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To: Lon Payne
California Energy Commission
Project/File: 23-OPT-01 Fountain Wind Project

From: Caitlin Barns
Stantec Environmental Consulting Inc.
Date: February 5, 2024

Reference: Fountain Wind Responses to Post-Scoping Data Requests (TN 253812)

On behalf of Fountain Wind, LLC, Stantec Consulting Services Inc. (Stantec) submits this response to the California Energy Commission's (CEC) Post-Scoping Data Requests, dated January 5, 2024 (TN 253812) ("Data Requests"). The numbered requests and responses are provided in the same order as originally provided by the CEC.

Corresponding with our responses below to data requests regarding water supply, a revised Water Supply Assessment (WSA), Traffic Impact Assessment, and air quality emissions analyses are under preparation and will be provided as soon as available. Also forthcoming is a revised Project Description with minor revisions prompted by the data discovery phase. Fountain Wind looks forward to ongoing coordination with staff for this important wind energy project.

BIOLOGICAL RESOURCES

BACKGROUND: MICRO-SITING REPORTS, AQUATIC RESOURCES, AND SUPPLEMENTAL SURVEYS TO REFLECT NEW SPECIES LISTING AND AGE OF EXISTING DATA.

The California Department of Fish and Wildlife (CDFW) docketed their comments in response to the Notice of Preparation on December 1, 2023 (TN 253469).

Pursuant to Assembly Bill (AB) 205, the CEC and CDFW developed a coordination plan (herein after referred to as the "MOU") to ensure that all potential impacts to fish, wildlife, and plant resources, and the habitats upon which they depend, including but not limited to incidental take of species protected under California Endangered Species Act, are consistent with the Fish & Game Code and its implementing regulations found in Title 14 of the California Code of Regulations. (Pub. Resources Code § 25545.5, subd. (a).) The MOU also ensures timely and effective consultation between the CEC and CDFW with respect to any proposed CEC findings and actions regarding potential impacts to fish, wildlife, and plant resources. (Ibid.) CDFW submitted comments in its consultation role under AB 205 and the MOU.

CDFW recommends the Draft Environmental Impact Report (DEIR) include a detailed micro-siting report for every wind turbine proposed. The applicant's avian risk plans for nocturnal migrants (TN 248308-6), condors (TN 248307-1), and spotted owl (TN 248307-5) provided an overall review of current literature and applicability to the project but did not provide specific information for each turbine. The applicant prepared the Year 1 Avian Use Study Report and Risk Assessment (TN 248309-5) and Results of the Year 2 Avian Use Study (248309-1) to "assess the relative abundance and spatial and temporal distribution of birds throughout the project area" and "evaluate the potential for adverse impacts to avian species." The reports analyzed fixed-point avian use surveys at 39 observation points located throughout the project area. According to the Year 1 Report, "Plots were selected for viewshed and to survey representative habitats and topography within the Project area, while meeting ECPG [Eagle Conservation

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Plan Guidance] spatial sampling recommendations of at least 30% survey coverage of areas within 1.0 kilometer (km; 1.6 miles [mi]) of proposed turbine locations.” Data on overall use and use for each survey plot was provided. The Risk Assessment discussed the avian use overall, species specific use, and compared the avian use results to Hatchet Ridge data. A micro-siting analysis for a specific placement of each turbine location and potential impacts to special-status species was not provided. Under Public Resources Code section 25545.4(d) additional information is necessary to address the comments from CDFW.

1. DATA REQUEST

Please provide a detailed micro-siting report for each wind turbine proposed. The report should include an analysis of the latest micro-siting science and field studies based on the topography of the proposed project area. The report should identify the methods for selecting turbine sites and any strategies that were used to reduce potential impacts to avian species. High avian use areas and migration corridors that are located within the vicinity of proposed turbines should be analyzed.

1. APPLICANT'S DATA RESPONSE

Please see Appendix A, Turbine Micrositing Report (WEST 2024) for responses to this data request. In addition, in response to CDFW's concern about risk to raptors, the applicant eliminated turbines M03 and M04.

