DOCKETED	
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Project Title:	Fountain Wind Project
TN #:	248330-4
Document Title:	Project Revisions Memo Feb 2021
Description:	N/A
Filer:	Caitlin Barns
Organization:	Stantec Consulting Services, Inc.
Submitter Role:	Applicant Consultant
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Docketed Date:	1/5/2023

Stantec

Memo

To:	Lio Salazar	From:	Caitlin Barns
	Shasta County Planning		Portland, Oregon
File:	Fountain Wind Project	Date:	February 12, 2021

Reference: Analyses of Refinements to the Project Description Since Circulation of the Draft Environmental Impact Report

1.1 REFINEMENTS TO THE PROJECT DESCRIPTION SINCE CIRCULATION OF THE DEIR

Since issuance of the Draft EIR, the project applicant has continued to coordinate with Shasta County staff and the regulatory agencies to further refine the project layout based on the presence of sensitive resources and the availability of updated turbine models that were not on the market when the application was submitted, as well as other factors. Supplemental technical studies conducted in support of the project were used to further refine the project footprint. The project applicant also reviewed public comments submitted in response to the DEIR to assess whether project refinements that respond to concerns stated by commenters could be incorporated. As a result, the project applicant has made a number of refinements to the proposed project since circulation of the DEIR. These refinements include the following:

- **Layout refinements to avoid sensitive environmental resources and improve engineering design.** Since the circulation of the DEIR, the applicant has refined the project footprint by eliminating one wind turbine generator location, and realigning access roads and electric collection lines. This has resulted in the avoidance or minimization of impacts on sensitive environmental resources, including a reduction in direct impacts on aquatic resources, riparian habitats, and a previously identified cultural site (FW 11). The majority of these changes occur within the Project Site defined in the DEIR, but several adjustments occur slightly (<500 ft) outside the Project Site boundaries, resulting in the need for additional surveys. A comparison of the modified project footprint in relation to the Project Site examined in the DEIR is depicted in Figure 1.
    - Refinement 1 (Survey Area 1): moved overhead collection line and associated access road up to approximately 250 ft west to avoid existing drainage and associated aquatic features including a perennial stream, intermittent stream, and riparian wetland segments.
    - Refinement 2 (Survey Area 2): moved access road up to approximately 130 ft northeast in order to utilize existing crossing of a nearby perennial stream and associated adjacent wetlands.
    - Refinements 3 (Survey Area 3): moved access road up to approximately 125 ft east in order to straighten access road.
    - Refinement 4 (Survey Area 4): moved access road up to approximately 275 ft east in order to utilize existing access road.
    - Refinement 5 and 6 (Survey Area 5 and 6): moved overhead collection line up to approximately 250 ft west in order to avoid building collection line on sloping terrain and align with an existing access road corridor.
    - Refinement 7 (FW 11): moved underground collection line approximately 100 ft west to avoid cultural resource site.

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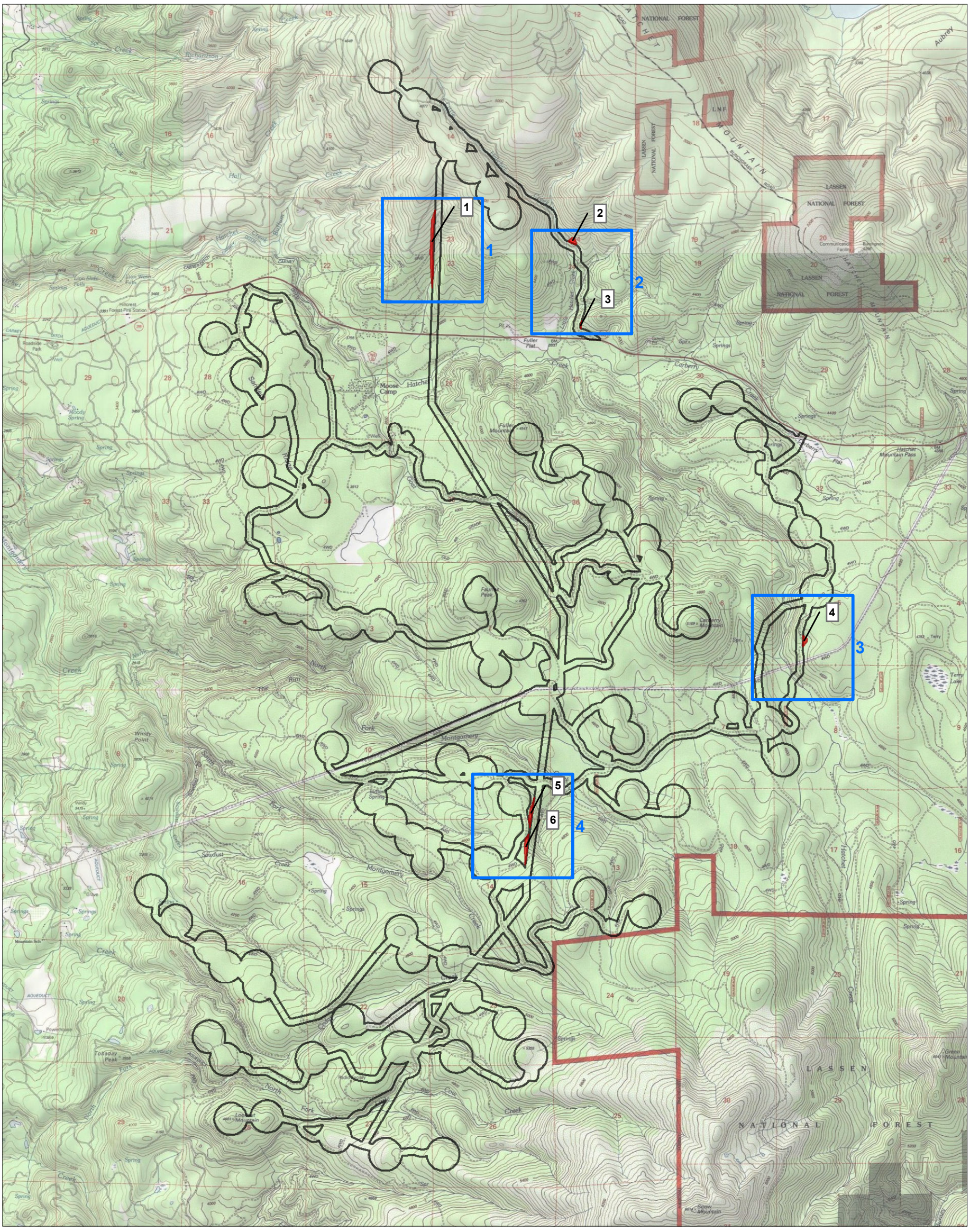

