

## 6 ALTERNATIVES

### 6.1 PURPOSE

Section 15126.6(a) of the State CEQA Guidelines requires that an EIR describe a range of reasonable alternatives to a project or its location that would feasibly attain most of the project's basic objectives but would avoid or substantially lessen any of the significant effects, and that the EIR evaluate the comparative merits of the alternatives. An EIR need not describe or evaluate the environmental effects of alternatives at the same level of detail as the effects of the proposed project; however, the document must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project.

CEQA requires that a no project alternative be evaluated (State CEQA Guidelines, Section 15126.6[e]). In addition, the EIR must identify an environmentally superior alternative among the alternatives considered, defined as the alternative that would result in the least adverse environmental impacts on a project site and affected environment. If the no project alternative is found to be environmentally superior, the EIR must also identify an environmentally superior alternative among the other alternatives.

The State CEQA Guidelines recommend that an EIR briefly describe the rationale for selecting the alternatives to be discussed, identify any alternatives that the lead agency considered but rejected as infeasible, and briefly explain the reasons for the lead agency's determination (State CEQA Guidelines, Section 15126.6[c]).

### 6.2 FACTORS CONSIDERED IN SELECTION OF ALTERNATIVES

Consistent with Section 15126.6(c) of the State CEQA Guidelines, Humboldt County (County) considered the following factors in developing the range of reasonable alternatives to the proposed project:

- ▶ The extent to which the alternative would accomplish the project's objectives
- ▶ The feasibility of the alternative
- ▶ Avoidance or substantial reduction of significant effects

Primary consideration was given to alternatives that would reduce significant impacts while still meeting most project objectives. Alternatives that would have the same or greater impacts compared to the proposed project, or that would not meet most of the project objectives, were rejected from further consideration (State CEQA Guidelines, Section 15126.6[a]).

#### 6.2.1 ABILITY OF THE ALTERNATIVE TO ATTAIN MOST PROJECT OBJECTIVES

Potential alternatives were identified and evaluated relative to the objectives of the proposed project. For the purpose of the alternatives analysis under CEQA, project objectives may not be defined so narrowly that the range of alternatives is unduly constrained. The project applicant provided the following objectives for the proposed project:

- ▶ Contribute to a diversified statewide energy portfolio that will reduce exposure to price volatility associated with electricity and natural gas, while assisting the state in meeting the renewable-energy requirements established in Senate Bill (SB) 350 and SB 100, including assisting in directly achieving the state's Renewable Portfolio Standard of 100 percent zero carbon energy by 2045.

- ▶ Develop a wind project that is feasible to finance, construct, and operate.
- ▶ Develop a wind energy project that can meet the criteria to achieve the maximum federal tax credit requiring placement into operation by December 30, 2020, which is intended to decrease the cost of renewable energy generation and delivery, promote the diversity of the energy supply, and decrease the dependence of the United States on foreign energy supplies.
- ▶ Promote sustainable energy and utilization of alternative energy systems throughout the county in compliance with the Open Space and Conservation Element of the *Humboldt County General Plan*.
- ▶ Develop a wind energy facility as near as possible to existing transmission infrastructure.
- ▶ Develop a wind energy facility in Humboldt County that supports the economy by creating short- and long-term employment opportunities and increasing tax revenue.
- ▶ Displace emissions of approximately 372,000 metric tons per year of carbon dioxide (a greenhouse gas [GHG]) that would otherwise be required to generate the same amount of electricity as this 155-megawatt (MW) project.

## 6.2.2 FEASIBILITY OF THE ALTERNATIVES

An EIR need not consider every conceivable alternative to a project. Rather, a range of potentially feasible alternatives, governed by the “rule of reason,” must be considered. This is intended to foster informed decision making and public participation (State CEQA Guidelines, Section 15126.6[f]). CEQA generally defines “feasible” as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account environmental, social, technological, and legal factors.” Alternatives were evaluated according to the “rule of reason” and general feasibility criteria suggested by State CEQA Guidelines Section 15126.6 as follows:

The range of alternatives required in an EIR is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

The inclusion of an alternative in an EIR does not necessarily mean that the alternative is feasible; rather, it indicates that the lead agency’s staff has determined that the alternative is potentially feasible. This analysis considered the following criteria (State CEQA Guidelines, Section 15126.6[f][1]):

- ▶ suitability of the site or alternative site;
- ▶ the alternative’s economic viability;
- ▶ availability of infrastructure;
- ▶ consistency of the alternative with the *Humboldt County General Plan*, zoning, and other plans and regulatory limitations; and
- ▶ the effect of applicable jurisdictional boundaries.

### **6.2.3 AVOIDANCE OR SUBSTANTIAL REDUCTION OF SIGNIFICANT EFFECTS**

The evaluation of alternatives must also account for the potential of the alternative to avoid or substantially lessen any of the significant effects of the proposed project, as identified in this EIR. The potential environmental effects of the proposed project are summarized in the Executive Summary of this EIR.

### **6.3 ALTERNATIVES REMOVED FROM CONSIDERATION**

CEQA Section 15126.6(f)(2) requires the lead agency to consider alternative locations if using an off-site location would avoid or lessen any of the significant effects of the project. Only locations that would avoid or substantially lessen any of the project's significant effects need be considered for inclusion in the EIR.

Before selecting the site for the proposed project, the project applicant conducted a review of all substations in Northern California to determine where sufficient capacity would be available to support a utility-scale project (more than 100 MW) on the grid. The Bridgeville Substation was identified as having sufficient capacity to support a utility-scale project with only minor substation upgrades needed. Once Bridgeville was identified, the project applicant reviewed meteorological data to determine whether conditions would be suitable for a wind energy project. The applicant then analyzed regional permitting constraints for resources that may be affected by a wind energy project (i.e., biological resources, cultural resources, and visual and aesthetic resources).

During the initial project planning phase, before settling on the current project location, the project applicant considered two off-site alternatives for wind turbine generators (WTGs), Shively Ridge and Rainbow Ridge, and multiple alternative alignments for the generation transmission line (gen-tie). The alternatives initially considered and the reasons for their removal from consideration are described below.

#### **6.3.1 WIND TURBINE GENERATOR LOCATION ALTERNATIVES**

##### **SHIVELY RIDGE**

The project applicant evaluated constructing WTGs at more than 26 locations and approximately 10 miles of access roads on Shively Ridge, a prominent ridgeline generally located approximately 4 miles southeast of Scotia, and north and east of U.S. Highway 101 (U.S. 101) and the Eel River in Humboldt County. The gen-tie route for this alternative would have been the same as that for the proposed project. Constructing the WTGs along Shively Ridge would have required constructing an access road from U.S. 101 along the length of Shively Road and Shively Ridge Road.

Constructing the Shively Ridge WTGs and access roads would have presented an extensive list of construction, engineering, and environmental concerns. Access for this alternative would have required constructing a bridge over Stitz Creek and a new access road to link the Stitz Creek bridge to Shively Ridge Road. The new roadway segment would have had excessive slopes and considerable mechanical assistance may have been required to deliver WTG components to the top of Shively Ridge. Such construction would have had the potential to affect special-status fish species and riparian habitat that may be present at the Stitz Creek bridge construction site.

In addition, preliminary feedback from the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) suggested that Shively Ridge has higher potential than the proposed project site to

be a flyway for marbled murrelet (*Brachyramphus marmoratus*)—which is federally listed as threatened and state-listed as endangered—given the ridge’s position between the Eel and Van Duzen rivers.

Regional datasets showed that Shively Ridge would be as windy as or windier than other ridges being considered; however, data collected from multiple locations on Shively Ridge revealed uncompetitive wind speeds for a wind energy project, especially when compared to Monument Ridge. To make the most efficient use of the wind resource, WTGs are sited in the windiest locations suitable for construction.

Thus, because of biological, engineering, construction, and meteorological concerns regarding development of WTGs and access roads on Shively Ridge, the project applicant determined that this location would not be feasible. Planning for project development on this ridge was not carried forward.

