APPENDIX C

Aesthetics: Visual Resources Technical Report

Humboldt Wind Energy Project

Visual Resources Technical Report

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Acronyms and Abbreviations

ac	acre
Caltrans	California Department of Transportation
DEM	Digital Elevation Model
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
gen-tie (line)	generation tie line
HRC	Humboldt Redwoods Company
KOP	Key Observation Point
kV	kilovolt
m	meter
MW	megawatt
METs	meteorological towers
mi	mile
O&M	Operations and Maintenance
TPZ	Timber Production Zone
VIA	Visual Impact Analysis
WTG	wind turbine generator

Note:

Often, agency suggestions and guidelines are provided in US units of measure (e.g., acres [ac] feet [ft], or miles [mi]), and in other instances, agency guidance is provided in metric (aka SI, or System International) units (e.g., meters [m] or kilometers [km]). To convert an otherwise readily recognized agency standard (e.g., 10 mi or 1 km) to the other system may result in confusion. Accordingly, we provide measures in either system, using the original agency suggestion unchanged, and provide conversion to the other standard only when it makes sense to do so.

Glossary

These terms are included in Federal Highway Administration (FHWA) Guidelines for the Assessment of Highway Projects (FHWA 1988, 2015). Slight modifications in terminology and descriptions have been made to some terms to reflect the way the FHWA method is applied in this report.

Color	The light reflecting off an object at a particular wavelength that creates hue (green, indigo, purple, red, etc.) and value (light to dark hues).
Distance Zones	Distance zones are based on the position of the viewer in relationship to the landscape. They are measured from one static point, such as the location of a viewpoint. There are three defined distance zones: • Foreground: 0.25–0.5 mile from the viewer • Middleground: Extends from the foreground zone to 3–5 miles from the viewer • Background: Extends from the middleground zone to infinity
Form	The unified mass or shape of an object that often has an edge or outline and can be defined by surrounding space. For example, a high-rise building would have a highly regular, rectangular form whereas a hill would have an organic, mounded form.
Intactness	The integrity of visual order in the natural and human-built landscape, and the extent to which the landscape is free from visual encroachment.
Key Observation Point (KOP)	A viewpoint usually selected for use in a visual impact analysis because it is either critical or representative of the visual character of either the environment or the project. If simulations are prepared for an analysis, they are prepared for views from KOPs.
Landscape Units	Defined areas within a project area that have similar visual features and homogeneous visual character and frequently, a single viewshed. An “outdoor room.” Typically, the spatial unit used for assessing visual impacts.
Line	Perceived when there is a change in form, color, or texture and where the eye generally follows this pathway because of the visual contrast. For example, a city’s high-rises can be seen silhouetted against the blue sky as a skyline, a river can have a curvilinear line as it passes through a landscape, or a hedgerow can create a line where it is seen rising up against a flat agricultural field.
Simulations	Two- or three-dimensional depictions of the visual character of a future state. Simulations range from artistic renderings to computer animations.
Texture	The perceived coarseness of a surface that is created by the light and shadow relationship over the surface of an object. For example, a rough surface texture (e.g., a rocky mountainside) would have many facets resulting in several areas in light and shadow and, often, with distinct separations between areas of light and shadow. Conversely, a smooth surface texture (e.g., a beach) would have fewer facets, larger surface areas in light or shadow, and gradual gradations between light and shadow.

Unity	The degree to which the visual resources of the landscape join to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.
Viewers	Those who occupy or will occupy a project site or lands within a project's viewshed can see the proposed project and travelers who would use it. • Neighbors: Viewers who occupy or will occupy land adjacent or visible to the proposed project. For a complex or controversial project, neighbors can be defined by land-use, including residential, retail, commercial, industrial, agricultural, recreational, and civic neighbors. • Travelers: Viewers who use the existing or would use the proposed transportation project. For complex or controversial projects, travelers can be defined by the purpose of traveling, including commuting, hauling, touring, or exercising travelers, or by their mode of travel as motorists, bicyclists, or pedestrians.
Viewshed	The surface area visible from a location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail). The area in which the project would theoretically be visible as influenced by the presence or absence of intervening topography, vegetation, and structures.
Visual Character	The description of the visible attributes of a scene or object typically using artistic terms such as form, line, color, and texture.
Visual Quality	What viewers like and dislike about visual resources that compose the visual character of a particular scene. Different viewers may evaluate specific visual resources differently based on their interests in natural harmony (harmony is considered desirable; disharmony is undesirable), cultural order (orderly is considered desirable; disorderly is undesirable), and project coherence (coherent is considered desirable; incoherent is undesirable). Neighbors and travelers may have different opinions on what they like and dislike about a scene.
Visual Resources	Components of the natural, cultural, or project environments capable of being seen. • Natural Visual Resources: The land, water, vegetation, and animals that compose the natural environment. Although natural resources may have been altered or imported by people, resources that are primarily geological or biological in origin are considered natural. A grassy pasture with rolling terrain, scattered trees, and grazing cows, for example, is considered to be composed of natural visual resources, even though it is a landscape created by people. • Cultural Visual Resources: The buildings, structures, and artifacts that compose the cultural environment. These are resources constructed by people. • Project Visual Resources: For highway transportation projects, the geometrics, structures, and fixtures that compose the project environment. These are the constructed resources that were or will be placed in the environment as part of the proposed project.
Vividness	The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.

Executive Summary

This technical report evaluates potential effects on visual quality from development of the proposed Humboldt Wind Energy Project on privately owned timber and grazing lands in rural, unincorporated south-central Humboldt County, California. Stantec visual resources specialists identified areas of potential project visibility and visual sensitivity, collected photographs of views toward the project site from publicly accessible locations throughout the surrounding landscape, and identified nine viewpoints for use in analysis of the project's potential visual effects. Stantec visualization specialists developed visual simulations that placed a photo-realistic model of the project into views and then evaluated the difference in visual quality between existing and proposed conditions, applying concepts of view vividness, intactness, and unity from the Federal Highway Administration Visual Impact Assessment method.

Visual quality would be reduced in most views toward the project site, but this reduction would not be substantial. Introduction of a power generation facility into predominantly rural and agricultural landscapes would alter the visual character visible in views, but existing visual quality, assessed by Stantec to range from moderate to high under existing conditions, would range from moderate to moderately high under conditions with the project. This conclusion, made for the visually representative, 34-turbine project layout, also generally holds for an alternative, comparatively evaluated 60-turbine layout, except for views from Scotia and Rio Dell, where effects to visual quality with the larger project would be more substantial.

1.0 INTRODUCTION

Humboldt Wind, LLC (Humboldt Wind) is planning to construct and operate the Humboldt Wind Energy Project (project) in southcentral Humboldt County, California. The project would consist of up to 60 wind turbine generators (WTGs, or "turbines") and associated facilities including meteorological towers (METs), electrical collection system, access roads, construction staging areas, an operations and maintenance (O&M) facility, and a 25-mile (mi) transmission generation tie (gen-tie) line and associated upgrades and expansion to the point of interconnection at Pacific Gas & Electric's Bridgeville substation.

This visual resources technical report evaluates potential effects on visual quality from development of the project. It assumes development of the project with the largest class of WTG contemplated for the project and evaluates two potential project layouts: a 34-turbine arrangement that represents the smallest potential project footprint and a 60-turbine layout representing the largest potential project footprint. It does not evaluate the interconnection line, which has not yet been engineered and remains conceptual.

Visual resources are elements of a natural or built environment with aesthetic value based on visual quality and character. They may be formally identified by local, state, or federal governments or recognized by other institutions and organizations. They may also be components of a natural or built environment that contribute to a memorable or distinct landscape. A visual resources technical report evaluates the potential effects on visual resources from a proposed project based on the project's physical characteristics and potential visibility and the degree to which the project could alter existing visual quality and/or visual character.

2.0 ENVIRONMENTAL SETTING

Proposed WTG locations are situated on two prominent ridgelines, Bear River Ridge and Monument Ridge, about 4 mi south and west of Highway 101 and the Eel River (Figure 1). The project site consists primarily of managed timberlands that are dominated by redwood and Douglas-fir forests, with annual grassland, hardwood, and chaparral inclusions. The topography is diverse and steep in places, and elevation ranges from nearly sea level in river bottoms to just over 3,000 feet.

The general plan designation for the majority of this area is Timber, with a smaller amount of Agricultural Grazing. About 100 acres (ac) of the project area has a designation of Residential Agriculture. Most of the area is zoned Timber Production Zone (TPZ) and Agriculture Exclusive with a combining zone specifying a minimum building site of 160 ac (AE-B-5(160)).

3.0 METHODS

This assessment of potential effects to visual resources from the project relies on and implements selected concepts from the Federal Highway Administration (FHWA) Visual Impact Assessment (VIA) for Highway Projects method (FHWA 1988, 2015[1]). When fully implemented, the FHWA VIA process requires four phases: 1) an Establishment Phase defines the study area and builds an understanding of the conceptual character of the proposed project; 2) the Inventory Phase examines visual quality related to the project site, considering the relationship between components of the affected environment and the composition of the affected population; 3) the Analysis Phase evaluates impacts on visual quality from a proposed project; and 4) the Mitigation Phase defines the mitigation and enhancement efforts to be included in project design, typically after project alternatives have been evaluated and a preferred alternative selected. This report addresses the first three phases.

Section 2.0, Environmental Setting, establishes the project area, Section 4.2, Visual Resources and Viewer Sensitivity, inventories existing visual quality, and identifies affected populations, or viewers. Potential project effects on visual quality are described in Section 4.4, Environmental Consequences. Environmental impacts and related mitigation measures are not identified here; rather, this technical report is intended to inform a separate analysis in the project Environmental Impact Report.

3.1 STUDY PROCEDURE

This section summarizes the primary steps undertaken in the production of this technical report.

3.1.1 Review of Project and Its Setting

Stantec visual resources specialists initiated the work to support this technical report by achieving a thorough understanding of the project components and the setting within which they are proposed to be constructed and operated. They reviewed local plans and policies, along with pertinent aerial imagery and maps. The visual resource specialists identified important visual resources, including state or locally-designated scenic roadways, designated scenic areas or vistas, and the location of residential, recreational, or cultural sites where those with views of the potential project are likely to have heightened sensitivity to perceived changes in the visual environment.

At the time of this study's initiation, the project's layout had not been finalized. Up to 60 WTGs are proposed. However, because the project could include various combinations of structures, various extents of visibility are possible. To account for maximum potential visibility, Stantec developed two visually representative layouts of WTGs for use in this technical report (Figure 1a & 1b). Humboldt Wind identified 34 of the potential WTG sites, selecting a distribution along the ridgetops that included the horizontal extent of the total project set, assuming maximum potential size WTGs (4.0 megawatt [MW] class WTGs with a hub height of 105 meters [m] and rotor diameter of 150 m), with the exception of four 3.5 MW class WTGs (with a hub height of 94 m and rotor diameter of 112 m). This

[1] The FHWA Guidelines for Highway Projects were updated in 2015. While these guidelines revised the recommended method for visual impact analyses for highway projects, they were generally consistent regarding definitions of concepts incorporated in this analysis. Those concepts were more fully defined in the 1988 method; thus, this analysis cites both the 1988 and 2015 FHWA guidelines as appropriate.

representative layout assumes the greatest potential proximity to WTGs in views from the east and west and for the widest development “envelope” in views from the north and south.

Augmenting this report’s primary analysis of the 34-turbine layout is a comparative evaluation of a 60-turbine layout, which consists entirely of the largest turbines contemplated for the project (Figure 1b). In the 60-turbine layout, a 4.0 MW class WTG, with a hub height of 105m and a rotor diameter of 150m, would be installed at all the potential WTG locations indicated in the project application. This report fully evaluates the 34-turbine layout, which assesses the contrast in specific views between current conditions and the visually representative layout. The assessment of each view also includes a qualitative discussion of how the 60-turbine layout would affect visual quality. Bookending the evaluation with the visually representative 34-turbine layout and a conservative 60-turbine layout allows this report to effectively asses the full range of effects to visual resources potentially resulting from the project. Further, at the time this technical report was written, the gen-tie line route was conceptual, with no proposed route finalized. As such, potential visual effects resulting from the gen-tie line are not included here.

3.1.2 Viewshed Analysis

A viewshed analysis is a GIS-based map that identifies, based on the maximum height of proposed components and surrounding topography, the theoretical visibility of a proposed project. The line-of-sight analysis between project components and ground elevations throughout the surrounding terrain does not account for intervening vegetation or structures and thus serves as an initial step in defining a project’s visibility and identifying viewpoints for use in visual impact analyses.

For this project, theoretical visibility was established for a radius of 20 mi, with the assumption that typical atmospheric conditions in the project area would reduce the size of the actual viewshed. The initial viewshed informed selection of preliminary viewpoints in representative or visually sensitive areas. These preliminary viewpoints were validated in the field and served as the basis for site photography. Within the viewshed, Stantec identified preliminary landscape units—based on presumed landscape character, topography, and land uses—to inform a broad selection of preliminary viewpoints (Figure 1a shows the viewshed of the 34-turbine layout; Figure 1b shows the viewshed of the 60-turbine layout).

3.1.3 Site Photography and Selection of Key Observation Points

In June 2018, Stantec visual resources specialists conducted a photography site visit, documenting views toward the project site from locations throughout the surrounding area. Visibility of the site was intermittent over the multi-day site visit; low clouds and coastal fog, typical for the region, obscured views on some days, while sunny and well-lit conditions prevailed on other days.

Visual resources specialists photographed with a high-resolution, full-frame, 35mm Digital Single-Lens-Reflex camera with a fixed 50mm lens. A 50mm focal length is widely accepted as an industry standard for approximating the field of vision of the human eye. That is, a photograph of a landscape shot with a full-frame camera with a 50mm lens generally replicates what a person would see in a in a single frame of view.

Stantec collected photographs of the project site from 67 viewpoints. These locations included preliminary viewpoints identified by the viewshed analysis, which were validated and retained or revised based on confirmation of project site visibility. The visual resources specialists collected additional views to account for observed views and potentially

sensitive receptors. All photographs serve to document project visibility and existing visual conditions within and near the project site. Stantec documents viewpoint locations using a hand-held global positioning system device.

From the set of viewpoints photographed, Stantec identified nine views that represented the general ranges of viewer sensitivities, landscapes, and land uses in the project area. Stantec submitted these views to Humboldt County, which reviewed and concurred with their use as KOPs in the formal visual analysis.

3.1.4 Preparation of Simulations

Visual simulations, in which a photo-realistic model of a project is placed into existing photographs, serve as the basis by which contrast between existing conditions and those with the project is evaluated. Using Autodesk 3ds Max™, Stantec visualization specialists built a three-dimensional model of the project based on the layout and specifications provided by Humboldt Wind. They then developed a simulated perspective (camera view) to match the geo-referenced location of each KOP, as well as the bearing and focal length of each photograph. Stantec obtained and used digital elevation model (DEM) data as the land base upon which existing elements in each view (e.g., buildings, vegetation, infrastructure) were modeled based on aerial imagery. They placed the project model and existing elements into the DEM, then adjusted the camera and target location, focal length, and camera roll to align all modeled elements with the corresponding elements in the photograph within which the model was placed. Visual resources specialists reviewed simulations for photo-realistic quality and consistency with the project plans and layout. Because the site layout has not yet been finalized, engineering has not been completed for the project. As such, simulations do not show effects of any road construction or vegetation clearance at the bases of WTGs.

