

3.12 Hydrology and Water Quality

This section identifies and evaluates issues related to hydrology and water quality in the context of the Project and alternatives. It includes information about the physical and regulatory setting and identifies the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

The Central Valley Regional Water Quality Control Board (RWQCB) provided initial input for the County's environmental review process shortly after the CUP application was filed for the Project (RWQCB, 2018a). Later, in response to the issuance of notice of intention to prepare this Draft EIR, the County received scoping input about hydrology- and water quality-related considerations from a variety of sources. All scoping input received, including issues raised pertaining to hydrology and water quality, is provided in Section 4.1 of the Scoping Report, a copy of which is provided in **Appendix J, Scoping Report**.

3.12.1 Setting

3.12.1.1 Study Area

The study area considered for this analysis of water resources includes the Project Site, which includes all areas of temporary and permanent disturbance (described in Table 2-1), as well as downstream portions of the waterways intersecting the Project Site and the undefined groundwater basins beneath the Project Site that could be impacted by the proposed construction, operation, and decommissioning activities.

3.12.1.2 Environmental Setting

Climate, Precipitation, and Site Topography

Shasta County is located in a Mediterranean climate, characterized by hot, dry summers and cold winters. Annual precipitation falling in the form of rain and snow measured at Round Mountain (3 miles west of the Project Site) is 63 inches on average (WRCC, 2010). By contrast, the annual average precipitation measured in Burney (approximately 6 miles east of the Project Site) is just 28 inches (WRCC, 2015). Thus, eastern portions of the County, including some eastern locations within the Project Site, are likely to receive considerably less precipitation due to rain shadow effects associated with the mountainous terrain. The Project Site is located in the southern portion of the Cascade Range, in the northern Sacramento River Hydrologic Region. Shasta County is located at the headwaters of California's largest watershed, the Sacramento River Basin. As noted in the County's General Plan, about 6.5 percent of all surface runoff in the state of California originates in Shasta County, amounting to more than one-fourth of the total surface runoff within the Sacramento River system, the state's largest source of domestic and agricultural water supplies (Shasta County, 2004). Elevations within the Project Site range from 3,000 to 6,000 feet above mean sea level.

Surface Water Hydrology

The Project Site is within the Whitmore and Pit River Units of the Sacramento River Hydrologic Region. Waterways in each of these hydrologic units ultimately flow west to the Sacramento River. The lower Pit River watershed drains to the Sacramento River and Lake Shasta (i.e., the confluence of the Pit River and the Sacramento River is within the area inundated by Shasta Dam). Lake Shasta is operated as a surface storage reservoir by the U.S. Bureau of Reclamation, and is managed by the Central Valley Project, as a major water supply resource for the state.

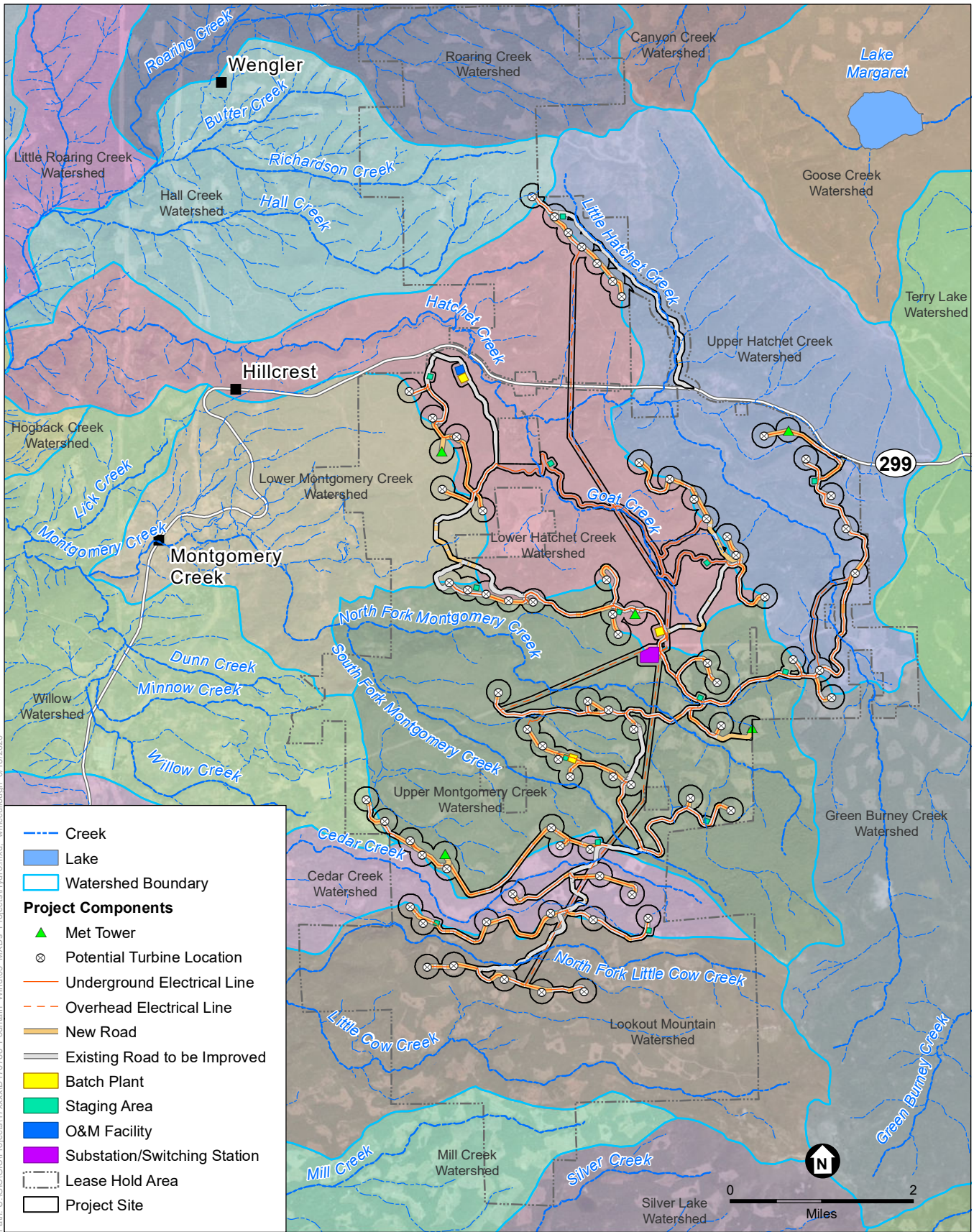
Figure 3.12-1, *Surface Waters and Hydrology*, depicts the surface waters, watersheds, and hydrology within and surrounding the Project Site. Multiple smaller watersheds span the Project Site including Lower and Upper Hatchet Creek, Lower and Upper Montgomery Creek, Green Burney Creek, and portions of Cedar Creek and Lookout Mountain. Multiple surface waters generally flow from east to west/northwest through the Project Site including Hatchet Creek, Montgomery Creek, Goat Creek, Indian Springs, Willow Creek Cedar Creek, Blue Lake, Little Cow Creek, Mill Creek, Cheddar Creek, Sawdust Creek, and Buffum Creek. In addition to approximately 8 miles of streams and creeks, as well as intermittent streams and other water features, some contributing to approximately 38 acres of wetlands that have been identified within the Project Site. Wetlands and riparian habitats are described in more detail in Section 3.4, *Biological Resources*, and in **Appendix C2**, which contains an Aquatic Resources Survey Report that was prepared for the Project. Due to the local terrain for watersheds in the Project's vicinity, hydrologic conditions for surface waters tend to be flashy in the winter months and dry in the summer, depending on conditions for snowmelt and winter rains.