Legend

- Map Index
- Survey Areas
- Proposed Project Site

Notes

1. Coordinate System: NAD 1983 2011 StatePlane California I FIPS 0401 Ft US
2. Base features USGS 2020; Esri 2020

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Project Location

185804576

Shasta County, CA

Prepared by JC on 2020-11-13
Technical Review by ES on 2020-11-13
Independent Review by CB on 2020-11-13

Client/Project

ConnectGen Generating LLC
Fountain Wind Project

Figure No.

1

Title

Project Location

Reference: Analyses of Refinements to the Project Description Since Circulation of the Draft Environmental Impact Report

- **Elimination of turbine location M03**. The applicant has chosen to eliminate turbine location M03 from further consideration as a potential turbine siting location in response to CDFW concerns about the potential for higher collision risk for raptors at this location. The two years of avian used data did not reflect observations of high raptor visitation at Turbine M04, therefore that turbine is being retained as part of the proposed project.
- **Clarification regarding fiber optic cable installation**. Chapter 2, Description of Project and Alternatives, in the Draft EIR states that the Project would include installation of a communication system within the same footprint as the electrical collection system. "The communication system consists of fiber optic communication cabling for the Supervisory Control and Data Acquisition (SCADA) system, which provides communication capabilities between turbine locations, substation, and operations and maintenance facilities. Most of the collector system would be located underground and adjacent to onsite access roads" (DEIR Section 2.4.2). To clarify this description, fiber optic cabling would be installed within the footprint of the electrical collection system as well as within approximately 4.5 miles of existing access roads in the northeastern portion of the Project Site. The approximately 4.5 miles of fiber optic cabling co-located with the existing roads would connect the proposed electrical system to the operations and maintenance facility, and to the existing fiber optic system located off of SR 299. See Figure 2.
- **Clarification of PG&E facilities**. Chapter 2, Description of Project and Alternatives, in the Draft EIR describes the PG&E upgrades needed as a result of constructing the new substation and switching station:

  > "Upgrades to PG&E facilities are anticipated to include construction or reconfiguration of utility line structures and transmission line circuits involving four to six new transmission poles. If required, the new poles would be located adjacent to the proposed substation and switching station...The Applicant would construct the switching station; PG&E would construct the electrical connections to its facility. PG&E ultimately would own and operate the switching station and interconnection components" (DEIR Section 2.4.2).

  Several clarifications are suggested for this description. First, in addition to the four to six new transmission poles, up to four replacement poles could be associated with replacement or reconfiguration of the existing utility line structures within the existing right of way. Second, a stormwater retention basin is planned for the proposed switching station facility and would be constructed within the switching station permanent footprint. See Figure 3 below which provides an updated design of the proposed switching station. Third, the switching station would be electrically connected to the substation. And lastly, the Applicant will build and own the Project substation while PG&E will own and operate the switching station and interconnection lines.
- **Additional project design features and Applicant Proposed Measures.** The applicant has identified several additional Applicant Proposed Measures (APMs) as set forth below. Although the Draft EIR is legally adequate without these additional measures, the applicant is voluntarily offering them and agrees that the County can impose these APMs as Conditions of Approval. These include:

- Preparation of a worker environmental awareness training program to be implemented during construction;
- Continued application of relevant provisions from US Fish and Wildlife Service's (USFWS) Land-Based Wind Energy Guidelines (WEGs) during construction and operation of the Project;
- Preparation and implementation of a Bird and Bat Conservation Plan (BBCS), which will detail measures to be taken during project operations to reduce impacts to birds and bats. Measures include post-construction mortality monitoring, prey reduction techniques, and adaptive management strategies;
- Development of a Nesting Bird Management Plan (NBMP) in coordination with California Department of Fish and Wildlife to avoid or minimize adverse impacts to nesting birds during construction. The NBMP will establish nesting seasons, species-specific avoidance buffers, and measures to reduce disturbance to nests;
- Application of measures described in the Avian Power Line Interaction Committee (APLIC) guidelines to reduce avian collisions and electrocution with project infrastructure, including installation of bird flight diverters and electrical design recommendations;
- Adoption of a Federal Aviation Administration-approved lighting plan for meteorological towers, and downward-facing and shielded lighting on other project components in consideration of the USFWS Communication Tower Guidance, to reduce the potential for nocturnal bird collisions;
- Implementation of an Invasive Species Management Plan prior to construction, to include invasive weed control measures and best practices to reduce introduction or limit the spread of noxious weed species; and
- Avoidance of sensitive habitats and waterways during application of dust palliatives.

- **Option to use more advanced wind turbine model**. A higher capacity, more efficient wind turbine model has recently become commercially available. Recent advancements in turbine technology have trended toward increasing the generating capacity and efficiency of individual turbines, resulting in the potential to install fewer turbines with higher rated nameplate generating capacities. The DEIR indicated that the applicant would be selecting turbines that could range between 3.0 MW to 5.7 MW. The applicant is now proposing that it be permitting to select a model of up to 6.2MW in capacity.

  The applicant has revised the project description to include the ability to select among a range of turbine nameplate capacities, ranging from 3.0 MW to 6.2 MW. This modification also allows further flexibility to account for generating capacity rating changes to existing turbine models. For instance, advanced software applications may allow a 5.7 MW turbine to operate at a 6.0 MW capacity without physical changes to the turbine. The proposed, expanded capacity range also captures any capacity upgrades that manufacturers could release for the originally proposed turbine models prior to construction. Since it is not possible at this time to ensure that any particular model of turbine will be available when the project is constructed, the FEIR assumes that any model between the lowest and highest capacity range could be selected. Table 1 compares the specifications of the turbine model options.

