



LARAMIE COUNTY PLANNING & DEVELOPMENT DEPARTMENT

Planning • Building

MEMORANDUM

TO: Laramie County Board of Commissioners

FROM: Bryan Nicholas, Associate Planner

DATE: February 19, 2019

TITLE: Review and action on a Wind Energy Site Plan for the Roundhouse Wind Energy Project, located in portions of lands in Townships 12 and 13 North, Ranges 68, 69, and 70 West, of the 6th PM, Laramie County, WY.

EXECUTIVE SUMMARY

NextEra Energy Resources, LLC on behalf of Duck Creek Grazing Association, Inc., Soapstone Grazing Association, Inc, State of Wyoming, City of Cheyenne, and the Union Pacific Railroad, CO., has submitted a Wind Energy Site Plan application for the Roundhouse Wind Energy Project, located approximately 9 miles southwest of Cheyenne. The application has been submitted to seek approval by the Board for a Large Wind Energy System.

BACKGROUND

The proposed Wind Energy System is described as a 300 megawatts (MW) Wind Turbine Farm consisting of up to 120 turbines on 43,621 acres. A Preliminary Site Plan showing the layout of the project was provided with the application submittal. It is the intent of the applicant to provide a Site Plan showing the final layout at the time of submitting a Wind Energy Permit. A change in the final layout of the project would not increase or decrease the project boundaries, and therefore would not encroach or affect the surrounding areas.

Pertinent Regulations

Section 2-2-125 of the Laramie County Land Use Regulations governing the criteria for Large Wind Energy Systems.

DISCUSSION

The Laramie County Comprehensive Plan identifies the area as Ag and Range Land (AGR). Within this area, primary uses include agriculture crop and livestock production, and a lower level of road access exists. Portions of lands within the project are also designated as Recreation Hub (REC) areas. The Comprehensive Plan describe lands within the Recreation Hub designation as areas that provide public access, fairgrounds, public parks, multi-use facilities and trails, as well as learning centers to the residents of Laramie County. Four specific recreation hubs are called out, including Curt Gowdy State Park, Archer Complex, Pine Bluffs recreation areas, and the Belvoir Ranch. The latter is included as part of the project area.

Although the project limits do not reach the boundaries of PlanCheyenne or the Zoned Boundary governed by the Laramie County Land Use Regulations (LCLUR), the east project line does abut lands that are designated as being in the Agriculture/Rural (AR) category of PlanCheyenne, and the Agricultural (A2) Zone District of the LCLUR. Both of these designations are similar in nature to the land within the project limits, primarily being agricultural in nature. The supported primary uses include agriculture, farming, and ranching. Per Section 2-2-125 (c)(ii), “A large wind energy system may be located only in areas that are within the Agricultural Residential (AR), Agricultural and Rural Residential (A-1), Agricultural (A-2)”

On January 9th, 2019, a Board Approval application was submitted to seek approval of a 230 kV generation-tie high power transmission line that will be part of the overall scope of the project. This application, which is to be presented to the Board during this public hearing, is dependent on the approval of the Wind Energy Site Plan. Per Section 2-2-127 (a) – “No high power transmission lines, water pipelines over 12” in diameter serving more than one property or energy pipeline shall be constructed in Laramie County without approval of the Board of County Commissioners.”

A proposed location for the Substation connecting the existing transmission line to the proposed and existing gas pipelines, access and equipment road layout, turbine locations, existing residences, and a collection system, is also shown on the Preliminary Site Plan. Upon approval by the Board of the Site Plan, a Wind Energy Permit needs to be submitted within 3 years. At which time the final Site Plan showing the permanent locations of all proposed development shall be provided.

Public notice was provided by the Applicant to adjacent neighbors within one mile, and cities within one-half mile, of the project boundary, per Section 2-2-125(d)(i) of the Land Use Regulations, and the Planning Office published a legal notice thirty days prior to this public hearing per Section 2-2-125(d)(ii). No public comment has been received by the Planning Department at this time.

The Planning Commission held a public hearing for this project on January 24th, and recommended approval to the Board 4-0. During the hearing a brief project description was provided by the applicant. Public comment was given to the Commission in support of the

proposed Wind Energy System; expressing the need to benefit from Wyoming's natural resource of wind, as well as providing careers to the citizens of Wyoming.

RECOMMENDATION and FINDINGS

Based on evidence provided, staff recommends the Board find that:

- a) This application meets the criteria for a Large Wind Energy System pursuant to section 2-2-125 of the Laramie County Land Use Regulations.

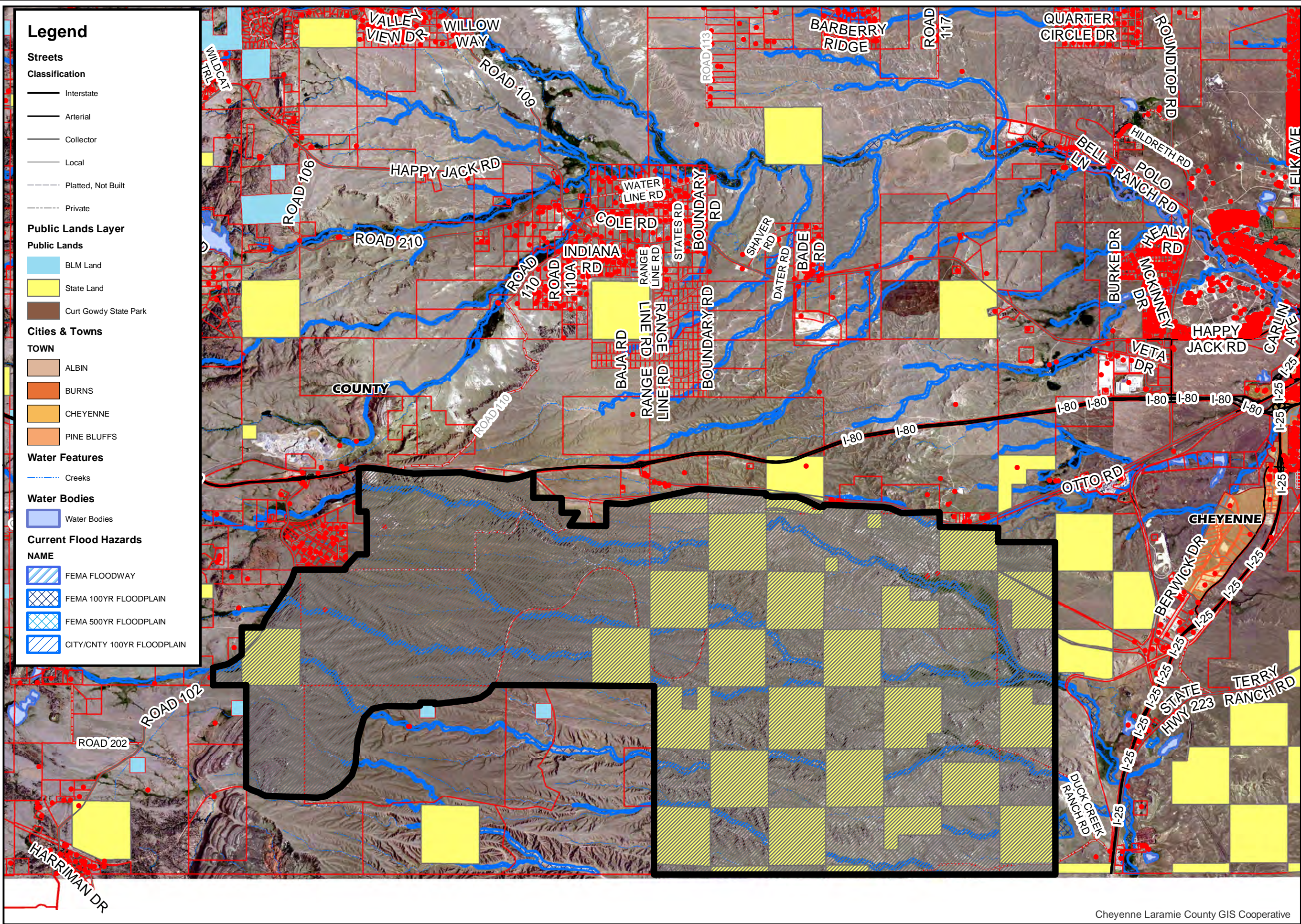
and that the Board approve the Roundhouse Wind Energy Site Plan with no conditions.

PROPOSED MOTION

I move to approve the Wind Energy Site Plan for the Roundhouse Wind Energy Project, and adopt the findings of fact a of the staff report.

ATTACHMENTS

- Attachment 1: Context Map**
- Attachment 2: Comprehensive Plan Map**
- Attachment 3: Preliminary Site Plan Map**
- Attachment 4: Applicant Project Narrative**
- Attachment 5: Agency Comments Report**
- Attachment 6: Applicant Agency Comments Response Letter 1.16.19**
- Attachment 7: Resolution**
- Attachment 8: Resolution Exhibit 'A'**



Laramie County, Wyoming



Roundhouse Wind Energy Project

Wind Energy Site Plan

PZ-18-00280

Context Map

SUBJECT PROPERTY



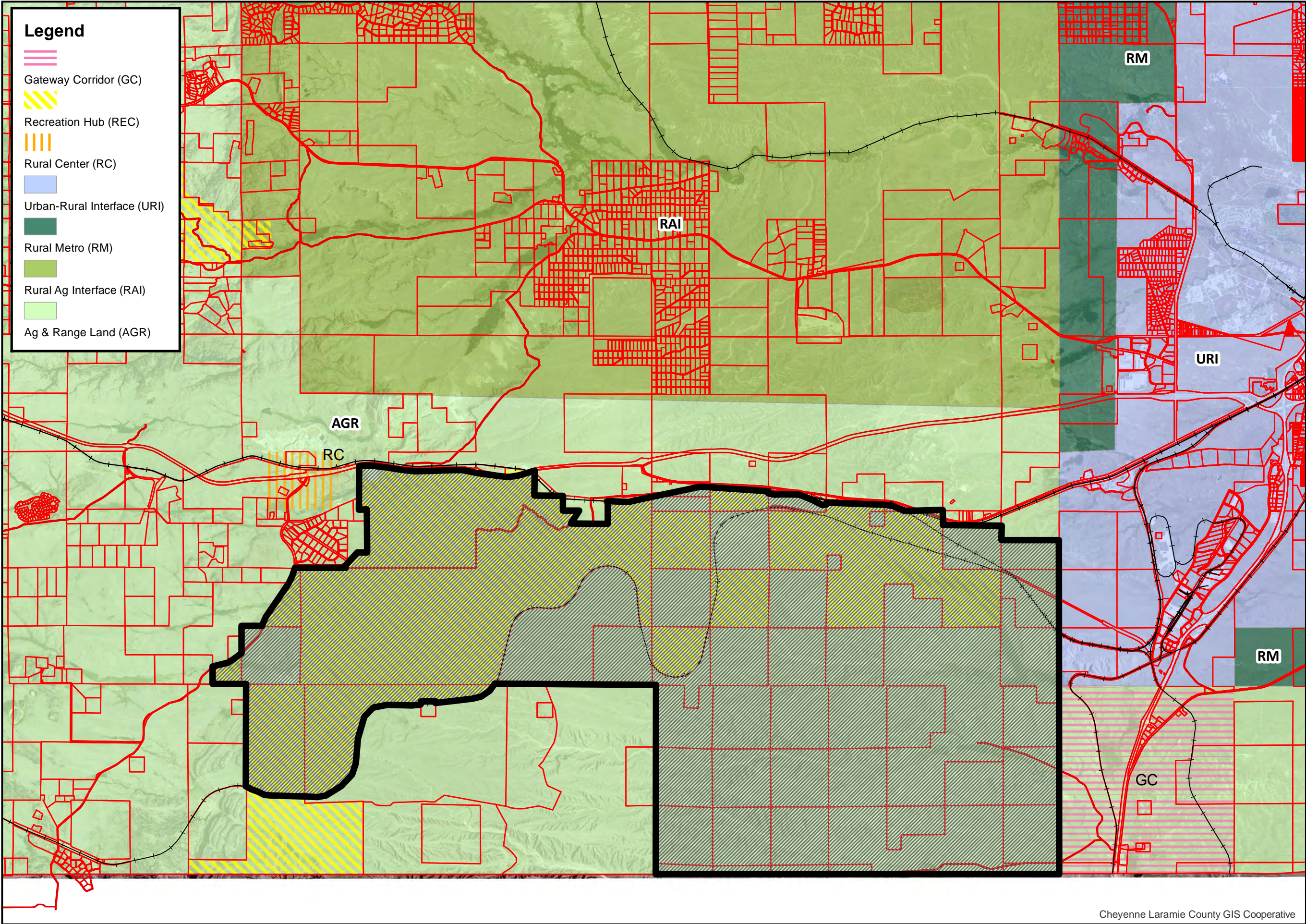
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Laramie County, Wyoming



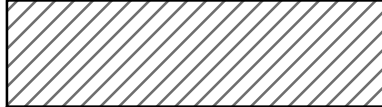
Roundhouse Wind Energy Project

Wind Energy Site Plan

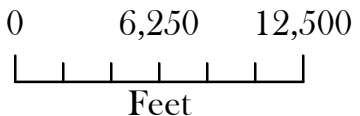
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Comprehensive Plan Map

SUBJECT PROPERTY



Printed on Dec 13, 2018



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2. Purpose and Benefits

2.1 Purpose

The Project is proposed due to the right combination of factors specific to the County and to current conditions in the market for wind energy. The County sits in an area with some of the fastest accessible wind speeds in the United States. By capturing this available wind resource, generated electricity can be delivered both to Wyoming customers and to the larger Intermountain West, positioning it as one of the least expensive and, therefore, most desirable, sources of new power in the region.

Wind energy is now the least expensive source of new power in many parts of the United States, and increasingly efficient turbines generate more energy and impact smaller areas. Utility customers, both individuals and commercial and industrial users, are demanding clean, renewable energy. Laramie County, and Wyoming as a whole, have a unique opportunity to serve this demand and, thereby, create both temporary and long-term jobs in the County and generate significant, consistent, long-term tax revenue through sales taxes, property taxes, and wind energy production taxes to help support state and County goals and leverage even further economic development. The Project will comply with all County, state, and federal regulations and serve to advance economic development and energy resource goals central to the Laramie County Comprehensive Plan and to the State of Wyoming.

2.2 Benefits

The Project will generate distinct and positive economic impacts during both construction and operation phases. Specifically, development and construction will result in a short-term surge in economic spending activity, while operation will produce long-term economic benefits to local communities. Both sources of regional economic stimuli will result in increased economic output, income, and employment, primarily in Laramie County.

Implementation of the Project is expected to have beneficial effects on employment, earnings, and tax revenues. A major facet of the socioeconomic impact of large capital infrastructure projects is the total economic impact on specific local economic sectors and various positive effects on the local economy. The increases in employment or economic output often occur locally as a result of new business locations and community events, and such changes have positive implications for other parts of the local economy.

