

DOCKETED	
Docket Number:	23-OPT-01
Project Title:	Fountain Wind Project
TN #:	248288-3
Document Title:	DEIR Intro to Environmental Analysis
Description:	N/A
Filer:	Caitlin Barns
Organization:	Stantec Consulting Services, Inc.
Submitter Role:	Applicant Consultant
Submission Date:	1/3/2023 10:55:06 AM
Docketed Date:	1/3/2023

CHAPTER 3

Environmental Analysis

3.1 Introduction to Environmental Analysis

3.1.1 Overview

This chapter describes and analyzes the direct, indirect, and cumulative environmental impacts of the Project and alternatives, including the No Project Alternative, as they relate to the following areas of environmental consideration: Aesthetics, Agriculture and Forestry Resources, Air Quality, Biological Resources, Communications Interference, Cultural and Tribal Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Utilities and Service Systems, and Wildfire.

3.1.2 Environmental Assessment Methodology

3.1.2.1 Environmental Baseline

The analysis of each issue area begins with a description of the actual physical environmental conditions in the area where a project and its alternatives would be implemented. These conditions also are referred to as the “baseline” relative to which Project-caused changes are analyzed to determine whether the change is significant for purposes of CEQA (CEQA Guidelines §§15125, 15126.2). For this Project, baseline conditions are those as they existed in January 2019 when the Notice of Preparation (NOP) was published unless as otherwise noted. The effects of the Project and alternatives are defined as changes to the environmental setting that are attributable to Project components or activities. Consistent with CEQA, an EIR need not analyze the effects of the existing environment on a project (including its users or occupants) unless the project exacerbates those conditions.

3.1.2.2 Impact Significance Criteria

CEQA lead agencies rely on impact significance criteria as benchmarks to determine whether changes to the existing environment caused by a project or an alternative would cause a significant adverse effect. A significant effect on the environment is “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project” (CEQA Guidelines §15382).

To guide the Lead Agency in determining whether the Project or an alternative may cause a significant impact on the environment, the preparers of this EIR (identified in Chapter 5, *Report Preparation*) have considered the series of questions provided in CEQA Guidelines Appendix G, as supplemented to consider whether the Project or an alternative could interfere with communications, including emergency communications.¹

3.1.2.3 Impact Significance Conclusions

This EIR evaluates whether the Project and alternatives would cause a change in the environment. Conclusions reached are based on information in the record, including scientific and factual data as well as professional knowledge and judgment. Consistent with CEQA and the CEQA Guidelines, significance conclusions are characterized as one of the following:

1. **No Impact:** This signifies that a project or an alternative would not cause any change in the environment relative to the applicable significance criterion; under these circumstances, no mitigation measures would be required or may be imposed and the project or alternative could not cause or contribute to any cumulative effect.
2. **Less-than-Significant Impact:** This signifies that a project or an alternative could cause an adverse change in the environment, but not one that would be substantial, relative to the applicable significance criterion. Under these circumstances, no mitigation measures would be required or may be imposed. The analysis considers whether the project or alternative could cause or contribute to a potential cumulative effect.
3. **Less than Significant with Mitigation Incorporated:** This signifies that a project or an alternative could cause an adverse change in the environment that would be substantial relative to the applicable significance criterion, but that the implementation of one or more feasible mitigation measures would reduce the significance of the impact below the established threshold. The analysis considers whether the project or alternative could cause or contribute to a potential cumulative effect.
4. **Significant and Unavoidable:** This signifies that a project or an alternative could cause a substantial adverse change in the environment relative to the applicable significance criterion; however, either no feasible mitigation measures are available, or, even with implementation of feasible mitigation measures, the significance of the impact would remain above the established threshold. The analysis considers whether the project or alternative could cause or contribute to a potential cumulative effect.
5. **Cumulatively Considerable:** This signifies that a project-specific or alternative-specific contribution to a significant cumulative effect would be considerable when viewed in connection with the incremental impacts of past projects, the impacts of other current projects, and the impacts of reasonably foreseeable probable future projects (as defined in CEQA Guidelines §15130).

To avoid or reduce potential significant impacts where feasible, alternatives have been considered or mitigation measures have been recommended to address them. The effectiveness of recommended mitigation measures has been evaluated by analyzing the impact remaining after the implementation of the measure. In some cases, the implementation of more than one

¹ Case law interpreting CEQA has recognized that lead agencies generally have broad discretion to formulate significance thresholds, including the discretion to depart from the precise language of Appendix G questions.

mitigation measure may be needed to reduce the significance of an impact below an established threshold. The mitigation measures recommended in this document are identified on a resource-by-resource basis in this Chapter 3, *Environmental Analysis*. Potential significant impacts of the Project and associated mitigation measures are summarized in Table ES-2, *Summary of Project Impacts and Mitigation Measures*.

3.1.2.4 PG&E Interconnection Infrastructure

In each resource section included in this chapter, a subsection called “PG&E Interconnection Infrastructure” follows the analysis of the direct and indirect effects of the Project and precedes the analysis of the direct and indirect effects of the Alternatives. The purpose of this subsection is to call out the direct and indirect impacts of the Project as a whole, the mitigation of which would be within the jurisdiction of the California Public Utilities Commission (CPUC), which has permitting authority over a portion of the Project and which therefore is a Responsible Agency for purposes of CEQA. The CPUC regulates private investor-owned utilities in the state of California, including electric power companies like PG&E as well as natural gas, telecommunications, and water companies. PG&E’s construction of the electrical connections to its infrastructure (as described in Section 2.4.3, *Project Substation, Switching Station and Interconnection Facilities*) would be subject to the CPUC’s authority and oversight. Aspects of the Project to be constructed by the Applicant (such as the switching station and collector lines) would not be subject to the CPUC’s authority and oversight. The impacts identified in the PG&E Interconnection Infrastructure subsections of this Chapter 3 are a subset of, not in addition to, the direct and indirect impacts of the Project as a whole.

3.1.3 Cumulative Effects Approach

As defined in CEQA Guidelines Section 15355, the term “cumulative impacts” refers to two or more individual effects, which, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact from multiple projects is the change in the physical environment that results from the incremental impact of the proposed project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines §§15355[b], 15130[a][1]).

The analysis in this chapter evaluates potential cumulative impacts on a resource-by-resource basis by considering the incremental impacts of the Project together with the ongoing effects of past, present, and reasonably foreseeable probable future projects that could cause environmental impacts that are closely related to those caused by the Applicant’s proposal. Factors considered in determining whether a project is included in the cumulative scenario include whether it would cause impacts of the same nature as the Project in the same area at the same time.

3.1.3.1 Cumulative Scenario

The cumulative scenario consists of trends; projections contained in one or more local, regional, or statewide planning documents; and the incremental effects of past, present, and reasonably foreseeable probable future projects summarized below by activity type.

Timber Management and Harvesting

Private ownership accounts for 39 percent of California’s forestlands and has provided most of the State’s timber since the 1940s (Taylor, 2018). While subject to annual variation, total timber harvesting statewide has declined by more than two-thirds since the late 1950s, and harvest rates have dropped from over 4.8 billion board feet in 1988—its recent peak—to approximately 900 million in 2009, when the harvest rate was at its lowest in recent history (Taylor, 2018). The Legislative Analyst’s Office reports that “timber harvesting rates have picked up somewhat [since 2009], but have not returned to earlier levels” (Taylor, 2018).

The County General Plan designates the Project Site as “Timberlands.” As of June 2020, approximately 58 percent of Shasta County were zoned for private timber production (1,454,680 acres of a total of 2,492,822 acres). Past, present, and reasonably foreseeable future timber harvesting plans (THPs) associated with the Project Site have been identified by the landowner. They are listed in **Table 3.1-1, Timber Harvest Plans in the Immediate Vicinity of the Project**. As explained in General Plan Section 6.2.2, “Negative impacts from forest practices may affect surrounding land uses and resources and create special management problems for timberland operations. Harvesting practices and the associated noise, dust, and traffic can be potentially damaging to air and water resources, wildlife habitats, aesthetic enjoyment, and the health and safety of nearby residences, although state-required timber harvest plans are intended to mitigate timber harvesting impacts to acceptable levels” (Shasta County, 2004). Ongoing impacts of past and current forest management activities within and near the Project Site are reflected in the baseline conditions described in the environmental setting on a resource-by-resource basis throughout this Chapter 3, *Environmental Analysis*.

**TABLE 3.1-1
 TIMBER HARVEST PLANS IN THE IMMEDIATE VICINITY OF THE PROJECT**

THP Name	Acres	THP Number	THP Status	Year Submitted
Cedar Boots	378	2-16-077-SHA	Active	2016
South Ox	Unknown	2-16-075-SHA	Active	2016
Little Ox	431	2-17-077-SHA	Active	2017
Bunchgrass	439	n/a	In Preparation	n/a
East Lookout	Unknown	n/a	In Preparation	n/a
Forks	Unknown	n/a	In Preparation	n/a

SOURCE: ConnectGen, 2019.