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Legend

- Turbine
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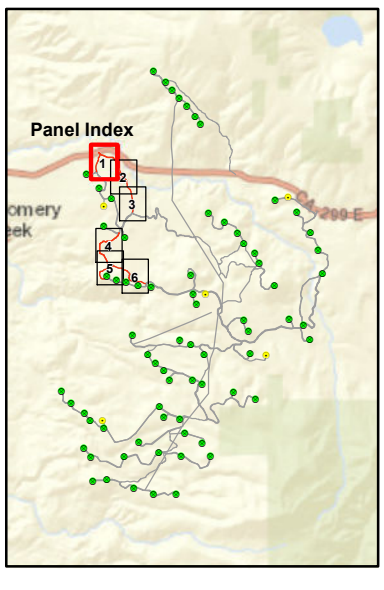
- Fiber Run
- Permanent Disturbance Footprint
- Permanent Disturbance
- Temporary Disturbance



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Stantec

Project Location

Shasta County, CA

185804576
Prepared by JSB on 2021-02-09
Technical Review by xxx on xxxx-xx-xx
Independent Review by xxx on xxxx-xx-xx

Client/Project

ConnectGen Generating LLC
Fountain Wind Project

Figure No.

2

Title

Fiber Optic Runs

Notes

1. Coordinate System: NAD 1983 2011 StatePlane California I FIPS 0401 Ft US
2. Base features: USGS 2020, Esri 2020

Panel 1 of 6

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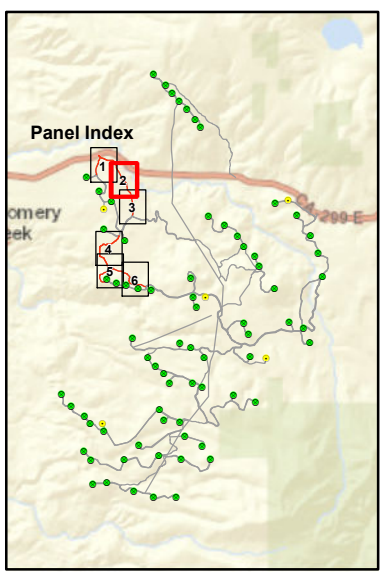

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Technical Review by xxx on xxxx-xx-xx
Independent Review by xxx on xxxx-xx-xx

Client/Project

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Fountain Wind Project

Figure No.
2

Title
Fiber Optic Runs

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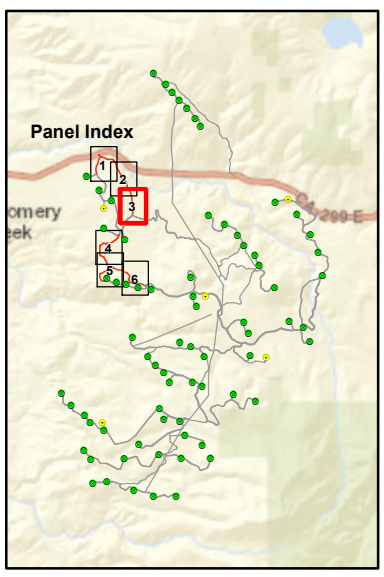

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Technical Review by xxx on xxxx-xx-xx
Independent Review by xxx on xxxx-xx-xx

Client/Project

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Fountain Wind Project

Figure No.

2

Title

Fiber Optic Runs

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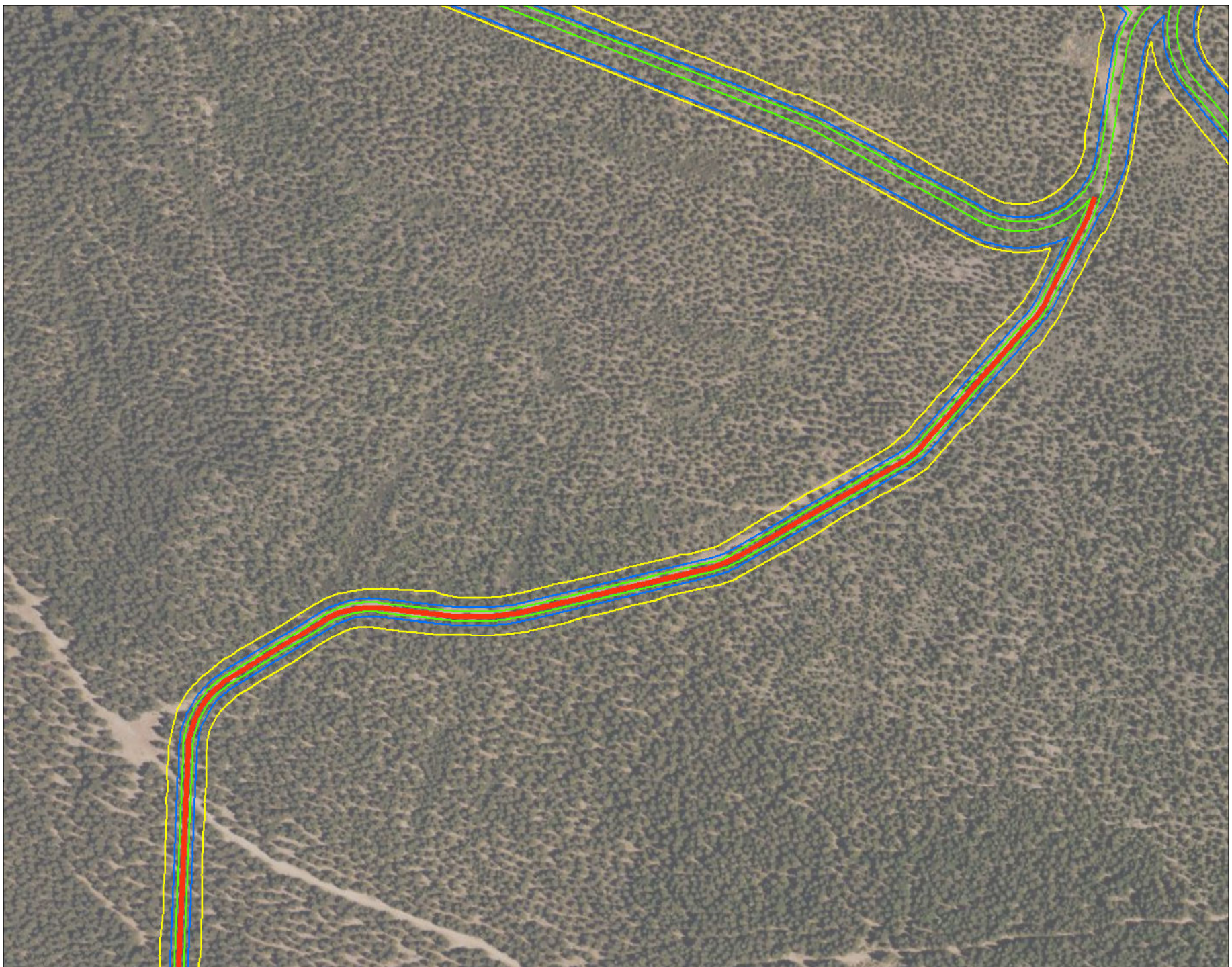