## **RAINBOW RIDGE**

The project applicant also evaluated constructing WTGs at more than 16 locations on Rainbow Ridge, a ridgeline generally located 7 miles southwest of Stafford to the south and west of U.S. 101 and Monument Ridge in Humboldt County. The gen-tie route for this alternative would have been the same as that for the proposed project; however, turbine collector lines would have had to be constructed between Rainbow Ridge and the project’s substation on Monument Ridge. Constructing the WTGs along Rainbow Ridge also would have required constructing an additional 11 miles of access roads to reach Monument Ridge.

Constructing the proposed project on Rainbow Ridge would have presented numerous construction and engineering constraints: steep slopes requiring substantial cuts and fills; construction of a bridge over the Bear River that would have required a large amount of grading and earth removal; a collector line crossing of the Bear River, either underground or overhead; and an increase in permanent disturbance to accommodate stormwater controls and road design. To maintain maximum load-bearing capacity for the WTGs and roadway design, the bridge crossing the Bear River would have had to be an arched concrete bridge with a deck extending 200 feet above the river. Although the bridge would have completely spanned the Bear River, construction could have affected special-status fish species present in the river. In addition, the collector line could have affected fish species (if the line were underground) or marbled murrelet (if the line were overhead).

In addition, preliminary feedback from USFWS, CDFW, and local nongovernmental organizations suggested that Rainbow Ridge may have higher potential to support raptors. Rainbow Ridge is also a prominent feature on the landscape and has heightened importance to local tribes. A desktop analysis showed a higher potential for the discovery of cultural resources on Rainbow and Long ridges than on Monument Ridge.

Thus, because of biological, engineering, construction, and cultural resource concerns regarding development of WTGs and access roads on Rainbow Ridge, the project applicant determined that this location would not be feasible. Further development on this ridge was not carried forward.

## **6.3.2 GEN-TIE ALIGNMENT ALTERNATIVES**

The conditional use permit application presented two options that would have kept the same WTG footprint as the proposed project, but modified the alignment of the gen-tie. Option 2 (the shorter of the two options) considered a longer gen-tie route that would have been more difficult to construct than the proposed gen-tie alignment because of steep terrain and the lack of existing roads to access the alignment. Option 3 would have been the longest route

and would have required two additional crossings of Larabee Creek. These two alternative gen-tie routes were not carried forward because they would have been more difficult to construct or would have added length and creek crossings.

### 6.3.3 PUBLIC RECOMMENDATIONS DURING THE SCOPING PROCESS

A notice of preparation was circulated to the public to solicit recommendations on the scope of the EIR (and alternatives) for the proposed project. In addition, two public scoping meetings were held during the public review period to solicit recommendations on the impacts and mitigation measures (including alternatives) to consider during the CEQA review. A complete list of comments is contained in the scoping report (Appendix A) and relevant comments are summarized below. Although CEQA does not require point-by-point responses to comments on a notice of preparation, brief responses are provided below.

- ▶ Commenters stated that the “No Project Alternative” should be considered.
  - *Response:* This alternative is considered as Alternative 1 below.
- ▶ Commenters stated that the project should propose alternative locations for turbines sited within the Cape Mendocino Grasslands Important Bird Area or known flyways.
  - *Response:* The WTGs on Bear River Ridge would be on the edge of the Cape Mendocino Grasslands Important Bird Area. Alternative 3 (analyzed below) would reduce the number of WTGs placed in known flyways based on a risk assessment conducted by a local expert.
- ▶ A commenter requested that the County examine two additional alternatives: The “No-Take” Alternative, which would not result in the taking of marbled murrelets; and the Large Turbine Alternative, which would minimize the total number of turbines while still achieving the project’s energy goals by using the largest feasible turbines at the site.
  - *Response:* Although only the No Project Alternative could guarantee “no take,” Alternative 2 would increase the distance between the gen-tie and marbled murrelet habitat. Alternative 3 would reduce the number of WTGs placed in known flyways based on a murrelet risk assessment conducted for the project. The proposed project would use the largest feasible WTGs (capable of generating 2–5 MW of electricity each). Alternative 4 considers smaller WTGs.
- ▶ A commenter requested that the analysis evaluate an alternative placing the transmission line underground along existing roadways.
  - *Response:* This alternative would substantially increase ground disturbance and would not likely reduce a significant impact.
- ▶ A commenter requested that the analysis consider an alternative that would not involve drilling under the Eel River for the transmission line.
  - *Response:* This alternative is considered as Alternative 2.

- ▶ A commenter recommended situating turbines at least 1 mile from occupied marbled murrelet sites; curtailing turbine operation during the breeding season (April–September); creating robust mitigation plans; changing the WTG design to nonlethal structures; and following USFWS’s best practices for wind energy.
  - *Response:* The County is considering a wide variety of impact avoidance and minimization measures to limit impacts on the marbled murrelet. The project applicant is also consulting with the resource agencies to reduce or mitigate impacts on the marbled murrelet.
- ▶ A commenter stated that other mountain ridges could support the project and suggested relocating the project closer to Bridgeville above State Route 36, or between Blue Lake and Willow Creek above State Route 299.
  - *Response:* The mountain ridges between Blue Lake and Willow Creek recommended for analysis by the commenter are not close to existing transmission infrastructure. The site above State Route 36 has insufficient wind energy resources. The project site is close to available infrastructure such as the Bridgeville Substation, and the project applicant has use and access rights to this site. The project applicant does not have control of land in the area described by the commenter and could not feasibly acquire such access and still complete the project in a timely manner. In addition, the commenter has not provided information to indicate that an alternate location would reduce any of the significant impacts associated with the project site.
- ▶ A commenter requested an alternative placing the turbines behind the ridge to maintain the pristine view.
  - *Response:* The project site was selected to maximize wind production. Placing WTGs behind the ridge would substantially reduce their energy generation capability.
- ▶ A commenter encouraged the use of tethered, airborne wind energy.
  - *Response:* Although airborne wind energy is in the experimental stages, it is not yet a commercially feasible technology. Currently it is about 10 times more costly than traditional wind generation (Deign 2017).

Except where stated, the County has elected not to examine any of these alternatives in detail.

### **6.3.4 ALTERNATIVES SELECTED FOR CONSIDERATION**

The County has selected four alternatives to the proposed project for comparison. An EIR need not describe or evaluate the environmental effects of alternatives at the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project (State CEQA Guidelines, Section 15126.2[d]). The alternatives are shown in Figures 6-1 through 6-4.

### **6.3.5 ALTERNATIVE 1: NO PROJECT**

Section 15126.6(e)(2) of the State CEQA Guidelines states that a discussion of the “No Project” alternative must consider “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans.” The purpose of describing and analyzing a no project alternative is to allow decision

makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.<sup>1</sup>

Lands that would be crossed by the project are zoned as Agriculture Exclusive (AE) and Timber Production Zone (TPZ), except for limited intermittent segments of the gen-tie, and are currently used primarily for timber production. The No Project Alternative assumes that the proposed project would not be implemented and that the project site would remain in its existing condition and be used primarily for timber production. If Alternative 1 were selected, no change from existing conditions would occur because the environmental consequences of constructing and operating the proposed project would not occur. If the proposed project were not approved at this location, it is reasonably foreseeable that renewable power needed to meet state renewable energy standards would be obtained from a project proposed at this or another suitable site.

### **ABILITY OF ALTERNATIVE 1 TO MEET THE PROJECT OBJECTIVES**

Alternative 1, the No Project Alternative, would not meet any of the basic project objectives, specifically the development of a wind project that will deliver up to 155 MW of renewable energy to the Bridgeville Substation by 2020.

### **ENVIRONMENTAL IMPACTS**

Under the no project scenario, none of the impacts identified for the proposed project would occur.

### **6.3.6 ALTERNATIVE 2: REALIGNED GEN-TIE AND ACCESS ROAD**

After conducting preliminary consultation with the National Marine Fisheries Service, the project applicant developed an alternative gen-tie alignment that would avoid the underground crossing of the Eel River. Even though the risk of frac-out<sup>2</sup> is low from boring under the Eel River, this alternative would reduce potential impacts on special-status fish species associated with potential water contamination caused by a frac-out condition.