National Forest System (NFS) lands account for approximately 38 percent of the commercial forest lands in Shasta County (Shasta County, 2004). The Project Site is within approximately 10 miles of three NFS forest management projects in the Shasta Trinity National Forest. First, the Project Site is approximately 7 miles from the southern boundary of the Chalk Mountain Plantation Thin and Underburn Project which includes thinning and underburning over approximately 2,834 acres to: (1) restore a more diverse and less dense forest stand structure and increase resilience to insect and disease infestations; (2) promote structural and species diversity;

(3) reduce overall fuel levels; and (4) restore eco-cultural systems upon which the tribal community depends (USFS, 2018a).

Second, the Project Site is approximately 7.5 miles from the northeastern boundary of the Green-Horse Restoration Project, which would entail prescribed burning and thinning on approximately 41,836 acres to reduce wildfire risk and protect, enhance, or maintain wildlife habitat quality (USFS, 2016).

Finally, while slightly outside the 10-mile boundary, the Project Site is approximately 10.4 miles from the southeastern boundary of the Bagley Hazard Tree Abatement Project which is intended to reduce risks to public safety along NFS roads affected by the Bagley Fire of 2012 by abating the hazards from dead and defective hazard trees (USFS, 2013).

Timber Land Conversion

Between 1969 and 1998, 112,866 acres of California’s privately-owned timberland were converted to a variety of other uses, primarily grazing and subdivision development. Approximately 49 percent of these conversions occurred in the northern region, which includes Shasta County (Shih, 2019). Over the most recent decade of the 30-year period, the average conversion statewide was 2,256 acres per year; within the northern region, the average conversion 237 acres per year (Shih, 2019). Regarding this conversion trend, a technical working paper of CAL FIRE’s Fire and Resource Assessment Program concluded, “The impact of conversions on timber supply is not significant, but in many local areas, conversions are a major land use issue” (Shih, 2019). Project-related timber conversion would be temporary rather than permanent, with the expectation that the Project Site would be returned to timberland use following the conclusion of the Use Permit term.

Fire History

Shasta County, which CAL FIRE has designated a “Very High Fire Hazard Severity Zone,” experiences extreme fire weather conditions, particularly between May and September (Shasta County, 2016). Between 1992 and 2003, Shasta County experienced an average of 333 wildland fires per year (Shasta County, 2018). Other notable fires in Shasta County include, but are not limited to, the following (CAL FIRE, 2014, 2016, 2019a, 2019b; USFS, 2018b; Shulman, 2018):

1. Carr Fire, 2018 (229,651 acres burned, the seventh largest fire in California history)
2. Fountain Fire, 1992 (64,000 acres)
3. Delta Fire, 2018 (63,311 acres)
4. Hirz Fire, 2018 (46,150 acres)
5. Bald Fire, 2014 (39,736 acres)
6. Eiler Fire, 2014 (32,416 acres)
7. Bully Fire, 2014 (12,661 acres)
8. Hat Fire, 2018 (1,900 acres)
9. Fiddler Fire, 2016 (303 acres)
10. Montgomery Creek Fire, 2018 (51 acres)

Ongoing environmental impacts of wildfire may continue to be observable on the landscape, potentially including degraded air quality, wildlife habitat, and watersheds as well as increased GHG emissions and reduced carbon sequestration capacity (Shasta County, 2016). With the current urbanization in and around Round Mountain and Montgomery Creek, the area near the Project Site “can expect future fires to be more damaging” (CAL FIRE and Shasta County Fire, 2018). Ongoing impacts of past wildland fires within and near the Project Site are reflected in the baseline conditions described in the environmental setting on a resource-by-resource basis throughout this Chapter 3.

Weather Extremes

The 60-month period between January 2012 and December 2016 was the hottest on record in California, with an average temperature of approximately 60.2 degrees Fahrenheit (°F); it was also the 11th driest since 1895 (Pacific Institute, 2017a). Governor Brown lifted the drought emergency for most of the state, including Shasta County, on April 7, 2017, when he issued Executive Order B-40-17. However, environmental damage had already occurred. For example, the U.S. Department of Agriculture (USDA) reported a finding of the U.S. Forest Service that in “2016 alone, 62 million trees have died, representing more than a 100 percent increase in dead trees across the state from 2015. Millions of additional trees are weakened and expected to die in the coming months and years” (USDA, 2016). The prolonged drought also harmed fish, wildlife, and their habitats; threatened water supplies; and created environmental strains that increased the potential of high-intensity fires across the state (Executive Order B-40-17; Shasta County, 2016). Due to limited hydropower capacity during the drought, electric generation relied increasingly on natural gas – a more carbon-intensive option that led to a 10 percent increase in CO₂ emissions from power plants (Pacific Institute, 2017b).

When it came, the end of the drought came quickly. The 2016/17 water year (which began on October 1, 2016) was the wettest on record (CDEC, 2019). Severe winter storms that year caused the water content in the state’s mountain snowpack to achieve 164 percent of the season average, and flooding that nearly caused Oroville Dam, the nation’s tallest, to fail (Executive Order B-40-17; Pacific Institute, 2017a). The impacts of these weather extremes are reflected in the environmental baseline and may have ongoing impacts that could combine with impacts of the Project to adversely affect existing conditions in the physical environment. These changes in weather patterns also may affect the State’s wind resources. Based on 36 years of data that showed wind regime changes consistent with global warming and information from “several wind farm sites,” research published by the California Energy Commission (CEC) projects that wind power generation capacity throughout California is expected to increase during the summer and decrease during fall and winter (CEC, 2018a).

Other Wind Projects

Considering in-state power plants with a nameplate capacity of 1 MW or greater, CEC data reports that wind energy generated 7.31 percent of the in-state total power generation in 2018, with wind energy power plants having a total capacity of 6,004 MW (CEC, 2019a). The wind energy generation contributions of Shasta County and other counties in the State are shown in **Table 3.1-2, California’s Total Wind Production by County**.

**TABLE 3.1-2
 CALIFORNIA'S TOTAL WIND PRODUCTION BY COUNTY**

County	Capacity (MW)
Kern	3,474.00
Solano	1,035.30
Riverside	643
Imperial	265.4
Alameda	228.1
San Diego	182.1
Shasta	101.2
Contra Costa	38
Merced	18.4
San Bernardino	7.2
Monterey	3.9
San Joaquin	3.5
Los Angeles	1.9
Tehama	1
Yolo	1
TOTAL	6,004.0

SOURCE: CEC, 2019a

The Hatchet Ridge Wind Project is Shasta County’s only existing wind project. It began commercial operation in 2010, and its 44 wind turbines have the capacity to generate 101.2 MW of electricity within a permanent project footprint of approximately 75.6 acres. Consistent with FAA regulations, the project includes rapid-discharge flashing red safety lighting and can be seen from some vantages day and night. Following construction, avian and bat mortality monitoring occurred for three years and site reforestation efforts took place, including the planting of more than 62,000 pine trees, including commercial Christmas trees. Approximately 6 to 10 local people operate and maintain the facility. They normally work from 7 a.m. to 5 p.m. The project interconnects with a PG&E transmission line that crosses the site. PG&E purchases 100 percent of the electricity generated by the project (Pattern Energy, 2019; Shasta County, 2008). Ongoing impacts of this existing project may combine with the incremental impacts of the Project to cause or contribute to cumulative effects.

Power Lines and Electrical Infrastructure

The California Independent System Operator (CAISO) manages the operation of California’s power grid, including the generation and transmission of electricity by PG&E. The CAISO divides the state into three regions: NP15, a key segment of California’s north-south power transmission corridor, corresponds to PG&E’s electric service territory (CAISO, 2008; PG&E, 2014).

Existing electrical infrastructure on and near the Project Site include two, 230 kV transmission lines that cross the Project Site south of SR 299 (CEC, 2014). The Project would interconnect to the grid along these lines. Other PG&E 230 kV infrastructure in the area includes the Carberry switching station, which is connected to the Hatchet Ridge Wind Project substation as well as the Burney Substation and points to the northeast, and the Round Mountain Substation (Dashiell

Corporation, 2019; CEC, 2014). Other area electrical infrastructure includes PG&E's Cedar Creek Substation (33 kV to 92 kV), Burney Forest Power's substation (220 kV to 287 kV), Sierra Pacific BFP (220 kV to 287 kV), and PG&E's Burney Substation (33 kV to 92 kV) (CEC, 2014; CEC, 2019b). A "bulk dynamic reactive voltage system" project has been proposed in connection with the Round Mountain Substation to address existing voltage issues on the 500 kV network in Northern California. This additional transmission reliability project is separate from and independent of the Project and would be considered by the CPUC regardless of the County's consideration of the Project. None of the current projects identified by the California Public Utilities Commission (CPUC) suggests that additional work is proposed along PG&E's transmission line in the vicinity of the Project Site (CPUC, 2019a).