BACKGROUND: WATERS OF THE STATE

Under the Opt-in certification process, CEC has exclusive jurisdiction over the proposed project and is responsible for ensuring any certification of the proposed project complies with the Fish & Game Code and its implementing regulations and includes all conditions necessary to avoid, minimize, or mitigate substantial adverse impacts to fish and wildlife resources from lake or streambed alteration (Fish & Game Code, § 1602).

Similarly, CEC is responsible for ensuring compliance with the Federal Clean Water Act (33 United States Code section 1251 et seq.) and the Porter Cologne Water Quality Control Act (California Water Code section 13000 et seq.).

The applicant provided an application to the CDFW for a Lake or Streambed Alteration Agreement and associated materials (TN 248329-1 through TN 248329-10). The 2019 Aquatic Resources Delineation Report (ARDR) was submitted as part of the Lake and Streambed Alteration Agreement (LSAA) application (TN 248329-4) and as a stand-alone report (TN 248307-2). The ARDR discusses aquatic resources that may be considered Waters of the U.S. (WOTUS) to support a Preliminary Jurisdictional Determination from the U.S. Army Corps of Engineers (USACE) but does not clarify if the extent or quantity of those aquatic features are the same acreages subject to CDFW or Regional Water Quality Control Board (RWQCB) jurisdiction. In many circumstances the CDFW jurisdiction is broader than the area defined as WOTUS, which uses different parameters to define waters under their jurisdiction. During a one-day site visit on November 14, 2023, conducted by staff and the applicant, it appeared that some potential waters may have been under mapped or overlooked. In addition, it was unclear how the delineation data defined CDFW jurisdictional waters. LSAA Figure 2 Aquatic Impacts (TN 248329-7) shows the limits of permanent impacts, temporary disturbance, and permanent vegetation clearing, but does not specifically call out the limits of CDFW or RWQCB jurisdiction.

Reference: Fountain Wind Responses to Post-Scoping Data Requests (TN 253812)

The LSAA Summary of Aquatic Impacts provides stream features to top of bank and permanent vegetation clearing but does not provide information specific to riparian disturbance (permanent or temporary) or potential waters of the state (WOTS).

2. DATA REQUEST

Please provide an updated jurisdictional delineation that clearly identifies the limits of CDFW jurisdiction and RWQCB jurisdiction for aquatic resources within the project area. Please identify all potential impacts to those features (temporary and permanent). Please highlight docketed information if the data was previously submitted.

2. APPLICANT'S DATA RESPONSE

For the purpose of this data response, Stantec analyzed field delineation geospatial data to assign jurisdictionality: each feature identified in Figure 1, Table 1, and geospatial layer "20240130_JurisdictionalCrossings" are classified as falling under the jurisdiction of the USACE (WOTUS), RWQCB (WOTS), or CDFW, or falling under the jurisdiction of two or more of these agencies. Each jurisdictional designation or combination of designations is shown with unique codes in Figure 1. Jurisdictionality was determined using two steps:

1. **Identify and delineate** aquatic resources using the following protocols:
 - **USACE:** Wetland delineation per USACE guidance followed the routine determination method given in the *Corps of Engineers Wetlands Delineation Manual* and the revised procedures in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains Valleys and Coast*. This methodology entails examining specific sample points in both wetlands and uplands (i.e., paired points) to determine the boundaries of wetland features. Sample points are examined for hydrophytic vegetation, hydric soils, and wetland hydrology. In most cases, by the federal definition, all three parameters must be present for an area to be considered a wetland. Problematic situations, in which only two parameters are met, do occur in the Arid West (outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains Valleys and Coast*), especially in areas that have been altered by human activity. The standard USACE Wetland Determination Data Form for the Western Mountains Valleys and Coast was used to document each sample point.
 - **RWQCB:** Wetland determination as defined by the State Water Resources Control Board follows the USACE three-parameter requirement as outlined above, including problematic situations that may require two parameters (State Water Resources Control Board 2021).
 - **CDFW:** Previous guidance by CDFW considers riparian canopy and riparian wetlands under the jurisdiction of CDFW when a wetland, shrub, or forest community associated with a drainage feature or "stream" passes the USACE criterion for hydrophytic vegetation.
2. **Assess** identified and delineated aquatic resources for potential jurisdiction for each agency using the following criteria:
 - **USACE:** Per current definition of WOTUS, other waters must be relatively permanent (not ephemeral) AND directly connected to a WOTUS to be considered jurisdictional. Wetland must also be directly connected to a WOTUS to be considered jurisdictional.

