

3.12 TRANSPORTATION AND TRAFFIC

This section describes the applicable federal, state, and local regulations and policies related to transportation and circulation; discusses the existing roadway network and transportation facilities in Humboldt County; describes existing transportation and circulation conditions along transportation routes that would be affected by transport of equipment, tools, materials, and personnel necessary to construct, operate, and decommission the project; and evaluates the potential impacts of project construction and operation.

The analysis also considers comments submitted in response to the notice of preparation. These comments expressed concern about the routing of heavy truck trips onto local roadways including but not limited to Monument Road and Mattole Road. They also expressed concern about the potential for through traffic to travel on local roadways in the town of Scotia, particularly because of periodic road closures as part of the Scotia Infrastructure Project.

3.12.1 TRANSPORTATION SETTING

Humboldt County's circulation network is made up of a network of state highways and roadways maintained by Humboldt County (County), cities, and private entities. The County-maintained roadway system is made up primarily of two-lane roads that traverse varying degrees of flat, rolling, and mountainous terrain.

The two major highways in Humboldt County are U.S. Highway 101 (U.S. 101) (north-south) and State Route 299 (east-west), which carry the highest volumes of passenger cars and commercial trucks. The use of public roads would be limited to a subset of the County transportation network that connects Fields Landing to the project site.

PUBLIC ROADWAYS

U.S. 101

U.S. 101 is the principal arterial serving interregional and interstate traffic in Humboldt County. U.S. 101 is a four-lane highway that provides the primary north/south route of travel through the county, connecting Eureka to other Humboldt County communities. The transport route and likely all construction traffic would use U.S. 101 between Eureka and the Pepperwood exit. U.S. 101 is generally access-controlled and is separated from other roads and waterways by numerous bridges and underpasses. On-ramps and off-ramps provide connections to the regional road system at frequent intervals.

South Bay Depot Road

South Bay Depot Road is a local roadway with one lane in each direction. Located in Fields Landing, South Bay Depot Road provides access to U.S. 101 for residential and commercial uses located west of Fields Landing Drive. Under the proposed project, barges would be guided to a docking location adjacent to an existing parking lot north of the western terminus of South Bay Depot Road in Fields Landing. Also, access to and egress from Fields Landing for trucks with WTG components would be via South Bay Depot Road.

Hookton Road

Hookton Road is a rural collector in Loleta, California. Hookton Road extends from U.S. 101 to the west to Table Bluff Road and to the east to Tompkins Hill Road. This roadway provides access to U.S. 101 for the Hookton, Table Bluff, and Indianola areas. For the proposed project, depending on final WTG selection and the transportation plan, the base tower section may exceed the allowable height on the Hookton Road overpass. Therefore, temporary detours and physical improvements are proposed for these locations.

Dinsmore Drive

Dinsmore Drive is a two-lane local collector in Fortuna, California. This road provides access to U.S. 101 for commercial and industrial uses west of U.S. 101 and north of the 12th Street/Riverwalk Drive overpass in Fortuna. For the proposed project, depending on final WTG selection and the transportation plan, the base tower section may exceed the allowable height on the 12th Street/Riverwalk Drive overpass. Therefore, temporary detours and physical improvements are proposed for these locations.

Loleta Drive

Loleta Drive is a two-lane collector in Loleta, California. Loleta Drive extends from U.S. 101 to the west to the Loleta community and to the east to Singley Hill Road. The proposed project plans detours off U.S. 101 to Loleta Drive. Vegetation along the off-ramp and on-ramp would have to be trimmed to provide truck clearance.

Palmer Boulevard

Palmer Boulevard is a two-lane collector in a rural area north of Fortuna, California. Palmer Boulevard extends from U.S. 101 to the east and connects the residential area just north of Fortuna to U.S. 101. The proposed project plans detours off U.S. 101 around the Palmer Boulevard Bridge. Vegetation along the off-ramp and on-ramp would have to be trimmed to provide truck clearance.

DEMONSTRATION FOREST ROAD RIGHT

Demonstration Forest Road Right is a private logging road that leads from the proposed staging area at Jordan Creek and travels upward, generally following the natural grade of the hillside. The proposed project would need to improve Demonstration Forest Road Right to accommodate the heavy trucks that would haul large components to the WTG pads along the ridge.

PROPOSED HAUL ROUTE

A maximum of 60 WTGs are proposed for construction and operations in the project area. For each WTG, up to 15 separate loads of equipment and materials would need to be delivered to its pad. Nine to 12 of these loads would be oversized, permitted loads (Figure 2-18 in Chapter 2, “Project Description”). Towers generally would be delivered and constructed in three, four, or five sections, depending on the WTG being installed. Each WTG blade, nacelle, rotor, and set of down-tower components (e.g., controllers, ladders and platforms, and switchgear) would be delivered separately.