3.1.5 Assessment of Effects on Visual Resources

Relying on observations during the site photography and the resulting images of views toward the project site, visual resources specialists evaluated the visual quality of existing conditions for each KOP. This process relied on the use of worksheets that focus key concepts of the FHWA method; it assessed vividness, intactness, and unity for each view, assigning a visual quality rating ranging from “very low” to “very high” (Appendix A). This assessment was replicated for the simulated images showing the project as it would be seen from each KOP. Stantec established a visual quality rating for each view showing proposed conditions. The difference in visual quality rating for each view between existing and proposed conditions established the degree of contrast in visual quality from the project.

4.0 RESULTS AND DISCUSSION

4.1 REGULATORY SETTING

Visual resources identified in plans, policies, or other applicable regulations that would potentially be affected by the proposed project are discussed below. It is not an exhaustive list of every law, ordinance, regulation, or other standard related to the project or project site.

4.1.1 California State Scenic Highway Program

The California Scenic Highway Program was created by the Legislature in 1963 and is managed by the Landscape Architecture Division of the California Department of Transportation (Caltrans). Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. A highway may be designated scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon travelers' enjoyment of the view.

There are no highways in the county officially designated as California State Scenic Highways; however, the entire segments of State Route 36 and Highway 101 in the project vicinity are eligible for state scenic highway designation (Caltrans 2018).

4.1.2 Humboldt County

Humboldt County General Plan

The Energy, Conservation and Open Space, and Water Resource Elements of the Humboldt County General Plan (Humboldt County 2017) include goals, policies, and standards related to aesthetics and visual resources that would apply to the project. This report reflects Goal SR-G1, Conservation of Scenic Resources, which details the County's objective of the protection of "high-value scenic forest, agriculture, river, and coastal areas that contribute to the enjoyment of Humboldt County's beauty and abundant natural resources." Policies and Standards related to identified Scenic Areas and Scenic Highways informed the views used in this analysis.

4.2 VISUAL RESOURCES AND VIEWER SENSITIVITY

The visual resources near the project site are primarily components of the project's natural setting. Humboldt County is within the Klamath/North Coast bioregion and features a rocky coastline, montane forests, and small and sparsely populated settlements. The county is among those with the wettest and foggiest weather in California. Cool, moist climate is typical on the coast, becoming progressively drier, warmer, and more variable but remaining mild inland. Humboldt County features several biological communities; the most abundant is coniferous forest, which comprises Douglas fir, redwood, and pine forests, followed by oak woodlands, and grasslands. Nearly 400,000 ac of the county's undeveloped forests and coastlines are designated as parks or forests.

Scenic forest, agricultural, river, and coastal areas are the primary natural or natural-appearing areas within the project viewshed, along with local and regional parks and recreational areas that include Humboldt Redwoods State Park, Riverwalk Park in Fortuna, and Table Bluff County Park. Locally-designated scenic Highway 101 and State Route 36 afford views of the project site and are also considered visual resources.

Potential viewers include the following, based on the FHWA definitions or neighbors and travelers (FHWA 2015).

Residential viewers: Residential neighbors live within viewing distance of the proposed project. Their visual preferences tend toward a desire to maintain the existing landscape as it is. Depending on their location, residential neighbors are often interested in cultural order and natural harmony, with less emphasis on project coherence unless it impacts their ability to appreciate the other two aspects of visual quality.

Recreational viewers: Recreational neighbors provide or participate in recreation within the project viewshed. Recreation includes organized sporting events, indoor and outdoor leisure activities, and cultural events. The visual preferences of recreational neighbors tend to be focused on and associated with their recreational activity. They tend to prefer the status quo and are leery of visual encroachments that may cause adverse effects on the setting of their activity. Depending on the type of recreation, recreational neighbors are very interested in cultural order and natural harmony, with some emphasis on project coherence as it impacts their experience traveling to their recreational activity.

Tourists: Tourists travel on a highway, primarily for enjoyment, usually to a pre-determined destination. Tourist trips tend to be more adventuresome, cover longer distances, and take more time than commuting trips. Tourists frequently travel in groups with both a driver and passengers and are equally interested in project coherence, cultural order, and natural harmony.

Workers: In agricultural areas, project viewers can include agricultural neighbors who are farmers of crops or herd animals and who often work in fields and pastures. Some are permanent; many are migratory but may return to the same area again and again over the years. Agricultural neighbors regard cultural order and natural harmony as critical components of the landscape. They are less interested in project coherence.

Commuters: Commuters are regular travelers of the same route. The frequency of the travel may vary, but there tend to be peaks—such as morning and evening rush hours and holidays. Commuters, like all travelers, are particularly interested in project coherence. They are also interested in cultural order and natural harmony to the extent that it contributes to wayfinding.

Residents, recreationists, and tourists are assumed to have moderately high to high sensitivity to visual change from the proposed project, based on the context of specific views. Workers and commuters are assumed to have more moderate sensitivity to visual change.

4.3 LANDSCAPE UNITS, KEY OBSERVATION POINTS, AND VISUAL QUALITY RATINGS

To frame the analysis of visual effects from the project, the viewshed is divided into landscape units. Landscape units are spatially enclosed and/or visually bounded areas with distinct landscape character and interrelated visual elements. KOPs are selected to represent the range of visual settings within each landscape unit. The five landscape units identified within the project viewshed and the existing visual conditions and visual quality within each landscape unit as viewed from each KOP are described below (Table 1). KOP locations are shown in Figure 1, and existing views are included in Figures 2 through 9. The table and text in this section summarizes the visual quality assessments for each of the KOPs as quantified in the FHWA rating sheets (Appendix A).

Table 1. Existing Visual Quality by Landscape Unit

Landscape Unit / KOP	Vividness	Intactness	Unity	Overall Visual Quality
Eel River Corridor				
KOP 1 – Shively	Moderately High	Moderately High	High	Moderately High

Landscape Unit / KOP	Vividness	Intactness	Unity	Overall Visual Quality
KOP 2 – Scotia 4th & B	Moderately High	Moderately High	High	Moderately High
KOP 3 – Scotia Main Street	Moderately High	Moderate	Moderately High	Moderately High
KOP 4 – Rio Dell	Moderately High	Moderate	Moderately High	Moderately High
KOP 5 – Fortuna Riverwalk	Moderately High	High	High	High
State Route 36				
KOP 6 – Hydesville	Moderate	Moderate	Moderately High	Moderate
West Humboldt				
KOP 7 – Mattole Road	High	High	High	High

Ferndale Plains				
KOP 8 – Highway 211	Moderately High	Moderate	Moderately High	Moderately High
Humboldt Bay				
KOP 9 – Table Bluff County Park	Moderately High	Moderate	Moderate	Moderate

4.3.1 Eel River Corridor Landscape Unit

The Eel River Corridor Landscape Unit includes land centered on the segment of the Eel River that passes through the project vicinity. The Eel River is a meandering, braided channel bounded by the forested ridgelines to the west, east, north, and south. These ridgelines also form the boundaries of this landscape unit. The southern portion is sparsely populated and contains small pockets of rural communities along the east bank of the Eel River. The mountainous terrain with mixed conifer forest visually characterize the southern portion of this landscape unit and limits long-distance views, including those toward the project site. Comparatively, the central and northern portions of this landscape unit are more populated. These areas are visually characterized by the presence of suburban and agricultural communities set below the forested bluffs. There is a mix of land uses in this part of the Eel River corridor, including residential and commercial uses, agricultural operations, and industrial uses primarily related to timber management. These areas allow for intermittent views of the surrounding ridgelines, which rise above the valley floor and appear as a backdrop to the suburban development. Given the range of viewer types—including residents, recreationists, tourists, commuters, and workers—viewers within the Eel River Corridor Landscape Unit are considered to have a moderate to high level of viewer sensitivity.

4.3.1.1 KOP 1 – Shively

KOP 1 is located in Shively, a rural, unincorporated community located just east of the Eel River and within 3 mi east-northeast of the project (Figure 1a). Shively is set along a small, flat, riverside area. It is bounded by two nearby ridgelines, Shively Ridge to the north and east and Monument Ridge to the west and south. Along with local vegetation, these ridgelines limit the length of views in the area. Several homes in the area appear to be associated with small to medium (less than 50 ac) farming operations. This viewpoint was selected to represent the view of rural residents who live relatively close to the project; residential viewers are assumed to have moderately high to high sensitivity to visual changes.

The visual quality of the view toward the project site from KOP 1 is moderately high (Figure 2). The low, forested ridgeline, with individually identifiable trees, serves as a backdrop to agricultural lands in the foreground, which are separated by conifers and shrub vegetation. The maintained agricultural lands are evidence of human activities that do not detract from the generally natural character of views and the overall vividness of the view is moderately high. The view's intactness is similarly moderately high. Agricultural uses appear aligned with the populated area in the foreground, with the undeveloped hillside set entirely beyond the Eel River, which is not visible, in the view's middleground. The overall view is typical of the rural agricultural communities that are set within the densely forested areas along the Eel River corridor. The human modifications add an element of visual interest to the view but are subordinate to the overall natural appearance. As such, the view's unity is high.

4.3.1.2 KOP 2 – Scotia 4th and B

KOP 2 is located within the Town of Scotia, approximately 3 mi northeast of the Bear River Ridge portion of the project (Figure 1a). Located along the west bank of the Eel River and accessible from Highway 101, Scotia is characterized by its history of ownership by the Pacific Lumber Company. While currently transitioning to a community of privately-owned homes, timber operations near the populated area are ongoing. HRC headquarters are in central Scotia, and a biomass power plant is nearby. Forested hills and ridgelines, including lands actively managed by HRC, surround Scotia. The existing visual character is, therefore, both industrial and residential, with short views toward a natural-appearing area beyond such uses. The north boundary of the town is adjacent to the City of Rio Dell. This viewpoint is located near the intersection of 4th Street and B Street, within Scotia's residential east side, which is slightly elevated relative to other parts of town. It was selected to represent views of the project from Scotia residents, who are assumed to have a moderately high to high degree of sensitivity to visual changes.

The visual quality of the view toward the project site from KOP 2 is moderately high (Figure 3). The row of uniformly constructed homes with the ridgeline backdrop lends a high degree of unity to the view. The viewpoint is close enough to the sloped ridgeline to allow the discernibility of individual trees and patches of grassland add variety and visual interest to the natural setting. These qualities, along with the varied colors of the homes in the immediate foreground, result in a moderately high degree of vividness in the view. The view's moderately high degree of intactness stems from the clear delineation between residential and natural areas from this vantage point, and presence of the nearby ridgeline along which human-made features are imperceptible.

4.3.1.3 KOP 3 – Scotia Main Street

KOP 3 is located along Main Street in the Town of Scotia, approximately 4 mi north of the Monument Ridge portion of the project (Figure 1a). It is adjacent to HRC headquarters, the Winema Theater, and Scotia Museum, as well as other commercial uses, and reflects the general visual character for the town as described for KOP 2. This viewpoint was selected to represent views of the project from Scotia residents and visitors to the downtown area, including tourists, who are assumed to have a moderately high to high degree of sensitivity to visual changes.

The visual quality of the view toward the project site from KOP 3 is moderately high (Figure 4). The view primarily shows the residential development located along Main Street in the town's downtown area. The forested ridgeline provides a backdrop to the suburban community and contributes to the moderately high vividness of the view. The roadside infrastructure (streetlights and street signs), utility distribution structures, flag pole, and vegetation visible in the foreground consist of various forms and linear features that encroach on one another, but all of this appears contained within the developed area. These structures along with the vegetation appear as vertical features that partially obstruct views of the surrounding ridgelines and encroach upon the skyline, with hills clearly visible as a backdrop. The view, therefore, has a moderate degree of intactness. In general, the view from KOP 3 is of a valley community set against a forested, hillside backdrop and the unity of the view is moderately high.

4.3.1.4 KOP 4 – Rio Dell

KOP 4 is located at the Highway 101 Davis Street off-ramp in the City of Rio Dell. This viewpoint is about 5 mi north of the project (Figure 1a). Rio Dell is a small community set on flat, open land below the Scotia Bluffs. The city's lower elevation allows for views of the surrounding redwood forested ridgelines. Development is centered around the city's downtown commercial area and includes a mix of single-family homes and rural properties associated with farming

operations. This viewpoint was selected to represent views of motorists driving southbound on Highway 101 and residents from this community. It is assumed that motorists would have moderate sensitivity to visual changes because Highway 101 is an eligible state scenic highway. Residential viewers are assumed to have a moderately high to high sensitivity to visual changes.

The visual quality of the view toward the project site from KOP 4 is moderately high (Figure 5). Monument Ridge extends across the view and provides a backdrop to the residential development and the grazing lands visible in the foreground. The residential development is separated from the natural environment by the lower elevated forested ridgelines to the west and the east, and the row of coniferous trees visible in the middleground. The modifications made to the valley floor do not detract from the moderately high vividness of the view, of which the vibrant color of the vegetation in the foreground and the definition of the forested ridgeline formations visible across the background of the view are contributors. The residential development visible in the middleground contributes to the moderate intactness of the view, because, at its rural scale of development, it appears across the foreground in a less-than-orderly fashion. The Eagle Prairie Bridge, which connects Rio Dell to Scotia, is partially visible in this view and serves to indicate the location of the Eel River. The view from KOP 4 of rural residential and small agricultural uses is typical of such communities in the Eel River corridor. It demonstrates a general coherence and the unity in the view is moderately high.

4.3.1.5 KOP 5 – Fortuna Riverwalk

KOP 5 is located along the Fortuna Riverwalk in the City of Fortuna. The Fortuna Riverwalk is a 2-mi gravel path set atop an earthen levee that forms the east bank of the Eel River. This viewpoint is accessible from Kenmar Road and is about 12 mi north of the project (Figure 1a). This viewpoint was selected because it provides recreationists with an unobstructed elevated view of the river valley and the surrounding forested ridgelines and hillsides, including the project site. Recreational viewers are assumed to have moderately high to high sensitivity to visual changes.

The visual quality of the view toward the project site from KOP 5 is high (Figure 6). The Eel River channel meanders through the foreground and middleground of this view and is backdropped by the surrounding forested ridgelines and lower elevated hillsides. The dominance of these natural features contributes to the moderately high vividness of the view. Rural development is partially visible in this view and appears setback from the bank of the Eel River. Other human-made modifications visible in this view include the rip-rap modifications made to the levee and evidence of past timber management activities along the ridgelines. However, visibility of these features does not reduce the view's overall high level of intactness, which consists primarily of the natural environment. Furthermore, the overall unity of the view is high as the rural development, surrounding forested ridgelines appear oriented around the meandering formation of the Eel River, which together form the overall composition of the Eel River Valley.

4.3.2 State Route 36 Landscape Unit

The State Route 36 Landscape Unit is centered along the agricultural plains that are located east of Highway 101, along State Route 36. State Route 36 is an eligible state scenic highway and is the primary transportation corridor extending east of the project area. This landscape unit is visually characterized by the patchwork formed by pastures and row crops, and the rolling terrain with mixed conifer forests and private timberlands. Several rural unincorporated communities are set within these areas with the areas of densest development concentrated along the highway. Residential development is increasingly rural in scale and character in views extending beyond the immediate roadway corridor. The Van Duzen River is the primary water feature that is located within this landscape unit (a

segment of the river beginning 8 mi east of the anticipated project interconnection location is federally designated as Wild and Scenic; no portion within the project area is so designated). State and local parks are located along the Van Duzen River, but vegetation and topography obscure visibility of the project site from these locations. The southern boundary of this landscape unit is defined by the forested bluff that follows the south bank of the Van Duzen River and extends toward Highway 101. This bluff, along with the steep terrain that extends further east, limits long-distance views toward the south. Viewers in this area include residents, commuters, and recreationists. As such, viewers in this landscape unit are generally assumed to have moderate to high sensitivity to visual changes.

