CROWNED RIDGE ENERGY STORAGE I - SOCIAL AND ECONOMIC IMPACT STUDY

Prepared by the First District Association of Local Governments

ADOPTED BY THE LOCAL REVIEW COMMITTEE ON DATE, 2026

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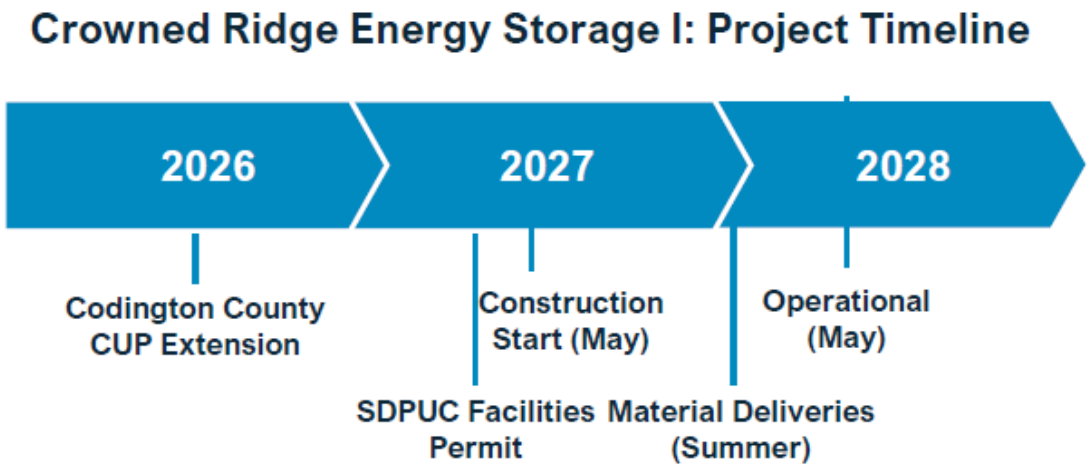
Executive Summary

The following project description is taken from the Introduction section of the Crowned Ridge Battery Energy Storage System Application to the Public Utilities Commission of the State of South Dakota for a Facility Permit to Construct a 120-Megawatt Battery Energy Storage System (Appendix A).

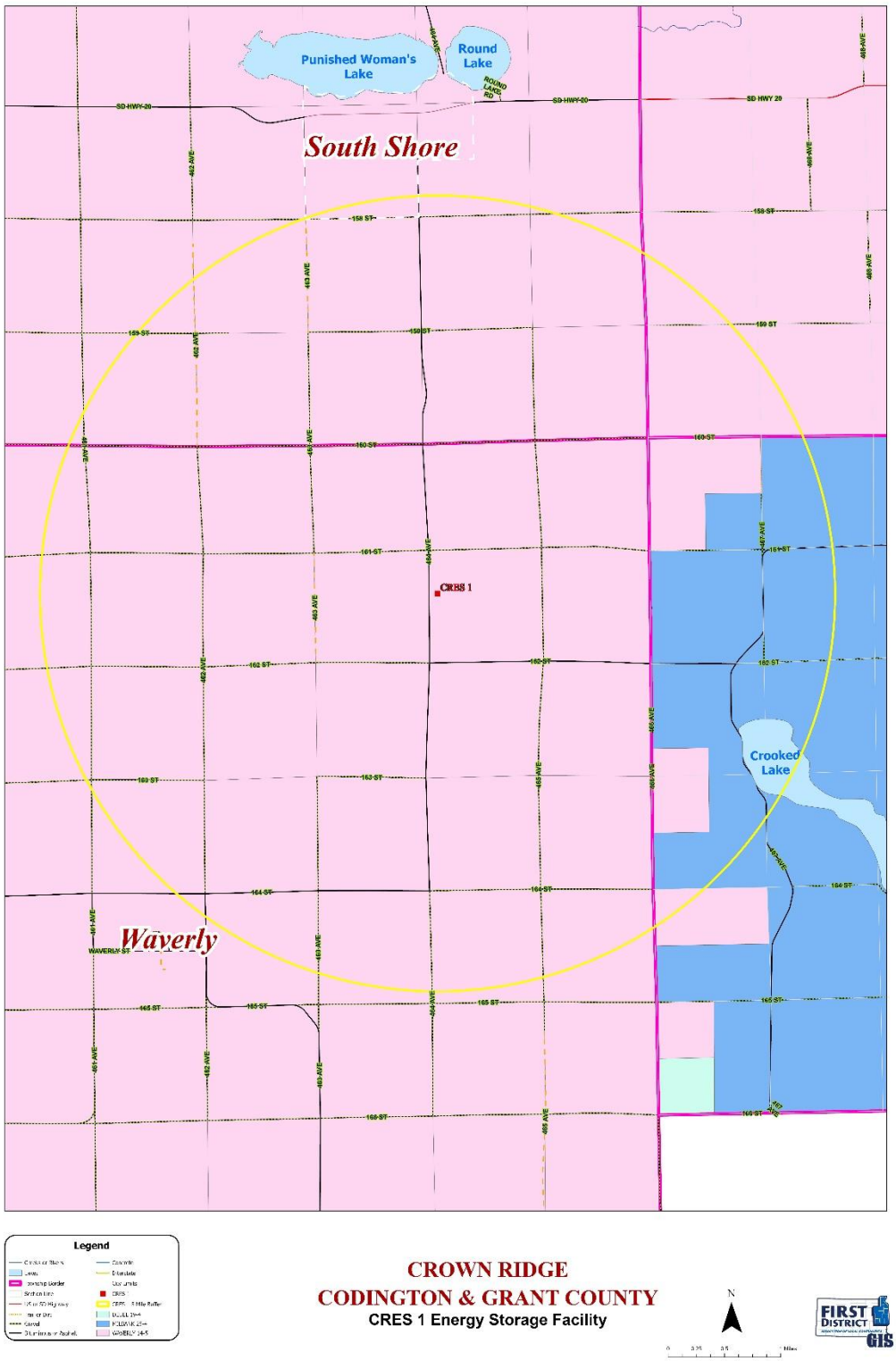
"Crowned Ridge Energy Storage I, LLC (CRES), a wholly owned, indirect subsidiary of NextEra Energy Resources, LLC (NextEra Energy Resources), submits this application for a facility permit to construct and operate a 120-megawatt (MW) battery energy storage system (BESS) (Project) to store excess energy available on the grid. The Project is proposed to be located within the existing Crowned Ridge Wind Energy Facility (CRW) project area, which is owned and operated by CRES's affiliate, Crowned Ridge Wind, LLC, in Codington County, South Dakota.

The Project includes a 120-MW, 4-hour duration BESS facility with associated inverters; transformers; medium voltage (mV) collection cables; and other ancillary facilities, such as fencing, roads, and a supervisory control and data acquisition (SCADA) system. The Project will connect to the existing CRW Collector Substation via approximately 2,215-foot-long mV collection cables. The Project Area encompasses all areas of both temporary and permanent impacts and comprises approximately 52.7 acres of property for which CRES has executed a voluntary lease with purchase option agreement. CRES expects to start construction in May 2027 with commercial operation anticipated in May 2028. The BESS is expected to occupy approximately 7.8 acres within this Project Area following construction. The Project's anticipated lifespan is 35 years.

The Project will be capable of storing excess power from the grid when production exceeds system demand (oversupply). If the grid has excess energy (e.g., during periods of low demand), this energy will be absorbed by the Project for later release. The Project will provide additional reliability for and deliverability to the grid by having the ability to store low-cost, excess generation (relative to load) and inject it into the grid at times of increased demand."



Map 1 – Crowned Ridge Energy Storage Facility Location and 5-Mile Study Area



Source: First District Association of Local Governments

The purpose of this Social and Economic Impact Study is to aid the Local Review Committee in addressing the impact the proposed Project will have in the 12 areas identified in South Dakota Codified Law 49-41B-7 within the 5-mile study area as defined by the South Dakota Public Utilities Commission and shown in Map 1.

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49-41B-7. Assessment by local review committee--Factors considered--Applicant to provide information.

The local review committee shall meet to assess potential social and economic effects of the proposed facility and the affected area's capacity to absorb those effects at various stages of construction, and to formulate mitigation measures. The committee's assessment must also include consideration of temporary and permanent alternatives in the following areas:

(1) Housing supplies;
(2) Educational facilities and manpower;
(3) Water supply and distribution;
(4) Waste water treatment and collection;
(5) Solid waste disposal and collection;
(6) Law enforcement;
(7) Transportation;
(8) Fire protection;
(9) Health;
(10) Recreation;
(11) Government; and
(12) Energy.

The applicant shall provide to the members of the committee copies of the application and any other information the commission determines necessary for the committee's assessment pursuant to this section.

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Local governments included in the 5-mile study area include: Codington County, Grant County, Town of South Shore, Waverly School District, and Milbank School District

Operational staffing is expected to consist of 1-2 new employees while construction staffing is expected to peak at about 60 employees. Construction is expected to last approximately from May of 2027 to April of 2028. Commercial operation is expected to begin in May of 2028.

The methodology for this study includes a description of existing conditions within a study area, assessing future conditions during project construction and operation, and identifying any measures that may need to be implemented to mitigate negative impacts. Impacts are based upon construction activities and the number of additional workers that the study area will likely need to serve and whether the existing conditions can absorb the anticipated demand created by the Project.

If the existing conditions can absorb the anticipated demand created by the Project, then a determination of 'no significant impact' is made and no mitigation measures are proposed. If the existing conditions cannot absorb the anticipated demand created by the Project, then a determination of 'mitigation recommended' is made and mitigation measures are proposed.

While mitigation measures have been proposed in 7 of the 12 study areas, the recommended mitigation measures will not create a significant adverse impact within the study area. Table 1 summarizes the determinations made for each study area.

Table 1 - Determinations

Study Area	Determination
1 – Housing Supplies	No Significant Impact
2 – Educational Facilities and Manpower	Mitigation Recommended – Safety Coordination with Bus Drivers and Student Traffic
3 – Water Supply and Distribution	No Significant Impact
4 – Wastewater Treatment and Collection	Mitigation Recommended – temporary restrooms or toilets during construction and the acquisition of wastewater permits from the DANR before construction begins.
5 – Solid Waste Disposal and Collection	No Significant Impact
6 – Law Enforcement	Mitigation Recommended – Informational meetings between law enforcement and project representatives prior to the start of construction and during construction as needed to address traffic-related concerns and any other issues that may arise.
7 – Transportation	Mitigation Recommended – Dust mitigation, complying with the Codington County Haul Road Agreement, and acquiring necessary SD DOT Transportation Permits
8 – Fire Protection	Mitigation Recommended – Fire department training and equipment, if needed
9 – Health	Mitigation Recommended – Responder Training for Ambulance Services
10 – Recreation	No Significant Impact
11 – Government	Mitigation Recommended – Adhere to the Conditional Use Permit requirements issued by the Codington County Board of Adjustment.
12 - Energy	No Significant Impact

Based upon the contents of this Social and Economic Impact Study, it is the professional opinion of the First District Association of Local Governments that the construction and operation of the Project will have no significant impact on the social and economic environment within the SDPUC defined 5-mile study area after recommended mitigation measures are implemented.

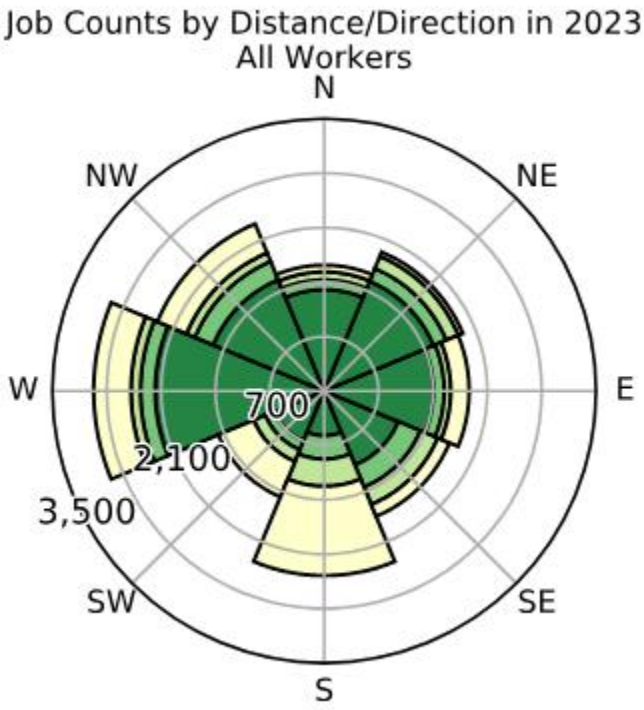
1 – Housing Supplies

While it is reasonable to assume that some of the Project's employees and construction workers will seek housing within the 5-mile study area, it is highly unlikely that all of the estimated 1-2 operational employees and 60 construction workers needed during peak construction will seek housing only within the 5-mile study area. Therefore, a larger commuting area will be used to determine the impact on housing supplies for operational and construction workers. This analysis is based on U.S. Census data for Codington County.

According to 2023 U.S. Census data, 5,198 of the 16,302 employees working in Codington County commute to work from another county and 3,070 employees experience a commuting distance greater than 50 miles. Based upon this information, the City of Watertown (21,482 population – 2020 Census) is within commuting distance of the project site.

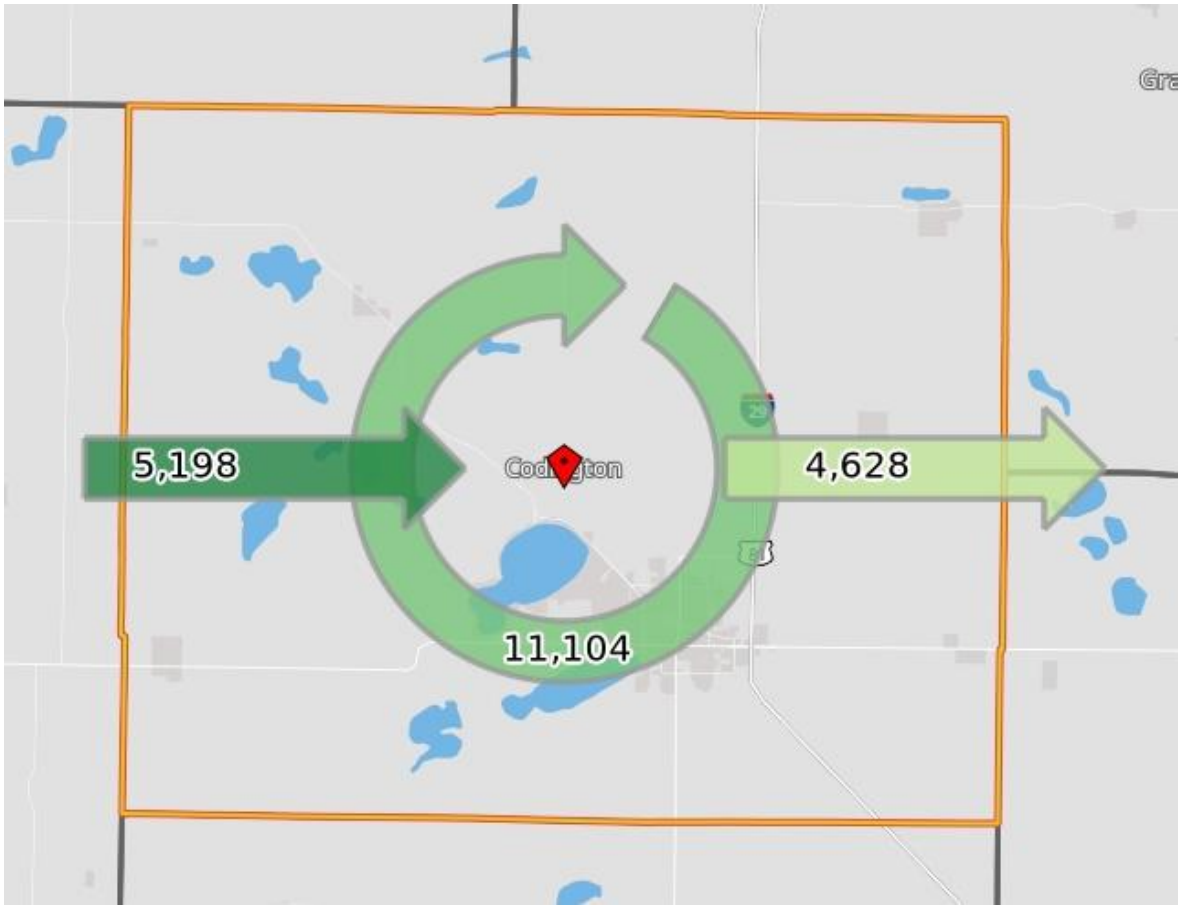
The following data analysis will identify where the Project's workers are likely to seek housing, how many homes and rental units are available within the Project's commuting area, and if the existing inventory of available homes and rental units can absorb the increased demand created by approximately 60 workers required during peak construction and 1-2 permanent operational workers moving into the area.

Chart 1 – Job Counts by Distance/Direction – Codington County



Source: https://onthemap.ces.census.gov/

Map 2 – Codington County Employee Inflow/Outflow Map



Source: https://onthemap.ces.census.gov/

To address the housing inventory issue for construction and operational workers, housing supplies in Codington County have been examined to include the following communities: Florence, Henry, Kranzburg, South Shore, Wallace, Watertown, and Waverly. The following charts track owner-occupied and renter-occupied information within Codington County.

Table 2 – Available Vacant Housing Units

Location	Occupied Housing Units	Vacant Housing Units
Town of Florence	124	12
Town of Henry	156	53
Town of Kranzburg	89	3
Town of South Shore	90	34
Town of Wallace	24	15
Town of Waverly	70	13
City of Watertown	10,394	716
Totals	**10,947**	**846**

Source: https://data.census.gov/

The 2 municipalities within the six-mile study area (Waverly and South Shore) have 47 vacant housing units. A total of 846 vacant housing units within Codington County. This existing supply of available housing units is more than sufficient to meet the demands of 60 temporary construction workers and 1-2 new operational workers.

Labor Force

Table 3 – June 2026 Codington County Labor Force

Area	Labor Force	Employment	Unemployment	Rate
Codington County	16,677	16,374	303	1.8%

Source: http://dlr.sd.gov/lmic/lbtables/countylf.aspx

Table 4 – June 2026 Codington County Labor Supply

Area	Unemployed	Underemployed	Discouraged Workers	Total Labor Supply
Codington County	305	1,105	45	1,450

Source: http://dlr.sd.gov/lmic/lbtables/laborsupply.aspx

The labor force in Codington County consists of 16,677 workers and includes 744 construction, extraction, and maintenance workers as well as 1,848 management, professional, and related workers. Approximately 60 construction workers (8.1% of area construction, extraction, and maintenance workers) are expected to be working at the project site during peak construction. Approximately 1-2 operational workers (0.001% of area management, professional, and related workers) are expected to work at the Project's facility after construction is complete and operation of the facility commences.

Based upon current labor force and resident occupations, there appears to be a sufficient number of workers within the area to meet the construction and operational workforce demands created by the Project. Construction will require a workforce with a variety of skills including, but not limited to, general carpenters, iron workers, millwrights, and electricians. It is expected that a portion of the construction work force will be hired locally. Recruitment of additional construction personnel from outside the affected area will usually include specialists and supervisory personnel who will temporarily relocate to the area.

Determination: No Significant Impact

2 – Educational Facilities and Workforce

The Milbank and Waverly-South Shore School Districts are located within the study area:

The 2024-2025 enrollment in the Milbank School District was 971 students and their previous peak enrollment 1,016 in 2022-2023. 45 new students would need to be added to the district to reach previous peak enrollment numbers. The 2024-2025 enrollment in the Waverly-South Shore School District was 263 students which is also their peak enrollment since 2017-2018.

Table 4 – Milbank School District Enrollment by Year

School Year	Milbank K-12 Enrollment	Waverly-South Shore K-12 Enrollment
2024-2025	971	263
2023-2024	1,012	256
2022-2023	1,016	254
2021-2022	981	256
2020-2021	987	252
2019-2020	997	250
2018-2019	996	233
2017-2018	957	245

Source: https://doe.sd.gov/ofm/statdigest.aspx

Total additional student capacity of the school districts within the study area: 45.

According to the 2020 Census, the average size of the U.S. household unit is approximately 2.53 members per household unit. The .53 represents the average number of children per household.

Based upon the assumption that each member of the projected construction labor force peak of approximately 60 new workers would fall within the parameter of .53 children per household unit, the projected maximum number of additional new students would peak at approximately 32 new students during the construction phase of this project.

Based upon the assumption that each member of the operational labor force peak of 1-2 new workers would fall within the parameter of .53 children per household unit, the projected maximum number of additional new students would be approximately 1 new student after the construction phase of this project is complete and the operational stage begins.

Both figures are below the additional student capacity of 45 new students identified to reach peak enrollment of the Milbank School District.

According to Justin Downes, Milbank School District Superintendent, the Project would create no adverse impact on the Milbank School District during construction or operational phases.

According to Jon Meyer, Waverly School District Superintendent, the Project would create no adverse impact on the Waverly School District during construction or operational phases.

Increased construction traffic may interact with school bus routes and students driving themselves to or from school. Stressing the importance of safety coordination with construction workers, bus drivers, and students driving themselves to and from school can be an effective way to reduce the number of traffic-related incidents that may occur.

Determination: Mitigation Recommended – Safety Coordination with Bus Drivers and Student Traffic

3 – Water Supply and Distribution

Construction and operation of the Project will utilize water supply and distribution infrastructure already in place at the site. In addition to utilizing existing infrastructure, construction workers will bring in their own drinking water or other drinks and will utilize temporary portable toilets during construction of the Project. Operational workers will utilize existing infrastructure at the site currently being utilized by Crowned Ridge Wind operational workers for drinking water and restroom facilities. No additional water supply or distribution capacity will be needed for operation of the Project as the facility will not require additional water beyond what is consumed by the operational staff at the facility.

Determination: No Significant Impact

4 – Wastewater treatment and collection

The Project's operational workers are anticipated to utilize the existing source of potable water at the site and it is anticipated to have sufficient water supply and distributional capacities to meet the projected potable water usage needs. The existing on site wastewater treatment and collection system is also anticipated to have sufficient capacity to meet the increase associated with 1-2 additional workers once the Project is operational.

1-2 new operational workers are projected to work at the Project. The average family size in the U.S. is 2.53 persons (2020 Census). If 2 new operational employees move into the area with average sized families then 5 new inhabitants will increase water usage by approximately 15,000 gallons per month. This figure is calculated using the US Geological Survey estimate of 100 gallons per person per day as an average for individual water usage (source: https://water.usgs.gov/edu/qa-home-percapita.html).

Construction of the Project is anticipated to require additional facilities to accommodate the wastewater generated by construction workers which can be accommodated through the utilization of temporary restroom or toilet facilities until construction of the Project is complete.

Approximately 60 construction workers are projected to work at the site during peak construction. The average family size in the US is 2.53 persons (2020 Census). If 60 construction workers move into the area with average-sized families, then 152 new inhabitants will temporarily increase water usage by approximately 456,000 gallons per month. This figure is calculated using the U.S. Geological Survey estimate of 100 gallons per person per day as an average for individual water usage (source: https://water.usgs.gov/edu/qa-home-percapita.html).

Increases in residential water usage will result in corresponding increases in wastewater volumes where workers live during construction and operation of the Project. The community of Watertown (2020 Census Population 22,655) is within commuting distance of the project site, and an increase of 152 persons will increase their total populations by approximately 0.67%. This increase does not represent a significant population expansion that would adversely impact municipal wastewater collection and treatment systems at either location.

Wastewater generated by the Project's operation from potable water is anticipated to be treated entirely on-site. No process water is expected to be generated by the operation of the facility. Any off-site disposal of wastewater will be completed in accordance with state law. The following wastewater treatment and collection permits for the Project may be issued by the South Dakota Department of Agriculture and Natural Resources (DANR):

1. National Pollution Discharge Elimination System (NPDES)/Surface Water Discharge
2. On-site Septic System
3. Storm Water Discharge

NPDES/Surface Water Discharge

No process water is anticipated to be discharged by the Project. Should circumstances change such that the process water would be required to be disposed or discharged, the project would arrange for off-site disposal.

On-site Septic Systems

There is an existing on-site wastewater septic system that incorporates a drain field. The water flowing into this system originates from sinks, toilets etc… and no process water is projected to flow into this system.

Storm Water Discharge

There will be a storm water pond to collect rainfall/snowmelt etc. from the areas that are paved or impacted by the facility. A Storm Water Discharge Permit will be acquired prior to the construction of the pond. Should storm water accumulate in the pond, the water will be sampled, analyzed, and discharged according to the permit's parameters.

Determination: Mitigation Recommended – temporary restrooms or toilets during construction and the acquisition of wastewater permits from the DANR before construction begins.

5 – Solid Waste Disposal and Collection

Construction Waste

Waste generated during construction activities will be disposed of at a properly permitted municipal solid waste landfill site in accordance with the laws of South Dakota. Construction waste disposal will be the responsibility of the prime construction contractor responsible for construction of the Project under the direction of NextEra.

Operational Waste

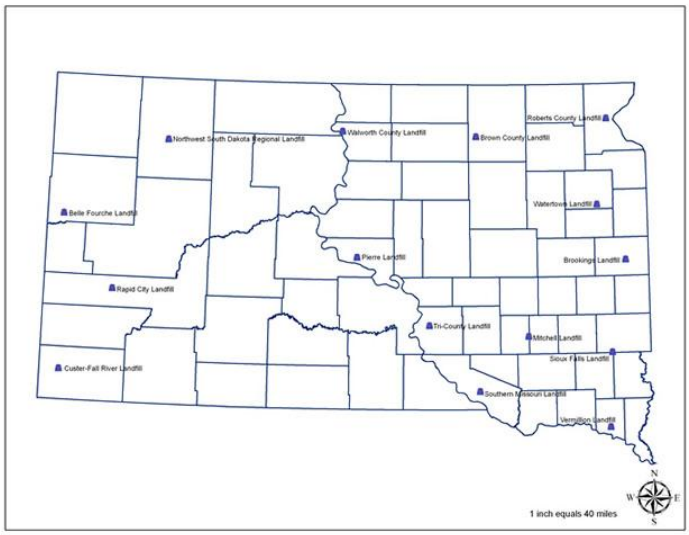
Waste generated during operational activities will be disposed of at a properly permitted solid waste landfill site in accordance with the laws of South Dakota. Arrangements for operational waste collection and disposal will be the responsibility of NextEra and will likely be handled by a private waste collection and disposal company.

Any solid waste associated with decommissioning the site shall be done in accordance with the Draft Decommissioning Plan identified as APPENDIX I as submitted with the Crowned Ridge Energy Storage Application to the SD PUC which can be found at the following link: https://puc.sd.gov/commission/dockets/electric/2026/el26-014/AppendI.pdf

Landfill Sites

While there are no properly permitted waste sites within the 5-mile project area there are two municipal solid waste landfill sites located nearby. The Brookings Landfill and the Watertown Landfill are both within approximately 60 minutes of the Project. Map 5 shows the locations of municipal solid waste landfill permitted by the State of South Dakota.

Map 3 – Permitted Municipal Solid Waste Landfills in South Dakota



Source: https://denr.sd.gov/des/wm/landfillmaps/lfstate.aspx

Determination: No Significant Impact

6 – Law Enforcement

The Project is located within the jurisdiction of the Codington County Sheriff's Department.

Brad Howell, Sheriff.....605-882-6280

Full Time Officers – 12
Part Time Officers – 3

24-hour protection – yes

Dispatch location – City of Watertown

Capacity to handle existing caseload – yes

Sheriff Howell was in office during the construction of the Crowned Ridge Wind Energy Facility that included the construction of infrastructure located adjacent to the Project site. He was contact to comment on impacts the Project may have on law enforcement and noted that his office received multiple traffic-related complaints from within the Crowned Ridge Wind Farm project area relating to construction workers either speeding or driving recklessly on rural roads.

While Sheriff Howell anticipated that similar traffic-related issues may arise during construction of the Project, he did not anticipate any other significant adverse impacts resulting from the construction or operation of the Project and noted that open communication between developers of the Project and law enforcement would be the most effective means to avoid potential issues before they arise. He suggested inviting law enforcement to participate in meetings with developers of the Project prior to the start of construction to facilitate communications between all parties would be the most effective means to prevent traffic-related issues from becoming an issue and that meetings could occur during construction, if needed, to address any other issues that may arise.

Determination: Mitigation Recommended – Informational meetings between law enforcement and project representatives prior to the start of construction and during construction as needed to address traffic-related concerns and any other issues that may arise.

7 – Transportation

Construction Traffic

The impact of construction traffic will be addressed in permits issued by the State of South Dakota and by the Haul Road Agreement issued by Codington County. The greatest impact of construction traffic will be experienced on Codington County roads because they are not designed for the amount of heavy traffic that will occur during the construction of the Project. This issue will be addressed in the Codington County Haul Road Agreement and will require pre-and post-construction inspections to be completed to determine what must be done to improve haul roads prior to construction and what must be done to return haul roads to preconstruction conditions.

Dust mitigation measures should also be implemented on 464th Avenue and 161st Street if dust resulting from construction traffic becomes an issue for residents. These measures could include applying water, calcium chloride, magnesium chloride, or another type of dust suppressant.

Operational Traffic

The impact of operational traffic will be minimal as it will consist largely of motor vehicle traffic to and from the facility. The expected 1-2 employees will have no significant impact on traffic patterns or traffic safety. No mitigation is recommended for operational traffic.

Codington County Roads

The primary mode of transportation used to bring shipments of construction equipment, workers and materials as well as operational workers to the Project's site will be via county roads.