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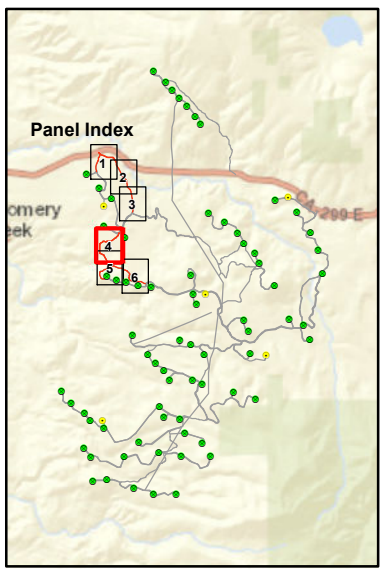

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Technical Review by xxx on xxxx-xx-xx
Independent Review by xxx on xxxx-xx-xx

Client/Project

ConnectGen Generating LLC
Fountain Wind Project

Figure No.

2

Title

Fiber Optic Runs

Notes

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2. Base features: USGS 2020, Esri 2020

Panel 4 of 6

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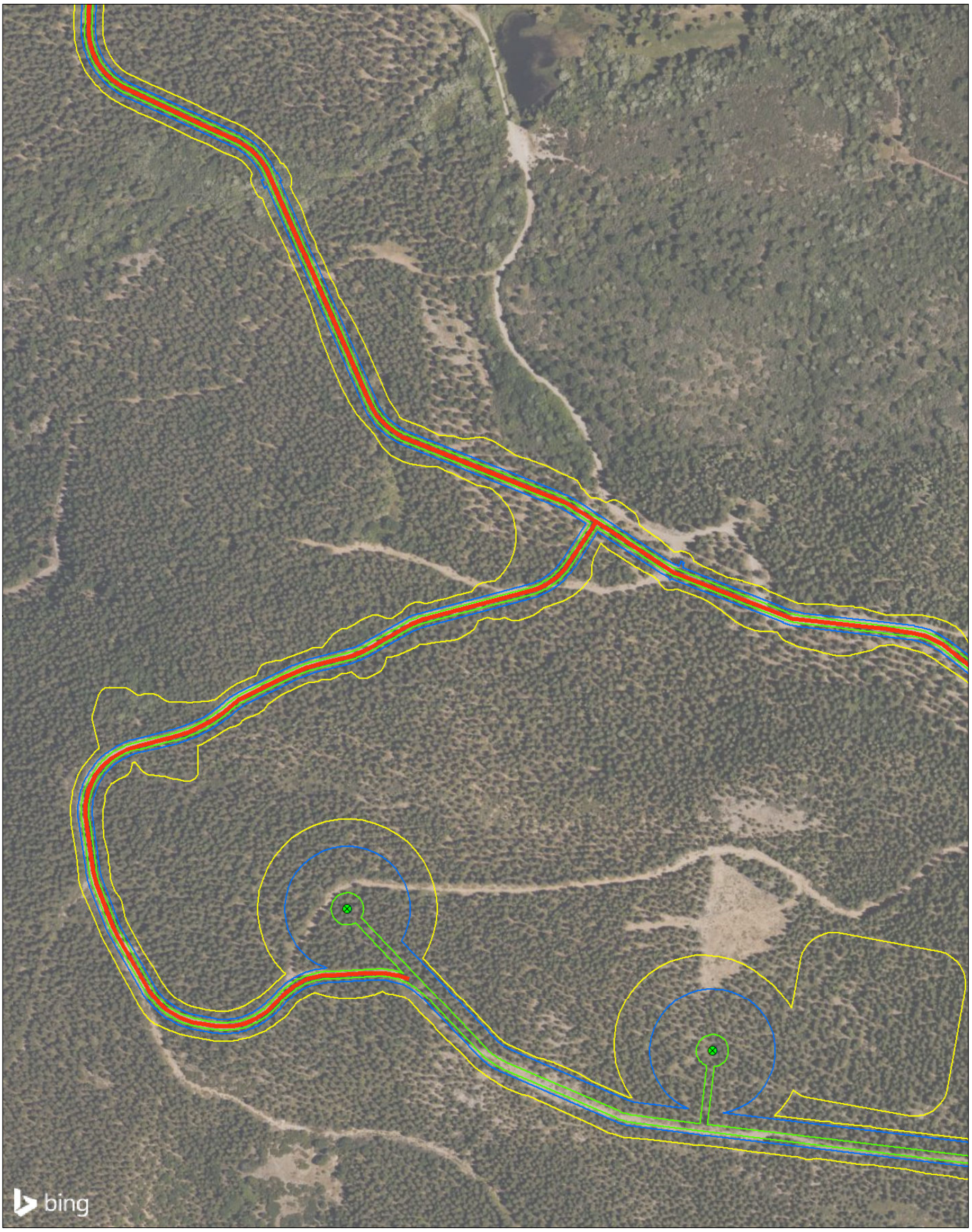