4.3.2.1 KOP 6 – Hydesville

KOP 6 is located along State Route 36, south of the unincorporated community of Hydesville, and approximately 8.5 mi north of the project (Figure 1a). This viewpoint was selected because it is representative of views toward the project site from the communities that are assumed to have a high degree of sensitivity to visual changes. In addition, this viewpoint is representative of motorists driving along scenic State Route 36, who are potentially traveling to or returning from recreational destinations east of the KOP. These viewers are assumed to have a moderate to moderately high degree of visual sensitivity to visual changes.

The visual quality of the view toward the project site from KOP 6 is moderate (Figure 7). The foreground and middleground includes a pattern formed by the flat agricultural plains and dispersed rural residential development. The agricultural lands and rural residential development are separated from the edge of the Van Duzen River by a row of trees which obscures visibility of the river channel in this view. A low forested bluff, with individually identifiable trees, serves as a backdrop to the valley floor. The edge of the forested bluff appears uneven from past timber management activities. As such, the human-made modifications to the valley floor and the forested bluff contribute to the view's moderate degree of vividness and intactness. The unity of the view, however, is moderately high because evidence of the active farming operations appear as a cohesive land use. These land uses contribute to the overall composition of the view and are representative of the working agricultural landscape that is typically visible along State Route 36.

4.3.3 West Humboldt Landscape Unit

The West Humboldt Landscape Unit consists of the lands west of Bear River Ridge and Monument Ridge. It is visually characterized by the densely forested, mountainous terrain located between the county's coastal and inland areas. This part of the county is predominantly undeveloped, though isolated rural residences are intermittently visible throughout the area. The mountainous terrain and dense redwood forests limit most long-distance views in this part of the county, but low sloped hillsides and open patches of grassland and oak woodland forest allow for intermittent views of the elevated ridgelines to the east. Viewer types here are primarily residents and motorists who are commuting, sight-seeing, or traveling to recreational coastal areas. As such, visual sensitivity here is generally assumed to be moderate to high.

4.3.3.1 KOP 7 – Mattole Road

KOP 7 is located along the eastbound lane of Mattole Road, approximately 13 mi west of the project (Figure 1a). Mattole Road is the primary route traversing this portion of Humboldt area, extending to the low, sparsely vegetated shoreline from the more mountainous and more heavily forested land to the east. This viewpoint was selected because of the relatively higher volume of travelers along Mattole Road, compared with other local roads in the

vicinity. Viewers at this KOP include rural residences and recreationists returning to central Humboldt County from its remote coastline, where there is northern access to the Lost Coast and the King Range National Conservation Area. Motorists driving on Mattole Road are assumed to have moderate to moderately high sensitivity to visual change.

The visual quality of the view toward the project site from KOP 7 is high (Figure 8). This view primarily consists of the natural environment and includes highly vivid components. The landforms appear layered with the low sloping hillsides in the foreground, which then become more elevated in the middleground and are backdropped by the elevated ridgelines. The hillsides and ridgelines are covered by dense redwood forest with alternating patches of oak woodland habitat. An isolated residential property is visible in this view but does not encroach on the overall view of the natural landforms. Therefore, the view appears highly intact. Similarly, the view appears highly unified by the layered appearance of the low hillsides that are backdropped by the elevated ridgelines.

4.3.4 Ferndale Plains Landscape Unit

The Ferndale Plains Landscape Unit includes the broad tracts of pastures and cropland visible to the north and south of Highway 211, which extends west from Highway 101 to the city of Ferndale. This landscape unit is delineated by the North Fork of the Eel River to the north boundary and the densely forested ridgelines and lower elevated hillsides to the south. Views along Highway 211 are expansive and include both rural residences and their apparently associated active farming operations dispersed throughout the landscape. These uses characterize the landscape unit visually, along with the mountain backdrop that includes Monument Ridge and Bear River Ridge in long-distance views. Given the presence of residences within a working, agricultural landscape, viewer sensitivity in the area is assumed to range from moderately low to high.

4.3.4.1 KOP 8 – Highway 211, west of Ferndale Bridge

KOP 8 is located along Highway 211, approximately 17 mi north of the project (Figure 1a). This viewpoint was selected because it provides an unobstructed view toward the project site from the Ferndale Plains area and approximates the view of westbound travelers who have just crossed the Ferndale Bridge. Visual sensitivity of viewers from the highway in this location is assumed to be moderate, while residents in the vicinity are assumed to have moderately high to high degrees of sensitivity.

The visual quality of the view toward the project site from KOP 8 is moderately high (Figure 9). The expansive view of the farmlands and associated farming operations visible in the foreground and middleground are consistent with the visual character of the Ferndale Plains. The gradations of color and form resulting from the inclusion of both forested ridgelines and flat farmlands contribute to the moderately high vividness of the view. Human activity is evident throughout the foreground and middleground of the view but not detectable in the elevated background from this distance, resulting in a moderate level of intactness. The valley floor has been modified to support the farmland operations and the associated rural residential development, which appears scattered across the view. In addition, utility distribution poles and the active sprinkler irrigation systems introduce vertical elements into the view and slightly encroach on views of the lower elevated hillsides. Overall, the unity of the view is moderately high. This is a coherent and cohesive view in which agricultural uses and residences appear along the valley floor backdropped by comparatively undeveloped hills and mountains.

4.3.5 Humboldt Bay Landscape Unit

The Humboldt Bay Landscape Unit consists of an expansive view of the flat tidal marshes and sloughs located south of Humboldt Bay. The marsh lands provide a transition between the coastline and inland area. The coastline provides opportunities for recreation activities, whereas the inland area includes clusters of rural residential uses. The north fork of the Eel River and surrounding delta forms the southern boundary of this landscape unit and separates this landscape unit from the Ferndale Plains. Primary viewers in this area include residents and recreationists. Viewer sensitivity is therefore assumed to range from moderately high to high.

4.3.5.1 KOP 9 – Table Bluff County Park

KOP 9 is located at Table Bluff County Park, approximately 23 mi north of the project (Figure 1a). Table Bluff County Park is a coastal recreation area that provides access to Humboldt Bay, approximately 4 mi northwest of the town of Loleta. This viewpoint provides an expansive view of the flat tidal marsh lands south of the park and the ridgelines beyond. It was selected to represent long-distance views of the project site from the north, including more populated lands near Eureka. Viewers at this location are departing the park, where views are oriented toward Humboldt Bay and the Pacific Ocean. Nevertheless, the presumed recreational nature of the area, in concert with the presence of nearby rural residences, requires the assumption of moderately high to high viewer sensitivity here. From this location, depending on the time of day and season, visibility of the ridgelines, including the project site, can be reduced because of the marine fog layer that encroaches on the inland areas.

The visual quality of the view toward the project site from KOP 9 is moderate (Figure 10). Land within the foreground gently slopes down toward the flat tidal marsh lands. A slough and wetland type features typical to this region are visible in the foreground and provide some visual interest. The flat tidal marshes extend across the center of the view and appear separated from the steep forested ridgelines by a vegetated corridor. The panoramic view of the surrounding ridgelines and coastal hillsides add an element of topographic relief from the flat marsh lands and together create a moderately high degree of vividness. The view includes a variety of structures that appear to have no discernable pattern and create breaks in the natural features visible in the middleground. In addition, utility poles and coniferous trees in the foreground appear as vertical features that contrast with and partially encroach upon the view's horizontal orientation. The variety of structures visible across the landscape contributes to the view’s moderate intactness. The presence of the human-made features that are co-located with the natural features and contribute to the overall composition of the coastal and inland environments visible in this view. However, because the human-made features lack any discernable pattern, the unity of the view is moderate.

4.4 ENVIRONMENTAL CONSEQUENCES

This section describes the components of the project evaluated in this report and their potential effects to visual quality in each of the views just described.

4.4.1 Proposed Project

4.4.1.1 Project Facilities

The project would include the following: WTGs and other permanent features such as project roads, underground collector lines, METs, an O&M facility, substation components, and, once a route has been identified, a transmission

line running generally east along Monument Ridge for interconnection with Pacific Gas & Electric's Bridgeville Substation, located several miles northeast of the project's eastern boundary. Project components:

- Up to 60 WTGs, of potentially mixed sizes, ranging between 2.3 and 4.6 MW, erected on tubular steel towers set on concrete foundations, with associated WTG pads, laydown yards, and either nacelle- or pad-mounted transformers
- Access roads, consisting of existing and new roads, and including both temporary access roads required for construction and permanent service roads for O&M activities
- A 34.5-kilovolt (kV) underground electrical collector system linking each WTG in succession and to the onsite collector substation and switching station
- An onsite collector substation and switching station to connect to the overhead gen-tie line
- An up to 30-mi, 138-kV gen-tie line providing project interconnection with the existing PG&E transmission system, with an underground crossing beneath the Eel River
- An underground fiber optic communication system
- Permanent MET(s), Sonic Detection and Ranging unit(s), and/or Light Detection and Ranging unit(s)
- A temporary, 10-ac construction and equipment laydown yard, construction trailer area, and associated parking area. This would be the site of the permanent O&M facility to include an operations building and outdoor storage area
- Up to four temporary, 5-ac laydown yards located throughout the project site
- Two temporary cement batch plant(s).
- Expansion of Pacific Gas & Electric's Bridgeville substation to facilitate interconnection

Given the topography of the project site and the surrounding region, along with the distance from which publicly accessible viewpoints toward the project site are located, the assessment of potential visual effects for the project will focus on the introduction of WTGs into the landscape. Other project components within the project site are not likely to be prominent or even visible in public views.

At the time this technical report was written, the gen-tie line route was conceptual, with no proposed route finalized. Further, site engineering had not yet been completed. As such, potential visual effects resulting from the gen-tie line, access roads, or vegetation clearing at the base of proposed WTGs are not included here.

4.4.1.2 Construction

Construction is anticipated to require 12 months to complete. Activities and disturbance related to construction (e.g., grading beyond the width of new roads, WTG erection, and other activities in areas that would be restored after construction) result in effects considered to be temporary rather than permanent alterations to the visual environment. Construction activities are not evaluated in this report.

4.4.1.3 Maintenance and Decommissioning

The project will have an operational lifespan of at least 30 years, based on landowner lease arrangements and permit approval timeframes. Decommissioning would follow the requirements as specified by Humboldt County and would require removal of the WTGs, cables, and other infrastructure and support facilities. The foundations would be removed to a depth determined by local, state, and federal regulations or as dictated by permits, and removal of access roads and restoration of disturbed lands would be in accordance with regulations and/or landowners contractual commitments.

4.4.2 Visual Quality Ratings with Project

This section assesses the changes that the development of the project would bring about in the visual quality and character of the views from each landscape unit and KOP. Stantec developed simulated views from each of the KOPs as they would appear with the project in place, along with the existing views from each KOP to provide a comparison of the existing and with project views (Figures 2–10). The simulated views include the proposed WTGs that would be visible in the view. Analysts compared changes to visual quality and existing conditions to with project conditions (Table 2). Potential effects to nighttime views are discussed for each view. Current Federal Aviation Administration (FAA) regulations require lights on the nacelles of turbines on the perimeter of a wind energy facility and select turbines within the facility. A lighting plan has not yet been approved for the project. This analysis assumes all WTGs will include lights, flashing in unison.

Worksheets showing the evaluation of visual quality contrast for each view are included in Appendix A.

Table 2. Existing and Simulated Visual Quality by Landscape Unit

Landscape Unit/KOP	Vividness	Intactness	Unity	Overall Visual Quality
Eel River Corridor				
KOP 1 – Shively (existing)	Moderately High	Moderately High	High	Moderately High
KOP 1 – Shively (w/ project)	Moderately High	Moderate	Moderately High	Moderately High
KOP 2 – Scotia 4th and B (existing)	Moderately High	Moderately High	High	Moderately High
KOP 2 – Scotia 4th and B (w/ project)	Moderately High	Moderate	Moderately High	Moderately High
KOP 3 – Scotia Main Street (existing)	Moderately High	Moderate	Moderately High	Moderately High
KOP 3 – Scotia Main Street (w/ project)	Moderately High	Moderately Low	Moderate	Moderate
KOP 4 – Rio Dell (existing)	Moderately High	Moderate	Moderately High	Moderately High
KOP 4 – Rio Dell (w/ project)	High	Moderate	Moderate	Moderately High
KOP 5 – Fortuna (existing)	Moderately High	High	High	High
KOP 5 – Fortuna (w/ project)	High	Moderately High	Moderately High	Moderately High
State Route 36				
KOP 6 – Hydesville (existing)	Moderate	Moderate	Moderately High	Moderate
KOP 6 – Hydesville (w/ project)	Moderately High	Moderately Low	Moderately High	Moderate
West Humboldt				
KOP 7 – Mattole Road (existing)	High	High	High	High
KOP 7 – Mattole Road (w/ project)	High	Moderately High	Moderately High	Moderately High
Ferndale Plains				
KOP 8 – Highway 211 (existing)	Moderately High	Moderate	Moderately High	Moderately High
KOP 8 – Highway 211 (w/ project)	Moderately High	Moderately Low	Moderate	Moderate
Humboldt Bay				
KOP 9 – Table Bluff Co. Park (existing)	Moderately High	Moderate	Moderate	Moderate
KOP 9 – Table Bluff Co. Park (w/ project)	Moderately High	Moderately Low	Moderate	Moderate

4.4.2.1 Eel River Corridor Landscape Unit

KOP 1 - Shively

The visual quality of the view from KOP 1 with the project would be reduced but would remain moderately high (Figure 2a). The WTGs on the eastern segment of Monument Ridge would be visible within the left half of the view, appearing above the low ridgeline at a distance ranging from 2.8 to 4.1 mi away from KOP 1, where the predominantly residential viewers have an assumed moderately high to high degree of sensitivity to visual change.

The presence of the WTGs would not alter the vividness of landform or vegetation, because they would obscure views of neither. Their presence – the noticeably light color in direct sunlight and the motion of the rotor when spinning – would increase the memorability of human-made features. Under sunny conditions, the WTGs viewed from the east would appear bright during morning light and dark in the afternoon when they would be backlit. The view's vividness, therefore, would increase slightly but remain moderately high. The intactness of the view would be reduced to a moderate level with the project. The WTGs would be visible within a limited portion of the view, both above and beyond the landform and vegetation that are the primary contributors to the view's visual character. However, they would encroach on the existing skyline, which is undeveloped. WTG towers are strong, vertical forms beneath angular rotor blades. Such structures, which appear light in color when well lit, and are smooth in texture, would relate to the verticality of the nearby tall trees, but would contrast visually with the broader context of the view from KOP 1. When spinning, the rotor blades would further contrast with the rest of the mostly static elements in view. The WTGs would appear above ridgetop trees and roughly equal in height to the highest visible ridgetop in the center of the view. The skyline would thus be redefined with the project, though not substantially. The presence of the WTGs would similarly reduce the overall unity of the view. Their visibility would introduce power-generating elements that appear industrial in character. While occupying only a relatively small portion of the view, the visible contrast would reduce the compositional harmony observable in the existing view, reducing the view's unity from high to moderately high.