Construction-related traffic to the site and operational-related traffic will travel to the site primarily on 464th Avenue and 161st Street

The Project will not be the first construction project within the study area to require a haul road agreement with Codington County. The County developed a previous haul road agreement for the Crowned Ridge Wind Project.

The Codington County Planning Board of Adjustment approved a conditional use permit (Appendix B) for the Project on May 20, 2024 that requires that the applicant apply existing haul road agreements used for the wind energy system to this facility, unless determined unnecessary by the road authority. The haul road agreement identifies haul roads, the condition of haul roads prior to construction, and sets forth the responsibilities of the contractor to make road-related improvements or to restore roadbeds and appurtenances to the condition they were in prior to the start of construction.

South Dakota Department of Motor Carrier Services Permits

Single-Trip Permits

Temporary Licensing - Single-trip commercial license, temporary fuel, or temporary (single state registration) permits.

Oversize / Overweight - Allows for the movement on state highways of a vehicle transporting a non-divisible load that exceeds size, weight, or size and weight limitations.

Over 80K on the interstate - Single-trip permits that allow a motor vehicle to exceed 80,000 pounds when traveling on the interstate highways. The permit does not allow a motor vehicle to exceed its legal axle weight, legal tire weight, or the weight as allowed by the Bridge Gross Weight Formula.

Movement to scale site - Single-trip permit to allow a motor vehicle to move to the nearest available public or private scale to determine whether a load is properly placed on the motor vehicle. Before a single-trip permit is requested, the operator moving a load in question must obtain approval from the private scale operator to weigh the vehicle and its load. A motor vehicle operator issued a permit to move to a weigh scale may not leave the scale site unless his load conforms to all legal weight limits or he obtains an overweight permit.

Books of 10 – Self-issue books of permits for over 80k on the interstate, single-trip commercial licensing, telephonic coupons, and construction plate permits.

Extended Length Permits

Booster Axle - Allows the movement on state trunk highways of a cement truck equipped with an overweight booster axle (not a variable load or lift axle) before July 1, 1996, whose loaded weight exceeds that allowed by SDCL 32-22-21 but does not exceed 600 pounds per inch of tire width.

Non-divisible Loads - Allows for the movement of a non-divisible oversize but not overweight load being hauled on a single unit or combination of two units up to a width of 14 feet 6 inches. Side overhang may not exceed 3 feet 3 inches. Total combined front and rear overhang may not exceed 30 feet. Total length of a single unit is limited to 60 feet, including load overhang. Total length for a two-unit combination is limited to 85 feet, including load overhang, and the second unit's wheelbase may not exceed 43 feet. The vehicle operator must keep a trip log. Trip authorization is required if the load exceeds a width of 12 feet.

Lift Axle/ Variable Load Axle - Allows a motor vehicle to be overweight when making a turn due to the lifting of a lift axle or variable load axle to make the turn. This permit allows the raising of the lift axle 100 feet before beginning a turn provided the axle is lowered within 100 feet after completing the turn. Not available for trailers.

Oversize Trailer - Allows for the movement of a semi-trailer manufactured for moving oversize equipment up to 10 feet wide and up to 110 feet long, but not over height or overweight. Can be assigned to a trailer or the power unit.

Overlength semi-trailer - Allows for the movement of a semitrailer manufactured before July 1, 1998, over 53 feet long but not longer than 60 feet. The overall length of the tractor and semitrailer may not exceed 80 feet.

Slow on Interstate - This permit is valid only when no parallel route is available. Allows the movement of a vehicle that cannot maintain a speed of 40 miles per hour on interstate highways. The vehicle must display flashing warning lights and must be driven as far to the right as possible.

Determination: Mitigation Recommended – Dust mitigation, complying with the Codington County Haul Road Agreement, and acquiring necessary SD DOT Transportation Permits

8 – Fire Protection

The primary fire protection service within the 5-mile study area is provided by the South Shore Fire Department, a department operated by approximately 20 volunteer firefighters. A mutual aid agreement with Watertown Fire Rescue allows cooperation between the departments when additional resources are needed to respond to an emergency call.

Milbank Fire & Rescue

Fire Chief – David Giesen (605) 237-1053

Fire Protection: Provided by volunteer members of the department

Ambulance Service: Provided through Grant-Roberts Ambulance, Milbank, SD

South Shore Fire Department

Fire Chief – Dustin Gottschalk (605) 237-6275

Fire Protection: Provided by volunteer members of the department

Ambulance Service: Provided through Watertown Fire Rescue, Watertown, SD

Stockholm Fire Department

Fire Chief – Ryan Heckelder (605) 949-0909

Fire Protection: Provided by volunteer members of the department

Ambulance Service: Provided through Grant-Roberts Ambulance, Milbank, SD

Watertown Fire Rescue

Fire Chief – Don Rowland (605) 882-5030

Fire Protection: Provided by employees of the department

Ambulance Service: Provided by employees of the department

Developers of the Project should establish contact with the South Shore Fire Department and Watertown Fire Rescue prior to the start of construction to provide early education and response training to first responders to determine the capacities of each department to respond to a fire or ambulance call at the Project's site.

If additional equipment is needed by the departments to provide adequate emergency response services to the Project, then that equipment should be provided to the departments at the expense of the developer of the Project.

Determination: Mitigation Recommended – Fire department training and equipment, if needed

9 – Health

No healthcare facilities are located within the 5-mile study area. The construction and operation of the Project will have no direct impact on area healthcare facilities. Responder training should be provided to ambulance services that may be dispatched to the site in the event of an emergency.

Determination: Mitigation Recommended – Responder Training for Ambulance Services

10 – Recreation

Existing recreational facilities that will be impacted by the construction and operation of the Project are located in South Shore and Waverly. A summary of those recreational facilities can be found below.

South Shore

- Fitness Center
- Punished Woman Lake

Waverly

- Waverly-South Shore School facilities

Construction and operational workers are unlikely to significantly increase utilization of existing recreational facilities withing the 5-mile study area. A portion of the Project's construction workers are likely to occupy camper hook-up sites for the duration of project construction. This will create a short-term increase in the demand for camper hook-up sites. As there are few camper hook-up sites within the 5-mile study area, the anticipated construction timeframe will not result in a significant impact to recreational facilities within the 5-mile study area.

Determination: No Significant Impact

11 – Government

Governmental entities located within the 5-mile study area

- Codington County
- Grant County
- Town of South Shore
- Town of Waverly
- Milbank School District 25-4
- Waverly School District 14-5

Governmental Entity Permits Summary

The Project is located outside of any municipal boundaries and Codington County will be the primary governmental entity impacted for local permitting purposes. Grant County is within the 5-mile project area but will not be issuing any permits for the Project. The Codington County Board of Adjustment approved a conditional use permit (Appendix B) for the Project on May 20, 2024 that contains the following language:

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A conditional use permit from the Codington County Zoning Ordinance to operate a Substation with accessory operation & maintenance building/shop, and Battery Energy Storage Site has been granted by the Codington County Board of Adjustment

Property location:

o Zemlicka Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota; &

o Zemlicka Second Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota.

Conditions to be placed upon the conditional use permit issued to Crowned Ridge Wind, LLC and Crowned Ridge Energy Storage I, LLC on the above-described property, owned by Crowned Ridge Wind, LLC and Dewey Zemlicka, et. al. by the Codington County Board of Adjustment on May 20, 2024

1. The applicant apply existing/previously approved haul road agreements used for the wind energy system to this facility for the construction of the accessory batter storage site, unless determined unnecessary by the road authority.

2. Applicant is required to comply with all conditions and/or restrictions as applied by the SDPUC with applicable permits.

3. Applicant is required to prepare, implement, and maintain adherence to the emergency action plan referenced ln the application.

4. No batteries may be placed in an area over Zone C of the Aquifer Protection District.

5. The elevation of the battery site is shall be at a similar elevation to the existing grade, unless grading is determined necessary by the project engineer for drainage purposes or other relevant site plan considerations.

6. The applicant agrees to provide documentation that all battery components and facilities will meet or exceed applicable fire code requirements at the time of installation upon request by the Board-of Adjustment.

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The Project will need to adhere to all of the conditions outlined in the conditional use permit issued by the Codington County Board of Adjustment.

Governmental Entity Taxation Summary

The governmental entities that the Project construction and operation impacted should experience either no impact or a positive impact to taxation within their jurisdiction. No perceived negative impacts on taxation are anticipated as a result of construction or operation of the Project.

Land Values

Land values within the platted property improved by the Project are expected to increase. It is expected that property taxes within the platted property improved by the Project will also increase once construction of the Project is complete and property taxes are being collected.

Records of property sales and assessed value histories from properties located near two energy production facilities, Deer Creek Station located in Brookings County and Astoria Station located in Deuel County, were reviewed to determine if an impact on land values of properties located near those facilities could be established.

Deer Creek Station is a combined-cycle natural gas-powered facility producing up to 297 MW that became operational in 2012 and is located in section 25 – township 111 north – range 48 west.

Astoria Station is a simple-cycle natural gas-powered facility producing up to 245 MW that became operational in 2021 and is located in section 22 – township 113 north – range 48 west.

Property sales in the areas surrounding both facilities have continued to occur since they became operational. Assessed value histories of surrounding properties appears to have remained steady since both facilities became operational. Based on the review of those property sales and assessed value histories, it is unclear what impact that Deer Creek Station and Astoria Station have had on nearby properties in terms of land values.

No definitive cause and effect conclusion can be established as to what impact the Project will have on land values of nearby properties based on the aforementioned reviews.

Determination: Mitigation Recommended – Adhere to the Conditional Use Permit requirements issued by the Codington County Board of Adjustment.

12 – Energy

The following language is copied from the Project's Application to the PUC that is linked in the Executive Summary portion of this document: "The Project will be capable of storing excess power from the grid when production exceeds system demand (oversupply). If the grid has excess energy (e.g., during periods of low demand), this energy will be absorbed by the Project for later release. The Project will provide additional reliability for and deliverability to the grid by having the ability to store low-cost, excess generation (relative to load) and inject it into the grid at times of increased demand."

Crowned Ridge Energy has chosen a project site that can be developed without significant additional electrical infrastructure development because the site is adjacent to existing electrical substation and distribution infrastructure.

Determination: No Significant Impact

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Appendix B – Codington County Conditional Use Permit

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Appendix A – Crowned Ridge Battery Energy Storage System Application to the Public Utilities Commission of the State of South Dakota for a Facility Permit to Construct a 120-Megawatt Battery Energy Storage System

APPLICATION TO THE PUBLIC UTILITIES COMMISSION OF THE STATE OF SOUTH DAKOTA FOR A FACILITY PERMIT TO CONSTRUCT A 120-MEGAWATT BATTERY ENERGY STORAGE SYSTEM

CROWNED RIDGE BATTERY ENERGY STORAGE SYSTEM

Crowned Ridge Energy Storage I, LLC

May 14, 2026

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KEY TERMS AND ABBREVIATIONS

AC	alternating current
ARSD	South Dakota Administrative Rules
BESS	battery energy storage system
BESS Site	the approximately 7.8-acre area in the northern portion of the Project Area where aboveground Project facilities will exist for the life of the Project
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
BMS	battery management systems
Commission	South Dakota Public Utilities Commission
CRES	Crowned Ridge Energy Storage I, LLC
CRW	Crowned Ridge Wind Energy Facility
CRWII	Crowned Ridge II Wind Energy Facility
dBA	A-weighted decibel
DC	direct current
EMF	electric and magnetic fields
ERP	Emergency Response Plan
EMS	energy management system
FE	federally endangered
FEMA	Federal Emergency Management Administration
First District	First District Association of Local Governments
fmsl	feet above mean sea level
FT	federally threatened
GLO	General Land Office
IPaC	Information for Planning and Consultation
L_{eq}, dBA	A-weighted equivalent sound levels
MISO	Midcontinent Independent System Operator
MW	megawatt
mV	medium voltage
NEC	National Electrical Code
NextEra Energy Resources	NextEra Energy Resources, LLC
NFPA	National Fire Protection Association
NLCD	National Land Cover Database
NRCS	Natural Resources Conservation Service

O&M	operations and maintenance
NRHP	National Register of Historic Places
SRHP	State Register of Historic Places
PCS	power conversion system
PE	federally proposed endangered
PEM	palustrine emergent freshwater wetland characterized by emergent marsh, fen, or wet meadow
$PM_{2.5}$	particulate matter 2.5 microns in diameter or less
PM_{10}	particulate matter 10 microns in diameter or less
Project	the 120-megawatt BESS, including all components and ancillary facilities, for which CRES seeks a facility permit from the Commission
Project Area	the approximately 52.7-acre area that encompasses all areas of both temporary and permanent impacts for which CRES has executed a voluntary lease with purchase option agreement
PT	federally proposed threatened
ROW	right-of-way
SCADA	supervisory control and data acquisition
SDCL	South Dakota Codified Law
SDDANR	South Dakota Department of Agriculture and Natural Resources
SDDOT	South Dakota Department of Transportation
SDGFP	South Dakota Game, Fish and Parks
SPCC	spill prevention, control, and countermeasure plan
ST	state listed
SWCA	SWCA Environmental Consultants
SWPPP	stormwater pollution prevention plan
UL	Underwriters Laboratories
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service

COMPLETENESS CHECKLIST

South Dakota Codified Law (SDCL)*	South Dakota Administrative Rules (ARSD)	Required Information	Location in Application
49-41B-11(1) through (12); 49-41B-35(2)	20:10:22:05	***Application contents**. The application for a permit for a facility shall contain a list of each permit that is known to be required from any other governmental entity at the time of the filing. The list of permits shall be updated, if needed, to include any permit the applicant becomes aware of after filing the application. The list shall state when each permit application will be filed. The application shall also list each notification that is required to be made to any other governmental entity.*	Section 29
49-41B-35; 49-41B-11(1)	20:10:22:06	***Names of participants required**. The application shall contain the name, address, and telephone number of all persons participating in the proposed facility at the time of filing, as well as the names of any individuals authorized to receive communications relating to the application on behalf of those persons.*	Section 3
49-41B-35; 49-41B-11(7)	20:10:22:07	***Name of owner and manager**. The application shall contain a complete description of the current and proposed rights of ownership of the proposed facility. It shall also contain the name of the project manager of the proposed facility.*	Section 3
49-41B-11(8)	20:10:22:08	***Purpose of facility**. The applicant shall describe the purpose of the proposed facility.*	Section 1; Section 4
49-41B-11(12)	20:10:22:09	***Estimated cost of facility**. The applicant shall describe the estimated construction cost of the proposed facility.*	Section 5
49-41B-11(9)	20:10:22:10	***Demand for facility**. The applicant shall provide a description of present and estimated consumer demand and estimated future energy needs of those customers to be directly served by the proposed facility. The applicant shall also provide data, data sources, assumptions, forecast methods or models, or other reasoning upon which the description is based. This statement shall also include information on the relative contribution to any power or energy distribution network or pool that the proposed facility is projected to supply and a statement on the consequences of delay or termination of the construction of the facility.*	Section 6
49-41B-11	20:10:22:11	***General site descriptions**. The application shall contain a general site description of the proposed facility including a description of the specific site and its location with respect to state, county, and other political subdivisions; a map showing prominent features such as cities, lakes and rivers; and maps showing cemeteries, places of historical significance, transportation facilities, or other public facilities adjacent to or abutting the plant or transmission site.*	Section 2; Appendix A, Figures A-1, A-2a, A-2b
49-41B-35(2); 49-41B-11(6); 49-41B-21; 34A-9-7(4)	20:10:22:12	***Alternative sites**. The applicant shall present information related to the selection of the proposed site for the facility, including the following:* *(1) The general criteria used to select alternative sites, how these criteria were measured and weighed, and reasons for selecting these criteria;* *(2) An evaluation of alternative sites considered by the applicant for the facility;* *(3) An evaluation of the proposed plant, wind energy, or transmission site and its advantages over the other alternative sites considered by the applicant, including a discussion of the extent to which reliance upon eminent domain powers could be reduced by use of an alternative site, alternative generation method, or alternative waste handling method.*	Section 8; Appendix A, Figure A-5

South Dakota Codified Law (SDCL)*	South Dakota Administrative Rules (ARSD)	Required Information	Location in Application
49-41B-11(11); 49-41B-21; 49-41B-22(2)	20:10:22:13	***Environmental information**. The applicant shall provide a description of the existing environment at the time of the submission of the application, estimates of changes in the existing environment which are anticipated to result from construction and operation of the proposed facility, and identification of irreversible changes which are anticipated to remain beyond the operating lifetime of the facility. The environmental effects shall be calculated to reveal and assess demonstrated or suspected hazards to the health and welfare of human, plant and animal communities which may be cumulative or synergistic consequences of siting the proposed facility in combination with any operating energy conversion facilities, existing or under construction. The applicant shall provide a list of other major industrial facilities under regulation which may have an adverse effect on the environment as a result of their construction or operation in the transmission site, wind energy site, or siting area.*	Sections 9–18
49-41B-11(11); 49-41B-22(2)	20:10:22:14	***Effect on physical environment**. The applicant shall provide information describing the effect of the proposed facility on the physical environment. The information shall include:* *(1) A written description of the regional land forms surrounding the proposed plant or wind energy site or through which the transmission facility will pass;* *(2) A topographic map of the plant, wind energy, or transmission site;* *(3) A written summary of the geological features of the plant, wind energy, or transmission site using the topographic map as a base showing the bedrock geology and surficial geology with sufficient cross-sections to depict the major subsurface variations in the siting area;* *(4) A description and location of economic deposits such as lignite, sand and gravel, scoria, and industrial and ceramic quality clay existent within the plant, wind energy, or transmission site;* *(5) A description of the soil type at the plant, wind energy, or transmission site;* *(6) An analysis of potential erosion or sedimentation which may result from site clearing, construction, or operating activities and measures which will be taken for their control;* *(7) Information on areas of seismic risks, subsidence potential and slope instability for the plant, wind energy, or transmission site; and* *(8) An analysis of any constraints that may be imposed by geological characteristics on the design, construction, or operation of the proposed facility and a description of plans to offset such constraints.*	Section 10; Appendix A, Figures A-2a and A-7

South Dakota Codified Law (SDCL)*	South Dakota Administrative Rules (ARSD)	Required Information	Location in Application
49-41B-11(11); 49-41B-21; 49-41B-22(2)	20:10:22:15	***Hydrology.*** *The applicant shall provide information concerning the hydrology in the area of the proposed plant, wind energy, or transmission site and the effect of the proposed site on surface and groundwater. The information shall include:* *(1) A map drawn to scale of the plant, wind energy, or transmission site showing surface water drainage patterns before and anticipated patterns after construction of the facility;* *(2) Using plans filed with any local, state, or federal agencies, indication on a map drawn to scale of the current planned water uses by communities, agriculture, recreation, fish, and wildlife which may be affected by the location of the proposed facility and a summary of those effects;* *(3) A map drawn to scale locating any known surface or groundwater supplies within the siting area to be used as a water source or a direct water discharge site for the proposed facility and all offsite pipelines or channels required for water transmission;* *(4) If aquifers are to be used as a source of potable water supply or process water, specifications of the aquifers to be used and definition of their characteristics, including the capacity of the aquifer to yield water, the estimated recharge rate, and the quality of ground water;* *(5) A description of designs for storage, reprocessing, and cooling prior to discharge of heated water entering natural drainage systems; and* *(6) If deep well injection is to be used for effluent disposal, a description of the reservoir storage capacity, rate of injection, and confinement characteristics and potential negative effects on any aquifers and groundwater users which may be affected.*	Section 11; Appendix A, Figure A-9
49-41B-11(11); 49-41B-21; 49-41B-22(2)	20:10:22:16	***Effect on terrestrial ecosystems****. The applicant shall provide information on the effect of the proposed facility on the terrestrial ecosystems, including existing information resulting from biological surveys conducted to identify and quantify the terrestrial fauna and flora potentially affected within the transmission site, wind energy site, or siting area; an analysis of the impact of construction and operation of the proposed facility on the terrestrial biotic environment, including breeding times and places and pathways of migration; important species; and planned measures to ameliorate negative biological impacts as a result of construction and operation of the proposed facility.*	Section 12
49-41B-11(11); 49-41B-21; 49-41B-22(2)	20:10:22:17	***Effect on aquatic ecosystems****. The applicant shall provide information of the effect of the proposed facility on aquatic ecosystems, and including existing information resulting from biological surveys conducted to identify and quantify the aquatic fauna and flora, potentially affected within the transmission site, wind energy site, or siting area, an analysis of the impact of the construction and operation of the proposed facility on the total aquatic biotic environment and planned measures to ameliorate negative biological impacts as a result of construction and operation of the proposed facility.*	Section 13

South Dakota Codified Law (SDCL)*	South Dakota Administrative Rules (ARSD)	Required Information	Location in Application
49-41B-11(11); 49-41B-22(2)	20:10:22:18	***Land use**. The applicant shall provide the following information concerning present and anticipated use or condition of the land:* *(1) A map or maps drawn to scale of the plant, wind energy, or transmission site identifying existing land use according to the following classification system:* *(a) Land used primarily for row and nonrow crops in rotation;* *(b) Irrigated lands;* *(c) Pasturelands and rangelands;* *(d) Haylands;* *(e) Undisturbed native grasslands;* *(f) Existing and potential extractive nonrenewable resources;* *(g) Other major industries;* *(h) Rural residences and farmsteads, family farms, and ranches* *(i) Residential;* *(j) Public, commercial, and institutional use;* *(k) Municipal water supply and water sources for organized rural water systems; and* *(l) Noise sensitive land uses;* *(2) Identification of the number of persons and homes which will be displaced by the location of the proposed facility;* *(3) An analysis of the compatibility of the proposed facility with present land use of the surrounding area, with special attention paid to the effects on rural life and the business of farming; and* *(4) A general analysis of the effects of the proposed facility and associated facilities on land uses and the planned measures to ameliorate adverse impacts.*	Section 14; Appendix A, Figure A-2b
49-41B-11; 49-41B-28	20:10:22:19	***Local land use controls**. The applicant shall provide a general description of local land use controls and the manner in which the proposed facility will comply with the local land use zoning or building rules, regulations or ordinances. If the proposed facility violates local land use controls, the applicant shall provide the commission with a detailed explanation of the reasons why the proposed facility should preempt the local controls. The explanation shall include a detailed description of the restrictiveness of the local controls in view of existing technology, factors of cost, economics, needs of parties, or any additional information to aid the commission in determining whether a permit may supersede or preempt a local control pursuant to SDCL 49-41B-28.*	Section 15
49-41B-11	20:10:22:20	***Water quality**. The applicant shall provide evidence that the proposed facility will comply with all water quality standards and regulations of any federal or state agency having jurisdiction and any variances permitted.*	Section 16
49-41B-11; 49-41B-21; 49-41B-22	20:10:22:21	***Air quality**. The applicant shall provide evidence that the proposed facility will comply with all air quality standards and regulations of any federal or state agency having jurisdiction and any variances permitted.*	Section 17
49-41B-11(3)	20:10:22:22	***Time schedule**. The applicant shall provide estimated time schedules for accomplishment of major events in the commencement and duration of construction of the proposed facility.*	Section 7.4.1

South Dakota Codified Law (SDCL)*	South Dakota Administrative Rules (ARSD)	Required Information	Location in Application
49-41B-11(3); 49-41B-22	20:10:22:23	***Community Impact.*** *The applicant shall include an identification and analysis of the effects the construction, operation, and maintenance of the proposed facility will have on the anticipated affected area including the following:* *(1) A forecast of the impact on commercial and industrial sectors, housing, land values, labor market, health facilities, energy, sewage and water, solid waste management facilities, fire protection, law enforcement, recreational facilities, schools, transportation facilities, and other community and government facilities or services;* *(2) A forecast of the immediate and long-range impact of property and other taxes of the affected taxing jurisdictions;* *(3) A forecast of the impact on agricultural production and uses;* *(4) A forecast of the impact on population, income, occupational distribution, and integration and cohesion of communities;* *(5) A forecast of the impact on transportation facilities;* *(6) A forecast of the impact on landmarks and cultural resources of historic, religious, archaeological, scenic, natural, or other cultural significance. The information shall include the applicant's plans to coordinate with the local and state office of disaster services in the event of accidental release of contaminants from the proposed facility; and* *(7) An indication of means of ameliorating negative social impact of the facility development.*	Section 18
49-41B-11	20:10:22:24	***Employment estimates****. The application shall contain the estimated number of jobs and a description of job classifications, together with the estimated annual employment expenditures of the applicants, the contractors, and the subcontractors during the construction phase of the proposed facility. In a separate tabulation, the application shall contain the same data with respect to the operating life of the proposed facility, to be made for the first ten years of commercial operation in one-year intervals. The application shall include plans of the applicant for utilization and training of the available labor force in South Dakota by categories of special skills required. There shall also be an assessment of the adequacy of local manpower to meet temporary and permanent labor requirements during construction and operation of the proposed facility and the estimated percentage that will remain within the county and the township in which the facility is located after construction is completed.*	Section 19
49-41B-11(5)	20:10:22:25	***Future additions and modifications.*** *The applicant shall describe any plans for future modification or expansion of the proposed facility or construction of additional facilities which the applicant may wish to be approved in the permit.*	Section 20

South Dakota Codified Law (SDCL)*	South Dakota Administrative Rules (ARSD)	Required Information	Location in Application
49-41B-11; 49-41B-21; 49-41B-22	20:10:22:26	***Nature of proposed energy conversion facility**. The application shall contain a description of the operating nature of the proposed facility, the expected source and quantity of its raw materials, and energy requirements. The preceding shall be illustrated by means of an annotated map. The description shall include the following:* *(1) The proposed on-line life of the facility and its projected operating capacity during its on-line life;* *(2) A general description of the major components of the proposed facility such as boilers, steam generators, turbine generators, cooling facilities, production equipment, pollution control equipment, and other associated facilities;* *(3) An identification of materials flowing into the facility, including all materials such as air, water, coal, and chemical compounds that will be utilized by the proposed facility, recorded in accordance with accepted scientific practices regarding their estimated consumption rate;* *(4) An inventory of all materials flowing out of the proposed facility, including the method of control, treatment, destination, and disposal monitoring programs of each of the materials; and* *(5) The procedures proposed to avoid or ameliorate the possibility that the discharges, emissions, or solid wastes would do any of the following:* *(a) Constitute a public nuisance;* *(b) Endanger the public health and safety;* *(c) Endanger human, animal, or plant life; or* *(d) Endanger recreational facilities.*	Section 21
49-41B-11	20:10:22:27	***Products to be produced**. The applicant shall describe both in general terms and by technical description the products and by-products to be produced by the proposed facility and their destinations.*	Section 22
49-41B-11	20:10:22:28	***Fuel type used**. The applicant shall provide a description of the type of fuel used, including:* *(1) Primary proposed fuel types;* *(2) Anticipated yield and range (BTU or appropriate unit); and* *(3) Approximate chemical analysis of the proposed design fuel.*	Section 23
49-41B-11	20:10:22:29	***Proposed primary and secondary fuel sources and transportation**. On a map drawn to scale, the applicant shall provide the location of proposed primary and secondary sources of fuel and method of its transportation. When possible, the map shall show the location of the proposed facility; where distances are too great to show the facility and proposed primary and alternate supply sources, smaller scale inserts showing relative location shall be presented. The applicant shall also describe any additional transportation facilities needed to deliver raw materials and to remove wastes.*	Section 24
49-41B-11; 49-41B-21; 34A-9-7(4)	20:10:22:30	***Alternative energy resources**. The applicant shall provide information concerning the alternate energy resources considered in the construction of the energy conversion facility. The applicant shall also discuss the reasons for selecting the proposed energy resource rather than an alternative resource.*	Section 25
49-41B-11	20:10:22:31	***Solid or radioactive waste**. The applicant shall provide information concerning the generation, treatment, storage, transport, and disposal of solid or radioactive waste generated by the proposed facility and evidence that all disposal of the waste will comply with the standards and regulations of any federal or state agency having jurisdiction. Any variations from these standards shall be indicated.*	Section 26

South Dakota Codified Law (SDCL)*	South Dakota Administrative Rules (ARSD)	Required Information	Location in Application
49-41B-11; 49-41B-21; 49-41B-22; 34A-9-7(2)(5)	20:10:22:32	***Estimate of expected efficiency**. The applicant shall provide an estimate of the expected efficiency of the proposed energy conversion process and discuss the assumptions on which the estimate is based.*	Section 27
49-41B-35(3)	20:10:22:33.01	***Decommissioning**. The applicant shall provide a plan or policy statement on action to be taken at the end of the energy conversion facility's on-line life. Estimates of monetary costs, site condition after decommissioning, and the amount of land irretrievably committed shall be included in this statement.*	Section 28
49-41B-11	20:10:22:05	***Application contents.** The application for a permit for a facility shall contain a list of each permit that is known to be required from any other governmental entity at the time of the filing. The list of permits shall be updated, if needed, to include any permit the applicant becomes aware of after filing the application. The list shall state when each permit application will be filed. The application shall also list each notification that is required to be made to any other governmental entity.*	Section 29
49-41B-11	20:10:22:33.02	***Information concerning wind energy facilities and solar energy facilities.** If a wind energy facility or solar energy facility is proposed, the applicant shall provide the following information:* *(1) Configuration of the wind turbines, including the distance measured from ground level to the blade extended at its highest point, distance between the wind turbines, type of material, and color - or configuration of the solar panels;* *(2) The number of wind turbines or solar panels, including the number of anticipated additions of wind turbines or solar panels in each of the next five years;* *(3) Any warning lighting requirements for the wind turbines;* *(4) Setback distances from off-site buildings, rights-of-way of public roads, and property lines;* *(5) Anticipated noise levels at the exterior of all occupied residences located within the affected area during construction and operation;* *(6) Anticipated electromagnetic interference during operation of the facilities;* *(7) The proposed wind energy site or solar energy site and alternative site locations as depicted on overhead photographs and land use culture maps;* *(8) Reliability and safety;* *(9) Right-of-way or condemnation requirements;* *(10) Necessary clearing activities;* *(11) Configuration of towers and poles for any electric interconnection facilities, including material, overall height, and width;* *(12) Conductor configuration and size, length of span between structures, and number of circuits per pole or tower for any electric interconnection facilities; and* *(13) If any underground collection facilities are placed, the depth of burial, distance between access points, conductor configuration and size, and number of circuits.*	Section 7

South Dakota Codified Law (SDCL)*	South Dakota Administrative Rules (ARSD)	Required Information	Location in Application
49-41B-7; 49-41B-22	20:10:22:36	***Additional information in application.*** *The applicant shall also submit as part of the application any additional information necessary for the local review committees to assess the effects of the proposed facility pursuant to SDCL 49-41B-7. The applicant shall also submit as part of its application any additional information necessary to meet the burden of proof specified in SDCL 49-41B-22. Applicant's burden of proof. The applicant has the burden of proof to establish that:* *(1) The proposed facility will comply with all applicable laws and rules;* *(2) The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area;* *(3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and* *(4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.*	Section 31
49-41B-11; 49-41B-22	20:10:22:39	***Testimony and exhibits****. Upon the filing of an application pursuant to SDCL 49-41B-11, an applicant shall also file all data, exhibits, and related testimony which the applicant intends to submit in support of its application. The application shall specifically show the witnesses supporting the information contained in the application.*	Section 32
49-41B-11	20:10:22:04 (5)	***Applicant's verification.*** *The truth and accuracy of the application shall be verified by the applicant. Each application shall be considered to be a continuing application, and the applicant must immediately notify the commission of any changes of facts or applicable law materially affecting the application. This duty continues up to and includes the date on which the permit is issued or denied.*	Section 33

* General Authority: SDCL 49-41B-35.