Water Quality

Surface waters and groundwater in Shasta County have been described as generally having high quality from a drinking water perspective (Shasta County, 2004). Post-fire conditions (such as those following the recent regional fires, described under the heading "Fire History" in Section 3.1.2.1, *Cumulative Scenario*) influence surface water quality, as water flowing through burned areas is likely to carry increased levels of sediment, organic debris, and chemicals (such as residuals from fire suppressants), contributing to degradation of water quality and aquatic resources (Shasta County, 2016). Timber harvesting activities in the region also have affected surface waters through delivery of silt, sediment, and increasing turbidity through runoff. Disturbance processes and effects on hydrology following a forest harvest or wildfire event are emerging areas of research in the region (USGS, 2014).

Groundwater

As described in Section 3.9, *Geology and Soils*, and shown in Figure 3.9-1, *Geologic Units*, the Project Site is underlain by volcanic bedrock. Groundwater basins underlying the Project Site are undefined. The closest defined groundwater basins are Burney Valley Groundwater Basin and Dry Burney Valley Basin beyond the ridge to the east of the Project Site, neither of which is a "medium" or "high-priority" basin or a basin in a condition of critical overdraft regulated under the Sustainable Groundwater Management Act. Groundwater is generally considered to be of high quality throughout most of Shasta County. Depth to groundwater is highly variable, ranging from 5 feet below ground surface to more than 230 feet below ground surface, based on DWR



Fountain Wind Project

Figure 3.12-1
Surface Waters and Hydrology

groundwater well data (DWR, 2020a, 2020b; see also **Appendix I**, which contains a Project-specific Water Supply Assessment).

As noted in Section 3.15, *Utilities and Service Systems*, the Burney Water District is the closest water district to the Project Site. District supplies are sourced from groundwater, and the tap water it provides to its more than 3,000 customers (from that groundwater) complies with federal health-based drinking water standards (Environmental Working Group, 2020). With that said, soil and geologic limitations for septic tanks or on-site wastewater systems, particularly in the eastern portion of the county, have generated concerns about potential groundwater contamination (Shasta County, 2004). To install and operate the onsite septic system proposed to serve the Project's O&M facility, a permit would be required from the County. For analysis of the suitability of on-site soils to support the proposed septic tank use, see Section 3.9, *Geology and Soils*.

Flooding and Inundation Hazards

The Federal Emergency Management Agency (FEMA) has developed mapping of flood hazard risk areas through the National Flood Insurance Program (NFIP). The Project Site is located in Zone X, classified by FEMA as an area of minimal flood hazard (FEMA, 2011). The Project Site is not located in an area subject to tsunamis, seiche or dam inundation. The closest dam to the Project Site is Haynes Reservoir, 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.

3.12.1.3 Regulatory Setting

Federal

Clean Water Act

Under the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), the U.S. Environmental Protection Agency seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters by implementing water quality regulations. Multiple CWA sections apply to activities near or within surface water or groundwater.

The federal Antidegradation Policy, established in 1968 under CWA Section 303, is designed to protect existing uses, water quality, and national water resources. The states implement a set of antidegradation measures when evaluating activities that may affect the quality of waters of the United States. Implementing antidegradation measures is integral to the comprehensive protection and enhancement of surface water and groundwater quality.

CWA Section 303(d) requires states to identify water bodies or segments of water bodies that are "impaired." (Impaired water bodies do not meet one or more of the water quality standards established by the state, even after point sources of pollution have been equipped with the minimum required levels of pollution control technology.) A point source is any discernible, confined, and discrete conveyance (e.g., a pipe discharge) of pollutants to a water body from

sources such as industrial facilities or wastewater treatment plants. Including a water body on the Section 303(d) List of Impaired Water Bodies triggers development of a total maximum daily load (TMDL) for that water body and a plan to control the associated pollutant or stressor on the list. The TMDL is the maximum amount of a pollutant/stressor that a water body can assimilate and still meet the water quality standards. Typically, a TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non-point sources. Non-point pollutant sources are those that do not have a single, identifiable discharge point but are rather a combination of many sources. For example, a non-point source can be stormwater runoff from land that contains petroleum from parking lots, pesticides from timber harvesting operations, or sediment from soil erosion.

The regional water quality control plan (referred to as the “basin plan”) identifies relevant TMDLs and specifies applicable regulatory requirements, including waste load allocations for entities that have permitted discharges. Once a water body is placed on the list of water quality limited segments, the “Section 303(d) list,” the water body remains on the list until a TMDL or alternative approach is adopted and the water quality standards are attained.

The Project Site is under the jurisdiction of Region 5, the Central Valley RWQCB. The RWQCB’s Basin Plan, which identifies beneficial uses, impairment statuses, and related requirements for the protection of waterways within and near the Project Site, is discussed further under regional regulations. A list of beneficial uses and impairment statuses of water bodies in the Project area is provided in **Table 3.12-1**.

**TABLE 3.12-1
 BENEFICIAL USES AND IMPAIRMENT STATUS**

Water Body	Beneficial Use(s)	Impairment Status	Pollutants
Pit River (from confluence of N and S forks to Shasta Lake)	Municipal and Domestic Supply (MUN), Agriculture Irrigation and Stock Watering (AG), Industry Power (POW), Cold Freshwater Habitat (COLD), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Water Contact Recreation (REC-1), Noncontact Water Recreation (REC-2)	Impaired; at least one beneficial use is not supported and a TMDL is required.	Nutrients, source unknown; Organic Enrichment/ Low Dissolved Oxygen, source unknown; Temperature, source unknown.
Lower Hatchet Creek	COLD, WARM, WILD, REC-1, REC-2	Not listed as impaired; drains to Hogback Creek	

SOURCE: RWQCB, 2018b.

Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (USACE) to regulate the discharge of dredged or fill material to waters of the U.S., including wetlands (33 USC §1344). USACE evaluates and issues site-specific individual or general (i.e., Nationwide) permits for such discharges. Because, based on a wetlands delineation prepared for the Project, construction would include stream crossings (Appendix C2, *Aquatic Resources Survey Report*), this work would include dredge and fill activity within jurisdictional waters of the U.S. and so would

necessitate a Section 404 permit. As of June 2020, USACE has not asserted a jurisdictional determination confirming whether a Section 404 Nationwide Permit would be required.

Under Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters (such as a Section 404 permit) must provide the licensing or permitting agency with a certification that the discharge would comply with the applicable CWA provisions (33 USC §1341). If a federal permit, such as a USACE Section 404 Nationwide Permit for dredge and fill discharges, is required for the Project, then the Applicant would also need to obtain a Section 401 Water Quality Certification from the Central Valley RWQCB prior to construction. An evaluation of on-site wetlands as well as a description of proposed avoidance and minimization measures would be required as part of the permit application.

State

Porter-Cologne Water Quality Control Act

The State of California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act) provides the basis for water quality regulation within California and assigns primary responsibility for the protection and enhancement of water quality to the State Water Resources Control Board (SWRCB) and the nine RWQCBs. Under the Porter-Cologne Act, the SWRCB and RWQCBs also have the responsibility for granting CWA National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements (WDRs) for certain point-source and non-point discharges to waters.