Under this alternative, the number and location of WTGs would be the same as under the proposed project, but the gen-tie would be rerouted to an alternative ridge directly above the town of Stafford (the “realigned gen-tie route”), using wooden H-frame or steel monopole structures (Figure 6-1). The gen-tie structures would be placed on the north side of the ridge to reduce their visibility. Once at the bottom of Monument Ridge, approaching the edge of the town of Stafford, the line would continue overhead as it crossed the Eel River on the west side of the Stafford Bridge. The line would be at the same height as Pacific Gas and Electric Company’s (PG&E’s) existing three lines on the east side of the bridge, crossing the Eel River at a height equal to or less than the deck of the bridge. Should overhead transmission structures (poles) be used to cross the Eel River, the conductors would be placed within the profile of and near the existing Stafford Bridge to avoid avian collisions, specifically by marbled murrelets.

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<sup>1</sup> The analysis of the no project alternative is not the baseline for determining whether the proposed project’s environmental impacts may be significant, unless it is identical to the existing environmental setting analysis that does establish that baseline (see Section 15125 of the State CEQA Guidelines).

<sup>2</sup> Frac-out is a condition in which drilling mud or bentonite slurry is released through fractured bedrock into the surrounding rock and sand and travels toward the surface.

Once on the east side of the Eel River, the gen-tie would cross U.S. 101 adjacent to PG&E's distribution line. The gen-tie would then continue adjacent to Shively Road for 0.8 mile before crossing Stitz Creek just south of the earthen dam. After crossing Stitz Creek, the gen-tie would proceed directly up Shively Ridge before connecting with the proposed gen-tie corridor at the western terminus of Shively Ridge Road.

The realigned gen-tie route of Alternative 2 would be consistent with the proposed gen-tie corridor until Alderpoint Road. At Alderpoint Road, the realigned gen-tie route would proceed northeast, while the proposed line would deviate south before rejoining the proposed gen-tie 0.3 mile south of the Bridgeville Substation.

Alternative 2 also includes an alternate access road alignment at the Jordan Creek staging area (the "realigned Jordan Creek access") to avoid impacts on a northern spotted owl flyway near Jordan Creek. From the Jordan Creek laydown area, the access road would continue in an easterly direction, roughly paralleling Demonstration Forest Road Left (DEMO-Left) and a PG&E service road. About 0.16 mile east of the junction of DEMO-Left and the PG&E service road, the alignment would turn south along a new alignment up Monument Ridge. This new alignment would continue for 0.4 mile before rejoining DEMO-Left. The alignment would follow DEMO-Left for an additional 1.5 miles before rejoining the proposed alignment. The access road would be slightly longer (approximately 1 mile) but would follow an existing road in places, reducing the impacts of creating new access roads.

Relative to the proposed project, Alternative 2 would reduce impacts on biological resources, make better use of existing roads (minimizing timber harvesting), and increase the distance of project infrastructure from Scotia.

## **ABILITY OF ALTERNATIVE 2 TO MEET THE PROJECT OBJECTIVES**

This alternative would meet the project objectives to the same extent as the proposed project.

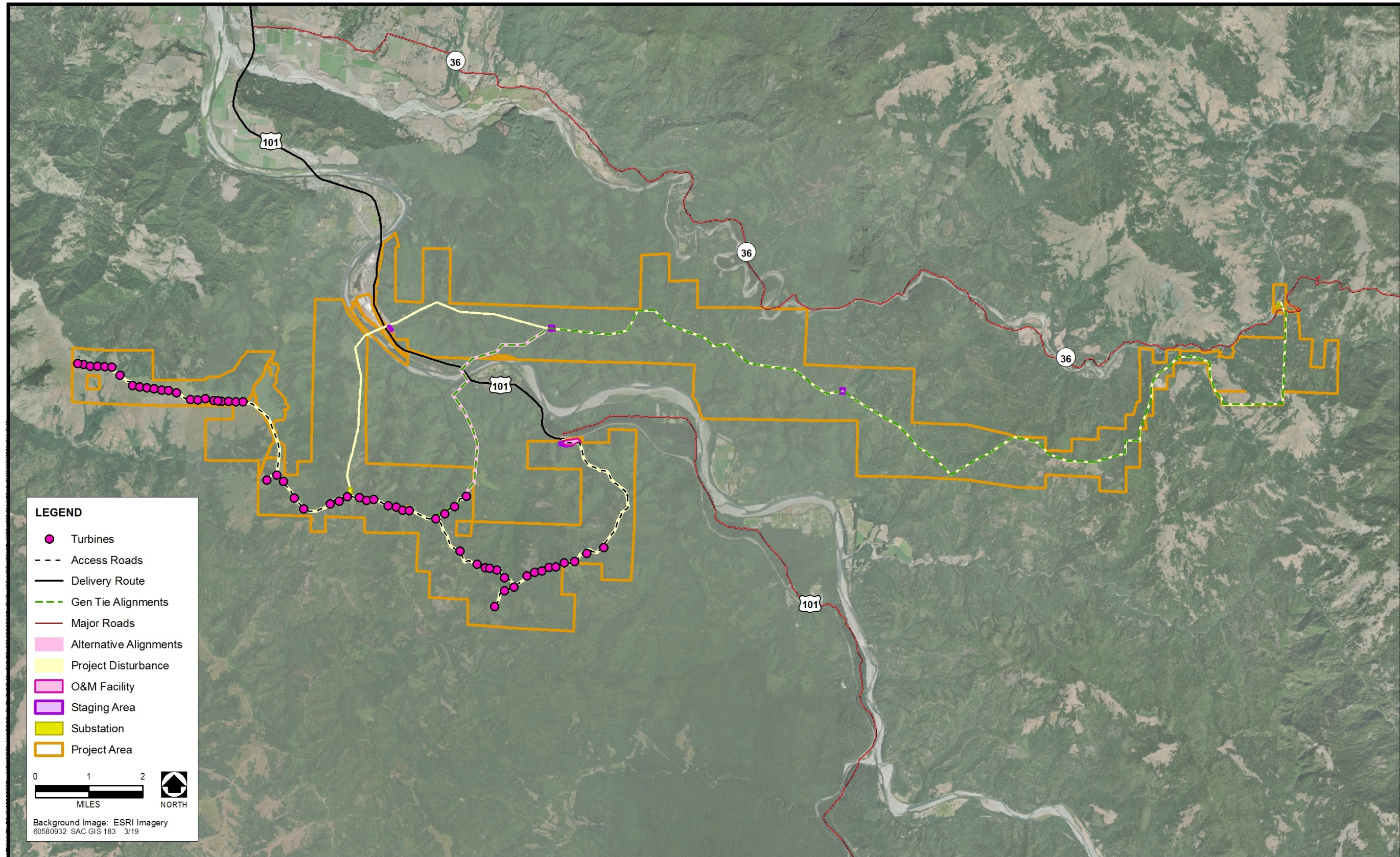
## **ENVIRONMENTAL IMPACTS**

### **Aesthetics**

The transmission line would be 2.97 miles shorter under Alternative 2 than under the proposed project. A shorter transmission line would require less construction, thus reducing the impacts of ground disturbance and air pollutant emissions from construction activity. Impacts from constructing and operating the WTGs would remain the same.

Keeping the transmission line above ground at the Eel River crossing instead of boring under the river would not substantially increase impacts on visual resources relative to the proposed project, and would likely reduce temporary construction-related impacts. Construction across the bridge would be completed more quickly under this alternative. The transmission line would be visible regardless of the alignment selected. However, under Alternative 2, the line would be routed parallel to the existing bridge and the elevation would be at the same height as the existing bridge, minimizing its visibility. Thus, the transmission line and would not substantially change the visual character of the area. The modified access road alignment would not substantially change impacts on aesthetic resources. Overall, impacts would be similar.





Source: Data compiled by AECOM in 2019

**Figure 6-1. Alternative 2: Realigned Gen-Tie and Access Road**

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## **Agriculture and Forestry Resources**

A shorter transmission line under Alternative 2 would lessen impacts on forestland compared to the impacts of the proposed project. Revising the proposed route for the main access road would result in fewer impacts on forestland than under the proposed project because the alignment for the new access road lies mainly on previously harvested forestland or follows existing logging roads. Impacts of Alternative 2 on timber production would be less than those of the proposed project.