1 INTRODUCTION

Crowned Ridge Energy Storage I, LLC (CRES), a wholly owned, indirect subsidiary of NextEra Energy Resources, LLC (NextEra Energy Resources), submits this application for a facility permit to construct and operate a 120-megawatt (MW) battery energy storage system (BESS) (Project) to store excess energy available on the grid. The Project is proposed to be located within the existing Crowned Ridge Wind Energy Facility (CRW) project area[1], which is owned and operated by CRES's affiliate, Crowned Ridge Wind, LLC, in Codington County, South Dakota (Appendix A, Figure A-1).

The Project includes a 120-MW, 4-hour duration BESS facility with associated inverters; transformers; medium voltage (mV) collection cables; and other ancillary facilities, such as fencing, roads, and a supervisory control and data acquisition (SCADA) system. The Project will connect to the existing CRW Collector Substation via approximately 2,215-foot-long mV collection cables. The Project Area encompasses all areas of both temporary and permanent impacts and comprises approximately 52.7 acres of property for which CRES has executed a voluntary lease with purchase option agreement. CRES expects to start construction in May 2027 with commercial operation anticipated in May 2028. The BESS is expected to occupy approximately 7.8 acres within this Project Area following construction. The Project's anticipated lifespan is 35 years.

The Project will be capable of storing excess power from the grid when production exceeds system demand (oversupply). If the grid has excess energy (e.g., during periods of low demand), this energy will be absorbed by the Project for later release. The Project will provide additional reliability for and deliverability to the grid by having the ability to store low-cost, excess generation (relative to load) and inject it into the grid at times of increased demand.

Pursuant to South Dakota Codified Law (SDCL) 49-41B-11, CRES is filing this application following the permitting process for an energy conversion facility in accordance with South Dakota Administrative Rules (ARSD) 20:10:22. In this application, CRES presents the information required by the South Dakota Public Utilities Commission's (Commission's) siting rules. Information regarding Project design, construction, and operation has been included in this application to allow a thorough understanding of the Project and to aid review by the Commission, regulatory agencies, and the public.

CRES seeks a facility permit for the Project Area, rather than for specific infrastructure locations. This process allows flexibility in determining the final equipment layout as the design is finalized and specific technology is selected. A preconstruction conference call will be held with Commission staff to ensure that the final Project site plan conforms to the facility permit requirements. This siting process is consistent with South Dakota siting rules; consistent with Commission precedent; and provides CRES with the flexibility necessary to develop a timely, safe, cost-effective project in an environmentally responsible manner.

2 GENERAL SITE DESCRIPTION (ARSD 20:10:22:11)

ARSD 20:10:22:11. General site description. *The application shall contain a general site description of the proposed facility including a description of the specific site and its location with respect to state, county, and other political subdivisions; a map showing prominent features such as cities, lakes and rivers; and maps showing cemeteries, places of historical significance, transportation facilities, or other public facilities adjacent to or abutting the plant or transmission site.*

[1] The CRW was approved by the Codington County Planning Commission/Board of Adjustment on July 16, 2018, and by the South Dakota Public Utilities Commission (Commission) on July 26, 2019 (Commission Docket No. EL 19-003).

Appendix A, Figure A-1, shows the Project Area with respect to state, county, and other political subdivisions, as well as prominent features such as cities, lakes and rivers, and transportation facilities. No cemeteries, places of historic significance, or public facilities are adjacent to or abut the Project Area.

The Project Area is in Sections 2 and 1, Township 118 North, Range 51 West (Appendix A, Figures A-2a–A-2b). The Project Area encompasses approximately 52.7 acres southeast of the intersection of 464th Avenue and 161st Street in Codington County, South Dakota. Mapped land cover according to the National Land Cover Database (NLCD) within the Project Area is listed in Table 2-1 (NLCD 2025) and shown in Appendix A, Figure A-3. However, much of the Project Area has been previously disturbed, and no forested areas, woodlots, or tree lines are currently present. No human-made structures such as buildings, barns, or bridges are present in the Project Area except for the substation and one operating wind turbine.

Table 2-1. NLCD-Mapped Land Cover within the Project Area

Land Cover Type	Acres	Percentage of Total
Cultivated Crops	37.7	71.6%
Grassland/Herbaceous	9.4	17.9%
Deciduous Forest	2.7	5.2%
Pasture/Hay	1.1	2.1%
Developed Open Space	0.9	1.7%
Developed Low Intensity	0.4	0.8%
Developed Medium Intensity	0.4	0.8%
Total	**52.7**	**100.1%**

Source: NLCD (2025).

Note: The Project Area is zoned as agricultural (Agricultural Zoning District). Public utilities are considered permissible as a conditional use in the Agricultural Zoning District. CRES applied for a conditional use permit to Codington County on February 22, 2024, for the CRW Collector Substation with a BESS. CRES obtained the conditional use permit from Codington County on May 20, 2024 (Appendix B). CRES is coordinating with Codington County to apply for an extension to the conditional use permit before June 2026.

* Totals may be off slightly due to rounding.

Within the Project Area, CRES anticipates that up to an estimated 32.6 acres may be temporarily impacted for the construction of the Project. Temporary impacts will occur in the northern portion of the Project Area, along the collection cable route between the BESS and the existing substation, and in access areas. Following construction, aboveground Project facilities will occupy only approximately 7.8 acres in the northern portion of the Project Area. This area, where aboveground facilities will exist for the life of the Project, is referred to herein as the BESS Site. Detailed site plans are found in Appendix C.

3 NAME OF OWNER, MANAGER, AND PARTICIPANTS (ARSD 20:10:22:06; 20:10:22:07)

ARSD 20:10:22:06. Names of participants required*. The application shall contain the name, address, and telephone number of all persons participating in the proposed facility at the time of filing, as well as the names of any individuals authorized to receive communications relating to the application on behalf of those persons.*

ARSD 20:10:22:07. Name of owner and manager*. The application shall contain a complete description of the current and proposed rights of ownership of the proposed facility. It shall also contain the name of the project manager of the proposed facility.*

The individual authorized to receive communications relating to this application on behalf of Crowned Ridge Energy Storage I, LLC is:

Crowned Ridge Energy Storage I, LLC
Daulton Pearson, Lead Project Manager, Development
c/o NextEra Energy Resources, LLC
700 Universe Boulevard
Juno Beach, Florida 33408

The owner and manager of the proposed Project is Crowned Ridge Energy Storage I, LLC, a wholly-owned indirect subsidiary of NextEra Energy Resources, LLC. The contact person is:

Crowned Ridge Energy Storage I, LLC
Daulton Pearson, Lead Project Manager, Development
c/o NextEra Energy Resources, LLC
700 Universe Boulevard
Juno Beach, Florida 33408

NextEra Energy Resources, LLC, through its subsidiaries and affiliates, develops energy generation projects throughout the United States and Canada with a strategic focus centered on the development, construction, and operation of long-term contracted generation facilities, including renewables, nuclear, and natural gas, as well as battery storage facilities. NextEra Energy Resources, LLC, is a world leader in battery energy storage, with more than approximately 3,000 MW of operational energy storage capacity. In South Dakota, NextEra Energy Resources, LLC, subsidiaries own and/or operate four wind facilities with additional wind energy and energy storage projects currently in development. Since 2003, NextEra Energy Resources, LLC's, subsidiaries have been helping fuel South Dakota's economic growth, improving quality of life, and moving the state and country toward energy independence. NextEra Energy Resources, LLC's, subsidiaries design, construct, and operate their facilities in an environmentally sound and responsible manner.

4 PURPOSE OF FACILITY (ARSD 20:10:22:08)

ARSD 20:10:22:08. Purpose of facility. *The applicant shall describe the purpose of the proposed facility.*

The purpose of the Project is to store excess power from the grid when production exceeds system demand (oversupply). If the grid has excess energy (e.g., during periods of low demand), this energy will be absorbed by the Project for later release. The Project will provide additional reliability for and deliverability to the grid by having the ability to store low-cost, excess generation (relative to load) and inject it into the grid at times of increased demand.

Utility-scale BESS facilities, like the Project, enhance grid resilience during extreme weather events and disruptions by providing immediate backup power, stabilizing grid operations, and integrating renewable energy. BESS facilities can store energy during low demand and release it during peak demand, maintaining grid stability and reducing outages. BESS facilities also support critical infrastructure during emergencies. Quick response times and demand management capabilities make BESS essential for ensuring continuous, reliable power, even in adverse conditions.

5 ESTIMATED COST OF FACILITY (ARSD 20:10:22:09)

ARSD 20:10:22:09. Estimated cost of facility. *The applicant shall describe the estimated construction cost of the proposed facility.*

The current estimated cost of construction for the Project is $174 million. This includes all construction of BESS facilities, including costs associated with the construction of the Project's approximately 2,215-foot-long mV collection cables between the BESS and the existing CRW Collector Substation. Estimated costs are based on preliminary engineering and are subject to change based on the final Project design and marketplace escalation before contracts are executed. The cost estimates for the Project are based on CRES's affiliates' experience and the actual costs incurred for constructing prior similar projects. CRES then updated these data based on market conditions and included a risk reserve for unknown variables, such as unfavorable weather conditions, additional environmental or cultural mitigation measures, and material/contractor pricing.

6 DEMAND FOR FACILITY (20:10:22:10)

ARSD 20:10:22:10. Demand for facility. *The applicant shall provide a description of present and estimated consumer demand and estimated future energy needs of those customers to be directly served by the proposed facility. The applicant shall also provide data, data sources, assumptions, forecast methods or models, or other reasoning upon which the description is based. This statement shall also include information on the relative contribution to any power or energy distribution network or pool that the proposed facility is projected to supply and a statement on the consequences of delay or termination of the construction of the facility.*

The Project will provide dispatchable capacity next to an existing wind resource, allowing the offtaker, Northern States Power, to deliver reliable energy during peak demand periods, reduce reliance on higher-cost peaking generation, and better balance volatility on the grid of the Midcontinent Independent System Operator (MISO), the system operator. CRES executed an Energy Storage Agreement with Northern States Power on October 24, 2025, which has a term of 15 years. The Project will share the CRW Collector Substation, and the interconnection of the Project has been studied by MISO. CRES will execute a Surplus Interconnection Service Generator Interconnection Agreement with the interconnecting transmission utility, Otter Tail Power Company, and MISO, which it anticipates executing in June 2026. The interconnection agreement will allow the BESS to connect to the grid through the shared use of the existing CRW Collector Substation and transmission line without exceeding the original interconnection limit of the CRW's Generator Interconnection Agreement. Therefore, the combined energy output will not exceed the original wind interconnection limits.

The loss or delay of planned capacity associated with the Project would reduce reserve margins and require reliance on higher-cost, short-term alternatives, placing upward pressure on electricity rates. It would also delay critical infrastructure and reliability improvements while introducing uncertainty into future planning efforts needed to meet growing demand in a timely and cost-effective manner.

7 INFORMATION CONCERNING THE PROJECT (ARSD 20:10:22:33.02)

ARSD 20:10:22:33.02. Information concerning wind energy facilities and solar energy facilities*. If a wind energy facility or solar energy facility is proposed, the applicant shall provide the following information:*

Detailed information regarding Project components, as required by ARSD 20:10:33:02 and applicable to a BESS project, is provided in this section and in other sections of this application, as shown in Table 7-1.

Table 7-1. Location of Information Provided as Required by ARSD 20:10:22:33.02 Relevant to the BESS Project

Required Information	Location in Application
(1) Configuration of the wind turbines, including the distance measured from ground level to the blade extended at its highest point, distance between the wind turbines, type of material, and color - or configuration of the solar panels;	Section 7.1; Appendix A, Figure A-4
(2) The number of wind turbines or solar panels, including the number of anticipated additions of wind turbines or solar panels in each of the next five years;	Section 7.1
(3) Any warning lighting requirements for the wind turbines;	Not applicable; the Project does not include installation of lighting.
(4) Setback distances from off-site buildings, rights-of-way of public roads, and property lines;	Section 7.3; Appendix A, Figure A-4
(5) Anticipated noise levels at the exterior of all occupied residences located within the affected area during construction and operation;	Section 14.2
(6) Anticipated electromagnetic interference during operation of the facilities;	Section 7.7
(7) The proposed wind energy site or solar energy site and alternative site locations as depicted on overhead photographs and land use culture maps;	Section 8; Appendix A, Figures A-1, A-2a, A-4, and A-5
(8) Reliability and safety;	Section 7.6
(9) Right-of-way or condemnation requirements;	Section 8.3
(10) Necessary clearing activities;	Section 7.4.4
(11) Configuration of towers and poles for any electric interconnection facilities, including material, overall height, and width;	Section 7.1; Appendix A, Figure A-4
(12) Conductor configuration and size, length of span between structures, and number of circuits per pole or tower for any electric interconnection facilities; and	Section 7.1; Appendix A, Figure A-4
(13) If any underground collection facilities are placed, the depth of burial, distance between access points, conductor configuration and size, and number of circuits.	Section 7.1.11

7.1 Site Configuration and Components

7.1.1 Batteries

Individual lithium-ion battery cells are proposed to form the core of the BESS. Battery cells are connected in series and parallel configurations and enclosed within sealed battery modules. CRES will install battery modules in self-supporting racks that are electrically connected either in series or parallel. Individual self-supporting racks are then connected in series or parallel to deliver the BESS power rating.

CRES will initially install approximately 126 BESS cabinets for the Project. To maintain the Project's required energy capacity over its operational life, periodic augmentation will be planned to offset the anticipated gradual capacity reduction in the original battery systems. CRES will install additional augmentation equipment throughout the life of the Project, including approximately 24 additional BESS cabinets. The final numbers may change depending on final design and technology changes at the time of augmentation.

7.1.2 Battery Management and Energy Management Systems

BESS cabinets will house the batteries and the battery management systems (BMS). The BMSs are used in conjunction with the Project-wide energy management system (EMS) to monitor battery voltage, current, temperature, charge, discharge, thermal management, fault diagnosis, five-alarm monitoring, and more. The BMS will function independently of external signals to protect the battery from overcharge, overdischarge, and other fault conditions. Together, the BMS and EMS form a multi-level structure designed to provide controls for the battery cabinets and power conversion system (PCS) up to the point of connection with the CRW Collector Substation. The BMS and EMS will ensure that the BESS effectively responds to dispatch instructions and provides a secondary safety system designed to safely shut down the BESS in the event of an emergency.

7.1.3 System Cabinets

Each BESS cabinet has a self-contained system cabinet that houses the control, communication, protection, and auxiliary equipment needed to operate the battery system, such as the BMS, fire alarm control panel, thermal management system, controllers, breakers, and power distribution components (Images 7-1–7-3). System cabinets are in separate compartments or sections of the enclosure, allowing technicians to access controls, breakers, and communication equipment without being exposed to the battery modules. The height of an individual cabinet will not exceed 25 feet.



Image 7-1. Example of a self-contained energy storage system cabinet.
Photograph courtesy of NextEra Energy Resources.



Image 7-2. Example of a self-contained energy storage system cabinet.
Photograph courtesy of NextEra Energy Resources.



Image 7-3. Example of a self-contained energy storage system cabinet.
Photograph courtesy of NextEra Energy Resources.

7.1.3.1 HEATING, VENTILATION, AND AIR CONDITIONING

Each energy storage system cabinet will be equipped with heating, ventilation, air conditioning, and liquid cooling or other thermal management systems for thermal management of batteries. Power for the thermal management systems will be provided through excess capacity in the batteries when charging and discharging or via the grid when idle.

7.1.3.2 FIRE DETECTION AND PROTECTION SYSTEMS

CRES will incorporate fire detection systems into the BESS design in accordance with National Fire Protection Association (NFPA) safety standards, applicable Codington County requirements, and codes applicable to stationary energy storage. These systems will be tied to a central fire alarm control panel and have a dedicated fire network for communication with NextEra Energy Resources' Renewable Operations Control Center.

7.1.4 Power Conversion System

The PCS will consist of an inverter, protection equipment, direct current (DC) and alternating current (AC) circuit breakers, filter equipment, equipment terminals, and a connection cabling system. Electric energy is transferred from the existing power grid to the batteries during a battery charging cycle and from the batteries to the grid during a battery discharge cycle. The PCS converts electric energy from AC to DC when energy is transferred from the grid to the battery and from DC to AC when energy is transferred from the battery to the grid. The energy conversion is enabled by a bidirectional inverter that connects the DC battery system to the AC electrical grid. The PCS will also include a transformer that converts the low-voltage AC side output of the inverter to medium AC voltage to facilitate interconnection and to increase the overall efficiency of the BESS. The transformer and associated protection equipment also safeguard the PCS in the event of system electrical faults.

CRES will initially install approximately 46 PCSs for the Project. To maintain the Project's required energy capacity over its operational life, periodic augmentation will be planned to offset the anticipated gradual capacity reduction in the original battery systems. CRES will install additional augmentation equipment throughout the life of the Project, including approximately four additional PCSs. The final numbers may change depending on final design and technology changes at the time of augmentation.

7.1.5 Sound Wall

CRES will install a 20-foot-high sound wall along approximately 860 feet of the BESS Site in the northwest corner (Image 7-4; Appendix A, Figure A-4). The wall will block line-of-sight sound transmission originating from the BESS equipment (see Section 14.2). The wall is expected to comprise precast concrete with galvanized steel posts. The sound wall will also be weather-resistant and will consider use of aesthetic features.



Image 7-4. Example of a sound wall.

Photograph courtesy of Dura-Crete Walls and NextEra Energy Resources.

7.1.6 Site Access and Parking

Access to the BESS Site will be off 464th Avenue and 161st Street (see Appendix A, Figure A-4). Access roads will comprise compacted soil topped with an approximately 8-inch-thick aggregate base (e.g., crushed rock). Each entrance to the BESS Site will be gated with an approximately 40-foot-tall swing gate and locked. Site access will comply with Codington County Fire Protection District requirements. On-site parking spaces will be provided in open gravel areas and in accordance with Codington County requirements.

7.1.7 Fencing and Security

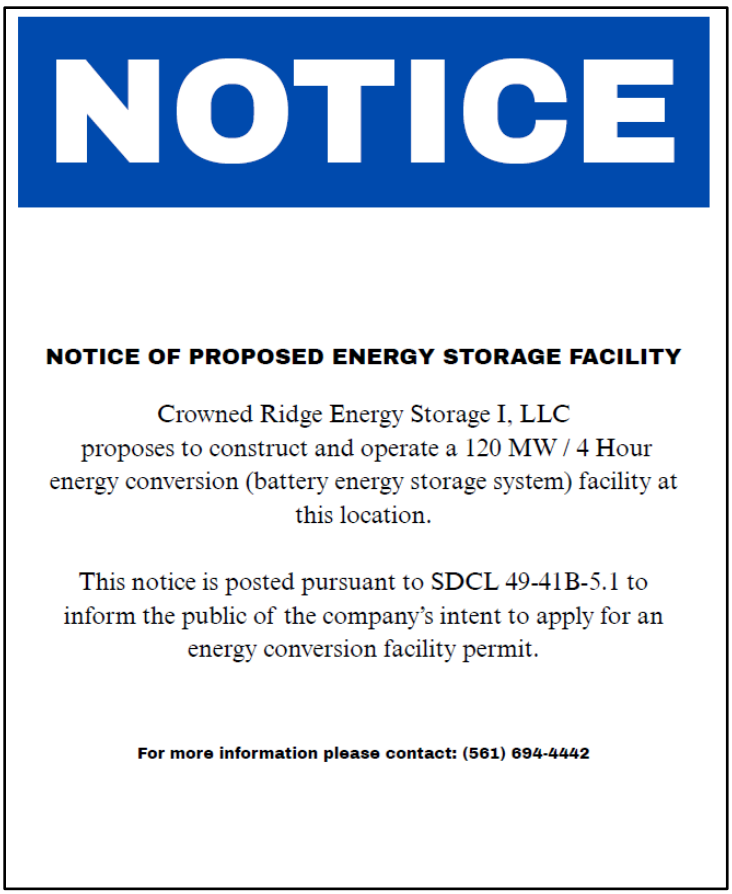
CRES will install approximately 2,228.3 linear feet of permanent security fencing along the perimeter of the BESS Site, excluding minor portions of access roads. Perimeter fencing will comprise a 7-foot-tall chain-link fence topped with 1 foot of three-strand barbed wire.

Fencing will be installed in accordance with industry standards and will comply with the National Electrical Code (NEC) as published in NFPA 70. The fencing system is designed to prevent the public from gaining access to electrical equipment, which could lead to injury.

7.1.8 Signage

On November 5, 2025, CRES installed a sign reading "Notice of Proposed Energy Storage Facility" at the intersection of 464th Avenue and 161st Street (Images 7-5 and 7-6). The sign was posted approximately 5 feet off the ground at the northwest corner of the Project Area, approximately 50 feet from, and in complete view of, the road.

In addition, and during construction, CRES will install safety signage providing information regarding high voltage within the BESS and information for emergency services on the fence near the entrances and at swing gates.


NOTICE

NOTICE OF PROPOSED ENERGY STORAGE FACILITY

Crowned Ridge Energy Storage I, LLC
proposes to construct and operate a 120 MW / 4 Hour energy conversion (battery energy storage system) facility at this location.

This notice is posted pursuant to SDCL 49-41B-5.1 to inform the public of the company's intent to apply for an energy conversion facility permit.

For more information please contact: (561) 694-4442

Image 7-5. Sign posted near the entrance to the Project Area.

Image courtesy of NextEra Energy Resources.



Image 7-6. Sign posted near the entrance to the Project Area.

Photograph courtesy of NextEra Energy Resources.

7.1.9 Stormwater Management Facilities

CRES will manage stormwater in the BESS Site through installation of culverts, a diversion berm, drainage swales, and a drainage basin required to satisfy National Pollutant Discharge Elimination System stormwater management requirements and through implementation of a site-specific stormwater pollution prevention plan (SWPPP). A SWPPP is required in South Dakota for all permitted construction and industrial stormwater sites. The SWPPP will describe stormwater runoff and management, including how CRES will ensure that runoff leaving the BESS Site will not become contaminated with pollutants, such as dirt or trash. CRES will develop the SWPPP prior to construction.

CRES designed the assumed locations, sizes, and approximate number of stormwater management facilities to capture water without requiring additional grading to direct flow, thereby reducing overall soil impacts (see Appendix A, Figure A-4).

7.1.10 Supervisory Control and Data Acquisition System

The Project will generally be operated remotely, with operational control and 24/7 monitoring performed off-site through the Project's SCADA system, which will be operated and monitored from NextEra Energy Resources' Renewable Operations Control Center in Juno Beach, Florida. The SCADA and associated systems will monitor key battery metrics, including state of charge, battery health, current, voltage, temperature, and alarm indicators for off-normal conditions. In the event of an anomaly or issue with a battery unit, the SCADA system will immediately alert qualified personnel who have specialized training and operational expertise in these systems and are located locally (i.e., within the county or within 50 miles of the Project Area). If necessary, the BESS can be remotely shut down within 1 minute. Section 7.5 provides additional detail on this process.

7.1.11 Electrical Collection System

Energy to and from the batteries will be routed through a series of underground 34.5-kilovolt collection cables, which will make up the electrical collection system that will connect to the CRW Collector Substation. The conductor type and exact length and position of the mV collection cables will be determined during detailed electrical design. Currently, the estimated length of the collection cables is approximately 2,215 feet. The electrical collection system will be designed to meet applicable requirements of the NEC as published in NFPA 70. The design work completed to date includes a load flow analysis for the BESS to ensure it will meet the power factor and voltage control specifications. The collection cables will be direct-buried and installed in a trench that will be 3.0 to 4.0 feet deep. Cables will be installed deeper (i.e., 6.0–8.0 feet deep) if the cables are stacked. The exception to this is that where the collection cables intersect the wetland (see Section 12.2), CRES will bore beneath the wetland to avoid impacts to this resource.

7.1.12 Utilities and Refuse

The CRW Collector Substation will be uninhabited with no restroom facilities or running water. During construction and decommissioning of the BESS, restroom facilities will be provided by portable units to be serviced by licensed providers. During operations, the BESS will be uninhabited with no restroom facilities or running water.

CRES will adhere to all state and local requirements for disposal of all refuse resulting from construction and/or operation of the BESS.

7.2 Screening

CRES will install a 20-foot-tall sound wall along the northwest portion of the Project Area and within the perimeter fence (see Section 7.1.5).

7.3 Setbacks

The BESS is set back a minimum of 100 feet from the property boundaries. Additionally, the distance from the fence to the nearest road right-of-way (ROW) (at 161st Street) is approximately 150.1 feet, from the closest BESS component to the nearest road ROW is approximately 258.0 feet, from the fence to the nearest residence (located west of the Project Area on 161st Street) is approximately 1,950.0 feet, from the closest BESS component to the nearest residence is approximately 2,030 feet, and from the fence to the nearest wind turbine (located south of the BESS) is approximately 635.0 feet.

7.4 Construction

7.4.1 Time Schedule (ARSD 20:10:22:22)

ARSD 20:10:22:22. Time schedule. *The applicant shall provide estimated time schedules for accomplishment of major events in the commencement and duration of construction of the proposed facility.*

Table 7-2 depicts the estimated schedule for the BESS development milestones, assuming all permits and authorizations are issued and obtained.

Table 7-2. Estimated Schedule of Project Milestones

Milestone	Date
Land control (voluntary lease with purchase option agreement in place)	March 2023
Environmental studies	Spring 2024–Summer 2025
County conditional use permit	May 2024
Preconstruction engineering	May 2026
Finalize layout	May 2026
Obtain Commission facility permit	May 2027
Construction	May 2027–April 2028
Energization	April 2028–May 2028
Commissioning and testing	March 2028–May 2028
Commercial operations date	May 2028

CRES will continue to update the schedule of Project milestones, including construction, as needed, and will submit a finalized schedule to the Commission prior to construction.

7.4.2 Personnel and Traffic

The Project is anticipated to require up to 60 temporary workers during construction (see Table 7-2), with the number of workers on-site at any given time varying depending on the phase of construction. The

estimated maximum average daily number of worker vehicle trips will be 120 (assuming that each worker drove their own vehicle and made a round trip), and the maximum average daily number of one-way vendor truck trips will be 20. CRES anticipates that construction crews will work 8 to 10 hours per day, with work occurring Monday through Friday. Overtime and weekend work will be used only as necessary to meet scheduled milestones or to accelerate the construction schedule and will comply with applicable South Dakota labor laws. CRES will require all workers to operate safely and in compliance with all applicable local, state, and federal safety regulations.

7.4.3 Deliveries

Material and equipment needed to construct the BESS will reach the Project Area through on-road truck delivery using both 464th Avenue and 161st Street. Most truck deliveries will be for BESS components (e.g., cabinets, PCSs) and aggregate material (e.g., gravel, rock). During construction (see Table 7-2), CRES anticipates that most material deliveries will occur over approximately 2 to 3 months. During that time, the estimated average number of daily vendor truck trips to the Project Area is 20.

Typically, components will be hauled to the Project Area using low-bed transfer trucks. Such loads typically are limited to approximately 40 tons (80,000 pounds), with a typical load being approximately 25 tons (50,000 pounds). Low-bed transport trucks also will transport construction equipment to the Project Area, unless the equipment can be driven (e.g., boom trucks). The size of low-bed transport trucks used will depend on the component or equipment being transported.

Aggregate material will be delivered via bottom dump trucks or transfer trucks with six axles.

7.4.4 Site Preparation

Construction will begin with site preparation. During this phase, CRES will prepare the site for construction. The Project Area is fairly level (1,962.2–2,010.3 feet above mean sea level [fmsl]); however, grading and minor earthwork may occur to support the installation of Project components. In areas where permanent, aboveground components will be installed, CRES will clear existing vegetation (e.g., agricultural and disturbed, herbaceous) during site preparation.