These changes would be only moderately perceptible to viewers at KOP 1 and its vicinity. The WTGs would occupy a narrow portion of the view toward the ridgeline from Shively; the view faces the easternmost extent of a generally east-west oriented string of structures. Because Monument Ridge overlooks Shively, the viewpoint is in an inferior position relative to the project, and the project would appear in the middleground of the view, with the nearest WTG visible 2.8 mi away. The WTGs are visible amid the ridgetop's tree line, and while awareness of the turbines may be high given the lack of other prominent human-made structures beyond the valley floor, exposure is likely to be limited due to intervening trees both along the ridgetop and near viewing locations within the valley floor. The motion from rotating blades would draw viewer attention where WTGs are visible, as there are few other sources of motion within the landscape, save agricultural activities (namely vehicles, machinery, and irrigation).

At night, FAA lighting would be visible in a portion of the view from KOP 1. The nacelles of four WTGs would be visible from this location. Thus, as many as four air traffic safety lights could be visible at night, depending on the lighting plan developed for the project. Given this KOP's proximity and angle of view toward the project, FAA lighting would appear above viewers. Further, the lateral position of the view of the project from this location would have the effect of FAA lighting appearing clustered in a limited portion of the view. While exterior and interior light from residences and small farms in the vicinity of the KOP are likely sources of nighttime light, there are no streetlights or developments with substantial night lighting that contribute to the baseline of ambient nighttime light. The FAA lighting

associated with the project, which would appear higher than and separated from any existing source of light on the valley floor, is likely to be a substantial source of contrast in nighttime views from KOP 1.

The 60-turbine layout as seen from KOP 1 would have the same effects as the 34-turbine layout (Figure 2b). Portions of seven WTGs would be visible from KOP 1, all in the same location of the ridgeline as those evaluated above. The effects to visual quality would be the same. The nearest turbine would also be approximately 2.8 mi away, and the hubs of four of the seven WTGs would be visible above the tree line, so the same number of air traffic safety lights could be visible with the 60-turbine layout.

KOP 2 – Scotia: 4th and B

The visual quality of the view from KOP 2 with the 34-turbine layout would be reduced but would in general remain moderately high (Figure 3a). Four WTGs along Bear River Ridge would be mostly to partially visible within the right half of the view. The most prominent two would appear above the sparsely wooded portions of the ridgeline. Blades of two other turbines would appear to extend above the tree line to the right. These turbines would appear as close as 3.2 mi away from KOP 2, where viewers are assumed to have a moderately high to high degree of sensitivity to visual change.

The WTGs, though few, would be clearly visible along the ridgeline backdrop in this view. They would add a degree of visual interest and thus slightly increase the view's vividness. Specifically, they would be a source of visible motion when the blades are spinning and their light color, when well-lit during morning hours, would be noticeable (the WTGs in views from the northeast would appear backlit and darker in afternoon light). They would not block views of landform or vegetation. However, they would encroach on the ridgeline, appearing as clearly detectable structures where none appear currently. As visible vertical features, they would relate to some minor elements in the view's foreground (e.g., house stove pipes, a utility pole, and individually detectable trees), but their strong and angular linear forms would contrast with their immediate surroundings. Thus, the moderately high degree of intactness observed in the existing view would be reduced to a moderate level. Similarly, introducing power-generating structures to a highly unified existing view would reduce the view's unity somewhat.

These changes would be perceptible to viewers at KOP 2 and throughout Scotia wherever views toward Bear River Ridge are available and not obstructed by intervening structures in the immediate foreground. The WTGs would occupy a limited portion of the ridgeline as seen from Scotia, which has a somewhat obtuse and inferior angle of view toward Bear River Ridge. The project would appear toward the back of the view's middleground, with the nearest WTG visible just over three mi away. Two WTGs would be mostly visible, with portions of two more partly visible above the tree line. Awareness of the WTGs would likely be high from KOP 2 and the surrounding residential neighborhood, and exposure would be high where views are static and uninterrupted. However, such views are also highly likely to be visually characterized more by the structures and activities in the foreground – Scotia's residential and industrial uses – with the ridgeline remaining as a backdrop. The motion from rotating blades would draw viewer attention where WTGs are visible, though traffic associated with residential and mill activities are current sources of motion in views from KOP 2.

FAA lighting would be visible along a portion of the view's background from KOP 2. The nacelles of four WTGs would be visible from here. Thus, depending on the final lighting plan for the project, as many as four air traffic safety lights could be visible at night, above and beyond the immediate setting. Light from residences, street lights, and industrial uses contribute to ambient night light in views from within Scotia. However, FAA lights visible along the ridgeline

would appear outside of any area prominently lit at night. As such, they would appear as a row of lights atop the ridge given the KOP's view of the broad side of the ridge, distinct from existing nighttime conditions as new sources of light. The FAA lighting associated with the project is likely to be a substantial source of contrast in nighttime views from KOP 2.

The 60-turbine project layout as seen from KOP 2 would intensify these effects (Figure 3b). A total of 12 WTGs would be visible from KOP 2, and all but the lower portion of the tower would be visible for five or them. The WTGs would occupy two separate areas along the ridgeline, with the nearest turbine on Bear River Ridge visible 3.2 mi away and the westernmost Monument Ridge turbines visible as near as four mi away. Viewers at KOP 2 and within the residential portion of Scotia would, with the addition of these WTGs atop a separate portion of the ridgeline, be more likely to see structures in multiple directions. In morning light, on well-lit days, additional light-colored structures would be visible along the ridgeline. In afternoon light under the same conditions, there would be additional, darkened, backlit structures visible along the ridgeline compared to the 34-turbine layout. The hubs of nine WTGs would be partially to fully visible above the tree line, which could mean as many as nine air traffic safety lights that could potentially be visible with the 60-turbine layout, depending on the final lighting plan. They would occupy a broader range of the ridgeline than would FAA lighting for the 34-turbine layout. All of this would result in a further reduction in visual quality compared to that assessed for the 34-turbine layout.

KOP 3 – Scotia Main Street

The visual quality of the view from KOP 3 with the project would be reduced from moderately high to moderate (Figure 4a). The WTGs part of the western segment of Monument Ridge would be visible within the left half of the view. The WTGs would appear above the forested ridgeline at a distance ranging from 4.2 to 4.5 mi away from KOP 3, where viewers are assumed to have a moderately high to high degree of sensitivity to visual change.

In this view, the WTGs would appear as prominent human-made features above the forested ridgeline in the background. The project would not obscure views of the surrounding ridgelines or the vegetation and, therefore, would not alter the landform or the vegetation. The presence of the WTGs would increase the memorability of human-made features – the motion of the rotor blades when spinning and darkened structures, backlit in views to the south from Scotia would be noticeable – but overall the vividness of the view would remain moderately high. The intactness of the view would be reduced from moderate to moderately low with the addition of the WTGs, which would increase the presence of vertical features in the view that would encroach on the existing skyline and alter the undeveloped nature of the ridgeline. The angular lines associated with the blades would contrast with other background features, and the forms would relate more to vertical elements in the foreground (flagpole, streetlights, utility poles, and street signs) than to trees or other vertical features amid the slops or atop the ridgeline beyond Scotia. The project would also result in the reduction of the view's unity from moderately high to moderate because the WTGs would appear industrial in character and would contrast with the suburban character of the view where, it should be noted, typical pedestrian and vehicular activities mean operational WTGs would likely not be the only moving features in this view.

The project and its effects to visual quality would be prominently visible from this part of Scotia. Viewers here would have a high degree of exposure to and awareness of the WTGs, with a total of 10 structures nearly completely visible in views from an inferior position, giving a higher profile along the skyline. The nacelles of all 10 WTGs would be visible from KOP 3. Viewers in Scotia would be likely to experience the project as a backdrop, present in any views that currently include the western portion of Monument Ridge. The visual character of their immediate surroundings

would not be altered, but the visual character of the broader context within which more proximate conditions exist would.

Air traffic safety lighting required by the FAA would be prominently visible along the backdrop of the view from KOP 3. As many as 10 air traffic safety lights could be visible at night, depending on the final lighting plan for the project. Because Monument Ridge overlooks Scotia, and because the view from KOP 3 would include the broad side of a string of WTGs, FAA lighting would be noticeable across the entire view, appearing above viewers. The urbanized setting of Scotia, including residences, street lights, and the co-generation plant (visible in the contextual panoramic image in Figure 4), contributes to a well-lit ambient setting at night. As with the view from KOP 2, however, FAA lighting would appear outside of such an area, the string of lights appearing intermittently as a backdrop to the view to the south. This would constitute a substantial contrast to existing nighttime views from KOP 3.

The 60-turbine project layout as seen from KOP 3 would extend the effects described above across the entire view. (Figure 4b). A total of 15 WTGs would be visible from KOP 3, all but one of them clearly visible from the tower up to rotor blade tips. The nearest turbine would be 4.2 mi away. The project under these conditions would become a dominant feature in views to the south from downtown Scotia. In concert with WTGs on Bear River Ridge, it is likely that one or more turbines would be visible in any ridgeline view to the south or southwest that is not obstructed by intervening vegetation or structures in the foreground. In south-facing, broad-side views of a string of WTGs, the structures would appear lit from the east and west in early morning and late afternoon light, respectively, but they would mostly appear backlit over the course of a day, appearing as dark forms atop the entire ridgeline. The hubs of all 15 WTGs would be visible. This means that depending on the final lighting plan, as many as 15 air traffic safety lights could potentially be visible in this view with the 60-turbine layout. All of this would result in a further reduction in visual quality compared to that assessed for the 34-turbine layout.

KOP 4 – Rio Dell

The visual quality of the view from KOP 4 with the project would be slightly reduced but would remain moderately high (Figure 5a). The WTGs on the western segment of Monument Ridge would be visible in the left half of the view and would appear above the forested ridgeline, 5.3 mi away from KOP 4. Viewer sensitivity at this viewpoint is assumed to be moderately high to high.

The WTGs would appear above the forested ridgeline and would not obscure views of the landform or vegetation. They would appear as memorable human-made features and would increase the vividness of the view to a high level, due primarily to the linear qualities of the towers and blades, their backlit, darkened color, and the motion of the rotors when operational. While the right side of the KOP view would remain intact, the WTGs would appear concentrated in the left side of the KOP view would encroach on the undeveloped skyline. This, along with the introduction of prominent vertical forms atop the background ridgeline, would slightly reduce the overall intactness of the view, which would nevertheless remain moderate. The WTG layout pattern would create a visual break between the left side and the right side of the KOP view, reducing the unity of the view to a moderate level.

The project would be visible atop Monument Ridge from KOP 4 and from any location in Rio Dell with views of the ridgeline. Viewers here would have a high degree of awareness of the WTGs, with a total of 10 structures nearly completely visible in views toward a skyline from an inferior position. Exposure would be mitigated, somewhat, by the distance from the view; WTGs would appear as smaller features on the ridgetop compared with closer views, and the view from KOP 4 includes agricultural activities in the immediate foreground that may draw viewer’s attention. The

grazing area is immediately backdropped by a residential portion of Rio Dell. Neither of these areas is likely to be the source of as much movement in the landscape as that which would result from the project when operational. As with views from Scotia, viewers in Rio Dell would be likely to experience the project as a backdrop, affecting perceptions of both visual quality and character in background views.

Given the unimpeded visibility toward Monument Ridge across the entire view from KOP 4, night lighting would be noticeable from this location. The nacelles of all 10 WTGs would be visible from KOP 4. As many as 10 air traffic safety lights could be visible at night, depending on the final lighting plan for the project, and they would extend across nearly half of the view, given the perpendicular orientation of the view toward the ridgeline. The viewpoint is set back from the more densely developed portion of Rio Dell; given the superior orientation of the ridgeline to KOP 4, the line of sight in nighttime views would be less affected by the ambient light from residences, street lights, and other structures in this area and would therefore likely be a greater source of visible contrast.

The 60-turbine project layout as seen from KOP 4 would include additional WTGs on the western segment of Monument Ridge and would therefore be visible across most of the KOP view background (Figure 5b). The effects described above would extend beyond the half of the view likely to be affected with just the 34-turbine layout. Fifteen WTGs, including nacelles, would be visible from KOP 4, with the nearest remaining 5.3 mi away. The presence of noticeable linear and angular forms across nearly the entire skyline, with the broad angle of view afforded by the viewpoint location, would, as with other similar views, alter the visual character of background views without altering the visual character or quality of closer, foreground and middleground views. Motion from operational WTGs across the majority of the skyline would be noticeable to the point that project awareness would be increased from more locations throughout Rio Dell where direct lines-of-sight to Monument Ridge are available. Because the hubs of all 15 WTGs would be visible, as many as 15 air traffic safety lights could potentially be visible in this view with the 60-turbine layout, and they would occupy the majority of the distant skyline. The exact amount of FAA lights will depend on the final lighting plan from the FAA. All of this would result in a further reduction in visual quality compared to that assessed for the 34-turbine layout.

KOP 5 – Fortuna Riverwalk

The visual quality of the view from KOP 5 with the project would be reduced from a high level to a moderately high level (Figure 6a). WTGs placed along the Bear River Ridge segment and the western segment of Monument Ridge would be visible across the background. The WTGs would appear above the ridgelines at a distance ranging from 8.7 to 11.5 mi away from KOP 5, where recreational viewers are assumed to have a moderately high to high degree of sensitivity to visual change.

The WTGs would be prominently visible in unobstructed views toward the project from KOP 5. In this view, the WTGs would not obstruct the panoramic view of the river valley or the surrounding forested ridgelines and hillsides. The WTGs would appear above the ridgelines and extend across the background portion of the KOP view, appearing as vertical forms, but following the horizontal orientation of the ridgelines. They would appear as the most prominent human-made features in this view from KOP 5, and therefore slightly increase the vividness of the view from a moderately high level to a high level because of the memorability of the new features. However, the introduction of the WTGs would also decrease the intactness from a high level to a moderately high level, because they would noticeably encroach upon the skyline in the background and contrast with the undeveloped appearance of the ridgelines. Further contrast would come from the noticeable angular form of the rotor blades, the WTGs' dark color (resulting from being backlit for most of the day in this south-facing view) and from the motion across the skyline from

operational WTGs, which would likely be observable from this distance. The linear formation of the WTGs would emphasize the horizontal orientation of the ridgelines that provide a backdrop to the Eel River Valley. Similarly, the overall unity of the view would be reduced from a high level to the moderately high level, because the introduction of power-generating facilities would contrast with the natural environment that dominates the view.

Viewers looking south from the Riverwalk Trail in Fortuna at KOP 5 would have an unobstructed background view of 17 WTGs atop the skyline, nearly across the KOP view's entire background. Viewer awareness would likely be moderately high, but the degree of exposure would be offset somewhat by the distance between viewpoint and ridgelines. The WTGs would be discernible as a series of dark (due to being backlit for most of the day), vertical structures along the distant skyline, viewed from an inferior vantage point. Motion from spinning rotors would also be noticeable. However, the most prominent source of motion in the view is the Eel River, and the riverbank area in the foreground extending from the foreground into the middleground's lower hills and ridges comprises a focal point that would likely draw as much of the viewer's attention as the background ridgeline.

Because Monument Ridge appears at an elevated angle across the entirety of this view, FAA lighting would be visible in the distance from KOP 5. Air traffic safety lights of as many as 17 WTGs could be visible at night, depending on the final lighting plan for the project. As with other views that look straight at Monument Ridge, the broad side of the project would be visible, and WTGs would occupy the entire horizon here. Other sources of nighttime light in this view include the southern extent of Fortuna – likely to cast ambient light from the left edge of the view – and the lights of vehicles traveling along US 101, which is visible in the left half of the view. Residences throughout the foothills and river valley also likely contribute incrementally to nighttime light in this view. The FAA lighting would draw attention not only from its presence above these sources of light but also from its uniformity. Flashing lights would contrast with all other sources of light in nighttime views from KOP 5.