Surface Mining and Reclamation Projects

Active mining projects, including extraction and reclamation, are considered because they could generate impacts similar to the impacts of the Project, e.g., traffic, ground disturbance, or lighting. Idle mines are not considered because the absence of activity on an idle site would not contribute incremental impacts to cumulative conditions. Additional details are provided in **Table 3.1-3, Active and Reclaimed Mines in Shasta County.**

**TABLE 3.1-3
ACTIVE AND RECLAIMED MINES IN SHASTA COUNTY**

Project ID	APN	CA Mine ID# 91-45-	Shasta County Reclamation Plan #	Use Permit	Mine Name	Status
1	307340004000	0001	2-88	85-73	SWA Mountain Gate Quarry	Active
2	23320036000	0006	6-88	37-89	Brush Mountain (Packway)	Active
3	307360003000	0012	00-03	63	Gray Rocks Quarry	Active
4	307010004000	0013	03-001	297-78	Falkenbury Quarry	Active
5	55240003000	0014	2-77	69-73A	Shea Sand and Gravel	Active
6	208230023000	0016	4-78	288-77	Shea Sand and Gravel Plan II (aka Hinds Pit)	Active
7	307350016000	0017	2-91	52-91B	Fawndale Quarry	Active
8	22200008000	0018	1-78A	185-78A	Dicalite	Active
9	30110006000	0020	4-94		Brush Mountain - BLM	Active
10	65250002000	0021	07-002	07-020	Crystal Creek Aggregate	Active
11	18350005000	0022	5-94		Blue Sand Cinder Pit	Active
12	23350001000	0024	4-92	64-92	Braden Sand Pit	Active
13	704150019000	0028	2-93		Black Butte Cinders	Active
14	97310032000	0029	4-93A		Oak Run Quarry	Active
15	704230003000	0036	3-94	39-94	Wildcat Pit	Active
16	30110005000	0045	2-95	22-95A	"Brush Mountain - Fruit Growers"	Active
17	23320024000	0049	97-1	97-28	Hidden Valley Quarry	Active
18	23250014000	0052	99-01	99-17	Eastside Aggregates	Active
19	22130025000	0053	01-001	01-016	Bales Mountain Quarry	Active
20	206350035000	0056	02-002	02-035	West Valley Sand & Gravel	Reclamation has begun
21	91050024000	0057	05-001	05-010	Shasta Ranch Pit	Active
22	50090027000	0058	06-001	06-038A	Wakeboard Park 3	Active

**TABLE 3.1-3 (CONTINUED)
 ACTIVE AND RECLAIMED MINES IN SHASTA COUNTY**

Project ID	APN	CA Mine ID# 91-45-	Shasta County Reclamation Plan #	Use Permit	Mine Name	Status
23	60020044000	0059	05-004	05-039	Twin Mine	Active
24	30090020000	0005	1-85	105-85	Jack Rabbit Flat Lava Rock	Reclamation has begun
25	16250004000	0042	01-002		Ben Bridge Trust Cinder Pit	Reclamation has begun

NOTES:

^a Table footnote text

SOURCE: Shasta County, 2019a.

Other Present and Reasonably Foreseeable Probable Future Projects

Projects within the Shasta County permit system as of the date of the NOP (January 15, 2019), were evaluated to identify projects that would cause environmental impacts that could combine with those of the Project (Table 3.1-4).

**TABLE 3.1-4
 POTENTIALLY CUMULATIVE COUNTY PROJECTS**

Project ID	APN	Status	Date Applied	Project Name	Site Address
1	207170008000.00	Applied	4/23/2019	Amendment to UP10-001	18703 Cambridge Rd
2	76260002000.00	Approved	4/18/2019	TR1945 EOT #2 (11 Parcel Land Division)	
3	58300060000.00	Approved	4/16/2019	TR1992 EOT #2 (Eleven Lot Subdivision)	8589 Silver Bridge Rd
4	83240006000.00	Applied	4/8/2019	Small RV Park	
5	59110082000.00	Applied	12/6/2018	Parcel Map Commercial	
6	704280013000.00	Approved	12/5/2018	TR1989 EOT (38 Lot Subdivision with Remainder)	
7	31610010000.00	Approved	10/4/2018	Hat Creek Radio Observatory	
8	111290011000.00	Approved	9/24/2018	Resubmittal and Amendment to TR1977 – Unit 2 Phase 2	
9	30390042000.00	Approved	9/5/2018	UP13-001 E1	37750 Highway 299 E
10	74100007000.00	Approved	8/20/2018	UP47-88A	
11	57140019000.00	Approved	8/15/2018	PM07-035E2 (3 Parcel Split)	
12	306050005000.00	Approved	8/2/2018	TR1973EOT	Union School Rd
13	306050003000.00	Approved	8/2/2018	TR1985EOT (4 Lots Plus Remainder Parcel)	
14	28370024000.00	Approved	5/31/2018	20,000 sq. ft. Grocery Store/Parking/Loading Dock	State Highway 299 E
15	50100015000.00	Approved	10/10/2017	Reclamation Plan for UP17-005	
16	85270003000.00	Applied	6/19/2019	T-Mobile Wireless Mono Pole	17211 Chapman Ln

SOURCES: Shasta County, 2019; Environmental Science Associates, 2019

In addition to evaluating potential projects in the Shasta County permit system, CEQANet was consulted to identify other projects within Shasta County with lead agencies other than the County. Additionally, the City of Redding, CALFIRE, Caltrans, and the Shasta-Trinity National Forest, and Lassen National Forest were contacted to identify projects that could have environmental impacts that could overlap with impacts resulting from the Project. **Table 3.1-5, *Other Potentially Cumulative Projects within Shasta County***, includes the projects that were identified as part of this process.

**TABLE 3.1-5
OTHER POTENTIALLY CUMULATIVE PROJECTS WITHIN SHASTA COUNTY**

Project ID	Project Name/ Applicant	Location/Approximate Distance from Project Site	Description	Status
1	Dignity Health North State Pavilion Project	At the intersection of Cypress/Hartnell just west of I-5 in Redding. Approximately 33 miles southwest from the Project Site.	Hospital campus including three buildings with parking and landscaping on an approximately 10.55-acre site.	Construction is expected to begin Spring 2020 and be completed in 2022
2	River Crossing Marketplace Specific Plan	Northeast corner of South Bonnyview Road and Bechelli Lane just off of I-5 in Redding. Approximately 34 miles southwest of the Project Site.	222,000 square feet of retail use including a discount warehouse store with up to 15 fuel pumps and retail pads accommodating up to 70,000 square feet of retail, restaurants (some with drive through lanes), and service uses	Unknown
3	Redding Rancheria Fee-to-Trust and Casino Project	Strawberry Fields Site, just west of I-5. Approximately 34 miles southwest of the Project Site.	232-acre site to be developed with a casino, hotel, and conference and event center	Unknown
4	NCPA Solar Project 1 - Redding Airport Site	Redding Airport. Approximately 34 miles southwest of the Project Site.	Development of 11.4 MW of PV panels on approximately 54.7 acres	Unknown
5	Shasta College Facilities Master Plan Amendment One Initial Study & Mitigated Negative Declaration	Old Oregon Trail & SR 299. Approximately 29 miles southwest of the Project Site.	Demolition of some existing campus buildings, renovation of existing buildings, construction of new buildings and features.	Demolition (2019-2030), Construction and renovation (2019-2030)
6	Bethel Church of Redding Colyer Drive Campus Planned Development	2080 Collyer Drive, Redding, Shasta County, CA. Approximately 29 miles southwest of the Project Site.	Construction and operation of a new church campus on 39.3 acres	Unknown
7	Sun Oaks Subdivision	3600 Argyle Road. Approximately 32 miles southwest of the Project Site.	Divide 26.9 acres into 51 single family lots	NOD approved 3/15/2019
8	02-0J200 Hatchet Mountain AR Chip, PM 60-67.8	State Route (SR) 299 at post mile (PM) 60.0/67.8 in Shasta County	Caltrans will place an asphalt rubber (AR) chip seal over the existing asphalt from edge of travelled way (ETW) to ETW. All work will be done within the existing edge of pavement. No work will be performed on bridge decks. There will be no increase in disturbed soil area.	NOE filed 9/26/19. Construction period 2021
9	02-1H570 Burney CapM, PM 67.8-77.8	State Route (SR) 299 at post mile (PM) 67.8-77.8 in Shasta County	The Project will not result in new disturbed soil or new impervious surfaces.	Construction period 2022-2023
10	Landvest Helicopter Dip Tank Installation	Within and adjacent to the Project Site	Landvest (owner of the Project Site) has installed and will be installing helicopter dip tanks throughout its ownership to aid fire suppression, including within the Project Site.	Ongoing

SOURCES: CEQANet, 2019; Bonin, 2019, Caltrans, 2019.

3.1.3.2 Cumulative Impacts Analysis

Incremental impacts resulting from initial site preparation and construction, operation and maintenance, and decommissioning and site restoration could combine with the incremental impacts of other projects to cause or contribute to cumulative effects. Direct and indirect effects of the Project are analyzed on a resource-by-resource basis throughout this Chapter 3. Where the Project would cause no impact to a given resource, it could not cause or contribute to any cumulative impact related to such resources. See, e.g., Section 3.1.3, *Environmental Topics Removed from Consideration*.