The Project's economic benefits to both local communities and the State of Wyoming include the following:

- Provides employment opportunities for an average of 119 and up to 240 construction jobs and up to 11 full-time operations jobs.
- Adds more than \$40 million in property taxes benefiting schools and local services over the first 30 years of the Project.
- Supports the economy through over \$300 million in capital costs including purchases of regional goods and services.
- Provides more than \$60 million in landowner payments over the first 30 years of the Project.
- Makes charitable contributions to local organizations.
- Creates no air or water pollution.
- Allows land to remain in agricultural use.
- Generates clean, home-grown electricity.

Wind power is a renewable and non-polluting source of electricity. It is clean energy that produces no emissions, which means it does not contribute to smog, mercury contamination, water withdrawal, or particulate-related health effects. The Project will contribute to the power purchaser's overall renewable

electrical generation yet will not create direct pollutant emissions during operation. In addition, unlike most other electrical generation sources, wind turbines do not consume water or require additional fuel sources. Lastly, construction and operation of the Project is a non-extractive source of electrical generation, leaving most of the surrounding land available for multiple uses.

3. Project Description

The Project site boundary, facility components, and related infrastructure are located entirely in unincorporated Laramie County, Wyoming (**Figure 1, Appendix A**). The Project site is approximately 9 miles west of Cheyenne and south of I-80.

The Project is in the High Plains ecological region of the Wyoming Basin. The area is generally characterized by rolling plains and tablelands with short grass and mixed-grass prairie vegetation. Most of the land is rangeland that is actively grazed by cattle from local ranches and can continue to be grazed throughout the life of the Project.

3.1 Preliminary Site Plan

The Applicant completed a preliminary site plan layout for the Project that minimizes environmental impacts and addresses community concerns to the greatest extent practical. See **Figure 2 in Appendix A** for the preliminary site plan. The preliminary site plan shows the location of the proposed turbine towers, up to two substations, 230-kV generation-tie transmission line, electric collection system, and existing and proposed access roads and access locations. This preliminary site plan will continue to evolve prior to construction to allow for environmental mitigation and construction optimization. The final site plan, showing any revisions to the location of Project facilities, ancillary components, and infrastructure, will be provided to the County with the Applicant's Wind Energy Permit application prior to construction.

3.2 Legal Description

The Project site consists of approximately 43,621 acres of private, City of Cheyenne, and State of Wyoming lands. The Applicant will obtain property control for the area within the Project site boundary through signed long-term lease agreements with the underlying landowners. The legal description of each parcel, or parts thereof, within the Project site boundary and crossed by the 230-kV generation-tie transmission line are provided in **Appendix B**. Warranty Deeds for City of Cheyenne, Soapstone Grazing Association and Duck Creek Grazing Association-owned lands and signatures of all participating landowners are attached to the application form with this application package. In lieu of a Warranty Deed for State of Wyoming-owned land, the Applicant has included a signed letter from Wyoming Office of State Lands and Investments (OSLI), documenting that state land within the Project site boundary is owned by the State and is included within the wind lease agreement.

3.3 Facility Components

The Project will use up to 120 wind turbine generators (WTGs). As currently planned, the Project will use 108 General Electric (GE) 2.52-MW turbines and 12 GE 2.3-MW turbines. Project facilities and related infrastructure include WTGs mounted on tubular towers, transformers, underground collection, electric and fiber optic communications cable, access roads, meteorological towers, a supervisory control and data acquisition (SCADA) system, up to two substations, and an operations and maintenance (O&M) building. The Project also includes an approximately 19-mile-long, 230-kV generation-tie transmission line from the proposed Project substation to the Platte River Power Authority Rawhide Substation in northern Colorado. The preliminary site plan is shown on **Figure 2 in Appendix A**.

3.3.1 Wind Turbine Generators

Although the turbine selection has not been finalized, WTG models contain the same basic components, and vary primarily, from an external standpoint, in height and rotor diameter. **Table 3-1** identifies the turbine specifications and dimensions of the GE 2.3-MW and GE 2.52-MW turbines considered for use in the Project. At these dimensions, the blade tips will reach a height of 471 feet and 499 feet, respectively. The preliminary turbine locations are shown on the preliminary site plan (**Figure 2, Appendix A**).

The WTGs will be mounted on a poured concrete pad and generally spaced at distances equal to approximately three to four rotor diameters between turbines (1,250 to 1,670 feet) and 12 to 15 rotor

diameters (5,000 to 6,250 feet) between turbine rows, depending on the specific turbine site characteristics.

WTGs consist of three main structures: steel tubular tower, nacelle, and rotor blades. The WTGs will be grouped in strings and interconnected with an underground power collection system at one of the centrally located substations for delivery to the electrical grid.

Table 3-1. Preliminary Turbine Specifications and Dimensions

Turbine Components	GE 2.3-MW Turbine	GE 2.52-MW Turbine
Tower Type	Tubular (monopole)	Tubular (monopole)
Hub Height (Tower)	262 feet	292 feet
Blade (Rotor) Diameter	417 feet	417 feet
Total Turbine Height (Blade Tip)	471 feet	499 feet
Pedestal	13 feet-10 inch (diameter)	13 feet-10-inch (diameter)
Concrete Foundation	60 feet (diameter)	60 feet (diameter)

Note: Values are approximate.

3.3.1.1 Rotor Blades

The WTGs are powered by three fiberglass epoxy or polyester resin blades connected to a central rotor hub. Wind creates lift on the blades, causing the rotor hub to spin. This rotation is transferred to a gearbox where the speed of rotation is increased to the speed required for the attached electric generator that is housed in the nacelle. The rotor blades turn slowly during normal operations and have multiple systems to control speed and to prevent rotation in excessive winds. Although the blades are non-metallic, they are equipped with a sophisticated lightning protection system.

3.3.1.2 Nacelle

The gearbox, generator, and various pieces of control equipment are enclosed within the nacelle that houses the unit that protects the turbine mechanics and electronics from environmental exposure. A yaw system is mounted between the nacelle and the top of the tower on which the nacelle resides.

The yaw system is composed of a bearing surface for directional rotation of the turbine and a drive system consisting of a drive motor(s) to keep the turbine pointed into the wind to maximize energy capture. A wind vane and anemometer are mounted at the rear of the nacelle to signal the controller with wind speed and direction information.

3.3.1.3 Tower Structures

The towers supporting the WTGs will be a tapered tubular monopole, up to 292 feet in height. The tower is anchored to a pedestal and supported by a reinforced-concrete foundation. The towers will be uniformly painted a neutral color that complies with Federal Aviation Administration (FAA) requirements for daylight marking. The towers feature a locked entry door at ground level and an internal access ladder with safety platforms for access to the nacelle. These features secure the towers against unauthorized access. A controller cabinet will be located inside each tower at its base. Towers are pre-fabricated in three to four sections and delivered and assembled onsite.

3.3.1.4 Transformer

Depending on the turbine model selected, a step-up transformer may be installed at the base of each WTG to increase the output voltage to the level of the 34.5-kV power collection system. A small concrete slab or fiberglass foundation, a concrete vault, or other suitable base will be used to support the step-up

transformers. In the case of other turbine models, the transformer will be located in the nacelle of the WTG and a switchgear will be located in the tower.

3.3.1.1 Foundations

The tower for the WTG will be set on a poured-in-place concrete foundation. The actual foundation design for each WTG turbine will be determined based on site-specific geotechnical information and structural loading requirements of each turbine model.

3.3.1.2 Aviation Lighting System

The WTGs will be grouped in strings, and some of the WTGs will include installed aviation warning lights, as required by the FAA. The number of WTGs with lights and the lighting pattern of the WTGs will be determined in consultation with the FAA.

The FAA requires aircraft warning markings on all structures taller than 200 feet. Therefore, the WTG towers would trigger review by the FAA. Once the Project layout is finalized, lighting will be developed using FAA guidance. Prior to operation, the Applicant may procure and install an Aircraft Detection Lighting System (ADLS) for control of the FAA required navigational lighting. In the event the ADLS is not approved by the FAA, the Applicant will provide notice and a copy of the FAA's decision to the County. Aviation warnings for a wind energy project may include medium-intensity red strobe warning lights placed on the nacelles of the turbines on each end of a turbine string, as well as on every third or fourth turbine. Once the exact marking configuration is developed, it will be submitted to the FAA for review. The Applicant will work with the FAA to reduce the quantity of FAA lights associated with the Project as much as is allowable and commercially feasible.

3.3.2 Related Infrastructure

3.3.2.1 Power Collection System

The Project electrical collection system consists of three key elements:

- 1) A collector system that collects energy generated at low to medium voltage from each WTG, transforms it to 34.5-kV through a pad-mounted transformer, and delivers the power through a network of electrical conductors.
- 2) A preliminary substation that transforms energy delivered by the collector systems from 34.5-kV to 230-kV. A second alternate substation that transforms energy delivered by the collector systems from 34.5-kV to 115-kV may be constructed (see Section 3.2.2.2).
- 3) An approximately 19-mile-long, 230-kV generation-tie transmission line to the Platte River Power Authority Rawhide Substation (see Section 3.2.2.3).

The Applicant anticipates that most of the approximately 70 miles of 34.5-kV collector lines will be buried directly in the soil approximately 4 feet below ground surface (bgs). However, should conditions warrant, some overhead collector lines may be required. The preliminary 34.5-kV collection system is shown on the preliminary site plan (**Figure 2, Appendix A**).

3.3.2.2 Substations

Output from the Project site will be delivered to the preliminary 34.5/230-kV collector substation. The Applicant may opt to construct a second alternate 34.5/115-kV collector substation within the Project site boundary. The collector cable system will link each WTG to the next in an electrical grid pattern and to each collector substation. The substation sites will consist of a graveled and fenced area with transformer and switching equipment, and a vehicle parking area. The transformers will be oil cooled and insulated. Substation equipment may include circuit breakers, power transformer(s), bus and insulators, disconnect switches, relaying equipment, battery and charger, surge arrestors, alternating current and direct current (AC/DC) supplies, control building, metering equipment, SCADA provision, grounding, and associated control wiring. The substation facilities will conform to all applicable Wyoming regulations and standards.

The preliminary substation and an additional alternate substation location are shown on the preliminary site plan (**Figure 2, Appendix A**). Should the Applicant opt to construct the alternate substation, the final site plan, showing any revisions to the location and collector system infrastructure, will be provided to the County with the Applicant's Wind Energy Permit application prior to construction.

3.3.2.3 Generation-tie Transmission Line

Power generated by the Project will be collected from the preliminary substation and transmitted to the existing Platte River Power Authority Rawhide Substation in northern Colorado via an approximately 19-mile-long, 230-kV generation-tie transmission line. The 230-kV generation-tie transmission line conductor will be supported on approximately 133 steel monopole structures. The proposed structures are approximately 100 feet in height. The average distance between power poles is approximately 750 feet and will vary depending on factors, including but not limited to topography, location of jurisdictional waters, existing land use, and clearance requirements. The preliminary 230-kV generation-tie transmission line route is shown on the preliminary site plan (**Figure 2, Appendix A**). Should the Applicant opt to construct the alternate substation, the final site plan, showing any revisions to the associated preliminary 230-kV generation-tie transmission line route, will be provided to the County with the Applicant's High-Power Transmission Line application and Wind Energy Permit application prior to construction.

3.3.2.4 Operation and Maintenance Building

One O&M building will be constructed within the Project boundary and will include space for offices, bathroom and kitchen facilities, a break room, a storage area, and a garage for vehicle, turbine, and equipment maintenance. There will also be a fenced, graveled area for parking and storage. The O&M building is also anticipated to use water obtained from a local landowner, existing water rights, or water purveyor for domestic use and discharge to an onsite septic system. Power for the O&M building is expected to be provided by Black Hills Energy.

3.3.2.5 Meteorological Towers

One permanent meteorological tower will exist within the footprint of the Project site to collect meteorological data, WTG power curve testing, and forecasting conditions. Depending on the height, the permanent meteorological tower will either be guyed, metal tube structures or self-supported. The tower may match the hub height of the surrounding wind turbines, in which case it will be marked per FAA regulations. If the tower is lower in height than FAA jurisdiction, it will have a painted top and display marker balls on the guy wires.

3.3.2.6 Supervisory Control and Data Acquisition (SCADA) System

A SCADA system will be installed to collect operating and performance data from each WTG and provide remote monitoring and operation of the WTGs when appropriate. The WTGs will be linked to one or more central computers via a fiber optic network. Fiber optic cables for the SCADA system will be installed in the collector cable trenches. The SCADA cables will be installed approximately 4 feet bgs. The host computer will be located in the O&M building at the Project site. SCADA software will consist of applications developed by the turbine vendor and/or a third-party SCADA vendor.

3.3.2.7 Access Roads

New gravel access roads will be constructed to access WTG and substation locations and along the length of turbine strings. Access roads will be designed under the direction of a professionally licensed engineer and constructed to meet turbine and transformer equipment load requirements specified by the vendor. Unimproved two-track ranch roads are present throughout the Project and will be used where possible to minimize new disturbance. Roads will be sited to minimize impact on sensitive resources (e.g., raptor nests, leks, wetlands, and water bodies). To allow safe passage of the large transport equipment used in construction, normal-weather gravel roads will be built with adequate drainage and compaction to handle expected loads. Road widths will be approximately 30 to 40 feet during construction. After

construction is complete, most of access roads will be reduced to approximately 16.5 feet in width. The proposed length of access roads is approximately 95 miles within the Project site. Access points and existing and proposed access roads to the Project site are shown on the preliminary site plan (**Figure 2, Appendix A**).

3.3.2.8 Other Facility Components

It is possible that portable temporary concrete batch plants will be used within the Project boundary during construction to provide onsite concrete mixing for the WTG foundations. The batch plants will be operated by a local subcontractor. Aggregate and water used for concrete mixing is expected to be provided by the subcontractor and it is anticipated to be obtained from local sources.

3.4 Construction Schedule

Completion of construction is anticipated to occur in fourth quarter 2020 with commercial operation required by December 31, 2020. Contingent upon obtaining approval from the Council and securing all other required permits, an assumed 17-month construction period is planned to begin with road building in August 2019. Except for possible winter weather shutdown of certain activities, construction is expected to be continuous through complete build-out and commercial operation by the end of 2020.

3.5 Construction Procedures

An overview of the construction procedures associated with the Project is provided below. The first year of construction is expected to consist largely of civil work. Turbine installation, erection, and commissioning is expected to occur in 2020. **Table 3-2** provides a list of general construction equipment that is likely to be used in the Project.