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1. Coordinate System: NAD 1983 2011 StatePlane California I FIPS 0401 Ft US
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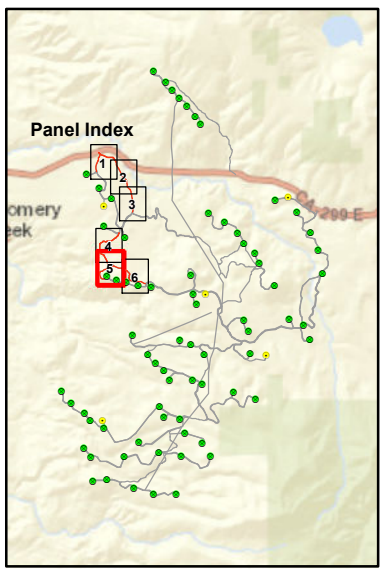

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Independent Review by xxx on xxxx-xx-xx

Client/Project

ConnectGen Generating LLC
Fountain Wind Project

Figure No.

2

Title

Fiber Optic Runs

Panel 5 of 6

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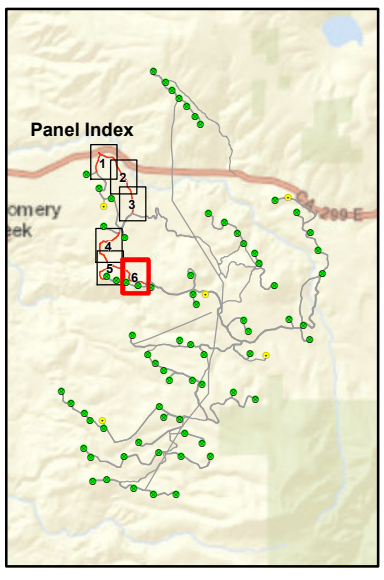

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Technical Review by xxx on xxxx-xx-xx
Independent Review by xxx on xxxx-xx-xx

Client/Project

ConnectGen Generating LLC
Fountain Wind Project

Figure No.

2

Title

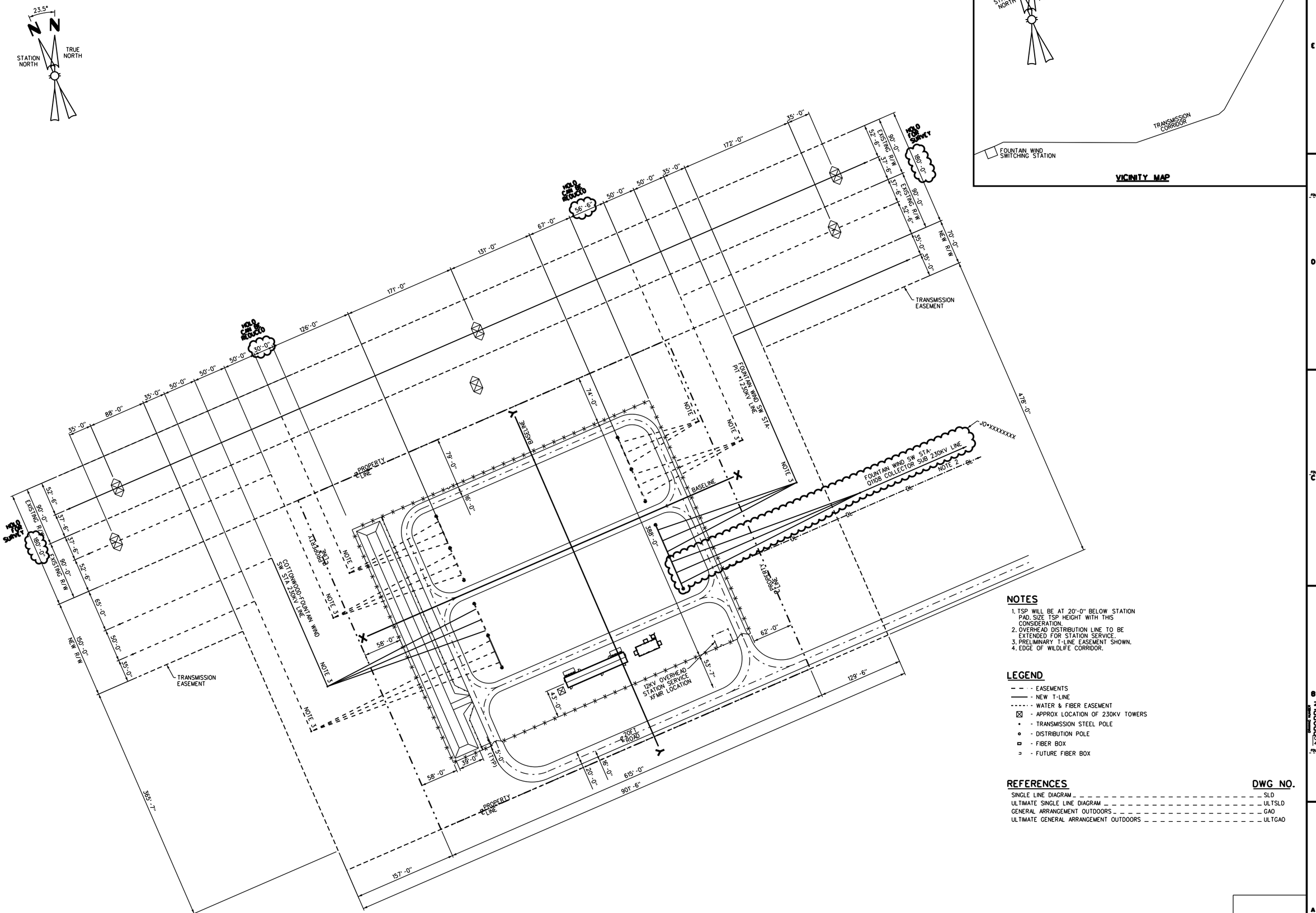
Fiber Optic Runs

Panel 6 of 6

Notes

1. Coordinate System: NAD 1983 2011 StatePlane California I FIPS 0401 Ft US
2. Base features: USGS 2020, Esri 2020

Figure 3. Switchyard and Substation Design



NOTES

1. TSP WILL BE AT 20'-0" BELOW STATION PAD. SIZE TSP HEIGHT WITH THIS CONSIDERATION.
2. OVERHEAD DISTRIBUTION LINE TO BE EXTENDED FOR STATION SERVICE.
3. PRELIMINARY T-LINE EASEMENT SHOWN.
4. EDGE OF WILDLIFE CORRIDOR.