Road surfaces will be at-grade to allow water to sheet flow across the Project Area as it currently does. During site preparation, a temporary laydown yard and topsoil stockpile location will be designated within the Project Area to serve as the storage areas for materials, equipment, and topsoil during construction. The construction contractor will determine the specific location of the temporary areas (see Appendix A, Figure A-4).

Site preparation and grading will be accomplished using various equipment that could include scrapers, graders, dozers, compaction equipment, and water trucks (to control dust). Water consumption during construction (and decommissioning) will be needed for dust suppression and earthwork. During operation, water use will be minimal and only as needed. Water will likely be delivered by truck from an off-site source. During construction, water pumped directly into 2,000- to 4,000-gallon water trucks may be stored in overhead approximately 12,000-gallon water storage towers/tanks (up to 16 feet tall) to assist in the availability of water for trucks and to expedite filling. CRES will use such tanks only temporarily, if at all, and will remove them following completion of construction.

7.4.5 Component Installation

The BESS components will be off-loaded from low-bed transport trucks and installed using cranes, boom trucks, forklifts, rubber-tired loaders, rubber-tired backhoes, and other small to medium-sized

construction equipment, as needed. Foundation pads for the energy storage system cabinets will be poured, followed by installation, including wiring of battery modules, of all BESS components.

7.4.6 Erosion and Sediment Control and Pollution Prevention

Project construction will result in the disturbance of an area greater than 1 acre of land. Therefore, CRES will be required to obtain coverage under the South Dakota Department of Agriculture and Natural Resources (SDDANR) General Permit Authorizing Stormwater Discharges Associated with Construction Activities. To enroll under this permit, CRES will prepare a SWPPP, as described in Section 7.1.9. The SWPPP will be prepared by a qualified engineer or erosion control specialist and will be based on the final engineering design. The SWPPP will be implemented during construction and will include best management practices (BMPs), including erosion and sediment control measures such as stormwater runoff quality control measures and watering for dust control. The SWPPP will be submitted to the SDDANR, Codington County, and the Commission prior to issuance of any building or grading permits.

7.5 Operations and Maintenance

The Project will operate 365 days per year and be monitored remotely through a SCADA system (see Section 7.1.10). NextEra Energy Resources operates a control center in Juno Beach, Florida, that monitors the readiness of its subsidiaries' energy storage facilities nationwide 24 hours a day, 7 days a week. If an issue is detected at a BESS location, the system can be shut down remotely, and a local (i.e., within the county or within 50 miles of the Project Area) technician can be deployed to resolve the issue. The Project team will respond to all emergencies following the emergency response plan (ERP) (see Section 18.8). The ERP establishes procedures for emergency response management, evacuation procedures, response to fire incidents and natural disasters, and security and cybersecurity, among other safety topics. Public safety is further discussed in Section 18.9.

The full-time operations and maintenance (O&M) staff responsibilities will include routine inspections, system monitoring, and maintenance activities to support the safe and efficient operation of the BESS. The O&M staff for the BESS will be based out of the existing CRW O&M facility located approximately 0.3 mile directly south of the Project Area at 16138 464th Avenue, Waverly, South Dakota.

Typically, one major maintenance inspection of the BESS occurs annually. Only occasional, on-site maintenance is expected to be required following commissioning, including replacement of inverter power modules and filters and miscellaneous electrical repairs on an as-needed basis. During normal O&M, CRES anticipates that one to two workers will inspect the Project approximately once or twice per week. Inspection scheduling and monitoring will be supported by the control center's SCADA system, which tracks system performance and flags any irregularities for prompt on-site evaluation.

To maintain the Project's required energy capacity over its operational life, periodic battery augmentation will be planned to offset the gradual capacity reduction in the original battery systems. Battery systems are initially sized to meet the full nameplate energy requirement from the start of operations, accounting for auxiliary loads and other energy losses. However, as batteries naturally degrade over time, new units will be integrated within the existing footprint to uphold the contracted energy levels. The Project design supports augmentation, with additional batteries expected approximately every 3 to 4 years, depending on usage and findings from routine inspections. These inspections are part of a preventive maintenance program to ensure optimal performance.

The added capacity will be accomplished by installing either new battery cabinets only (DC augmentation), or new battery cabinets with new inverters (AC augmentation). New battery cabinets with or without new inverters will be added within the existing boundary on the existing prepared graveled

area. Augmentation may include building new foundations, trenching to connect the new equipment to the existing systems, and testing of the new equipment. Augmentation locations are shown on the preliminary site plan in Appendix A, Figure A-4. On-site augmentation activities typically take 2 to 4 months to complete by a temporary crew of six to eight workers.

7.6 Reliability and Safety (ARSD 20:10:22:33.02(8))

ARSD 20:10:22:33.02. Information concerning wind energy facilities and solar energy facilities. *If a wind energy facility or solar energy facility is proposed, the applicant shall provide the following information:*

> *...*
> *(8) Reliability and safety;*
> *...*

CRES will ensure that all aspects of the Project comply with established industry standards and safety codes to safeguard the surrounding community and the environment. The safety of the O&M staff, neighbors, and the public is the highest priority.

CRES will comply with the NEC, as published in NFPA 70, which defines comprehensive standards for the safe installation of electrical wiring and equipment. The NEC is designed to protect people and property from electrical hazards. CRES will meet NEC requirements by ensuring the proper installation of all electrical conductors and equipment associated with the Project. Procedures will be updated regularly to reflect the most current NEC revisions, which are updated every 3 years to incorporate new technologies and safety measures.

CRES will also comply with NFPA 855, the Standard for the Installation of Stationary Energy Storage Systems. This includes implementing necessary precautions to ensure the safety of BESS installations by minimizing risks associated with fire, electrical hazards, and system failures. CRES will design the system according to NFPA safety standards, ensuring that Codington County and industry setbacks between the energy storage units and surrounding properties are met, and installing fire protection systems. Security barriers and access controls will be installed in accordance with NFPA 855 guidelines to enhance operational safety and prevent unauthorized access.

The BESS will be certified under Underwriters Laboratories (UL) 9540, the standard for verifying the safety of energy storage systems and equipment. UL 9540 certification ensures that the Project meets the required safety standards for fire, electrical, mechanical, and environmental hazards. CRES will ensure that its systems undergo comprehensive testing and meet nationally recognized safety protocols as prescribed by UL 9540.

Through compliance with NFPA 70, NFPA 855, and UL 9540, CRES will construct and operate the Project in full adherence to industry standards for safety and reliability.

7.7 Electromagnetic Interference

Electric and magnetic fields (EMF) are created wherever electricity flows, which includes the wiring in homes and schools, power lines, and the electrical equipment and devices used at the workplace and in homes. Leading United States and international scientific organizations, such as the National Cancer Institute and the World Health Organization, have evaluated EMF research. These organizations generally conclude that the overall body of scientific research does not show that exposure to EMF causes or

contributes to any type of cancer or any other disease or illness (National Institute of Environmental Health Sciences 1999).

Low-level power frequency EMF will occur around the BESS in the battery cells and inverters and along the collection cable lines. All Project components will be located away from residences; the nearest residence is approximately 1,950.0 feet west of the Project Area on 161st Street. At this distance, EMF levels will be below background levels. Given this, no adverse impacts are expected because of EMF, and no mitigation is proposed.

8 ALTERNATIVE SITES AND SITING CRITERIA (ARSD 20:10:22:12)

ARSD 20:10:22:12. Alternative sites. *The applicant shall present information related to its selection of the proposed site for the facility, including the following:*

> *(1) The general criteria used to select alternative sites, how these criteria were measured and weighed, and reasons for selecting these criteria;*
>
> *(2) An evaluation of alternative sites considered by the applicant for the facility;*
>
> *(3) An evaluation of the proposed plant, wind energy, or transmission site and its advantages over the other alternative sites considered by the applicant, including a discussion of the extent to which reliance upon eminent domain powers could be reduced by use of an alternative site, alternative generation method, or alternative waste handling method.*

The following is a description of the general Project Area selection process, a discussion of the Project configuration alternatives considered, and a summary of CRES's siting criteria applied through the development process.

8.1 Project Area Selection

Development of the Project was an iterative process involving general Project Area identification, Project Area (i.e., boundary) refinement, and micro-siting of proposed Project infrastructure within the Project Area. Each of these steps is described in more detail below.

Identification of the Project Area was primarily driven by the following:

- Access to viable transmission interconnection
- Landowner support for BESS
- Land use and environmental resource compatibility with BESS development

The Project Area is within adequate proximity to the CRW Collector Substation where interconnection capacity is available. With proximity to the CRW Collector Substation, CRES was able to design the Project's 2,215-foot-long mV collection cables to effectively and efficiently deliver power to the MISO transmission grid while using rural land, minimizing impacts to human settlements and environmental resources, and providing benefits to the local economy, as described in Section 18.

Landowner support is demonstrated through CRES's land control via a voluntary lease with purchase option agreement on the land that will host the Project. The option was signed in March 2023.

A discussion of land use is included in Section 14.

8.2 Project Configuration Alternatives

An earlier iteration of the Project site design, and that which was proposed to Codington County in CRES's conditional use permit application, sited the Project Area and BESS infrastructure farther west (nearer the southeast corner of the intersection of 464th Avenue and 161st Street) (Appendix A, Figure A-5). However, coordination with Codington County following application submittal determined that the area directly southeast of the 464th Avenue and 161st Street intersection was underlain by an area of glacial outwash deposits (i.e., an aquifer) (Appendix A, Figure A-6). To avoid impacts to this resource and in direct response to the Codington County Board of Adjustment's request, CRES shifted the Project Area and site design east to avoid the aquifer entirely (see Appendix B). This shift east, along with further site design work, resulted in the current Project site design described in Section 7 and reflected in Appendix A.

The current Project site design (see Appendix A, Figure A-4) is compatible with existing land use (Sections 14 and 15), proximate to the CRW Collector Substation, and avoids or minimizes impacts to natural (e.g., aquifers, wetlands) and cultural (e.g., cairns, stone circles) resources. As described in Section 18, impacts to cultural resources will be avoided or mitigated in consultation with the South Dakota State Historic Preservation Office. CRES also will avoid or minimize impacts to terrestrial and aquatic ecosystems, including wildlife, as described in Sections 12 and 13, respectively.

8.3 Lack of Reliance on Eminent Domain Powers

CRES will not exercise eminent domain powers. CRES signed a voluntary lease with purchase option agreement in March 2023 for the land that will host the Project.

9 ENVIRONMENTAL INFORMATION (ARSD 20:10:22:13)

ARSD 20:10:22:13. Environmental information. *The applicant shall provide a description of the existing environment at the time of the submission of the application, estimates of changes in the existing environment which are anticipated to result from construction and operation of the proposed facility, and identification of irreversible changes which are anticipated to remain beyond the operating lifetime of the facility. The environmental effects shall be calculated to reveal and assess demonstrated or suspected hazards to the health and welfare of human, plant and animal communities which may be cumulative or synergistic consequences of siting the proposed facility in combination with any operating energy conversion facilities, existing or under construction. The applicant shall provide a list of other major industrial facilities under regulation which may have an adverse effect on the environment as a result of their construction or operation in the transmission site, wind energy site, or siting area.*

Sections 10 through 18 describe the existing environment at the time of the submission of the application; describe anticipated impacts to the existing environment from construction and operation of the proposed Project; identify irreversible changes that are anticipated to remain beyond the operating lifetime of the Project; and describe avoidance, minimization, and mitigation measures that CRES will implement as part of the Project.

The CRW project area overlaps, and the Crowned Ridge II Wind Energy Facility (CRWII) and Dakota Range project areas are proximate to, the CRES BESS Project Area. The only resource for which these industrial facilities might have cumulative or synergistic consequences is sound, as discussed in Section 14.2.

The Project will result in both temporary (32.6 acres; 61.9% of the Project Area) and permanent (7.8 acres; 14.8% of the Project Area) ground disturbance impacts.

10 EFFECT ON PHYSICAL ENVIRONMENT (ARSD 20:10:22:14)

ARSD 20:10:22:14. Effect on physical environment. *The applicant shall provide information describing the effect of the proposed facility on the physical environment. The information shall include:*

(1) A written description of the regional land forms surrounding the proposed plant or wind energy site or through which the transmission facility will pass;

(2) A topographic map of the plant, wind energy, or transmission site;

(3) A written summary of the geological features of the plant, wind energy, or transmission site using the topographic map as a base showing the bedrock geology and surficial geology with sufficient cross-sections to depict the major subsurface variations in the siting area;

(4) A description and location of economic deposits such as lignite, sand and gravel, scoria, and industrial and ceramic quality clay existent within the plant, wind energy, or transmission site;

(5) A description of the soil type at the plant, wind energy, or transmission site;

(6) An analysis of potential erosion or sedimentation which may result from site clearing, construction, or operating activities and measures which will be taken for their control;

(7) Information on areas of seismic risks, subsidence potential and slope instability for the plant, wind energy, or transmission site; and

(8) An analysis of any constraints that may be imposed by geological characteristics on the design, construction, or operation of the proposed facility and a description of plans to offset such constraints.

The following sections describe the existing physical environment within the Project Area and the potential effects of the Project on that environment. Planned avoidance, minimization, and mitigation measures for those effects are also described, if applicable.

10.1 Geological Resources

The following sections describe the existing regional landforms, surficial geology, bedrock geology, economic deposits, seismic risks, and subsidence potential within the Project Area.

10.1.1 Existing Resources

10.1.1.1 REGIONAL LANDFORMS AND SURFICIAL GEOLOGY

The Project is within the Level IV Prairie Coteau ecoregion, which is a subdivision of the Level III Northern Glaciated Plains ecoregion (Bryce et al. 1998). The Prairie Coteau ecoregion resulted from stagnant glacial ice melting beneath a layer of sediment and is dominated by a tightly undulating, hummocky landscape with no drainage pattern. This ecoregion has large chains of lakes and scattered semipermanent or seasonal wetlands (Bryce et al. 1998).

Project Area elevations range from approximately 1,962.2 to 2,101.3 fmsl. A topographic map of the Project Area is provided in Appendix A, Figure A-2a.

The Project Area encompasses approximately 52.7 acres. Approximately 26.8 acres (50.1%) of the Project Area is underlain by Upper Wisconsin till (end moraine) consisting of a compact, silty, clay-rich matrix with sand- to boulder-sized clasts of glacial origin that are characterized by elevated linear ridges with hummocky terrain locally at former ice margins. The remaining approximately 25.9 acres (49.1%) of the Project Area is underlain by Upper Wisconsin till (end moraine) consisting of a compact, silty, clay-rich matrix with sand- to boulder-sized clasts that is characterized by smooth, rolling terrain (Martin et al. 2004). Upper Wisconsin till deposits have an estimated composite thickness of up to 300 feet (Martin et al. 2004), and pre-Late Wisconsin drift deposits underlie those deposits, which can result in a total thickness for all glacial deposits of 400 to 700 feet (Gilbertson 1989). The Upper Cretaceous Pierre Shale underlies the till deposits at an elevation of approximately 1,379 fmsl (Martin et al. 2004), which indicates that the till deposits range from approximately 583 to 782 feet in thickness at the Project Area.

Shallow glacial outwash deposits of sand and gravel can occur at the land surface to depths of generally 50 feet or less in the Prairie Coteau ecoregion. An isolated, adjacent occurrence of such outwash deposits is present directly west-northwest of the Project Area (see Appendix A, Figure A-6). CRES moved an earlier iteration of the Project Area (see Appendix A, Figure A-5) east to its current location to avoid this glacial outwash deposit after learning of its presence. No such deposits are present in the Project Area. The first occurrence of water-bearing sand and gravel deposits in the Project Area is generally greater than 100 feet below surface (Jensen 2003; Martin et al. 2004).

10.1.1.2 BEDROCK GEOLOGY

The Upper Cretaceous Pierre Shale underlies the Project Area and is described as a blue-gray to dark-gray, fissile to blocky shale with persistent beds of bentonite, black organic shale, and light-brown chalky shale, with minor sandstone, conglomerate, and abundant carbonate and ferruginous concretions (Appendix A, Figure A-7). This bedrock formation is overlain by up to 700 feet of glacial deposits and is not exposed at the surface (Gilbertson 1989).

10.1.1.3 ECONOMIC DEPOSITS

Economic deposits are not present in the Project Area (Schultz 1991).

10.1.1.4 SEISMIC RISKS

Risk of seismic activity at the Project Area is low. Between 1872 and 2025, nearly 100 earthquakes were recorded in South Dakota (U.S. Geological Survey [USGS] 2025), but none of these earthquakes occurred in Codington County. SDDANR indicates the closest recorded earthquake, with a Modified Mercalli Intensity of IV, occurred in eastern Spink County, which is approximately 60.0 miles from the Project Area. The USGS indicates the closest recorded earthquake, with a Modified Mercalli Intensity of II–III and Richter Scale Magnitude of 3.7, occurred in northeastern Roberts County, which is approximately 55.0 miles from the Project Area, on October 20, 1995 (USGS 2025).

10.1.1.5 SUBSIDENCE POTENTIAL

Limestone units and karst terrain are not present in the Project Area and, therefore, the potential for subsidence is negligible. CRES is not aware of any subsidence potential or slope instability problems within the Project Area.

10.1.2 Impacts/Mitigation

The risks posed by the Project are generally limited by the characteristics of the geologic materials in the area. The unconsolidated geologic materials at the Project Area are composed of generally low permeability (Jensen 2003). Available geologic data indicate that the Project will not significantly affect bedrock geology. Seismic activity is not anticipated to affect the performance of the BESS. CRES is not aware of any constraints that may be imposed by geological characteristics or soils on the design, construction, or operation of the BESS.

10.2 Soil Resources

The following sections describe the existing soil resources, including prime farmland soils, within the Project Area and the potential effects of the Project on these resources (Appendix A, Figure A-8).

10.2.1 Existing Resources

10.2.1.1 SOILS

The Soil Survey Geographic Database geographic information system data available from the Natural Resources Conservation Service (NRCS) indicate that there are five mapped soil associations present within the Project Area (NRCS 2026) (Table 10-1; see Appendix A, Figure A-8).

Table 10-1. Mapped Soil Associations within the Project Area

Soil Association	Hydric Rating	Drainage Class	Frequency of Flooding	Estimated Depth to Water Table (inches)	Area (acres)	Percentage of Project Area*
Barnes-Buse-Svea loams, 1 to 6 percent slopes	Predominantly non-hydric	Well drained	None	75	43.2	82.0%
McKranz-Hidewood, frequently flooded, silty clay loams, 0 to 2 percent slopes	Partially hydric	Somewhat poorly drained	None	15	6.8	13.0%
Buse-Barnes loams, Coteau, 2 to 15 percent slopes, very stony	Predominantly non-hydric	Well drained	None	125	1.7	3.3%
Barnes-Buse loams, 6 to 9 percent slopes	Predominantly non-hydric	Well drained	None	125	0.6	1.1%
Hamerly-Badger complex, 0 to 2 percent slopes	Predominantly non-hydric	Somewhat poorly drained	None	18–30	0.4	0.7%
Total					**52.7**	**100.1%**

Source: NRCS (2026).

* Totals may vary slightly due to rounding.

10.2.1.2 PRIME FARMLAND

The NRCS defines *prime farmland* as areas that have acceptable acidity or alkalinity, a dependable supply of moisture from irrigation or precipitation, favorable temperature, and an adequate growing season (NRCS 2024). Typically, soils in prime farmland are sufficiently well drained and not excessively erodible during the growing season. Table 10-2 presents the percentage of area by farmland classifications for the Project Area.

Table 10-2. Farmland Classification within the Project Area

Description	Area (acres)	Percentage of Project Area
All areas are prime farmland	43.2	82.0%
Farmland of statewide importance	7.2	13.7%
Not prime farmland	2.3	4.4%
Total	**52.7**	**100.0%**

Source: NRCS (2026).

10.2.2 Impacts/Mitigation

10.2.2.1 SOILS

Soil erosion is the greatest risk to the geologic environment in the Project Area. Soil erosion potential is low where land slope is relatively flat. The potential for soil erosion increases significantly where steeper slopes (i.e., greater than 6 percent) are present. The Project Area is relatively flat, with an elevation gain of only 139.1, and only 2.3 acres (4.4%) consists of soils associated with slopes potentially greater than 6 percent (see Table 10-1). Further, there are no locations within the Project Area that have steep (i.e., greater than 3:1 [horizontal: vertical] or 33 percent) slopes.

Although slope influences soil erosion potential, soil texture and water transmission are significant in assessing soil runoff potential and subsequent erosion. The NRCS categorizes soils into four main hydrologic groups based on their runoff potential and rate of infiltration when thoroughly wet (NRCS 2026). The hydrologic groups are A, B, C, and D, with A having the highest runoff potential and rate of infiltration. All Project Area soils have a low to medium runoff potential (hydrologic groups B and C).

Project construction activities described in Section 7.4 will result in an estimated 32.6 acres of temporary impacts to soils and in approximately 7.8 acres of permanent impacts to soils. Impacts to soils could include compaction, potential loss of soil due to erosion, and the potential contamination of soils from construction equipment spills.

To reduce adverse effects to and from soils, CRES will develop and implement a SWPPP and use BMPs during construction to protect topsoil and minimize soil erosion. Soil areas disturbed during construction will be decompacted and returned to preconstruction contours to the extent practicable and in accordance with landowner agreements and the SWPPP. The goal is to have all surfaces drain naturally; blend in with the undisturbed natural terrain; and be left in a condition to facilitate revegetation, provide proper drainage, and prevent erosion.

10.2.2.2 PRIME FARMLAND

Table 10-3 provides the estimated temporary and permanent impacts to farmland classifications associated with construction and operation of the Project.

Table 10-3. Estimated Temporary and Permanent Impacts to Farmland

Description	Temporary Impacts (acres)	Permanent Impacts (acres)
All areas are prime farmland	29.2	7.2
Farmland of statewide importance	1.2	0.0

Description	Temporary Impacts (acres)	Permanent Impacts (acres)
Not prime farmland	2.2	0.6
Total	**32.6**	**7.8**

11 EFFECT ON HYDROLOGY (ARSD 20:10:22:15)

ARSD 20:10:22:15. Hydrology. *The applicant shall provide information concerning the hydrology in the area of the proposed plant, wind energy, or transmission site and the effect of the proposed site on surface and groundwater. The information shall include:*

(1) A map drawn to scale of the plant, wind energy, or transmission site showing surface water drainage patterns before and anticipated patterns after construction of the facility;

(2) Using plans filed with any local, state, or federal agencies, indication on a map drawn to scale of the current planned water uses by communities, agriculture, recreation, fish, and wildlife which may be affected by the location of the proposed facility and a summary of those effects;

(3) A map drawn to scale locating any known surface or groundwater supplies within the siting area to be used as a water source or a direct water discharge site for the proposed facility and all offsite pipelines or channels required for water transmission;

(4) If aquifers are to be used as a source of potable water supply or process water, specifications of the aquifers to be used and definition of their characteristics, including the capacity of the aquifer to yield water, the estimated recharge rate, and the quality of ground water;

(5) A description of designs for storage, reprocessing, and cooling prior to discharge of heated water entering natural drainage systems; and

(6) If deep well injection is to be used for effluent disposal, a description of the reservoir storage capacity, rate of injection, and confinement characteristics and potential negative effects on any aquifers and groundwater users which may be affected.

The following sections describe the hydrological resources within the Project Area and the potential effects of the Project on those resources. Planned avoidance, minimization, and mitigation measures for those effects are also described, if applicable.

11.1 Surface Water

11.1.1 Existing Resources

The Project Area is in the Missouri hydrologic region within the Round Lake Watershed Hydrologic Unit Code 12 (Seaber et al. 1987). There are no surface water resources, such as streams, lakes, rivers, or ponds, present within the Project Area (USGS 2026). Additionally, no 100-year floodplains (Federal Emergency Management Administration [FEMA] Flood Zone A) are present in the Project Area (FEMA 2025) (Appendix A, Figure A-9). Appendix A, Figure A-9 also shows the current drainage patterns proximate to the Project Area.

Data from the National Hydrography Dataset (USGS 2026) indicate the presence of approximately 508.0 linear feet of one flowline characterized as stream/river-perennial. However, during field wetland delineations, SWCA Environmental Consultants (SWCA) did not observe the presence of a distinct

flowline. Rather, the aquatic resource in this area was delineated as a palustrine emergent (PEM) wetland (see Section 12.2).

11.1.2 Impacts/Mitigation

No surface water is present in the Project Area. Therefore, no impacts, including changes to surface water drainage patterns, will occur, and no mitigation is proposed.

11.2 Groundwater

11.2.1 Existing Resources

Most of the groundwater resources near the Project Area occur in sand and gravel deposits generally at depths greater than 100 feet below ground surface, although the first occurrence of groundwater in surficial alluvial, outwash, and sand and gravel deposits is generally less than 50 feet below ground surface (Jensen 2003). Such deposits are not present in the Project Area. An isolated aquifer is adjacent to the northwest corner of the Project Area, but it does not extend under it (Jensen 2003) because CRES moved the Project Area specifically to avoid overlaying this resource (see Section 8.2).

As mapped by the NRCS (2026), shallow groundwater occurs in the soils within the Project Area at depths ranging from 18 to 30 inches in the area just south of the proposed BESS facility location and 49 to 61 inches in the remainder of the Project Area. Such shallow groundwater resources may not provide adequate yields to wells for use as a domestic or livestock water supply; however, they may be sources of recharge for deeper, underlying aquifers and to support agricultural plant growth.

11.2.2 Impacts/Mitigation

Permanent impacts to the deeper groundwater (i.e., at depths greater than 100 feet) are not expected, although permanent impacts to the shallow soil groundwater are likely to occur because the BESS equipment and access roads will serve as an impermeable layer that will prevent precipitation from percolating into the soil profile. Additionally, foundation depths may be sufficient to intersect the shallow soil groundwater, which may have to be removed from construction areas through installation of gravel blankets or French drains. If construction dewatering is anticipated, CRES may pump and discharge groundwater in accordance with the Project SWPPP. Potential drawdown effects of any such activities will be local and temporary. Permanent impacts to deeper groundwater from construction dewatering activities and/or structure placement in the shallow groundwater flow regime are not expected.

The risk for groundwater contamination caused by release of contaminants during construction is low. The overall low permeability of Project Area soils and unconsolidated geologic deposits will inhibit contaminant flow. Additionally, if construction or operation of the Project involves storing more than 1,320 gallons of oil or other hazardous substances, a spill prevention, control, and countermeasure plan (SPCC) will be required and will address potential releases to soils. The need for a SPCC will be assessed based on the final design of the Project.

The Project will not require water reprocessing, cooling, or deep well injection. Permanent effects to aquifers and potable water supplies are not expected.

11.3 Current and Planned Water Uses

11.3.1 Existing Resources

Existing water sources for residential and agricultural uses near the Project Area are provided by wells. There are 38 water well records within 5 miles of the Project Area and none within the Project Area itself. CRES is not aware of any wells located in the Project Area. Water well records provide details about the drilling and construction of wells, well depth, well diameter, static water level (if present), and a well log describing the encountered soil horizons. Review of these records indicates that the wells range from 16 to 416 feet deep, with yields ranging from 10 to 60 gallons per minute (SDDANR 2026a). The wells can serve a variety of purposes, including domestic, stock, irrigation, monitoring, and testing. Due to the age of some records, some well geolocations may be inaccurate, and others may not have been recorded.

11.3.2 Impacts/Mitigation

Construction will require water for foundations, backfill, and compaction; road construction; and dust control. CRES's contractors will manage dust control during construction. CRES estimates that approximately 4.5 million gallons of water will be hauled via water trucks and stored on-site in a temporary storage tank for dust control during construction. Any additional water needed for construction of the Project will be dependent on final site investigation and weather. CRES plans to use locally available private water sources (e.g., pond water from nearby landowners) or public waters, as needed. If applicable, CRES will obtain a temporary water use permit from SDDANR to obtain water from public sources. If local water sources are not available, CRES may install a groundwater well to meet Project needs.

Operation of the Project is not anticipated to require appropriation of surface water or permanent dewatering. Further, as described in Section 7.1.12, the BESS will be uninhabited during O&M with no restroom facilities or running water. Therefore, no water supply is needed.

Because no effects on the water supply are anticipated, no mitigation is proposed.

12 EFFECT ON TERRESTRIAL ECOSYSTEMS (ARSD 20:10:22:16)

ARSD 20:10:22:16. Effect on terrestrial ecosystems. *The applicant shall provide information on the effect of the proposed facility on the terrestrial ecosystems, including existing information resulting from biological surveys conducted to identify and quantify the terrestrial fauna and flora potentially affected within the transmission site, wind energy site, or siting area; an analysis of the impact of construction and operation of the proposed facility on the terrestrial biotic environment, including breeding times and places and pathways of migration; important species; and planned measures to ameliorate negative biological impacts as a result of construction and operation of the proposed facility.*

The following sections describe the terrestrial ecosystems within the Project Area and the potential effects of the Project on those resources. Planned avoidance, minimization, and mitigation measures for those effects are also described, if applicable.

12.1 Vegetation (Flora)

The following sections describe vegetation within the Project Area and the potential effects of the proposed Project on those resources. Mitigation measures are also described.

12.1.1 Existing Resources

12.1.1.1 GENERAL VEGETATION

USGS land cover data indicate that the Project Area is primarily Cultivated Crops (37.7 acres; 71.6%), followed by Grassland/Herbaceous cover (9.4 acres; 17.9%) (see Table 2-1). During natural resources pedestrian surveys conducted in the Project Area in May 2024 and July 2025, biologists observed that agricultural areas were dominated in the north by soybean (*Glycine max*) production and in the south by possible haying. Cropland provides minimal habitat for most terrestrial species, though it may provide a food source and cover for some wildlife species. No forested areas, woodlots, or tree lines are present in the Project Area.