3.5.1 Site Work/Preparation

Prior to breaking ground, the construction work area will be surveyed and clearly demarcated with stakes and flagging. Locations will be grubbed, cleared, and prepared for site activities. Roads are expected to be constructed in advance of other Project features. Grading will be minimized, and topsoil will be preserved, to the extent practicable. Excavated topsoil will be stockpiled alongside the excavated area for replacement after construction, or as agreed with the landowner.

Table 3-2. List of General Construction Equipment

Equipment	Construction Use
Bulldozers	Road and Pad Construction
Motor Graders	Road and Pad Construction
Gravel Truck Haulers/Bottom Dump	Hauling and Placement of Road Aggregate
Water Trucks	Compaction, Erosion, and Dust Control
Rollers/Compactors	Road and Pad Compaction
Backhoe/Trenching Machines	Excavating Foundations; Trenches for Underground Utilities
18-Wheel Semi-Tractors	Component Delivery
Truck-Mounted Drill Rigs	Drilling Soil Test Bore Holes
Concrete Trucks and Pumps	Pouring Foundations
Conventional and Small Cranes	Off-Loading Equipment Onsite
Heavy and Intermediate Cranes	Off-Loading Equipment Onsite
Cement Trucks	Hauling Cement
Pickup Trucks	General Use by Construction Personnel
Small Hydraulic Cranes/Forklifts	Loading and Unloading Minor Project Equipment

Table 3-2. List of General Construction Equipment

Equipment	Construction Use
All-Terrain Vehicles	Site Access
Rough-Terrain Forklift	Lifting Equipment
Concrete Batch Plant	Onsite Concrete Mixing for Turbine Foundations

3.5.2 Access Roads and Crane Paths

To the extent practicable, access roads will be located to minimize disturbances, maximize transportation efficiency, and avoid sensitive resources and unsuitable topography. Existing roads will be used where practicable and will be reconstructed, as necessary, to Project road design specifications (e.g., some areas may need to be widened to accommodate delivery of WTG equipment or movement of construction equipment). New roads will be constructed according to a licensed engineer's design specifications. Raw materials used for access road preparation will consist primarily of aggregate, such as gravel or crushed rock, and water for dust control and road compaction. In conjunction with the access road construction, earthen crane pads will be established at each WTG location, and crane mats will be used during installation. The crane pads will provide enough space and support for placement of a large crane to install the tower sections, nacelle, and rotor. When construction is complete, an area around the turbine will be graveled and maintained for O&M access purposes.

3.5.3 Tower Foundations

After road and pad construction is complete, crews will begin installation of the tower foundations immediately adjacent to the crane pads. Tower foundations will be constructed according to a licensed engineer's design specifications; the design engineer will also prepare a special inspection report for each foundation excavation and pour. The concrete foundations will be excavated, a mud mat poured and cured, forms set, rebar installed, and the concrete placed and cured to create the foundation. Blasting is not anticipated; however, if unrippable substrate conditions are encountered that require blasting, it will be performed by state-licensed explosives experts in accordance with a Blasting Plan. Construction dewatering is also not anticipated as groundwater depths in the Project area exceed the anticipated depths of excavation; however, if necessary, the Applicant will obtain a Temporary Discharge Permit from the Wyoming Department of Environmental Quality (WYDEQ).

The tower foundations for the WTGs will require approximately 450 cubic yards (yd³) of concrete depending upon the WTG selected for the Project. Based on the current construction schedule, the Project is likely to use one or two onsite portable concrete batch plants, which may be relocated to different areas on the Project during the construction period to reduce the transport time and impact to local roads. The aggregate and water for the concrete will be sourced locally. The aggregate source will be based upon suppliers' ability to provide the engineer's specified aggregate and obtained through a competitive bid process. Water for concrete foundations will be provided by the batch plant operator using existing water rights or permits acquired by the Project.

3.5.4 Tower Assembly

After the concrete foundations are in place and cured, the WTG towers, nacelles, and blades will be delivered to each WTG location in the order of assembly. Crane mats will be installed, and large cranes will be brought onsite to lift the multiple tower sections, nacelle, and three-bladed rotor into place. The first step will be to lift and secure the down tower electrical assembly to the foundation. Next, the first tubular tower base section will be lifted over the down tower assembly and secured to the foundation. Subsequent tower sections will be connected to the base tower section. The nacelle, rotor, and other WTG equipment will then be delivered to the turbine pad location. Depending on the turbine selected for the Project, there are two potential ways the rotors may be assembled. They may be assembled on the ground by connecting the three blades to the rotor hub and installing the entire rotor to the nacelle as one piece. The other option, required by some turbine manufacturers, is to assemble the rotor in the air by installing each blade separately to the rotor hub after it and the nacelle have been installed on the tower.

3.5.5 Electric Collection Lines and Communication Cable

Underground (or overhead, if necessary) electric collection lines and communication cables will be installed adjacent to and connecting with WTG arrays. Cables will be direct buried 4 feet bgs and the trenches will be backfilled and compacted per the design specifications. In certain limited environmental situations (e.g., challenging topography, soils, or across roads), these cables may be installed above ground. Where possible, lines will be installed adjacent to Project access roads. Disturbed areas will be contoured and reseeded with a designated reclamation seed mixture, in consultation with the reclamation contractor and in accordance with any landowner requirements. To the maximum extent practical, collection lines will be buried.

3.5.6 Substation

The Project collector substation areas will be cleared and graded. Each substation is likely to occupy an area of up to 5 acres. After site preparation, transformer pads, oil spill containment structure, and other foundations will be excavated, forms set, rebar installed, and the concrete poured and cured to create the foundation. Electrical and other equipment will be transported to the site by truck and installed with appropriate construction equipment. Following construction, the substation sites will be surrounded by a security fence pursuant to prudent and adopted utility practices.

3.5.7 Transformers

Depending on the model of turbine, pad-mounted transformers could be located at the base of each turbine tower. The approximately 20-square-foot (ft²) steel transformer box housing the transformer circuitry will be mounted on an approximately 30-ft² pad or vault made of fiberglass or concrete. If not located at the base, turbine transformers and switchgears would be located within the turbine. Transformers will contain non-polychlorinated biphenyl (PCB) mineral oil and will be sealed.

3.5.8 Testing

After all WTGs are erected and electrical collection systems are interconnected, all systems, controls, and safety equipment will be calibrated and tested before being placed into service. Qualified technicians, turbine experts, and electricians will test and inspect all WTG components, transformers, communications systems, substation and switchyard, and transmission systems to ensure that they comply with required design specifications and are working properly. Each WTG and associated piece of equipment will be tested and inspected upon individual completion. All tests will be conducted, and problems corrected prior to final interconnection commissioning.

3.5.9 Cleanup and Reclamation

After construction, temporarily disturbed areas (e.g., crane pads, laydown areas, and collector lines) will be restored similar to pre-construction conditions. Disturbed areas will be contoured and reseeded with a designated reclamation seed mixture, in consultation with the reclamation contractor and landowner and in accordance with any landowner agreement requirements.

3.6 Site Decommissioning

Decommissioning is a step-by-step, methodical deconstruction process that involves removing and disposing of the infrastructure and appurtenant facilities associated with the Project. With some exceptions, site decommissioning would involve the reverse of site development. The following events may trigger the decommissioning process:

- Termination or expiration of a wind energy lease
- Technological obsolescence or the end of the useful economic life of WTGs
- Inability to replace or repower aging turbines

The Applicant's Decommissioning and Reclamation Plan is included as an appendix to Section 4 and described in the Applicant's response to LUR 2-2-125(e)(xi)(D) to ensure that the Project is properly decommissioned.

4. Compliance with Laramie County Land Use Regulations

This section identifies the County's wind energy site plan review requirements and demonstrates how the Project complies with the applicable standards, general requirements, and site plan criteria in LUR 2-2-125. The information provided below in response to the County's requirements is based on the potential effects of activities proposed for construction, operation, and decommissioning of the Project.

As described in Section 1.1, the Applicant is also applying for a Wyoming Industrial Siting Permit in accordance with Wyoming Statutes as well as rules and regulations governed by the Council. Certain items in LUR 2-2-125 are substantively similar to requirements in the ISA and the Council rules and regulations. Accordingly, the Applicant's responses reference the Applicant's ISA Permit application to further demonstrate Project compliance with the *Laramie County Land Use Regulations* (Laramie County, 2011).

Following review of the Applicant's responses below, the County may find that the Project complies with the applicable requirements in LUR 2-2-125 necessary for approval of this Wind Energy Site Plan application.

4.1 Purpose

a. Purpose - *To oversee the permitting of wind energy systems for the purpose of preserving and protecting public health and safety; to reasonably preserve and protect natural and cultural resources; to protect the quality of life for nearby property owners; to facilitate economic opportunities for both County and local residents; and to allow for the orderly development of land.*

Finding: By compliance with LUR 2-2-125 as is established throughout this Wind Energy Site Plan application as well as with the ISA and Council rules and regulations, this Project preserves and protects public health and safety, reasonably preserves and protects natural and cultural resources, protects the quality of life for nearby property owners, facilitates economic opportunities for both County and local residents, and allows for the orderly development of land. By way of example, public health and safety and the quality of life for nearby property owners are protected by the Project exceeding the county setback standards, addressing any impacts to roads and meeting all other applicable standards. As is established herein in Sections 4.2 and 4.4, the Project will be developed to preserve and protect natural and cultural resources. The Project will facilitate economic opportunities for both County and local residents by providing employment opportunities, contributing tax dollars, supporting the economy through capital investment, diversifying the economy, and generating home-grown electricity. Orderly development of the land occurs with complying with LUR 2-2-125. Therefore, the Project complies with the purpose of LUR 2-2-125.

4.2 Standards for Large Wind Energy Systems

c. Standards - *These standards apply to large wind energy systems and wind farm systems only.*

i. Structure - *The wind tower portion of any large horizontal wind energy system should be of monopole construction. Other construction may be considered by the Board if monopole construction is not practicable or if new technology emerges. A wind tower must be of freestanding construction to the extent practicable. If monopole or freestanding construction is not practicable, a wind tower may be guyed upon approval of the Board.*

Finding: Section 3.2.1 and **Table 3-1** show that the proposed turbine towers consist of free-standing tubular monopole construction. Therefore, the Project complies with this standard.

ii. Location - *A large wind energy system may be located only in areas that are within the Agricultural Residential (AR), Agricultural and Rural Residential (A-1), Agricultural (A-2), and Heavy Industrial (HI) zone districts and in the regulatory area of the County. A wind farm*

may be located only in areas that are zoned Agricultural Residential (AR), Agricultural and Rural Residential (A-1), Agricultural (A-2), Heavy Industrial (HI) and in the regulatory area of the County.

Finding: The Project site boundary is located entirely within an unzoned and unincorporated area of the County. The Project site boundary is also entirely within a future Agriculture and Range (AGR) land use designation on the Laramie County Comprehensive Plan (Laramie County, 2016). The Laramie County Comprehensive Plan also identifies the Recreation Hub Future Land Use Overlay District for a portion of the Project located on City of Cheyenne property known as the Belvoir Ranch. The Project is compatible with recreation. The Project, a large wind energy system, is permitted in the unzoned area of the County subject to the applicable standards under LUR 2-2-125. Therefore, the Project complies with this standard.

iii. Setbacks

Reduced setbacks may be allowed if written permission, as recorded with the Laramie County Clerk, is granted by the affected adjacent nonparticipating property owners for a specific lesser setback.

- A.** *The center of the base of each wind tower shall be located no less than 1.5 (hub height + rotor diameter) from adjacent unplatted nonparticipating property lines and dedicated public roads.*
- B.** *No tower or other structure, other than underground structures, transmission lines, roadways and structures appurtenant to roadways, shall be located at a distance of less than five and one-half (5.5) times the maximum height of the tower, but in no event less than one thousand (1,000) feet from any platted subdivision unless this restriction is waived in writing by the owners of all lands included within the distance specified in this paragraph.*
- C.** *The base of any tower shall not be located at a distance of less than five and one-half (5.5) times the maximum height of the tower, but in no event less than one thousand (1,000) feet from a residential dwelling or occupied structure, unless waived in writing by the person holding title to the residential dwelling or occupied structure;*
- D.** *The base of any tower shall not be located at a distance of less than one-half (1/2) mile from the limits of any town or city.*

Finding: The Applicant provides certification in **Appendix C** that the Project complies with the applicable standards defined by LUR 2-2-125(c)(iii) concerning construction setbacks. This section provides specific documentation of the Applicant's compliance with these setback standards.

Although the turbine selection has not been finalized, **Table 3-1** identifies the turbine specifications and dimensions of the GE 2.3 MW and GE 2.52 MW turbines considered for use in the Project. At these dimensions, the towers will reach a maximum height of 499 feet (measured from the base of the tower to the tip of the blades at the highest height). The preliminary turbine locations are shown on the preliminary site plan (**Figure 2, Appendix A**).

For analysis provided herein, the following distances are defined by criteria in LUR 2-2-125(c)(iii) and are based on the proposed maximum tower height of 499 feet:

- 1.5 (tower hub height + blade rotor diameter) = 1,063.5 feet (0.2 mile)
- 5.5 times the maximum height of the tower = 2,744.5 (0.52 mile)

The center of each Project turbine base is not located within 1,063.5 feet (0.2 mile) from adjacent unplatted nonparticipating property lines. The base of the nearest proposed Turbine 58 to the nearest

unplatted nonparticipating property is 1,501 feet (**Figure 2, Appendix A**). Therefore, a lesser setback is not required.

The center of each Project turbine base is not located within 1,063.5 feet (0.2 mile) from adjacent dedicated public roads. The base of the nearest proposed Turbine 2 to the nearest adjacent dedicated public road, Harriman Road, is 1,235 feet (**Figure 2, Appendix A**). Therefore, a lesser setback is not required.

Project turbines are not located within 2,744.5 feet (0.52 mile) from any platted subdivision. The nearest platted subdivision is located in Granite Canon and is over 3,279 feet from the nearest proposed Turbine 1. Therefore, a lesser setback is not required.

No known residential dwellings or occupied structures are within 2,744.5 feet (0.52 mile) of the base of any Project turbine (**Figure 2, Appendix A**). The nearest permanent residential dwelling or occupied structure to a turbine base is the home of a non-participating project landowner, located approximately 3,070 feet from the base of proposed Turbine 65 (**Figure 2, Appendix A**). Therefore, a waiver is not required.

Project turbines are not located within 0.5 mile from the limits of any city or town. The base of proposed Turbine 96 is over 6.76 miles from the nearest limits of the City of Cheyenne.

Therefore, the Project demonstrates compliance with these setback standards.