The 60-turbine project layout as seen from KOP 5 would include additional WTGs on both Bear River Ridge and the western segment of Monument Ridge; a total of 35 WTGs would be visible across the entire view, with the nearest 8.7 mi away (Figure 6b). Compared with the visually representative layout, the 60-turbine layout would occupy the same total horizontal space across the skyline; the additional turbines would appear to fill in additional parts of the skyline and the project would possess greater visual density. The increased presence of WTGs and the motion they would contribute to views would intensify the visibility of the project from KOP 5, and the project would constitute a moderately strong line across the KOP view's horizon. While not affecting foreground or middleground views, the visibility of the 60-turbine layout would intensify the reduction in visual quality assessed for the visually representative layout and also likely be viewed as affecting visual character. Further, the hubs of nearly all the 35 WTGs would be visible from KOP 5, meaning that up to 35 air traffic safety lights could potentially be visible in this view with the 60-turbine layout depending on the final lighting plan for the project. This would more than double the sources of such light along the ridgeline compared with the 34-turbine layout, which would be a substantial intensification of the visual effects associated with FAA lighting.

4.4.2.2 State Route 36 Landscape Unit

KOP 6 – Hydesville

The visual quality of the view from KOP 6 with the project would be reduced but would remain moderate (Figure 7a). WTGs placed along the western and eastern segments of Monument Ridge would be visible in the background, at a distance ranging from 8.5 to 10.2 mi away from KOP 6. Residential viewers have an assumed moderately high degree of sensitivity to visual changes, and motorists driving on State Route 36 have a moderate degree of sensitivity.

The WTGs would be visible in the background and follow the low profile of the forested bluff. As vertical forms with angled turbine rotors appearing amid a tree lined ridgetop, they would be memorable features, slightly increasing the vividness of the view to a moderately high level. The forested bluff would partially obscure visibility of some of the WTGs and limit their prominence in the background. Regardless, the WTGs would encroach on the skyline and disrupt the undeveloped appearance of the forested bluff. They would appear as relatively small dark forms for most of the day, given the backlit nature of south-facing views, meaning potential contrast between the evergreen ridgeline and light-colored WTGs would be minimized. Nevertheless, the intactness of the view would be reduced from a moderate level to a moderately low level. The unity of the view would be reduced to moderate given the introduction of a power generation element to an area that otherwise appears rural residential and agricultural in character.

These changes would be perceptible to viewers at KOP 6 and elsewhere in the vicinity with a similar line-of-sight to the ridgeline. Of the 11 WTGs visible from KOP 6, the nacelles of just five would be visible above the current tree line. They would be perpendicular to viewers traveling along State Route 36, which passes through this area in a generally east/west direction and from which views to the south are frequently obstructed by roadside vegetation or structures. The project would likely be less visible, if visible at all, from the agricultural area in the view's foreground, given its position of greater vantage inferiority than the KOP. Given all of this, viewers are likely to have moderately low awareness and exposure to the project from this location. Because WTG rotor blades are visible above the horizon, it is likely that they would be the source of visible motion in the landscape once operational. However, given the agricultural uses apparent in the area, other sources of motion under existing conditions include vehicles, farm equipment, and irrigation systems. The motion of WTGs may draw viewers' attention, but such motion would very likely not appear within a completely static view.

Night lighting would be visible for no more than five WTGs from this location, but given the heavily forested, generally undeveloped slopes between the ridgeline and populated valley below, they would be highly visible from State Route 36. Viewers here look over the developed valley below and look up toward the ridgeline. As such, at nighttime, the hillsides likely appear as being mostly devoid of light sources. With the project and FAA lighting, they would appear as a darkened band across the entire view, separating populated valley and its residential and agricultural sources of light from the air traffic safety lighting atop the ridge. The contrast would be accentuated by the apparent distance between the two sources of light in nighttime views.

The 60-turbine project layout as seen from KOP 6 would intensify these effects, but only slightly so (Figure 7b). A total of 13 WTGs would be partially visible from KOP 6, with seven nacelles visible, meaning up to seven air traffic safety lights could be visible at night, depending on the final lighting plan for the project. The most noticeable difference between the view from KOP 6 with the 60-turbine layout and the 34-turbine layout is the addition of the WTG visible along the right edge of the view of the larger layout. It would be no closer than the closest turbine under

the 34-turbine layout. The addition of two turbines that would be partially visible along the ridgeline and which would contribute to potential sources of air traffic safety lighting is the only difference between the 60-turbine layout and the 34-turbine layout and changes to visual quality from the larger layout would therefore be the same as those evaluated for the smaller layout.

4.4.2.3 West Humboldt

KOP 7 – Mattole Road

The visual quality of the view from KOP 7 with the project would be reduced from a high level to a moderately high level (Figure 8a). The WTGs would be visible in the background and concentrated in the left side of the view, ranging from 7.5 to 12.5 mi away. The WTGs would appear clustered at the top of Bear River Ridge and Monument Ridge, where motorists driving on Mattole Road are assumed to have a moderate to moderately high degree of sensitivity to visual change.

The project would introduce new human-made features into the view from KOP 7, which primarily consists of natural landforms and vegetation. WTGs would not obscure views of the hillsides and vegetation visible in the foreground and the middleground, nor be dominant features in background views. They would, however, add forms unique to the landscape. Given the somewhat lateral view of the project, WTGs atop the two separate ridges would appear from this distance as two discrete groups of structures, and because some WTGs would appear in front of others, they would in some portions appear as jagged clusters (the rotor blades) supported by the turbine towers. They would also appear dark during backlit morning conditions and light during afternoon light in views from the west. The addition of features with visual interest would result in a slight increase of the KOP view's vividness, which would remain high. However, because the WTGs would, in the relatively small portion of the KOP view they would occupy, encroach on the skyline and contrast in form, line, and color with the undeveloped and vegetated ridgelines and hillsides, the intactness of the view would be reduced from a high level to a moderately high level. Similarly, the introduction of the power-generating facilities into a predominately natural environment would reduce the overall unity of the view from a high to moderately high level.

These changes would be perceptible to viewers at KOP 7 and other locations along Mattole Road that afford visibility of the project site, though the winding road and intervening vegetation and topography result in only intermittent views of the project site from this area. The 15 visible WTGs would occupy a narrow portion of the KOP view from the west, since the WTG strings are generally aligned west-to-east. The inferior position of the viewpoint relative to the project site enhances the skylining appearance of the WTGs. Still, the lack of trees on Bear River Ridge and the height of turbines along Monument Ridge compared with the trees there facilitate the visibility of the WTGs. They would stand out as the only identifiable infrastructure in this KOP view outside of the roadway corridor, as well as the only source of visible motion in the landscape when operating. Viewers would therefore have moderately high awareness of the WTGs where visible, but exposure would be low given the intermittent views of short duration.

There are very few detectable sources of nighttime lighting in the view from KOP 6. The nacelles of 12 of the 15 visible WTGs would be visible from KOP 7; up to a dozen air traffic safety lights could be visible at night, depending on the lighting plan developed for the project. These would be visible in a view that, aside from lighting at a handful of residences, is likely devoid of direct sources of nighttime light. Thus, WTGs with FAA lighting are likely to attract

attention in nighttime views. Given the lateral orientation of the KOP to the project, the westernmost WTGs may be visible just intermittently, as they would be generally concentrated and viewed as a cluster of lights, not a string. Regardless, the contrast in nighttime views with the project would be prominent.

The 60-turbine project layout as seen from KOP 7 would have similar but demonstrably intensified effects as the 34-turbine layout (Figure 8b). Portions of more than 25 WTGs would be detectible from KOP 7, in the same general location as those evaluated above, but occupying slightly larger horizontal space within the KOP view. The effects to visual quality would be the same. The nearest turbine would 7.2 mi away, which is not substantially closer than the 34-turbine layout. The nacelles of 20 of the WTGs would be visible above the ridgelines; thus, up to 20 air traffic safety lights could be visible from KOP 7 with the 60-turbine layout, depending on the lighting plan developed for the project. This would intensify an already clearly detectable effect to nighttime views compared with the 34-turbine layout.

4.4.2.4 Ferndale Plains

KOP 8 – Highway 211, west of Ferndale Bridge

The visual quality of the view from KOP 8 with the project would be reduced from a moderately high level to a moderate level (Figure 9a). The WTGs would be visible in this view and would appear across the ridgeline in the background, between 10.5 to 16.5 mi away from KOP 8. Motorists driving on Highway 211 are assumed to have a moderate degree of sensitivity to visual changes. Residents in the vicinity are assumed to have moderately high to high degrees of sensitivity.

The project would not obscure the expansive view of the farmlands in the foreground and middleground or the surrounding ridgelines in the background. The vividness would remain moderately high because the addition of the WTGs would appear within a view including numerous other human-made features. While restricted to the KOP view's background, the small, vertical forms of WTGs would encroach on nearly the entire KOP view. This would reinforce the horizontal orientation of the ridgeline but would nonetheless reduce the existing KOP view's moderate intactness to moderately low. Further, the WTGs would mostly appear backlit in views to the south from this location and would therefore appear mostly dark atop the ridgeline, except for early morning and late afternoon when they could appear somewhat lighter in color. The motion of spinning rotors would be detectable from this distance. However, agricultural activities in the area include vehicles, farm equipment, and, as shown in the view from KOP 8, pivot irrigation, which would relate somewhat to the circular motion of the rotors. The introduction of power-generating facilities would contrast with the existing rural and agricultural components that characterize the current view, reducing the unity of the view to a moderate level.

Viewers looking south from Highway 211 west of the Ferndale Bridge would perceive nearly the entire 34-turbine layout, entirely within a background view. Thirty-one of the 34 turbines would be partially or mostly visible from this location, and the project would appear to extend across nearly the entire KOP view. Viewer awareness from this area would be high. And, despite the distance between viewpoint and project, unobstructed views of long duration and the area's inferior vantage allow for moderately high viewer exposure. The WTGs would appear uniformly beyond a predominantly agricultural area. It is likely that some viewers would perceive the project as a backdrop to a working, nearly entirely managed landscape.

Nacelles of 30 WTGs would be visible from this location, and the same number of air traffic safety lights could be visible at night, depending on the final lighting plan for the project. The lights would appear at night as an intermittently visible band across nearly the entirety of the view, above and beyond the viewpoint and agricultural setting in the foreground and middleground. The farms and residences visible across the Ferndale Plains and within the surrounding foothills are likely point sources of varied and dispersed night lighting. But the uniformity and elevated presence of the project's FAA lighting would accentuate the contrast in nighttime views.

The 60-turbine project layout as seen from KOP 8 would include additional WTGs on both Bear River Ridge and Monument Ridge; fifty-three of the WTGs would be either partially or mostly visible across the entire view, with the nearest 10.5 mi away (Figure 9b). The 60-turbine layout would occupy the same total horizontal space across the skyline as the 34-turbine layout; it would appear more densely developed with the additional turbines. As in other long-distance views, the increased presence of WTGs and the motion they would contribute to views would intensify the visibility of the project from this KOP location, and the concentration of mostly backlit structures would appear across the horizon as a dark band as much as a series of small vertical forms. From this distance, however, the visibility of the 60-turbine layout would be consistent with the reduction in visual quality assessed for the 34-turbine layout. Of the 53 partially visible turbines, the nacelles of 48 WTGs would be visible from KOP 8, meaning that 48 air traffic safety lights could potentially be visible in this KOP view with the 60-turbine layout, depending on the final lighting plan for the project. This would intensify the already substantial contrast from night lighting compared with the 34-turbine layout.

4.4.2.5 Humboldt Bay Landscape Unit

KOP 9 – Table Bluff County Park

The visual quality of the view from KOP 9 with the project would be slightly reduced, but overall would remain moderate (Figure 10a). The WTGs would be visible in this view and would appear across the ridgeline in the background, between 16.8 and 23.8 mi away from KOP 9. The recreational and residential viewers in this area are assumed to have a moderately high to high degree of sensitivity to visual changes.

The project in this view from KOP 9 would not obscure views of the flat tidal marshes visible in the foreground and middleground, or the surrounding forested ridgelines in the background. The addition of the WTGs, which would appear from this distance as a single row of small, vertical forms, would add a slight degree of visual interest, but the vividness would remain moderately high because the WTGs would appear alongside existing, varying forms of human-made features. However, their encroachment on the skyline, likely darkened appearance due to predominantly backlit conditions, and contrast with the undeveloped nature of the ridgelines would decrease the intactness from a moderate to a moderately low level. The unity of the view would slightly decrease with the presence of power-generating facilities in the view, but their low prominence in views, a function of their distance from the viewpoint, would result in the overall unity of the view remaining moderate.

Viewers at this KOP, assumed to be departing Table Bluff County Park or other coastal areas to the north, are likely to be aware of the project but are not likely to perceive it as having a deleterious effect to visual quality. The nearest WTG to this KOP would be nearly 17 mi away, and from this distance viewers would likely need to be aware of the project and consciously looking for it to discern it along the horizon. All but one of the 34 turbines would be partially or

mostly visible from this location, and the project when visible would appear to extend across nearly the entire KOP view. But exposure would be moderate given the distance of the view from KOP 9. Further, any view toward the distant ridgeline would also include other features in the middle and foreground likely to attract viewer attention, including the tidal areas below the viewpoint.

The distance between KOP 9 and the ridgeline atop which WTGs and associated FAA lights would be visible would concentrate lights somewhat toward the center of the view. From this location, the nacelles of each of the 33 WTGs would be visible. Therefore, up to 33 air traffic safety lights could be visible at night, depending on the final lighting plan for the project. As in other long-distance views, point sources of light are likely visible throughout the landscape in nighttime views from KOP 9, where residences and agricultural facilities are visible. However, such sources are likely limited to the plains and foothills area and are irregularly placed. The contrast between these light sources and the more orderly, elevated row of FAA lights across the ridgeline in views toward the broad side of the project would be substantial, with the mostly undeveloped hillsides serving as a darkened band between existing and proposed light.

The 60-turbine project layout as seen from KOP 9 would include additional WTGs on both Bear River Ridge and Monument Ridge, and 59 WTGs would be either partially or mostly visible across the entire view (Figure 9b). The nearest WTG would be 16.8 mi away. As with other long-distance, unobstructed views, the 60-turbine layout would appear to be more densely developed within the same total horizontal space as the 34-turbine layout. Unlike the other KOP views evaluated in this report, the distance between viewpoint and project would not result in any substantive difference visually. Viewers, aware of the presence of WTGs along the distant skyline, would likely find it difficult to find meaningful differentiation between the number of WTGs unless doing so with intent. From this distance, viewers would observe a series of relatively short, dark, vertical forms, as they would with the 34-turbine layout. As such, project-related effects to visual quality from the 60-turbine layout would be consistent with those for the 34-turbine layout, with the exception of air traffic safety lighting: the nacelles of 56 WTGs would be visible from KOP 9, meaning that up to 56 air traffic safety lights could potentially be visible in this view with the 60-turbine layout. Although that number depends on the results of the final lighting plan for the project, there would be an intensification of the effects described for the 34-turbine layout.

5.0 CONCLUSIONS

The introduction of a wind energy project to this portion of Humboldt County would, in general, reduce visual quality in most views toward the project site, but not substantially so. Project WTGs would be visible from the set of publicly accessible representative views discussed here, though the degree to which they would be prominent would vary, and their presence would be restricted to view backdrops. As new features in the landscape, they would contribute a degree of vividness and visual interest, though their encroachment upon middleground and background skylines would reduce, somewhat, the intactness of views. Similarly, the introduction of a wind energy generation facility into landscapes that predominantly feature rural residential and agricultural uses would generally reduce the compositional harmony of these views.