12.1.1.2 FEDERALLY AND STATE-LISTED SPECIES

The U.S. Fish and Wildlife Service (USFWS) South Dakota Ecological Services Field Office publishes a list of federally threatened and endangered species with potential to occur by counties in South Dakota (USFWS 2021). The South Dakota Game, Fish and Parks (SDGFP) also maintains a list of threatened, endangered, and candidate species (SDCL 34A-8 and 34A-8A) and provides information on recorded observations by county (SDGFP 2016). Neither the USFWS nor SDGFP indicate any listed plant species as occurring in Codington County.

12.1.1.3 NOXIOUS WEEDS

Noxious weeds are regulated by state and federal rules and regulations (SDCL 38-22 and 7 Code of Federal Regulations 360) that are designed to stop the spread of plants that may be detrimental to the environment, agricultural practices, and/or the public. The SDDANR (2026b) lists 11 state noxious weed species, and the Codington County Weed and Pest Department lists three additional local noxious weed species (Codington County Weed and Pest Department 2020) (Table 12-1). Formal noxious weed surveys have not been completed for the Project Area. No noxious weeds were observed during natural resources pedestrian surveys conducted in the Project Area in May 2024 and July 2025.

Table 12-1. Noxious Weeds with Potential to Occur in the Project Area

Common Name	Scientific Name	Status
Absinth wormwood	*Artemisia absinthium*	State noxious weed
Bull thistle	*Cirsium vulgare*	County noxious weed
Canada thistle	*Cirsium arvense*	State noxious weed
Hoary cress	*Cardaria draba*	State noxious weed (none reported in Codington County)
Leafy spurge	*Euphorbia esula*	State noxious weed
Musk thistle	*Carduus nutans*	County noxious weed
Perennial sow thistle	*Sonchus arvensis*	State noxious weed
Plumeless thistle	*Carduus acanthoides*	County noxious weed

Common Name	Scientific Name	Status
Purple loosestrife	*Lythrum salicaria*	State noxious weed (none reported in Codington County)
Salt cedar	*Tamarix aphylla, T. chinensis, T. gallica, T. parviflora, and T. ramosissima*	State noxious weed (none reported in Codington County)

12.1.2 Impacts/Mitigation

Construction of the Project will result in temporary impacts to up to approximately 32.6 acres and in permanent impacts to approximately 7.8 acres. Unmitigated loss of vegetation, or introduction of noxious weeds, could impact to vegetation resources.

Temporary impacts will be mitigated using BMPs, as described in the Project SWPPP. Such BMPs may include installation of erosion control devices and revegetation practices. For example, in temporarily impacted areas that were previously natural (i.e., non-cropland), CRES will use native vegetation (weed free) seed mixes to revegetate disturbed areas to preconstruction conditions where feasible.

Permanent impacts will occur where vegetation is removed for placement of specific Project components (see Section 7.4.4). These impacts will result in a loss of production of crops and natural vegetation in limited areas where natural vegetation may occur. Other impacts could include the spread of noxious weed species resulting from construction equipment introducing seeds into new areas.

Impacts to cultivated lands are not biologically significant as these lands are currently frequently disturbed by tilling, planting, and harvesting activities.

No federally or state-listed plant species are known to occur in the Project Area. Therefore, no impacts to federally or state-listed plants are expected to occur, and no mitigation measures are proposed.

12.2 Wetlands and Water Bodies

The following sections describe the wetlands and water bodies within the Project Area and the potential effects of the Project to these resources. Planned avoidance, minimization, and mitigation measures for those effects are also described.

12.2.1 Existing Resources

SWCA conducted a desktop review to identify locations of potential wetlands and water bodies within the Project Area (Appendix D). According to the USFWS's National Wetland Inventory, the Project Area contains portions of one riverine system totaling 0.3 acre (USFWS 2025a) (see Appendix A, Figure A-9). The USGS National Hydrography Dataset indicates that 508 feet of an intermittent stream is within the Project Area (USGS 2026); the intermittent stream overlaps the National Wetland Inventory feature (see Appendix A, Figure A-9). SWCA's review of historical and aerial imagery did not indicate any additional areas with possible wetland signatures that warranted investigation during field wetland delineations.

SWCA completed natural resources pedestrian surveys, including wetland delineations, within the Project Area in May 2024 and July 2025. SWCA delineated two wetlands (WET001, WET002) in the Project Area (Table 12-2; see Appendix A, Figure A-9) and recorded one wetland determination point and one corresponding upland determination point for each wetland. Within the Project Area, the wetlands comprised 0.03 and 5.6 acres. Both wetlands were classified as PEMs according to the Cowardin classification system (Cowardin et al. 1979) (see Appendix D). A PEM wetland is a freshwater wetland characterized by emergent marsh, fen, or wet meadow.

Table 12-2. Field-Delineated Wetlands in the Project Area

Feature ID	Survey Date	Location		Surficial Connectivity	Acres
		Latitude	Longitude		
WET001	07/30/2025	45.046985	-96.920784	Yes	5.64
WET002	07/30/2025	45.046139	-96.922286	No	0.03
Total					**5.67**

12.2.2 Impacts/Mitigation

Project infrastructure has been sited to avoid impacts to the wetlands. Only the mV collection cables must intersect the wetland located directly south of the BESS Site. Where the mV collection cables intersect the wetland, CRES will bore under the wetland to avoid impacts to the resource.

Further, CRES will obtain a South Dakota General Permit for Storm Water Discharges Associated with Construction Activity (SDR100000), develop and implement a SWPPP prior to construction, and use BMPs to reduce impacts during construction. The SWPPP will describe BMPs for erosion and sedimentation control. Such BMPs may include the use of silt fences and/or other measures to control stormwater run-on and runoff to mitigate erosion and sedimentation into wetlands located in the Project Area.

As a result of site planning and design, implementation of erosion and sediment control BMPs, and boring of mV collection lines, no impacts to the wetlands are anticipated, and no additional mitigation measures are proposed.

12.3 Wildlife (Fauna)

The following sections describe potentially present wildlife species within the Project Area and the potential effects of the proposed Project on these species. Planned avoidance, minimization, and mitigation measures for those effects are also described.

12.3.1 Existing Resources

12.3.1.1 GENERAL

No federally or state-listed wildlife species were observed during natural resources pedestrian surveys conducted in the Project Area in May 2024 or July 2025 or during more than 20 wildlife surveys conducted between 2007 and 2018 for the CRW and CRWII project areas. The monarch butterfly (*Danaus plexippus*) was incidentally observed during natural resources pedestrian surveys conducted in the Project Area in July 2025. Species observed during surveys conducted between 2007 and 2018 were common species that may occur in suitable habitats throughout the region. These species included Richardson's ground squirrel (*Urocitellus richardsonii*), mink (*Mustela vison*), least weasel (*M. nivalis*), common raccoon (*Procyon lotor*), white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), American robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), and killdeer (*Charadrius vociferus*).

Six bat species have potential to occur near the Project Area and may fly through the Project Area occasionally or during migration: eastern red bat (*Lasiurus borealis*), silver-haired bat (*Lasionycteris*

noctivagans), hoary bat (*Lasiurus cinereus*), northern long-eared bat (*Myotis septentrionalis*), little brown bat (*Myotis lucifugus*), and big-brown bat (*Eptesicus fuscus*). No suitable winter habitat (e.g., caves or buildings) or roosting habitat (e.g., buildings, trees, bridges) for bats is present in the Project Area.

Overall, wildlife species likely to occur in the Project Area are those that are common and widespread species in the region, and that are adapted to developed areas and human disturbance.

12.3.1.2 FEDERALLY AND STATE-LISTED, PROPOSED LISTED, OR PROTECTED SPECIES

CRES queried the USFWS's Information for Planning and Consultation (IPaC) to obtain an unofficial resource list of critical habitat and of federally listed species, proposed species, and candidate species with the potential to occur in the Project Area (USFWS 2026a) and also reviewed the SDGFP website to identify federally listed species and state-listed species with potential to occur in Codington County (SDGFP 2016). The results of these reviews are provided in Table 12-3. The sections that follow describe the habitat requirements of each species and their potential to occur within the Project Area.

There is no designated or proposed critical habitat present in the Project Area (USFWS 2026a).

Table 12-3. Federally Listed and State-Listed Terrestrial Species with Potential to Occur in Codington County

Common Name	Scientific Name	USFWS IPaC Resource List for Project Area	SDGFP County List	Status*
Mammals				
Northern long-eared bat	*Myotis septentrionalis*	✓		FT
Northern river otter	*Lontra canadensis*		✓	ST
Insects				
Dakota skipper	*Hesperia dacotae*	✓	✓	FT
Monarch butterfly	*Danaus plexippus*	✓		PT
Poweshiek skipperling	*Oarisma poweshiek*		✓	FE
Suckley's cuckoo bumble bee	*Bombus suckleyi*	✓		PE
Western regal fritillary	*Argynnis idalia occidentalis*	✓		PT
Birds				
Bald eagle	*Haliaeetus leucocephalus*			BGEPA
Golden eagle	*Aquila chrysaetos*			BGEPA
Piping plover	*Charadrius melodus*		✓	FT, ST
Rufa red knot	*Calidris canutus rufa*	✓		FT
Whooping crane	*Grus americana*		✓	FE, SE
Fish				
Topeka shiner†	*Notropis topeka*	✓	✓	FE

Sources: SDGFP (2016); USFWS (2026a).

* BGEPA – protected by the Bald and Golden Eagle Protection Act; FE – federally endangered; FT – federally threatened; PE – federally proposed endangered; PT – federally proposed threatened; ST – state listed.

† Because the Topeka shiner is an aquatic species, it is discussed in Section 13.

12.3.1.2.1 Northern Long-eared Bat

Summer habitat for the northern long-eared bat (federally endangered) consists of forested areas with trees greater than 3 inches in diameter at breast height (USFWS 2026b). Northern long-eared bats roost in live trees and/or snags that have exfoliating bark, cracks, crevices, and/or cavities (USFWS 2026b). The species typically forages in forest interiors. As a forest interior species, the northern long-eared bat requires contiguous forest blocks; these wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure (USFWS 2026b). Northern long-eared bats also may roost in human-made structures such as buildings, barns, bridges, and bat houses (USFWS 2026b). The species hibernates in caves, mines, or other cave-like structures during the winter.

According to the NLCD, the Project Area contains 2.7 total acres of forest (NLCD 2025); however, much of the Project Area has been previously disturbed, and no forested areas, woodlots, or tree lines are currently present. No human-made structures like buildings, barns, or bridges are present in the Project Area except for the CRW Collector Substation, and no karst features are known to occur in the Project Area.

Due to a lack of suitable habitat, the northern long-eared bat is unlikely to occur in the Project Area during winter or summer. The northern long-eared bat may fly through the Project Area as a temporary migrant during the spring and fall, though migration behavior of the species is poorly understood.

12.3.1.2.2 Northern River Otter

Northern river otters (*Lontra canadensis*) (state threatened) can occupy many types of aquatic habitats, including rivers, streams, lakes, and marshes with deep pools, which typically support abundant vegetation and prey resources (Kiesow and Dieter 2025; SDGFP 2025). Water quality, year-round access to open water, and limited disturbance are important habitat characteristics for the species. No rivers, streams, lakes, marshes with deep pools, or areas of year-round access to open water are present in the Project Area.

Due to a lack of suitable habitat, the northern river otter is unlikely to occur in the Project Area.

12.3.1.2.3 Dakota Skipper

The Dakota skipper (*Hesperia dacotae*) (federally threatened) is an obligate of undisturbed, native prairies, and generally inhabits wet lowlands dominated by bluestem grasses, or dry uplands that are a mix of bluestem and needle stem grasses (Vaughn 2005). Larvae have been observed feeding on several grasses, although little bluestem (*Schizachyrium scoparium*) is the preferred food source; the preferred nectar source for adults is purple coneflower (*Echinacea angustifolia*) (Vaughn 2005), in addition to other prairie flowering species. As of 2002 (the most recent year for which CRES could find publicly available occurrence data in Codington County), Dakota skippers had been recorded at 53 sites in 10 counties in South Dakota, including two sites in Codington County (USFWS 2002). The Codington County occurrences were at Goose Lake (approximately 22.7 miles southwest of the Project Area) and Horseshoe Lake (approximately 20.3 miles west-southwest of the Project Area).

During the 2024 and 2025 natural resources surveys, SWCA did not observe potentially suitable Dakota skipper habitat. Due to a lack of suitable habitat and the overall paucity of occurrence records in Codington County, the Dakota skipper is unlikely to occur in the Project Area.

12.3.1.2.4 Monarch Butterfly

Monarch butterfly (proposed to be federally listed as threatened) habitat occurs throughout most of the United States, including South Dakota, particularly in open habitats and including shortgrass and tallgrass prairies, meadows, livestock pastures, agricultural margins, roadsides, wetland areas, and gardens (Monarch Joint Venture 2026). The monarch has four life stages: egg, larvae, pupae, and adult (Monarch Joint Venture 2026). Milkweed plants (*Asclepias* spp.) are the sole host plant for monarch eggs and larvae, and the presence of milkweed plants is vital to the species throughout its breeding and migratory range (Monarch Joint Venture 2026). Adult monarch butterflies also use nectar-producing plants to feed on during migrations. Suitable habitat with milkweed and other nectar-producing plants may occur in fields, meadows, weedy areas, marshes, and roadsides.

During the 2024 and 2025 natural resources surveys, SWCA observed small areas of potentially suitable habitat with milkweed and potential nectar sources in the Project Area. SWCA also observed adult monarch butterflies in flight and a single monarch caterpillar (i.e., larva).

12.3.1.2.5 Poweshiek Skipperling

The Poweshiek skipperling (*Oarisma poweshiek*) (federally endangered) lives in high-quality tallgrass prairie in both dry upland areas and low moist areas (USFWS 2026c). Nectar species for the Poweshiek skipperling include purple coneflower, black-eyed Susan (*Rudbeckia hirta*), palespike lobelia (*Lobelia spicata*), and other flowering prairie species. There is no definitive research available regarding which plant species are necessary for larvae to develop, but the species appears to select fine-stemmed grasses and sedges, such as slender spike rush (*Eleocharis elliptica*), prairie dropseed (*Sporobolis heterlepis*), and little bluestem (Shepherd 2005; USFWS 2026c). USFWS (2026c) indicates the Poweshiek skipperling may be extirpated from South Dakota.

Due to a lack of suitable habitat (areas of high-quality tallgrass prairie), the Poweshiek skipperling is unlikely to occur in the Project Area.

12.3.1.2.6 Suckley's Cuckoo Bumble Bee

Suckley's cuckoo bumble bee (*Bombus suckleyi*) (proposed to be federally listed as endangered) has historically occurred in a variety of habitats, including prairies, grasslands, meadows, agricultural areas, urban environments, and woodlands up to approximately 10,500 fmsl (USFWS 2024a). The species is an obligate social parasite that relies on host bumble bees, primarily the western bumble bee (*Bombus occidentalis*) and Nevada bumble bee (*Bombus nevadensis*), to collect pollen and provision nests for its young (USFWS 2024a). Historically, the species occurred from Alaska through much of Canada and into several western and northern U.S. states, including South Dakota (USFWS 2024a). Historical records indicate approximately 53 occurrences in South Dakota prior to 2001; however, no records have been documented in the state since 2002 despite increased survey effort (USFWS 2024a). Suckley's cuckoo bumble bee has not been observed anywhere in the United States since 2016 (USFWS 2024a).

Although potentially suitable habitat (i.e., agricultural and herbaceous areas) is present within the Project Area, based on the lack of recent observations in South Dakota and the United States and the absence of recent records near the Project Area, Suckley's cuckoo bumble bee is unlikely to occur in the Project Area.

12.3.1.2.7 Western Regal Fritillary

The western regal fritillary (*Argynnis idalia occidentalis*) (a species proposed to be federally listed as threatened) is associated with native prairie habitats that support its larval host plants, primarily violets

(*Viola* spp.), and that provide abundant nectar sources for adults (USFWS 2023). Suitable habitat generally includes areas of large, intact and often contiguous grasslands (USFWS 2024b). Historically and currently, regal fritillaries have been documented across portions of the Great Plains, including South Dakota, although populations have declined substantially due to habitat loss and fragmentation of native prairie (USFWS 2023). The species is thought to occur in Codington County (USFWS 2023).

Due to a lack of suitable habitat (areas of intact, large grasslands) in the Project Area, the western regal fritillary is unlikely to occur in the Project Area.

12.3.1.2.8 Bald Eagle and Golden Eagle

The bald eagle (*Haliaeetus leucocephalus*) (protected under the Bald and Golden Eagle Protection Act [BGEPA]) typically occupies habitats near large rivers, lakes, and marshes with available food sources (USFWS 2026d). The species builds nests in trees and occasionally on human-made structures (USFWS 2026d). SDGFP indicates that in South Dakota, bald eagles are most strongly associated with large reservoirs and rivers (SDGFP 2026a).

The golden eagle (*Aquila chrysaetos*) (also protected under BGEPA) breeds primarily west of the Missouri River in South Dakota, usually on cliffs, rocky outcrops, and in large trees (Kochert et al. 2002; Pulkrabek and O'Brien 1974). SDGFP indicates no species detections in Codington County, and the Project Area occurs in an area of probability of occurrence (SDGFP 2026b).

Neither eagle species was observed during 232 point count surveys conducted at 29 locations throughout the CRW and CRWII project areas, which include the Project Area. During 2017 and 2018, no eagle nests were observed within the CRW and CRWII project areas, which include the Project Area. Suitable bald and golden eagle habitat is not present in the Project Area, and the species are unlikely to occur except as occasional flyovers.

12.3.1.2.9 Piping Plover

Within South Dakota, piping plovers (*Charadrius melodus*) (federally and state threatened) breed and nest on open beaches, alkaline wetlands, and sandflats (Aron 2005). The Platte River Recovery Implementation Program (2026) indicates that the species breeds in alkaline wetlands and along lake shorelines and on the Missouri River and its tributaries in South Dakota.

The species was not observed during 232 point count surveys conducted at 29 locations throughout the CRW and CRWII project areas, which include the Project Area. Due to a lack of suitable habitat, the piping plover is unlikely to occur in the Project Area.

12.3.1.2.10 Rufa Red Knot

The rufa red knot (*Calidris canutus rufa*) (federally threatened) is a shoreline species that breeds in drier Arctic tundra areas that generally are sparsely vegetated. Outside of the breeding season, the species primarily is found in marine habitats, especially near coastal inlets, estuaries, and bays (Harrington 2001). The species may be present in South Dakota as a migrant or accidental occurrence, but breeding or wintering populations have not been observed (Harrington 2001).

The species was not observed during 232 point count surveys conducted at 29 locations throughout the CRW and CRWII project areas, which include the Project Area. Due to a lack of suitable habitat, the rufa red knot is unlikely to occur in the Project Area.

12.3.1.2.11 Whooping Crane

The Project Area is approximately 35.8 miles east of the 95% core migration corridor (the area containing 95% of documented whooping crane observations during migration) (as delineated by Pearse et al. 2018a, 2018b) at its closest, indicating that it is relatively less likely for whooping cranes (*Grus americana*) (federally and state endangered) to be present within the Project Area than in areas closer to the migration corridor. According to the USFWS Whooping Crane Tracking Project Database (USFWS 2025b), the closest whooping crane observation is from spring 2015, approximately 23 miles northwest of the Project Area. The species was not observed during 232 point count surveys conducted at 29 locations throughout the CRW and CRWII project areas, which include the Project Area.

Suitable whooping crane habitat is not present in the Project Area. The wetlands located within the Project Area (see Section 12.2) are not considered suitable stopover habitat for whooping cranes due to size and/or proximity to paved and gravel roads (The Watershed Institute 2013). Therefore, the species is unlikely to occur in the Project Area.

12.3.1.2.12 Prairie Grouse

The ranges of the greater prairie-chicken (*Tympanuchus cupido*) and sharp-tailed grouse (*T. phasianellus*) include the Project Area, and the Project Area is within core habitat for sharp-tailed grouse. Neither species is federally or state-listed as threatened or endangered.

No leks or greater prairie-chicken or sharp-tailed grouse individuals were incidentally observed in the Project Area during May 2024 or July 2025 natural resources surveys. Additionally, the SDGFP conducted a search of the South Dakota Natural Heritage Database for the Project Area in February 2026, which indicated no records of species at risk in the Project Area (Appendix E).

CRES will instruct its on-site employees and contractors to remain aware of the potential presence of prairie grouse species. If a lek is observed within the Project Area, CRES will coordinate with the SDGFP as soon as possible following the observation.

12.3.2 Impacts/Mitigation

12.3.2.1 GENERAL

Construction of the Project may result in temporary (e.g., in areas that are restored following construction, or due to noise and human activity during construction) and permanent (e.g., in areas where natural vegetation is replaced by impervious or semi-impervious cover) displacement of wildlife individuals. Displaced wildlife are expected to use adjacent habitats elsewhere in and near the Project Area during active disturbance. Where temporary displacement occurs, individuals are also expected to reinhabit disturbed areas following restoration.

Construction may also result in the direct injury or mortality of some wildlife individuals (e.g., reptiles and amphibians). Injury or mortality associated with construction (e.g., crushing by vehicles) is expected to be very limited and not result in population-level effects. Wildlife, when mobile (e.g., adult birds), can escape disturbance.

During O&M activities, wildlife may be disturbed by activity, including vehicle and foot traffic. Such disturbances will be short term and limited to the duration of activities. Wildlife species occurring in the Project Area are expected to be adapted to human disturbance and are expected to habituate to long-term,

intermittent, routine activity (e.g., O&M activities) associated with the Project, which will be similar to, or less frequent than, current land uses in the Project Area.

Construction crews will be instructed to avoid disturbing or harassing wildlife when observed. Further, crews will remove trash from the Project Area to avoid inadvertently attracting scavenger species, which could in turn increase potential impacts to prey species (e.g., nesting birds).

12.3.2.2 FEDERALLY AND STATE-LISTED, PROPOSED LISTED, OR PROTECTED SPECIES

Of the federally and state-listed, proposed listed, or protected species discussed in Section 12.3.1.2, only the monarch butterfly has potential to occur in the Project Area. The species is currently proposed for listing under the Endangered Species Act. If the species becomes listed prior to construction, CRES will survey the Project Area for species presence. If presence is documented, CRES will implement BMPs to avoid impacts to the species (e.g., avoid clearing host plant species during specific seasons).

13 EFFECT ON AQUATIC ECOSYSTEMS (ARSD 20:10:22:17)

ARSD 20:10:22:17. Effect on aquatic ecosystems*. The applicant shall provide information of the effect of the proposed facility on aquatic ecosystems, and including existing information resulting from biological surveys conducted to identify and quantify the aquatic fauna and flora, potentially affected within the transmission site, wind energy site, or siting area, an analysis of the impact of the construction and operation of the proposed facility on the total aquatic biotic environment and planned measures to ameliorate negative biological impacts as a result of construction and operation of the proposed facility.*

13.1 Existing Resources

13.1.1 General

No aquatic resources are present in the Project Area beyond the two delineated wetlands discussed in detail in Section 12.2.

13.1.2 Federally and State-Listed or Protected Species

CRES completed an unofficial IPaC review for the Project Area and reviewed the SDGFP's website to identify federally and state-listed species with potential to occur in Codington County (see Table 12-3) (USFWS 2026a and SDGFP 2016, respectively). The only federally listed aquatic species with potential to occur in Codington County is the Topeka shiner (*Notropis topeka*). No state-listed aquatic species have potential to occur in the Project Area.

13.1.2.1 TOPEKA SHINER

The Topeka shiner is native to eastern South Dakota and is found within tributaries to the James, Vermillion, and Big Sioux Rivers. The species prefers a variety of habitats, including runs, pools, and backwater areas in cool, perennial streams. Occupied streams typically are groundwater-fed and have high water quality, clean gravel substrates, and vegetated banks (Shearer 2003).

No suitable habitat for the Topeka shiner occurs in the Project Area, and the species is unlikely to occur there.

13.2 Impacts/Mitigation

No impacts to aquatic ecosystems or species will occur as these resources and species are not present in the Project Area. Therefore, no mitigation is proposed.

14 LAND USE (ARSD 20:10:22:18)

ARSD 20:10:22:18. Land use. *The applicant shall provide the following information concerning present and anticipated use or condition of the land:*

(1) A map or maps drawn to scale of the plant, wind energy, or transmission site identifying existing land use according to the following classification system:

(a) Land used primarily for row and nonrow crops in rotation;

(b) Irrigated lands;

(c) Pasturelands and rangelands;

(d) Haylands;

(e) Undisturbed native grasslands;

(f) Existing and potential extractive nonrenewable resources;

(g) Other major industries;

(h) Rural residences and farmsteads, family farms, and ranches;

(i) Residential;

(j) Public, commercial, and institutional use;

(k) Municipal water supply and water sources for organized rural water systems; and

(l) Noise sensitive land uses;

(2) Identification of the number of persons and homes which will be displaced by the location of the proposed facility;

(3) An analysis of the compatibility of the proposed facility with present land use of the surrounding area, with special attention paid to the effects on rural life and the business of farming; and

(4) A general analysis of the effects of the proposed facility and associated facilities on land uses and the planned measures to ameliorate adverse impacts.

14.1 Land Use

14.1.1 Existing Resources

The Project Area is within the CRW project area, and land use includes one operational CRW turbine, the CRW Collector Substation, and agriculture. No irrigated lands; pasturelands or rangelands; undisturbed native grasslands; known existing or potential extractive nonrenewable resources; residences, farmsteads, family farms, or ranches; or municipal water supplies or water sources for organized rural water systems are present in the Project Area. Other than the single operational CRW turbine and CRW Collector Substation, no other major industries or public, commercial, or institutional uses are present in the Project

Area. Existing land uses within the Project Area are shown in Appendix A, Figure A-2b. The Project is compatible with these land uses as it is similar to the existing developed infrastructure, and agricultural use will not be restricted in undeveloped areas following construction.

No public, state, or federal lands are present within or adjacent to the Project Area (Appendix A, Figure A-10).

Local land use controls, including zoning ordinances, are discussed in Section 15.

14.1.2 Impacts/Mitigation

During construction, agricultural practices may be interrupted on up to approximately 32.6 acres within the Project Area. Following construction, all aboveground Project infrastructure will be located entirely within land that is currently used for agriculture. On these approximately 7.8 acres of land, land use will permanently shift from agricultural production to an energy storage facility.

Following construction, land use throughout the remainder (44.9 acres; 85.2%) of the Project Area will be restored (where temporary impacts occurred) or unchanged.

No specific resources contemplated by ARSD 20:10:22:18 beyond agricultural land and the limited commercial use of the operational turbine that is part of CRW are present within the Project Area. Therefore, no impacts to such resources will occur, and no mitigation is proposed.

14.2 Sound

The primary land use surrounding the Project Area is agricultural interspersed with operating wind turbines associated with CRW. Farming activities and vehicle traffic on county and local roads likely account for the largest amount of sound within the Project Area.

14.2.1 Existing Sound Levels and Regulatory Framework

14.2.1.1 SOUND TERMINOLOGY

Sound is measured on a logarithmic scale in units of decibels. Human hearing is not equally sensitive to all frequencies of sound, and the A-weighted decibel (dBA) scale most closely corresponds to the frequency sensitivity range for human hearing. Sound levels capable of being heard by humans are measured in dBA (Table 14-1). Cumulative sound increases along the scale of human perception in a logarithmic scale, with sound levels at less than 3 dBA being barely perceptible and changes in sound levels over 20 dBA being dramatically perceived.

Table 14-1. Typical Human Response to A-weighted Decibel Sound

Sound Pressure Level (dBA)	Human Perception
Less than 3	Barely perceptible
5	Clearly noticeable
10	Doubling or halving of loudness
20	Dramatic change in loudness

Existing sound in rural areas varies between 40 and 50 dBA, sound in suburban areas is generally between 50 and 60 dBA, and sound in urban areas ranges from 60 to 70 dBA (Smith et al. 1999). General background sounds such as a quiet rural area, a whisper, a library, and a quiet suburb are under 50 dBA. Sounds in urban areas include conversations in restaurants, offices, and running household items (e.g., dishwashers, vacuums, radios). Higher sound levels, generally those between 80 to 180 dBA, include jet takeoffs, motorcycles, concerts, stadium sound, shotguns, and a rocket launch (Table 14-2) (Center for Hearing and Communication 2026; IAC Acoustics 2026).

Table 14-2. Sound Source Examples of A-weighted Decibel Sound

Sound Pressure Level (dBA)	Sound Source Example(s)
10	A pin dropping
20	Rustling leaves
30	Whisper; quiet rural area
40	Computer; library
50	Refrigerator; quiet suburb
60	Air conditioner at 100 feet; conversation in restaurant, office, background music
70	Dishwasher; vacuum cleaner; radio; passenger car at 65 miles per hour; excavation equipment (loader, dump truck, concrete mixer truck, air compressor)
80	Garbage disposal, car wash, propeller plane flyover at 1,000 feet; diesel truck at 40 miles per hour; excavation equipment (grader, bulldozer, excavator, concrete truck)
90	Boeing 737 at one nautical mile; lawn mower
100	Motorcycle (riding); garbage truck; jet flyover at 1,000 feet
110	Concert with live rock music; jackhammer; steel mill, automobile horn at 1 meter
120	Thunderclap; chainsaw; oxygen torch
130	Peak stadium crowd sound
140	Jet engine at takeoff; aircraft carrier deck
150	Fighter jet launch
160	Shotgun
170	Safety airbag
180	Rocket launch

Source: Center for Hearing and Communication (2026); IAC Acoustics (2026).