For the remaining resource areas, this Draft EIR analyzes potential incremental impacts of the Project and alternatives combined with the incremental impacts of past, other present, and reasonably foreseeable future projects, and determines whether the incremental impacts of the Project would be significant and, if so, whether the incremental contribution of the Project would be cumulatively considerable. As noted above, the geographic scope of the cumulative effects analysis for each resource area is tailored to the natural boundaries of the affected resource. Unless otherwise noted in the analysis, potential cumulative effects could occur at any time during the conditional use permit period, from the moment on-site activities begin to the conclusion of post-Project site restoration activities. Existing conditions within the cumulative impacts area reflect a combination of the natural condition and the ongoing effects of past actions in the affected area.

3.1.4 Environmental Considerations Unaffected by the Project or Not Present in the Project Area

CEQA Guidelines Appendix G suggests that lead agencies consider potential impacts to 20 different aspects of the physical environment to guide thinking and disclosure about a wide range of potential environmental consequences. The 20 suggested resource areas include: Aesthetics, Agriculture and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Energy, Geology/Soils, Greenhouse Gas Emissions, Hazards & Hazardous Materials, Hydrology/Water Quality, Land Use/Planning, Mineral Resources, Noise, Population/Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, Utilities/Service Systems, and Wildfire. The County has analyzed potential impacts in each of these areas, as well as potential impacts to Communications Interference (see Section 3.5). However, there are some resources that are not present in the relevant area, or that would not be affected by implementation of the Project. This is true, for example, with respect to Agricultural Resources, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, and Recreation. Analysis and explanation of why the project would result in no impact to each of these resource categories is provided below. The Project also would have no impact to some (but not all) of the considerations identified in CEQA Guidelines Appendix G checklist for other resources, such as Air Quality, Biological Resources, and others. Analysis and explanation of the individual “no impact” considerations within resource groups also are provided below to focus the sections that follow on areas where the Project could result in a potential significant impact. See, e.g., Section 3.3, *Air Quality*, and Section 3.4, *Biological Resources*.

3.1.4.1 Agriculture and Forestry Resources

Agriculture

According to CEQA Guidelines Appendix G Section II, a project would result in a significant impact to agriculture resources if it would: a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use; b) Conflict with existing zoning for agricultural use, or a Williamson Act contract; or c) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use. Neither the Project nor Alternative 1 or 2 would result in any impact relative to these considerations.

Maps produced by the California Resources Agency pursuant to the Farmland Mapping and Monitoring Program show that there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) in the Project Site (California Department of Conservation, 2016), nor is any land in the Project Site zoned for agricultural use or subject to a Williamson Act contract. The nearest area designated as Prime Farmland is an approximately 110-acre site 0.25 mile southeast of the closest proposed turbine. Therefore, the Project and Alternatives 1 and 2 would have no impact on agricultural resources and could not cause or contribute to any cumulative impact to such resources.

Forestry

CEQA Guidelines Appendix G Section II also considers potential impacts to forestry resources. For example, according to CEQA Guidelines Appendix G Section II(c), a project would result in a significant impact to forest resources if it would: “Conflict with existing zoning for, or cause rezoning of, forest land..., timberland..., or timberland zoned Timberland Production.” For purposes of this analysis, forest land is described in Public Resources Code Section 12220(g) as “land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.” Timberland is defined in Section 4526 of the Z’Berg-Nejedly Forest Practice Act (Pub. Res. Code §4526) as “land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products....” Timberland Production is defined by Government Code Section 51104(g) as “an area which has been zoned [timberland production] pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses.” In this context, “compatible uses” are expressly defined in Section 51104(h) to include the “erection, construction, alteration, or maintenance of gas, electric, water, or communication transmission facilities.”

Neither the Project nor Alternatives 1 or 2 would result in any impact relative to consistency with existing zoning for Forest Resources. The Shasta County General Plan designates the Project Site as Timber (T); the zoning designations are Timber Production (TP) (approximately 4,457 acres) and Unclassified (U) (approximately 6 acres). Existing land uses within the Project Site consist

exclusively of managed forest lands. Unpaved logging roads and transmission lines cross the Project Site. Chapter 17.08, Timber Production District, in the Shasta County Zoning Ordinance identifies the uses allowed in the TP district if a use permit is issued, including “the erection, construction or alteration of a gas, electrical, water or communication facility, or other public improvements, in accordance with Government Code §51152.” Neither the Project nor alternatives would cause an impact because the uses allowed on the Project Site by the County’s General Plan and zoning designation are consistent with the state’s definitions of forest land, timberland, and timberland zoned Timber Production.

See Section 3.8, *Forestry Resources*, for analysis of other forest resource-related considerations identified in CEQA Guidelines Appendix G Section II.

3.1.4.2 Air Quality

Scoping comments from the Shasta County Air Quality Management District (AQMD) suggested that onsite fuel dispensing and storage must meet California Phase 1 vapor recovery requirements. However, the Vapor Recovery Program controls vapor emissions from gasoline marketing operations (gasoline dispensing facilities or service stations, tanker trucks [cargo tanks], bulk plants, and terminals), where gasoline vapor is a precursor to the formation of ozone and contains benzene, a constituent of gasoline vapor that has been identified as a toxic air contaminant (TAC). As shown in Table 2-3, *Hazardous Materials*, gasoline would not be stored onsite during any phase of the Project. Therefore, the requirements of the Vapor Recovery Program do not apply to the Project or Alternatives 1 or 2.

Scoping comments from the Shasta County Air Quality Management District also recommended, in the event that proposed operations would be conducted in an area containing naturally occurring asbestos, that a plan be submitted that meets the requirements of the Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. The Project Site is not located in such an area. Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by state, federal, and international agencies and was identified as a TAC by the California Air Resources Board (CARB) in 1986. All types of asbestos are hazardous and may cause lung disease and cancer. Serpentinite may contain chrysotile asbestos, especially near fault zones. Ultramafic rock, a rock closely related to serpentinite, may also contain asbestos minerals. According to the California Division of Mines and Geology, nearest units of ultramafic rocks are mapped approximately 60 miles to the west of the Project Site (DMG, 2000). Because Project operations would not occur in an area containing naturally occurring asbestos, the Project and Alternatives would have no impact relating to naturally-occurring asbestos, and the preparation of a plan like the one suggested by the Air District has not been recommended as part of this CEQA process.

See Section 3.3, *Air Quality*, for analysis of the air quality-related considerations identified in CEQA Guidelines Appendix G Section III.

3.1.4.3 Biological Resources

According to CEQA Guidelines Appendix G Section IV, a project would result in a significant impact to biological resources if it would: “(e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance” or “(f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.” The Project and alternatives would have no impact in either respect because Shasta County does not have a tree protection ordinance, nor any language regarding tree preservation or heritage trees in the General Plan (see Section 3.4.1.3, *Regulatory Setting*). Further, there is no adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved habitat conservation plan covering the Project Site. Thus, there would be no impact to either of these biological resources-related considerations.

See Section 3.4, *Biological Resources*, for analysis of the other considerations identified in CEQA Guidelines Appendix G Section IV.

3.1.4.4 Cultural Resources

According to CEQA Guidelines Appendix G Section V(a), a project would result in a significant impact to cultural resources if it would: “Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.” In this context, a significant impact would occur if the Project caused a substantial adverse change to a historical resource, herein referring to historic-era architectural resources or the built environment, including buildings, structures, and objects. Based on the results of the cultural resources analysis completed for the Project (Stantec, 2019), there are no historic-era architectural resources that qualify as historical resources within the Project Site. Thus, there would be no direct impact to historical resources relating to the built environment from any phase of the Project or Alternative 1 or 2, including site clearing and construction, as well as operation/maintenance, decommissioning or site reclamation.

See Section 3.6, *Cultural and Tribal Cultural Resources*, for analysis of the other considerations identified in CEQA Guidelines Appendix G Section V and Section XVIII.

3.1.4.5 Electric and Magnetic Fields

Scoping comments enquired about and suggested potential impacts of electromagnetic radiation (electric and magnetic fields [EMFs]) from high voltage power lines and turbines and their potential to cause neurological problems, cancer, Alzheimer’s disease, dementia, Parkinson’s disease, and depression (Appendix J). It does not appear that any of the studies identified in scoping comments have undergone peer review (i.e., none has been scrutinized with normal scientific rigor, met outside scientific review, been submitted to a scientific journal for review by independent scientists, or published in a scientific journal) and none of the studies identified in scoping comments rises to the level of substantial evidence.

EMFs consist of waves of electric and magnetic energy moving together. On the electromagnetic spectrum, power lines result in 50 to 60 cycles per second (or “hertz,” Hz, which is an extremely

low-frequency (ELF) EMF exposure. By comparison, television and radio broadcasts, mobile phones, and wireless local area networks (wi-fi) all cause higher frequency exposures, and x-rays and therapeutic radiation each cause still-higher frequency exposures (National Cancer Institute, 2019). Electric charges produce electric fields; the flow of electrical current through wires or electrical devices produce magnetic fields. For this reason, EMF occurs close to power lines. Because the strength of the EMF is proportional to the amount of electrical current passing through the power line and decreases as you move farther away, potential exposure to an EMF field from a power line decreases with distance (USEPA, 2019; CPUC, 2019b).