LEGEND

- - - - EASEMENTS
——— NEW T-LINE
- - - - - - WATER & FIBER EASEMENT
⊠ - APPROX LOCATION OF 230KV TOWERS
• - TRANSMISSION STEEL POLE
o - DISTRIBUTION POLE
▭ - FIBER BOX
▭ - FUTURE FIBER BOX

REFERENCES

	DWG NO.
SINGLE LINE DIAGRAM	SLD
ULTIMATE SINGLE LINE DIAGRAM	ULTSLD
GENERAL ARRANGEMENT OUTDOORS	GAO
ULTIMATE GENERAL ARRANGEMENT OUTDOORS	ULTGAO

ELECTRIC TRANSMISSION ENGINEERING & CONSTRUCTION
FOR QUESTIONS ON REV A OF THIS DWG
Coll DASHIELL– at xxx-xxx-xxxx
Coll DASHIELL-RAJA KODURU at 713-578-6218

SUBSTATION & TRANSMISSION	SWITCHING STATION	CIVIL	FOUNTAIN WIND SWITCHING STATION	ARRANGEMENT	ACTIVE		SUBSTATION	230KV
BUSINESS LINE	FACILITY TYPE	DISCIPLINE	FACILITY NAME	DRAWING TYPE	STATUS	PROJECT	FACILITY COMPONENT	UNIT

REV	DATE	DESCRIPTION	JOB NO	USR/DWN	CHKD	SUPV	APVD
A		APPROVED FOR CONSTRUCTION		JME		RKK	
–	–	REFERENCE EDS 4042042 REV 4	–	–	–	–	–

W.O. REV. 1
DSG J. EMMERT
DWN
CHKD
SUPV R. KODURU
APVD
APVD
DATE

PROPERTY PLAN
FOUNTAIN WIND SWITCHING STATION
DEPARTMENT OF ENGINEERING
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

SCAN | IC
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PROPPLN | REV A

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VECTOR: PROPPLN.DGN
RASTER:

Reference: **Analyses of Refinements to the Project Description Since Circulation of the Draft Environmental Impact Report**

Table 1. Comparison of Turbine Options

Turbine Specifications	Turbine Models Proposed in DEIR		Optional Turbine Model	Percent Change from Maximum Assumed in DEIR
	3.0 MW	5.7 MW	6.2 MW	
Number of Towers[1]	72	37	34	--
Rotor Diameter	417 ft (127 m)	531 ft (162 m)	558 ft (170 m)	+5%
Blade Length	186 ft (62 m)	237 ft (79 m)	250 ft (83 m)	+5%
Hub Height	292 ft (89 m)	410 ft (125 m)	377 ft (115 m)	-8%
Total Turbine Height	500 ft (152.5 m)	676 ft (206 m)	656 ft (200 m)	-3%
Rotor-swept Area per Turbine	136,572 sq ft	221,452 sq ft	244,545 sq ft	+10%
Total Rotor-swept Area	9,833,184 sq ft	8,193,724 sq ft	8,314,530 sq ft	-15%

1.2 SCOPE OF ANALYSES CONDUCTED FOR REFINEMENTS TO THE PROJECT DESCRIPTION SINCE CIRCULATION OF THE DEIR

This memorandum contains results of analyses undertaken to support the conclusion that the project refinements would not result in any new or substantially more severe environmental impacts beyond those that were disclosed in the DEIR. Accordingly, the applicant reviewed the potential for proposed project refinements to affect resource topics considered in the DEIR. The project changes analyzed in this document would, under CEQA, have no impact to the following topic areas, and thus no further analyses are included herein:

- Agriculture and Forestry Resources
- Air Quality and Greenhouse Gas Emissions
- Communications
- Energy
- Geology and Soils, or Paleontological or Mineral Resources
- Land Use and Planning
- Population and Housing
- Public Services
- Recreation
- Transportation
- Utilities and Service Systems
- Wildfire

For several topics considered in the DEIR, including biological resources, cultural resources, visual resources, noise, hazards and hazardous materials, and hydrology and water quality Stantec has conducted supplemental analyses and technical studies to substantiate and confirm the impact analyses presented in the DEIR as applied to the project revisions. The results of these analyses are presented in the following sections. Topic areas for which an additional technical report was produced include:

[1] The EIR assumes the Project could include up to 72 turbines. The total number of wind turbines would depend on the turbine model selected and final design. Calculations are estimations based on this range.

- Biological resources: results of botanical, wetland, and wildlife pedestrian survey of unsurveyed areas resulting from refinements to the project footprint (Appendix A).
- Cultural resources: results of cultural pedestrian survey of unsurveyed areas resulting from refinements to the project footprint (Appendix B).
- Shadow flicker: results of analyses of potential impacts shadow flicker from use of 6.2 MW turbines (Appendix C).

1.3 RESULTS OF SUPPLEMENTAL ENVIRONMENTAL ANALYSIS OF PROJECT REVISIONS

The proposed revisions to the project description result in no change to the impact conclusions presented in the DEIR, as many project refinements result in no new impacts or a reduction in potential impacts to sensitive resources. This conclusion is supported by supplemental technical studies where necessary. These are not considered "significant new information" requiring recirculation under section 15088.5 of the CEQA Guidelines because they show either no changes in the potential for environmental impacts or reduced potential for environmental impacts. Analyses supporting this conclusion are presented in the following sections and in the attached appendices.