While such contrast would likely affect the apparent visual character in views toward the project site, the visual quality of the same views would be reduced only from a range of moderate to high in existing views to a range of moderate to moderately high in views with the project present.

The comparative evaluation of a 60-turbine layout indicates that, in lateral views (those generally from the east and west toward one end of the project or the other), and in long distance views, a project with the largest possible WTGs at all proposed locations would intensify the project's appearance but would be generally consistent with the effects found for the 34-turbine layout. However, in closer views – namely those from Scotia and Rio Dell – visual quality would be reduced further with the 60-turbine layout.

In nighttime views, FAA lights placed on WTG nacelles would be highly visible, though the portions of views containing such new sources of light would depend on the distance between viewpoint and project. The prominence of FAA lights is likely to be enhanced by their apparent disassociation from other sources of light in nighttime views, which would reflect the relative lack of development within ridge slopes. Existing light in views ranges from ambient to point sources of varying number and intensity throughout the lower elevations in views; the elevated night lights would not appear as a part of any existing pattern of nighttime light but as a new, contrasting source of such light.

6.0 REFERENCES

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FIGURES

APPENDICES

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

Wind Turbine Generators (WTGs)
- 4.0 MW Class WTGs (180m max. height)
- 3.45 MW Class WTGs (150m max. height)

Viewshed
- Areas of Potential Project Visibility
- Distance from Project (5-mile increments)

Landscape Units and Key Observation Points (KOPs)
- Eel River Corridor
  - KOP 1 — Shively
  - KOP 2 — Scotia: 4th and B
  - KOP 3 — Scotia: Main St.
  - KOP 4 — Rio Dell
  - KOP 5 — Fortuna Riverwalk
- State Route 36
  - KOP 6 — Hydesville
- West Humboldt
  - KOP 7 — Mattole Road
- Ferndale Plains
  - KOP 8 — Highway 211
- Humboldt Bay
  - KOP 9 — Table Bluff County Park

0 2 4
Miles
1:200,000
(At original document size of 11x17)

Stantec

Project Location
Humboldt County, California

185703758
Prepared by PG on 2018-08-29
Technical Review by JH on 2018-08-30
Independent Review by JD on 2018-08-30

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

Figure No.
1a

Title
Key Observation Points and Project Viewshed: 34-Turbine Layout

Notes
1. Coordinate System: NAD 1983 UTM Zone 10N
2. Base map: ESRI World Imagery Map web mapping service

Wind Turbine Generators (WTGs)
- 4.0 MW Class WTGs (180m max. height)

Viewshed
- Areas of Potential Project Visibility
- Distance from Project (5-mile increments)

Landscape Units and Key Observation Points (KOPs)
- Eel River Corridor
  - KOP 1 — Shively
  - KOP 2 — Scotia: 4th and B
  - KOP 3 — Scotia: Main St.
  - KOP 4 — Rio Dell
  - KOP 5 — Fortuna Riverwalk
- State Route 36
  - KOP 6 — Hydesville
- West Humboldt
  - KOP 7 — Mattole Road
- Ferndale Plains
  - KOP 8 — Highway 211
- Humboldt Bay
  - KOP 9 — Table Bluff County Park

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Miles
1:200,000
(At original document size of 11x17)

Stantec

Project Location
Humboldt County, California

185703758
Prepared by PG on 2018-11-12
Technical Review by JH on 2018-11-19
Independent Review by JD on 2018-11-12

Client/Project
Humboldt Wind, LLC
Humboldt Wind Energy Project

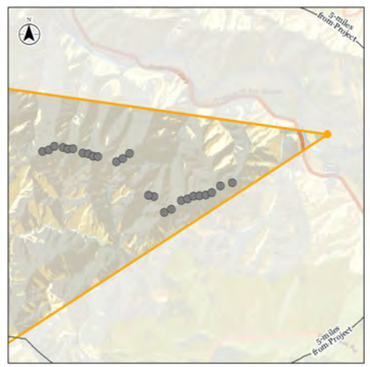
Figure No.
1b

Title
Key Observation Points and Project Viewshed: 60-Turbine Layout

View to the west from Shively, a rural unincorporated community located east of the Eel River within 3 miles of the Project.

View from KOP 1 with the Project (34-turbine layout). The nearest WTG is 2.8 miles away.

Existing view from KOP 1 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 2a

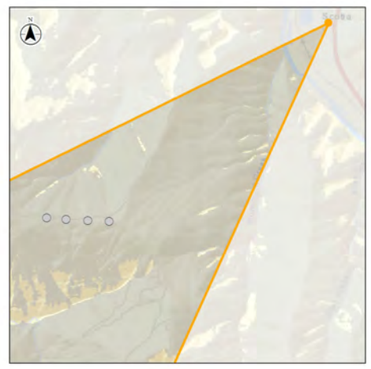
Key Observation Point 1 - Shively (34-Turbine Layout)

Humboldt Wind Energy Project

View to the southwest from the intersection of 4th Street and B Street in a residential section of the Town of Scotia

View from KOP 2 with the Project (34-turbine layout). The nearest WTG is 3.2 miles away.

Existing view from KOP 2 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

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Figure 3a

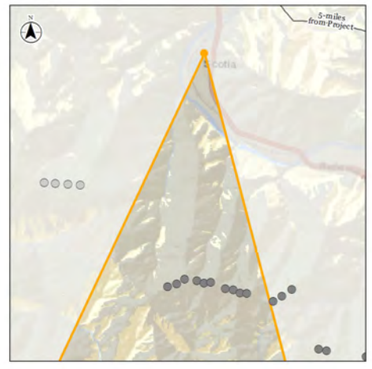
Key Observation Point 2 - Scotia: 4th and B (34-Turbine Layout)

Humboldt Wind Energy Project

View to the south from Main Street in the Town of Scotia, approximately 4 miles north of the Project.

View from KOP 3 with the Project (34-turbine layout). The nearest WTG is 4.2 miles away.

Existing view from KOP 3 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 4a

Key Observation Point 3 - Scotia: Main Street (34-Turbine Layout)

Humboldt Wind Energy Project

View to the south/southwest from US Highway 101, near the Davis Street southbound on-ramp, approximately 5 miles from the Project.

View from KOP 4 with the Project (34-turbine layout). The nearest WTG is 5.3 miles away.

Existing view from KOP 4 (outlined in orange) within broader context.

Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 5a

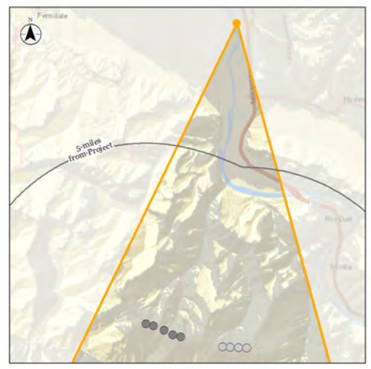
Key Observation Point 4 - Rio Dell (34-Turbine Layout)

Humboldt Wind Energy Project

View to the south from along the Fortuna Riverwalk, approximately 12 miles from the Project.

View from KOP 5 with the Project (34-turbine layout). The nearest WTG is 8.7 miles away.

Existing view from KOP 5 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 6a

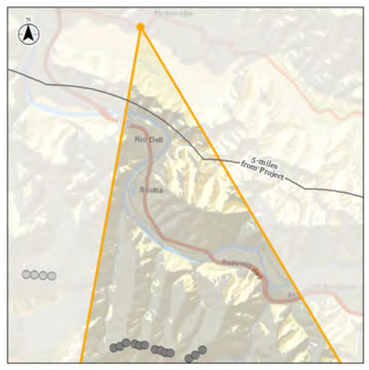
Key Observation Point 5 - Fortuna Riverwalk (34-Turbine Layout)

Humboldt Wind Energy Project

View to the southeast from along the northbound lane of State Route 36, approximately 8.5 miles from the Project.

View from KOP 6 with the Project (34-turbine layout). The nearest WTG is 8.5 miles away.

Existing view from KOP 6 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

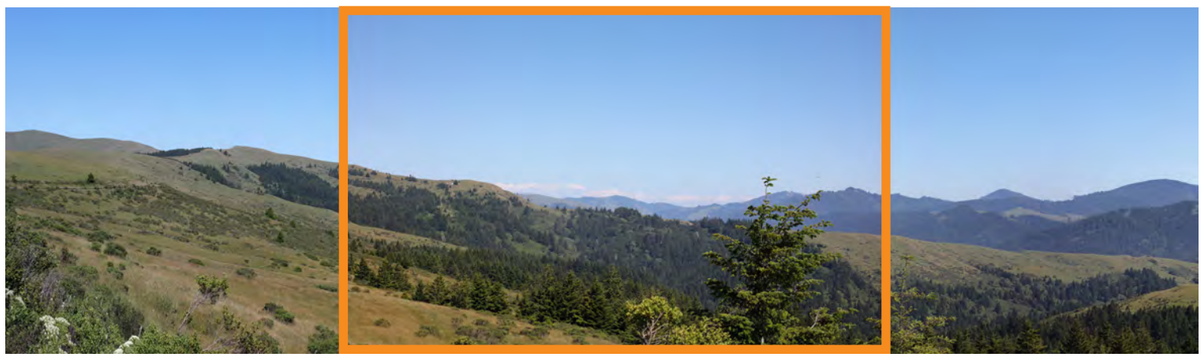
Figure 7a

Key Observation Point 6 - Hydesville (34-Turbine Layout)

Humboldt Wind Energy Project

View to the south/southeast from along the northbound lane of Mattole Road, approximately 13 miles from the Project.

View from KOP 7 with the Project (34-turbine layout). The nearest WTG is 7.5 miles away.



Existing view from KOP 7 (outlined in orange) within broader context.

Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 8a

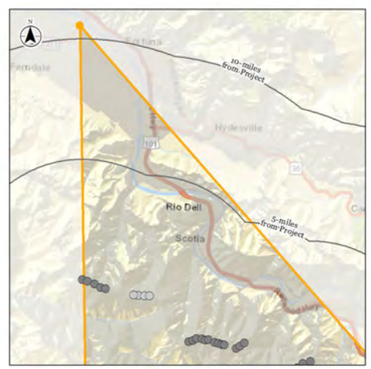
Key Observation Point 7 - Mattole Road (34-Turbine Layout)

Humboldt Wind Energy Project

View to the south/southeast from along the southbound lane of Highay 211, approximately 17 miles from the Project.

View from KOP 8 with the Project (34-turbine layout). The nearest WTG is 10.5 miles away.

Existing view from KOP 8 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 9a

Key Observation Point 8 - Highway 211 (34-Turbine Layout)

Humboldt Wind Energy Project

View to the south/southeast from along the southbound lane of Table Bluff Road, approximately 23 miles from the Project.

View from KOP 9 with the Project (34-turbine layout). The nearest WTG is 16.8 miles away.

Existing view from KOP 9 (outlined in orange) within broader context.

Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 10a

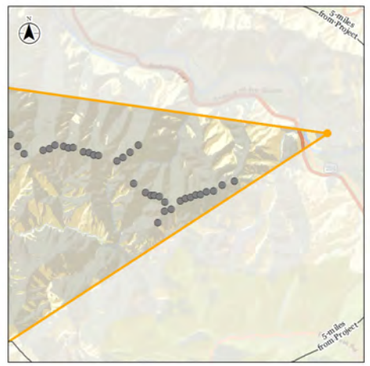
Key Observation Point 9 - Table Bluff County Park (34-Turbine Layout)

Humboldt Wind Energy Project

View to the west from Shively, a rural unincorporated community located east of the Eel River within 3 miles of the Project.

View from KOP 1 with the Project (60-turbine layout). The nearest WTG is 2.8 miles away.

Existing view from KOP 1 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 2b

Key Observation Point 1 - Shively (60-Turbine Layout)

Humboldt Wind Energy Project

View to the southwest from the intersection of 4th Street and B Street in a residential section of the Town of Scotia.

View from KOP 2 with the Project (60-turbine layout). The nearest WTG is 3.2 miles away.

Existing view from KOP 2 (outlined in orange) within broader context.

Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 3b

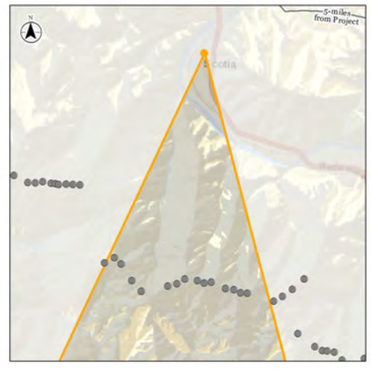
Key Observation Point 2 - Scotia: 4th and B (60-Turbine Layout)

Humboldt Wind Energy Project

View to the south from Main Street in the Town of Scotia, approximately 4 miles north of the Project.

View from KOP 3 with the Project (60-turbine layout). The nearest WTG is 4.2 miles away.

Existing view from KOP 3 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 4b

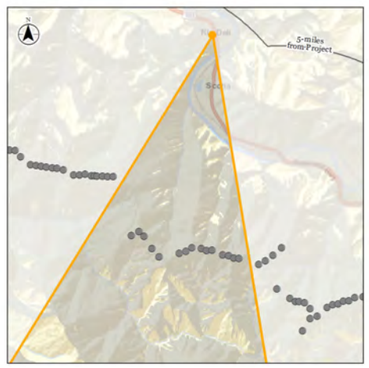
Key Observation Point 3 - Scotia: Main Street (60-Turbine Layout)

Humboldt Wind Energy Project

View to the south/southwest from US Highway 101, near the Davis Street southbound on-ramp, approximately 5 miles from the Project.

View from KOP 4 with the Project (60-turbine layout). The nearest WTG is 5.3 miles away.

Existing view from KOP 4 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 5b

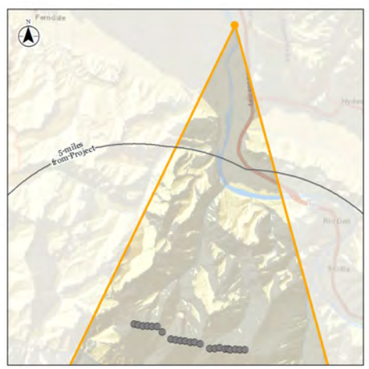
Key Observation Point 4 - Rio Dell (60-Turbine Layout)

Humboldt Wind Energy Project

View to the south from along the Fortuna Riverwalk, approximately 12 miles from the Project.

View from KOP 5 with the Project (60-turbine layout). The nearest WTG is 8.7 miles away.

Existing view from KOP 5 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

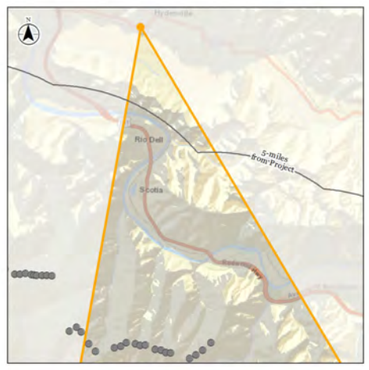
Stantec

Figure 6b
Key Observation Point 5 - Fortuna Riverwalk (60-Turbine Layout)
Humboldt Wind Energy Project

View to the southeast from along the northbound lane of State Route 36, approximately 8.5 miles from the Project.

View from KOP 6 with the Project (60-turbine layout). The nearest WTG is 8.5 miles away.