## **Air Quality**

Mobile and stationary sources would emit criteria pollutants during construction and operation under either the proposed project or Alternative 2. During transmission line construction, Alternative 2 would generate fewer emissions than the proposed project; the modified gen-tie alignment would require a smaller development footprint, thus shortening the construction period and reducing the operation of heavy machinery. Operational emissions would be similar to those of the proposed project because the operations and maintenance (O&M) facility and the WTG maintenance needed would be the same. Overall, impacts of Alternative 2 on air quality would be less than those of the proposed project.

## **Biological Resources**

Modifications to the access road alignment and gen-tie route under Alternative 2 would generally reduce impacts on biological resources by reducing the length of the transmission line. A shorter transmission line would reduce the construction disturbance footprint and lessen the amount of grading and other construction activities that could affect biological resources. Rerouting the gen-tie would increase the distance between the gen-tie and marbled murrelet habitat on Shively Ridge (Stand 76) from 0.35 mile to 1.5 miles, so construction-related impacts would be less than those of the proposed project. Placing the transmission line above ground would also reduce the risk of effects on Eel River water quality that could affect salmonid species, by avoiding the use of horizontal directional drilling activities to underground the transmission line and removing the risk of a frac-out. Realigning the access road would increase the distance from the access road, its associated noise, and other disturbances to a known activity center for northern spotted owl.

Permanent land disturbance would be less under Alternative 2 than under the proposed project given the shorter gen-tie length. Habitat types that would experience less disturbance under this alternative include barren/urban, grassland, riparian, shrub, and wetland areas. Temporary impacts on forests and woodlands would be slightly greater under Alternative 2, but wetlands impacts would be less because this alternative does not require an underground crossing of the Eel River. Alternative 2 would reduce impacts on wetlands and other waters of the United States.

Vegetation mapping of the revisions considered under Alternative 2 was documented in a memorandum report (*Humboldt Wind Energy Project—Updated Vegetation Mapping* [Stantec 2019a]). The vegetation mapping effort involved identifying and documenting the presence of all CDFW sensitive natural communities in the survey area by vegetation type. Alternative 2 would increase impacts on redwood forest. However, impacts on most sensitive natural communities would either remain the same or be reduced by Alternative 2. Notably, Alternative 2 would completely avoid impacts on three sensitive natural communities: Fremont cottonwood forest, black cottonwood forest, and grand fir forest.

## **Cultural Resources, including Tribal Cultural Resources**

A cultural resources inventory of the Alternative 2 elements, documented in a memorandum report (Stantec 2019b), identified two previously documented cultural resources—P-12-002087 and P-12-002088—in the footprint of the realigned Jordan Creek access. The inventory also found that the proposed realigned gen-tie route bisected one newly documented cultural site, HUM-ALT-1 (a segment of the Northwestern Pacific Railroad). P-12-002088 consists of upright redwood log posts that have been converted into a shelter, along with associated historic-era and contemporary refuse. Impacts to historic resource and cultural landscape districts would be similar under Alternative 2 as to the proposed project. Placement of WTGs is the determining factor behind these impacts.

The same mitigation measures identified for impacts of the proposed project on documented cultural resources would also be available under Alternative 2. The transmission line would be shorter under this alternative, thus reducing the potential for discovery of previously unidentified cultural resources. Should previously unidentified cultural materials be unearthed during project implementation, they would be subject to regulations protecting cultural resources.

Because it is impossible to know at this time whether any subsurface cultural resources could be affected, it also cannot be determined whether the impacts of Alternative 2 would be less than those of the proposed project. Alternative 2 has a similar potential for unearthing cultural resources during development, and would be subject to similar regulations protecting cultural resources; therefore, the impacts of this alternative on cultural resources would be similar to those of the proposed project. In addition, because Alternative 2 would not change the sizes or locations of the WTGs, potential impacts on historic Scotia would be similar. The mitigation measures identified for the proposed project would also be available to Alternative 2.

## **Geology and Soils**

The same regulations governing site preparation and building construction would apply under both the proposed project and Alternative 2, including the California Building Code, which provides minimum standards for building design throughout California. Fewer ground-moving activities would occur under Alternative 2 and the potential for soil erosion or topsoil loss would be less substantial. The mitigation measures identified for the proposed project would also be available to Alternative 2, such as incorporating the recommendations of site-specific geotechnical reports and grading and erosion control plans.

## **Greenhouse Gas Emissions**

Alternative 2 would generate fewer total construction-related GHG emissions than the proposed project because the transmission line would be shorter, thus reducing construction time and the operation of construction equipment. Operational GHG emissions would be the same under either development scenario and implementation of Alternative 2, like the project, would contribute renewable energy source into the statewide energy portfolio that would not otherwise be available for use as alternative to fossil fuel fired plants. Impacts related to GHG emissions would be reduced under Alternative 2.

## **Hazards and Hazardous Materials**

Various federal, state, and local agencies extensively regulate the storage, use, disposal, and transport of hazardous materials. Project construction and operation under either Alternative 2 or the proposed project would

be required to comply with applicable building, health, fire, and safety codes. Reducing the transmission line's length and construction requirements at the Eel River would reduce the likelihood of a potential hazardous materials upset and accident condition. Impacts of Alternative 2 related to hazards and hazardous materials would be less than those of the proposed project.

## **Hydrology and Water Quality**

With a shorter gen-tie alignment, construction-related impacts on hydrology and water quality could be reduced under Alternative 2 relative to the proposed project. Less ground disturbance would occur, thus reducing the potential for erosion and sedimentation in on-site drainages. Constructing the transmission line above ground instead of boring under the river would avoid potential frac-out conditions that could adversely affect water quality in the Eel River, an impaired waterway. In addition, Alternative 2 would slightly reduce the amount of impervious surfaces added on-site compared to the proposed project, which would decrease the peak discharge flow and rate of stormwater runoff generated on the project site. With less overall development under Alternative 2, impacts on hydrology and water quality would be less than under the proposed project.

## **Noise**

Except for boring equipment, Alternative 2 would use the same types of construction equipment as the proposed project. However, the equipment would be used for a shorter time, which would reduce the potential temporary, short-term exposure of sensitive receptors to construction noise, groundborne noise, and vibration. Operational impacts would be similar. The access road alignment would require more construction, and more associated noise.

## **Transportation and Traffic**

Because the transmission line would be shorter under Alternative 2 than under the proposed project, less construction equipment and fewer workers would be needed. This would slightly reduce transportation impacts. However, if traffic on the bridge would be affected during construction of the transmission line, transportation and traffic impacts could increase slightly. Revisions to the access road alignment under Alternative 2 would not cause a substantial change in impacts on transportation and traffic relative to the proposed project because both development scenarios would require heavy trucks to travel along public roadways.

## **Fire Protection Services and Wildfire Hazards**

Under either Alternative 2 or the proposed project, the project design and ongoing maintenance would be subject to federal and state laws and industry practices that address the potential hazards of a wildfire. The project applicant must comply with requirements identified in the California Public Resources Code; vegetation clearance requirements outlined in Title 14, Section 1104.1(d) of the California Code of Regulations (14 CCR Section 1104.1[d]) for single overhead facilities; and California Public Utilities Commission (CPUC) General Order 95 requirements for overhead utility lines in high-fire-threat areas. Compliance with the existing design and O&M requirements for the facility and application of Mitigation Measure 3.10-1, "Prepare and Implement a Fire Services Financing Plan," and Mitigation Measure 3.10-2, "Prepare and Implement a Fall Protection Plan" would lessen impacts under either development scenario. Under Alternative 2, there would be less of a chance for the transmission line to be damaged by falling hazards, resulting in less potential for wildfire.

### **6.3.7 ALTERNATIVE 3: REDUCED TURBINE FOOTPRINT—MONUMENT RIDGE**

Alternative 3 would reduce the total number of WTGs from 60 to 23 and would avoid placing WTGs on Monument Ridge (Figure 6-2). Because the WTG count would be reduced, the WTGs selected would likely be the largest (600-foot maximum height). Fewer WTGs would provide greater spacing from sensitive areas identified in the project corridor. Based on a marbled murrelet risk assessment, this alternative would also likely reduce impacts on known marbled murrelet flyways. Alternative 3 would result in less ground disturbance and related impacts than the proposed project, and fewer visual impacts. This alternative is also expected to reduce mortality of birds and bats from collisions with rotor blades, relative to the proposed project.