Components would be transported overland to project sites on heavy trucks, which would use U.S. 101 before reaching the temporary Jordan Creek staging area at the Pepperwood off-ramp (Figure 2-17). On reaching the temporary staging area, the equipment would be either off-loaded and stored temporarily or hauled directly to a

project site to be assembled or installed. Transport of heavy components may require localized clearing or pruning of vegetation, temporary relocation of obstacles such as fences and overhead power lines, and/or placement of temporary mats and fill material to support the loaded vehicle weight. Depending on final WTG selection and the transportation plan, the base tower section may exceed the allowable height of two overpasses: Hookton Road and 12th Street. At these two locations, temporary detours would be required to bypass the physical constraints of the overpass. See Section 2.3.2, “Component Transport to the Project Site,” in Chapter 2 for temporary detours and physical improvements that are proposed for project area roadways and other transportation facilities.

All transportation activities would be timed to minimize traffic disruptions, consistent with applicable permits administered by the California Department of Transportation (Caltrans), the City of Fortuna, and the County. Delivery of project components would be coordinated through both the Caltrans and County encroachment permit processes. These processes would be used to determine the final trailer configuration, clearance requirements, emergency service access, lane closures (if required), California Highway Patrol (CHP) escort (as required), and transportation times.

Construction/Operations Routes

The project would generate vehicular traffic primarily during construction. This traffic would consist of trips by workers traveling to and from the project area, the transport of construction materials, and equipment deliveries. All construction traffic would be routed along U.S. 101 and the new access road through Jordan Creek. Monument Road from Rio Dell, or Bear River Ridge Road/Mattole Road through Ferndale, would be used only for egress during an emergency. The County Department of Public Works letter dated June 19, 2018, written in response to the conditional use permit application, proposes to condition the project to prohibit the use of Monument Road and Mattole Road, as these roadways do not have the capacity to accommodate heavy loads. The haul route is shown in Figure 2-17.

ADJACENT LAND USES

Single-family homes are situated on large, agricultural parcels along the proposed haul route, creating a very low-density population and correspondingly low traffic volumes. Single-family homes are situated on small lots along the portion of the proposed haul route adjacent to the Fields Landing dock.

3.12.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following federal plans, policies, regulations, and laws may be applicable to the proposed project.

- ▶ Title 49, Sections 171–173 and 177 of the Code of Federal Regulations include general information, regulations, and definitions pertaining to the transportation of hazardous materials, the types of materials defined as hazardous, shipping requirements, marking of transportation vehicles, training requirements, and carriage by public highway.
- ▶ Title 49, Sections 350–399 and Appendices A–G of the Code of Federal Regulations address safety issues for transport of goods, materials, and substances over public highways.

- ▶ The Hazardous Materials Act of 1974, which is directed by the U.S. Department of Transportation, governs the transportation of hazardous materials in the nation. The act’s main objective is to improve regulations and enforcement that deal with transportation of hazardous materials in commerce.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following State of California plans, policies, regulations, and laws may be applicable to the proposed project.

California Streets and Highways Code and California Vehicle Code

- ▶ Sections 660, 670, 1450, 1460 et seq., 1470, and 1480 of the Streets and Highways Code regulate right-of-way encroachment and granting of permits for encroachments on state and county roads.
- ▶ Sections 117 and 660-672 of the Streets and Highways Code and California Vehicle Code (CVC) Section 35780 et seq. require permits for transportation of oversized loads on county roads.
- ▶ CVC Sections 13369, 15275, and 15278 address the licensing of drivers and classifications of licenses required for operating particular types of vehicles. In addition, certificates permitting operation of vehicles transporting hazardous materials are addressed.
- ▶ CVC Section 353 defines hazardous materials, and Sections 2500–2505 authorize the issuance of licenses by the CHP Commissioner for transportation of hazardous materials, including explosives.
- ▶ Under CVC Section 2812.5, CHP staff may prohibit commercial vehicles from using highways under limited-visibility conditions, and Section 21662 includes regulations related to driving in mountainous terrain.
- ▶ CVC Division 13 regulates towing and loading equipment and vehicles.
- ▶ CVC Division 14.8 includes safety regulations for operation of commercial vehicles and certain large vehicles.
- ▶ CVC Division 15, Chapter 5, Article 6 defines oversized loads. Approvals from Caltrans are required for transportation of oversized or excessive loads over state highways, and include limitations for various types, depending on axles and wheelbase length.

California Department of Transportation

California Manual on Uniform Traffic Control Devices

The *California Manual on Uniform Traffic Control Devices* specifies standards for construction work in the public rights-of-way, including Chapter 6, “Temporary Traffic Control” (Caltrans 2018). Caltrans is responsible for the planning, design, construction, operation, and maintenance of all state-owned roadways, including those in the county. U.S. 101 is located in the county, and thus is within Caltrans’s jurisdiction.