- iv. Height - The total height of a large wind energy system shall comply with all federal, state and local regulations, including FAA guidelines. Applicants are strongly encouraged to contact the Cheyenne Regional Airport Manager and the Pine Bluffs Municipal Airport Manager concerning airport operations, approaches and local matters critical to flying safety and airspace conflicts prior to submitting an application for review. Applicants are required to review the relevant airport information packet available from the Laramie County Planning Department, the Cheyenne Regional Airport Manager, or the Pine Bluffs Clerk's Office.*

Finding: The total height of the large wind energy system will comply with all federal, state and local regulations, including FAA guidelines. The Applicant contacted the Cheyenne Regional Airport Manager and Pine Bluffs Municipal Airport Manager via telephone on November 13, 2018, to request information packets from the respective airports. Both the Cheyenne Regional Airport Manager and Pine Bluffs Municipal Airport Manager confirmed via email on December 3, 2018 that they do not have specific airport information packets to provide for review. The Pine Bluffs Municipal Airport Manager referenced a link to airnav.com that includes publicly available FAA information on the Pine Bluffs Municipal Airport. This information is included in **Appendix C**. The Applicant will provide the County with copies of all FAA Form 7460 submissions when the forms are tendered to the FAA for review and approval. The Applicant has made reasonable efforts to locate and review relevant airport information packets. Records of the email correspondences with the respective airport managers are included with the Applicant's certification statement in **Appendix C**. Therefore, following FAA approval of the Applicant's Form 7460 submissions, the Project will comply with this standard.

- v. Clearance - The vertical distance from ground level to the tip of a large horizontal wind energy system turbine blade when the blade is at its lowest point must be at least twenty five (25) feet.*

Finding: The minimum blade tip height is anticipated to be approximately 70 feet. Therefore, no Project turbine blade will be lower than 25 feet at its lowest point when measuring the vertical distance from ground level to the tip of blade. The Project demonstrates compliance with this standard.

- vi. Access - A wind tower, including any climbing aids, must be secured against unauthorized access.*

Finding: The Project turbine towers will include locked tower access doors. The climbing aids are located within the turbine towers. The turbine tower access doors will be locked at all times, except when authorized personnel are present. As such, the wind towers will be secured against unauthorized access and the Project demonstrates compliance with this standard.

- vii. Electrical Wires - Electrical wires associated with a large wind energy system shall be located underground when practicable.*

Finding: Section 3.2.2 describes that most of the approximately 70 miles of 34.5-kV collector lines will be buried directly in the soil approximately 3 feet bgs. However, should conditions warrant, some overhead collector lines may be required. The preliminary 34.5-kV collection system is shown on the preliminary site plan (**Figure 2, Appendix A**). Therefore, Project collector lines will be buried to the extent practicable and the Project complies with this standard.

- viii. Code Compliance - All large wind energy systems must comply with the most recent adopted edition of the National Electrical Code, International Building Code and all applicable local, county, state and federal codes and regulations.*

Finding: The Applicant will develop the Project in compliance with the most recent adopted edition of the National Electrical Code, International Building Code, and all applicable local, County, state, and federal codes and regulations. The Applicant's ISA Permit application will identify specific local, County, state, and federal codes and regulations that the Applicant must satisfy for Council approval. Therefore, the Project will comply with this standard.

- ix. Lighting - Wind tower and turbine lighting for large wind energy systems must comply with FAA minimum requirements and be at the lowest intensity allowed. No accessory lighting is permitted unless it is determined by the Board to be necessary for safety and security.*

Finding: The Project will not install accessory lighting unless it is necessary for safety and security during Project O&M. As described in Section 3.2.1, the FAA requires aircraft warning markings on all structures taller than 200 feet. Therefore, the WTG towers would trigger review by the FAA. Once the Project layout is finalized, lighting will be developed using FAA guidance. Prior to operation, the Applicant may procure and install an ADLS for control of the FAA required navigational lighting. In the event the ADLS is not approved by the FAA, the Applicant will provide notice and a copy of the FAA's decision to the County. Aviation warnings for a wind energy project may include medium-intensity red strobe warning lights placed on the nacelles of the turbines on each end of a turbine string, as well as on every third or fourth turbine. Once the exact marking configuration is developed, it will be submitted to the FAA for review. The Applicant will work with the FAA to reduce the quantity of FAA lights associated with the Project as much as is allowable and commercially feasible. The ultimate number of WTGs with lights and the lighting pattern of the WTGs will be determined in consultation with the FAA. Therefore, the Project demonstrates compliance with this standard.

- x. Appearance - Wind energy systems in a wind farm should be of a coordinated design to minimize visual impacts to the surrounding area. Wind energy systems shall be exempt from landscape requirements in this regulation.*

Finding: The design of the Project follows best practices to minimize impacts on the surrounding area. Only two turbine designs will be used, which will ensure that Project will appear as an integrated ensemble. All the turbines will have the same off-white color and no logos or writing will appear on the towers or nacelles with the exception of appropriate warning signs and tower identification. The turbines have been sited in strings that follow the contours of the landscape. In the limited areas where there are residences in proximity to the Project site boundaries, turbines have been located to maintain a distance of 0.7 mile or more from the closest homes. Therefore, the Project demonstrates compliance with this standard.

- xi. Signs - No wind turbine, tower, building, or other structure associated with a WES may be used to advertise or promote any product or service. No word or graphic representation other than appropriate warning signs, tower identification, and owner, land owner or*

manufacturer identification, may be placed on a wind turbine, tower, building, or other structure associated with a WES.

Finding: The Project will not apply advertising or promotional lettering for any product or service or any word or graphic representation on any tower, turbine, nacelle, blade or other Project-related structure beyond appropriate warning signs and tower identification. Therefore, the Project demonstrates compliance with this standard.

- xii. Noise - The noise generated by the operation of a large wind energy system or wind farm may not exceed a noise level of more than fifty (50) dB(A) as measured at any point along the common property lines between a nonparticipating property and a participating property. This level, however, may be exceeded during short-term events such as utility outages, severe weather events, construction or maintenance operations. Noise levels may exceed the 50 dB(A) limit along common property lines if written permission, as recorded with the Laramie County Clerk, is granted by the affected adjacent nonparticipating property owners. Sound measurements shall be made five (5) feet above ground level over 10-minute measurement periods, on the basis of equivalent sound pressure levels and wind speed equal to 8 meters/second, using the procedures established by IEC 61400-11 (International Electrotechnical Commission, 2nd Edition, 2002-12.)*

Finding: Figure 3 in Appendix A presents the Project's proposed wind turbine layout and the predicted sound levels based on the analysis described herein consistent with the County requirements. These results document that the predicted operational sound levels do not exceed 50 decibels (A-weighted scale; dBA) at any non-participating property lines consistent with *LUR 2-2-125(c)(xii)*. In addition, the predicted sound level at the closest non-participating resident is 45 dBA.

Standard acoustical engineering methods were used in the analysis. The sound power levels representing the standard performance of the wind turbines are assigned based on International Electrotechnical Commission (IEC) Standard 61400-11 data supplied by the manufacturer, GE, to the Applicant. Using these sound power levels as a basis, the acoustical model calculates the sound pressure level that would occur after losses from distance, air absorption, ground effects, and screening are considered.

The commercial software used to prepare the acoustical model is Cadna/A by DataKustik GmbH, Version 2019 (build: 165:4900). The sound propagation factors used in the acoustical model have been adopted from International Organization for Standardization 9613-2 (ISO 9613-2), *Acoustics—Sound Attenuation During Propagation Outdoors Part 2: General Method of Calculation* (1996). Cadna/A as well as ISO 9613-2 have been used by researchers and regulatory bodies throughout the world in similar wind turbine sound evaluations. The ISO 9613-2 method is based on an omnidirectional downwind condition. That is, the sound prediction algorithms assume every point at which sound level is calculated is downwind of all noise-emitting equipment simultaneously. In essence, the prediction assumes each receiver or prediction point is a "black hole" and the wind is blowing from each turbine and into this black hole. While this is physically impossible, the ISO 9613-2 model has been widely and successfully used to develop acoustical models for wind energy as well as other facilities.

Atmospheric absorption for conditions of 10 degrees Celsius and 70 percent relative humidity (conditions that favor propagation) was computed in accordance with ISO 9613-1, *Acoustics—Sound Attenuation During Propagation Outdoors, Part 1: Calculation of the Absorption of Sound by the Atmosphere* (ISO, 1993). The results may vary depending on a number of factors, including timescale, metric and method of evaluation. The Applicant is committed to operating the Project in compliance with the County sound standard.

This analysis presents one of many options available to the Applicant to build and operate in compliance with the requirements of *LUR 2-2-125(c)(xii)*. It is understood that there are other regulatory approvals required before the Project is constructed and that obtaining these approvals may take additional time. To maintain flexibility to address these potential regulations, as part of its permit application the Applicant can provide the final as-to-be-built turbine locations as well as a final pre-construction sound analysis documenting that predicted levels do not exceed the 50 dBA threshold established in *LUR 2-2-125(c)(xii)*.

threshold. Should the final Project sound analysis exceed 50 dBA at a non-participating property line, the Applicant will obtain written permission from the affected non-participating property owner and record it with the Laramie County Clerk consistent with the requirements of *LUR 2-2-125(c)(xii)*. The Applicant maintains the ability and understands the obligation to operate the project in compliance with the 50 dBA property line sound limits established in *LUR 2-2-125(c)(xii)*.

xiii. Impacts to Public Roads - The use of dedicated public roads shall be in accordance with and in compliance of federal, state, county and local regulations governing such activities. The owner shall be responsible for any degradation to or damage of dedicated public roads by any and all parties affiliated with the installation of the wind farm and will bear all costs required to return the public roads to their original or better condition prior to their use of same. The use of any dedicated public road for the purpose of transporting parts, materials and/or equipment for construction of a large wind energy system or wind farm shall require the following prior to approval of any wind energy permit:

- A. A detail mapping of known haul routes shall be submitted with the wind energy permit application. Haul routes shall be updated as transit information becomes available. Final haul routes must be submitted at least ten (10) days prior to the start of construction.*
- B. Completion of a pre-construction baseline survey prepared by a mutually agreed upon professional engineer to determine existing road conditions.*
- C. An engineer's assessment of the potential for damage or impact to the roads detailed in the haul route.*
- D. A mitigation plan and/or long-term road maintenance plan to address the impacts to the roads as determined in the assessment.*
- E. Preparation of an engineer's estimate for the total estimated cost to improve, maintain or repair the existing roads as detailed in the mitigation/maintenance plan.*
- F. Documentation of the establishment of a bond for the repair of roads along the haul route for a wind farm in an amount of not less than 115 percent of the cost for infrastructure improvement or repair as determined in the engineer's estimate of cost, but in no case less than \$25,000 for the purpose of repairing any damage to public roads caused by constructing, operating or maintaining the system. Prior to commencement of any work on the participating property, the owner shall enter into with the Board or its designee an agreement that documents the owner's obligations for the County roads.*
- G. Any additional information, studies, or reports as reasonably determined by the Board as necessary.*

Finding: The primary access to the Project site will be via I-80 west of Cheyenne to Wyoming State Highway (WYO) 225 (Otto Road). The Project will use an existing ranch road that connects to Otto Road about 6 miles west of the I-80 interchange with Otto/U.S. Route 30 (US 30). From this point, access will utilize existing ranch roads or minor county gravel roads as well as new turbine access roads to connect to individual turbine sites.

It is anticipated that the haul routes for construction materials will use the same network of roads as shown on **Figure 4** in **Appendix A**. Otto Road is a paved, minor collector roadway approximately 7.6 miles long and provides access to southwestern Cheyenne. The route accesses I-80 via a diamond interchange west of the city. WYO 225 traverses under I-80 within this interchange. The highway also intersects with I-80 near the Cheyenne city limit (the roadway is designated as US 30/Lincolnway east of this interchange) through a partial cloverleaf interchange. Per the Wyoming Department of Transportation website, the pavement is in poor condition for the length of this route. With an average width of 26 feet, this undivided route has minimal to no shoulders and provides passing zones where feasible. Two lanes are provided for most of the length; however, there are two lanes in the northwest direction approaching

the I-80 diamond interchange. The posted speed limit is 65 mph and the terrain is generally level east of the project site access intersection and rolling to the north. The route provides local access to roads and driveways through at-grade intersections with stop- or yield-control for the side road movements.

Appendix D provides a traffic study of the public roadways leading to and away from the proposed Project. Section 2 and Table 1 in **Appendix D** identify and describe the existing transportation network at the Project site, which includes several state highways and county roads. The traffic analysis concludes that vehicle and truck trips generated by the Project will have a minimal impact on the operations of the roadway network near the Project site. The segment of WYO 225 east of the Ranch Road intersection will experience a temporary decrease in level of service (LOS) during the peak construction period. However, the resultant increased travel times will not be a permanent condition and are small enough that they will likely be imperceptible to drivers. The highway and intersection will operate at acceptable LOS even with these increased travel times. Once the construction peak is over, the facilities will operate at acceptable LOS as they do currently. Thus, no roadway capacity improvements are recommended for WYO 225 or its intersection with WYO 222/Roundtop Road to accommodate additional trips generated by Project construction and operations.

The Applicant will provide updated haul routes if needed as transit information becomes available. The Applicant will submit final haul routes at least 10 days prior to the start of construction. In addition, the Applicant will provide information, studies, or reports as reasonably determined by the Board of County Commissioners in its review of this Wind Energy Site Plan application and in conformance with the applicable standards under LUR 2-2-125(c)(xiii)(B-F) prior to approval of the Wind Energy Permit. Therefore, the Project demonstrates compliance with this standard.

xiv. Reclamation and Decommissioning - Documentation of a guarantee between the owner and the participating property owner for the reclamation and decommissioning of the wind farm shall be provided at the time of the site plan application. A guarantee should be in the form of financial assurance, lease agreements, or other terms as negotiated between the owner and the participating property owner. At the time of abandonment or removal as further described in this article, the participating property shall be reasonably restored to the physical state as existed before the wind energy system or wind farm was constructed. A decommissioning plan shall be submitted as part of the wind energy site plan application. If a Wind Energy Permit is granted, the owner shall provide an updated reclamation and decommissioning plan to the Laramie County Planning and Development Office every five (5) years. The plan shall specify and provide for the following:

- A. The physical removal of wind energy systems, equipment, security barriers and transmission lines from the site.***
- B. Disposal of all solid and hazardous waste in accordance with local, state and federal waste disposal regulations.***
- C. Stabilization or re-vegetation of the site as necessary to minimize erosion. The decommissioning plan may allow the owner to leave landscaping or designated below-grade foundations and other below-grade infrastructure as agreed upon by the participating property owner in order to minimize erosion and disruption to vegetation.***
- D. Identification of all physical elements that may remain on the property at the discretion of the participating property owner.***

Finding: The Applicant's Draft Decommissioning and Reclamation Plan is provided in **Appendix E**. Decommissioning is a step-by-step, methodical deconstruction process that involves removing and disposing of the infrastructure and appurtenant facilities associated with the Project. With some exceptions, site decommissioning would involve the reverse of site development. The following events may trigger the decommissioning process:

- Termination or expiration of a wind energy lease
- Technological obsolescence or the end of the useful economic life of WTGs

- Inability to replace or repower aging turbines

The Applicant has crafted the *Section 109 Industrial Siting Act Decommissioning and Reclamation Plan* (Decommissioning and Reclamation Plan) to ensure that the Project is properly decommissioned. The Decommissioning and Reclamation Plan meets the requirements of W.S. 35-12-105(d) and (e) which is consistent with the standards under LUR 2-2-125(c)(xiv). The Decommissioning and Reclamation Plan describes the framework for reclamation, revegetation, and noxious weed control. The focus is to restore areas impacted by construction, operation, maintenance, and decommissioning of the Project. The Decommissioning and Reclamation Plan will incorporate input from landowners regarding the type and degree of restoration on each parcel that will both meet the requirements of the ISA statutes and regulations and the needs of the landowner. The Decommissioning and Reclamation Plan also includes a Basis of Estimate, that establishes an engineer's opinion of probable cost to decommission the Project. This estimate will help inform the Council's determination of an adequate bond amount for the Project. This estimate was prepared by a Jacobs team of licensed professional engineers and estimators with review and approval by a Wyoming Licensed Professional Engineer. The costs included in the estimate consist of labor, equipment, and disposal cost projections based on industry standards and the engineers' past reclamation project experiences. The assurance will be in the form of surety bond, certificate of deposit, or similar financial assurance.