The Porter-Cologne Act allows the California SWRCB to adopt statewide Water Quality Control Plans and basin-specific water quality control plans, which serve as the legal, technical, and programmatic basis of water quality regulation statewide or for a particular region. The water quality control plans limit impacts on water quality from a variety of sources. The RWQCB Basin Plan and permit requirements relevant to this Project are described below.

California Fish and Game Code Section 1602

Pursuant to Division 2, Chapter 6, Section 1602 of the State Fish and Game Code, the California Department of Fish and Wildlife (CDFW) regulates diversion obstructions, or alterations to the natural flow or bed, channel, or bank of any river, stream or lake which supports fish or wildlife. According to the Jurisdictional Delineation, there are waters of the state on the Project site that could be subject to CDFW jurisdiction including wetland and riparian vegetation and ephemeral drainages, and perennial waterways (Appendix C2, *Aquatic Resources Survey Report*). Therefore, the Project may be required to apply for a Lake and Streambed Alteration Agreement through CDFW.

California Forest Practice Act

Areas that would be removed from timber production as a result of the Project (such as access roads and a 2-acre buffer around each proposed turbine) would be harvested in accordance with a Timberland Conversion Permit (TCP) and Timber Harvesting Plan (THP) authorization from the California Department of Forestry and Fire Protection (CAL FIRE). The Z'Berg-Nejedly Forest

Practice Act of 1973 (Pub. Res. Code §§4511–4360.2) and its implementing regulations, the Forest Practice Rules (14 Cal. Code Regs. §895 et seq.), govern the management of privately owned forestlands in California, including regarding the construction of watercourse crossings. The following Forest Practice Rules are relevant to the No Project Alternative and the Project’s proposed timber harvest activities.

1. Rule 934.5 establishes the following performance standard in connection with waste disposal: “Non-biodegradable refuse, litter, trash, and debris resulting from timber operations, and other activity in connection with the operations shall be disposed of concurrently with the conduct of timber operations” (14 Cal. Code Regs. §934.5).
2. Rule 934.8 establishes performance standards for watercourse crossing facilities on tractor roads (including their planning, construction, maintenance, and removal) (14 Cal. Code Regs. §934.5).
3. Rule 936.2 establishes performance standards for the protection of the beneficial uses of water and riparian functions (14 Cal. Code Regs. §936.2).
4. Rule 936.3 prescribes general limitations near watercourses, lakes, marshes, meadows and other wet areas (14 Cal. Code Regs. §936.3).
5. Rule 936.4 regulates watercourse and lake protection (14 Cal. Code Regs. §936.4).
6. Rule 936.10 regulates domestic water supply protection (14 Cal. Code Regs. §936.10). It says: “(a) When proposed timber operations may threaten to degrade a domestic water supply the Director shall evaluate any mitigations recommended prior to the close of the public comment period (Pub. Res. Code §4582.7) and shall require the adoption of those practices which are feasible and necessary to protect the quality and beneficial use of the supply. (b) The Director may require a post-harvest evaluation of the effectiveness of the mitigations and practices designed to protect the domestic water supply as a condition of plan approval. The Director shall require an evaluation at the request of the California Regional Water Quality Control Board, or any affected water purveyor, if the necessity for the evaluation is supported by substantial evidence in the record. This evidence may include, but is not limited to, potential land failures, accelerated rate of road construction or harvesting within a watershed, concentration or intensity of harvesting activity near streams or springs. The design and implementation of the evaluation shall be done in consultation with the Director, appropriate RWQCB, and THP submitter, and the sufficiency of the information requested by the Director shall be judged in light of reasonableness and practicality.”

General Order of Waste Discharge Requirements for Timberland Management Activities on Non-Federal and Federal Lands (Order No. R5-2017-0061)

Activities associated with timber harvest that could affect the quality of waters of the state are required to apply for coverage under General Order Number R5-2017-0061. As analyzed in Section 3.8, *Forestry Resources*, the Project proposes to convert private timberland acreage to a non-timber use; therefore, in addition to a TCP from CAL FIRE, the Project would require WDR coverage under General Order No. R5-2017-0061. Under the order, “timberland management activities” means commercial activities relating to forest management and timberland conversions, including, but not limited to: cutting or removal of timber and other solid wood forest products; construction, reconstruction and maintenance of roads, fuel breaks, firebreaks, watercourse crossings, landings, skid trails, or beds for the falling of trees; fire hazard abatement and fuel

reduction activities; pesticide applications; site preparation that involves disturbance of soil or burning of vegetation following timberland management activities (RWQCB, 2017). Depending on how the proposed timber management activity is categorized (e.g., as having a high or low threat to water quality), avoidance and impact minimization measures, notification for pesticide use, and design safeguards for water crossings may be imposed to protect slopes and waterways.

California Department of Pesticide Regulation

The Department of Pesticide Regulation (DPR) is the California agency responsible for implementing the NPDES Pesticide General Permit requirements. DPR's strict oversight begins with pesticide product evaluation and registration and continues through statewide licensing of commercial applicators, dealers, consultants, and other pesticide professionals; evaluation of health impacts of pesticides through illness surveillance and risk assessment; environmental monitoring of air, water, and soil; field enforcement (with county agricultural commissioners) of laws regulating pesticide use; residue testing of fresh produce; and encouraging development and adoption of least-toxic pest management practices through incentives and grants.

California's Food and Agricultural Code authorizes the state's pesticide regulatory program and mandates it to:

- Provide for the proper, safe, and efficient use of pesticides and protection of public safety.
- Protect the environment from environmentally harmful pesticides by prohibiting, regulating or ensuring proper stewardship of those pesticides.
- Assure agricultural and pest control workers have safe working conditions where pesticides are present.
- Authorize agricultural pest control by competent and responsible licensees and permittees under strict control of DPR and the state's county agricultural commissioners.
- Assure pesticides are properly labeled and appropriate for the use designated by the label, and that state or local governmental dissemination of information on uses of any registered pesticide product is consistent with the uses for which the product is registered.
- Encourage the development and implementation of pest management systems, stressing application of biological and cultural pest control techniques with selective pesticides when necessary to achieve acceptable levels of control with the least possible harm to public health, nontarget organisms, and the environment.

California Safe Drinking Water Act

The California Safe Drinking Water Act of 1996 requires the Office of Environmental Health Hazard Assessment (OEHHA) to develop public health goals for chemical contaminants to drinking water (OEHHA, 2007). Contaminants in herbicide application such as glyphosate (discussed in Section 3.11, *Hazards and Hazardous Materials*) are among the chemicals included as public health goals to prevent pollutants from entering waterways.

Regional

NPDES Construction General Permit

Construction activities disturbing 1 acre or more of land, as proposed for the Project Site, are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (Construction General Permit, Order 2009-0009-DWQ, NPDES No. CAS000002, as amended by Orders 2010-0014-DWQ and 2012-006-DWQ; SWRCB, 2014) and must apply for Construction General Permit coverage. The permit regulates stormwater discharges from construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including the installation of utility lines. This General Permit requires that stormwater discharges and authorized non-stormwater discharges must not contain pollutants that cause or contribute to an exceedance of any applicable water quality objective or water quality standards (identified in the Basin Plan). The Central Valley RWQCB administers and enforces the Construction General Permit throughout Region 5, which includes the Project Site.