Transportation Concept Reports

Caltrans has completed transportation concept reports for the state highway system serving Humboldt County. These reports are Caltrans’s long-range planning documents, completed for each state highway route to describe

the conceptual improvement options for each given transportation route or corridor. The reports identify existing route conditions and future needs. Each report includes a route summary, segment summaries, existing and forecasted travel data, route maps, and a list of planned, programmed, and needed projects for each highway over the next 20 years. The reports identify how a highway will be developed and managed so that it delivers a targeted level of service (LOS) (the “concept LOS”) that is feasible to attain over a 20-year planning horizon. The concept LOS represents the minimum acceptable service conditions over the next 20 years. These reports (previously called “route concept reports”) for the state highways in the county and their respective concept LOS are as follows (Caltrans 2002a):

- ▶ Concept LOS C on four-lane rural segments
- ▶ Concept LOS D on all segments in urban areas and along two-lane rural segments

California Statewide Transportation Improvement Program

The California Statewide Transportation Improvement Program (STIP) is a multiyear, statewide, intermodal program of transportation projects that are consistent with the statewide transportation plan and planning processes, and metropolitan plans. The STIP is prepared by Caltrans in cooperation with the metropolitan planning organizations and regional transportation planning agencies. The STIP contains all capital and noncapital transportation projects or identified phases of transportation projects for funding under the Federal Transit Act and Title 23 of the U.S. Code.

Interregional Transportation Improvement Program

Caltrans’s 5-year Interregional Transportation Improvement Program is prepared pursuant to Government Code Section 14526, Streets and Highways Code Section 164, and the California Transportation Commission’s STIP Guidelines. Regional agencies work with Caltrans to identify projects that will address improvements to the interregional transportation system and improve the movement of people, vehicles, and goods between regions.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

The Humboldt County Association of Governments (HCAOG), the designated regional transportation planning agency for Humboldt County, is required by California law to adopt and submit an approved regional transportation plan (RTP) to the California Transportation Commission every 5 years. The 2014 RTP guides transportation investments in the county over the next 20 years. The RTP includes policies and guidelines for use of federal, state, and local funding. Development of updates to the RTP is a cooperative effort between the HCAOG, Caltrans, and other stakeholders, including Native American tribes, local transit authorities, local social service providers, and the general public.

The 2014 RTP demonstrates close ties to the Regional Transportation Improvement Program, the Interregional Transportation Improvement Program, the STIP, the overall work program, the Federal Transportation Improvement Program, the California Transportation Plan and Interregional Blueprint, and the California Strategic Highway Safety Plan (HCAOG 2014).

The 2014 RTP provides a course for future transportation investment in the region, with the goal of building and maintaining a multimodal, safe, efficient, and balanced transportation system. The plan outlines projects for public transportation, rail and bus service, highways, county roads, local streets, bicycling and pedestrian systems,

aviation, goods movement, trails, tribal transportation, and emergency access, to provide an integrated, multimodal transportation system.

2016 Regional Transportation Improvement Program

The Regional Transportation Improvement Program is a 5-year program of highway, local road, transit, and active transportation projects that a region plans to fund with federal and state revenue programmed by the California Transportation Commission in the STIP. The program is designed to implement the region's overall strategy for providing mobility and improving the transportation system as a whole. The Regional Transportation Improvement Program incrementally implements the 2014 RTP, which is the long-range transportation plan for the county. In addition, it covers multiple fiscal years and is amended frequently to reflect near-term priorities and expenditures.

Humboldt County General Plan

The Circulation Element of the *Humboldt County General Plan* (General Plan) (Humboldt County 2017) encourages a balanced transportation network that accommodates motorized vehicles, public transit, bicycles, and pedestrians. The following General Plan goals, policies, and standard that address transportation and traffic issues are relevant to the project:

Goal C-G1: Circulation System Safety and Functionality. A safe, efficient, accessible and convenient circulation system in and between cities, communities, neighborhoods, hamlets, and adjoining regions taking into consideration the context-specific needs of all users*, consistent with urban, suburban, rural or remote community character.

* All users is defined in the Complete Streets Act to include: motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan.

Goal C-G2: Diverse Transportation Opportunities. A transportation system that provides the availability of options among modes of travel by considering the needs of all users* in a context sensitive manner that is appropriate to urban, suburban, rural or remote community character.

* See above definition

Goal C-G3: Interagency Cooperation. Coordinated planning between the County, transportation system service providers and HCAOG for improved system design, development, operations, and maintenance.

Goal C-G4: Access to Active Transportation. Improved access to non-motorized modes of transportation, including walking, bicycling, horseback riding and hiking.

Goal C-G5: Movement of Goods. A circulation system with improved opportunities, reliability, connectivity, and cost-effectiveness for businesses and producers to move goods within, into and out of Humboldt County.

- ▶ **Policy C-P4: Mitigation Measures.** Development with potentially significant circulation impacts as determined by CEQA review shall be conditioned to proportionally mitigate such impacts through payment of impact fees, construction of on- and off-site improvements and dedication of rights-of-way or a combination of impact fees, improvements, and dedications.

- ▶ **Policy C-P5: Level of Service Criteria.** The County shall strive to maintain LOS C operation on all roadway segments and intersections, except for U.S. 101, where LOS D shall be acceptable. LOS improvements for automobiles should not adversely affect LOS and/or quality of service for other modes of transportation, if possible.
- **Standard C-S3: Traffic Thresholds of Significance.** Apply objective measures, such as roadway capacity and LOS from the Transportation Research Board Highway Capacity Manual or its equivalent, to make determinations on the significance of traffic impacts for CEQA purposes.