#### **ABILITY OF ALTERNATIVE 3 TO MEET THE PROJECT OBJECTIVES**

Alternative 3 would not go as far as the proposed project toward meeting the project objectives because it would not be capable of generating 155 MW of energy. Alternative 3 would likely result in greater use of nonrenewable energy than the proposed project, which is estimated to displace emissions of approximately 372,000 metric tons per year of carbon dioxide (a GHG) that would otherwise be required to generate the same amount of electricity as the 155 MW generated by the proposed project.

#### **ENVIRONMENTAL IMPACTS**

##### **Aesthetics**

Aesthetically, fewer, larger WTGs are preferred over more, smaller turbines. Alternative 3 would reduce the number of WTGs visible from surrounding land. Impacts on visual resources would be less than those of the project because fewer WTGs would be visible.

##### **Agriculture and Forestry Resources**

Impacts of Alternative 3 on agriculture and forestry resources would be similar to those of the proposed project because the overall development corridor would be unchanged, to permit flexibility in planning during final engineering work, when the specific locations of individual WTGs would be finalized. However, permanent impacts on agriculture and forestry resources would be reduced because this alternative would require fewer WTG pads and associated access roads.

##### **Air Quality**

Alternative 3 would generate a smaller amount of construction-related pollutant emissions than the proposed project because of the reduced WTG count and reduced need for heavy machinery. Operational emissions under this alternative would be similar to those of the proposed project because there would be no changes to the O&M facility, although less maintenance would be required for the smaller number of WTGs.

##### **Biological Resources**

Impacts on birds and bats would be reduced under Alternative 3 relative to the proposed project because fewer WTGs would operate in a similarly sized project area. Impacts of physical ground disturbance for the access road and gen-tie alignment would remain the same as under the proposed project.

## **Cultural Resources, including Tribal Cultural Resources**

Should previously unidentified cultural materials be unearthed during project implementation, they would be subject to regulations protecting cultural resources. Alternative 3 and the proposed project would have similar impact to historic landscapes and tribal cultural resources since Bear River Ridge would be developed with the WTGs. Similarly, both development scenarios have the potential to unearth cultural resources during construction, and would be subject to similar regulations protecting cultural resources; therefore, the impacts of Alternative 3 on cultural resources would be similar to those of the proposed project. The mitigation measures identified for the proposed project would also be available to Alternative 3.

## **Geology and Soils**

The same regulations governing site preparation and building construction would apply under both the proposed project and Alternative 3, including the California Building Code, which provides minimum standards for building design throughout California. Fewer ground-moving activities would occur under Alternative 3 and the potential for soil erosion or topsoil loss would be less substantial. The mitigation measures identified for the proposed project would also be available to Alternative 3, such as incorporating the recommendations of site-specific geotechnical reports and grading and erosion control plans.

## **Greenhouse Gas Emissions**

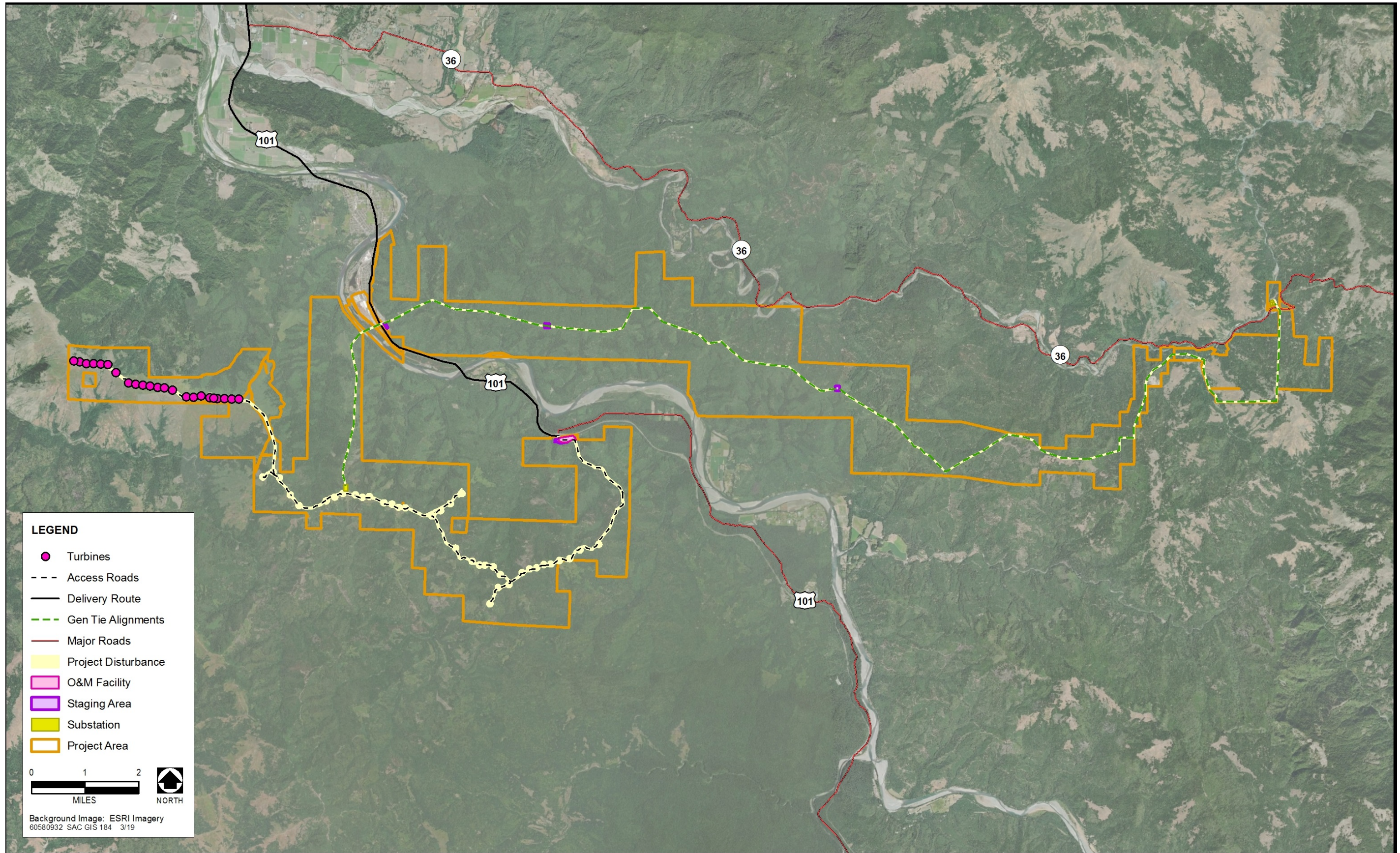
Alternative 3 would likely generate fewer short-term construction-related GHG emissions than the proposed project because of the lower WTG count. The WTGs and gen-tie would not emit GHGs, but the supporting O&M facility and related O&M activities would. Assuming that this alternative would have a support facility and operational procedures similar to those of the proposed project (although O&M activities would be slightly reduced), GHG emissions from project operations under Alternative 3 would be comparable to those from the proposed project. However, reducing the number of WTGs would lessen the amount of renewable energy available to the energy market, so Alternative 3 would not go as far as the proposed project toward reducing GHG emissions overall.

## **Hazards and Hazardous Materials**

Various federal, state, and local agencies extensively regulate the storage, use, disposal, and transport of hazardous materials. Project construction and operation under either Alternative 3 or the proposed project would be required to comply with applicable building, health, fire, and safety codes. Reducing the number of WTGs would reduce the likelihood of a potential hazardous materials upset and accident condition because fewer materials would need to be transported. Impacts of Alternative 3 related to hazards and hazardous materials would be less than those of the proposed project.







**Figure 6-2. Alternative 3: Reduced Turbine Footprint—Monument Ridge**

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## **Hydrology and Water Quality**

With its substantial reduction in development, Alternative 3 could reduce temporary construction-related impacts on hydrology and water quality relative to the proposed project. In addition, this alternative would slightly reduce the amount of impervious surfaces added on-site compared to the proposed project, which would decrease the peak discharge flow and rate of stormwater runoff generated on the project site. With less overall development under Alternative 3, impacts on hydrology and water quality would be less than under the proposed project.