For all new projects, applicants must electronically file permit registration documents using the Stormwater Multiple Applications and Report Tracking Systems (SMARTS), and must include a Notice of Intent (NOI), risk assessment, site map, and storm water pollution prevention plan (SWPPP) to be covered by the General Construction Permit prior to beginning construction. The risk assessment and SWPPP must be prepared by a State-Qualified SWPPP Developer (QSD). In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The Construction General Permit requires that construction sites be assigned a risk level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the risk to receiving waters during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could be discharged to receiving water bodies, and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving-waters risk level reflects the risk to receiving waters from the sediment discharge. Depending on the risk level, construction projects governed by the Construction General Permit could be subject to the following best management practice requirements (BMPs): Effluent standards; good site management “housekeeping;” non-stormwater management; erosion and sediment controls; run-on and runoff controls; inspection, maintenance, and repair; and monitoring and reporting requirements. Such BMPs are designed to protect surface water quality by preventing eroded soil and construction-related pollutants from migrating off-site from the construction area. Routine inspection of all BMPs is required under the Construction General Permit.

Local

Shasta County General Plan

Multiple elements of the Shasta County General Plan discuss and prioritize considerations of water resources. Water supply, flooding, water quality, erosion, dam safety and inundation are

key areas of hydrological consideration in the General Plan. The following objectives and policies pertain to a consideration of hydrology and water quality (Shasta County, 2004).

5.1 Seismic and Geologic Hazards

SG-4: Protection of waterways from adverse water quality impacts caused by development on highly erodible soils.

SG-d: Shasta County shall develop and maintain standards for erosion and sediment control plans for new land use development. Special attention shall be given to erosion prone hillside areas, including those with extremely erodible soils types such as those evolved from decomposed granite.

5.2 Flood Protection

FL-2: Protection of public health and safety, both on-site and downstream, from flooding through floodplain management which regulates the types of land uses which may locate in the floodplain, prescribes construction designs for floodplain development, and requires mitigation measures for development which would impact the floodplain by increasing runoff quantities.

6.6 Water Resources

W-9: Institute effective measures to protect groundwater quality from potential adverse effects of increased pumping or potential sources of contamination.

W-a: Sedimentation and erosion from proposed developments shall be minimized through grading and hillside development ordinances and other similar safeguards as adopted and implemented by the County.

W-b: Septic systems, waste disposal sites, and other sources of hazardous or polluting materials shall be designed to prevent contamination to streams, creeks, rivers, reservoirs, or groundwater basins in accordance with standards and water resource management plans adopted by the County.

W-c: All proposed land divisions and developments in Shasta County shall have an adequate water supply of a quantity and a quality for the planned uses. Project proponents shall submit sufficient data and reports, when requested, which demonstrate that potential adverse impacts on the existing water users will not be significant. The reports for land divisions shall be submitted to the County for review and acceptance prior to a completeness determination of a tentative map. This policy will not apply to developments in special districts which have committed and documented, in writing, the ability to provide the needed water supply.

3.12.2 Significance Criteria

CEQA Guidelines Appendix G Section X identifies considerations relating to hydrology and water quality. See Section 3.1.4, *Environmental Considerations Unaffected by the Project or Not Present in the Project Area*, as it relates to the County's analysis of the potential impacts of this Project to the considerations suggested in CEQA Guidelines Appendix G Section X. Otherwise, for purposes of this analysis, a project would result in a significant impact to Hydrology or Water Quality if it would:

- a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - i. Result in substantial erosion or siltation on- or off-site;
 - ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
 - iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - iv. Impede or redirect flood flows; or
- d) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Neither the Project nor alternatives would have any impact relating to flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation. See Section 3.1.4, *Environmental Topics Removed from Consideration*, for details.

3.12.3 Direct and Indirect Effects

3.12.3.1 Methodology

The analysis conservatively assumes that all areas of temporary and permanent disturbance, identified in Table 2-1 would, to varying degrees, alter the hydrology of the Project Site. The analysis includes all phases of the Project: site clearing, construction, operation and maintenance, as well as decommissioning, and associated site reclamation following the anticipated 40-year term of the use permit.

3.12.3.2 Direct and Indirect Effects of the Project

- a) **Whether the Project would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.**

Impact 3.12-1: The Project would, unless mitigated, violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during construction and decommissioning. (*Less than Significant with Mitigation Incorporated*)

Construction

Whether a discharge of waste would adversely affect the quality of the waters of the state depends on various factors including distribution and sensitivity of the beneficial uses of water; presence

of domestic water supplies and aquatic species; proximity of operations to other critical beneficial uses; current water quality conditions including existing TMDL or 303(d) listings; erodible soils and topography; and presence of any post fire landscapes, evaluated against the type and scope of proposed activities.

Construction associated with the Project would be subject to water quality policies and standards identified in the Basin Plan and waste discharge requirements pursuant to RWQCB General Order Number R5-2017-0061 for proposed timber harvest activities. Waste discharge requirements would be implemented, as required, along with their associated compliance conditions, which could include establishing equipment limitation zones near watercourses, installation of and/or protective structures for culverts at stream crossings; and retention of riparian vegetation along waterways and wetlands, and restrictions on pesticide use near water courses, among others. The Project would be constructed in a manner that would minimize hill cuts and other actions that could generate unchecked conditions of erosion, runoff, and associated water quality violations. The Project design would be further refined and ultimately finalized based on conditions of specific permits and other authorizations if the Project is approved.

Beneficial uses of waters in the vicinity of the Project (as identified in the Basin Plan and listed in Table 3.12-1) include municipal water supply, recreation, freshwater and wildlife habitat, among others. Project construction activity would involve soil disturbances that could temporarily generate erosion and/or sedimentation causing exceedances of state or federal water quality standards, or impact beneficial uses for receiving waters. Site clearing, soil disturbance, removal of vegetation, and timber harvesting, and surface water diversions associated with access road construction, and installation of the on-site septic system as well as other construction activities have the potential to substantially degrade surface and groundwater quality within the Project Site. Such effects could extend to the surrounding watersheds.

As detailed in Table 2-1, construction of Project components would include widening and development of access roads; clearing and grading for turbine pads; work footprints for electrical collector systems; substation, O&M building equipment areas and staging areas. Temporary disturbance associated with these activities has been estimated to include an area of up to 1,384 acres. Water quality impacts associated with soil disturbances would vary depending on proximity to waterways, types of disturbances, and impact avoidance and minimization measures intended and implemented to protect surface water and groundwater quality. The Project's internal access/circulation road construction north of SR 299 would be in very close proximity to a 2-mile reach of Little Hatchet Creek. Thus grading activity during construction could result in significant sedimentation of this waterway within the upper Hatchet Creek watershed. The Project would include a relatively high number of turbines within the Upper Montgomery Creek watershed; thus, temporary and permanent impacts associated with construction of turbine pads and access roads would be higher within this watershed than in other watershed areas affected. To reduce direct impacts to waters and wetlands, mitigation measures (such as Mitigation Measure 3.4-15a) would be implemented as described in Section 3.4, *Biological Resources*. This mitigation measure includes specific provisions for marking locations of wetlands, waterways, and wells that could be affected by the Project and procedures for establishing buffers for the protection of aquatic resources.