Humboldt County Code

The Humboldt County Code contains the following policy regarding transportation and circulation that may be applicable to the project:

Title III, Division 2, Subdivision Regulations

This division of the County Code regulates the geometric design of roadways associated with the expected extent of use (roadway categories 1 through 6 [as shown in Table 3.12-1]). This includes specifics on total roadway width, number of travel lanes, shoulder size, design speed, and whether on-street parking is allowed.

Table 3.12-1. Roadway Categories—County Code

| Roadway Category | Roadway Type |
|------------------|---|
| #1 | (1) Single lane—low speed, less than 20 mph. (2) No parking permitted on traveled way. (3) Maximum length—1/4 mile. (4) Serves maximum of four (4) parcels having no more than one dwelling unit per parcel. (5) Rural area only. |
| #2 | (1) Single lane—with intervisible turnouts not to exceed 1/4 mile spacing. (2) No parking on traveled way. (3) Serves a maximum of ten (10) parcels having no more than one dwelling unit per parcel. (4) Rural area only. (5) Low speed—25 mph design. |
| #3 | (1) Single lane—will allow for vehicles to pass each other at slow speeds. (2) No parking on traveled way. (3) Serves a maximum of 20 parcels having no more than one dwelling unit per parcel. (4) Rural situations—low density area. (5) Low speed—25 mph design. |
| #4 | (1) Two lane—narrow roadway, low to moderate speed—25–40 mph. (2) No parking on traveled way. (3) Serves a maximum of 100 parcels with no more than one dwelling unit per parcel. (4) Urbanization situation. Vicinity is beginning to undergo a transition from rural to urban. |
| #5 | (1) Full two lane with at least two 4-foot shoulders. (2) No parking on traveled way. (3) Urban or urbanizing area. Vicinity normally will have intermittent high density lots and large lots or acreage. |
| #6 | (1) Full two lanes with at least two 8-foot parking lanes. (2) Provides on-street parking and/or sidewalks as approved by Department of Public Works. Topography or design may require deletion of parking on one side as approved by Department of Public Works. (3) Urban area. |

Note: mph = miles per hour

Source: Humboldt County Code 2018 (https://humboldt.county.codes/Code/32_Ax-3); adapted by AECOM in 2019.

Section 3112-1. Road and Driveway Access

Road and street networks, whether public or private, unless exempted under Section 3111-3(b), shall provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency consistent with Sections 3112-2 through 3112-13.

3.12.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. Implementing the project would have a significant impact if it would:

- ▶ conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- ▶ conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b);
- ▶ substantially increase hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- ▶ result in inadequate emergency access.

ANALYSIS METHODOLOGY

This section describes the criteria used to evaluate the impacts associated with the project's transportation and traffic components, including impacts of the unusually large WTG transporter vehicles on the existing public transportation network, and the impacts of all other project traffic. The public transportation system includes the network *structure and geometry* because these define the physical network, and the *operations* of the network because travel safety and efficiency are best evaluated based on traffic operations.

Transporter Impacts on Public Infrastructure

A wind turbine generator consists of several components, including the tower base, mid-section, and top section; three WTG blades; and the WTG nacelle. The size of these components would require the use of special transport vehicles that would exceed allowable limits when loaded and traveling on California roadways. Specifically, a transporter under load would exceed the maximum allowable width, height, length, and/or weight for California highways, as defined in CVC Division 15, "Size, Weight, and Load." Division 15 includes provisions for obtaining a discretionary permit to transport such loads (also known as a transportation permit) from Caltrans and/or local agencies, for the use of roadways under their respective jurisdictions. The application for such a transportation permit requires the applicant to describe the vehicle, the load, and the route to be traversed; specify whether the permit is for a single trip or continuous operation; and provide the transport date(s) and various other details.

This section presents an evaluation of the impacts of transporting these oversized loads on roadways and bridge structures, on public infrastructure components suspended above roads (e.g., utility lines), and on the areas directly adjacent to existing travel ways along the project routes.

Weight Limits

Vehicle weight limits are specified in the CVC, and a summary of these complex regulations is outside the scope of this analysis. Vehicles weighing more than regulatory limits must obtain a transportation permit, which must specify the number of tires per truck axle, the distance between axles, and axle widths. This information is used to determine the maximum allowable weight per axle for the vehicle. The maximum allowable weight per axle is used for comparison to bridge weight restrictions and for determining “equivalent axle loads” used in road structure evaluations.

Caltrans inspects both state and County bridges and identifies the weight-bearing capacity of each. The County Road Design Standards include information on the design of county roads relative to traffic loads, although no specific standards are identified relative to single traffic trips.

The maximum allowable weight per axle for a heavy vehicle is grouped into orange, green, or purple load categories, corresponding to similar bridge ratings. Bridges are designed to carry a certain maximum allowable weight, and bridge ratings may change over time. Heavier loads have fewer route options because some bridges are not designed to accommodate extremely heavy loads. The transporter must obtain a transportation permit from state and local agents, so that, among other safety concerns, the proposed load would not exceed any bridge weight limits along the intended route.

Bridge ratings can be obtained from Caltrans transportation permit staff for all bridges along state highways and from Humboldt County staff for bridges within County jurisdiction. The County Department of Public Works maintains the Transportation Permits Bridge Loading Codes.