## **Noise**

Alternative 3 would use the same types of construction equipment as the proposed project, but for a shorter time. This would reduce the potential temporary, short-term exposure of sensitive receptors to construction noise, groundborne noise, and vibration. Operational impacts would be reduced slightly.

## **Transportation and Traffic**

Transportation and traffic impacts would be reduced under Alternative 3 as fewer heavy truck trips are needed to haul project components to the site, reducing the length of time that vital roadway segments could be subject to closure.

## **Fire Protection Services and Wildfire Hazards**

Under either Alternative 3 or the proposed project, the project design and ongoing maintenance would be subject to federal and state laws and industry practices that address the potential hazards of a wildfire. The project applicant must comply with requirements identified in the California Public Resources Code; vegetation clearance requirements outlined in 14 CCR Section 1104.1(d) for single overhead facilities; and CPUC General Order 95 requirements for overhead utility lines in high-fire-threat areas. Compliance with the existing design and O&M requirements for the facility and application of Mitigation Measure 3.10-1, "Prepare and Implement a Fire Services Financing Plan," and Mitigation Measure 3.10-2, "Prepare and Implement a Fall Protection Plan" would lessen impacts under either development scenario.

## **ALTERNATIVE 4: REDUCED TURBINE COUNT**

Alternative 4 would place 31 WTGs within the same study corridor as the proposed project. Access to the WTG site would be provided from the planned road at the Jordan Creek Staging Area and the gen-tie would extend to the Bridgeville Substation using the same alignment as under the proposed project (Figure 6-3). Because the turbine count would be reduced, the WTGs selected for installation would be the largest (600-foot maximum height). Based on a marbled murrelet risk assessment, this alternative would likely reduce impacts on known marbled murrelet flyways. Compared to the proposed project, Alternative 4 would result in less ground disturbance during placement of individual WTGs and related impacts, and would place fewer WTGs in areas visible from surrounding lands. This alternative is also expected to reduce mortality of birds and bats from collisions with rotor blades by avoiding areas with high concentrations of birds and bats. Alternative 4 would also reduce but not eliminate direct impacts to historic cultural landscapes and tribal cultural resources identified along Bear River Ridge.

## **ABILITY OF ALTERNATIVE 4 TO MEET THE PROJECT OBJECTIVES**

Alternative 4 would not go as far as the proposed project toward meeting the project objectives because it would generate less power. Consequently, Alternative 4 would likely result in greater use of nonrenewable energy than the proposed project, which is estimated to displace emissions of approximately 372,000 metric tons per year of carbon dioxide (a GHG) that would otherwise be required to generate the same amount of electricity as the 155 MW generated by the proposed project.

## **ENVIRONMENTAL IMPACTS**

### **Aesthetics**

Aesthetically, fewer, larger WTGs are preferred over more, smaller turbines. Placing fewer WTGs in a layout similar to the configuration of the proposed project would reduce visual impacts compared to the proposed project. Impacts related to views of the WTGs as observed from Scotia would be reduced under Alternative 4 because fewer turbines would be visible from surrounding land.

### **Agriculture and Forestry Resources**

Alternative 4 would result in ground disturbance for road building and the gen-tie at a similar level to the proposed project these elements remain unchanged compared to the project. Permanent impacts to vegetation and land cover would be less than under the proposed project because fewer turbine pads and associated spur roads would be required.

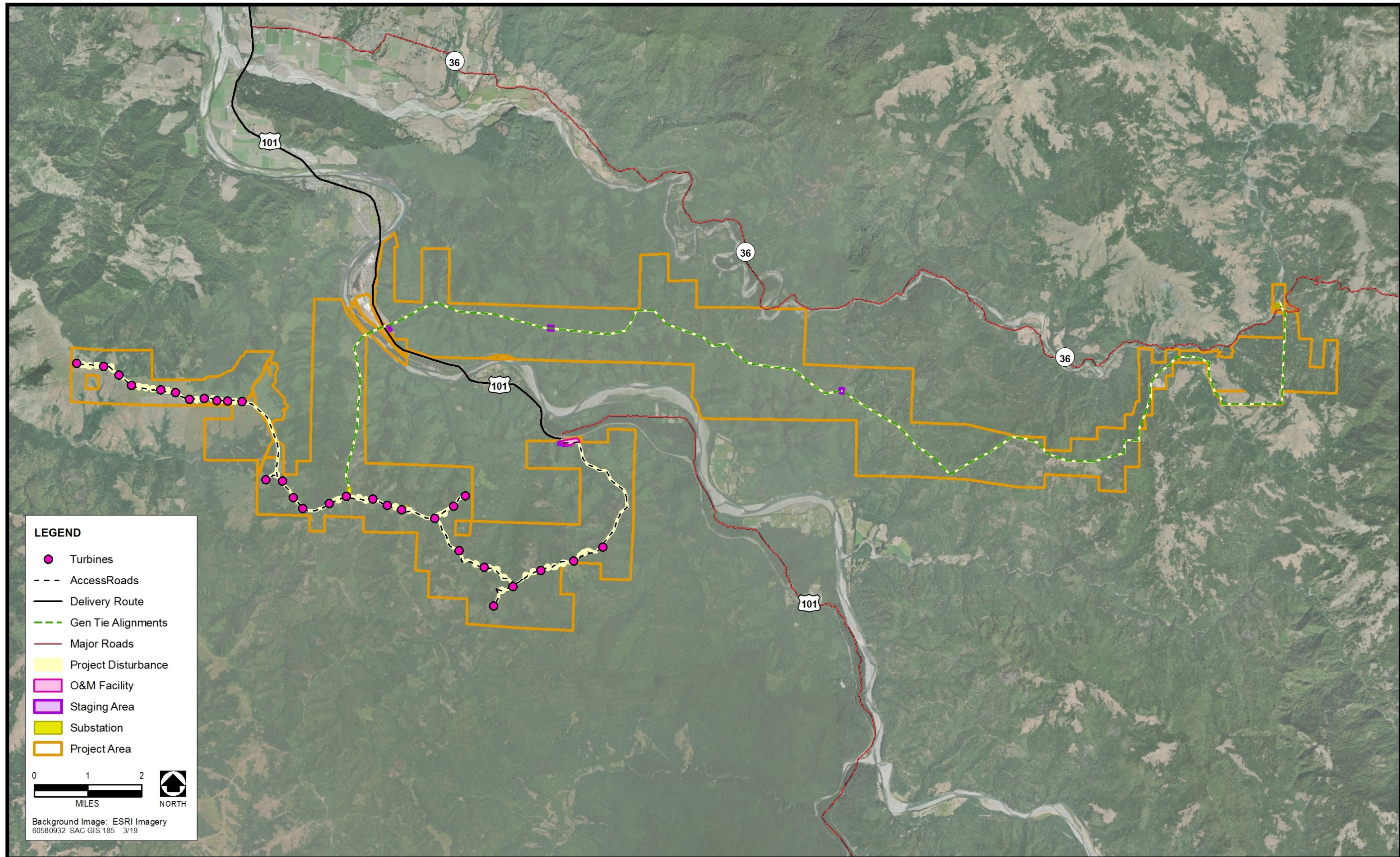
Consequently, impacts of Alternative 4 on agriculture and forestry resources would be less than those of the proposed project.

### **Air Quality**

Mobile and stationary sources would emit criteria pollutants during construction and operation under either the proposed project or Alternative 4. Because there would be fewer WTGs, construction-related emissions would be slightly less. No change to the O&M facility would occur, so operational emissions would be similar between Alternative 4 and the proposed project. Overall, construction impacts on air quality would be less under this alternative than under the proposed project because less land disturbance and related construction activity would be required.

### **Biological Resources**

The impacts of Alternative 4 on wildlife habitat would be less than those of the proposed project because constructing 31 WTGs under this alternative would require less land disturbance than constructing 60 WTGs under the proposed project. Moreover, reducing the number of WTGs has the potential to reduce the risk of avian and bat mortality because there would be greater flexibility for locating and spacing between the WTGs. (Note that this correlation is not certain and could be outweighed by placement of individual WTGs in certain locations.)



**Figure 6-3. Alternative 4: Reduced Turbine Count**

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## **Cultural Resources, including Tribal Cultural Resources**

Alternative 4 and the proposed project would have similar impact to historic landscapes and tribal cultural resources since Bear River Ridge would be developed with the WTGs; therefore, the impacts of Alternative 4 on cultural resources would be similar to those of the proposed project. The mitigation measures identified for the proposed project would also be available to Alternative 4.