Consistent with requirements of the Construction General Permit, a SWPPP and a Temporary Erosion and Sediment Control (TESC) plan, containing site-appropriate BMPs consistent with the requirements of the Forest Practice Rules as well as the recommendations of the California Association of Stormwater Quality Agencies (CASQA), would be implemented to limit potential water quality contamination. Temporary and permanent measures would be installed to protect stormwater conveyance infrastructure. Measures could include engineered erosion control devices such as silt fences and straw wattles (along contours) and interceptors at culverts and stormwater inlets to limit delivery of silt, sediment, and stormwater contaminants into receiving waters. The TESC would stipulate appropriate intervals to monitor and adjust BMPs to ensure that measures perform as designed.

Construction activities and other Project phases may involve the transportation, use, or storage of a variety of hazardous materials, that in the absence of appropriate procedures, could compromise the water quality of surface and groundwater. However, as discussed in the Project Description (Section 2.4.8.3, *Hazardous Materials*) and in Section 3.11, *Hazards and Hazardous Materials*, the Project would prepare a Hazardous Materials Business Plan (HMBP) which would include a Spill Prevention Control and Countermeasures Plan (SPCC) prior to construction. The HMBP would include BMPs for the transport, storage, use, and disposal of hazardous materials and waste. The HMBP would also include information regarding construction activities, worker training procedures, and hazardous materials inventory procedures. The Applicant further proposes as part of the Project that all equipment would be maintained in good working condition, and free of leaks; all vehicles would be equipped with drip pans during storage to contain minor spills and drips; no refueling or storage would take place within 100 feet of a drainage channel; spill kits would be located onsite and in vehicles for use in spill response; and crews working with heavy equipment would be trained in spill containment and response.

Even with implementation of a SWPPP, HMBP/SPCC, and associated BMPs, given the Project's location and scale of soil disturbing activities proposed to occur in close proximity to waterways, the Project could violate water quality standards through the contribution of contaminants to waterways during construction. This would be a significant impact. To reduce this potential significant effect on water quality, Mitigation Measure 3.12-1, Water Quality Best Management Practices during Activities in and near Water, would be implemented during construction.

Operation and Maintenance

For purposes of this analysis, permanent disturbance would occur in those areas that would remain cleared and in use throughout Project operations, regardless of whether they are returned to original use after decommissioning. The total area of permanent disturbance for the Project has been estimated to include up to 713 acres of land, as quantified in Table 2-1.

Operation of the Project would include an on-site septic system as part of the O&M Building facility. Unless properly sited, designed and operated, the proposed septic system could degrade surface or groundwater. A Shasta County septic permit and review and clearance from the Shasta County Office of Environmental Health would be required to permit this facility. Adherence to these County permit requirements would ensure that the septic system would have a less-than-significant impact on water quality.

For the Project's operational phase, the Applicant would prepare and implement a HMBP (including operational BMPs) with information about the types of hazardous materials that would be used during operation and maintenance of the Project. The HMBP also would include spill prevention and spill response measures to ensure that in the event of an unlikely release, the area affected is swiftly contained and minimized. Permanent erosion control measures (installed at the time of construction) would be maintained to protect access roads, culverts, and stormwater infrastructure throughout the life of the Project. With implementation of the HMBP, operation and maintenance of the Project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during construction. A less-than-significant impact would result during this phase of the Project.

Decommissioning

Following the anticipated 40-year term of the requested conditional use permit, the Project's above-ground components would be dismantled and the site would be restored generally to pre-Project conditions. Removal of Project components would include ground disturbance, including to excavate turbine and structure foundations to a depth of approximately 3 feet below grade. The types of equipment and vehicles necessary to decommission the Project would be generally similar to the requirements for construction. In areas where trees and vegetation were removed, replanting would occur. Given the Project's location in close proximity to multiple waterways and proposed activities that would disturb soil and potentially convey contaminants to these waterways, decommissioning of the Project could violate water quality standards. To reduce this potential significant effect to water quality, Mitigation Measure 3.12-1, Water Quality Best Management Practices during Activities in and Near Water, would be implemented during construction and decommissioning.

Mitigation Measure 3.12-1: Water Quality Best Management Practices during Activities in and near Water.

To avoid and/or minimize potential impacts on water quality (and jurisdictional waters) during construction- and decommissioning-related project activities that would be conducted near (i.e., within 50 feet), in, or over waterways, the project contractor shall implement the following standard construction BMPs to prevent releases of hazardous materials and to avoid other potential environmental impacts:

1. In-stream construction shall be scheduled during the summer low-flow season to minimize impacts on aquatic resources. If instream construction takes place during higher flow seasons, the following measures shall be implemented:
 - a. Minimize mechanized equipment use below top of bank of streams;
 - b. Perform activities in accordance with all permit conditions and best practices; and
 - c. Have environmental monitors on-site to monitor instream construction to ensure compliance with permit conditions and best practices.
2. All construction material, wastes, debris, sediment, rubbish, trash, etc., shall be removed from the Project Site daily during construction and decommissioning, and

thoroughly at the completion of each of these phases. Debris shall be transported to an authorized upland disposal area.

3. Consistent with the Project's Hazardous Materials Business Plan (HMBP) and Spill Prevention Control and Countermeasures Plan (SPCC), construction workers shall receive training prior to construction/decommissioning and protective measures shall be implemented to prevent accidental discharges of oils, gasoline, or other hazardous materials to jurisdictional waters during fueling, cleaning, and maintenance of equipment, as outlined in the Project's HMBP. Equipment used to perform construction work on the Project Site shall be maintained in accordance with manufacturers' protocols, and, except in the case of failure or breakdown, equipment maintenance shall be performed off-site. Crews shall check heavy equipment daily for leaks; if a leak is discovered, it shall be immediately contained and use of the equipment shall be suspended until repaired. The source of the leak shall be identified, material shall be cleaned up, and the cleaning materials shall be collected and properly disposed.
4. Vehicles and equipment shall be serviced off-site, or, if on-site service is necessary, in a designated location a minimum distance of 100 feet from drainage channels and other waterways. Fueling locations shall be inspected after fueling to document that no spills have occurred. Any spills shall be cleaned up immediately.

Significance after Mitigation: Less than significant.

Impact 3.12-2: Blasting, if it occurs, could substantially degrade groundwater quality. (*Less than Significant with Mitigation Incorporated*)

As proposed, the Project could include blasting prior to trenching or excavating in rocky areas. If blasting is necessary, the Applicant would prepare a Blasting Plan that identifies the locations where blasting is anticipated to be needed, all applicable regulations governing the activity, the times and distances where explosives would be permitted, and a commitment to notify the County and emergency responders at least 24 hours in advance of blasting. Nonetheless, if it occurs, blasting could result in the release of a regulated or unregulated substance to the groundwater (e.g., by spilling or releasing chemicals from blasting materials) or could result in potential impacts to state or private water supplies by causing the subsurface fracturing of volcanic rock and alteration of hydrological conditions for adjacent aquifers. Blasting also could cause a shaking loose of silt, rock, or other particles that line fracture surfaces in the subsurface and, thereby result in increased turbidity in well water. Should they occur, a significant adverse impact to groundwater would result. As described in Section 3.4, *Biological Resources*, Mitigation Measure 3.4-15a would be implemented, which includes measures to protect aquatic resources. In addition to these measures and to reduce this potentially significant effect, Mitigation Measure 3.12-2, *Best Management Practices for Blasting*, also would be implemented.

Mitigation Measure 3.12-2: Best Management Practices for Blasting.

All activities related to blasting shall follow Best Management Practices (BMPs) to prevent contamination of groundwater including preparing, reviewing and following an approved blasting plan; proper drilling, explosive handing and loading procedures;

observing the entire blasting procedures; evaluating blasting performance; and handling and storage of blasted rock.