Width Limits

The maximum allowable width of a vehicle in California is 8.5 feet (with some exceptions noted in the CVC), although most vehicles are closer to 6 feet wide. Most vehicles exceeding the maximum width and all vehicles more than 10 feet wide must obtain a transportation permit from state and local agents, so that, among other safety concerns, the proposed load would not obstruct the flow of opposing traffic, travel outside its lane width, or encroach into areas outside the travel way.

For extra-wide loads, the vehicle width must be noted on the transportation permit, along with the specified transport route. Using this information, local agents can determine which roads are adequate. It is common to permit extra-wide loads to use the majority of the roadway, even if oncoming travel is obstructed. This use can be accomplished in a safe manner by requiring a variety of temporary traffic control measures, such as escorts by pilot cars or the CHP; by providing advance notice to the traveling public that the travel route may be subject to delay during the transport passage; or by delineating a detour route.

All study road segments are designed to accommodate two-way travel; U.S. 101 is predominantly a four-lane road, and all other roads along the haul routes are two-lane facilities.

Length Limits

California has two types of truck networks based on truck length, the STAA Network and the California Legal Truck Network. Vehicles that exceed regulation length limits must obtain a transportation permit, specifying semi-tractor and semi-trailer lengths, axle length, and total length, to name several dimensions.

Vehicular length limits have been established mainly because of a vehicle characteristic called off-tracking. Off-tracking is the tendency for rear tires to follow a shorter path than front tires when turning. Off-tracking is a concern primarily for longer vehicles because rear tires may clip street signs; drive onto unpaved shoulders, walkways, or bike lanes; or cross the centerline on a curve, creating a safety hazard for adjacent and oncoming traffic. If extra-legal length loads are expected to travel on narrow, mountainous roads, the driver's safety is also a concern, depending on the ability of the vehicle to stay within the roadway.

Height Limits

Vehicle heights are restricted to a maximum of 14 feet (with exceptions noted in the CVC), although the CVC stipulates that a vehicle height of 13.5 feet shall be exceeded (by 6 inches) only where deemed to be safe by the vehicle owner and the operator. These limits have been established for various reasons; a lower vehicle center of gravity contributes to the stability of a moving vehicle, and overcrossing roads, utilities, and tree branches are suspended above many roadways and may obstruct the safe passage of vehicles. Roads that cross state facilities are posted with a clearance height facing the undercrossing travel lanes, if the undercrossing clearance is less than 16 feet.

Transporter Impacts on Traffic Flows

The size of the various WTG components may require the transporters to move at a rate or in such a manner as to impede normal traffic flow. Both traffic traveling in the same direction as the transporters and traffic traveling in the opposite direction could be affected. The impacts of these potential delays on traffic flow along the proposed transporter travel routes were evaluated against these standards.

The speed limit on U.S. 101 is 65 miles per hour (mph) for all vehicles except trucks with trailers, which are limited to 55 mph.

The County has adopted emergency response traffic operational standards, applicable to construction projects (the Fire Safe Regulations), which are incorporated into the County Code in Title III (Land Use and Development), Division 11. Specifically, "road and street networks, whether public or private, unless exempted under Section 3111-3(b), shall provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency consistent with Section 3112-2 through 3112-13." These sections delineate topics such as minimum access dimensions to be constructed as a condition of development, including road widths, road grades, turnarounds, turnouts, vertical clearances, gate entrances, signing, and building numbers.

The County has adopted, by reference to the *California Manual on Uniform Traffic Control Devices*, standards for temporary traffic control (TTC) relative to construction work zones. Specifically, "when the normal function of the roadway is suspended due to construction, planning is required to provide for continuity of the movement of traffic and access to areas served by roads. The primary function of TTC is to provide for the reasonably safe and efficient movement of road users through or around TTC zones while reasonably protecting workers,

responders to traffic incidents, and equipment. Of equal importance to the public traveling through the TTC zone is the safety of workers performing the tasks.”

Section 3.12.2, “Regulatory Setting,” includes other General Plan policies that are relevant to road operations.

Other Project Traffic—Impacts on Traffic Operations

In addition to transporters, project construction would generate traffic, including construction workers driving to and from project sites, and delivery of materials, tools, and equipment.

Project operation would also generate traffic. The impacts of these passenger vehicle trips on the existing roadway network’s traffic patterns were evaluated to assess whether the expected increase in traffic would exceed an adopted standard for traffic operations on the travel routes of these vehicles. Impacts of the project on alternative transportation modes, including transit, bicycle, and pedestrian modes, were also assessed.

The General Plan does not include specific road capacity policy statements or standards, and thus, Caltrans standards were applied to evaluate the vehicular capacity of roadways that could be affected by project traffic. In its *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002b), Caltrans indicates that it endeavors to maintain operation at the transition from LOS C to LOS D; however, where operation is already below LOS C, the existing measure of effectiveness should be maintained.