If the Wind Energy Permit is granted, the Applicant will update the Decommissioning and Reclamation Plan every five years until Project site decommissioning and reclamation is complete. Therefore, the Project demonstrates compliance with this standard.

- xv. Liability Insurance - At the time of a wind energy permit application for a wind farm, the owner shall provide evidence of liability insurance for a duration of not less than 24 months from the estimated time of project completion to cover loss or damage to persons and structures occasioned by the failure of the facility.*

Finding: Should the Board of County Commissioners approve this Wind Energy Site Plan application, the Applicant will submit a Wind Energy Permit application to the Laramie County Planning and Development Office within 3 years. The Applicant's Wind Energy Permit application will demonstrate compliance with LUR 2-2-125(g)(i)(C), which requires evidence of liability insurance for the Project. Therefore, the Project will comply with this standard.

- xvi. Impacts to Natural and Cultural Resources - The owner of a large wind energy system and/or wind farm shall comply with all federal, state and local requirements pertaining to natural and cultural resources. The owner of a wind farm system shall submit written statements that the project is in full compliance with all relevant requirements at the time of the permit application submittal. The owner of a large wind energy system and/or wind farm should make reasonable efforts to avoid siting large wind energy systems components in a manner that will adversely impact wildlife, water, historical and/or cultural resources.*

Finding: The Project meets the definition of a facility defined in W.S. 35-12-102(a)(vii) and the Applicant is submitting a Section 109 Permit Application pursuant to W.S. 35-12-109 of the ISA. The Applicant's ISA Permit application will provide a detailed review and assessment of the Project's potential environmental, social, and economic effects, which is subject to review by the Wyoming Department of Environmental Quality-Industrial Siting Division (WDEQ-ISD) in accordance with the ISA and the rules and regulations governed by the Council. A summary of the Applicant's environmental review process is provided below. The summary includes an overview of the Applicant's reasonable efforts to avoid siting Project components in a manner that could potentially adversely impact wildlife, water, historical, and/or cultural resources.

The environmental review in the Applicant's ISA Permit application will include but is not limited to conducting cultural resource records searches and pedestrian surveys, threatened and endangered species habitat evaluations and surveys, sage grouse surveys, avian-use fixed-point surveys, bat acoustic monitoring surveys, raptor nest surveys, aquatic resources delineations, and noise and visual resource analyses to document and characterize baseline conditions of the Project area. The Project

infrastructure will be located outside greater sage-grouse core areas. The Applicant will use baseline resource information and survey results to site Project components to avoid or minimize the potential for environmental and natural resource impacts. Avoidance and minimization activities may include setbacks, avoidance of sensitive natural resources, and potentially relocating WTGs within the preliminary Project layout if needed. Studies are ongoing and will be incorporated into micrositing activities where appropriate. The Applicant will work with the Wyoming Game and Fish Department and U.S. Fish and Wildlife Service to minimize impacts to the environment as a result of the construction and operation of the Project.

Air quality impacts will be limited to temporary fugitive dust during construction. Measures such as road watering are expected to control those impacts. Impacts to recreation, either within or surrounding the Project area, are expected to be minimal. Land use is primarily ranching, and those uses are expected to continue into the operational phase of the Project.

The Applicant will site Project infrastructure to eliminate or minimize the risk of discharges of dredged or fill materials into wetlands or potentially jurisdictional waters of the United States. Final micrositing of linear features during the final design phase will further reduce the potential for impacts to surface waters to the extent practicable. The Applicant will minimize impacts to waterbodies to the maximum extent practical. Construction practices and micrositing of facilities are designed to minimize risk of erosion or discharge into ephemeral/intermittent waterbodies; therefore, direct or significant indirect impact to aquatic or fishery resources are expected to occur during Project construction or operation. Therefore, the Project will comply with this standard.

4.3 General Requirements

d. General Requirements -

- i. Notification - The owner shall send notice via certified mail to all property owners of record within (1) mile of and to cities and towns within one half (1/2) mile of the perimeter of the property affected at least thirty (30) days prior to the Planning Commission review of any site plan. The notice shall include a general project description, the project location, the number of turbines proposed, and routes of ingress and egress to the location.*

Finding: The Applicant sent notice via certified mail to all property owners of record within 1 mile and to all cities and towns located within 0.5 mile of the perimeter of the Project site boundary.

Appendix F provides an example copy of the landowner notification packet sent to landowners within 1 mile of the perimeter of the Project site boundary. The landowner notification packet includes a general description of the Project, fact sheet, location map, anticipated dates for commencement of construction and operations, projected number of turbines, and the likely routes of ingress and egress. **Appendix F** also provides a list of participating and non-participating landowners within 1 mile of the Project site, and signed certified delivery receipts and/or tracking information for the mailed landowner notification packets.

Appendix G provides an example copy of the notification packets sent to local jurisdictions and agencies within 0.5 mile of the perimeter of the Project site boundary. The notification packet includes a general description of the Project, fact sheet, location map, anticipated dates for commencement of construction and operations, projected number of turbines, and the likely routes of ingress and egress. **Appendix G** also provides a list of local jurisdictions and agencies within 20 miles of the Project site, and certified delivery receipts and/or tracking information for the mailed notification packets. Therefore, the Project complies with this standard.

- ii. The Laramie County Planning and Development Office shall publish a legal notice thirty (30) days prior to the Planning Commission review of any site plan.*

Finding: The Applicant acknowledges that the Laramie County Planning and Development Office will publish a legal notice 30 days prior to the Planning Commission's review of this Wind Energy Site Plan application. The Project will comply with this standard.

- iii. Siting Process - Each large wind energy system and/or wind farm shall require both a site plan and a wind energy permit. Site plans will be reviewed by both the Planning Commission and the Board. All site plans, after action by the Planning Commission, shall be heard by the Board at its next available regular meeting. The Board shall approve site plans according to the Board approval process. The Administrator shall approve wind energy permits accordance with this article. The installation of a large wind energy system and/or wind farm is contingent upon compliance with any and all conditions established by the Board. The applicant shall meet with a Planning and Development Office representative prior to submittal of any site plan. This pre-application meeting will allow the applicant to define the project and provide information. During this pre-application meeting a list of items needed for the submittal of the site plan will be addressed. Applicants shall provide copies of all FAA Form 7460 submissions to any airport authority that could be affected by the application when such forms are tendered to the FAA for approval.*

Finding: The Applicant met with County staff at the Planning and Development Office for a pre-application meeting on September 20, 2018. A copy of the pre-application meeting notes is attached to the application form with this Wind Energy Site Plan application package. This application includes items addressed for submittal in the pre-application meeting notes. The Applicant acknowledges and understands the County's review process for a wind energy site plan and wind energy permit. The Applicant also understands that Project development is contingent upon compliance with any conditions that may be established by the Board of County Commissioners. The Applicant will provide the County with copies of all FAA Form 7460 submissions to the Cheyenne Regional Airport, and if needed the Pine Bluffs Municipal Airport, when the forms are tendered to the FAA for review and approval. Therefore, the Project will comply with this standard.

4.4 Site Plan Requirements

- e. Site Plan - A site plan illustrating preliminary layout, design and access shall be submitted for Planning Commission review and Board review and approval. The site plan must meet the requirements of the Site Plan Review Application, available through the Laramie County Planning and Development Office. No wind energy permit shall be issued by the Administrator without a Board-approved site plan. The applicant shall provide a complete application in accordance with the requirements of the pre-application meeting. Failure to do so shall result in a denial of the application. Upon submittal of the site plan, Laramie County Development Office staff shall have 5 (five) business days to determine if the site plan is complete. At the end of that period, if no letter has been issued to the applicant, the application will be automatically determined to be complete. The Laramie County Planning and Development Office shall begin the public notification period no less than 7 (seven) days from the submittal of the site plan. The proposed large wind energy system and/or wind farm shall comply with all federal, state and local regulations. A site plan approval shall expire three (3) years from the date of approval by the Board unless the construction of the wind farm has been initiated. All site plans shall include the following as a minimum:*

- i. Name, mailing address and telephone number of the person signing the application, certifying that the application is true and correct.*

Finding: The Applicant's information is provided in Section 1.2 and on the application form with this application package. The Applicant provides a statement in **Appendix C** certifying that this Wind Energy Site Plan application is true and correct. Therefore, the Project complies with this standard.

- ii. Name, mailing address, and telephone number of the owner.*

Finding: The owner's information is provided in Section 1.2 and on the application form with this application package. Therefore, the Project complies with this standard.

- iii. Name, signature, mailing address and telephone number of the participating property owner(s).*

Finding: The requisite information for participating property owners is attached to the application form with this application package. Therefore, the Project complies with this standard.

iv. Legal description of the participating property and/or proposed participating property.

Finding: The legal description for the participating property owners is attached to the application form with this application package. Therefore, the Project complies with this standard.

v. General description of the proposed large wind energy system(s), including the estimate of total number of systems, lighting and estimated total height of each large wind energy system.

Finding: A description of the proposed Project, including but not limited to the estimate of total number of systems, lighting and estimated total height of each large wind energy system, is provided in Section 3. Therefore, the Project complies with this standard.

vi. General location of proposed wind energy system(s) and buildings. Actual locations of wind energy systems and buildings will be required for the wind energy permit and any associated building permits.

vii. Proposed location of above ground and underground electrical wiring, vehicular access routes and fencing.

Finding: As described in Section 3.1.1, the Applicant completed a preliminary site plan layout for the Project. See **Figure 2** in **Appendix A** for the preliminary site plan. The preliminary site plan shows the location of the proposed turbine towers, up to two substations, 230-kV generation-tie transmission line, electric collection system, and existing and proposed access roads and access locations. This preliminary site plan will continue to evolve prior to construction to allow for environmental mitigation and construction optimization. The final site plan, showing any revisions to the location of Project facilities, ancillary components, and infrastructure, will be provided to the County prior to construction. Therefore, the Project complies with these standards.

viii. Location of any existing above ground utility lines, roads, right-of-way, pipelines, easements and etc. within the property.

Finding: See **Figure 2** in **Appendix A** for the preliminary site plan which incorporates known locations of existing aboveground utility lines, gas pipelines, railroads, and roads within the Project site vicinity. Therefore, the Project complies with this standard.

ix. Existing buildings and structures within one-quarter mile (1320 feet) of the property, including any church, hospital, public library, residence, school or other structure designated for public assembly. This information may be based on available public data.

Finding: See **Figure 2** in **Appendix A** for the preliminary site plan, which incorporates known locations of existing buildings and structures within one-quarter mile (1,320 feet) of the property, including any church, hospital, public library, residence, school or other structure designated for public assembly. The nearest institutions are Willadsen Elementary School, which is located approximately 0.9 mile west of the Project site boundary, and Gilchrist Elementary, which is located approximately 4.6 miles north of the Project site boundary. Therefore, the Project complies with this standard.

x. Location of cultural and sensitive natural resources (such as historical structures, trails, archaeological sites, wetlands, migratory flight paths, and endangered wildlife and/or vegetation).

Finding: As described in the Applicant's response to LUR 2-2-125(c)(xvi), the Project meets the definition of a facility defined in W.S. 35-12-102(a)(vii) and the Applicant is submitting a Section 109 Permit Application pursuant to W.S. 35-12-109 of the ISA. The Applicant's ISA Permit application will provide a detailed review and assessment of the Project's potential environmental effects, which is subject to

review by the ISD in accordance with rules and regulations governed by the Council. A summary of the Applicant's environmental review process is provided above and will include the identification and location of cultural and sensitive natural resources. The summary includes an overview of the Applicant's reasonable efforts to avoid siting Project components in a manner that could potentially adversely impact wildlife, water, historical and/or cultural resources. Therefore, the Project will demonstrate compliance with this standard upon receipt of the Council's approval of the ISA Permit application.

xi. The following documents shall be submitted with the site plan:

- A. Statement that each large wind energy system will be installed in compliance with manufacturer's specifications.*

Finding: The Applicant provides a statement in **Appendix C** that the Project will be installed in compliance with the manufacturer's specifications. Therefore, the Project demonstrates compliance with this standard.

- B. Statement that the owner will construct and operate each large wind energy system or wind farm in compliance with all applicable local, state, and federal codes, laws, orders, regulations, and rules.*

Finding: The Applicant provides a statement in **Appendix C** that the Project will be constructed and operated in compliance with all applicable local, state, and federal codes, laws, orders, regulations, and rules. Therefore, the Project demonstrates compliance with this standard.

- C. Preliminary construction documents describing general plans for appropriate drainage, erosion control, and infrastructure improvements. Final construction documents will be required with the wind energy permit.*

Finding: The Project will minimize erosion during construction, operation, and decommissioning activities and will stabilize soils prior to final reclamation. The WDEQ regulates stormwater discharges from construction sites under the Wyoming Pollutant Discharge Elimination System (WYPDES) discharge permit. A Large Construction General Permit (Permit) would be required for the construction and decommissioning activities for interim reclamation (WDEQ, 2016). Preparation of a Stormwater Pollution Prevention Plan (SWPPP) is required under this permit and will detail erosion control measures to be utilized during all phases of construction through final stabilization. The SWPPP will be prepared by the Applicant's contractor.

Based on online Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for Laramie County, portions of the project area are mapped as special flood hazard areas (SFHAs), subject to inundation by the 1 percent annual chance flood (100-year flood). If the project components (i.e. access road) cross any SFHAs, the Applicant would coordinate with the Laramie County floodplain administrator for submittal of a floodplain development permit prior to construction.