(1) **Blasting Plan.** Prior to conducting the first blast on the Project Site, the Applicant shall prepare and submit a detailed blasting plan to the Shasta County Department of Resource Management and the Shasta County Sheriff's Department. The blasting plan shall contain a complete description of how explosives will be safely transported and used at the site; evacuation, security and fire prevention procedures; blasting equipment list; and procedures for notification of nearby receptors. The blasting plan shall explain how the Applicant will comply with the requirements of 30 CFR §§816.61 through 816.68 regarding the use of explosives to be consistent with the technical requirements of the statute. Procedures for notification shall include, but not be limited to, the following:

- a. At least 30 days before initiation of blasting, the operator shall notify, in writing, all residents or owners of dwellings or other structures located within 0.5-mile of the permit area describing how to request and submit a pre-blasting survey. Notification shall include posting a written notice within the Project Site, and on the County's public website describing how to obtain and submit a pre-blasting survey.
- b. A resident or owner of a dwelling or structure within 0.5 mile of any part of the permit area may request a pre-blasting survey. This request shall be made, in writing, directly to the operator or to the regulatory authority, who shall promptly notify the operator. The operator shall promptly conduct a pre-blasting survey of the dwelling or structure and promptly prepare a written report of the survey detailing the results.
- c. The operator shall determine the condition of the dwelling or structure and shall document any pre-blasting damage and other physical factors that could reasonably be affected by the blasting. Structures such as pipelines, cables, transmission lines, and cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data.
- d. Prior to finalizing the blasting plan, the County or designated operator shall consult with jurisdictional authorities tasked with protecting waters of the state and implement avoidance and minimization measures, as required by CDFW, USACE, and regional water quality (Section 401) regulatory permits prepared for the Project. Such protective measures shall be included in the blasting plan and/or incorporated by reference.

(2) **Loading practices.** The following blast hole loading practices to minimize environmental effects shall be followed:

- a. Drilling logs shall be maintained by the driller and communicated directly to the blaster. The logs shall indicate depths and lengths of voids, cavities, and fault zones or other weak zones encountered as well as groundwater conditions.
- b. Explosive products shall be managed on-site so that they are either used in the borehole, returned to the delivery vehicle, or placed in secure containers for off-site disposal.

- c. Spillage around the borehole shall either be placed in the borehole or cleaned up and returned to an appropriate vehicle for handling or placement in secured containers for off-site disposal.
 - d. Loaded explosives shall be detonated as soon as possible and shall not be left in the blast holes overnight, unless weather or other documented safety concerns reasonably dictate that detonation should be postponed.
 - e. Loading equipment shall be cleaned in an area where wastewater can be properly contained and handled in a manner that prevents release of contaminants to the environment.
 - f. Explosives shall be loaded to maintain good continuity in the column load to promote complete detonation. Industry accepted loading practices for priming, stemming, decking and column rise shall be attended to.
- (3) **Explosive Selection.** To reduce the potential for groundwater contamination when explosives are used, explosive products shall be selected that (a) are appropriate for site conditions and safe blast execution, and (b) have the appropriate water resistance for the site conditions present to minimize the potential for hazardous effect of the product upon groundwater.
- (4) **Prevention of Misfires.** Appropriate practices shall be developed and implemented to prevent misfires.
- (5) **Blast Rock Pile Management.** To reduce the potential for contamination, the interaction of blasted rock piles and stormwater shall be managed to prevent contamination of water supply wells or surface water.

Significance after Mitigation: Less than significant.

b) Whether the Project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Impact 3.12-3: The Project could decrease groundwater supplies or interfere with groundwater recharge such that the project may impede sustainable groundwater management of the basin. (*Less-than-Significant Impact*)

The Project has the potential to directly and indirectly affect groundwater supplies during construction through use of groundwater for dust suppression and other subsurface disturbances. Direct impacts could include groundwater use potentially placing substantial demands on available supplies. Other considerations raised during the Project's scoping period suggested that alteration to subsurface hydrology could occur with excavation, which could impact groundwater. The Project would require excavation to a depth of 10 to 15 feet to support the turbine pedestals and excavation for a foundation depth of 40 feet to support the Project's microwave tower structure at the switching station. Groundwater levels for wells in the vicinity of the Project's switching station range from 87 to 155 feet below ground surface, so it is unlikely that the depth

of excavation required for construction of the Project would impact these groundwater resources nor alter groundwater flow patterns (DWR, 2020a).

Regarding potential impacts to groundwater supplies, the Project would require up to 49 acre-feet of water for site clearing and construction and 5.6 acre-feet of water per year for operation and maintenance. To put this in context, the Project's annual water requirements for operation and maintenance would be roughly equivalent to annual domestic water use for 22.6 households in California.¹ During both construction and operation and maintenance, water either would be provided from onsite well(s) or would be delivered by a contractor using water trucks from an existing water right. The expected source of offsite water, if used, is the Burney Water District. Because District supplies are sourced from groundwater (Environmental Working Group, 2020), this analysis assumes that all water to supply the Project would come from groundwater. The water supply assessment prepared for the Project (see **Appendix I**) determined that the potential impact of the Project's water demand (with respect to groundwater supply) would be negligible and represents a *de minimis* use of groundwater compared to existing production capacity. Because groundwater basins within Shasta County are not overdrafted, and because the Project's demand, if sourced from the Burney Water District, would represent a small fraction (approximately 7.6 percent) of the overall withdrawal from the Burney Creek Valley Groundwater Basin (estimated to be about 643 acre-feet per year per DWR, 2020c), it is expected that the Project would not substantially decrease groundwater supplies such that the Project could impede sustainable groundwater management of the basin. Therefore, the impact associated with construction would be less than significant.

Operation and Maintenance

Human activity can affect groundwater recharge potential by limiting the percolation of surface water through the ground to an aquifer or by removing water from an aquifer via wells. Here, the Project would increase impervious surfaces or otherwise limit groundwater recharge potential within the Project Site by constructing turbine pads, foundations, roads, and the other components identified in Table 2-1, *Project Components and Disturbance Areas*, that could compact soils or replace soil with concrete so as to preclude percolation of surface waters in the areas where they are proposed. However, given the limited ground surface, and the limited amount of development in the vicinity that would be affected by the Project (see Figure 3.12-1), it is expected that the Project would not interfere substantially with groundwater recharge such that the Project could impede sustainable management of the groundwater basin. Therefore, the impact would be less than significant.

As described in Section 2.4.8, operation and maintenance of the Project would require an estimated 5,000 gallons per day for the 40-year duration of the requested conditional use permit to serve the water needs for the O&M facility and to fill an onsite water tank for emergency fire protection. This limited demand is less intense from year to year than would be generated during construction, and would cause a less-than-significant impact.

¹ This estimate is based on a California per capita average water use of 85 gallons per day, with 2.6 persons per household.

Decommissioning and Site Reclamation

Decommissioning and Site Reclamation would utilize water resources only for fire protection and dust control and would be a temporary demand. For the same reasons discussed in the context of construction, the Project would not have a significant impact on groundwater resources during decommissioning and site reclamation.

Mitigation: None required.