LOS is used to rank traffic operation on various types of facilities, based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, LOS A represents free-flow conditions, and LOS F represents forced flow or breakdown conditions. The study roadways were analyzed using a methodology published in the *Highway Capacity Manual*, fourth edition, but this was not used for this analysis because of the lack of an applicable methodology for the study roadways. Instead, this analysis was performed based on the methodology for the highway system planning approach to roadway segment capacity, found in the *Highway Capacity Manual*, third edition, in Chapter 8, “Two-Lane Highways,” Table 8-10, “Maximum AADT’s vs. Level of Service and Type of Terrain for Two-Lane Rural Highways” (Transportation Research Board 2010). This method enables a very general evaluation of rural two-lane roadway operations, expressed in terms of average annual daily traffic and type of terrain, including level, rolling, or mountainous terrain. All study roadways in Ferndale, Rio Dell, and Caltrans jurisdictions are in level terrain, as are all the County study roadways except Monument Road, Mattole Road, and Bear River Ridge Road, which are in mountainous terrain.

Regarding alternative transportation modes, General Plan policy statements address bicycle facilities, including a reference to a countywide bicycle plan. The plan includes maps that delineate existing and proposed bike facilities. Three maps include various regions in the project vicinity, including the Southern Humboldt County Bicycle Facilities Map, the City of Rio Dell Bicycle Facilities Map, and the City of Ferndale Bicycle Facilities Map.

Traffic Scenarios

The methodologies and project details used to apply the evaluation criteria are described below.

Transporter Size

To evaluate impacts of the transporters on existing infrastructure or traffic flows, and impacts on the infrastructure because of weight, width and length, and transporter height, project transportation routes were reviewed under the transport route review by Central Oceans USA in 2018. The evaluation involved determining roadway width, roadway alignment, road grade, the location and height of obstructions crossing over the roads, and bridge weight rating records. Both horizontal and vertical limitations along the route were considered.

In the transport route review, the heights of overcrossing objects suspended above the study roads were measured in several locations, including tree branches and power or telephone service lines; these heights were estimated to be the typical crossing heights for other road crossing objects. These object crossing heights were found to exceed 16 feet in the center of the roadway. This information was compared to the truck specification worksheets, provided in the Hard Rock Specialized feasibility study. For the weight of the WTG transport loads, several load specification worksheets were used that graphically represent the maximum vehicle axle loading for each WTG component. For the width and length of the transporter, the information used in the transport route review was used. Transporter travel along steep road grades was identified as a traffic safety concern, based on hazards to driver safety and the traffic environment.

Transporter Travel Speed and Logistics

To evaluate the impacts of the transporters on traffic flows, it was assumed that the transporters, when loaded, would travel at 40–50 mph; when empty, they are expected to travel at 55–60 mph. Travel time between the Fields Landing dock and the generation area is estimated to take 2 hours, depending on CHP pilot car/escort logistics. Travel time would be less on U.S. 101 than on local roads, with travel time from the Fields Landing dock to Rio Dell estimated to be within 30 minutes, and the remaining travel time estimated at approximately 1.5 hours. The last 15 miles, including traversing the mountainous terrain up to Bear River Ridge, would be traveled at an estimated speed of 10 mph.

Transporter Logistics

Loading and unloading times would vary, depending on pad locations, crane types, and weather. A transporter would load, transport, unload, and return to the dock before the next transporter would be dispatched. Based on loading and unloading times and estimated travel times, one or two WTG components would be delivered per day. This would reflect an average delivery cycle of 1.5 transport loads per day. As shown in Table 2-2 in Chapter 2, “Project Description,” four loaded transporters would be necessary to deliver all components for a single WTG. With 60 WTGs, this would result in 240 transport loads, and using an average delivery cycle of 1.5 loads per day, the transporters would be en route for a total of 160 working days, which would be slightly more than 6 months, assuming 250 working days each year.

IMPACTS AND MITIGATION MEASURES

| | |
|----------------------|--|
| IMPACT 3.12-1 | Potential to Conflict with a Program, Plan, Ordinance, or Policy. <i>The project would not substantially alter the total number of vehicle miles traveled in Humboldt County, as it is not considered to be a trip-generating land use type. The project would not conflict with a state or local transportation policy, including State CEQA Guidelines Section 15064. This impact would be less than significant.</i> |
|----------------------|--|

The project would generate approximately 29,000 trips over the course of construction, excluding the trips associated with hauling WTG components. This would result in 14,500 trucks each making one inbound trip and one outbound trip. After construction, operations and maintenance would require approximately three round trips per day using pickups or other light-duty trucks. Table 3.12-2 summarizes the project’s estimated trip generation.

Table 3.12-2. Summary of Project Trip Generation (Nontransporter)

| Use Type | Unit | Mode | | Weekday Daily Trips | P.M. Peak Hour Trips* |
|---------------------------------|---------------|--------------------|-----------------|---------------------|-----------------------|
| | | Passenger Vehicles | Delivery Trucks | | |
| Construction Labor | 30 personnel | 30 | 0 | 60 | 6 |
| Material and Equipment Delivery | 14,500 trucks | 0 | 14,500 | 37 | 4 |
| Construction Total | | 33 | 14,500 | 97 | 10 |
| Operations | 3 employees | 3 | 0 | 6 | 1 |

* 10 percent of the daily traffic is assumed to occur during the p.m. peak hour, based on California Department of Transportation data.
Source: Data provided by Humboldt Wind LLC and compiled by AECOM in 2019

During project construction, 97 daily trips are expected to be generated, with six daily trips for daily operations thereafter. This is a nominal number of trips compared to existing conditions described in Table 3.12-1. The project would not generate substantial vehicular traffic during operation and would not substantially alter the total number of vehicle miles traveled in the county during the project’s 30-year life span. Therefore, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system. This impact would be **less than significant**.