Disturbed areas will be reclaimed and returned to pre-Project land uses (grazing) and will follow landowner use agreements. Disturbed areas will re-establish the contour of the land consistent with the land's future use and contours will blend in with the topography of the surrounding terrain unless it would create an erosion problem or hazard. Seed mixes will be tailored to the existing vegetation and ecological condition and will be developed in coordination with landowners. The Applicant will prepare and submit final construction documents and drainage plans with the Wind Energy Permit.

- D. Reclamation and decommissioning plan in accordance with this regulation.*

Finding: The Applicant's Decommissioning and Reclamation Plan, in accordance with LUR 2-2-125(c)(xiv), is provided in **Appendix E**. Therefore, the Project demonstrates compliance with this standard.

- E. Preliminary road assessment and mitigation plan.*

Finding: The preliminary haul routes for construction materials are shown on **Figure 4** in **Appendix A**. **Appendix D** provides a traffic study of the public roadways leading to and away from the proposed Project. Section 2 and Table 1 in **Appendix D** identify and describe the existing transportation network at the Project site which includes several state highways and county roads. The traffic analysis concludes that vehicle and truck trips generated by the Project will have a minimal impact on the operations of the roadway network near the Project site. The Applicant will submit final haul routes at least 10 days prior to the start of construction in accordance with LUR 2-2-125(c)(xiii). In addition, the Applicant will provide information, studies, or reports as reasonably determined by the Board of County Commissioners in its review of this Wind Energy Site Plan application. Therefore, the Project demonstrates compliance with this standard.

- F. A noise analysis to determine the decibel (dBA) level at adjacent nonparticipating property lines. The analysis shall be completed in accordance with this regulation.*

Finding: **Figure 3** in **Appendix A** presents the Project's proposed wind turbine layout and the predicted sound levels based on the analysis described herein. These results document that the predicted operational sound levels do not exceed 50 decibels (A-weighted scale; dBA) at any non-participating property lines. In addition, the predicted sound level at the closest non-participating resident is 45 dBA.. The analysis presents one of many options available to the Applicant to build and operate in compliance with the requirements of LUR 2-2-125(c)(xii). It is understood that there are other regulatory approvals required before the Project is constructed and that obtaining these approvals may take additional time. To maintain flexibility to address these potential regulations, as part of its permit application the Applicant can provide the final as-to-be-built turbine locations as well as a final pre-construction sound analysis documenting that predicted levels do not exceed the 50 dBA threshold established in LUR 2-2-125(c)(xii) threshold. Should the final Project sound analysis exceed 50 dBA at a non-participating property line, the Applicant will obtain written permission from the affected non-participating property owner and record it with the Laramie County Clerk consistent with the requirements of LUR 2-2-125(c)(xii). The Applicant maintains the ability and understands the obligation to operate the project in compliance with the 50 dBA property line sound limits established in LUR 2-2-125(c)(xii).

- G. Certification that the applicant has reviewed the airport information packet of any affected airport and has provided to such airport authority a copy of the site plan submitted to the County and a copy of FAA form 7460 if the form was submitted for FAA approval.*

Finding: The Applicant provides certification in **Appendix C** that the Cheyenne Regional Airport Manager and Pine Bluffs Municipal Airport Manager were contacted via telephone on November 13, 2018, to request information packets from the respective airports. Both the Cheyenne Regional Airport Manager and Pine Bluffs Municipal Airport Manager confirmed that they do not have an airport information packet to provide for review. However, the Applicant will provide the County with copies of all FAA Form 7460 submissions when the forms are tendered to the FAA for review and approval. The Applicant has made reasonable efforts to locate and review relevant airport information packets. Therefore, following FAA approval of the Applicant's Form 7460 submissions, the Project will comply with this standard.

- H. A proposed phasing plan showing areas or locations of wind energy systems for the purposes of permitting.*

Finding: The Project does not require a phasing plan and this standard is not applicable to the proposed Project.

- I. Written certification that notice of the proposed facility has been given to the owners and claimants of mineral rights located on and under lands encompassed by the site plan.*

Finding: The Applicant provides certification in **Appendix C** that the Project complies with the applicable standards defined by W.S. 18-5-504 concerning mineral rights notifications. **Appendix H** provides a list of record owners and claimants of mineral rights on lands where the Project will be constructed. **Appendix H** also provides the notification packet sent to these record owners and claimants of mineral rights. The notification packet includes a general description of the Project, fact sheet, location map, legal description

of parcels within the Project boundary, anticipated dates for commencement of construction and operations, projected number of turbines, and the likely routes of ingress and egress. Therefore, the Project demonstrates compliance with this standard.

- xii. Following Board approval of the site plan, the owner shall have three (3) years to apply for a wind energy permit.*

Finding: Should the Board of County Commissioners approve this Wind Energy Site Plan application; the Applicant will submit a Wind Energy Permit application to the Laramie County Planning and Development Office within three years. The Applicant's Wind Energy Permit application will demonstrate compliance with the applicable standards under LUR 2-2-125(f) and (g).

To demonstrate compliance with LUR 2-2-125(g)(i)(H), the Applicant provides a written preliminary Emergency Management Plan (EMP) in **Appendix I**. The Applicant provides certification in **Appendix C** that the preliminary EMP will be revised prior to the start of operation if changes to the site occur during construction that would affect the EMP.

To demonstrate compliance with LUR 2-2-125(g)(i)(I), the Applicant provides a written preliminary Waste Management Plan (WMP) in **Appendix J** detailing the estimated solid wastes and proposed disposal program for the Project. The preliminary WMP will be revised prior to the start of operation if changes to the site occur during construction that would affect the WMP.

5. References

Laramie County. 2011. The Laramie County Land Use Regulations. Adopted February 15. Accessed on November 21, 2018.

https://www.laramiecounty.com/_departments/PlanningDevelopment/_pdfs/LandUseRegulations/Laramie%20County%20Land%20Use%20Regulations%2006082011.pdf.

Laramie County. 2016. Laramie County Comprehensive Plan 2016. Accessed on November 21, 2018.

https://www.laramiecounty.com/_departments/PlanningDevelopment/_pdfs/2016%20Laramie%20County%20Comprehensive%20Plan%20Map/2016%20Laramie%20County%20Comprehensive%20Plan%20Map.pdf

WDEQ. 2016. Wyoming Department of Environmental Quality. Large Construction General Permit to Discharge Storm Water Associated with Large Construction Activity under the Wyoming Pollutant Discharge Elimination System (WYPDES).

http://deg.wyoming.gov/media/attachments/Water%20Quality/Storm%20Water%20Permitting%20/Construction%20General%20Permits/2016LCGP_final_with_sig_with_TOC_links.pdf.

County Engineer: Scott Larson COMMENTS ATTACHED 12/28/2018

1. The Traffic Study submitted is adequate for the proposed development and I concur with its findings and summary.
2. An official request for a waiver of a detailed Drainage Study should be submitted justifying why a waiver should be granted.
3. Any proposed access roads that cross floodplains will need a floodplain development permit application submitted to the County for review and approval.
4. The Site Plan application and/or drawing should include a diagram showing the typical footprint for the wind turbine bases.

Environmental Health Department: Roy Kroeger COMMENTS ATTACHED 12/26/2018

Laramie County Small Wastewater System Regulations

If a construction office or workshop is utilized with a restroom a commercial small wastewater system permit shall be obtained.

A commercial wastewater system temporary or permanent will require the design be done by a licensed Wyoming Professional Engineer.

Porta-Potties do not require a permit but the pumper of the porta-potties must be licensed to business in Laramie County. Licensed pumpers are listed on the Laramie County website.

Wyoming Game & Fish: Meghan Lockwood COMMENTS ATTACHED 12/27/2018
Please see attached comment report.

Planners: Bryan Nicholas COMMENTS ATTACHED 12/28/2018

Section 2-2-125 Large Wind Energy Systems will be the governing regulations for this application. If approved by the Board a Wind Energy Permit must be submitted to the Planning and Development Office within three years.

The limits of this project do not reach the Zoned Boundary, and therefore is not under any zoning regulations.

All tower setbacks must meet the requirements per Section 2-2-125(c)(iii)

The applicant will need to apply for Board Approval for any high power transmission line.

Standard GESC Permits will be required at time of construction for all roads and tower locations.

Any crossings or development within the SHA/100 Year Floodplain will need a Floodplain Development Permit.

Building Dept.: Antony Pomerleau COMMENTS ATTACHED 12/28/2018
BUILDING PERMITS SHALL BE REQUIRED FOR ALL TURBINES AND ASSOCIATED STRUCTURES.

ALL SUBMITTED PLANS SHALL BE STAMPED BY A LICENSED WYOMING DESIGN PROFESSIONAL.

FIRE APPARATUS ACCESS LANES SHALL BE PROVIDED IN ACCORDANCE WITH 2018 IFC SECTION 503.

AGENCIES WITH NO COMMENTS:

County Assessor
CenturyLink

AGENCIES WITH NO RESPONSE:

Cheyenne Regional Airport
County Attorney
County Real Estate Office
County Public Works Department
County Treasurer
County Conservation District
Department of Energy (WAPA
Wyoming State Engineer's Office
WYDOT
Wyoming DEQ
Combined Communications Center
Emergency Management
Fire District No. 1
Fire District No. 10
Sheriff's Office
Black Hills Energy
High West Energy



LARAMIE COUNTY PLANNING & DEVELOPMENT OFFICE

3966 Archer Pkwy
Cheyenne, WY 82009
Email: planning@laramiecounty.com
Phone (307) 633-4303 Fax (307) 633-4616

Comment Request

Request	Review and Comment	Case # PZ-18-00280
Purpose	Wind Energy Site Plan	
Project Name	Roundhouse Wind Energy Project	
Due Date	12/29/18	

Applicant Name	NextEra Energy Resources, LLC c/o Ryan Fitz Patrick
Phone	(307) 399-1393
Address	700 Universe Boulevard, Juno Beach, FL 33408

Project Location	Portions of lands in T.12N., R.67W.; T.12N., R.68W.; T.12N., R.69W.; T.12N., R.70W.; T.13N., R.67W.; T.13N., R.68W.; T.13N., R.69W.; T.13N., R.70W. the 6 th P.M., Laramie County, WY, and southwest of Cheyenne
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This development action is forwarded for your review. Please submit comments before the "Due Date" noted above. COMMENTS NOT RECEIVED BY THE "DUE DATE" WILL NOT BE PUT FORWARD AS PART OF THIS DEVELOPMENT ACTION. Please send any comments you may have directly to our office as addressed at the top of this sheet and to the applicant as appropriate (listed above).

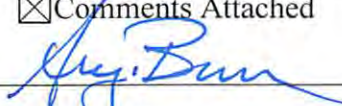
Comments: (please cite applicable regulation source with comments)

Dear Mr. Nicholas,

Please see the attached comments by the Wyoming Game and Fish Department regarding the above mentioned project.

Thank you.

☐ No Comments ☐ Comments Above ☒ Comments Attached

Reviewer: Angi Bruce Signature: 

Reviewing Agency Name: Wyoming Game and Fish Department

Phone: 307-777-4506 Date: December 27, 2018

Scheduled Meeting and Dates:

County Commissioners: 2/19/19 County Planning Commission: 1/24/19



WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

Phone: (307) 777-4600 Fax: (307) 777-4699

wgfd.wyo.gov

GOVERNOR
MATTHEW H. MEAD

DIRECTOR
SCOTT TALBOTT

COMMISSIONERS
MARK ANSELM - President
DAVID RAE - Vice President
GAY LYNN BYRD
PATRICK CRANK
KEITH CULVER
PETER J. DUBE
MIKE SCHMID

December 27, 2018

WER 4502.136

Laramie County Planning and Development Office
Roundhouse Wind Energy Project
Wind Energy Site Plan
PZ-18-00280
Laramie County

Bryan Nicholas
Laramie County Planning and Development Office
3966 Archer Parkway
Cheyenne, WY 82009

Dear Mr. Nicholas,

The staff of the Wyoming Game and Fish Department (Department) has reviewed the proposed NextEra Roundhouse Wind Energy Project - Wind Energy Site Plan (PZ-18-00280) located in Laramie County. We offer the following comments for your consideration.

The Wyoming Game and Fish Commission (Commission) is created and empowered in Title 23 of the Wyoming Statutes. The Department is created and placed under the direction and supervision of the Commission in W.S. 23-1-401. The responsibilities of the Commission and the Department are defined in W.S. 23-1-103. The following comments are consistent with the Commission's Wildlife Protection Recommendations for Wind Energy Development in Wyoming (Wind Recommendations). This document provides recommendations for: 1) collecting baseline data prior to turbine siting to avoid potential conflicts with wildlife; 2) construction and operations monitoring; and 3) mitigating impacts to affected wildlife.

The Department is working with NextEra to develop a Monitoring Plan consistent with the Commission's Wind Recommendations. To date, we have only seen a summary of data from the Belvoir Ranch portion of the project. Since we have not had the opportunity to review all the baseline wildlife data that has been collected for this project, we are unable at this time to provide comments on how the siting of the turbines and related facilities could affect wildlife.

Hunting is an important tool to manage wildlife, provides recreational opportunity for Wyoming residents and non-residents, and is an important economic driver in the state. Our Lone Tree Hunter Management Area (HMA) is within the project area and provides a public hunting opportunity in an area with limited public access. We believe that hunting is compatible with

Bryan Nicholas
December 27, 2018
Page 2 of 2 – WER 4502.136

wind energy development. We would like to see a commitment to continue to allow managed public hunting on the HMA and other project lands.

Thank you for the opportunity to comment. If you have any questions or concerns please contact Mark Conrad, Habitat Protection Biologist, at 307-777-4509.

Sincerely,



Angi Bruce
Habitat Protection Supervisor

AB/xx/ml

cc: U.S. Fish and Wildlife Service
Embere Hall, Wyoming Game and Fish Department
Jason Sherwood, Wyoming Game and Fish Department
Bobby Compton, Wyoming Game and Fish Department
Chris Wichmann, Wyoming Department of Agriculture, Cheyenne



LARAMIE COUNTY PLANNING & DEVELOPMENT OFFICE

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Comment Request

Request	Review and Comment	Case # PZ-18-00280
Purpose	Wind Energy Site Plan	
Project Name	Roundhouse Wind Energy Project	
Due Date	12/29/18	

Applicant Name	NextEra Energy Resources, LLC c/o Ryan Fitz Patrick
Phone	(307) 399-1393
Address	700 Universe Boulevard, Juno Beach, FL 33408

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This development action is forwarded for your review. Please submit comments before the "Due Date" noted above. COMMENTS NOT RECEIVED BY THE "DUE DATE" WILL NOT BE PUT FORWARD AS PART OF THIS DEVELOPMENT ACTION.

Please send any comments you may have directly to our office as addressed at the top of this sheet and to the applicant as appropriate (listed above).