-
- c) Whether the Project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) Result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.**

Impact 3.12-4: The Project would, unless mitigated, substantially increase siltation of waterways or provide substantial additional sources of polluted runoff during construction and decommissioning. (*Less than Significant with Mitigation Incorporated*)

Site Clearing

The Project is designed in a manner to maintain onsite surface drainage patterns to the extent possible. The Project's access roads would be designed to follow natural contours and minimize hill cuts. However, some alteration of contours may be required which could change drainage patterns and result in localized erosion, siltation, and/or runoff. As described in the aquatic resources delineation prepared for the Project, it is anticipated that the construction of the Project would impact wetlands, marshes, intermittent, ephemeral and perennial streams in the survey area. The Project would include clearing of vegetation, tree removal and other soil disturbing activities as summarized in Table 2-1, *Project Components and Disturbance Areas*. Cleared turbine pad sites with 2-acre buffers would be established involving tree removal and replacement with low-growing vegetation. Up to 72 turbines would be installed on constructed spread footing foundations requiring 10-15 feet of subsurface excavation. The Project's construction, at the initiation of site clearing or soil disturbing activities, would require coverage under the Construction General Permit and would include implementation of a SWPPP, and associated BMPs to limit erosion and runoff. Project Site preparation and construction also would be subject to federal and State jurisdiction under Sections 401 and 404 of the federal CWA. Therefore, implementing the Project would require a CWA Section 404 permit from USACE and a Water Quality Certification from the Central Valley RWQCB. Additionally, as described in the regulatory setting, coverage under the General Order for Timber Management Activities would include compliance conditions to limit impacts to surface waters.

Construction

The Project includes improvement (widening) and use of existing logging roads, as well as construction of new graded and graveled access roads, as depicted in Figure 2-5, *Road Network*.

Construction of access roads would alter terrain to enable initial transport of turbine blades and other components. Although roads would be designed and graded to align with the natural contours, and stormwater drainage infrastructure (i.e., upgraded culverts) would be installed to minimize impacts associated with access road construction, soil disturbing activities would have the potential to substantially degrade water quality as sediment and other pollutants could be delivered to waterways through stormwater runoff. Widening of roads, grading, and compaction also could alter drainage patterns and increase the rate and volume of surface runoff.

In addition to access roads, the Project's construction would include construction of pads or foundations for turbines, electrical infrastructure including a substation, operation and maintenance building, METs, parking areas, and other developments to support the overall energy generation facilities. The construction of these Project components would be required to adhere to the SWPPP and TESC, such that erosion control, good housekeeping, and other BMPs would be comprehensively applied as part of construction. As described under question a), the HMBP and SPCC would provide measures to intercept oils, fuels, and other potential contaminants, acting as an effective form of source control during all phases of construction. Similar to impacts identified in question a), with implementation of Mitigation Measure 3.12-1 (Water Quality Best Management Practices during Activities in and near Water) and measures required for the Construction General Permit, the SWPPP, the TESC, and the interception of pollutants through the HMBP and SPCC, impacts would be reduced to less-than-significant levels.

Operation and Maintenance

Access roads, graded and widened as part of the Project, would facilitate long-term maintenance of the Project's wind energy generation facilities. Access roads, as part of these facilities, also would require monitoring and periodic maintenance, such as grading, replacement of gravel for road surfaces. Seasonal monitoring and maintenance of culverts and storm drains also may be required to ensure functionality and limit erosive conditions on site. Culverts at stream crossings would be sized to allow for conveyance of a 100-year storm event without increasing average flow velocity or bed/bank scour potential.

The construction of the turbine pads would introduce new impervious surfaces; however, they would be required to include grading and erosion control requirements in accordance with Shasta County Code, Chapter 12.12 which includes grading requirements (under Section 2, Chapter 15.08.110) for the prevention of sedimentation and damage to off-site property. Pursuant to Section 4, Chapter 15.13.040, a detailed grading and drainage plan also would be required. In addition, these pads, relative to the entire Project Site, would represent a relatively small portion of the site. Therefore, considering the spacing and size, the runoff produced from the pads would be controlled by drainage control improvements and would not concentrate flows such that there would be a substantial increase in erosion, runoff volumes, or flooding potential. Therefore, the proposed increase in impervious surfaces while changing drainage patterns, would not adversely affect receiving waters in water quality, runoff volumes, or impede flood flows. The potential impact would be less than significant.

As noted in Table 2-3, *Hazardous Materials*, herbicides may be utilized for fire safety purposes to control vegetation around Project facilities. Herbicides would be applied in a manner consistent

with product labels, consistent with state (DPR) and federal requirements. See, e.g., Potential impacts of herbicide use to human health are analyzed in Section 3.11, *Hazards and Hazardous Materials*.

Decommissioning

At the conclusion of the Project's term of use, decommissioning would include removal of constructed elements along with some degree of land-disturbing activity. Disturbed areas would be restored to preconstruction conditions (as stated in Section 2.4.7, *Decommissioning and Site Restoration*). Subsurface elements of the project, stormwater drainage facilities would remain on site to ensure that built access roads remain in a condition to allow for appropriately managed drainage.

Mitigation Measure 3.12-4: Implement the water quality best management practices during activities in and near water that would be required by Mitigation Measure 3.12-1.

Significance after Mitigation: Less than significant.

d) Whether the Project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Impact 3.12-5: The Project would, unless mitigated, conflict with implementation of the Central Valley Basin Plan. (*Less than Significant with Mitigation Incorporated*)

The Project Site is not located in a defined groundwater basin, nor is there a groundwater management plan in place or proposed that would be applicable to the Project. With protection measures described as follows, surface and groundwater resources would not become compromised. As discussed in the context of Impact 3.12-1, the Basin Plan identifies numerous beneficial uses of waterways that cross through the Project Site. With implementation of protective erosion control measures defined in the TESC and the SWPPP (as part of the Construction General Permit); source control measures outlined in the HMBP/SPCC; and Mitigation Measure 3.12-1 (Water Quality Best Management Practices during Activities in and near Water) and, if blasting occurs, Mitigation Measure 3.12-2 (Best Management Practices for Blasting), the Project would not conflict with implementation of the Basin Plan.

Mitigation Measure 3.12-5a: Implement the water quality best management practices during activities in and near water that would be required by Mitigation Measure 3.12-1.

Mitigation Measure 3.12-5b: Implement the best management practices for blasting that would be required by Mitigation Measure 3.12-2.

Significance after Mitigation: Less than significant.

3.12.3.3 PG&E Interconnection Infrastructure

The Project would include interconnection infrastructure as described in Section 2.4.3, *Project Substation, Switching Station and Interconnection Facilities*. Construction and decommissioning of the proposed PG&E infrastructure would require ground disturbance that could affect surface and groundwater, and may require blasting to accommodate rocky terrain. With the implementation of Mitigation Measures Mitigation Measure 3.12-1 (Water Quality Best Management Practices during Activities in and near Water) and Mitigation Measure 3.12-2 (Best Management Practices for Blasting), impacts of the PG&E infrastructure would be less than significant.

3.12.3.4 Direct and Indirect Effects of Alternatives

Alternative 1: South of SR 299

Under Alternative 1, no turbines would be erected north of SR 299. Thus, Alternative 1 would avoid all impacts to Little Hatchet Creek and most disturbance-related impacts to the main stem of Hatchet Creek. There would be an overall reduced acreage of temporary and permanent disturbance, limited to a footprint defined in a smaller area with fewer turbines compared to the Project. However, Alternative 1 would still have potentially significant impacts and thus would require implementation of the same mitigation measures to reduce direct and indirect impacts associated with hydrological disturbance and runoff. Consistent with baseline conditions, it is expected that, under Alternative 1, timber harvesting activities would continue to occur in areas north of SR 299, along with the associated disturbance from active forest management of these lands.