Expansion of the Bridgeville Substation would be a very minor component of the project’s overall construction activity. This impact would be **less than significant**.

| | |
|----------------------|---|
| IMPACT 3.12-2 | Creation of Hazards from Truck Traffic. <i>A large number of trucks would transport loads over roadways that do not normally see a high volume of truck traffic. These trucks could exceed applicable standards for maximum vehicle width or exceed the width of most travel lanes. Use of the roadway network by these oversized trucks would shorten the remaining useful life of roadway surface and could create hazardous road condition. This impact would be potentially significant.</i> |
|----------------------|---|

The proposed project would require a large number of trucks to transport loads over roadways that do not normally see a high volume of truck traffic. These trucks could exceed applicable standards for maximum vehicle width or exceed the width of most travel lanes, requiring the transporter to occupy additional travel lanes. Use of the roadway network by these oversized trucks would shorten the remaining useful life of roadway surfaces. This

condition would be exacerbated when the structural section of the roadway is not designed for truck traffic. The weight of one legal-load truck is equivalent to approximately 10,000 cars. This impact would be **potentially significant**.

Mitigation Measure 3.12-1: Rehabilitate/Reconstruct County-Maintained Roads Damaged by Truck Traffic.

The project applicant shall prepare a transportation route plan that avoids heavy truck trips (except pickup trucks without trailers) on Monument Road and Mattole Road. All truck traffic shall use Jordan Road for ingress and egress from U.S. 101 to the project site.

Before issuance of the grading permit, the project applicant shall submit a haul route map to the County Department of Public Works identifying all County-maintained roads that would be used by trucks. The applicant and County Department of Public Works shall assess each road on the ground to determine their preproject condition before project-related truck traffic uses the roads.

During the course of the project, if the project applicant wishes to use additional County-maintained roads, the applicant shall submit a revised haul route map to the County Department of Public Works. The applicant and the County Department of Public Works shall assess each road on the ground to determine their preproject condition before project-related truck traffic uses the roads.

At the conclusion of the project, the project applicant and the County Department of Public Works shall reassess all roads used by project-related truck traffic. The applicant shall rehabilitate/reconstruct the roads to the satisfaction of the County Department of Public Works.

Implementing Mitigation Measure 3.12-1 would reduce this impact to **less than significant**.

The expansion of the Bridgeville Substation would not affect County-maintained roads. **No impact** would occur.

| | |
|-----------------------------|--|
| <p>IMPACT 3.12-3</p> | <p>Potential to Impede Emergency Access. <i>The size and limited mobility of heavy trucks hauling project components could impede vehicular travel on U.S. 101. U.S. 101 is the primary north/south access route to and from Humboldt County. The County Emergency Operations Plan lists U.S. 101 for use by emergency responders during critical events. This impact would be less than significant.</i></p> |
|-----------------------------|--|

The Humboldt County Emergency Operations Plan identifies U.S. 101 as a primary transportation route used during major incidents. Transportation of oversize loads may require lane closures and the use of detours, which has the potential to slow traffic flow and create congestion that could cause traffic to overflow onto surface roads adjacent to the closed route, creating access problems for local law enforcement agencies. Alternate routes between Fields Landing and the staging area at the Pepperwood off-ramp are not available or very limited along portions of this transportation route because of steep terrain and the presence of the Eel River. If not properly controlled, transport of heavy project components would have the potential to impede emergency response times or access to property.

Vehicle Size and Mobility

A loaded WTG transporter is estimated to be a maximum of 13 feet wide, with a length up to 190 feet. This is greater than the normally applicable standard of 10 feet in width and 65 feet in length. A vehicle that is 13 feet wide will extend beyond the limits of a standard 12-foot travel lane and all narrower travel lanes. Therefore, transporters could occupy both travel lanes in one direction along U.S. 101, which would affect the traffic that is traveling in the same direction, but not in the opposing direction. All other study roadways are two-lane facilities, and the transporters would affect traffic flows on those roadways in both travel directions simultaneously, potentially creating a roadblock. Travelers may attempt to pass the large transporter on the two-lane roadways, risking the possibility of encountering an oncoming vehicle and obstructing or slowing the flow of oncoming traffic that could potentially impede the travel of an emergency vehicle responding to call for service.

The proposed project would also require use of loaded transporters that exceed vehicle length limits. Vehicular length limits have been established mainly because of a vehicle characteristic called off-tracking. Off-tracking is a concern primarily for longer vehicles because rear tires may clip street signs; drive onto unpaved shoulders, walkways, or bike lanes; or cross the centerline on a curve, obstructing or slowing the flow of oncoming traffic and potentially impeding emergency vehicles traveling to a call for service.