Comments: (please cite applicable regulation source with comments)

☐ No Comments ☐ Comments Above ☒ Comments Attached

Reviewer: Rex Lockman Signature: *Rex Lockman*

Reviewing Agency Name: Laramie County Conservation District

Phone: 307-772-2600 Date: 1-30-19

Scheduled Meeting and Dates:

County Commissioners: 2/19/19 County Planning Commission: 1/24/19



Laramie County Conservation District
11221 U.S. Hwy 30 - Cheyenne, WY 82009 - Phone (307) 772-2600 Fax (307) 772-2606

January 30, 2019

Laramie County Planning and Development Office
Roundhouse Wind Energy Project
Wind Energy Site Plan
PZ-18-00280
Laramie County

Bryan Nicholas
Laramie County Planning and Development Office
3966 Archer Parkway
Cheyenne, WY 82009

Dear Mr. Nicholas,

The Laramie County Conservation District has reviewed the proposed Roundhouse Wind Energy Project Site Plan (PZ-18-00280) in Laramie County. The District offers the following recommendations for your consideration.

Since there is no information included in the plans on how wildlife and their habitats will be impacted or how these impacts will be mitigated, the Laramie County Conservation District has the following wildlife concerns.

The western edge of the project site located on the City of Cheyenne's Belvoir Ranch and State of Wyoming lands consists of limestone ridges and outcrops. These ridges are predominantly vegetated with Mountain mahogany shrubs. Mountain mahogany is an important food source for Mule deer, elk, and antelope in the winter. Making this area important winter habitat for these wildlife. The planned roads, site pads, and vehicle traffic to these locations could impact the wildlife use in these areas. The district would suggest taking a close look at the sites in the following areas to make sure there is little impact to the wildlife.

-T12N R70W Sec.'s 1 and 12

-T13N R70W Sec.'s 27 and 36

This area is also where the plains meet the mountains and has created a migration corridor for many birds traveling south to north along the Rockies. There is a 2 to 4 mile strip along the eastern edge of this uplift that many birds use during migration. The district would recommend taking this into consideration when siting the turbines.

The Conservation District would also encourage NextEra in following the recommendations in The Wyoming Game and Fish Commission's Wildlife Protection Recommendations for Wind Energy Development.

A majority of the project area being disturbed are native rangelands. Currently there are not many noxious weed issues in this area. With the construction disturbance of this area it would open up the chances of other noxious weeds invading the area or making the existing noxious weed problems worse. The district would recommend a plan be in place to address any noxious weeds issues that arise. This would include revegetation of disturbed areas as soon as possible and control of weeds while these areas are being revegetated. The network of roads around the project site will create a constant flow of weed seed into the area via seed transportation on vehicles. The road edges will have to be continuously monitored for weeds. Following is a list of more common noxious weeds this area could be subject to but not limited to.

- Dalmatian toadflax	<i>Linaria dalmatica (L) Mill</i>
- Larkspur	<i>Delphinium geyeri Greene</i>
- Cheatgrass / Downey brome	<i>Bromus Tectorum L.</i>
- Viper's Bugloss (blueweed)	<i>Echium vulgare L.</i>
- Spotted Knapweed	<i>Centaurea repens L.</i>
- Canada Thistle	<i>Cirsium Arvense L.</i>

January 16, 2018

Brad Emmons / Director
Laramie County Planning and Development Office
3966 Archer Parkway
Cheyenne, WY 82009

Subject: **Roundhouse Wind Energy Project – Agency Comment Responses**
Laramie County Wind Energy Site Plan and Wind Energy Permit Application

Dear Mr. Emmons:

Roundhouse Renewable Energy, LLC (Roundhouse, referred to herein as Applicant), a wholly owned, indirect subsidiary of NextEra Energy Resources, LLC (NextEra), submitted a Wind Energy Site Plan application (PZ-18-00280) to Laramie County (County) on December 14, 2018. The Applicant seeks approval to build and operate the Roundhouse Wind Energy Project (Project) in the County.

This letter provides responses to agency comments received by the County Planning and Development Office on the Applicant's Wind Energy Site Plan application. This letter contains the following information:

- Table 1: Provides the Applicant's responses to specific comments received from state and local agencies.
- Attachment 1: Provides documentation of the original agency comments received by the County Planning and Development Office.
- Attachment 2: Provides a Drainage Report Waiver request in response to comment 2 provided by the County Engineer.
- Attachment 3: Provides a diagram showing the typical footprint for the proposed wind turbine bases in response to comment 4 provided by the County Engineer.

Should you have any questions or comments regarding the responses provided herein, please do not hesitate to contact me at ryan.fitzpatrick@nexteraenergy.com or 307-399-1393. We look forward to working with you on this Project.

Sincerely,



Ryan Fitzpatrick
Roundhouse Renewable Energy, LLC

700 Universe Boulevard
Juno Beach, FL 33408

Table 1. Agency Comment Responses to PZ-18-00280

Roundhouse Wind Energy Project - Laramie County Wind Energy Site Plan and Wind Energy Permit Application

Agency/Department ^a	Comment	Applicant Response
County Engineer	<p><i>1. The Traffic Study submitted is adequate for the proposed development and I concur with its findings and summary.</i></p> <p><i>2. An official request for a waiver of a detailed Drainage Study should be submitted justifying why a waiver should be granted.</i></p> <p><i>3. Any proposed access roads that cross floodplains will need a floodplain development permit application submitted to the County for review and approval.</i></p> <p><i>4. The Site Plan application and/or drawing should include a diagram showing the typical footprint for the wind turbine bases.</i></p>	<p>The Applicant acknowledges comment 1 from the County Engineer.</p> <p>Attachment 2 to this letter provides a Drainage Report Waiver request in response to comment 2 from the County Engineer.</p> <p>Based on final design, the Applicant will submit a floodplain development permit application to the County for review and approval prior to construction of any proposed access roads that will cross floodplains.</p> <p>Attachment 3 to this letter provides a diagram showing the typical foundation footprint for the proposed wind turbine bases in response to comment 4 from the County Engineer. Turbine foundations are designed for site specific conditions and may be optimized for site specific loads if required. Attachment 3 includes typical turbine pedestal and footing dimensions and shows photos associated with the typical octagonal shallow mat foundations.</p>
County Environmental Health Department	<p><i>Laramie County Small Wastewater System Regulations If a construction office or workshop is utilized with a restroom a commercial small wastewater system permit shall be obtained. A commercial wastewater system temporary or permanent will require the design be done by a licensed Wyoming Professional Engineer. Porta-Potties do not require a permit but the pumper of the porta-potties must be licensed to businee in Laramie County. Licensed pumpers are listed on the Laramie County website.</i></p>	<p>In compliance with Laramie County Small Wastewater System Regulations, the Applicant acknowledges that any sewage disposal system that distributes 2,000 gallons or less of domestic sewage per day is subject to a Commercial Wastewater System Permit. As such, the Applicant will obtain a Commercial Wastewater System Permit for permanent sewage disposal at the proposed Operation and Maintenance building and for temporary construction offices or workshops if needed. The wastewater systems will be designed by a licensed Wyoming Professional Engineer.</p> <p>During construction, the Applicant or the Applicant's contractor will select a pumper for porta-john maintenance that is licensed to do business in Laramie County.</p>
County Planning and Development Office	<p><i>Section 2-2-125 Large Wind Energy Systems will be the governing regulations for this application. If approved by the Board a Wind Energy Permit must be submitted to the Planning and Development Office within three years. The limits of this project do not reach the Zoned Boundary, and therefore is not under any zoning regulations. All tower setbacks must meet the requirements per Section 2-2-125(c)(iii) The applicant will need to apply for Board Approval for any high-power transmission line. Standard GESC Permits will be required at time of construction for all roads and tower locations. Any crossings or development within the SHA/100 Year Floodplain will need a Floodplain Development Permit.</i></p>	<p>The Applicant demonstrates compliance with the applicable Laramie County Land Use Regulations (LUR) for large wind energy systems under Section 2-2-125, in Section 4 of the application narrative. If the Applicant's Wind Energy Site Plan application is approved by the Board, the Applicant will submit a Wind Energy Permit application to the County Planning and Development office for review and approval.</p> <p>The Applicant acknowledges that the Project is not within a zoned boundary in the County and is not subject to zoning regulations. The Applicant provides certification in Appendix C to the application narrative that the Project complies with the applicable standards defined by LUR 2-2-125(c)(iii) concerning construction setbacks.</p> <p>The Applicant submitted a High-Power Transmission Line application for Board approval to the County on January 9, 2019 for the 230-kV generation-tie transmission line associated with the Project.</p> <p>Based on final design, the Applicant will obtain Standard Grading Erosion and Sediment Control (GESC) permits for roads and tower locations. At final design, the Applicant will also submit a floodplain development permit application to the County for review and approval prior to</p>

Table 1. Agency Comment Responses to PZ-18-00280

Roundhouse Wind Energy Project - Laramie County Wind Energy Site Plan and Wind Energy Permit Application

Agency/Department ^a	Comment	Applicant Response
		construction of any proposed access roads that will cross designated special hazard areas or designated floodplains.
County Building Department	<i>BUILDING PERMITS SHALL BE REQUIRED FOR ALL TURBINES AND ASSOCIATED STRUCTURES. ALL SUBMITTED PLANS SHALL BE STAMPED BY A LICENSED WYOMING DESIGN PROFESSIONAL. FIRE APPARATUS ACCESS LANES SHALL BE PROVIDED IN ACCORDANCE WITH 2018 IFC SECTION 503.</i>	The Applicant acknowledges that building permits are required for all turbines and associated Project structures. Prior to construction, the Applicant or the Applicant's contractor will submit plans for review and approval of County building permits. The plans will be stamped by a licensed Wyoming Professional Engineer and where applicable, will address fire apparatus access lanes in accordance with 2018 IFC Section 503.
Wyoming Department of Transportation (WYDOT)	<i>Contact WYDOT district office in Laramie to discuss possible road maintenance agreement for WY 225. Access permits will be needed for modifications to access and interchange ramp/crossroad intersections where large radii are required to accommodate turning path for long loads. Assumed peak hour volume percentage in traffic study of 8% would be considered an urban value. A more realistic value for rural setting would be 15% - 18%. Overall volumes are quite low show the results should still be within acceptable parameters. Any location that would disturb or damage any right of way markers for WYDOT right of way must be reference in a physical survey. If any right of way makers are destroyed, they must be replaced by a Professional Land Surveyor. Monuments tied prior to possible damage must be sent to District 1 with their coordinate location.</i>	<p>The Applicant will contact the WYDOT district office in Laramie to discuss a possible road maintenance agreement for WY 225. The Applicant will obtain necessary access permits for modifications to access and interchange ramp/crossroad intersections where large radii are required to accommodate equipment hauling.</p> <p>Through a web search, a document was found that indicates that 15 percent would be an appropriate assumption for a rural highway facility (based on a Nebraska report). Given the existing counts on WYO 225, an increase from 8 to 15 percent for the background peak hour volumes would not impact the traffic operations enough to decrease the A/B Levels of Service (LOS) to an undesirable LOS (i.e., LOS E or F) for the background conditions in any of the three analysis scenarios. The volumes generated by the construction and operations of the Project are independent of and not affected by the assumption of the background peak hour volume percentage. The total projected traffic operating conditions with the Project-generated volumes added to the background volumes are LOS A/B for all three analysis scenarios. Like the background LOS estimates, an increase in the percentage of peak hour background volumes would likely not cause a decrease to undesirable LOS conditions in any of the three analysis scenarios. We agree that the results would still be within acceptable parameters with background peak hour volumes representing 15 percent of the Average Daily Traffic. Should Project construction disturb or damage any WYDOT right-of-way markers, the Applicant will reference the markers in a survey and replace the markers by a Professional Land Surveyor.</p>
Wyoming Game and Fish Department	See comments in the letter provided with Attachment 1 from the Wyoming Game and Fish Department.	As described in the Wyoming Game and Fish Department letter provided in Attachment 1, the Applicant is working with the department to develop a Monitoring Plan consistent with the Wyoming Game and Fish Commission's Wildlife Protection Recommendations for Wind Energy Development in Wyoming (Wind Recommendations). The Applicant's response to LUR 2-2-125(c)(xvi) in the application narrative demonstrates that the environmental review in the Applicant's ISA Permit application will include but is not limited to conducting threatened and endangered species habitat evaluations and surveys, sage grouse surveys, avian-use fixed-point surveys, bat acoustic monitoring surveys, raptor nest surveys, aquatic resources delineations, and noise and visual resource analyses to document and characterize baseline conditions of the Project area. The Project infrastructure will be located outside greater sage-grouse core areas. The Applicant will use baseline resource information and survey results to site Project components to avoid or minimize the potential for environmental and natural resource impacts. Avoidance and

Table 1. Agency Comment Responses to PZ-18-00280

Roundhouse Wind Energy Project - Laramie County Wind Energy Site Plan and Wind Energy Permit Application

Agency/Department ^a	Comment	Applicant Response
		<p>minimization activities may include setbacks, avoidance of sensitive natural resources, and potentially relocating WTGs within the preliminary Project layout if needed. Studies are ongoing and will be incorporated into micrositeing activities where appropriate. The Applicant will work with the Wyoming Game and Fish Department and U.S. Fish and Wildlife Service to minimize impacts to the environment as a result of the construction and operation of the Project.</p> <p>The Applicant further acknowledges that hunting is an important recreational opportunity and is compatible with wind energy development. As such, the Project will not preclude public hunting access to the Lone Tree Hunter Management Area (HMA) within the Project area and the Applicant is committed to allowing managed public hunting on the HMA and other public land within the Project site boundary.</p>

Source: Laramie County. 2019. *Citizen Access – Project or Permit Information*.

Notes:

^aAgencies with No Comments:

CenturyLink
 County Assessor
 Department of Energy (WAPA)
 County Sheriff's Office

Agencies with No Response:

Black Hills Energy
 Cheyenne Airport Manager
 Combined Communications Center
 County Attorney
 County Conservation District
 County Public Works Department
 County Real Estate Office
 County Treasurer
 County Emergency Management
 Fire District No. 1
 Fire District No. 10
 High West Energy
 Wyoming State Engineer's Office
 Wyoming Department of Environmental Quality (DEQ)

Attachment 1
Original Agency Comments

County Engineer: Scott Larson COMMENTS ATTACHED 12/28/2018

1. The Traffic Study submitted is adequate for the proposed development and I concur with its findings and summary.
2. An official request for a waiver of a detailed Drainage Study should be submitted justifying why a waiver should be granted.
3. Any proposed access roads that cross floodplains will need a floodplain development permit application submitted to the County for review and approval.
4. The Site Plan application and/or drawing should include a diagram showing the typical footprint for the wind turbine bases.