Less land area would be disturbed under Alternative 4 than under the proposed project, thus reducing the potential for discovery of previously unidentified cultural resources. Should cultural materials be unearthed, they would be subject to regulations protecting cultural resources.

Because it is impossible to know at this time whether subsurface cultural resources could be affected, it also cannot be determined whether the impacts of Alternative 4 would be less than those of the proposed project. Alternative 4 has a similar potential for unearthing cultural resources during development, and would be subject to similar regulations protecting cultural resources; therefore, the impacts of this alternative on cultural resources would be similar to those of the proposed project. Despite being fewer in number, the WTGs would still be visible from the town of Scotia and would still substantially change the historical resources setting of Scotia.

## **Geology and Soils**

The same regulations governing site preparation and building construction would apply under both the proposed project and Alternative 4, including the California Building Code, which provides minimum standards for building design throughout California. This alternative would require less ground movement to install and operate 31 WTGs than the proposed project would require for 60 WTGs, thus reducing the potential for soil erosion or topsoil loss. The mitigation measures identified for the proposed project would also be available to Alternative 4, such as incorporating the recommendations of site-specific geotechnical reports and grading and erosion control plans.

## **Greenhouse Gas Emissions**

Alternative 4 would generate fewer total construction-related GHG emissions than the proposed project because fewer turbines would be installed, requiring fewer transportation-related trips and less construction activity. Operational impacts would be similar to those of the proposed project because O&M activity would not change substantially.

## **Hazards and Hazardous Materials**

Various federal, state, and local agencies extensively regulate the storage, use, disposal, and transport of hazardous materials. Project construction and operation activity under either Alternative 4 or the proposed project would be required to comply with applicable building, health, fire, and safety codes. Reducing the number of turbines under this alternative could decrease the likelihood of potential hazardous materials upset and accident condition. Impacts of Alternative 4 related to hazards and hazardous materials would be less than those of the proposed project.

## Hydrology and Water Quality

Temporary construction-related impacts on hydrology and water quality could be less under Alternative 4 than under the proposed project because of the decrease in number of WTGs. In addition, Alternative 4 would slightly reduce the amount of impervious surfaces compared to the proposed project, which would reduce the peak discharge flow and rate of stormwater runoff generated on the project site. All mitigation measures identified for the project would also be available for Alternative 4. Impacts on hydrology and water quality would be less than under the proposed project.

## Noise

Alternative 4 could generate slightly less construction noise over the project site and would reduce local operational noise impacts relative to the proposed project. The fewer WTGs operating under this alternative would be less noisy than the 60 WTGs associated with the proposed project.

## Transportation and Traffic

Transportation and traffic impacts could be less under Alternative 4 than under the proposed project. Fewer components would require transport along U.S. 101, reducing the amount of time that road closures or detours would be needed to accommodate construction activity. Traffic volumes during project operation would be similar under Alternative 4 and the proposed project because O&M activities would be similar.

## Fire Protection Services and Wildfire

Under either Alternative 4 or the proposed project, the project design and ongoing maintenance would be subject to federal and state laws and industry practices that address the potential hazards of a wildfire. The project applicant must comply with requirements identified in the California Public Resources Code; vegetation clearance requirements outlined in 14 CCR Section 1104.1(d) for single overhead facilities; and CPUC General Order 95 requirements for overhead utility lines in high-fire-threat areas. Compliance with the existing design and O&M requirements for the facility and application of Mitigation Measure 3.10-1, “Prepare and Implement a Fire Services Financing Plan,” and Mitigation Measure 3.10-2, “Prepare and Implement a Fall Protection Plan” would lessen impacts under either development scenario.

### 6.3.8 ALTERNATIVE 5: REDUCED TURBINE FOOTPRINT—BEAR RIVER RIDGE

Alternative 5 would reduce the total number of WTGs from 60 to 37 and would avoid placing WTGs on Bear River Ridge (Figure 6-4). Because the turbine count would be reduced, the WTGs selected would likely be the largest (600-foot maximum height). Fewer WTGs would provide greater spacing from sensitive areas identified in the project corridor. This alternative would avoid impacts on Bear River Ridge, which is considered a tribal cultural resource, and would reduce indirect effects on the Scotia historic district. Alternative 5 would result in less ground disturbance and related impacts than the proposed project, and fewer visual impacts. This alternative is also expected to reduce mortality of birds and bats from collisions with rotor blades, relative to the proposed project.



## **ABILITY OF ALTERNATIVE 5 TO MEET THE PROJECT OBJECTIVES**

Alternative 5 would not go as far as the proposed project toward meeting the project objectives because it would not be capable of generating 155 MW of energy. Alternative 5 would likely result in greater use of nonrenewable energy than the proposed project, which is estimated to displace emissions of approximately 372,000 metric tons per year of carbon dioxide (a GHG) that would otherwise be required to generate the same amount of electricity as the 155 MW generated by the proposed project.

## **ENVIRONMENTAL IMPACTS**

### **Aesthetics**

Aesthetically, fewer, larger WTGs are preferred over more, smaller turbines. Alternative 5 would reduce the number of WTGs visible from surrounding land and remove all turbines from Bear River Ridge. Impacts on visual resources would be less than those of the project because fewer WTGs would be visible.

### **Agriculture and Forestry Resources**

Impacts of Alternative 5 on agriculture and forestry resources would be similar to those of the proposed project because the overall development corridor would be unchanged, to permit flexibility in planning during final engineering work, when the specific locations of individual WTGs would be finalized. However, permanent impacts on agriculture and forestry resources would be reduced because this alternative would require fewer WTG pads and associated access roads.

### **Air Quality**

Alternative 5 would generate a smaller amount of construction-related pollutant emissions than the proposed project because of the reduced WTG count and reduced need for heavy machinery. Operational emissions under this alternative would be similar to those of the proposed project because there would be no changes to the O&M facility, although less maintenance would be required for the smaller number of WTGs.

### **Biological Resources**

Alternative 5 would have fewer impacts on birds and bats than the proposed project because fewer WTGs would operate in a similarly sized project area. Impacts of this alternative related to physical ground disturbance for the access road and gen-tie alignment would be the same as the impacts of the proposed project.

### **Cultural Resources, including Tribal Cultural Resources**

Should previously unidentified cultural materials be unearthed during project implementation, they would be subject to regulations protecting cultural resources. Alternative 5 and the proposed project would have similar potential to unearth cultural resources during development, and would be subject to similar regulations protecting cultural resources; therefore, the impacts of Alternative 5 on cultural resources would be similar to those of the proposed project. In addition, the WTGs would be less visible from Scotia under Alternative 5 than under the proposed project, thus reducing potential impacts on historic resources. Removal of WTGs from Bear River Ridge would also avoid the significant impact to Tribal Cultural Resources associated with the project. The mitigation measures identified for the proposed project would also be available to Alternative 5.

## **Geology and Soils**

The same regulations governing site preparation and building construction would apply under both the proposed project and Alternative 5, including the California Building Code, which provides minimum standards for building design throughout California. Fewer ground-moving activities would occur under Alternative 5 and the potential for soil erosion or topsoil loss would be less substantial. The mitigation measures identified for the proposed project would also be available to Alternative 5, such as incorporating the recommendations of site-specific geotechnical reports and grading and erosion control plans.