14.2.1.2 SOUND REGULATIONS

Neither the State of South Dakota nor Codington County have regulatory sound limits for BESS. Therefore, the Project has been evaluated against sound level limits agreed upon by the Codington County Commission and CRES. The sound level limits evaluated at participating and non-participating residences are presented in Table 14-3 (Epsilon Associates, Inc. [Epsilon] 2026) (Appendix F).

Table 14-3. Sound Level Limits

Participation Status	Sound Level Limit (dBA)
Participating	50
Non-participating	45

14.2.2 Impacts/Mitigation

14.2.2.1 CONSTRUCTION SOUND LEVELS

Construction activities will produce short-term and intermittent sound that may affect nearby residences on a short-term basis. Short-term construction sound levels will differ depending on the equipment being used and the operation being performed. Typically, construction equipment sound pressure levels range from 70 to 100 dBA at a distance of 50 feet for construction equipment such as air compressors, backhoes, dozers, scrapers, shovels, and trucks (see Table 14-2) (Federal Transit Administration 2018). Sound levels are expected to be quieter in areas farther away from Project construction.

During construction, sound levels will be minimized by ensuring that construction equipment is equipped with working mufflers. Construction activities generally will be limited to the hours of 7 a.m. to 9 p.m., and major construction activities are planned to begin in May 2027 and be completed by April 2028. No additional mitigation measures are necessary as there will be minimal sound impacts from Project construction.

14.2.2.2 OPERATIONAL SOUND LEVELS

CRES conducted a preliminary sound assessment for the Project using specifications of the 150 LG DC Link 5.1 battery containers and 50 PE PCSM Gen3 inverters proposed for the Project (Epsilon 2026) (Table 14-4) (see Appendix F). The assessment included consideration of the 20-foot-tall sound wall (see Section 7.1.5) and of CRW turbines T-25 and T-26 in noise-reduced-operating mode (Epsilon 2026) (see Appendix F). The assessment also incorporated a 2-dBA adjustment to all assessed sources, making the predicted sound levels intentionally conservative. Further, the assessment assumed worst-case sound propagation conditions that occur less frequently than typical weather conditions, meaning sound generally does not travel as far under normal circumstances. In addition, the assessment was based on Project equipment operating at maximum sound output, whereas actual operations—particularly during cooler months—are expected to be well below these levels.

Table 14-4. Battery Container and Inverter Sound Power Levels (per unit)

Project Component	Model	Quantity	Broadband Sound Power Level (dBA)
Battery container	LG DC Link 5.1	150	Confidential
Inverter*	PE PCSM Gen3	50	93

Source: Epsilon (2026).

* With manufacturer sound attenuation kit and 100% fan speed.

The sound assessment used computer-aided noise abatement software developed by DataKustik GmbH and International Organization for Standardization 9613-2 “Attenuation of sound during propagation outdoors, Part 2” (Epsilon 2026). All sound levels assessed, as output from computer-aided noise abatement, are A-weighted equivalent sound levels (Leq, dBA). The sound assessment indicates that no participating residences are expected to be above 49 dBA, and no non-participating existing residences are expected to be above 45 dBA (Epsilon 2026). Therefore, the Project will be compliant with the Commission’s allowable sound pressure levels. Further, these values represent the worst-case future Leq sound levels produced cumulatively by the Project and three (i.e., CRW, CRWII, and Dakota Range) wind farms in the region. Again, these levels are only likely to occur when all Project equipment is operating at maximum load and under optimum sound propagation conditions. This, together with the

conservative modeling approach described above, indicates that the results represent a reasonable worst-case scenario rather than typical conditions.

14.3 Visual Resources

14.3.1 Existing Visual Resources

Dominant visual characteristics in the Project Area are agricultural (e.g., crop production) and development (e.g., substation, operational wind turbine). Open land and two wetlands are also present. No additional constructed infrastructure (e.g., homes, public roads, barns) exist within the Project Area.

Project Area topography is nearly flat, ranging from 1,962.2 to 2,101.3 fmsl (elevation gain of 139.1 feet), as described in Section 10.2.2.1 (see Appendix A, Figure A-2a). Therefore, no significant visual topographic characteristics are present in the Project Area.

14.3.2 Visual Impacts

The degree to which the Project will be visible to onlookers will vary by location. The Project will frequently be visible to landowners or renters who farm areas in or near the Project Area and to people who travel roads near the Project Area. However, constructed features (e.g., existing wind turbines), topography, and natural landscape features such as tree cover, in relation to a viewer's physical location, may impede view of the Project.

The primary visual impact from the Project will include the introduction of additional constructed features. These features will be visible during the day due to visual contrast and potential surface glare.

Many areas near and in the Project Area currently are visually impacted by developed structures (e.g., wind turbines, local transmission lines) and existing roadways. CRES has implemented measures to minimize the impact the Project will have upon existing scenic integrity by incorporating county setback requirements and a sound wall (see Sections 7.3 and 7.1.5. respectively).

15 LOCAL LAND USE CONTROLS (ARSD 20:10:22:19)

ARSD 20:10:22:19. Local land use controls. *The applicant shall provide a general description of local land use controls and the manner in which the proposed facility will comply with the local land use zoning or building rules, regulations or ordinances. If the proposed facility violates local land use controls, the applicant shall provide the commission with a detailed explanation of the reasons why the proposed facility should preempt the local controls. The explanation shall include a detailed description of the restrictiveness of the local controls in view of existing technology, factors of cost, economics, needs of parties, or any additional information to aid the commission in determining whether a permit may supersede or preempt a local control pursuant to SDCL 49-41B-28.*

The Project will be constructed in accordance with the Codington County Comprehensive Zoning Regulations and with land use control policies and local ordinances in the county's comprehensive land use plan (Codington County 2012).

Additionally, the following Project characteristics are consistent with Codington County requirements:

- The BESS is set back a minimum of 100.0 feet from property boundaries.

- The distance from the fence to the nearest road ROW (at 161st Street) is approximately 150.1 feet.
- The distance from the closest BESS component to the nearest road ROW is approximately 258.0 feet.
- The distance from the fence to the nearest residence (located west of the Project Area on 161st Street) is approximately 1,950.0 feet.
- The distance from the closest BESS component to the nearest residence is approximately 2,030 feet.
- The distance from the fence to the nearest wind turbine (located south of the BESS) is approximately 635.0 feet.

CRES applied for a conditional use permit to Codington County on February 22, 2024, for the CRW Collector Substation with a BESS. CRES obtained the conditional use permit from Codington County on May 20, 2024. CRES is currently coordinating with Codington County and will file an application for an extension to the conditional use permit before June 2026.

16 WATER QUALITY (ARSD 20:10:22:20)

ARSD 20:10:22:20. Water quality. *The applicant shall provide evidence that the proposed facility will comply with all water quality standards and regulations of any federal or state agency having jurisdiction and any variances permitted.*

16.1 Existing Water Quality

Section 303(d) of the federal Clean Water Act requires that states develop a list of water bodies that do not meet their designated uses due to excess pollutants (impaired waters) and to determine total maximum daily loads of all pollutants from all sources that a water body can receive and still meet applicable water quality standards. No water bodies occur in the Project Area or directly adjacent to the Project.

Two wetlands occur in the Project Area and are discussed in Section 12.2.

16.2 Potential Impacts/Mitigation

No water bodies occur in the Project Area; therefore, no impacts to water quality are anticipated, and no mitigation is proposed.

Avoidance of impacts to wetlands is discussed in Section 12.2.2.

17 AIR QUALITY (ARSD 20:10:22:21)

ARSD 20:10:22:21. Air quality*. The applicant shall provide evidence that the proposed facility will comply with all air quality standards and regulations of any federal or state agency having jurisdiction and any variances permitted.*

17.1 Existing Conditions

The State of South Dakota follows ambient air quality goals and standards, as defined under the federal government regulations (ARSD 74:36:02). The nearest ambient air quality monitoring station is in Watertown, Codington County, South Dakota, approximately 13.1 miles southwest of the Project Area. The primary sources of emission within and surrounding the Project Area are vehicles traveling along roadways and agricultural-related equipment.

The existing air quality of the Watertown region is good, based on the air quality index established by the U.S. Environmental Protection Agency under federal regulations. Watertown's air quality monitoring station was established in the western third of Watertown in 2003, located just east of an industrial park area, with service type businesses and light industry to the west and south and residential areas to the north and east of the station. The station monitors for particulate matter 10 microns in diameter or less (PM_{10}), particulate matter 2.5 microns in diameter or less ($PM_{2.5}$), and ozone. Applicable national maximum 24-hour average ambient air quality standards for PM_{10} is 150 micrograms per cubic meter ($\mu g/m^3$), and the $PM_{2.5}$ monitored at the station is 35 $\mu g/m^3$. Annual average maximum $PM_{2.5}$ concentration is 9 $\mu g/m^3$ as measured at the station, and the 8-hour maximum ozone concentration is 0.070 parts per million (ppm). The Watertown area has only exceeded the 24-hour PM_{10} standard twice since 2003; these events were due to high wind events causing fugitive dust levels to exceed the 24-hour standard (SDDANR 2014).

Fugitive dust emissions are produced from wind erosion of disturbed areas and may affect both rural and urban environments. Air quality pollutant emissions include particulate matter such as fine dust from vehicle travel on unpaved roads; agricultural activities; other wind-blown dust and air pollutants; ozone or ground-level smog such as carbon monoxide; and sulfur dioxide and nitrogen oxides from vehicles, stationary sources burning coal and oil, electric utilities, and industrial boilers. Sulfur dioxide and nitrogen oxide are monitored in Sioux Falls, which is the closest monitoring station to the Project Area that monitors these elements (SDDANR 2026c).

The entire state of South Dakota is in attainment for all National Ambient Air Quality Standards established by the U.S. Environmental Protection Agency (2026). Therefore, general conformity is not applicable.

17.2 Impacts/Mitigation

Project construction is likely to result in temporary impacts to air quality. Construction activities may result in increased short-term airborne dust/particulate matter and construction equipment and vehicle emissions. Construction activities may include clearing, hauling, and excavation that could produce dust. CRES will use standard BMPs to minimize potential impacts to air quality. Such BMPs may include dust suppression/control and reclamation during and after construction, as required by the SWPPP and/or Codington County haul road permits that may be required. Impacts will be temporary; no long-term impacts on air quality will result from construction activities. No impacts to air quality from Project operation are anticipated, nor will the Project produce air emissions that will impact surrounding areas.

18 COMMUNITY IMPACT (ARSD 20:10:22:23)

ARSD 20:10:22:23. Community impact. *The applicant shall include an identification and analysis of the effects the construction, operation, and maintenance of the proposed facility will have on the anticipated affected area including the following:*

(1) A forecast of the impact on commercial and industrial sectors, housing, land values, labor market, health facilities, energy, sewage and water, solid waste management facilities, fire protection, law enforcement, recreational facilities, schools, transportation facilities, and other community and government facilities or services;

(2) A forecast of the immediate and long-range impact of property and other taxes of the affected taxing jurisdictions;

(3) A forecast of the impact on agricultural production and uses;

(4) A forecast of the impact on population, income, occupational distribution, and integration and cohesion of communities;

(5) A forecast of the impact on transportation facilities;

(6) A forecast of the impact on landmarks and cultural resources of historic, religious, archaeological, scenic, natural, or other cultural significance. The information shall include the applicant's plans to coordinate with the local and state office of disaster services in the event of accidental release of contaminants from the proposed facility; and

(7) An indication of means of ameliorating negative social impact of the facility development.

The following sections describe those resources, and any associated impacts, addressed in ARSD 20:10:22:23, with exception of the following, for which no resources are present within or within 1 mile of the Project Area:

- Recreational facilities
- Schools
- Transportation facilities (i.e., railroads or airports)

Because no recreational facilities, schools, railroads, or airports are present in or within 1 mile of the Project Area, no impacts to such features will occur and no mitigation is required.

18.1 Commercial and Industrial Sectors

18.1.1 Existing Resources

The Project Area is within the existing CRW project area and includes one operational turbine and the CRW Collector Substation. Several operational wind turbines associated with CRW are within 1 mile of the Project Area. Other than these structures, no other commercial or industrial uses are present in or within 1 mile of the Project Area.

18.1.2 Impacts/Mitigation

The Project will provide dispatchable capacity next to an existing wind resource (CRW) (see Section 6) and is compatible with existing land use (see Section 14.1). Therefore, the Project will not have any adverse impacts to commercial or industrial sectors, and CRES has determined that no mitigation is required.

18.2 Socioeconomics

The following sections describe existing conditions and associated impacts, where applicable, to population, income, occupational distribution, labor market, housing, land/property values, and communities.

18.2.1 Existing Resources

According to the U.S. Census Bureau, the Codington County population estimate in 2025 was 29,562 (U.S. Census Bureau 2026). The unemployment rate for Codington County in July 2024 was 267 people of the 16,723 people in the labor force (approximately 1.6%). From 2018 to 2023, jobs in Codington County increased by 5.9%, with this increase being projected to continue. As of 2023, the top two industries in Codington County were manufacturing and retail trade, followed by government, health care, and social assistance (South Dakota Governor's Office of Economic Development 2024). In April 2026, Codington County had 223 homes for sale, many of which are in Watertown (approximately 13.0 miles southwest of the Project Area) (Realtor 2026).

18.2.2 Impacts/Mitigation

The Project will have positive economic impacts for the local population, including payment for the purchase of the land, employment, and property and sales tax revenue. CRES estimates that the total cost of the Project will be approximately $174 million (see Section 5). There are no BESS facilities currently in South Dakota; therefore, the tax structure is not clearly defined. However, if the Project were to be taxed at the assumed rate of a traditional commercial property or gas plant, it would result in approximately $2 million annually depending on the assessed value for property taxes and in approximately $6.5 million sales tax. CRES will work with First District Association of Local Governments (First District) to develop an in-depth social and economic impact study following the start of the local review committee's review of this application. CRES will have more accurate information following completion of the impact study and will share results with Codington County and the Commission at that time.

CRES has executed a voluntary lease with a purchase option agreement for the land where the Project is located, providing a benefit to the landowner.

As described in Section 7.4.2, the Project is anticipated to require up to 60 temporary workers for the duration of construction (approximately 9–12 months), with the number of workers on-site at any given time varying depending on the phase of construction. Labor will likely consist of both local (i.e., residing within the Codington County or within 50 miles of the Project Area) and non-local (i.e., residing outside of Codington County, and in other areas of the state, the region, or other states). It is likely that general skilled labor is available locally to serve the basic Project site preparation and construction needs. Additionally, specialized labor will be required for certain components of Project development and may require non-local workers. CRES expects that balancing the use of local construction contractors and non-local specialized construction contractors will alleviate any labor relations issues.

The total wages and salaries local workers are paid will contribute to the total personal income of the county and/or the state, resulting in a temporary benefit to the local economies. Non-local workers, when employed, are likely to use lodging facilities in and around Watertown or other areas in the county, which will also result in temporary benefits to local businesses and the economy. Additionally, any Project- or worker-related expenditures made for equipment, energy, fuel, operating supplies, food, and other products and services will temporarily benefit businesses in the county and state.

The Project will create approximately one to two full-time O&M jobs (see Section 7.5). These employees are expected to reside locally (i.e., within the county or within 50 miles of the Project Area). The total wages and salaries these local workers are paid will contribute to the total personal income of the county and/or the state. Project operation is not expected to result in measurable impacts to the local economies, to the number of permanent residents in communities near the Project Area, to demand for permanent housing, or to local businesses.

Long-term beneficial impacts to Codington County's tax base will contribute to the local economy as a result of Project construction and operation. Socioeconomic impacts associated with the Project are expected to be positive, with an influx of wages and expenditures made at local businesses during the construction period. Based on this assessment, CRES has concluded that no mitigation measures are required.

Currently, CRES is unaware of any publicly available, peer-reviewed empirical studies analyzing the potential relationships between BESS projects and land or property values. CRES does not anticipate that the Project will have an effect on land or property values.

18.3 Health Facilities

18.3.1 Existing Resources

No healthcare facilities are in or within 1 mile of the Project Area. Construction workers or O&M workers needing medical attention will likely seek assistance at Prairie Lakes Hospital in Watertown, which is approximately 13.5 miles southwest of the Project Area.

The following ambulance services could respond to medical emergencies at the Project Area:

- South Shore Area Volunteer Fire Department located in South Shore approximately 4.0 miles north of the Project Area
- Watertown Fire Rescue located in Watertown approximately 13.5 miles southwest of the Project Area

18.3.2 Impacts/Mitigation

CRES will employ rigorous safety protocols and adhere to all applicable safety standards to avoid and minimize the likelihood of accidents requiring medical treatment (see also Section 7.6). Therefore, CRES does not anticipate that accidents will occur in such a way (e.g., frequently) as to place an undue burden on health facilities during the life of the Project. CRES has determined that no mitigation is necessary.

18.4 Electrical and Cellular Services

18.4.1 Existing Resources

The Codington-Clark Electric Cooperative, Inc., provides rural electrical service in the Project Area and in Codington County.

In Codington County, cellular service is supported by several major carriers with coverage of urban and rural areas. Verizon and AT&T are the primary providers offering coverage throughout the region.

18.4.2 Impacts/Mitigation

The Project will self-supply electricity stored from the BESS during active operation or use station service from the Codington-Clark Electric Cooperative, Inc., while idle. Therefore, CRES has determined that no mitigation is required.

BESS facilities do not cause disruptions to cellular telephone signals. BESS facilities operate within a different frequency range than cellular telephone signals, ensuring there is no interference. No impact to existing cellular service is anticipated. Therefore, CRES has determined that no mitigation is required.

18.5 Sewage, Water, Solid Waste Management Facilities

18.5.1 Existing Resources

Many Codington County residents in rural or unincorporated areas rely on private septic systems rather than municipal sewer lines. No municipal sewer lines are present within the Project Area. It is likely that within 1 mile of the Project Area, residents rely mostly on private septic systems (County Office 2006).

The Watertown Municipal Utilities Department supplies potable water to communities in Codington County; however, no water utilities serve the Project Area (County Office 2026).

The Watertown Sanitation Department operates the Watertown City Landfill and provides waste management services such as garbage collection, recycling, yard waste disposal, and composting for the Watertown area (County Office 2026).

18.5.2 Impacts/Mitigation

The BESS will be uninhabited with no restroom facilities or running water during operations, and the only restroom facilities provided during construction and decommissioning will be portable units to be serviced by licensed providers (see Section 7.1.12). Therefore, no effects on local sanitation service providers or nearby private septic systems are anticipated, and CRES has determined that no mitigation is required.

The Project is not expected to impact local water utilities. Water required for construction (see Section 11.3.2) will be hauled via water trucks and stored on-site in a temporary storage tank for dust control during construction and will be sourced from locally available private water sources (e.g., pond water from nearby landowners) or public waters, as needed. Therefore, no effects on water utilities are anticipated and CRES has determined that no mitigation is required.

It is possible that CRES will dispose of refuse at nearby, licensed facilities (e.g., the Watertown City Landfill). In so doing, CRES will adhere to all state and local requirements for disposal of all refuse resulting from construction and/or operation of the BESS (see Section 7.1.12). Therefore, no effects on such facilities are anticipated, and CRES has determined that no mitigation is required.

18.6 Roads and Traffic

18.6.1 Existing Resources

The Project Area is bounded to the west by 464th Avenue and to the north by 161st Street. The network that will make up the transportation system used during Project construction and O&M includes public

county roads, public township roads, public section lines, and private access roads. The Project Area lies within the South Dakota Department of Transportation (SDDOT) Watertown Area of the Aberdeen Region (SDDOT 2025). Within 1 mile of the Project Area, portions of 161st Street and 162nd Street experience annual daily traffic (i.e., average number of vehicles per day) of 0 to 250, and portions of 464th Avenue experience annual daily traffic of more than 250 to 550 and more than 550 to 1,500 (SDDOT 2025).

18.6.2 Impacts/Mitigation

CRES or its contractors will coordinate with state, county, and local transportation, highway, and road authorities to obtain all required permits (e.g., oversize/overweight permit, haul road permit), as needed and described in Section 29. CRES or its contractors will complete Project-related activities in compliance with such permits, including restoration for damages to roadways if applicable.

There will be a temporary increase in vehicular traffic during construction activities. Impacts are expected to be temporary and minor during construction, limited to up to approximately 60 temporary workers and up to 20 vendor trips accessing the Project Area daily during the 9- to 12-month construction period (see Section 7.4.1). During Project O&M, approximately one to two full-time employees will use the local road network to access the Project Area intermittently, which is not expected to have a measurable impact to traffic volume.

Although there may be some increase in heavy vehicle traffic in discrete locations for limited amounts of time, any impacts to public use of roadways in the Project Area will be negligible and temporary and will be resolved with the completion of construction. Therefore, CRES has determined that no mitigation is required.

18.7 Agricultural Production and Use

18.7.1 Existing Resources

The Project Area is zoned as agricultural (see Section 2). The Project Area is within the existing CRW project area and includes one operational turbine and the CRW Collector Substation.

Codington County has a total land area of 687 square miles (439,680 acres), with approximately 442 square miles (rounded to the nearest whole number; 282,976 acres) of land (65.9% of the county land area) in farms (U.S. Census Bureau 2026; U.S. Department of Agriculture 2022). In 2022, there were a total of 500 farms, and the average-sized farm was 566 acres. Crop sales were primarily grains, oil seeds, dry beans, and dry peas, whereas poultry and eggs, cattle and calves, and milks from cows made up most livestock, poultry, and product sales (U.S. Department of Agriculture 2022).

18.7.2 Impacts/Mitigation

Project construction will result in temporary impacts to an estimated 32.6 acres, some of which appears to be currently used to produce soybeans. During construction, farming operations will cease in active construction areas to protect the safety of both farmers and construction workers on these 32.6 acres, which comprises <0.01% of the total agricultural area within Codington County. Areas disturbed during construction will be repaired and restored to preconstruction contours to the extent practicable so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion. Temporary construction areas will be restored in accordance with the SWPPP.

Following construction, impacts to agricultural areas will remain on approximately 7.8 acres for the operational life of the Project where BESS components are installed. These acres represent <0.002% of the total agricultural area within Codington County. Economic losses from farmland that is taken out of production for operation of the Project are anticipated to be minimal in comparison to the additional income provided by the Project (see Section 18.2).

These limited impacts to agriculture are minor and are not expected to affect the overall agricultural sector in the community or in the county, and no mitigation is proposed.

Drain tile lines may be present in the Project Area. CRES will identify and mark drain tile lines to avoid damage during construction. Where locations are known, temporary travel paths will avoid drain tiles where possible. Where avoidance is not possible, matting may be used. If drain tile lines are inadvertently damaged by construction of the Project, CRES will repair tile lines.

18.8 Emergency Response, Fire Protection, and Law Enforcement

CRES will prepare an ERP for the Project following its company template (Appendix G). The ERP will be shared with local emergency response personnel, as needed, and filed with Codington County and the Commission prior to the Project commercial operations date. CRES has engaged and/or will engage with first responders to coordinate response efforts in the unlikely event of an emergency. These first responders include the following:

- Codington County Emergency Management located in Watertown approximately 13.5 miles southwest of the Project Area
- Codington County Sheriff's Office located in Watertown approximately 13.5 miles southwest of the Project Area
- Prairie Lakes Hospital located in Watertown approximately 13.5 miles southwest of the Project Area
- South Dakota State Fire Marshal's Office located in in Pierre approximately 175.0 miles west-southwest of the Project Area
- South Shore Area Volunteer Fire Department, which also includes ambulance services, located in South Shore approximately 4.0 miles north of the Project Area
- Watertown Fire Rescue, which includes ambulance services and is located in Watertown approximately 13.5 miles southwest of the Project Area
- Watertown Police Department located in Watertown approximately 13.5 miles southwest of the Project Area

Specific contact information for these entities will be included in the ERP. Coordination with these first responders includes the following key actions:

- **Orientation**. CRES will provide a general orientation of the Project to first responders once key design details and access points have been established.
- **ERP training**. CRES, in collaboration with the Power Generation Division of NextEra Energy Resources, will coordinate with applicable local emergency responders for ERP training closer to the commissioning phase of the Project. This training will help prepare first responders for managing potential incidents at the Project.

- **Annual refresher ERP training**. To maintain readiness, CRES will offer annual refresher ERP training, as required by NFPA and the International Fire Code. This will ensure ongoing preparedness and reinforce best practices for safety and fire protection systems at the Project.

Following the occurrence of a significant event involving an emergency, CRES will notify Codington County Emergency Management and the Commission. CRES will, within 30 calendar days of an extraordinary event, submit a report to Codington County Emergency Management describing the cause of the occurrence and the steps taken to avoid future occurrences.

In addition to those procedures (e.g., ERP training) required by the Project ERP, CRES will employ rigorous safety protocols and adhere to all applicable safety standards to avoid and minimize the likelihood of a significant event occurring (see also Sections 7.6). Therefore, CRES does not anticipate that extraordinary events will occur in such a way (e.g., frequently) as to place undue burden on first responders during the life of the Project. CRES has determined that no mitigation is necessary.

18.9 Public Health and Safety

CRES will implement several measures to mitigate risks to public safety. Batteries used at the Project will undergo rigorous industry testing and certification to ensure that cell and module designs are robust. Each container will be equipped with fire protection and control systems that comply with NFPA standards. The Project will have a thermal management system to maintain operations within a prescribed temperature range. The Project will use sensors to detect and alarm in the event of abnormal conditions, and each BESS will be equipped with a BMS that can automatically shut down an affected unit (see Section 7.1.2).

In addition, and during construction, CRES will install safety signage providing information regarding high voltage within the BESS and information for emergency services on the fence near the entrances and at swing gates (see Section 7.1.8).

18.10 Cultural Resources

18.10.1 Existing Resources

This section presents the results of a record search, a review of previously recorded cultural resources, and the results of the current Level III cultural resources survey report conducted for the Project.

In accordance with the *South Dakota Guidelines for Complying with Federal and State Preservation Laws* (South Dakota State Historical Society 2023), cultural resources reviews were conducted for an area that includes a 1-mile buffer of the Project Area. The record search for the Project considered all cultural resources documented within and up to 1 mile of the Project Area.

The records search was conducted on May 14, 2024, and updated on February 23, 2026, through the Archaeological Research Center at the South Dakota State Historical Society for the Project Area. Pursuant to SDCL 1-20-21, information contained within the records search data is confidential and not for public distribution. Additional background research conducted for the Project Area included a review of the historical General Land Office (GLO) plat maps available online from the Bureau of Land Management. Information presented below is a summary of the data obtained from the Archaeological Research Center and from the GLO database; site-specific location information is confidential and is not included in this review.

The results of the records show that nine previous cultural resource inventories have been conducted within 1 mile of the Project Area for other projects. Three of these inventories overlap the Project Area, providing full coverage. Eight of the previous inventories were completed in the past 10 years.

18.10.2 Existing Cultural Resources

The records search was conducted within 1 mile of the Project Area, according to South Dakota State Historic Preservation Officer guidance. This search determined that nine previously documented archaeological sites have been recorded within 1 mile of the Project Area. Previously documented sites within 1 mile of the Project Area and their eligibility for the National Register of Historic Places (NRHP) and State Register of Historic Places (SRHP) are discussed below by resource type.

The nine previously documented archaeological sites include Native American stone feature sites, Native American isolated artifacts, Euro-American feature sites, and Euro-American isolated artifacts. Of the nine sites, one has been determined by State Historic Preservation Office as not eligible for the NRHP and SRHP. The remaining eight sites have not been evaluated for the NRHP and SRHP, though two have been recommended eligible and one has been recommended not eligible. None of the previously recorded sites are within the Project Area.

18.10.2.1 PREVIOUSLY DOCUMENTED CEMETERIES

No previously documented cemeteries have been identified within 1 mile of the Project Area.

18.10.2.2 GENERAL LAND OFFICE REVIEW

The GLO survey plat map for Township 118 North, Range 51 West from 1873 was reviewed for historic features that may be located within the Project Area. This review indicated that no historic features were documented within or near the Project Area at that time.

18.10.3 Level III Cultural Resources Survey

The Project Area is fully within areas inventoried within the last 10 years. However, SWCA conducted a supplemental Level III cultural resources survey of 21 acres within the Project Area on May 18, 2024. The principal investigators supervising this survey meet the U.S. Secretary of the Interior's Professional Qualifications Standards for archaeology. No archaeological sites or standing structures were identified within the Project Area (SWCA 2026a). A report detailing the results of the Level III survey and the greater Project Area within previously surveyed areas was submitted to the South Dakota State Historical Society on April 14, 2026 (see Appendix H [report has been redacted to protect sensitive information]).

A survey for Tribal sensitive sites of an area that includes the Project Area was previously conducted in 2019 during surveys for the CRWII generation tie-line. Four Tribal sensitive sites are fully within the Project Area, and five additional Tribal sensitive sites are partially in the Project Area. CRES has designed the Project to avoid all sensitive sites. In addition, previously identified Tribal sites will be fenced for avoidance and monitored during construction with the participation of the Sisseton Wahpeton Oyate of the Lake Traverse Reservation. CRES will also prepare an unanticipated discovery plan prior to construction to ensure safeguards are in place should resources be discovered during construction.

18.10.4 Impacts/Mitigation

No Project construction activities are planned near archaeological sites or historic standing structure sites. Additionally, no buildings or structures listed in the NRHP or on the SRHP occur within 1 mile of the

Project Area. Although sites important to Tribal cultural traditions are present within the Project Area, they will be avoided by Project construction activities.