Existing view from KOP 6 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

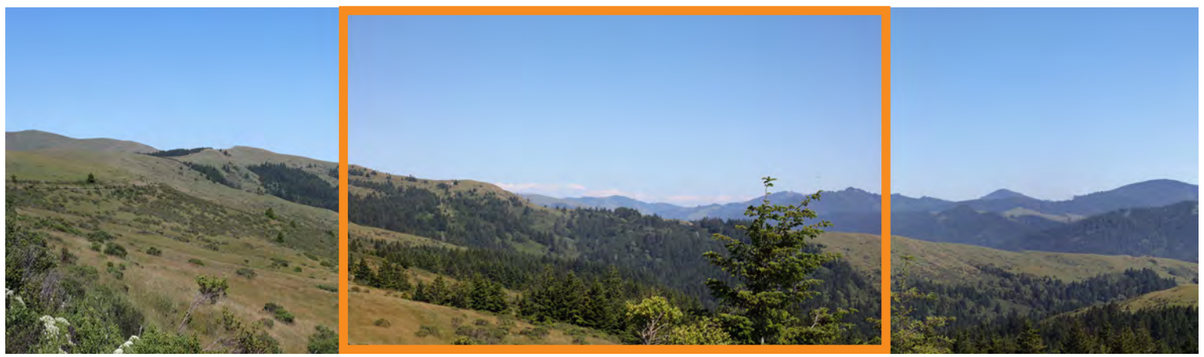
Figure 7b

Key Observation Point 6 - Hydesville (60-Turbine Layout)

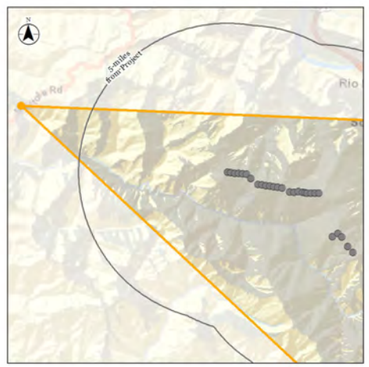
Humboldt Wind Energy Project

View to the south/southeast from along the northbound lane of Mattole Road, approximately 13 miles from the Project.

View from KOP 7 with the Project (60-turbine layout). The nearest WTG is 7.2 miles away.



Existing view from KOP 7 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 8b

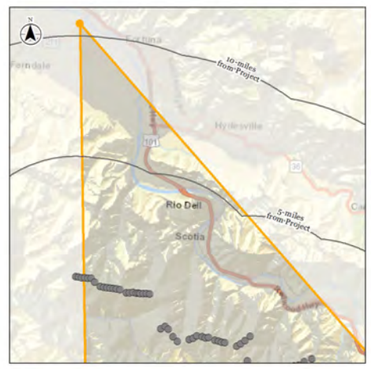
Key Observation Point 7- Mattole Road (60-Turbine Layout)

Humboldt Wind Energy Project

View to the south/southeast from along the southbound lane of Highay 211, approximately 17 miles from the Project.

View from KOP 8 with the Project (60-turbine layout). The nearest WTG is 10.5 miles away.

Existing view from KOP 8 (outlined in orange) within broader context.



Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 9b

Key Observation Point 8 - Highway 211 (60-Turbine Layout)

Humboldt Wind Energy Project

View to the south/southeast from along the southbound lane of Table Bluff Road, approximately 23 miles from the Project.

View from KOP 9 with the Project (60-turbine layout). The nearest WTG is 16.8 miles away.

Existing view from KOP 9 (outlined in orange) within broader context.

Approximate location of all WTGs within the 40-degree horizontal field of vision in the above view.

Stantec

Figure 10b

Key Observation Point 9 - Table Bluff County Park (60-Turbine Layout)

Humboldt Wind Energy Project

Appendix A KEY OBSERVATION POINTS WORKSHEETS

Visual Resource Survey:		Existing Conditions	
KOP Location:	**Shively**	Viewpoint:	**KOP 1**
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the west from Shively, a rural unincorporated community located east of the Eel River. The Monument Ridge portion of the project is about 2.5 miles away.		
Photo Orientation:	W		
Viewer Position:	____X____ Inferior _____ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	The foreground consists of tilled farmland, low-lying shrubs, grasslands, and coniferous trees. The coniferous trees and low-lying shrubs parallel Gribble Street, which is partially visible and defines the edge of the foreground. A structure is partially visible in the left side of the view.
Middleground (1/2 - 4 miles)	The middleground consists of an unobstructed view of the densely forested ridgeline.
Background (> 4 miles)	Background views are obscured by the forested ridgeline that extends across the middleground.

Vividness		
Feature	***Score****	***Notes***
Landform	5	The forested ridgeline extends across the middleground. The low ridgeline contrasts with the flat agricultural lands, which provides some visual interest to the view.
Vegetation	5	Vegetation includes coniferous trees and low-lying shrubs that are typical for this region. Grasses have been tilled in the foreground.
Water Feature	n/a	The Eel River is not visible in this view.
Human-Made	4	Land within the foreground has been modified to support the agriculture lands. Other human-made modifications include Gribble Street extending across the foreground and a structure in the left side of the view. However, these features are partially visible and do not detract from the vividness of the view.
Overall	**4.7**	

Intactness		
Overall	**5**	The valley floor has been modified by the agricultural activites, Gribble Street, and the structure partially visible in the foreground. The ridgeline appears jagged because of the varying tree heights, but does not appear to have been altered by timber management activites.

Unity		
Overall	**6**	The overall view is typical of the rural agricultural communities that are set within the densely forested areas along the Eel River corridor. The human modifications add an element of visual interest to the overall natural environment.

Overall Visual Quality Score	**5.2**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		With Project	
KOP Location:	**Shively**	Viewpoint:	**KOP 1**
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the west from Shively, a rural unincorporated community located along the Eel River corridor. Monument Ridge is about 2.5 miles from this point.		
Photo Orientation:	W		
Viewer Position:	____X____ Inferior _____ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	Turbines are visible at the top of the ridgeline and clustered together in the left side of the view.
Background (> 4 miles)	No change.

Vividness		
Feature	***Score****	***Notes***
Landform	5	No change.
Vegetation	5	No change.
Water Feature	n/a	No change.
Human-Made	5	The turbines would be visible at the top of the ridgeline. The vividness would increase with the addition of the memorable human-made features.
Overall	**5.0**	

Intactness		
Overall	**4**	The intactness would be reduced by the introduction of built features along a generally undisturbed forested ridgeline.

Unity		
Overall	**5**	The unity of the view would decrease with the addition of power-generating facilities along the ridgeline.

Overall Visual Quality Score	**4.7**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***Existing Conditions***	
KOP Location:	**Scotia - 4th and B**	Viewpoint:	**KOP 2**
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the southwest from the the intersection of 4th Street and B Street in a residential section of the Town of Scotia. The Bear River Ridge portion of the Project is approximately 3.25 miles away in this view.		
Photo Orientation:	SW		
Viewer Position:	___X___ Inferior	_____ Level	_____ Superior

View	***Notes***
Foreground (0 - 1/2 mile)	The houses in the immediate foreground obscure any other features in the foreground of this view, which would otherwise include other residential areas and part of the Humboldt Redwood Company lumber mill.
Middleground (1/2 - 4 miles)	The ridgeline extends to the back of the middleground, approximately 4 miles away. The skyline consists of discernible trees with interspersed areas of grasslands. A utility line atop the ridge in the center of the view is barely discernible.
Background (> 4 miles)	N/A

Vividness		
Feature	***Score****	***Notes***
Landform	5	The slopes and ridgeline to the southwest of Scotia provide a vivid backdrop in the view, though such conditions are typical of views in the area.
Vegetation	4	Mature evergree vegetation is visible across the entire view, though much of lower slopes are obscured by homes in foreground. The proximity of the ridgeline allows for individual trees to be detectible. The patches of grassland provide variety in color and texture.
Water Feature		N/A
Human-Made	5	The homes in the immediate foreground signify the residential character of this viewpoint. The uniformity of architecture, in both design and scale, indicates Scotia's history as a company-owned town, and the view's foreground vividness is derived maily from the color of the homes.
Overall	**4.7**	
Intactness		
Overall	**5**	There is a clear delineation between the populated foreground and the elevated middleground which, while managed forestlands, nevertheless appear natural in this view. Utility infrastructure along the ridgetop is difficult for the naked eye to observe; thus there is a high degree of intactness.
Unity		
Overall	**6**	This is a highly unified view. A natural-appearing ridgeline and associated slopes appear as backdrop to a residential area with structures that are, themselves, unified in appearance.
Overall Visual Quality Score	**5.2**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***With Project***	
KOP Location:	**Scotia - 4th and B**	Viewpoint:	**KOP 2**
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):			
Photo Orientation:	SW		
Viewer Position:	___X___ Inferior	_____ Level	_____ Superior

View	***Notes***
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	Four turbines are mostly to partly visible along the top of the ridge.
Background (> 4 miles)	N/A

Vividness		
Feature	***Score****	***Notes***
Landform	5	No change.
Vegetation	4	No change.
Water Feature		
Human-Made	6	The turbines add points of visual interest along the ridgeline and contribute
Overall	**5.0**	
Intactness		
Overall	**4**	The turbines would encroach on the ridgeline, introducing vertical forms that would relate to other forms in the view but not in their immediate vicinity.
Unity		
Overall	**5**	The project would place power-generating structures atop the ridgeline. They would be subordinate to the view's residential and natural features, but would introduce an element that reduces the view's unity.
Overall Visual Quality Score	**4.7**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		Existing Conditions	
KOP Location:	**Scotia - Main Street**	Viewpoint:	**KOP 3**
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the south from Main Street in the Town of Scotia, approximately 4 miles north of the Monument Ridge portion of the project site.		
Photo Orientation:	S		
Viewer Position:	___X___ Inferior _____ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	The foreground primarily consists of Main Street. Residential housing is oriented along Main Street, where single-story housing is located on the right side of the street and two-story housing is located on the left side of the street.
Middleground (1/2 - 4 miles)	The density of the residential development increases toward the middleground. The forested ridgelines form the edge of the middleground and extend across the view.
Background (> 4 miles)	Background views are obscured by the forested ridgelines that extend across the middleground.

Vividness		
Feature	***Score****	***Notes***
Landform	6	The forested ridgeline extends across the middleground.
Vegetation	5	Redwood trees cover the entirety of the ridgeline in the background. The varying colors of the vegeation along the lower hillsides adds a degree of visual interest to the view and provides contrast with the color of the trees along the ridgeline.
Water Feature	n/a	There are no water features visible in this view
Human-Made	4	Human-made features include the suburban residential development in the Town of Scotia. Main Street extends from the foreground to the middleground. Sidewalks, street lighting, and street signs parallel the roadway. Utility distribution poles and lines run perpendicular to the roadway. A flag pole is visible in the foreground and extends into the skyline.
Overall	**5.0**	
Intactness		
Overall	**4**	The view is dominated by human-made features that are associated with the Town of Scotia. The human-made features such as the flag pole and utility distribution lines and the vegeation visible in the foreground and middleground encorach upon the ridgelines and the skyline in the background.
Unity		
Overall	**5**	The prominence of human-made features contributes to the overall suburban character and is representative of the communities that are located along the west bank of the Eel River.
Overall Visual Quality Score	**4.7**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		With Project	
KOP Location:	**Scotia - Main Street**	Viewpoint:	**KOP 3**
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):			
Photo Orientation:	S		
Viewer Position:	___X___ Inferior _____ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	The turbines would appear above the forested ridgeline in the background
Background (> 4 miles)	`

Vividness		
Feature	***Score****	***Notes***
Landform	6	No change.
Vegetation	5	No change.
Water Feature	n/a	No change.
Human-Made	5	The turbines would appear as prominent human-made features in the background. Visibility of the turbines would add to the memorability of human-made features.
Overall	**5.3**	
Intactness		
Overall	**3**	The turbines would increase the presence of vertical features in the view that would encroach on the existing skyline and alter the undeveloped nature of the ridgeline.
Unity		
Overall	**4**	The turbines would appear industrial in character and would contrast with the suburban character of the view.
Overall Visual Quality Score	**4.1**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		Existing Conditions	
KOP Location:	Rio Dell. US Highway 101 - Davis Street off-ramp	Viewpoint:	KOP 4
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the south/southwest from Highway 101, near the Davis Street southbound on-ramp. This view includes rural residential development oriented along Highway 101 in the City of Rio Dell. Monument Ridge extends across the view and is 5.5 miles from this point.		
Photo Orientation:	SSW		
Viewer Position:	___X___ Inferior _____ Level _____ Superior		

View	Notes
Foreground (0 - 1/2 mile)	The foreground includes grazing land for cattle, associated agricultural structures, and rural residential development. The density of the residential development increases toward the middleground.
Middleground (1/2 - 4 miles)	The middleground consists of single-family residential development that is framed by the densely forested ridgelines.
Background (> 4 miles)	The background view consists of a panoramic view of Monument Ridge.

Vividness		
Feature	**Score***	**Notes**
Landform	6	Monument Ridge extends across the background view and provides a backdrop to the valley floor.
Vegetation	6	Yellow mustard flowers adds vibrant color in the foreground. The ridgelines are covered by vegetation typical to this region, which includes dense coniferous forest interspersed with grassland and oak woodlands. Other ornamental trees and shrubs are visible in the middleground and surround the residential development.
Water Feature	n/a	There are no water features visible in this view.
Human-Made	4	The valley floor has been modified by the rural development and grazing lands. Past timber management activities are evident within the surrounding ridgelines based on the varying tree heights and jagged formations along the ridgelines. The Eel River Bridge is partially visible in the middleground.
Overall	**5.3**	
Intactness		
Overall	**4**	There is a clear distinction between the rural development set within the valley floor and the undeveloped nature of the ridgelines. However, the rural development appears cluttered and disorderly across the middleground view, and the ridgelines appear jagged from the past timber management activities.
Unity		
Overall	**5**	The residential and agricultural land uses contribute to the overall rural composition of this view. The residential development extends across the view and follows the horizontal pattern of the ridgelines in the background.
Overall Visual Quality Score	**4.8**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		With Project	
KOP Location:	Rio Dell. US Highway 101 - Davis Street off-ramp	Viewpoint:	KOP 4
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):			
Photo Orientation:	SSW		
Viewer Position:	___X___ Inferior _____ Level _____ Superior		

View	Notes
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	No change.
Background (> 4 miles)	The turbines would be visible in the background, but limited to the left center of the view.

Vividness		
Feature	**Score***	**Notes**
Landform	6	No change.
Vegetation	7	No change.
Water Feature	n/a	No change.
Human-Made	5	The addition of the turbines would increase the presence of human-made features in the landscape, but would contribute to the vividness of the view.
Overall	**6.0**	
Intactness		
Overall	**3.5**	The turbines encroach on the skyline in the left side of the background view. The turbines would be concentrated in the left side of the view, which slightly decreases the intactness because the right side of the view would not change.
Unity		
Overall	**4**	The turbines would be limited to the left side of the view. This creates a break between the portion of the ridgeline in the right side of the view that would remain undeveloped.
Overall Visual Quality Score	**4.5**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		Existing Conditions	
KOP Location:	**Fortuna Riverwalk**	Viewpoint:	**KOP 5**
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the south from along the Fortuna Riverwalk trail. This point overlooks the Eel River Valley and the expansive ridgelines. Bear River Ridge and Monument Ridge are about 9 to 11 miles from this point.		
Photo Orientation:	S		
Viewer Position:	___X___ Inferior _____ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	The Eel River channel meanders through the foreground and extends toward the middleground. The west bank of the river channel is bounded by a levee, which is covered by grasses and rip-rap. A gravel sand bar extends from the east bank of the river to the center of the channel.
Middleground (1/2 - 4 miles)	The levee becomes densely vegetated with taller stands of trees and riparian forest habitat. Rural development is partially visible along the levee.
Background (> 4 miles)	The background view consists of a panoramic view of Monument Ridge, Bear River Ridge, and the lower elevated hillsides.