Although no federal, state, or local standards regulate EMF from power lines or related facilities, such as substations, the CPUC regularly revisits the question of whether there is a sufficient scientifically verifiable relationship between EMF exposure and negative human health consequences to support regulation. On January 15, 1991, the CPUC initiated an investigation to consider its role in mitigating the health effects, if any, of electric and magnetic fields from utility facilities and power lines (CPUC, 1991). The California EMF Consensus Group was created to advise the CPUC on this issue. The Group consisted of 17 stakeholders representing citizen groups, consumer groups, environmental groups, state agencies, regulated utilities, and others (CPUC, 1993). Its fact-finding process was open to the public, and its report incorporated public concerns. Based on the work of the Group, written testimony, and evidentiary hearings, the CPUC issued a decision (D.93-11-013) on November 2, 1993, in which it found no scientific link between power frequency EMFs and adverse human health effects: “We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value” (CPUC, 1993). The CPUC reaffirmed its conclusion in 2006: “[A]t this time, we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences” (CPUC, 2006). This continues to be the case. As reported in 2019, “The Commission is unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences” (CPUC, 2019c).

Others agree. The World Health Organization (WHO) explored the potential link between prolonged exposure to ELF EMF (0 Hz to 100 Hz) and neurodegenerative disorders (e.g., Alzheimer disease, Parkinson disease, and amyotrophic lateral sclerosis [ALS]) and with neurobehavioural effects (e.g., depression and suicide) (WHO, 2007). Regarding neurodegenerative disorders, the WHO report concluded, “No study has provided clear evidence of an association with above-average exposure to extremely low frequency EMFs and, in the absence of laboratory evidence to the contrary, it seems unlikely that such fields are involved in the disease” (WHO, 2007). Regarding neurobehavioural disorders, the WHO report concluded that the literature reflects findings that are not consistent and that cannot easily be resolved (WHO, 2007). The National Institute of Environmental Health Sciences (NIEHS), which is part of U.S. Department of Health and Human Services, cites “power lines” as an example of a source of EMF of the type that “is generally perceived as harmless due to its lack of potency” (NIEHS, 2018). Separately, the National Cancer Institute reviewed numerous epidemiologic studies and comprehensive reviews of the scientific literature evaluating possible associations between exposure to non-ionizing EMFs and risk of cancer in children before concluding, “No consistent evidence for an association between any source of non-ionizing EMF and cancer has been found”

(National Cancer Institute, 2019). Similarly, from the U.S. Environmental Protection Agency, “Scientific studies have not clearly shown whether exposure to EMF increases cancer risk. A few studies have connected EMF and health effects, but they have not been able to be repeated. This means that they are inconclusive. Scientists continue to conduct research on the issue” (USEPA, 2019).

This EIR does not consider potential impacts relating to EMF in further detail because: (a) there is no agreement among scientists that EMF creates a potential risk to human health, (b) there are no defined or adopted CEQA standards for defining health risk from EMF, and (c) the County has determined that the potential for health effects associated with EMF exposure is too speculative to allow for a meaningful evaluation of the potential impacts.

3.1.4.6 Energy Resources

According to CEQA Guidelines Appendix G Section VI(b), a project would result in a significant impact to energy if it would: “Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.” Neither the Project nor Alternatives 1 or 2 would have any impact in this respect.

Although the Project would provide a new source of renewable energy in the state, the specific existing sources of energy that could be replaced by this Project are unknown. The Project would supply wind energy to PG&E’s northern California grid, and would be available to reduce the potential demand of nonrenewable generated power. According to CARB, for the most part, the power being displaced due to renewable energy generation would be comprised of incremental power provided by generators to address load changes (natural gas power plants typically serve as the incremental power source) (CARB, 2010). Therefore, the Project would directly support Senate Bill (SB) 100 and California’s Renewables Portfolio Standard (RPS) goal of increasing the percentage of electricity procured from renewable sources to 100 percent by 2045.

The Project would require diesel and gasoline fuel, as well as minimal amounts of electricity through the life of the Project. (See Section 3.7, *Energy*, for related analysis.) However, these energy inputs would be offset by the anticipated Project generation of approximately 605,491,200 kilowatt-hours (kWh) per year.

In terms of mobile energy usage, as described above, the National Highway Traffic Safety Administration (NHTSA) required manufacturers of light duty vehicles to meet an estimated combined passenger car and light truck average fuel economy level of 34.1 miles per gallon (mpg) by model year 2016. In the course of more than 30 years, the National Energy Conservation Policy Act (NECPA) regulatory program has resulted in improved fuel economy throughout the United States’ vehicle fleet, and has also protected against inefficient, wasteful, and unnecessary use of energy.² The projected fleet-wide mpg for light duty vehicles is expected to reach 41.7 mpg by 2020 (USEPA, 2012). Vehicles used for Project construction, maintenance,

² The NECPA (42 U.S.C. §8201 et seq.) serves as the underlying authority for federal energy management goals and requirements and is the foundation of most federal energy requirements. The NECPA establishes energy-efficiency standards for consumer projects and energy-efficiency standards for new construction.

and decommissioning workers to travel to and from the Project Site would already incorporate these standards; therefore, the Project would not impede the efficient use of mobile fuel.

The O&M building on the Project Site would be subject to the Building Energy Efficiency Standards required by regulations (24 Cal. Code Regs. Part 6) implementing the California Energy Code. These standards are intended to save energy, increase electricity supply reliability, and avoid the need to construct new fossil-fueled power plants (CEC, 2018b). Pursuant to the California Building Standards Code and the Energy Efficiency Standards, the County would review the design components of the Project's energy conservation measures when the Project's building plans are submitted. These measures could include: insulation, use of energy-efficient heating, solar-reflective roofing materials, energy-efficient indoor and outdoor lighting systems, and other measures. The Project also would be subject to CALGreen during construction and decommissioning activities, which requires 65 percent construction and demolition waste diversion.³

Since the Project would provide a new source of renewable energy supporting SB 100 and the State's energy goals, offset its fuel usage, and comply with fuel and energy efficiency regulations, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency, and no impact would occur (SB 100 is described in Section 3.7.1, *Regulatory Setting*). The same would be true of Alternatives 1 and 2.

See Section 3.7, *Energy*, for analysis of other energy-related considerations identified in CEQA Guidelines Appendix G Section VI.

3.1.4.7 Geology, Soils, and Paleontological Resources

According to CEQA Guidelines Appendix G Section VII(a)(1), a project would result in a significant impact to geology and soils if it would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area. Neither the Project nor an alternative would cause an impact in this respect because no Alquist-Priolo Earthquake Fault Zones have been mapped as intersecting or adjacent to the Project Site. The closest mapped fault zones are located approximately 8.5 miles (Rocky Ledge Fault Zone) and 15 miles (the Hat Creek Fault Zone) from the Project Site. Accordingly, the Project would not directly or indirectly cause substantial adverse effects related to fault rupture. See Section 3.9, *Geology and Soils*, for additional analysis of potential impacts relating to geology and soils.

According to CEQA Guidelines Appendix G Section VII(f), a project would result in a significant impact to paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Geologic mapping published by the CGS indicates a majority of the Project Site is underlain by two types of volcanic rock (i.e.,

³ The California Green Building Standards Code (CALGreen, Title 24 Cal. Code Regs. Part 11) is a statewide regulatory code for all buildings. CALGreen is intended to encourage more sustainable and environmentally-friendly building practices, require use of low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment (CBSC, 2019).

andesite and basalt, which are discussed in Section 3.9.1.2, *Environmental Setting*). In general, rocks of igneous origins like volcanic rocks have low to no paleontological potential and sensitivity, due to the extremely high temperatures associated with the formation of the rocks and the nature of lava flows. Nonetheless, the online collections database of the University of California Museum of Paleontology (UCMP) was searched for fossil localities from geologic units mapped as occurring in the Project Site. Data provided through the UCMP's online database includes taxonomic identification, locality number and name, age, and county, and sometimes geologic formation. Precise locality data is not provided; however, in some cases the locality name can be used to further refine the general vicinity of the locality within the county. The results of this search indicate no previously recorded vertebrate fossil discoveries within the geologic formations within the Project Site (UCMP, 2020). For these reasons, implementation of the Project or Alternatives 1 or 2 would result in no impact to paleontological resources.

3.1.4.8 Hazards and Hazardous Materials

According to CEQA Guidelines Appendix G Section IX, a project would result in a significant impact to hazards and hazardous materials if it would: c) emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school; d) be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment; or e) for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area. Neither the Project nor alternatives would result in any impact relative to these considerations.

There are no schools, existing or proposed, within 0.25 mile of the Project Site. The nearest school is Montgomery Creek Elementary School, which is located approximately 1.5 miles from the western boundary of the Project Site. The Project Site is not included on a list of hazardous materials sites compiled pursuant to the Cortese List (Government Code §65962.5). The nearest airport to the Project Site, the Fall River Mills Airport, is located approximately 20 miles northeast of the Project Site. Additionally, the Project Site is not located within an airport land use plan. For these reasons, the Project would cause no impact related to these considerations. The same would be true of Alternatives 1 and 2.

See Section 3.11, *Hazards and Hazardous Materials*, for analysis of other considerations identified in CEQA Guidelines Appendix G Section IX.