19 EMPLOYMENT ESTIMATES (ARSD 20:10:22:24)

ARSD 20:10:22:24. Employment estimates. *The application shall contain the estimated number of jobs and a description of job classifications, together with the estimated annual employment expenditures of the applicants, the contractors, and the subcontractors during the construction phase of the proposed facility. In a separate tabulation, the application shall contain the same data with respect to the operating life of the proposed facility, to be made for the first ten years of commercial operation in one-year intervals. The application shall include plans of the applicant for utilization and training of the available labor force in South Dakota by categories of special skills required. There shall also be an assessment of the adequacy of local manpower to meet temporary and permanent labor requirements during construction and operation of the proposed facility and the estimated percentage that will remain within the county and the township in which the facility is located after construction is completed.*

The Project will create up to 60 temporary construction jobs over the approximately 9- to 12-month construction period, with the number of workers on-site at any given time varying depending on the phase of construction. Once construction is complete, the Project will create approximately one to two full-time O&M jobs. These employees are expected to reside locally (i.e., within the county or within 50 miles of the Project Area).

20 FUTURE ADDITIONS AND MODIFICATIONS (ARSD 20:10:22:25)

ARSD 20:10:22:25. Future additions and modifications*. The applicant shall describe any plans for future modification or expansion of the proposed facility or construction of additional facilities which the applicant may wish to be approved in the permit.*

To maintain the Project's contractually required energy capacity over its operational life, and as described in Sections 7.1.1 and 7.1.4, periodic augmentation is planned to offset the gradual capacity degradation in the original battery systems. The Project was initially sized to meet the full nameplate energy requirement from the start of operations, accounting for auxiliary loads and other energy losses. However, as batteries naturally degrade over time, new battery containers and PCSs will be integrated within the existing footprint to uphold the contracted energy levels. The nameplate capacity will not be increased by augmentation but will remain the same. The Project design accounts for planned augmentation, and augmentation is expected to occur, as needed, every 3 to 4 years depending on actual degradation as measured by periodic capacity tests and findings from routine inspections. These inspections and installation of additional capacity are part of the O&M activities described in Section 7.5.

Based on the current design, CRES will install approximately 126 initial BESS cabinets plus an additional 24 augmentation cabinets (see Section 7.1.1) for a total of approximately 150 BESS cabinets. CRES will also initially install approximately 46 PCSs, with an additional four augmentation PCSs (see Section 7.1.4), for a total of approximately 50 PCSs. The final numbers may change depending on final design and technology changes at the time of augmentation.

The site plan submitted with this application (see Appendix C) includes all areas needed for future augmentations, and the construction contractor will grade and prepare augmentation areas during initial construction, as described in Section 7.4.

21 NATURE OF PROPOSED ENERGY CONVERSION FACILITY (ARSD 20:10:22:26)

ARSD 20:10:22:26. Nature of proposed energy conversion facility. *The application shall contain a description of the operating nature of the proposed facility, the expected source and quantity of its raw materials, and energy requirements. The preceding shall be illustrated by means of an annotated map. The description shall include the following:*

(1) The proposed on-line life of the facility and its projected operating capacity during its on-line life;

(2) A general description of the major components of the proposed facility such as boilers, steam generators, turbine generators, cooling facilities, production equipment, pollution control equipment, and other associated facilities;

(3) An identification of materials flowing into the facility, including all materials such as air, water, coal, and chemical compounds that will be utilized by the proposed facility, recorded in accordance with accepted scientific practices regarding their estimated consumption rate;

(4) An inventory of all materials flowing out of the proposed facility, including the method of control, treatment, destination, and disposal monitoring programs of each of the materials; and

(5) The procedures proposed to avoid or ameliorate the possibility that the discharges, emissions, or solid wastes would do any of the following:

(a) Constitute a public nuisance;

(b) Endanger the public health and safety;

(c) Endanger human, animal, or plant life; or

(d) Endanger recreational facilities.

21.1 Proposed On-Line Life and Operating Capacity

The Project will have an operating capacity of 120 MW and is expected to be on-line for approximately 35 years (see Section 1).

21.2 General Description of Major Project Components

A description of Project components is provided in Section 7.1.

21.3 Identification of Materials Flowing Into the Facility

The potential use of water during Project construction is described in Section 11.3.

No materials such as air, water, coal, or chemical compounds will flow into or be used by the Project during O&M.

21.4 Identification of Materials Flowing Out of the Facility

Emissions, such as fugitive dust, and waste that may result during Project construction are described in Sections 17.2 and 18.5.2, respectively.

During O&M, the Project will not result in discharges, emissions, or solid waste beyond stormwater runoff. Stormwater management is described in Section 7.1.9.

21.5 Procedures to Mitigate

The Project will not result in a possibility for discharges, emissions, or solid wastes to do any of the following:

- Constitute a public nuisance
- Endanger the public health and safety
- Endanger human, animal, or plant life
- Endanger recreational facilities

Therefore, no procedures are needed to avoid or ameliorate such impacts.

22 PRODUCTS TO BE PRODUCED (ARSD 20:10:22:27)

***ARSD 20:10:22:27: Products to be produced**. The applicant shall describe both in general terms and by technical description the products and by-products to be produced by the proposed facility and their destinations.*

The Project will store electricity that will be provided to the regional energy market. The Project is not anticipated to produce by-products.

23 FUEL TYPE USED (ARSD 20:10:22:28)

***ARSD 20:10:22:28. Fuel type used**. The applicant shall provide a description of the type of fuel used, including:*

(1) Primary proposed fuel types;

(2) Anticipated yield and range (BTU or appropriate unit); and

(3) Approximate chemical analysis of the proposed design fuel.

No fuel types are proposed to be used by or yielded from the Project.

24 PROPOSED PRIMARY AND SECONDARY FUEL SOURCES AND TRANSPORTATION (ARSD 20:10:22:29)

***ARSD 20:10:22:29. Proposed primary and secondary fuel sources and transportation**. On a map drawn to scale, the applicant shall provide the location of proposed primary and secondary sources of fuel and method of its transportation. When possible, the map shall show the location of the proposed facility; where distances are too great to show the facility and proposed primary and alternate supply sources, smaller scale inserts showing relative location shall be presented. The applicant shall also describe any additional transportation facilities needed to deliver raw materials and to remove wastes.*

No fuel types are proposed to be used by or yielded from the Project beyond that required for use of construction equipment, vehicles, and batteries. Additional fuels, or fuel storage, will not be required for the Project.

CRES will use the existing road system within and near the Project Area to deliver materials and remove waste to and from the Project Area. Roads within and near the Project Area include public county roads, public township roads, public section lines, and private access roads.

25 ALTERNATIVE ENERGY RESOURCES (ARSD 20:10:22:30)

ARSD 20:10:22:30. Alternative energy resources. *The applicant shall provide information concerning the alternate energy resources considered in the construction of the energy conversion facility. The applicant shall also discuss the reasons for selecting the proposed energy resource rather than an alternative resource.*

Due to the unique challenges and requirements of energy storage, it is unlikely that alternative technologies, such as hydrogen storage, compressed air energy storage, flywheel energy storage, pumped hydro storage, thermal energy storage, or natural gas/biogas backup, would fully replicate the capabilities and versatility provided by a BESS. Therefore, it is unlikely that an alternative to a BESS would meet the same need.

26 SOLID OR RADIOACTIVE WASTE (ARSD 20:10:22:31)

ARSD 20:10:22:31. Solid or radioactive waste. *The applicant shall provide information concerning the generation, treatment, storage, transport, and disposal of solid or radioactive waste generated by the proposed facility and evidence that all disposal of the waste will comply with the standards and regulations of any federal or state agency having jurisdiction. Any variations from these standards shall be indicated.*

CRES conducted a Phase I Environmental Site Assessment for the Project. The assessment indicated no recognized environmental conditions, controlled recognized environmental conditions, or significant data gaps in connection with the Project Area (SWCA 2026b).

As with any construction activity, there is the possibility of accidentally spilling fuel, hydraulic fluid, or other hazardous substances during construction. Any petroleum waste produced will be handled and disposed of in accordance with local, state, and federal regulations. If construction or operation of the Project involves storing more than 1,320 gallons of oil or other hazardous substances, an SPCC plan will be required. This plan will outline the procedures for safe storage, spill prevention practices, and emergency response protocols to ensure environmental safety. The need for an SPCC plan will be assessed based on the final design of the Project.

27 ESTIMATE OF EXPECTED EFFICIENCY (ARSD 20:10:22:32)

ARSD 20:10:22:32. Estimate of expected efficiency. *The applicant shall provide an estimate of the expected efficiency of the proposed energy conversion process and discuss the assumptions on which the estimate is based.*

The Project will not convert energy but rather will store energy. The Project optimizes energy conservation through its location by being strategically located within the existing CRW project area. Its proximity to existing infrastructure will allow surplus energy to be efficiently stored. Additionally, the Project's energy-efficient design and streamlined processes will enhance overall energy conservation by minimizing energy losses during storage and distribution, ensuring that stored energy is used with maximum efficiency.

28 DECOMMISSIONING (ARSD 20:10:22:33.01)

ARSD 20:10:22:33.01. Decommissioning of wind energy facilities and solar energy facilities -- Funding for removal of facilities. *The applicant shall provide a plan regarding the action to be taken upon the decommissioning and removal of the wind energy facilities and solar energy facilities. Estimates of monetary costs and the site condition after decommissioning shall be included in the plan. The commission may require a bond, guarantee, insurance, or other requirement to provide funding for the decommissioning and removal of a wind energy facility and solar energy facility. The commission shall consider the size of the facility, the location of the facility, and the financial condition of the applicant when determining whether to require some type of funding. The same criteria shall be used to determine the amount of any required funding.*

The Project's draft decommissioning plan is provided in Appendix I. CRES will prepare a final decommissioning plan for the Project and file the plan with Codington County and the Commission prior to the Project commercial operations date.

28.1 Timeline

CRES currently estimates that the BESS will have a useful life of at least 35 years based on its experience operating projects, models, and technology. At that time, CRES may either extend and continue operations or decommission the BESS. If operations continue, either existing equipment will be used or equipment will be upgraded with newer technologies. If operations are not extended, the BESS will be decommissioned. One year in advance of anticipated decommissioning, CRES will provide notice to Codington County that decommissioning will occur. After that time, the BESS will be decommissioned, and the existing equipment will be removed, as described in the following sections of this application. Decommissioning may require up to 12 months. This period may be extended up to an additional 12 months if there is a delay caused by forces beyond the control of CRES, including inclement weather conditions, permitting delays, planting requirements, equipment failure, or the availability of equipment or personnel to support decommissioning. Decommissioning equipment and the number of personnel will be similar to or less than that required for construction. The estimated cost to decommission the Project, excluding consideration of salvage value, is approximately $5,016,000.

28.2 Removal and Disposal of Facilities

The goal of decommissioning is to remove the installed facilities and to return the Project Area to a condition as close to preconstruction as feasible. Disposal of components will meet applicable provisions of state and local waste requirements, and all receiving facilities will be licensed or certified to accept the specific types of equipment and material discussed.

- **Batteries, system cabinets, BMSs, PCSs, and miscellaneous equipment.** All equipment will be inspected and tested, if applicable, prior to being disconnected and removed. Operable or usable equipment will be packed and shipped to an off-site facility for reuse or resale. Nonworking

equipment will be packed and shipped for recycling or other appropriate disposal methods at an appropriate facility. CRES will assess resale options upon decommissioning. Batteries include lithium-ion, which degrades but can be recycled or repurposed. Energy storage enclosures include steel or aluminum, with concrete foundations—all of which may be recycled.

- **Electrical collection system.** Assuming that the electrical collection system (including the collection line) no longer serves a purpose for the site, it will be disassembled and removed. CRES will remove all buried cables up to 4 feet deep. All cables and lines will be recycled or disposed of at an appropriate facility. NextEra Energy Resources will backfill trenches with the same soil displaced temporarily during cable removal.
- **Fences.** All fence parts, including foundations, will be disconnected and disassembled, and all parts will be removed. The fence parts will then be subject to one of the following actions: reconditioning and reuse, sold as scrap, recycled, or disposed of at an appropriate facility.
- **Access roads.** Gravel access roads will be stripped. Compacted soils may require ripping to loosen before revegetation. Foreign road materials will be removed and reused or disposed of in accordance with applicable local regulations. Roads will be restored so that they become a part of the natural surroundings and are no longer recognizable, to the greatest extent practicable, as needed or as agreed upon in consultation with the landowner. Road gravel will be used to backfill foundation locations to within 6 inches of final grade. The landowners will have the choice, when the Project is decommissioned, as to whether the Project access roads are to be removed. To facilitate the various uses for the property, the owner may choose to leave the roads in place. If the roads are left, maintenance of the roads will become the responsibility of the respective landowner. All remaining access roads will conform to applicable Codington County regulations in effect at the time of decommissioning.
- **Stormwater management facilities.** CRES will grade stormwater facilities (e.g., retention basins) to match surrounding contours and drainage patterns, decompact soils, and spread topsoil to accommodate agricultural activities or desired future land use.
- **Hazardous materials.** All hazardous materials will be stored, handled, removed, and transported in full compliance with all applicable federal, state, and local laws and regulations. Fuel, hydraulic fluids, and oils will be transferred directly to a tanker truck from the respective tanks and vessels. Storage tanks and vessels will be rinsed and transferred to tanker trucks. If an item cannot be removed at the point of production for a period of time, such as lubricants, paints, and solvents, it will be kept in a locked utility structure with integral secondary containment that meets applicable requirements for hazardous waste storage until removal for proper disposal and recycling. All hazardous materials will be removed from the facility in a timely manner. CRES anticipates that all oils will be recycled at an appropriate facility. Site personnel involved in handling these materials will be trained in proper handling procedures.

  Transportation of the removed hazardous materials will comply with applicable regulations for transporting hazardous materials, including those set by the U.S. Department of Transportation, U.S. Environmental Protection Agency, SDDANR – Waste Management, South Dakota Highway Patrol, and South Dakota State Fire Marshal.

28.3 Erosion and Sediment Control and Pollution Prevention

Decommissioning activities will involve exposure and disturbance of soil. Therefore, CRES or the owner will implement erosion and sediment control measures in accordance with applicable regulations in effect at that time, which are anticipated to include implementation of a SWPPP and standard BMPs. BMPs

implemented during decommissioning activities may include installation of erosion control measures in disturbance areas where potential for erosion exists, consistent with stormwater management objectives and requirements.

28.4 Restoration/Reclamation

CRES will submit a reclamation plan containing details regarding decommissioning and site reclamation to Codington County prior to initiating decommissioning activities. CRES will restore the site to approximate preconstruction conditions to the extent possible. The goal of restoration will be to restore natural hydrology, soil conditions, and vegetation to the greatest extent practicable while minimizing new disturbance. The decommissioning effort will include implementation of BMPs, including the following measures:

- Remediate any petroleum product leaks and chemical releases prior to completion of decommissioning.
- Minimize new disturbance to the greatest extent practicable.
- Remove equipment and access roads up to 4 feet below surrounding grade, backfill with subgrade material, and cover with suitable topsoil to allow adequate root penetration for vegetation.
- Decompact footprints if needed and grade to match surrounding characteristics and contours.
- During decommissioning activities, remove and stockpile topsoil and designate and separate it from other excavated material. Prior to restoration, topsoil will be decompacted to match characteristics of the surrounding area. CRES will replace topsoil to its original depth and original surface contours to the extent practical. CRES will mitigate topsoil deficiencies and settling using imported, locally sourced (from a location within 50 miles of the site) topsoil consistent with the characteristics and quality of soils in the site, if necessary.
- Restore disturbed areas using seed agreed upon with the landowner, if applicable. An appropriate seed mixture will be broadcast or drilled across the site and weed-free mulch will be applied to stabilize the soil and retain moisture for seedling germination and establishment.

29 PERMITS AND APPROVALS (ARSD 20:10:22:05)

ARSD 20:10:22:33.01. Application contents*. The application for a permit for a facility shall contain a list of each permit that is known to be required from any other governmental entity at the time of the filing. The list of permits shall be updated, if needed, to include any permit the applicant becomes aware of after filing the application. The list shall state when each permit application will be filed. The application shall also list each notification that is required to be made to any other governmental entity.*

Table 29-1 includes the potential required permits and approvals for the Project.

Table 29-1. Potential Required Permits and Approvals

Agency	Type of Permit, Approval, or Coordination	Status*	Need or Description
Federal			
U.S. Environmental Protection Agency	SPCC plan	3	Required if more than 1,320 gallons of oil storage is on-site.

Agency	Type of Permit, Approval, or Coordination	Status*	Need or Description
USFWS	Section 10 (no federal nexus, private project) of the Endangered Species Act; Special Use Permit	4	Not applicable as no USFWS easements are present, and no impacts to federally listed species are expected to occur.
U.S. Army Corps of Engineers	Section 404 of the Clean Water Act	4	Not required as no impacts to waters of the United States are expected to occur.
State of South Dakota			
Public Utilities Commission	Facility permit	2	Required for BESS facility over 100 MWs.
Department of Agriculture and Natural Resources	Section 401 Water Quality Certification	4	Not required as no impacts to water resources are expected to occur.
	National Pollutant Discharge Elimination System Permit: General Permit for Storm Water Discharges Associated with Construction Activities	3	Required for disturbance of over 1 acre of land. Must prepare a SWPPP.
	Temporary water use permit for construction activities	3	Required for compliance with South Dakota Code Titles 46 and 46A regarding water rights and water management, respectively. Temporary permits for the use of public water for construction, testing, or drilling purposes.
	General permit for temporary dewatering	4	Compliance with the South Dakota Water Pollution Control Act. A separate general temporary discharge permit for construction dewatering is not required because construction dewatering is authorized under the Construction General Stormwater Discharge Permit (SDR100000).
	Air quality permit	4	Required for a process or fuel burning unit that emits a pollutant into the ambient air.
SDGFP Commission	Environmental review for state-listed species	C	Coordination regarding state-listed species has been completed.
South Dakota State Historical Society	SDCL 1-19A-11.1	A	Compliance required for state permits. Coordination regarding historic properties has been initiated.
Department of Transportation	Highway access permit; road crossing agreements	3	Permit required for construction of access roads from state highways.
	Utility permit	4	Not required as no utility crossings on state highway ROW are associated with the Project.
	Oversize/overweight permit	3	Required for heavy hauling construction equipment and materials on state highways. Construction contractor/trucking company will obtain, as necessary.
Local			
Codington County	Conditional use permit	C	Required for the Project from Codington County Planning and Zoning under the Codington County Zoning Ordinance, Chapter 3.04.
	Utility permit	3	Required for crossing county roads.
	Overweight and/or oversize permit	3	Required for vehicle travel on county roads with loads exceeding 7 tons per axle. Typically obtained by the trucking company.
	Road approach/driveway permit	3	Required for site access from a county road.
	Haul road agreement	3	Required where Codington County Highway System is used for conveyance of construction equipment and materials.
	Building permit	3	Required for facility construction.

Agency	Type of Permit, Approval, or Coordination	Status*	Need or Description
Waverly Township	Road crossing agreement	3	May be required for use of township roads for the conveyance of construction equipment and materials.
	Oversize/overweight permit	3	May be required for vehicle travel on township roads with loads exceeding a specified weight per axle. Typically obtained by the trucking company.

* C = completed and approved; A = applied and/or decision pending; 3 = will apply for prior to construction, if applicable; 4 = not applicable.

30 AGENCY AND PUBLIC COORDINATION

This section describes CRES's outreach efforts as well as federal, state, and local agency and public involvement in the pre-application process. CRES also made efforts to solicit stakeholder and landowner opinions, concerns, and feedback regarding the Project.

On January 15, 2026, CRES sent a letter describing the Project to the SDGFP and USFWS. Those letters and the response received as of the date of this application are included in Appendix E. Table 30-1 provides a summary of significant communication with federal, state, and local agencies, as well as public involvement and/or noticing in chronological order.

CRES will continue to collaborate with agencies and other stakeholders throughout the development, construction, and operation phases of the Project as appropriate.

Table 30-1. Agency and Public Coordination Dates and Correspondence

Date	Entity	Event and Participants
April 14, 2026	South Dakota State Historic Preservation Office	Level III Cultural Resources Survey Report submitted by Abi Riggle (SWCA) to South Dakota State Historic Preservation Office.
February 25, 2026	Codington County Emergency Management/ Watertown Fire Rescue	Meeting with Andrew Delgado, Director of Emergency Management, and Scott Jongbloed, Assistant Fire Chief. Thomas James, Developer, led the meetings to discuss fire safety and emergency response operations and the scheduling of additional training/education.
February 25, 2026	Watertown Chamber of Commerce	Meeting with Tim Sheehan, President and Chief Executing Officer, and Thomas James to discuss Project details, economic opportunities for local residents, and timeline.
February 24, 2026	SDGFP	Letter from Mandy Pearson (SDGFP) to Kely Wabnitz (SWCA) providing comments on the Project.
January 15, 2026	USFWS	Email from Luke Toso (USFWS) to Kely Wabnitz (SWCA) in response to January 15, 2026 letter.
January 15, 2026	USFWS	Letter from Kely Wabnitz (SWCA) to Luke Toso (USFWS) describing Project and inviting questions and comments.
January 15, 2026	SDGFP	Letter from Kely Wabnitz (SWCA) to Mandy Pearson (SDGFP) describing Project and inviting questions and comments.
November 5, 2025	Public	In accordance with SDCL 49-41B-5.1, CRES posted signage at the intersection of 464th Avenue and 161st Street in South Shore, South Dakota. The signage was placed at the northwest corner of the Project Area, approximately 50 feet from the road, approximately 5 feet in height, and in complete view from the road.
October 27, 2025	First District	Meeting with Senior Planner, Luke Muller, to discuss Project progression, required building permits, and new timeline with state permit requirements if jurisdiction is taken.

Date	Entity	Event and Participants
May 20, 2024	Codington County Commission	Conditional use permit hearing and decision. Participants were the Codington County Commissioners, CRES team, and the public.

31 ADDITIONAL INFORMATION IN APPLICATION (ARSD 20:10:22:36)

ARSD 20:10:22:36. Additional information in application. *The applicant shall also submit as part of the application any additional information necessary for the local review committees to assess the effects of the proposed facility pursuant to SDCL 49-41B-7. The applicant shall also submit as part of its application any additional information necessary to meet the burden of proof specified in SDCL 49-41B-22. Applicant's burden of proof. The applicant has the burden of proof to establish that:*

(1) The proposed facility will comply with all applicable laws and rules;

(2) The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area;

(3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and

(4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

The information presented in this application establishes the following:

- The Project complies with applicable laws and rules (see Section 29).
- The Project will not pose a threat of serious injury to the environment or to the social and economic condition of inhabitants in or near the Project Area (see Sections 9–18).
- The Project will not substantially impair the health, safety, or welfare of the inhabitants (see Section 18).
- The Project will not unduly interfere with the orderly development of the region, having given consideration to the views of the governing bodies of the local affected units of government (see Section 15).

32 TESTIMONY AND EXHIBITS (ARSD 20:10:22:39)

ARSD 20:10:22:39. Testimony and exhibits. *Upon the filing of an application pursuant to SDCL 49-41B-11, an applicant shall also file all data, exhibits, and related testimony which the applicant intends to submit in support of its application. The application shall specifically show the witnesses supporting the information contained in the application.*

CRES is submitting testimony and exhibits in support of the application as shown in Table 32-1.

Table 32-1. Testimony and Exhibits Submitted in Support of this Application

Name and Title	Entity	Subject Matter
Jill Seed, Environmental Project Manager	NextEra Energy Resources, LLC	Environmental
Joshua Dudash, Fire and Safety Engineer	NextEra Energy Resources, LLC	Site configuration and components, operations, maintenance, and safety
Daulton Pearson, Lead Project Manager, Development	NextEra Energy Resources, LLC	Project development, siting, construction, community impacts, and decommissioning
Laurie Morrill, Lead Scientist	Epsilon Associates, Inc	Acoustics

33 APPLICANT'S VERIFICATION (ARSD 20:10:22:04)

ARSD 20:10:22:04. *General format of the application for permit. (5) The truth and accuracy of the application shall be verified by the applicant. Each application shall be considered to be a continuing application, and the applicant must immediately notify the commission of any changes of facts or applicable law materially affecting the application. This duty continues up to and includes the date on which the permit is issued or denied;*

Daulton Pearson, being during sworn, deposes and states that he is the authorized representative of Crowned Ridge Energy Storage I, LLC, and is authorized to sign this application on behalf of Crowned Ridge Energy Storage I, LLC. He further states that he does not have personal knowledge of all facts recited in the application and exhibits and attachments attached hereto, but the information has been gathered from employees and agents of Crowned Ridge Energy Storage I, LLC, and the information is verified by him as being true and correct on behalf of Crowned Ridge Energy Storage I, LLC.

Dated this 14th day of May 2026.

Daulton Pearson by Kelly Osmitz

Daulton Pearson
Lead Project Manager, Development

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Appendix B –Codington County Conditional Use Permit

APPENDIX B

Codington County Conditional Use Permit and Letter of Assurances

Prepared by:
Luke Muller, Codington County Zoning Officer
1910 W. Kemp Ave
Watertown, SD 57201
(605) 882-6300

Letter of Assurance

A conditional use permit from the Codington County Zoning Ordinance to operate a Substation with accessory operation & maintenance building/shop, and Battery Energy Storage Site has been granted by the Codington County Board of Adjustment

Property location:

- Zemlicka Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota; &
- Zemlicka Second Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota.

Conditions to be placed upon the conditional use permit issued to Crowned Ridge Wind, LLC and Crowned Ridge Energy Storage I, LLC on the above-described property, owned by Crowned Ridge Wind, LLC and Dewey Zemlicka, et. al. by the Codington County Board of Adjustment on May 20, 2024

1. The applicant apply existing/previously approved haul road agreements used for the wind energy system to this facility for the construction of the accessory batter storage site, unless determined unnecessary by the road authority.

2. Applicant is required to comply with all conditions and/or restrictions as applied by the SDPUC with applicable permits.

3. Applicant is required to prepare, implement, and maintain adherence to the emergency action plan referenced in the application.

4. No batteries may be placed in an area over Zone C of the Aquifer Protection District.

5. The elevation of the battery site is shall be at a similar elevation to the existing grade, unless grading is determined necessary by the project engineer for drainage purposes or other relevant site plan considerations.

6. The applicant agrees to provide documentation that all battery components and facilities will meet or exceed applicable fire code requirements at the time of installation upon request by the Board of Adjustment.

IN WITNESS WHEREOF, Codington County and the Grantor(s) have executed this Conditional Use Permit Letter of Assurance.

x _____ 5/28/2025
Crowned Ridge Wind, LLC (Grantor) Date
By: Daniel Gerard
Its: _____

x _____ 5/28/2025
Crowned Ridge Energy Storage I, LLC Date
By: Dexter Liu
Its: _____

STATE OF Florida
SS:
COUNTY OF Palm Beach

This instrument was acknowledged before me on 5.28, 2025 by Daniel Gerard on behalf of Crowned Ridge Wind, LLC (Grantor).

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public
My Commission Expires: 3.28.28

KIM L. OTTO
MY COMMISSION # HH 470252
EXPIRES: March 28, 2028

STATE OF Florida
SS:
COUNTY OF Palm Beach

This instrument was acknowledged before me on 5.28, 2025 by Dexter Liu on behalf of Crowned Ridge Energy Storage I, LLC (Grantor).

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public
My Commission Expires: 3.28.28

KIM L. OTTO
MY COMMISSION # HH 470252
EXPIRES: March 28, 2028

x
Chairperson
Codington County Board of Adjustment

6-23-2025
Date

STATE OF SOUTH DAKOTA
SS:
COUNTY OF CODINGTON

This instrument was acknowledged before me on 6-23-25, ~~2024~~ by Brenda Hanten, representing Codington County as the Chairperson of the Codington County Board of Adjustment.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public
My Commission Expires: 5-17-2028

BECKY L. GOENS
NOTARY PUBLIC
SOUTH DAKOTA
SEAL
SEAL

County Planning Board of Adjustment Minutes

May 20, 2024

The Codington County Board of Adjustment met for their monthly meeting on May 20, 2024, at the Codington County Extension Complex. Members of the Board of Adjustment present were Brenda Hanten, Mark O'Neill, Calvin Mack, Mel Ries, Myron Johnson, Alex Kahnke, and Luke Muller (Planner at First District Association of Local Governments/Codington County Zoning Officer). Absent: Rodney Klatt.

Others present: Adam Gracia, Miles Schumacher, Evan Shea, Dewey Zemlicka, Linda Lindgren, Tim Lindgren, Albert Howey, Gokham Andi, Joseph Block, Wayne Borgheiinck, Raynelle Mueller, and Becky Goens.

Chair Hanten brought the meeting to order at 8:36 pm.

Motion by Ries, second by Kahnke, to approve the April 15, 2024 meeting minutes. Motion passed unanimously.

Motion by Johnson, second by Mack, to approve the agenda. Motion passed unanimously.

Motion by Mack, second by Ries, to recess the Planning Commission and convene only as the Board of Adjustment. Motion passed unanimously.

Motion by Johnson, second by Ries, to approve the Conditional Use Permit request by Lyndon and Carol Waters to retain building rights on a 2.62-acre parcel at the site of an existing farmstead. Property is located at E476' of W1565' of N240' in Government Lots 3&4, Section 2-T116N-R51W, Codington County, SD; subject to conditions read by Staff. Muller read Staff Report (attached). No one was present to speak on this issue. Public hearing closed. Muller read the Findings of Fact. There were no questions or objections. Motion passed unanimously.