Environmental Health Department: Roy Kroeger COMMENTS ATTACHED 12/26/2018

Laramie County Small Wastewater System Regulations

If a construction office or workshop is utilized with a restroom a commercial small wastewater system permit shall be obtained.

A commercial wastewater system temporary or permanent will require the design be done by a licensed Wyoming Professional Engineer.

Porta-Potties do not require a permit but the pumper of the porta-potties must be licensed to business in Laramie County. Licensed pumpers are listed on the Laramie County website.

Wyoming Game & Fish: Meghan Lockwood COMMENTS ATTACHED 12/27/2018
Please see attached comment report.

Planners: Bryan Nicholas COMMENTS ATTACHED 12/28/2018

Section 2-2-125 Large Wind Energy Systems will be the governing regulations for this application. If approved by the Board a Wind Energy Permit must be submitted to the Planning and Development Office within three years.

The limits of this project do not reach the Zoned Boundary, and therefore is not under any zoning regulations.

All tower setbacks must meet the requirements per Section 2-2-125(c)(iii)

The applicant will need to apply for Board Approval for any high power transmission line.

Standard GESC Permits will be required at time of construction for all roads and tower locations.

Any crossings or development within the SHA/100 Year Floodplain will need a Floodplain Development Permit.

Building Dept.: Antony Pomerleau COMMENTS ATTACHED 12/28/2018
BUILDING PERMITS SHALL BE REQUIRED FOR ALL TURBINES AND ASSOCIATED STRUCTURES.

ALL SUBMITTED PLANS SHALL BE STAMPED BY A LICENSED WYOMING DESIGN PROFESSIONAL.

FIRE APPARATUS ACCESS LANES SHALL BE PROVIDED IN ACCORDANCE WITH 2018 IFC SECTION 503.

AGENCIES WITH NO COMMENTS:

County Assessor
CenturyLink

AGENCIES WITH NO RESPONSE:

Cheyenne Regional Airport
County Attorney
County Real Estate Office
County Public Works Department
County Treasurer
County Conservation District
Department of Energy (WAPA
Wyoming State Engineer's Office
WYDOT
Wyoming DEQ
Combined Communications Center
Emergency Management
Fire District No. 1
Fire District No. 10
Sheriff's Office
Black Hills Energy
High West Energy



LARAMIE COUNTY PLANNING & DEVELOPMENT OFFICE

3966 Archer Pkwy
Cheyenne, WY 82009
Email: planning@laramiecounty.com
Phone (307) 633-4303 Fax (307) 633-4616

Comment Request

Request	Review and Comment	Case # PZ-18-00280
Purpose	Wind Energy Site Plan	
Project Name	Roundhouse Wind Energy Project	
Due Date	12/29/18	

Applicant Name	NextEra Energy Resources, LLC c/o Ryan Fitz Patrick
Phone	(307) 399-1393
Address	700 Universe Boulevard, Juno Beach, FL 33408

Project Location	Portions of lands in T.12N., R.67W.; T.12N., R.68W.; T.12N., R.69W.; T.12N., R.70W.; T.13N., R.67W.; T.13N., R.68W.; T.13N., R.69W.; T.13N., R.70W. the 6 th P.M., Laramie County, WY, and southwest of Cheyenne
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This development action is forwarded for your review. Please submit comments before the "Due Date" noted above. COMMENTS NOT RECEIVED BY THE "DUE DATE" WILL NOT BE PUT FORWARD AS PART OF THIS DEVELOPMENT ACTION. Please send any comments you may have directly to our office as addressed at the top of this sheet and to the applicant as appropriate (listed above).

Comments: (please cite applicable regulation source with comments)

Dear Mr. Nicholas,

Please see the attached comments by the Wyoming Game and Fish Department regarding the above mentioned project.

Thank you.

☐ No Comments ☐ Comments Above ☒ Comments Attached

Reviewer: Angi Bruce Signature: 

Reviewing Agency Name: Wyoming Game and Fish Department

Phone: 307-777-4506 Date: December 27, 2018

Scheduled Meeting and Dates:

County Commissioners: 2/19/19 County Planning Commission: 1/24/19



WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

Phone: (307) 777-4600 Fax: (307) 777-4699

wgfd.wyo.gov

GOVERNOR
MATTHEW H. MEAD

DIRECTOR
SCOTT TALBOTT

COMMISSIONERS
MARK ANSELM - President
DAVID RAE - Vice President
GAY LYNN BYRD
PATRICK CRANK
KEITH CULVER
PETER J. DUBE
MIKE SCHMID

December 27, 2018

WER 4502.136

Laramie County Planning and Development Office
Roundhouse Wind Energy Project
Wind Energy Site Plan
PZ-18-00280
Laramie County

Bryan Nicholas
Laramie County Planning and Development Office
3966 Archer Parkway
Cheyenne, WY 82009

Dear Mr. Nicholas,

The staff of the Wyoming Game and Fish Department (Department) has reviewed the proposed NextEra Roundhouse Wind Energy Project - Wind Energy Site Plan (PZ-18-00280) located in Laramie County. We offer the following comments for your consideration.

The Wyoming Game and Fish Commission (Commission) is created and empowered in Title 23 of the Wyoming Statutes. The Department is created and placed under the direction and supervision of the Commission in W.S. 23-1-401. The responsibilities of the Commission and the Department are defined in W.S. 23-1-103. The following comments are consistent with the Commission's Wildlife Protection Recommendations for Wind Energy Development in Wyoming (Wind Recommendations). This document provides recommendations for: 1) collecting baseline data prior to turbine siting to avoid potential conflicts with wildlife; 2) construction and operations monitoring; and 3) mitigating impacts to affected wildlife.

The Department is working with NextEra to develop a Monitoring Plan consistent with the Commission's Wind Recommendations. To date, we have only seen a summary of data from the Belvoir Ranch portion of the project. Since we have not had the opportunity to review all the baseline wildlife data that has been collected for this project, we are unable at this time to provide comments on how the siting of the turbines and related facilities could affect wildlife.

Hunting is an important tool to manage wildlife, provides recreational opportunity for Wyoming residents and non-residents, and is an important economic driver in the state. Our Lone Tree Hunter Management Area (HMA) is within the project area and provides a public hunting opportunity in an area with limited public access. We believe that hunting is compatible with

Bryan Nicholas
December 27, 2018
Page 2 of 2 – WER 4502.136

wind energy development. We would like to see a commitment to continue to allow managed public hunting on the HMA and other project lands.

Thank you for the opportunity to comment. If you have any questions or concerns please contact Mark Conrad, Habitat Protection Biologist, at 307-777-4509.

Sincerely,



Angi Bruce
Habitat Protection Supervisor

AB/xx/ml

cc: U.S. Fish and Wildlife Service
Embere Hall, Wyoming Game and Fish Department
Jason Sherwood, Wyoming Game and Fish Department
Bobby Compton, Wyoming Game and Fish Department
Chris Wichmann, Wyoming Department of Agriculture, Cheyenne

Attachment 2
Drainage Report Waiver Request

Denver Office

9193 South Jamaica Street

United States

T +1.303.807.7504

F +1.303.652.0239

www.jacobs.com

Subject	Drainage Report Waiver Request
Project Name	Roundhouse Wind Energy Project
Attention	Laramie County Public Works Department
From	Jacobs Engineering Group, Inc.
Date	January 16, 2019

1. Introduction

Roundhouse Renewable Energy, LLC (Roundhouse, referred to herein as Applicant), a wholly owned, indirect subsidiary of NextEra Energy Resources, LLC (NextEra), is proposing to develop the Roundhouse Wind Energy Project (Project) in unincorporated Laramie County (County), Wyoming. The Project site is approximately 9 miles west of Cheyenne and south of Interstate 80 (I-80). The site consists of approximately 43,621 acres of private, City of Cheyenne, and State of Wyoming acreage. The Project is 300 megawatts (MW) in size, consisting of 120 wind turbines, depending on final turbine technology selection. Project facilities and related infrastructure include WTGs mounted on tubular towers, transformers, underground collection, electric and fiber optic communications cable, access roads, meteorological towers, a supervisory control and data acquisition (SCADA) system, up to two substations, and an operations and maintenance (O&M) building. The Project also includes an approximately 19-mile-long, 230-kV generation-tie transmission line from the proposed Project substation to the Platte River Power Authority Rawhide Substation in northern Colorado.

Pending receipt of required permit approvals, an assumed 9-month construction period would begin with road building in March 2020. Construction is expected to be continuous through complete build-out and commercial operation by December 2020.

2. Request

Prior to development, the Project must demonstrate compliance with the *Laramie County Land Use Regulations* (LUR), which define the Project as a large wind energy system and/or wind farm, requiring both wind energy site plan approval and a wind energy permit. The purpose of this request is to obtain a drainage report waiver from the Laramie County Public Works Department (Department) consistent with the applicable waiver criteria under LUR 3-1-105, which are addressed below.

3. Project Description

The Project description is provided in Section 3 of the Applicant's Wind Energy Site Plan application (PZ-18-00280) submitted to the County on December 14, 2018.

4. Compliance with Laramie County Land Use Regulations

This section addresses the drainage report waiver criteria under LUR 3-1-105. Responses to the applicable criteria are as follows:

LUR 3-1-105 Drainage Report Waiver

Requests for waivers for drainage impact studies shall be made in writing to the Laramie County Public Works Department. The County shall review the request and approve the grant for a waiver or identify the level of study required for the proposed development action. Laramie County Public Works may waive the requirement for drainage study based on the following:

- a. *Information is provided to substantiate there are no potential drainage problems at the site or downstream of the site (including impacts to downstream floodplains);*

Response: During preliminary surveys within the Project site boundary, the Applicant verified that there are no potential drainage problems at the site or downstream of the site.

- b. *The development or redevelopment will not result in an increase in the historic impervious area;*

Response: The Project consists of 120 wind turbines sited within an approximately 43,621-acre site boundary. Increased impervious area associated with the Project will be minimal. The majority of Project impacts are associated with the development of approximately 95 miles of pervious access roads. The access roads will be approximately 16.5 feet in width during Project operations and will be constructed on normal-weather aggregate base. No new pavement will be constructed for access. The roads will be built with adequate drainage and compaction to handle expected loads.

Development of impervious area within the Project site boundary is predominantly associated with the turbine pad foundations. The turbine foundation pads will be constructed of steel-reinforced concrete; however, the impervious area will be minor. The typical turbine pad foundation is 60 feet in diameter and will result in 0.06 acre of impervious area for each turbine. In total, the turbine pads will result in the development of approximately 7.8 acres of new impervious area interspersed throughout the 43,621-acre Project site boundary. The operation and maintenance building will also include an approximately 2,688 square foot (0.1 acre) concrete parking area. Together, the total impervious area associated with the 120 turbine pad foundations and O&M parking area will be approximately 8 acres, which accounts for 0.02 percent of the overall Project site (43,621 acres).

- c. *The development or redevelopment of an area is immediately adjacent to a major drainage way that is capable of conveying the fully developed basin 100-year flood without impact to the base flood elevation;*

Response: The Project is not adjacent to any major drainage ways. There are multiple minor streams within the Project limits. It is not anticipated that this Project will change any drainage patterns on the site.

- d. *The development or redevelopment is unlikely to create drainage problems.*

Response: Adverse Impacts to downstream properties are not anticipated as a result from this Project. The Project will not significantly impact existing drainage patterns across the site. Where necessary, new access roads may require the installation of culverts and/or roadside ditches to convey runoff across the new access roads. These facilities will be designed to convey the design storm and not impact upstream or downstream drainage patterns or runoff.

Attachment 3
Typical Turbine Foundations



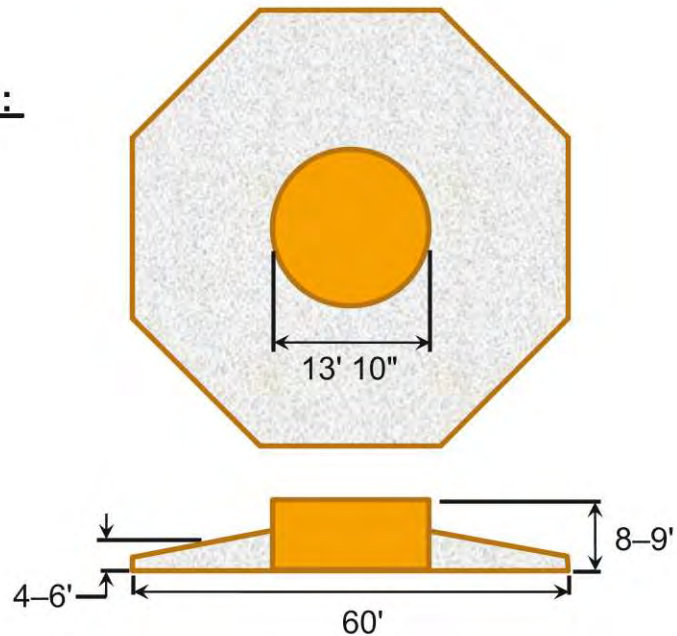
Typical dimensions:

Footing

- Width: 60'
- Average depth: 4–6'

Pedestal

- Diameter: 13' 10"
- Height: 8–9'



Typical Turbine Foundations
Roundhouse Wind Energy Project
Laramie County, Wyoming

RESOLUTION NO. _____

**A RESOLUTION TO APPROVE A WIND ENERGY SITE PLAN FOR THE
ROUNDHOUSE WIND ENERGY PROJECT, LOCATED IN PORTIONS OF LANDS IN
TOWNSHIPS 12 AND 13 NORTH, RANGES 68, 69, AND 70 WEST, OF THE 6TH PM,
LARAMIE COUNTY, WY.**

WHEREAS, Wyoming State Statutes §18-5-201 to 18-5-208; §18-5-301 to 18-5-315 authorize Laramie County, in promoting the public health, safety, morals and general welfare of the county, to regulate the use of land through zoning in unincorporated Laramie County; and

WHEREAS, the Laramie County Board of Commissioners adopted the Laramie County Land Use Regulations; and

WHEREAS, the proposed wind energy site plan is in accordance with section 2-2-125 of the Laramie County Land Use Regulations.

NOW THEREFORE BE IT RESOLVED BY THE GOVERNING BODY OF LARAMIE COUNTY, WYOMING, as follows:

The Laramie County Board of Commissioners finds that:

- a. This application is in conformance with section 2-2-125 of the Laramie County Land Use Regulations.

And the Board approves the Wind Energy Site Plan for the Roundhouse Wind Energy Project, Laramie County, WY, as shown on attached Exhibit 'A'.

**PRESENTED, READ AND ADOPTED THIS _____ DAY OF
_____, 2019.**

LARAMIE COUNTY BOARD OF COMMISSIONERS

Linda Heath, Chairman

ATTEST:

Debra K. Lee, Laramie County Clerk

Reviewed and approved as to form:

Mark T. Voss, Laramie County Attorney

EXHIBIT 'A'