Reference: Fountain Wind Responses to Post-Scoping Data Requests (TN 253812)

- **RWQCB:** The state has no requirement for direct connectivity or relative permanence for a drainage to be a WOTS. Wetlands are typically WOTS regardless of connectivity.
- **CDFW:** In addition to lakes, rivers, and streams with bed-and-bank, any riparian vegetation along a drainage is typically considered CDFW jurisdictional.

These parameters were used to determine which features within the project area (1) meet the definition of an aquatic resource and (2) are potentially jurisdictional by a regulatory agency (USACE, RWQCB, CDFW, or a combination thereof). The jurisdictionality of certain aquatic features within the project area (i.e., ephemeral streams, non-vegetated ditches, and fresh emergent wetlands) can be more difficult to determine unless they are contiguous to a perennial waterway or have hydrologic connectivity to a jurisdictional feature. Reviewing the Aquatic Resources Delineation Report for the project and the datasheets collected in the field, aerial imagery, and available topographic and hydrologic maps helped Stantec biologists determine the potential jurisdiction of each feature. All WOTUS are WOTS, but not all WOTS are WOTUS; therefore, some features may be under the jurisdiction of all three regulatory agencies, while the remaining fall under two jurisdictions.

BACKGROUND: SUPPLEMENTAL SURVEYS

The CDFW comment letter noted that some of the biological reports and surveys completed for the project were performed five or more years ago. Per CDFW protocol, and due to elapsed time, CDFW advised the CEC to have updated species evaluations and supplemental species-specific (and/or where applicable, protocol-level) surveys performed for those species with potential to occur. CDFW recommended that additional focused surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, be conducted. In addition, species-specific survey procedures should be developed in consultation with CDFW. The CDFW noted that the presence of some species may be presumed and that the completion of protocol-level surveys (where available) is important to identify species that are present within and around the proposed project area, as well as how those species use the proposed project area prior to construction.

As part of staff's impact analysis, it is expected that pre-construction surveys for sensitive plants and wildlife will be required prior to ground disturbance should the project be approved. Initiating focused and protocol surveys for sensitive plants and wildlife in 2024, concurrent with staff's expected completion of the DEIR, will better inform the impact analysis as data becomes available and would be incorporated into the DEIR and Final EIR. These surveys would also be required as part of the conditions of certifications and other measures required to comply with CDFW and other agency requirements.

3. DATA REQUEST

Please provide a survey plan that identifies when supplemental surveys for any survey over five years old would be initiated and provide the survey results when available.

3. APPLICANT'S DATA RESPONSE

See attached Table 2. Survey results will be provided to CEC after completion of surveys.

Reference: Fountain Wind Responses to Post-Scoping Data Requests (TN 253812)

BACKGROUND: FUEL BREAKS AND POTENTIAL IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES AND JURISDICTIONAL FEATURES

The applicant's presentation from the Public Scoping Meeting on November 28, 2023 (TN 253463) identified 667 acres of new shaded fuel breaks as a component of the project. The following information regarding shaded fuel breaks was also included on page 22 of the *Fountain Wind Project Impacts on Fire Behavior and Aerial Firefighting* (TN 253505), docketed on December 4, 2023, and states:

...[a] shaded fuel break will be maintained to 100 feet from the primary road's centerline, creating a fire break of 200 feet in width on ridgelines where roads exist. Secondary access roads are to have shaded fuel breaks extending 50 feet from the centerline of each road, and an area of approximately 2.5 acres around each of the turbines will be cleared of flammable vegetation (Barns, 2023).