Alternative 2: Increased Setbacks

Under Alternative 2, there would be fewer turbines reducing overall temporary (construction-related) and permanent disturbance. However, potential impacts to Little Hatchet Creek and other surface waters and groundwater would be substantially similar to those described for the Project. Alternative 2 would require implementation of the same protective measures and mitigation.

No Project Alternative

If the No Project Alternative is implemented, none of the proposed wind project infrastructure would be constructed, operated and maintained, or decommissioned on the Project Site. No new roads would be constructed and none of the existing roads would be improved. No stream crossings or other work near surface waters would occur, no grading or other surface preparation work would occur, no wells would be installed, and the existing permeability of on-site soils would remain unchanged. No surface or groundwater would be used for Project purposes. No Project-related vehicles or equipment would be present on the site. The Project Site would continue to be operated as managed forest timberlands. Because there would be no change relative to baseline conditions, the No Project Alternative would create no impact related to Hydrology or Water Quality.

The Project Site is zoned for timber production. Pursuant to regulations implementing the California Timberland Productivity Act (Government Code §51100 et seq.; 14 Cal. Code Regs. §897[a]), there is a legal presumption that “timber harvesting is expected to and will occur on such lands.” The regulations further specify that timber harvesting on such lands “shall not be presumed to have a Significant Adverse Impact on the Environment” (14 Cal. Code Regs. §898). Therefore, the No Project Alternative, including anticipated timber harvesting, is not presumed to result in a significant adverse individual or cumulative effect to Hydrology or Water Quality. CAL FIRE would review any future timber harvesting proposal to evaluate any potential project-specific, site-specific environmental impacts.

3.12.4 Cumulative Analysis

The geographic scope of analysis of cumulative effects includes the Project Site, affected waterways, and surrounding watersheds and aquifers potentially impacted by site clearing, construction, operation and maintenance, and decommissioning of the Project. Consideration of the cumulative scenario includes effects of past projects such as legacy land management and timber harvesting within and surrounding the Project Site, as well as current and reasonably foreseeable activities that similar to the Project, have an influence on land contours and hydrological issues across the landscape. This analysis considers the incremental effects of the Project to determine whether, when added to the effects of other projects in the cumulative scenario, would cause or contribute to significant cumulative effects.

The temporal scope of a consideration of incremental construction-related Project effects is assumed to include the initiation of site clearing and soil disturbing activities within the 18- to 24-month time frame for construction (prior to Project operation). The temporal scope for a consideration of operation and maintenance related activities is assumed to be the life of the Project, or the 40-year duration of the requested conditional use permit. This analysis also considers cumulative effects of decommissioning and site restoration for a period of 18 to 24 months.

As described in Section 3.1.2, there are numerous timber management activities and three large-scale projects on Federal lands surrounding the Project, involving tree mortality and removal in response to California’s recent drought, climate change, and wildfire conditions. Effects of these activities, though intended for purposes of forest restoration, are likely to include soil disturbance, erosion, hydrological alteration, as well as impacts to water quality for the creeks and streams that cross through the mountainous landscape. Other wind generation development, notably the Hatchet Ridge Wind Project, included alteration of site contours, construction of access routes, erection of wind turbine generators and other soil disturbing activities on a similar scale, with impacts determined to be less than significant with mitigation implemented within 1 mile of the Project Site. Moreover, scoping comments suggest that the remote location of the proposed site is one that is likely to include cannabis cultivation projects that could impact water quality by introducing pesticides and other contaminants to the watersheds through unregulated methods.

Such projects and associated site alterations and impacts, even those considered to be less than significant, when considered in combination with the Project's potential effects on hydrology and water quality could result in an impact that would be considered cumulatively significant. Because the Project's incremental impacts would be reduced through implementation of various measures to protect waterways and water quality through compliance with water quality standards or waste discharge requirements and best management practices (see Mitigation Measures 3.12-1 and 3.12-2), when considered in combination with the effects of other projects, including presumed projects that employ unregulated hydrology and water quality practices, the Project's incremental contribution to potential significant cumulative effect would not be cumulatively considerable.

3.12.5 References

- California Department of Water Resources (DWR), 2020a. Well Completion Report Map Application. Available online at: <https://www.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37>. Accessed June 23, 2020.
- California Office of Environmental Health Hazard Assessment (OEHHA), 2007. Public Health Goals for Chemicals in Drinking Water Glyphosate. Available online at: <https://oehha.ca.gov/media/downloads/water/chemicals/phg/glyphg062907.pdf>. Accessed April 10, 2020.
- Central Valley Regional Water Quality Control Board (RWQCB), 2017. Waste Discharge Requirements for Discharges Related to Timber Management Activities on Non-Federal Lands and Federal Lands Order Number R5-2017-0061. Available online: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2017-0061/r5-2017-0061_w_att_a.pdf. Accessed July 2, 2020.
- Central Valley RWQCB 2018a. Letter of Dannas J. Berchtold, Engineering Associate, Storm Water and Water Quality Certification Unit, to Bill Walker. February 5, 2018.
- Central Valley RWQCB, 2018b. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region, Fifth Edition. Revised May 2018.
- DWR, 2020b. Water Data Library Groundwater Levels for Well 408700N1216500W001. Available online at: https://water.ca.gov/waterdatalibrary/groundwater/hydrographs/brr_hydro.cfm?CFGRIDKEY=46216. Accessed June 17, 2020.
- DWR, 2020c. Sustainable Groundwater Management Act, SGMA Basin Prioritization Dashboard. Burney Creek Valley (5-048). Available online at: <https://gis.water.ca.gov/app/bp-dashboard/final/#>. Accessed June 18, 2020.
- Federal Emergency Management Agency (FEMA), 2011. Flood Map Service Center National Flood Hazard Layer FIRMette, Search Unincorporated Shasta County. Available online: <https://msc.fema.gov/portal/home>. Accessed July 2, 2020.

- Environmental Working Group, 2020. Burney Water District. Available online at: <https://www.ewg.org/tapwater/system.php?pws=CA4510003>. Accessed April 12, 2020.
- Shasta County, 2004. Shasta County General Plan. Available online at: <https://www.co.shasta.ca.us/index/drm/planning/general-plan>. Accessed April 13, 2020.
- Shasta County, 2016. Shasta County Communities Wildfire Protection Plan 2016. Available online at: <http://www.westernshastarc.org/Docs/ShastaCWPPs-2016.pdf>. Accessed May 22, 2019.
- State Water Resources Control Board (SWRCB), 2014. General Permit for Stormwater Discharges Associated with Construction Activity Adopted Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ). Available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml. Accessed March 18, 2020.
- U.S. Geological Survey (USGS), 2014. Climate and Disturbance Impacts on Hydrological Processes. Abstract available online at: <https://water.usgs.gov/nrp/climate-disturbance-hydrologic-processes/disturbance-hydrology.html>. Accessed March 20, 2020.
- Western Regional Climate Center (WRCC), 2010. Period of Record Monthly Climate Summary, Round Mountain, California. Available online at: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7581>. Accessed March 13, 2020.
- WRCC, 2015. Period of Record Monthly Climate Summary, Burney, California. Available online at: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca1214>. Accessed March 13, 2020.

This page intentionally left blank