To address the effects of oversize loads on public roads, the project applicant and/or contractor must obtain a transportation permit from the County and the City of Fortuna for each heavy load before WTG components are transported to the project site. The applicant or contractor is also required to submit a copy of the permit to the County Planning & Building Department before transporting WTG components. The permit application must identify the specific transporter to be used and provide details about the WTG components' load specifications, the requested route, and time and date of transport so that proper traffic control measures can be implemented as described above. Incorporation of the traffic control measures outlined by the transportation permit would ensure that vehicle access is maintained and the project would not impede emergency vehicle access.

Transport Speed and Traffic Flow

The transporters would travel at 40–50 mph when loaded and at 55–60 mph when empty. The speed limit on U.S. 101 is 65 mph for all vehicles except trucks with trailers, which are limited to 55 mph. The existing traffic volumes are approximately 8,000–26,000 vehicles per day within the preferred WTG route segments (Table 3.12-3). Assuming that half of these vehicles (4,000–13,000 vehicles per day) drive in direction, and assuming that 15 percent of this daily directional traffic occurs during a peak travel hour between 4 and 6 p.m., approximately 600–1,950 vehicles could be affected by a transporter traveling during the peak hour. The transporters would complete each trip along U.S. 101 in a half-hour; thus, about 300–1,000 other vehicles could be affected by a single WTG load. The transporters would be expected to travel in the slow lane plus the shoulder, enabling most vehicles to pass in the remaining fast lane. Because other vehicles would be able to pass the transporters safely, the impact on the freeway traffic flow would be minor, even during peak hours.

The impact on emergency access on these roads would be **less than significant**.

Even though the impact would be less than significant, the project applicant has voluntarily agreed to implement Mitigation Measure 3.12-2 as an enforceable condition of approval.

Mitigation Measure 3.12-2: Create a Traffic Control Plan and Notify the Public Regarding Anticipated Roadway Obstructions.

The transporters shall travel under loaded conditions during off-peak hours and possibly during evenings or at night, to minimize impacts on roadway traffic flows. The project applicant shall work with Caltrans to determine the lowest hourly traffic flows and develop a traffic control plan that specifies travel times and days, and includes public notification of anticipated roadway obstructions before transporter travel days. The final plan shall be submitted to Caltrans for review and approval.

Table 3.12-3. Existing Daily Traffic Volumes on Study Road Segments (Caltrans 2017 Counts)

| Road | Segment | Back Peak Hour | Ahead Peak Hour | Back AADT | Ahead AADT |
|----------|--|----------------|-----------------|-----------|------------|
| U.S. 101 | Barkdull Road | 1,100 | 1,150 | 8,100 | 8,300 |
| U.S. 101 | Jct. Rte. 254 Southwest | 1,150 | 1,200 | 8,300 | 9,000 |
| U.S. 101 | Shively Road | 1,100 | 1,100 | 9,100 | 9,200 |
| U.S. 101 | South Scotia Road | 1,100 | 1,100 | 9,200 | 9,300 |
| U.S. 101 | Jct. Rte. 283 Northwest, North Scotia Road | 1,100 | 1,200 | 9,200 | 9,800 |
| U.S. 101 | Davis Street (Rio Dell) | 1,200 | 1,300 | 9,800 | 10,200 |
| U.S. 101 | Scenic Way (Rio Dell) | 1,300 | 1,500 | 10,200 | 13,000 |
| U.S. 101 | Jct. Rte. 36 East | 1,900 | 2,000 | 17,800 | 18,100 |
| U.S. 101 | Drake Hill Road | 2,000 | 2,000 | 18,100 | 18,100 |
| U.S. 101 | Kenmar Road (Fortuna) | 2,000 | 2,300 | 18,100 | 20,400 |
| U.S. 101 | 12th Street | 2,300 | 2,600 | 20,400 | 23,800 |
| U.S. 101 | Fortuna Overhead | 2,600 | 2,600 | 23,800 | 24,100 |
| U.S. 101 | Palmer Boulevard | 2,600 | 2,500 | 24,100 | 23,900 |
| U.S. 101 | Finch Creek Road | 2,500 | 2,100 | 23,900 | 19,800 |
| U.S. 101 | Jct. Rte. 211 | 2,100 | 4,300 | 19,800 | 23,500 |
| U.S. 101 | Loleta Drive | 4,300 | 2,600 | 23,500 | 23,400 |
| U.S. 101 | Hookton Road | 2,600 | 2,600 | 23,400 | 22,800 |
| U.S. 101 | South Bay Depot Road (Fields Landing dock) | 2,600 | 2,900 | 22,800 | 25,500 |
| U.S. 101 | Orchard Street | 2,900 | 3,000 | 25,500 | 26,400 |
| U.S. 101 | King Salmon Avenue | 3,000 | 2,900 | 26,400 | 27,700 |

Notes: AADT= annual average daily traffic; ADT = average daily traffic; Caltrans = California Department of Transportation; Jct. = junction; NA = not available; Rte. = Route; U.S. 101 = U.S. Highway 101

Source: Caltrans traffic counts conducted in 2017 (<http://www.dot.ca.gov/trafficops/census/volumes2017/Route101.html>); data compiled by AECOM in 2019

The expansion of the Bridgeville Substation site would not involve large loads associated with the installation of the WTGs. **No impact** would occur.