The revised Project Description provided by the applicant on August 17, 2023 (TN 251663), does not include any reference to fuel breaks as part of proposed project activities, nor does it characterize access roads as "primary access roads" versus "secondary access roads." Furthermore, Table 2 (Project Components and Associated Impact Footprints) from the revised Project Description (TN 251663) states that permanent impacts from access roads would be "...[u]p to 40 ft. wide corridor (20 ft. wide drivable surface with up to 10 ft. of cleared area on either side)."

4. DATA REQUEST

- a. Please provide a map of impacts to native vegetation communities and jurisdictional features associated with areas proposed as "shaded fuel breaks."
- b. Please verify where proposed fuel breaks (shaded or non-shaded) will be constructed, and the size (i.e., width and total acreage) of these fuel breaks.
- c. Please provide a maintenance schedule for these areas and indicate if herbicide would be used in these areas.

4. APPLICANT'S DATA RESPONSE

- a. According to the 2022 California Forest Practice Rules (See 14 CCR 933.4 (c) on PDF page 77), a shaded fuel break is "Where some trees and other vegetation and fuels are removed to create or maintain a shaded fuel break or defensible space in an area to reduce the potential for wildfires and the damage they might cause. Fuel breaks are created by removing and thinning existing trees or by strategically replanting trees after they have been removed."
- b. A map of fuel breaks overlaid with wetlands/waters and general vegetation types is provided as Figure 2 and geospatial layer "FNW_ShadedFuelBreaks_20240130". The primary access road shaded fuel break will be an area 100 feet from the centerline on both sides of the roads (except in areas where topography or other elements prevent it) (see geospatial layer "FNW_AccessRoads_20240130"). Fuel breaks along secondary access roads would be an area 50 feet from the centerline on both sides of the roads. As currently contemplated, fuel breaks along both primary and secondary access roads collectively equate to 667 acres.

Non-shaded fuel breaks correspond to the permanent disturbance footprint for access roads, collector lines, turbine pads, and all other project components with permanent footprints and the

Reference: Fountain Wind Responses to Post-Scoping Data Requests (TN 253812)

associated cleared areas (see Project Description Table 2 and geospatial data layer “FNW_PermlImpacts_20230629” within “FNW_Impacts_20230629” as TN 250835, submitted June 29, 2023). Non-shaded fuel breaks equate to 510 acres.

- c. Fuel breaks will be implemented as part of the construction revegetation process. During operations, the maintenance schedule will be dependent on the timeline by which woody and herbaceous vegetation establishes after installing the shaded fuel break. A typical maintenance schedule involves vegetation control interventions every three to five years using a variety of methods including, but not limited to, chemical, mechanical, or manual removal. Maintenance activities may involve masticating, mowing, trimming using hand tools, or the use of herbicides. Any herbicide treatments would be prescribed by an applicator licensed by the California Department of Pesticide Regulation using herbicides labeled (permitted) for forestry use. All vegetation maintenance would be outlined in the Project-specific Vegetation Management Plan.

BACKGROUND: WATER SUPPLY AND POTENTIAL IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES AND SURFACE WATER FEATURES

In a meeting with Shasta County representatives following the November 28, 2023, Informational and Scoping Meeting, CEC staff was informed that Burney Water District (BWD) would not be supplying water to the Fountain Wind Project (TN 253804). This information was confirmed by the BWD Board meeting minutes of September 21, 2023 (BWD 2023a), and further verified by staff by contacting David Zevely, District Manager for BWD, on November 30, 2023. If ground water is extracted to support construction and operation of the project, staff is concerned that existing surface water features including wet meadows and intermittent and perennial stream systems could be adversely affected depending on the location and depth of any water well.

5. DATA REQUEST

Please provide a hydrology study or other documentation that demonstrates that existing surface water features at the project site and in downstream areas would not be adversely affected from ground water pumping to supply facility water.

5. APPLICANT'S DATA RESPONSE

Until receipt of these data requests, the applicant was unaware that BWD had rescinded its agreement to provide water for Project construction. It received no notice of this action from BWD either before the September 21, 2023, hearing or after the hearing. In the absence of this water source, the applicant plans to truck construction water in from an offsite source in either Redding or Burney or near vicinity. For water needs during operations, the applicant will use an onsite well planned to be constructed at the operations and maintenance (O&M) facility, and may also truck water to the site.