1.3.1 BIOLOGICAL RESOURCES

Sensitive Natural Communities and Special Status Plants

Vegetation communities present in Survey Areas 1-6 were consistent with communities reported in the initial technical studies; no unique soil types, new vegetation assemblages, or rock outcrops were present. No special status plants or new sensitive natural communities were observed during surveys. The new areas surveyed were consistent biologically with the previously surveyed adjacent areas.

Wetlands and Aquatic Features

A perennial stream and riparian wetlands occur in Survey Area 1 (Figure 1A). The perennial stream and associated riparian corridor are continuations of features mapped during the project's aquatic resources survey (Stantec 2019a). Based on a review of datasheets collected for perennial streams and riparian wetlands in the survey area, the features' vegetation, hydrology, and soils were very similar to previously observed characteristics. Accordingly, there would be no change to the impact conclusion presented in the DEIR.

The project footprint described in the DEIR would have located an overhead collection line within the drainage feature located adjacent to Survey Area 1 for approximately 3,800 feet. The drainage feature is made up of segments categorized as intermittent stream, perennial steam, and riparian wetland. The overhead collection line was moved up to 250 ft west to avoid direct impacts to the feature and its riparian corridor, and in response to a comment letter from CDFW requesting impacts to riparian habitat be minimized further. As a result of the reroute in this location, direct impacts to this drainage and its riparian corridor would be substantially reduced.

Reference: Analyses of Refinements to the Project Description Since Circulation of the Draft Environmental Impact Report

Special Status Wildlife

Soils, plant species and communities, and habitats present in the expanded survey areas are consistent with the description of habitats present in the previous project surveys. Accordingly, there would be no differences in use by or potential to be impacted for any species of common or special status wildlife as compared with reports composed for the project as originally designed, as well as the implementation of mitigation measures proposed in the DEIR.

Birds and Bats

Option to Use Up to 6.2 MW Turbine Model. The higher-capacity turbines have a larger rotor-swept area than the range of originally proposed 3.0 MW turbines (79% larger per turbine) and 5.7 MW turbines (10% larger per turbine). In general, a larger rotor-swept area per turbine could result in greater strike risk to birds and bats. However, because the higher-capacity, turbines are more efficient, the applicant requires fewer of them to reach the project's maximum nameplate capacity of 216 MW. Therefore, with the use of the the additional turbine option, there would be a reduction in total rotor-swept area of up to 1.2 million sq ft, or 15%, in comparison with the rotor-swept area that would result from the use of the 3.0 MW turbines, or nearly 145,000 sq ft or 1% resulting from the use of the 5.7 MW turbines. As a result, there would be an up to 15% reduction in the strike risk to birds and bats if the 6.2 MW turbine option is selected.

Elimination of Turbine Location M03. Results of avian point count surveys undertaken during preparation of the DEIR suggest that the proposed location of Turbine M03, located on the edge of the proposed Project Site, was visited at a higher frequency by raptor species than other turbine locations. Although Year 2 point count surveys did not show any higher frequency of use, the applicant chose to eliminate this turbine location from the project, thereby eliminating its potential to directly impact birds or bats. Because Point Count survey data did not reflect observation of high raptor use at Turbine M04, that turbine remained part of the project.

Design Features and Updates to APMs. Implementation of the applicant's additional voluntary protection measures would not increase any previously identified environmental impact or result in any new environmental impacts. The applicant will continue to develop, construct, and operate the project in consideration of the USFWS's Wind Energy Guidelines to reduce potential interaction with biological resources. Although not a requirement, the applicant will prepare a BBCS and NBMP, which will include commitments to perform post-construction mortality monitoring, prey reduction measures, adaptive management strategies, and nest avoidance strategies, that when implemented would avoid or reduce potential impacts to avian and bat species.

Impacts to birds and bats resulting from project operation will be further reduced through the implementation of several additional applicant commitments, including application of the Avian Power Line Interaction Committee's (APLIC) guidelines to reduce collisions (APLIC 2012) and electrocution (APLIC 2006). By following guidance in the 2012 manual, the applicant will reduce potential bird collisions with overhead collector lines by employing line marking devices. And by following the guidance in the 2006 manual, the applicant will reduce potential bird electrocutions by separating grounded and energized portions of aboveground collector lines.

Reference: Analyses of Refinements to the Project Description Since Circulation of the Draft Environmental Impact Report

In addition, the applicant has committed to preparing a Federal Aviation Administration-approved lighting plan for meteorological towers, and also follow USFWS Communication Tower Guidance such as using downward-facing and shielded lighting on other project components, to reduce the potential for nocturnal bird collisions. Shielded or downward-facing lighting reduces the potential for accidental attraction, collisions, or disorientation.

1.3.2 CULTURAL RESOURCES

This memorandum concludes that the revisions to the project would not result in any new or substantially more severe environmental impacts on cultural resources. Environmental conditions in Survey Areas 1-6 closely match those described during previous surveys (Stantec 2019b). Ground disturbances associated with logging activities, including tracks, pits, and ruts consistent with the use of trucks and large tracked equipment, were observed in all locations. Understory management in Survey Areas 4, 5, and 6 appeared to have occurred recently. No cultural resources were observed, and Survey Areas 1-6 do not possess heightened potential for the presence of buried cultural resources relative to the adjacent, previously surveyed areas.

In addition, the Project Site analyzed in the DEIR identifies an underground collection line within a cultural resource site (FW 11). FW 11 is comprised of prehistoric and historic cultural resources, including prehistoric basalt and black obsidian flakes and flake tools, and historic logging artifacts. The applicant has realigned the footprint of the collection line within the Project Site to avoid intersecting FW 11, thereby avoiding impacts to that site (See Figure B1 in Appendix B).