## **Greenhouse Gas Emissions**

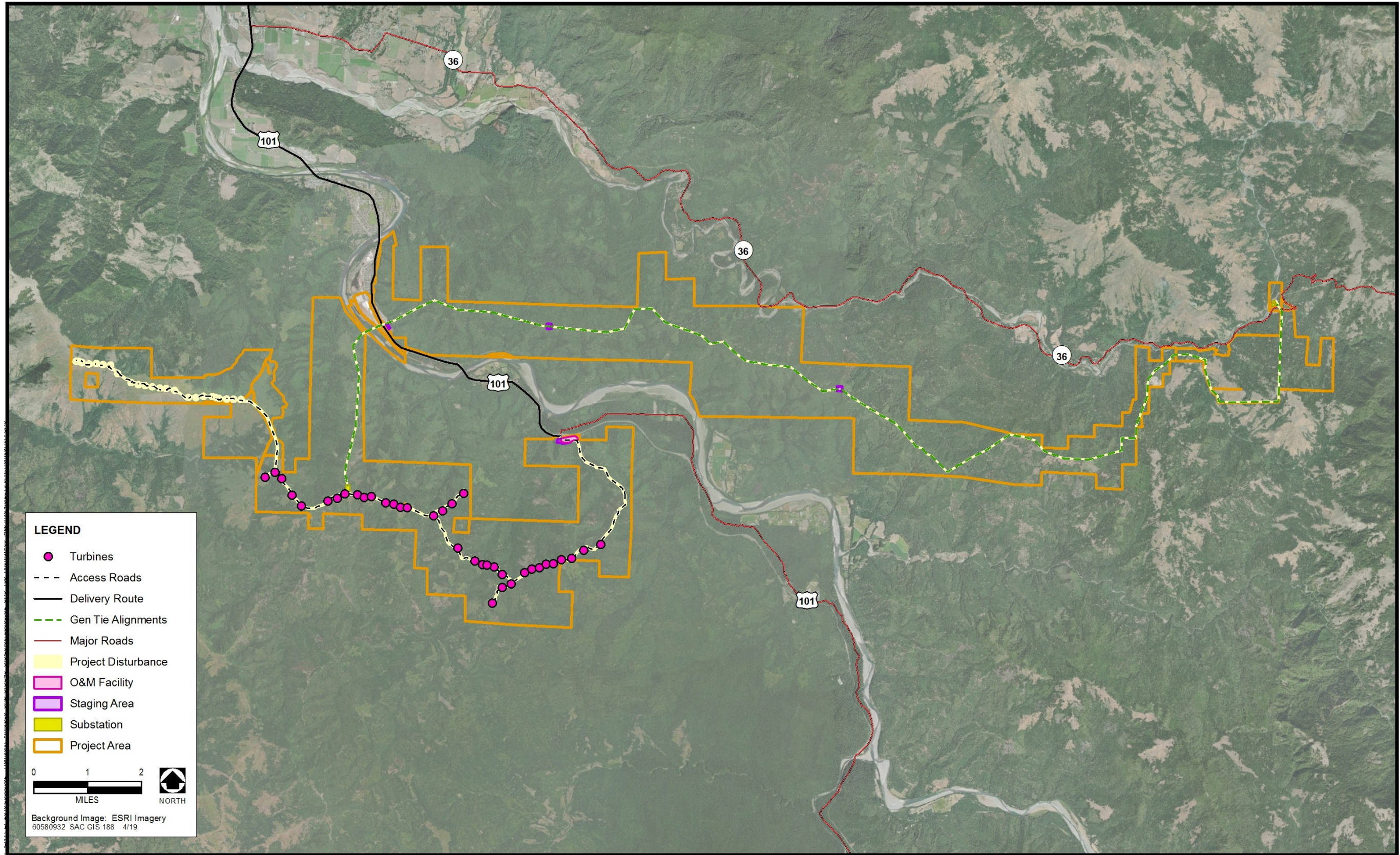
Alternative 5 would likely generate fewer short-term construction-related GHG emissions than the proposed project because of the lower WTG count. The WTGs and gen-tie would not emit GHGs, but the supporting O&M facility and related O&M activities would. Assuming that this alternative would have a support facility and operational procedures similar to those of the proposed project (although O&M activities would be slightly reduced), GHG emissions from project operations under Alternative 5 would be comparable to those from the proposed project. However, reducing the number of WTGs would lessen the amount of renewable energy available to the energy market, so Alternative 5 would not go as far as the proposed project toward reducing GHG emissions overall.

## **Hazards and Hazardous Materials**

Various federal, state, and local agencies extensively regulate the storage, use, disposal, and transport of hazardous materials. Project construction and operation under either Alternative 5 or the proposed project would be required to comply with applicable building, health, fire, and safety codes. Reducing the number of WTGs under this alternative would reduce the likelihood of a potential hazardous materials upset and accident condition because fewer materials would need to be transported. Impacts of Alternative 5 related to hazards and hazardous materials would be less than those of the proposed project.

## **Hydrology and Water Quality**

With its substantial reduction in development, Alternative 5 could reduce temporary construction-related impacts on hydrology and water quality relative to the proposed project. In addition, this alternative would slightly reduce the amount of impervious surfaces added on-site compared to the proposed project, which would decrease the peak discharge flow and rate of stormwater runoff generated on the project site. With less overall development under Alternative 5, impacts on hydrology and water quality would be less than under the proposed project.



**Figure 6-4. Alternative 5: Reduced Turbine Footprint—Bear River Ridge**

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## **Noise**

Alternative 5 would use the same types of construction equipment as the proposed project, but for a shorter time. This would reduce the potential temporary, short-term exposure of sensitive receptors to construction noise, groundborne noise, and vibration. Operational impacts would be reduced slightly.

## **Transportation and Traffic**

Transportation and traffic impacts would be reduced under Alternative 5 because fewer WTGs would be transported from Fields Landing to the project site, thus reducing the period of road closures. In addition, construction activity would occur over a shorter time period, resulting in fewer vehicle trips by construction workers traveling to and from the site.

## **Fire Protection Services and Wildfire Hazards**

Under either Alternative 5 or the proposed project, the project design and ongoing maintenance would be subject to federal and state laws and industry practices that address the potential hazards of a wildfire. The project applicant must comply with requirements identified in the California Public Resources Code; vegetation clearance requirements outlined in 14 CCR Section 1104.1(d) for single overhead facilities; and CPUC General Order 95 requirements for overhead utility lines in high-fire-threat areas. Compliance with the existing design and O&M requirements for the facility and application of Mitigation Measure 3.10-1, “Prepare and Implement a Fire Services Financing Plan,” and Mitigation Measure 3.10-2. “Prepare and Implement a Fall Protection Plan” would lessen impacts under either development scenario.

## **6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

Table 6-1 compares the environmental impacts of each alternative to those of the proposed project. The environmentally superior alternative is identified below. CEQA provides that an EIR must identify the environmentally superior project alternative (14 CCR Section 15126.6[e]). If the “no project” alternative is the environmentally superior alternative, then the EIR must also identify an environmentally superior alternative from among the others (14 CCR Section 15126.6[e][2]). In this case, the No Project Alternative is superior, so the EIR must select among the others for the environmentally superior alternative.

Based on the information provided above, Alternative 5, Reduced Turbine Footprint—Bear River Ridge, is considered environmentally superior to the project. Compared to the proposed project, this alternative would reduce impacts on all resource areas except GHG emissions, and fire protection services and wildfire hazards.

**Table 6-1. Comparison of Alternatives**

Issue	Alternative 1: No Project	Alternative 2: Realigned Gen-Tie and Access Road	Alternative 3: Reduced Turbine Footprint— Monument Ridge	Alternative 4: Reduced Turbine Count	Alternative 5: Reduced Turbine Footprint—Bear River Ridge
Aesthetics	No impact	Similar	Reduced	Reduced	Reduced
Agriculture and Forestry Resources	No impact	Reduced	Reduced	Reduced	Reduced
Air Quality	No impact	Reduced	Reduced	Reduced	Reduced
Biological Resources	No impact	Cannot be determined	Reduced	Reduced	Reduced
Cultural Resources, including Tribal Cultural Resources	No impact	Similar	Similar	Similar	Reduced
Geology and Soils	No impact	Reduced	Reduced	Reduced	Reduced
Greenhouse Gas Emissions	No impact	Greater	Greater	Greater	Greater
Hazards and Hazardous Materials	No impact	Reduced	Reduced	Reduced	Reduced
Hydrology and Water Quality	No impact	Reduced	Reduced	Reduced	Reduced
Noise	No impact	Cannot be determined	Reduced	Reduced	Reduced
Transportation and Traffic	No impact	Cannot be determined	Reduced	Reduced	Reduced
Fire Protection Services and Wildfire Hazards	No impact	Similar	Similar	Similar	Similar
<i>Total Reduced Impacts</i>	<i>12</i>	<i>5</i>	<i>9</i>	<i>9</i>	<i>10</i>
Source: Data compiled by AECOM in 2019					