The Project Water Supply Assessment (WSA) is being updated to discuss the planned sources and effects of pumping to obtain construction water on underlying aquifers. The proposed O&M water demand is anticipated to be up to 5.6 acre-feet per year (afy) or 5,000 gallons per day. The anticipated maximum pumping rate of the onsite well is estimated to be 10.4 gallons per minute (GPM) assuming pumping operations occur during a standard 8-hour (480-minute) work shift 365 days per year. However, because the pumped groundwater would be conveyed to and temporarily stored in a tank with automated operational controls, the required pumping rate of the proposed O&M well would be lower.

Reference: Fountain Wind Responses to Post-Scoping Data Requests (TN 253812)

The surface water closest to the planned well at the O&M facility is Hatchet Creek, located more than 650 feet away, which is lower in elevation than the location of the O&M facility. The elevational difference between the well and the creek is approximately 180 feet. To ensure pumping of the O&M well does not affect groundwater feeding into Hatchet Creek or other surface waters, the applicant will construct the well such that it draws only from groundwater at depths greater than 280 feet below ground surface, which is more than 100 feet below the bed of Hatchet Creek. The well will be constructed with a minimum 280-foot annular seal, precluding hydraulic connection between fractures in the underlying volcanic rock at the proposed well and the creek due to the distance between them and the fact that the well will be drawing from 100 feet below the creek bed. In addition, the proposed maximum pumping rate of the proposed O&M well is estimated to be 10.4 gallons per minute over an 8-hour work day based on the 5,000 gallons per day O&M water demand. This low rate combined with intermittent daily operation of the well will further minimize any potential impact on streamflow in Hatchet Creek or any other flowing or intermittent creeks in the project area. As a result, groundwater pumping at the O&M facility would not have a significant effect on surface water features at the Project Site.

PROJECT DESCRIPTION

BACKGROUND: FUEL BREAKS

The applicant's presentation from the Public Scoping Meeting on November 28, 2023 (TN 253463) identified 667 acres of new shaded fuel breaks as a component of the project. The following information regarding shaded fuel breaks was also included on page 22 of the Fountain Wind Project Impacts on Fire Behavior and Aerial Firefighting (TN 253505), docketed on December 4, 2023, and states:

...[a] shaded fuel break will be maintained to 100 feet from the primary road's centerline, creating a fire break of 200 feet in width on ridgelines where roads exist. Secondary access roads are to have shaded fuel breaks extending 50 feet from the centerline of each road, and an area of approximately 2.5 acres around each of the turbines will be cleared of flammable vegetation (Barns, 2023).

The revised Project Description provided by the applicant on August 17, 2023 (TN 251663), does not include any reference to fuel breaks as part of proposed project activities, nor does it characterize access roads as "primary access roads" versus "secondary access roads." Furthermore, Table 2 (Project Components and Associated Impact Footprints) from the revised Project Description (TN 251663) states that permanent impacts from access roads would be "...[u]p to 40 ft. wide corridor (20 ft. wide drivable surface with up to 10 ft. of cleared area on either side)."

6. DATA REQUEST

- a. Please define "shaded fuel break" as it pertains to proposed project activities. Will all fuel breaks be "shaded fuel breaks?"
- b. Please verify where proposed fuel breaks (shaded or non-shaded) will be constructed, and the size (i.e., width and total acreage) of these fuel breaks.
- d. Provide the following fuel break construction information:
 - c. The anticipated schedule for constructing the fuel breaks, and how this will be sequenced with other project activities.
 - d. Equipment required for fuel break construction.

Reference: Fountain Wind Responses to Post-Scoping Data Requests (TN 253812)

- e. Anticipated schedule for maintaining fuel breaks.
- f. Equipment required for maintaining fuel breaks.
- g. Provide the location of primary access roads versus secondary access roads.