1.3.3 HYDROLOGY AND WATER QUALITY

A perennial stream occurs in Survey Area 1 (Figure A1). The perennial stream is a continuation of a feature mapped during the project's aquatic resources survey (Stantec 2019a). Based on a review of datasheets collected for perennial streams in the survey area, the feature's vegetation, hydrology, and soils were very similar to previously observed characteristics. Accordingly, there would be no change to the impact conclusion presented in the DEIR.

The project footprint described in the DEIR would have located an overhead collection line within the drainage feature located adjacent to Survey Area 1 for approximately 3,800 feet. These components were moved up to approximately 250 ft west to avoid direct impacts to the drainage, and in response to a comment letter from CDFW requesting impacts to riparian habitat associated with drainages be minimized further. As a result of the reroute in this location, direct and indirect potential impacts to this drainage resulting from project construction, including erosion and sedimentation, reduced water quality, runoff, and disturbances to bed and bank, would be substantially reduced.

1.3.4 NOISE

Additional analysis was performed to determine whether use of a 6.2 MW turbine would change any of the conclusions regarding noise impacts in the the DEIR. If selected, the higher capacity turbines would operate at a noise level within the range of the worst-case, loudest turbine analyzed in the DEIR (between 99 and 105.5dB(A).) The newer models also have the ability to reduce noise levels by adjusting the turbine controller settings, i.e., an optimization of rpm and pitch. The noise settings are not static and can be applied to optimize

the operational output of the turbine. Noise settings can be tailored to time of day as well as wind direction to offer the most suitable solution for a specific location. As a result, the use of the newly available turbine models would not change the impact determination for noise impacts assessed in the DEIR.

1.3.5 HAZARDS AND HAZARDOUS MATERIALS (SHADOW FLICKER)

An updated shadow flicker analysis for a project layout was performed based on a hypothetical layout of 72 6.2 MW turbines. This analysis is exceedingly conservative since, if the 6.2 MW turbines are selected, fewer than 72 would be installed. The detailed report is included as Appendix C. In comparison to the layout using the 5.7 MW turbines, three new receptors would be added to the "0-1 hours/year" category for shadow flicker, and five existing receptors could experience up to 20 additional hours of shadow flicker per year. No new receptors would experience more than 30 hours of shadow flicker per year, the threshold for which mitigation is recommended. As a result, the use of the higher capacity turbine would not change the impact determination for impacts caused by shadow flicker assessed in the DEIR.

1.3.6 VISUAL RESOURCES

The DEIR evaluated the potential visual effects of project turbines with a maximum height of 206 m, or 676 ft. Visual simulations produced to support the DEIR showed these turbines with a hub height of 125 m (410 ft), an 81-m (266-ft) rotor blade length, and a total rotor diameter of 162 m (532 ft). The higher capacity turbine models are slightly shorter than those evaluated in the DEIR with a maximum height of 200 m (656 ft), with a hub height of 115 m (377 ft), an 83-m (250-ft) rotor blade length, but with a slightly larger rotor diameter of 170 m (558 ft).

Use of the higher capacity turbines would not result in any change to conclusions regarding the project's visual impacts as assessed in the DEIR. The hub heights would be 10 m (33 ft) shorter with the optional turbine models, but the total area within which the rotor blades would spin (the "rotor-swept area") would be 8 m (26 ft) wider, due to the additional 4-m (13-ft) length of the blades. The net reduction in turbine height would be 6 m (20 ft). Views of the higher capacity turbines would be virtually indistinguishable from the 5.7 MW turbines shown in visual simulations from Key Observation Points (KOPs) located within the mountain communities area. These are the views from KOPs along the State Route 299 corridor between Round Mountain to the west and Burney to the east and are the closest views evaluated in the DEIR. Visual impacts of the project would remain significant and unavoidable.

Visual quality would be reduced in views from KOPs 1, 2, and 3 to the same degree that they would be with the turbines evaluated in the DEIR. Shorter hub heights could mean that the nacelles of some of the more distant turbines would not be visible above certain ridgelines. While this could reduce the potential number of new sources of night lighting compared with what was evaluated in the EIR, rotor blades would remain a source of contrast along the ridgeline in terms of form, color, and, when spinning, motion.

In views from KOP 4 and KOP 5, shorter hub heights and slightly larger rotor diameters would not alter effects as described in the DEIR. Proposed turbines would remain visible in views alongside existing turbines, though, as in other views, lower hub heights could reduce the degree to which some of the nacelles would be visible above ridgelines. The difference between the two turbine models in the two distant views evaluated,

from State Route 299 to the east (KOP 6) and Redding to the west (KOP 7), in which a large number of proposed turbines would be visible but difficult to discern individually, would be negligible.

1.4 CONCLUSION

The analyses in this memorandum and the supplemental technical studies confirm that the proposed refinements to the project description since circulation of the DEIR would not result in any new or substantially more significant environmental impacts beyond those already disclosed in the DEIR; would not change impact conclusions described in the DEIR; would reduce potential environmental impacts resulting from Project construction and operation; and are not considered significant new information requiring recirculation under section 15088.5 of the CEQA Guidelines.

Reference: Analyses of Refinements to the Project Description Since Circulation of the Draft Environmental Impact Report

2.0 REFERENCES

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Reference: **Analyses of Refinements to the Project Description Since Circulation of the Draft Environmental Impact Report**

APPENDIX A: ASSESSMENT OF POTENTIAL EFFECTS ON BIOLOGICAL RESOURCES IN FOUNTAIN WIND PROJECT EXPANDED SURVEY AREAS

Reference: **Analyses of Refinements to the Project Description Since Circulation of the Draft Environmental Impact Report**

APPENDIX B: FOUNTAIN WIND ENERGY PROJECT CULTURAL RESOURCES PHASE 1 INVENTORY OF 4,463 ACRES, SHASTA COUNTY CALIFORNIA, ADDENDUM 3: SUPPLEMENTAL ARCHAEOLOGICAL SURVEY, OCTOBER 2020

Reference: **Analyses of Refinements to the Project Description Since Circulation of the Draft Environmental Impact Report**

APPENDIX C: FOUNTAIN WIND SUPPLEMENTAL PROJECT SHADOW FLICKER ANALYSIS