3.1.4.9 Hydrology and Water Quality

According to CEQA Guidelines Appendix G Section X, a project would have a significant impact to hydrology and water quality if it would: d) risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. Neither the Project nor alternatives would result in any impact relative to these considerations because the Project Site is not located in a flood hazard, tsunami, or seiche zone. Nor would the project become inundated in the event of a dam failure due to its elevation and location relative to the Haynes Reservoir, which is located approximately

3.3 miles northeast of the Project Site. In the unlikely event of a dam failure, projected inundation would extend north and down gradient, away from the Project Site. Therefore, there would be no impact pertaining to this criterion.

See Section 3.12, *Hydrology and Water Quality*, for analysis of other considerations identified in CEQA Guidelines Appendix G Section X.

3.1.4.10 Land Use and Planning

According to CEQA Guidelines Appendix G Section XI, a project would have a significant impact relating to land use and planning if it would: a) Physically divide an established community; or b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Neither the Project nor an alternative would have an impact in either respect.

The Project Site is privately-owned timberland located approximately 6 miles west of Burney, 35 miles northeast of Redding, and near the private recreational facility of Moose Camp.⁴ Other communities near the Project Site include Montgomery Creek, Round Mountain, Wengler and Big Bend. None would be physically divided by the Project.

The Shasta County General Plan designates the Project Site as Timber (T). The zoning designations are Timber Production (TP) (approximately 4,457 acres) and Unclassified (U) (approximately 6 acres). Consistent with General Plan Policy 6.2.4, T-d, the proposed power generation facilities are an allowed use. Regarding the TP district, Shasta County Code Section 17.08.030(D) conditionally allows the construction of “gas, electrical, water, or communication transmission facility, or other public improvements, in accordance with Government Code Section 51152.” Regarding the U zone district, Code Section 17.64.040, conditionally permits wind energy systems so long as the system is not otherwise prohibited by law and would not be inconsistent with any portion of the General Plan. Code Section 17.88.035 requires a Use Permit in all districts for all large scale wind energy facilities, like the Project, that would be larger than 50 kilowatts (Shasta County, 2019c). Consistent with Code Section 17.92.020, the Applicant has submitted a Use Permit application for the County’s consideration. Consistency with other relevant General Plan policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect are considered in the context of the relevant resource area elsewhere in this Chapter 3. For these reasons, no impact would result from the Project or from Alternative 1 or 2.

3.1.4.11 Mineral Resources

According to CEQA Guidelines Appendix G Section XII, a project would result in a significant impact to mineral resources if it would result in the loss of availability of: a) a known mineral resource that would be of value to the region and the residents of the state; or b) a locally-important

⁴ Moose Camp is an approximately 146-acre private recreational facility owned and operated by Moose Recreational Camp, Ltd., a California Non-Profit Mutual Benefit Corporation, for the benefit of its approximately 75 members and their families (Moose Recreational Camp, Ltd., 2012a, 2012b; Appendix J, Scoping Report [Letters P17, P23, P37, P43, P55]). In Moose Camp, 50 cabin residences are used year-round (Appendix J, Letters P17, P23, P37, P43, P55).

mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Neither the Project nor alternatives would result in any impact relative to these considerations.

Neither the Project nor Alternatives 1 or 2 would be located within a significant mineral, oil, or gas resources area (DMG, 1997; DOGGR, 2020). Furthermore, local land use plans do not indicate presence of locally important mineral resources near the Project Site (Shasta County, 2004). Therefore, the Project and alternatives would not result in the loss of availability of a known mineral resource, nor would result in the loss of locally important mineral resource recovery site. Accordingly, the Project would have no impact related to mineral resources. The same would be true of Alternatives 1 and 2.

3.1.4.12 Noise

According to CEQA Guidelines Appendix G Section XIII(c), a project located in the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport would result in a significant impact to noise if it would expose people residing or working in the project area to excessive noise levels. The nearest airport to the Project Site, the Fall River Mills Airport, is located approximately 20 miles to the northeast. Based on the distance between the two locations, neither the Project nor Alternative 1 or 2 would involve any activities in an airport land use compatibility plan area, and neither would have the potential to expose people residing or working on or near the Project Site to excessive noise levels generated by airport operations.

See Section 3.13, *Noise and Vibration*, for analysis of the other considerations identified in CEQA Guidelines Appendix G Section XIII.

3.1.4.13 Population and Housing, Growth Inducement

According to CEQA Guidelines Appendix G Section XIV, a project would result in a significant impact to population and housing if it would: a) induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or b) displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. Further, Section 15126.2(e) of the CEQA Guidelines suggests that an EIR discuss the ways that a proposed project could foster economic or population growth, or the construction of additional housing, in the surrounding environment because increases in the population may tax existing community service facilities, and thereby require the construction of new or expansion of existing facilities that could cause significant environmental effects. Projects are considered growth inducing, consistent with Section 15126.2(e), when they would remove obstacles to population growth. Growth inducement can be a result of new development that increases employment levels, removes barriers to development, or provides resources that lead to secondary growth. Neither the Project nor alternatives would result in any impact relative to these considerations.

The Project and Alternatives 1 and 2 would not induce substantial unplanned population growth in Shasta County either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., by extending public roads or other infrastructure). No new homes are proposed as part of the

Project, and none would be removed. No one lives within the Project Site. Therefore, neither the Project nor an alternative would displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

With respect to employment, the Project would require up to 400 on-site personnel, comprised of a combination of local and specialized (non-local) workers, during the projected 18- to 24-month construction period. The existing construction labor pool in Shasta County is sufficient to meet the Project's non-specialized labor needs.⁵ Non-local workers would stay at local hotels and commute to the Project Site from Redding, Burney, Fall River Mills, or McArthur.⁶ Operation and maintenance of the Project would require up to 12 full-time employees. Non-routine (emergency) maintenance could require additional workers. Decommissioning and site restoration activities are expected to require a smaller workforce than construction; decommissioning and site restoration-related activities are expected to take approximately 18- to 24-months to complete.

Because the operations and maintenance workforce would be small, and because the construction and decommissioning workforces would be temporary and include local workers, the Project would not cause substantial numbers of people to relocate to Shasta County. Therefore, the Project would not result in a large increase in employment levels that would significantly induce growth. Nonetheless, even if all workers were to migrate into Shasta County, the existing available housing supply could accommodate them without requiring new construction.⁷ Therefore, the Project is not expected to induce population growth, the housing and provision of services for which could cause significant adverse environmental impacts. The same would be true of Alternatives 1 and 2.

Although as discussed in Section 3.7, *Energy*, the Project would contribute to the energy supply, which supports growth, the development of power infrastructure is a response to increased market demand, and the availability of electrical capacity by itself does not ensure or encourage growth within a particular area. Other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have a more direct effect on growth.

3.1.4.14 Public Services

According to CEQA Guidelines Appendix G Section XV, a project would result in a significant impact to public services if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response

⁵ Shasta County comprises the Redding, California Metropolitan Statistical Area. The 2018 annual average unemployment rate in the Redding Metropolitan Statistical Area was 4.9 percent as compared to 4.2 percent for California and 3.9 percent for the nation during the same period (State of California Employment Development Department 2020; U.S. Department of Labor Bureau of Labor Statistics, 2019). While the number of construction jobs has been on the rise since 2011, it has not recovered to 2007/2008 levels (U.S. Department of Labor Bureau of Labor Statistics 2017). The number of individuals employed in the construction in the Redding Metropolitan Statistical Area in 2019 fluctuated from 3,000 in January, 2019 to 3,900 in July, 2019 (EDD, 2019).

⁶ A review of hotels in Burney, Fall River Mills, McArthur, and Redding using Google Travel indicated that there are 49 hotels and motels within the four towns (Google Travel, 2020).

⁷ Shasta County's vacancy rate for residential rentals is higher than the national average: 3.82 percent compared to 2.34 percent (Sperling's BestPlaces 2017).

times or other performance objectives for any of the public services: a) fire protection, b) police protection, c) schools, d) parks, or e) other public facilities. Neither the Project nor alternatives would require the construction of new or physical alteration of existing public services facilities. As explained below, no impact would result relative to these considerations.

Fire Protection Services

Fire control agencies in Shasta County operate at the federal, state, and local level. While State and Federal agencies are primarily tasked with responding to wildland fires, in practice, all agencies work together in times of need (Shasta County, 2018).

The U.S. Forest Service (USFS) is responsible for wildland fire control on Forest Service-administered lands and, pursuant to an agreement with the California Department of Forestry and Fire Protection (CAL FIRE), on approximately 200,000 acres of private lands adjacent to or within USFS boundaries. The National Park Service provides protection for Lassen National Park and Whiskeytown National Recreation Area (Shasta County, 2018).

CAL FIRE is responsible for wildland fire control on approximately 1.1 million acres of private lands outside of USFS or city boundaries. CAL FIRE protects an additional 250,000 acres of federal lands through an agreement with the USFS and Bureau of Land Management. There are five CAL FIRE Battalions in Shasta County. They support fire-fighting equipment and personnel with eight seasonal fire stations, and one Battalion with three additional stations that serve the County, although they are located outside its boundaries (Shasta County, 2018). Performance objectives for fire protection include the following:

1. According to the Shasta Trinity Unit 2018 Strategic Fire Plan, “CAL FIRE’s goal is to contain 95 percent of all wildfires at 10 acres or less.” (CAL FIRE and Shasta County Fire, 2018).
2. According to CAL FIRE Chief Ken Pimlott, CAL FIRE’s statewide Initial Attack Fire Policy goal is to aggressively attack all wildfires, with the goal of containing 95 percent of all fire starts to 10 acres or less (NPR, 2018).