6. APPLICANT'S DATA RESPONSE

- a. As explained in the technical memorandum docketed on December 4, 2023, entitled *Fountain Wind Project: Impacts on Fire Behavior and Aerial Firefighting* (TN 253505), “shaded fuel breaks” are created by “removing and thinning roadside trees...along all primary and secondary roadways” (*Firefighting* p. 9). Shaded fuel breaks correspond to the temporary disturbance footprint for all project components (see Project Description Table 2¹ and geospatial data layer entitled “FWN_TemplImpacts_20230629” within “FNW_Impacts_20230629” as TN 250835, submitted June 29, 2023). Shaded fuel breaks collectively equate to 667 acres (*Firefighting* p. 9). Non-shaded fuel breaks correspond to the permanent disturbance footprint for access roads, collector lines, turbine pads, and all other project components with permanent footprints (see Project Description Table 2 and geospatial data layer “FNW_PermlImpacts_20230629” within “FNW_Impacts_20230629” as TN 250835, submitted June 29, 2023). The dimensions of each fuel break type depend on the type of associated project component. See response to Data Request 4 for detailed dimensions and acreages.
- b. See response (a) above.
- c. Fuel breaks will be created during activities related to road improvement and widening, which are anticipated to take 126 workdays (Project Description Table 4²).
- d. Equipment required includes three road graders, four scrapers, six medium bulldozers, four drum compactors, eight rock trucks, 16 pickup trucks, and six water trucks.
- e. A typical maintenance schedule for fuel breaks involves vegetation control interventions every three to five years.
- f. Maintenance activities may involve masticating, mowing, trimming using hand tools, or the use of herbicides. Any herbicide treatments would be prescribed by an applicator licensed by the California Department of Pesticide Regulation using herbicides labeled (permitted) for forestry use. All vegetation maintenance would be outlined in the Project-specific Vegetation Management Plan.
- g. The primary access roads for the Project are the two roads that connect to State Route 299. Secondary roads are those which branch off these two primary roads and do not connect to State Route 299. See Figure 1 for the locations of primary and secondary access roads.

¹ TN# 251663 submitted on August 17, 2023

² TN# 251663 submitted on August 17, 2023

Reference: Fountain Wind Responses to Post-Scoping Data Requests (TN 253812)

BACKGROUND: WATER TANKS

The applicant's presentation from the Public Scoping Meeting on November 28, 2023 (TN 253463), identified new 5,000-gallon water tanks as part of the project. The revised Project Description provided by the applicant on August 17, 2023 (TN 251663), does not include any reference to 5,000-gallon water tanks.

7. DATA REQUESTS

- a. Please provide details on the number of proposed water tanks and the location of each proposed water tank.
- b. What would be the source of water to fill the proposed water tanks?
- c. Please indicate if water trucks or other transport vehicles would be required to deliver water to the project site for project construction and operation use (e.g., concrete batch plant, firefighting, etc.).
- d. If water would be trucked to the project site, provide details on where these vehicles would travel from, and the number of trips required to fill the water tanks.

7. APPLICANT'S DATA RESPONSE

- a. The applicant is proposing three locations to place water tanks (Figure 3, geospatial layer "Proposed_Water_Tank_Sites_20240124"). The final number of water tanks that will be installed, and the final locations of the tanks, are subject to CAL FIRE recommendation. Each would have a capacity of at least 5,000 gallons.
- b. The tanks would be filled with non-potable water that is trucked in from off-site. One onsite well could also provide water for the tanks.
- c. Water trucks would be required to transport water to the project site during construction and operations.
- d. Vehicles would either travel from Burney or Redding. To fill a 5,000-gallon tank, one to three trucks would be required. It is anticipated that tanks would be drained and refilled annually. Truck trips for this purpose will be included in the updated WSA, Traffic Impact Assessment, and air quality calculations.

TRAFFIC AND TRANSPORTATION

BACKGROUND: SAFETY ANALYSIS

In their review of the Notice of Preparation for the Draft EIR for the proposed project, Caltrans District 2 staff provided comments regarding site access on the State Highway System (TN 253602). Specifically, Caltrans is requesting a safety analysis. Several elements of the safety analysis identified by Caltrans are not available in the applicant's docketed material.