Vividness		
Feature	***Score****	***Notes***
Landform	6	Monument Ridge, Bear River Ridge, and the lower elevated hillsides backdrop the Eel River.
Vegetation	5	Grasses, low-lying shrubs, and riparian forest habitat are visible along both sides of the Eel River channel. The ridgelines are coverd by dense coniferous forest. The hillsides are moderately covered by coniferous forest, with grassland and oak woodland vegetation dispersed throughout.
Water Feature	5	The Eel River meanders through the foreground and the middleground views.
Human-Made	5	Rural development is partially visible along the levee. Past timber management activities are faintly visible along the ridgelines.The Eel River has been modified by the placement of the levee, vegetation plantings, and rip-rap along the west side of the channel.
Overall	**5.3**	
Intactness		
Overall	**6**	The Eel River distinguishes the valley landscape from the surrounding ridgelines. The river channel has been altered to support rural development, which somewhat encroaches on the west side of the river. The surrounding ridgelines are undeveloped, but appear jagged from the past timber management activities.
Unity		
Overall	**6**	The rural development and surrounding ridgelines are oriented around the Eel River, which contributes to the overall composition of the Eel River Valley.
Overall Visual Quality Score	**5.8**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		With Project	
KOP Location:	**Fortuna Riverwalk**	Viewpoint:	**KOP 5**
Landscape Unit:	Eel River Corridor	Date:	Jun-18
Viewpoint Description (Figure Caption):			
Photo Orientation:	S		
Viewer Position:	___X___ Inferior _____ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	No change.
Background (> 4 miles)	Turbines would be visible in the background and extend across Bear River Ridge and Monument Ridge.

Vividness		
Feature	***Score****	***Notes***
Landform	6	No change.
Vegetation	5	No change.
Water Feature	5	No change.
Human-Made	6	The turbines would appear as memorable human-made features across the ridgelines in the background view and would contribute to the vividness of the view.
Overall	**5.5**	
Intactness		
Overall	**5**	The turbines encroach on the skyline in the background view. The turbines would be distinct built features in the view and diminish the undeveloped nature of the ridgelines.
Unity		
Overall	**5**	The turbines extend across the entirety of the view. The linear formation of the turbines would emphasize the horizontal pattern of the ridgelines that provide a backdrop to the Eel River Valley. The unity would decrease with the introduction of power-generating facilities along the ridgeline.
Overall Visual Quality Score	**5.2**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:	Existing Conditions		
KOP Location:	**Hydesville**	Viewpoint:	**KOP 6**
Landscape Unit:	Highway 36	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the southeast from along the northbound lane of State Route 36. This viewpoint is representative of the communities located along State Highway 36.		
Photo Orientation:	S		
Viewer Position:	___X___ Inferior _____ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	The foreground includes a patchwork of row crops and pastureland. Rural residential development is visible in the left side of the view.
Middleground (1/2 - 4 miles)	A forested bluff extends across the middleground
Background (> 4 miles)	Background views are obscured by the forested bluff extending across the middleground.

Vividness		
Feature	***Score****	***Notes***
Landform	4	A forested bluff extends across the view.
Vegetation	5	The bluff is completely covered by redwood trees. Trees are scattered across the foreground and middleground views and are primarily concentrated around the rural development and along the edge of the Van Duzen River.
Water Feature	n/a	The Van Duzen River is obscured by the row of trees in the middleground
Human-Made	4	Lands within the foreground have been highly modified to support the farming operations. Rural development is scattered across the left side of the view. The top of the bluff appears uneven from past timber management activities
Overall	**4.3**	
Intactness		
Overall	**4**	Human-made modifications are prominent in this view. The valley floor has been highly modified by the agricultural operations. The edge of the forested bluff appears uneven as a result of past forest management activities.
Unity		
Overall	**5**	Evidence of the active farming operations and timber management activities are representative of the working agricultural landscape that is typically found along State Highway 36.
Overall Visual Quality Score	**4.4**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:	With Project - Option 1		
KOP Location:	**Hydesville**	Viewpoint:	**KOP 6**
Landscape Unit:	Highway 36	Date:	Jun-18
Viewpoint Description (Figure Caption):			
Photo Orientation:	S		
Viewer Position:	___X___ Inferior _____ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	No change.
Background (> 4 miles)	The top of the turbines would appear above the forested bluff and extend across the background view.

Vividness		
Feature	***Score****	***Notes***
Landform	4	No change.
Vegetation	5	No change.
Water Feature	n/a	No change.
Human-Made	5	The turbines would appear as memorable human-made features across the forested bluff and would contribute to the vividness of the view.
Overall	**4.7**	
Intactness		
Overall	**3**	The tubines would encroach on the skyline.
Unity		
Overall	**4**	Introduction of turbines into view currently characterized by rural residential and agricultural uses.
Overall Visual Quality Score	**3.9**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:	Existing Conditions		
KOP Location:	**Mattole Road**	Viewpoint:	**KOP 7**
Landscape Unit:	West Humboldt	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the south/southeast from along the northbound lane of Mattole Road. This point along Mattole Road includes a view of Bear River Ridge and Monument Ridge from west Humboldt County. Bear River Ridge and Monument Ridge are about 7.5 miles from this point.		
Photo Orientation:	SSE		
Viewer Position:	X Inferior	____ Level	____ Superior

View	***Notes***
Foreground (0 - 1/2 mile)	The foreground consists of gently sloped forested hillsides, interspersed with open patches of grassland and oak woodland habitat.
Middleground (1/2 - 4 miles)	Elevated hillsides extend across the middleground view. The elevated hillsides are moderately forested with rural development visible at the top of the slope.
Background (> 4 miles)	Forested ridgelines extend across the background view. Bear River Ridge is visible in the left center of the view. Monument Ridge is visible further in the distance behind Bear River Ridge.

Vividness		
Feature	***Score****	***Notes***
Landform	6	Landforms visible in this view appear layered with gently sloped hillsides in the foreground, elevated hillsides in the middleground, and steeper ridgelines visible in the background.
Vegetation	6	Vegetation in this view includes coniferous trees interspersed with grassland and oak woodland habitats. This vegetation is typical to the region.
Water Feature	n/a	There are no water features visible in this view.
Human-Made	5	Rural development is visible in the middleground at the top of the elevated hillside.
Overall	**5.7**	
Intactness		
Overall	**6**	Rural development is visible in the middleground. These structures slightly encroach on the hillsides in the middleground, but do not detract the overall view of the hillsides and ridgelines.
Unity		
Overall	**6**	The view is typical of the expansive landscape patterns in west Humboldt County, where the forested hillsides and ridgelines are the dominant features and visible across the view.
Overall Visual Quality Score	**5.9**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:	With Project		
KOP Location:	**Mattole Road**	Viewpoint:	**KOP 7**
Landscape Unit:	West Humboldt	Date:	Jun-18
Viewpoint Description (Figure Caption):			
Photo Orientation:	SSE		
Viewer Position:	X Inferior	____ Level	____ Superior

View	***Notes***
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	No change.
Background (> 4 miles)	Turbines are visible in the background and appear clustered at the top of Bear River Ridge and Monument Ridge.

Vividness		
Feature	***Score****	***Notes***
Landform	6	No change.
Vegetation	6	No change.
Water Feature	n/a	No change.
Human-Made	6	The turbines would be visible in the background view along Bear River Ridge and Monument Ridge. The turbines would not appear as distinct features in the landscape and would appear consistent with the low profile of the distant ridgelines.
Overall	**6.0**	
Intactness		
Overall	**5**	The intactness of the view would decrease with the introduction of distinctive built features in a predominantly natural landscape.
Unity		
Overall	**5**	From this angle, the turbines do not appear to have an orderly layout pattern. The turbines are clustered on Bear River Ridge and Monument Ridge, which creates breaks in the horizontal pattern of the ridgelines in the background view.
Overall Visual Quality Score	**5.3**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:	Existing Conditions		
KOP Location:	Highway 211, west of Ferndale Bridge	Viewpoint:	KOP 8
Landscape Unit:	Ferndale Plain	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the south/southeast overlooking the Ferndale Plains that are backdropped by the surrounding ridgelines. This point approximates the view from the northbound lane of Highway 211. Bear River Ridge and Monument Ridge are about 10.5 to 17 miles from this point.		
Photo Orientation:	SSE		
Viewer Position:	X Inferior	____ Level	____ Superior

View	Notes
Foreground (0 - 1/2 mile)	Open, wide farmland extends across the foreground and forms the valley floor.
Middleground (1/2 - 4 miles)	The middleground consists of rural development including residential homes and agricultural related structures associated with the active farmlands. The rural development forms the edge between the flat farmlands and the elevated hillsides.
Background (> 4 miles)	The background consists of a panoramic view of Monument Ridge, Bear River Ridge, and the lower hillsides.

Vividness		
Feature	Score*	Notes
Landform	6	Monument Ridge, Bear River Ridge, and the lower hillsides. The surrounding hillsides and ridgelines provide a backdrop to the flat Ferndale Plains that occupy the valley floor.
Vegetation	5	Grasses associated with the farmlands are the dominant vegetation in the foreground and middleground views. The hillsides contain coniferous trees interspersed with oak woodland and grasslands. The distant ridgelines are densely forested by coniferous trees.
Water Feature	3	Active sprinkler irrigation systems are visible in the middleground.
Human-Made	4	Rural residential development, supporting agricultural structures, and utility distribution poles are visible across the middleground view. These structures are set within the valley floor, which has been highly modifed to support the production of crops. Evidence of past timber management activities are slightly visible based on the jagged forms and varying tree heights along the ridgelines.
Overall	**4.5**	

Intactness		
Overall	**4**	The valley floor has been highly modified to support the residential and agriculture land uses visible within the foreground and middleground views. Portions of the ridgelines appear jagged from the past timber management activities. The vertical form of the utility distribtion poles and the sprinkler irrigation systems slightly encroach on views of the hillsides and the horizontal orientation of the view.

Unity		
Overall	**5**	The horizontal pattern of the farmlands and rural development set within the valley floor complements the horizontal orientation of the ridgelines that extends across the background view.

Overall Visual Quality Score	**4.5**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:	With Project		
KOP Location:	Highway 211, west of Ferndale Bridge	Viewpoint:	KOP 8
Landscape Unit:	Ferndale Plain	Date:	Jun-18
Viewpoint Description (Figure Caption):			
Photo Orientation:	SSE		
Viewer Position:	X Inferior	____ Level	____ Superior

View	Notes
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	No change.
Background (> 4 miles)	The turbines would extend across Bear River Ridge and Monument Ridge and be visible in the background.

Vividness		
Feature	Score*	Notes
Landform	6	No change.
Vegetation	5	No change.
Water Feature	3	No change.
Human-Made	4	The addition of the turbines would increase the presence of human-made features in the landscape but would contribute to the vividness of the view.
Overall	**4.5**	

Intactness		
Overall	**3**	The turbines encroach on the skyline in the background view. The vertical form of the turbines would distrubt the horizontal orientation of the ridgelines and reduce the undeveloped nature of them.

Unity		
Overall	**4**	The linear formation of the turbines along the ridgelines would emphasize the horizontal pattern that extends across the open view. The unity of the view would decrease with the introduction of power-generating facilities

Overall Visual Quality Score	**3.8**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***Existing Conditions***	
KOP Location:	**Table Bluff County Park**	Viewpoint:	**KOP 9**
Landscape Unit:	Humboldt Bay	Date:	Jun-18
Viewpoint Description (Figure Caption):	View to the south/southeast from along the southbound lane of Table Bluff Road. This point approximates a view from Table Bluff County Park, overlooking the flat tidal marsh lands near Humboldt Bay. Bear River Ridge and Monument Ridge are about 17 to 23 miles.		
Photo Orientation:	SSE		
Viewer Position:	___X___ Inferior	_____ Level	_____ Superior

View	***Notes***
Foreground (0 - 1/2 mile)	Land within the foreground gently slopes down toward the flat tidal marshes. Beyond the tidal marsh lands, rolling hills and single-family residential development are visible in the left portion of the view. The utility distribution poles and perimeter fence posts add vertical elements in the foreground.
Middleground (1/2 - 4 miles)	The middleground consists of an expansive view of the flat tidal marsh lands with scattered rural development. The edge of the middleground is defined by the coniferous and wetland vegetation that extends across the view, at the base of where the elevated hillsides begin to form.
Background (> 4 miles)	The background consists of a panoramic view of the surrounding forested ridgelines and hillsides. The top of the ridgeline is somewhat obstructed by the cloud cover.

Vividness		
Feature	***Score****	***Notes***
Landform	6	The background consists of a panoramic view of the surrounding ridgelines and hillsides. Visibility of these formations are slightly diminished by the cloud cover, which typically occurs in this region.
Vegetation	5	The foreground and middleground consists of wetland vegetation. The surrounding ridgelines and hillsides are densely forested with vegetation typical to this region such as, coniferous trees, oak woodlands, and grasslands.
Water Feature	4	Wetlands are visible within the foreground and middleground of this view and are typical of the coastal landscape.
Human-Made	4	Human-made modifications include the utility distribution poles and barbed wire fence posts that parallel the perimeter of Table Bluff Road in the foreground and the various residential structures that are clustered across the middleground.
Overall	**4.8**	
Intactness		
Overall	**4**	In this view from Table Bluff Road, the utility poles and coniferous trees in the foreground appear as vertical features that contrast with and partially encroach upon the view's horizontal orientation.The middleground includes a variety of structures that are distributed throughout the landscape with no discernable pattern and creates breaks in the natural features in the middleground. The ridgelines extend across the background view and appear intact.
Unity		
Overall	**4**	The human-made features are co-located with the natural features, and contribute to the overall composition of the coastal and inland environmentals visible in this view. However, because the human-made features lack any discernable pattern the unity of the view is moderate.
Overall Visual Quality Score	**4.3**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 -Moderate; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***With Project***	
KOP Location:	**Table Bluff County Park**	Viewpoint:	**KOP 9**
Landscape Unit:	Humboldt Bay	Date:	Jun-18
Viewpoint Description (Figure Caption):			
Photo Orientation:	SSE		
Viewer Position:	___X___ Inferior	_____ Level	_____ Superior

View	***Notes***
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	No change.
Background (> 4 miles)	The turbines would extend along Monument Ridge and Bear River Ridge. The turbines that appear closer in the view would be partially obscured by the lower elevated hillside.

Vividness		
Feature	***Score****	***Notes***
Landform	6	No change.
Vegetation	5	No change.
Water Feature	4	No change.
Human-Made	4	The addition of the turbines would increase the presence of human-made features in the landscape but would contribute to the vividness of the view.
Overall	**4.8**	
Intactness		
Overall	**3**	Introduction of the turbines would decrease the intactness of the ridgelines with the addition of built features.
Unity		
Overall	**3.5**	The unity of the view would not change. The turbines would follow the linear formation of the ridgelines and extend across the background view. Visibility of the turbines add to the human-made features that are co-located with the natural environment.
Overall Visual Quality Score	**3.8**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 -Moderate; 5 - Moderately High; 6 - High; 7 - Very High