Local fire agencies serving the unincorporated areas of Shasta County include 12 community fire districts (including Burney), 19 volunteer fire companies (including Montgomery Creek), and one Shasta County Fire District station at the Redding Station 43. Several of the local fire agencies overlap with CAL FIRE and USFS jurisdictions. The Burney Fire Protection District provided initial input for the County’s environmental review process shortly after the Use Permit application was filed for the Project (Burney Fire Protection District, 2018). Later, in response to the issuance of notice of intention to prepare this Draft EIR, the County received scoping input noting that the California Office of Emergency Services (Cal OES) provides community support, including disaster response and recovery, and that the local community is served by a volunteer fire department (the Montgomery Creek Fire Company). All scoping input received, including regarding Public Services, is provided in Section 4.1 of the Scoping Report, a copy of which is provided in **Appendix J, Scoping Report**.

The Project and Alternatives 1 and 2 would result in no impact relating to the maintenance of acceptable performance objectives for fire protection services because they would not provide or

require the construction of new or physical alteration of existing governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection. As described in Section 3.18, *Wildfire*, the Project Site is within an area classified as a Very High Fire Hazard Severity Zone. As an example, the Fountain Fire destroyed approximately 600 structures in Round Mountain, Montgomery Creek, and the surrounding area and burned approximately 64,000 acres in 1992. A burn scar from that fire remains evident on the landscape within the Project Site. The Project could increase the demand for fire protection and response services due to the possibility that Project-related vehicles or infrastructure could ignite a fire. However, this increase in potential demand would be moderated by the proposed preparation of a Project-specific Fire Prevention Plan to be prepared consistent with the directives in the Shasta County Fire Safety Standards (Shasta County, 2017), the Forest Practice Rules (CAL FIRE, 2019), CAL FIRE’s Shasta–Trinity Unit Strategic Fire Plan (CAL FIRE, 2017), and maintenance of adequate firebreaks and other fire prevention precautionary measures. Further, increases in long-term demand for fire protection services typically are associated with substantial increases in population, which would not occur as a result of the Project. See Section 3.1.3.6, *Population and Housing, Growth Inducement*. Because no new or modified fire protection facilities would be required, the Project would result in no impact relating to the construction of new or modification of existing governmental fire protection facilities.

Police Protection Services

Increases in long-term demand for police protection services typically are associated with substantial increases in population, which would not occur as a result of the Project. See Section 3.1.3.6, *Population and Housing, Growth Inducement*. The Project could cause an increase in the demand for police services associated with security issues during construction or decommissioning (e.g., theft of equipment or materials from the Project Site) or operation and maintenance (e.g., to police illegal trespassing). However, because the Project would be located entirely on private property and public access would be restricted by gates and posted “no trespassing” signs, any such increase in demand is not expected to be substantial and could be met by existing services. Therefore, there would be no need to modify existing, or provide new, police protection facilities to maintain acceptable performance objectives, the construction of which facilities could cause substantial adverse physical impacts. Because no new or modified police protection facilities would be required, the Project would result in no impact in this regard. The same would be true of Alternatives 1 and 2.

Other Public Services

Neither the Project nor Alternatives 1 or 2 would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public services, including schools, parks, hospitals, or libraries. The Shasta County Office of Education supports 101 public schools, 17 public charter schools, and 19 preschools. Five public schools and two preschools are located within 20 miles of the Project Site, and two Head Start childhood education facilities are located within 10 miles of the Project Site. Regarding parks, the Big Bend Community Park, located

approximately 6.5 miles north of the Project Site, is the only developed community park within 20 miles of the Project Site. The hospital nearest to the Project Site is Mayers Memorial District Hospital, 20 miles northeast in Fall River Mills. Mayers Memorial Hospital provides essential hospital and emergency room care, as well as outpatient services. There is one public library within 20 miles of the Project Site. The Burney Branch Library is located approximately 6 miles east of the Project Site. As noted above, the Project would not result in an increase in the permanent population of the area. See Section 3.1.3.6, *Population and Housing, Growth Inducement*. Therefore, any Project workforce-generated demand on such facilities and services is likely to be part of the baseline condition and any temporary increase in population could be accommodated by existing or planned capacity within those systems and services. Because no new or modified schools, parks, hospitals, or libraries would be required, neither the Project nor Alternatives 1 or 2 would result in any impact regarding these public services.

3.1.4.15 Recreation

According to CEQA Guidelines Appendix G Section XVI, a project would result in a significant impact to recreation if it would: a) increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or b) include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Neither the Project nor Alternatives 1 or 2 would result in any impact relative to these considerations.

The Project and Alternatives 1 and 2 would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated because, as discussed above, the Project would not generate new residents in nearby communities or in the greater Shasta County area. Further, as described in Chapter 2, no recreational facility construction or expansion is proposed or would be required by the Project or alternatives. Accordingly, no impact would result to any of the significance criteria listed in CEQA Guidelines Appendix G Section XVI.

Although there are no parks on or in the immediate vicinity of the Project Site, scoping input suggests that the Project would affect areas that provide recreation based on swimming, hunting and fishing, hiking, biking, cross-country skiing, snowmobiling, and bird watching (Appendix J). The Project Site is private property. Indications of the landowner's intent to exclude the general public from the Project Site include fences, locked gates, and no trespassing signs. Because there is no right to trespass, the proposal to enforce restrictions of public access is not considered an impact to recreation as anticipated in CEQA Guidelines Appendix G Section XVI.

3.1.4.16 Utilities and Service Systems

According to CEQA Guidelines Appendix G Section XIX, a project would result in a significant impact to utilities and service systems if it would: a) require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; or b) fail to comply with federal, state, and local

management and reduction statutes and regulations related to solid waste. Neither the Project nor Alternatives 1 or 2 would result in any impact relative to these considerations.

See Section 3.17, *Utilities and Service Systems*, for analysis of other the utilities and service systems-related considerations identified in CEQA Guidelines Appendix G, Section XIX.

Water and Wastewater Treatment Facilities

Project Site clearing and construction would require water for dust control, batch concrete mixing, emergency fire suppression, and other activities. This water would be provided by a new on-site well(s) or would be delivered by a contractor using water trucks and sourced from an existing water right. The potential construction of one or more on-site wells and a septic system are included as part of the Project description and impacts are analyzed where appropriate throughout this EIR. Well construction would occur in accordance with the requirements of the water well permitting program administered by the Shasta County Environmental Health Division (EHD). Portable toilets would be provided for construction workers and would be serviced on a regular basis by a licensed contractor who would dispose of sanitary wastewater pursuant to applicable regulations. The Project would not connect permanently to any water or wastewater treatment facilities and would not result in the relocation or construction of new water or wastewater treatment facilities to serve direct Project-related demand that would have any impact not already addressed on a resource-by-resource basis in this EIR. As the construction workers are anticipated to be predominantly local and from the surrounding areas (i.e., Redding, Burney, Fall River Mills, or McArthur), the Project would not result in the need for additional wastewater treatment facilities in order to serve indirect Project-related demand. Therefore, the Project would not result in additional demand for wastewater treatment facilities and have no impact from construction of new wastewater facilities during construction. The same would be true of Alternatives 1 and 2.

Operation and maintenance of the Project would require water for the O&M facility, equipment maintenance and washing, and emergency fire suppression. The O&M facility would be served either by the onsite well, as discussed above, or by an onsite storage tank that would be filled periodically by water trucks from an existing water right. The O&M facility also would utilize an onsite septic system. The construction of storage tanks and an onsite septic system is included as part of the Project description and impacts are analyzed where appropriate throughout this EIR. Both the onsite storage tanks and septic system would be operated and maintained in accordance with the rules and regulations of the Shasta County Department of Resource Management's Environmental Health Division. The Project would not connect permanently to any water or wastewater treatment facilities and would not result in the relocation or construction of new water or wastewater treatment facilities to serve direct Project-related demand that would have any impact not already addressed on a resource-by-resource basis in this EIR.

The Project would not result in a permanent increase in the populations of local areas such as Redding, Burney, Fall River Mills, or McArthur. The Project would not result in the need for additional water or wastewater treatment facilities in order to serve indirect Project-related demand during operation and maintenance. Therefore, the Project would not result in additional demand for water or wastewater treatment facilities and have no impact from construction of new water or wastewater facilities during operation and maintenance.

Water and wastewater use during decommissioning would be limited to use for fire protection, dust suppression, and portable toilets. If a domestic well is installed during construction, operation, or maintenance, it would remain on-site. Decommissioning of the Project would not result in the construction or relocation of any additional permanent water or wastewater treatment facilities which could cause a significant environmental effect. Therefore, no impact would occur.