Reference: Fountain Wind Responses to Post-Scoping Data Requests (TN 253812)

8. DATA REQUEST

- a. Please prepare a safety analysis of the planned access locations on the State Highway System that would include the following:
- b. Traffic volume at the access locations (with and without the project)
- c. Type of traffic entering and existing access locations
- d. The postmiles designations of the access locations
- e. Sight distance
- f. Safety assessment
- g. As appropriate, the safety analysis should provide mitigation for identified safety concerns.

8. APPLICANT'S DATA RESPONSE

Please see Appendix B, Traffic Technical Memorandum (Westwood 2024) for responses to this data request.

WATER RESOURCES

BACKGROUND: WATER SUPPLY

In a meeting with Shasta County representatives following the November 28, 2023, Informational and Scoping Meeting, CEC staff was informed that (BWD would not be supplying water to the Fountain Wind Project (TN 253804). This information was confirmed by the BWD Board meeting minutes of September 21, 2023 (BWD 2023a), and further verified by staff by contacting David Zevely, District Manager for BWD, on November 30, 2023. The WSA (TN248320-1) prepared for the project application identified BWD as one of two options for water supply; the other was groundwater extraction from on-site water well(s) located near the proposed O&M facility. Given the loss of BWD as a water supply alternative, additional information regarding groundwater extraction is reasonably necessary to prepare the environmental impact report.

The WSA concedes that groundwater storage conditions are unknown: "The amount of groundwater in storage in the fractured volcanic deposits underlying the Project Site is unknown owing to the lack of defined basin boundaries and saturated layers for the storage of groundwater." In addition, the WSA conclusion that the proposed annual operational water use of 5.6 afy "represents a de minimis use" in comparison to local water well use may be flawed. The WSA utilizes the per capita use targets prepared by the City of Redding for its Urban Water Management Plan (Redding 2021); however, these targets are representative of a mixed water supply of imported surface water and groundwater from an alluvial aquifer, not solely groundwater from fractured rock.

Moreover, of the 17 City of Redding groundwater extraction wells, the lowest capacity is 95 GPM (Redding 2023), while based on the well completion reports for 4 water wells installed within the last 30

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years in the vicinity of the project site, the tested well yield ranged between 12 and 29 GPM and averaged about 20 GPM (DWR 2023).

Appendix B (g) (14) (E) (ii) of title 20, California Code of Regulations requires that if the project will pump groundwater, aquifer drawdown should be estimated using computer modeling conducted by a professional geologist that considers the impact to neighboring water wells and the likelihood of any changes in existing physical or chemical conditions of groundwater resources.

9. DATA REQUEST

Please conduct computer modeling to estimate the impact to the fractured rock aquifer at the project site. If there is insufficient data to support computer modeling, aquifer testing at the project site may be necessary. Please verify that there are no existing water wells within ½ mile of the proposed groundwater extraction well(s) near the proposed O&M facility. If neighboring water wells do exist within the ½ mile zone, drawdown impact to the well should be incorporated into the computer modeling or aquifer testing program. The evaluation of the groundwater modeling, or aquifer testing if necessary, should include a discussion of groundwater extraction impacts to the resource per Appendix B (g) (14) (E) (ii) of title 20, California Code of Regulations.

9. APPLICANT'S DATA RESPONSE

According to published well data from the State Department of Water Resources, no wells exist within 0.5-miles of the proposed well at the O&M facility. No groundwater from the fractured rock aquifer below the site will be used for Project construction. Water from the well at the O&M facility will be used during operations. The proposed O&M water demand is anticipated to be up to 5.6 afy or 5,000 gallons per day. The anticipated maximum pumping rate of the well is estimated to be 10.4 gpm assuming pumping operations occur during a standard 8-hour (480-minute) work shift 365 days per year. However, because the pumped groundwater would be conveyed to and temporarily stored in a tank with automated operational controls, the required pumping rate of the proposed O&M well would be lower. Wells within one mile of the O&M building have pumping rates of between 12 and 25 gpm, and the pumping rates of wells within two miles of the O&M building are between 6 and 60 gpm. See also discussion above under Applicant Data Response 5.