Storm Water Drainage Facilities

During site clearing and construction, the Project would maintain onsite stormwater drainage patterns to the extent possible to minimize impacts on runoff and drainage, but new storm water drainage facilities such as ditches and culverts would be constructed to capture and convey stormwater runoff. The construction of stormwater drainage ditches and culverts is included as part of the Project description and impacts are analyzed where appropriate throughout this EIR. As described in Section 2.4.5.6, *Stormwater Control*, the Applicant would prepare a site-specific Storm Water Pollution Prevention Plan (SWPPP) for the Project that would identify best management practices (BMPs) to be used to minimize or eliminate pollution, erosion, and sedimentation during road construction. The Applicant also would prepare a Temporary Erosion and Sediment Control (TESC) Plan, which would be implemented and maintained by the construction contractor throughout operation to further reduce the potential for erosion. For more information regarding the SWPPP or the TESC Plan, see Section 3.12, *Hydrology and Water Quality*. The Project would not create a new connection to any stormwater drainage system and would not result in the relocation or construction of new stormwater drainage facilities due to an increase in runoff from the site. No impact would result.

Decommissioning of the Project would involve removal of turbines, support towers, transformers, substation, switching station, and foundations. No new access roads or road widening would be required. Therefore, decommissioning of the Project would not result in the relocation or the construction of any new stormwater drainage facilities. Under this criterion, there would be no impact.

Electric Power and Telecommunications Facilities

The Project would include site clearing for and construction of 34.5 kV overhead (approximately 12 miles) and underground (approximately 51 miles) collector lines, fiber optic communication cabling, an onsite substation, a switching station, and four permanent Meteorological Equipment (MET) towers. Additionally, a relay microwave tower or overhead fiber optic communication circuits could be required as part of the interconnection facilities. These electrical power and telecommunication facilities are part of the Project description and are analyzed where appropriate throughout this EIR. Construction of other Project components would not result in the need for additional electric power or telecommunication facilities. Therefore, no impact would occur during construction.

Operation and maintenance of the Project would use electrical power supplied by the connections installed during construction as described above. No additional electrical power or telecommunication facilities would be constructed or relocated during operation and maintenance; therefore, no impact would occur.

Decommissioning of the Project would result in removal of all facilities listed above (i.e., overhead and underground collector lines, relay microwave tower, fiber optic cabling, substation, switching station, and MET towers). The decommissioning phase of the Project would not result in any need for additional construction or relocation of new electric power or telecommunication facilities. Under this criterion, there would be no impact.

In response to its notice of intention to prepare this Draft EIR, the County received scoping input asking whether existing electrical infrastructure is adequate to transmit electricity to be generated by the Project reliably and safely once it hits the Round Mountain station operated by PG&E. It is suggested that these lines are at or over electrical capacity during peak times 7 months or more of the year. The County is aware of a Round Mountain 500 kV Area Dynamic Reactive Support project that is being considered as part of the California Independent System Operator's transmission planning process (CAISO, 2019a, 2019b) to maintain reliability for the transmission system in response to increasing variable loading on the transmission system and in anticipation of retiring the Diablo Canyon nuclear power plant in 2025. The County anticipates that the CPUC would analyze the potential environmental impacts of any transmission reliability work proposed to take place in connection with the Round Mountain Substation once sufficient details about such a proposal are known. That project would be proposed many miles away from the Project Site and would have a different applicant, a different CEQA lead agency, and different objectives than the Project analyzed in this EIR. It is anticipated that any reliability upgrades that could be proposed in connection with the Round Mountain substation would be evaluated whether or not the Project proceeds. Although overall electrical system capacity and issues of grid reliability are beyond the scope of the County's consideration under CEQA of impacts of the proposed wind project, the County further notes that a regional grid reliability project at or near the Round Mountain Substation appears to be proceeding (TransmissionHub, 2020).

Natural Gas Facilities

No new or relocated natural gas facilities are proposed or would be required for construction, operation and maintenance, or decommissioning of the Project or Alternatives. Therefore, no impact would result regarding the relocation or construction of such facilities.

Regulatory Compliance and Solid Waste

No federal regulations governing solid waste apply to the Project, so there would be no impact to federal statutes and regulations related to solid waste. As discussed in connection with Impact 13.7-3 in Section 3.17, *Utilities and Service Systems*, the Project would be consistent with both the Forest Practice Act of 1973 regarding non-biodegradable waste, as well as the California Green Building Standards Code regarding biodegradable waste. The Project also would comply with the Shasta County EHD regarding disposal of solid waste. Therefore, there would be no impact as the Project would comply with all federal, State, and local management regulations related to solid waste. The same would be true of Alternatives 1 and 2.

3.1.4.17 “Wind Turbine Syndrome”

Scoping comments identified an unspecified condition called “wind turbine syndrome” as having the potential to cause sleep disturbance, headaches, tinnitus, a sense of quivering or vibration, dizziness, nausea, nervousness, high blood pressure or rapid heartbeat, difficulty with concentration, memory loss, irritability and anger, and seizures (Appendix J).

The term “Wind Turbine Syndrome” was coined by a pediatrician in 2009 in a report that hypothesized that wind turbines generating low frequency sound cause a multitude of symptoms, such as headache and dizziness. An article in the *Journal of Environmental Health* (Roberts and Roberts, 2013) summarizes the study method used in the 2009 report (i.e., a collection of subjective responses from 37 participants interviewed by phone) and summarized peer-reviewed literature examining the relationship between human health effects and exposure to sound generated from the operation of wind turbines. The journal article concluded that “exposure to wind turbine sound and the mere presence of wind turbines” can cause a significant annoyance response among study participants, but that no specific health condition has been documented in the peer-reviewed literature that has been classified as a disease caused by exposure to sound levels and frequencies generated by the operation of wind turbines (Roberts and Roberts, 2013). An article in the May–June 2016 volume of *Neurotoxicology and Teratology* (a bimonthly peer-reviewed scientific journal) also investigated the possibility of an association between residential proximity to wind turbines and symptoms of unknown or uncertain origin (Blanes-Vidal and Schwartz, 2016). This article also reports having found no observed significant relationship between residential proximity to wind turbines and symptoms complained of. That symptoms may be attributed to something other than the wind turbines also is suggested by an article published in *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* (a bimonthly peer-reviewed scientific journal): “In the research interviews examined, even though interviewees treat those who report experiencing symptoms from wind farms as having primary rights to narrate their own experience, this epistemic primacy does not extend to the ability to ‘correctly’ identify symptoms’ cause. As a result, the legitimacy of health complaints is undermined. Wind turbine syndrome is an example of a contested illness that is politically controversial.” (Clark and Botterill, 2018).

With regard to annoyance from wind turbines, the County of San Diego Public Health Office authored a Public Health Position Statement in 2019 that contained a systematic and comprehensive look at claims of adverse health impacts from wind turbines. The Public Health Position Statement states that there is a convincing body of evidence to show that annoyance is strongly related to visual cues and attitude as well as the wind turbine noise itself. “In particular, this was highlighted by the fact that people who benefit economically from wind turbines (e.g., those who have leased their property to wind farm developers) reported significantly lower levels of annoyance than those who received no economic benefit, despite increased proximity to the turbines and exposure to similar (or louder) sound levels” (County of San Diego, 2019). The “body of evidence” referenced by the 2019 Position Statement includes studies by the Minnesota Department of Public Health, Maschke, Havas, the Danish Energy Agency, Niemann, the World Health Organization, and the National Research Council.

Based on the current state of the science, this EIR does not consider potential impacts relating to “Wind Turbine Syndrome” in further detail because: (a) there is no agreement among scientists that Wind Turbine Syndrome is a risk to human health, (b) there are no defined or adopted CEQA standards for defining health risk from wind turbine-generated sound, and (c) the County has determined that the potential for health effects associated with “wind turbine syndrome” as characterized in scoping comments is too speculative to allow for a meaningful evaluation of potential impacts.

3.1.5 Irreversible Impacts

Section 15126.2(d) of the CEQA Guidelines requires an EIR to consider whether a proposed project, if implemented, would result in significant irreversible environmental changes. Such changes are likely to occur for example, following the dedication of a large commitment of non-renewable resources because “a large commitment of such resources makes removal or nonuse thereafter unlikely.” Secondary impacts (such as highway improvements, which provide access to a previously inaccessible area) generally commit future generations to similar uses.

For the Fountain Wind Project, the use permit period ultimately would be established by County decision-makers; a 40-year permit duration has been requested. Upon the expiration of the use permit period, the Project would be decommissioned and the Project Site restored to a condition suitable for commercial timber land use (see Section 2.4.7, *Decommissioning and Site Restoration*). Internal roads that would not be needed to serve the future timber land use of the site would be removed and the area restored, including by natural recruitment. Therefore, the Project-specific commitment of non-renewable resources (e.g., oil, gas, and other fossil fuels) would not preclude the removal of Project infrastructure or the site’s future use in a way that is comparable to its current use. Irreversible impacts also can result from damage caused by environmental accidents caused by a proposed project (CEQA Guidelines §15126.2[d]). Potential impacts relating to hazards and hazardous materials are analyzed in Section 3.11, which identifies no significant unavoidable adverse effect. For these reasons, the Project would not, if implemented, result in significant irreversible impacts.

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