Motion by Johnson, second by Ries, to approve the Conditional Use Permit request by Louise and Jeanne Schleusner requesting to retain building rights on a 5-acre parcel at the site of an existing farmstead. Property is located at NE1/4, Section 18-T116N-R51W to be known upon platting as Ben Schleusner Addition in NE1/4, Section 18-T116N-R51W, Codington County, SD; subject to conditions read by Staff. Muller reviewed Staff Report (attached). No one was present to speak on this issue. Public hearing closed. Muller read the Findings of Fact. There were no questions or objections. Motion passed unanimously.

Motion by Mack, second by Ries, to approve the Conditional Use Permit request by Crowned Ridge, LLC and Crowned Ridge Energy Storage, LLC to construct a substation with accessory uses including battery storage facility on property owned by Dewey Zemlicka and located in Zemlicka Addition in N1/2 of Section 11-T118N-R51W; and Zemlicka Second Addition in N1/2 of Section 11-T118N-R51W, Codington County, SD; subject to conditions read by Staff.

Muller reviewed Staff Report (attached). If approved, the staff recommends, a letter of assurance be signed and filed with the application at the Zoning Office agreeing to the following conditions:

- The applicant apply existing haul road agreements used for the wind energy system to this facility unless determine unnecessary by the road authority.
- Applicant is required to comply with all conditions and/or restrictions as applied by the SDPUC with applicable permits
- The permit for substation and accessory uses applies and is limited to the following legally described property:
    - Zemlicka Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota; &
    - Zemlicka Second Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota.
    - Any expansion of the use of the substation or its accessory uses outside of those two legally described properties will require additional applicable use permits.

Adam Gracia, Crowned Ridge, spoke on behalf of this project. Muller spoke with Jay Gilbertson regarding the Aquifer Protection District (APD), Jay noted that an engineer would be required to determine there would be no runoff from the structures into the APD. It would be best if it could be moved further East. Those speaking in opposition of the request: AJ Howey, Tim Lindgren, Linda Lindgren, and Wayne Borgheiinck. Muller read Tim and Linda Lindgren's letters that were submitted at the April 14 Board of Adjustment meeting. This item is being re-heard from the April 2024 Board of Adjustment Meeting, due to an adjacent landowner not receiving notice prior to that meeting. That landowner was sent notice and was not in attendance. The minutes and record from the April 2024 Meeting were included in the record for this meeting. No one else was present to speak on this request. Public hearing closed. Motion by Kahnke, second by O'Neill, to move the battery component site East of the proposed site so that it does not sit over the APD, as recommended by Jay Gilbertson. Motion by Kahnke, second by O'Neill, to add to the amendment to keep the units at the current grade level, unless determined a lower elevation was necessary by the project engineer. Motion on amendments passed unanimously. Each unit has fire detection capabilities. Motion by Mack, second by O'Neill, to require the applicant must provide certification, upon request, that all replacement components meet or exceed the most up-to-date replacement available. Motion on amendment passed unanimously. Yearly emergency response training is provided to the local fire department. Muller read the Findings of Fact. There were no questions or objections. Motion, with the amendments, passed unanimously.

Motion by Kahnke, second by Ries, to recess the Board of Adjustment and convene as the Planning Commission. Motion passed unanimously.

Motion by Mack, second by O'Neill, to recommend approval to the Board of County Commissioners the Plat of Ben Schleusner Addition located in the NE1/4 of Section 18-T116N-R51W, Codington County, SD. Motion passed 5-1.

Motion by O'Neill, second by Ries, to recommend approval to the Board of County Commissioners the Plat of Morrow Addition located in the SW1/4 of Section 35-T117N-R52W, Codington County, SD.

The June meeting will need to be moved due to staff availability. Board members will be notified via email.

Motion to adjourn made by Johnson, second by Mack. Motion passed unanimously. Meeting adjourned at 10:26 pm.

Respectfully Submitted,

Becky Goens

MAY 2024
CODINGTON COUNTY PLANNING COMMISSION/BOARD OF ADJUSTMENT
STAFF REPORT

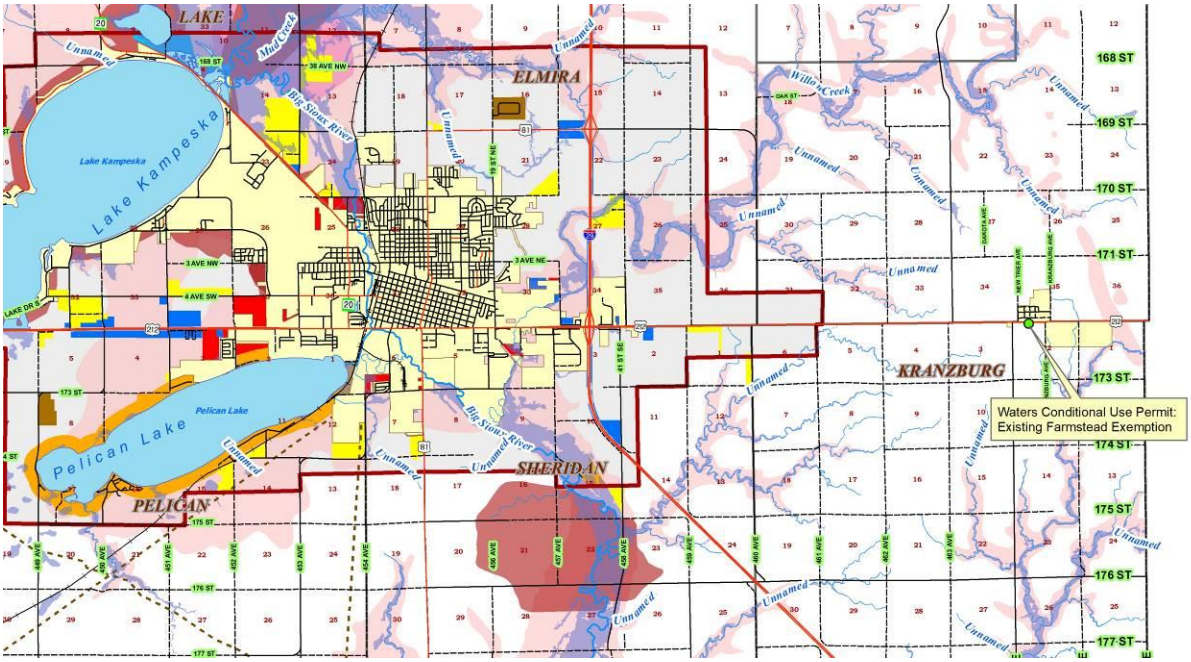
ITEM #1 CONDITIONAL USE PERMIT

Applicant/Owner: Lyndon and Carol Waters

Property Description: The East 476 Feet of the West 1,565 Feet of the North 240 Feet of Government Lots 3 & 4 in Section 2, Township 116 North, Range 51 West of the 5th P.M., Codington County, South Dakota. (Kranzburg (S) Township).

Lat/Long *(Existing Approach): 44.889850°; - 96.920211°*

Action Items – Conditional Use Permit – Existing farmstead exemption "B" (3.04.02.44)

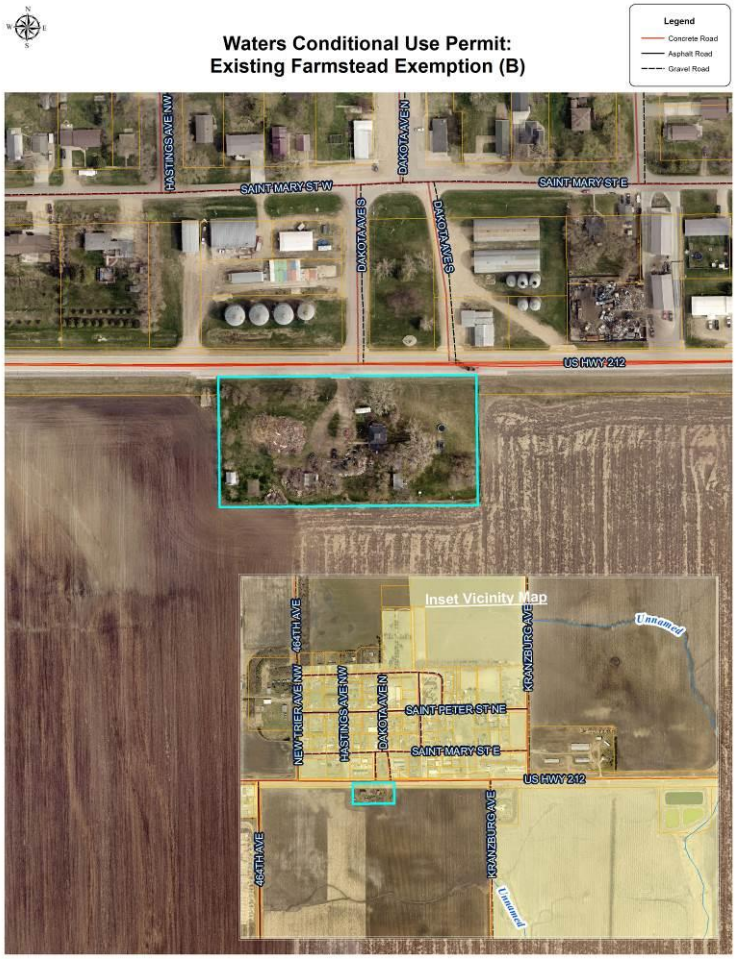


Zoning Designation: Agricultural

Request: The applicant seeks to retain building rights at the site of an Existing Farmstead.

History/Issue(s):
1. The Waters' live at the above described property.
2. The Waters intend to construct a new garage.
3. The property was a base for farming operations since prior to 1976 and is currently lived in.
4. Codington County's Zoning Ordinance does allow for variance from the 35 acre-minimum lot requirement if the lot is determined to be an existing farmstead which contains at least five acres and thereby affording building rights.
5. The parcel contains an existing farmstead as defined by the Codington County Zoning Ordinance.
6. The property was sold separately from the farmland in 1999.

7. Policy has been to waive the requirement to replat existing farmsteads which were initially transferred prior to 2004.
8. This property is adjacent to city limits of the Town of Kranzburg. The town supports county approval of this conditional use permit.
    a. Since sanitary sewer services are over 300' north of this property (and across HWY 212), the Town does not request annexation at this time. Annexation should be petitioned when sewer services are brought across USHWY 212 and within 200' of this legal description.
9. Staff recommendation **(Conditional Use Permit)** –***Existing Farmstead Exemption*** - Approve request because the Zoning Officer after review of anecdotal information, records and site-visit has determined that this parcel is under contiguous ownership of an existing farmstead/residential site prior to October 26, 1976. If approved it should be done so on the following conditions:
    a. Applicant sign a letter of assurance (to be recorded) agreeing to petition annexation to the Town of Kranzburg if and when sanitary sewer services are extended within 200' of this property in a location south of US HWY 212.



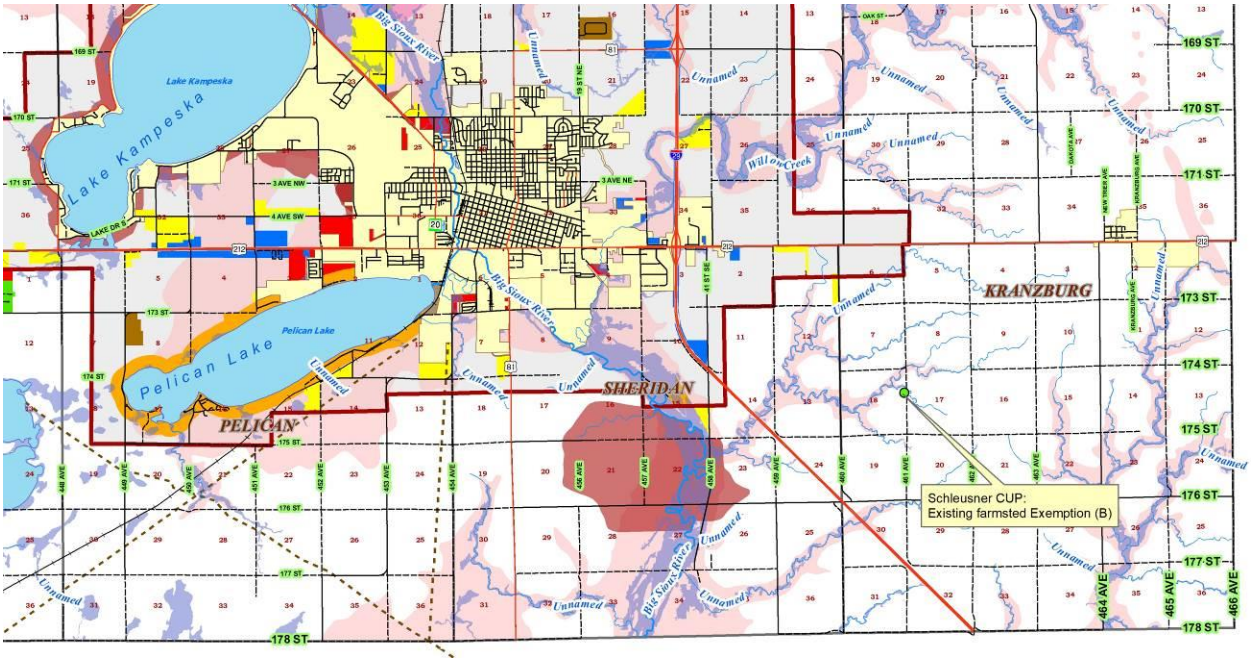
ITEM #2 CONDITIONAL USE PERMIT

Applicant/Owner: Louis and Jeanne Schleusner

Property Description: A portion of the Northeast Quarter, Section 18 Township 116 North, Range 51 West of the 5th P.M., Codington County, South Dakota. (Kranzburg (S) Township), to be known upon platting as Ben Schleusner Addition in the Northeast Quarter, Section 18 Township 116 North, Range 51 West of the 5th P.M., Codington County, South Dakota.

Lat/Long *(Existing Approach): 44.857914°; - 96.985914°*

Action Items – Conditional Use Permit – Existing farmstead exemption "B" (3.04.02.44)



Zoning Designation: Agricultural

Request: The applicant seeks Existing Farmstead Exemption to create a lot with less than 35-acres on the same legal description as an existing farmstead.

History/Issue(s):

1. The Schleusner's son lives at the above described property.
2. The property was a base for farming operations since prior to 1976 and is currently lived in.
3. Codington County's Zoning Ordinance does allow for variance from the 35 acre-minimum lot requirement if the lot is determined to be an existing farmstead which contains at least five acres and thereby affording building rights.
4. The parcel contains an existing farmstead as defined by the Codington County Zoning Ordinance.
5. Staff recommendation **(Conditional Use Permit)** –***Existing Farmstead Exemption*** - Approve request because 1) The lot does contain at least five acres which meets the terms of the Ordinance. 2) The Zoning Officer after review of anecdotal information, records and site-visit has determined that this parcel is under contiguous ownership of an existing farmstead/residential site prior to October 26, 1976. If approved it should be done so on the following conditions:



a. that the applicant shall plat a lot of at least five (5) acres in accordance with the Codington County Subdivision Ordinance.

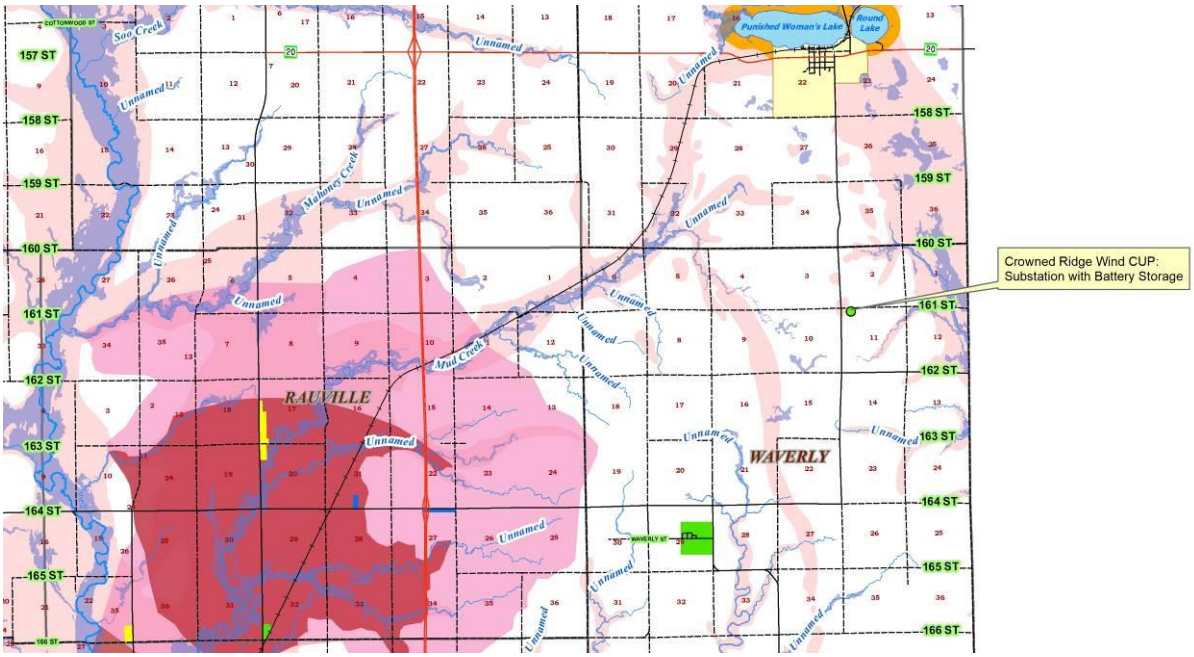
ITEM #2 CONDITIONAL USE

Applicant: Crowned Ridge LLC

Owner: Dewey Zemlicka

Property Description:

- Zemlicka Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota; &
- Zemlicka Second Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota.



Action Item – Conditional Use Permit – Public utility and public service structure (including Substations)… (3.04.02.11)

Zoning Designation: Agricultural District

Request: Crowned Ridge Wind seeks conditional use permit for the substation associated with the Wind Farm to facilitate construction of (electrical) battery storage on-site.

History/Issue(s):

Specifics of Property/Request:

1. This application is mostly identical to the request heard on April 15, 2024 by the Board of Adjustment. It is being re-heard because it was found that Rob Carpenter, adjoining landowner to the south of Zemlicka Addition was not mailed a certified letter (notice) of the

hearing. The only change to the application was to specify the legal description to be used for the Substation and accessory battery facility. (It previously referenced a portion of the north half of this section rather than Zemlicka Addition and Zemlicka Second Addition.)

2. On July 16, 2018, Crowned Ridge, LLC was issued a conditional use permit to operate a Wind Energy System, including "accessory uses" in various townships in the eastern portion of the county.
3. The substation on the above legal description was constructed as accessory to the permitted wind energy system.
4. The applicant now requests to add a "battery storage" facility at the same property as the existing substation.
5. The existing substation will also have site plan modifications which meet required setbacks.
6. The storage facility will consist of:
   a. Lithium ion or similar batteries inside of "cabinet" structures (resembling storage pods) not more than 25' in height.
   b. Collector line running from the substation to the battery facility.
   c. Storm water retention.
   d. Sound barrier (wall) up to 20' in height.
7. 464th will continue to be used as access for the substation. Additional access is requested from 464th in the south end of the proposed battery facility, in addition to the intent to access 161st Street at the east end of the battery facility. Internal driveways consisting of gravel will encircle the cabinets.
8. Access will be gated.
9. 7' chain link fence is used for security fencing at the present facility. A combination of security and sound fence will be used at the battery site.
10. Signs will be placed at the entrance of the battery site but outside the right-of-way for identification purposes.
11. Downward facing lighting will be used.
12. The substation and battery facility are uninhabited so sanitary sewer services and garbage collection is not expected to be necessary on site following construction.
13. The existing substation is setback 268' from the 464th Ave right-of-way. The nearest components of the batter facility are expected to be 170' from both rights-of-way (464th and 161st, however fencing and sound wall may be 100' from the right-of-way.
14. The nearest residences (no required setback) 1,380' (AJ Howey) and roughly is 2,630 feet (Lindgren) from the battery facility.
15. Construction is expected to occur until the fall of 2026.
16. The site is monitored remotely via telecommunications signal (SCADA).
17. Decommissioning of the site would occur in conjunction with Decommissioning of the previously approved Wind Energy System.

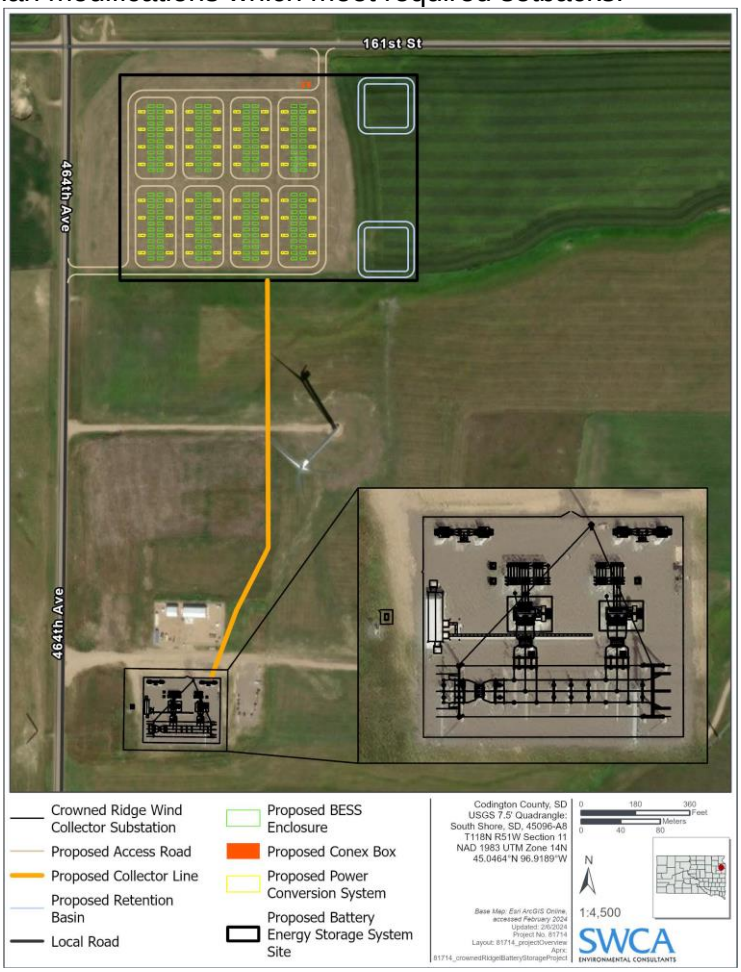




Figure 3b. Example of sound barrier (IAC Acoustics 2023).



Figure 2c. Example self-contained energy storage system cabinet.

Ordinance and Comprehensive Land Use Plan regarding this request:

- *Conditional Use Permit*

1. The substation was issued a building permit on June 26, 2019 as an accessory use to the Wind Energy System since the use of substations was discussed in the wind energy system application for conditional use permit.
2. The Zoning Officer determined that since the battery facility was not contained in the application it needs to be added as an accessory use. The battery facility could be accessory to the Wind Energy System or a substation. Since the battery facility is localized to one property, the applicant chose to obtain an individual conditional use permit for a substation (effectively divorcing it from the Wind Energy System Permit) to allow the battery facility as accessory.
3. Regarding utilities: the comprehensive land use plan encourages clustering of non-ag uses to limit the amount of intrusion/removal of land from agricultural production.
4. The intent of the Ag District, and land use plan is to reserve land in the Ag District for agricultural uses.
5. No specific requirements are listed for public utilities such as this structure. Ordinance requirements regarding all conditional uses were addressed above.
6. Battery facilities do create sound. No sound standards are listed in the zoning ordinance for public utilities. Even if an amendment were made to the wind energy system conditional use permit, the sound standards listed in the ordinance apply only to wind turbines and would not apply to the battery facility.
7. The sound fence is proposed to meet the anticipated requirements of the Public Utilities Commission, who will combine this facility with the permit for the Wind Energy System.
8. A portion of the proposed battery storage facility is located over the shallow aquifer protection district (Zone C). Should it be determined that hazardous materials as determined by the Pipeline and Hazardous materials Safety Administration (PHMSA) are use in the battery storage facility. Any portion of the facility situated over Zone C shall comply with the performance standards of the Aquifer Protection District relating to Hazardous Materials. (Section 3.12.06.7)

Staff Summary and Recommendation:

Staff Recommendation: Conditional Use Permit – ***Public Utility and Public Service Structure***: The Board may postpone the request, deny the request, approve the request, or determine no such permit is necessary. If approved, the staff recommends, a letter of assurance be signed and filed with the application at the Zoning Office agreeing to the following conditions:

- The applicant apply existing haul road agreements used for the wind energy system to this facility unless determine unnecessary by the road authority.
- Applicant is required to comply with all conditions and/or restrictions as applied by the SDPUC with applicable permits
- The permit for substation and accessory uses applies and is limited to the following legally described property:
  - Zemlicka Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota; &
  - Zemlicka Second Addition in the North Half of Section 11, Township 118 North, Range 51 West of the 5th Prime Meridian, Codington County, South Dakota.
  - Any expansion of the use of the substation or its accessory uses outside of those two legally described properties will require additional applicable use permits.

CODINGTON COUNTY PLANNING COMMISSION

ITEM #1 PLAT

Applicant/Owner: Louis and Jeanne Schleusner

Property Description: Ben Schleusner Addition in the Northeast Quarter, Section 18 Township 116 North, Range 51 West of the 5th P.M., Codington County, South Dakota.

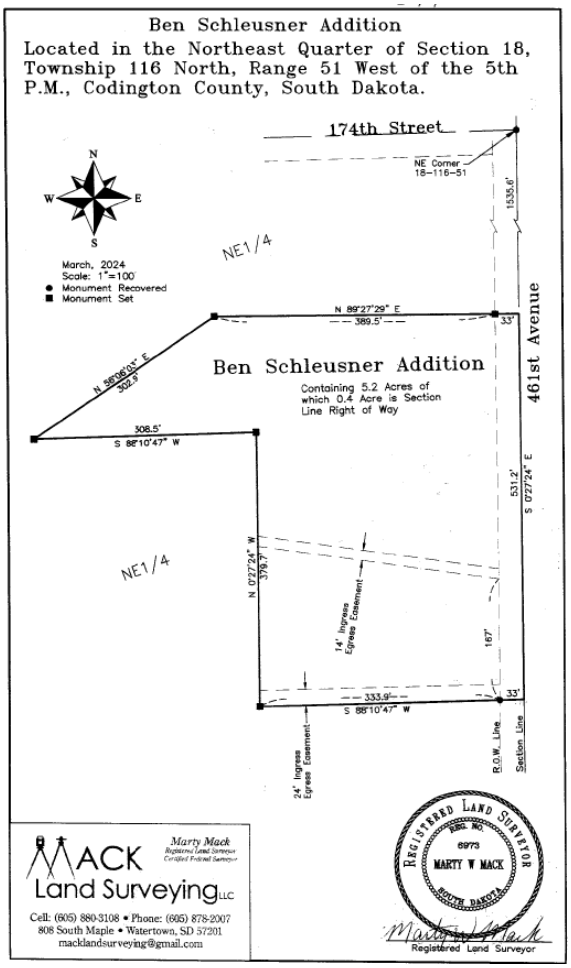
Action Items – Plat approval.

Zoning Designation: Ag District

Request: Plat a 14.8 acre lot east of Mahoney Creek

Summary:

1. Plat is a requirement of existing farmstead exemption.



ITEM #2 PLAT

Applicant/Owner: David and Melanie Morrow

Property Description: Morrow Addition in the Southwest Quarter of Section 35, Township 117 North, Range 52 West of the 5th P.M., Codington County, South Dakota.

Action Items – Plat approval.

Zoning Designation: Ag District

Request: Plat existing site into one (1) 5-acre lot and one (1) (min.) 35-acre lot.

Summary:

1. In 2015 the Board of Adjustment granted an existing farmstead exemption and variance to temporarily have two houses on the same lot. (The Morrow's were working out the purchase of additional property at the time)
2. The Board required a plat with one 35 acre lot and one 5 acre lot to retain building rights with both houses.
3. No such plat had been prepared to date.
4. Zoning Officer seeks authorization of the chair to sign a plat upon preparation of the appropriate plat to forward on to the county commissioners provided each house is on its own lot.

Conditional Use Permit Application for the Crowned Ridge Wind Collector Substation with a Battery Energy Storage System as an Accessory Use, Codington County, South Dakota

FEBRUARY 2024

PREPARED FOR

Crowned Ridge Wind, LLC, and
Crowned Ridge Energy Storage I, LLC

PREPARED BY

SWCA Environmental Consultants

CONDITIONAL USE PERMIT APPLICATION FOR THE CROWNED RIDGE WIND COLLECTOR SUBSTATION WITH A BATTERY ENERGY STORAGE SYSTEM AS AN ACCESSORY USE, CODINGTON COUNTY, SOUTH DAKOTA

Prepared for

Crowned Ridge Wind, LLC, and
Crowned Ridge Energy Storage I, LLC
700 Universe Boulevard
Juno Beach, Florida 33408

Prepared by

SWCA Environmental Consultants
116 North 4th Street, Suite 200
Bismarck, North Dakota 58501
www.swca.com

SWCA Project No. 81714

February 2024

February 22, 2024

Luke Muller
Codington County Planning & Zoning
1910 West Kemp Avenue
Watertown, South Dakota 57201

Re: Codington County – Conditional Use Permit Application for Crowned Ridge Wind Collector Substation with a Battery Energy Storage System as an Accessory Use

Dear Luke Muller:

Crowned Ridge Wind, LLC, and Crowned Ridge Energy Storage I, LLC respectfully request your review and consideration of the enclosed application for the Crowned Ridge Wind Collector Substation with a Battery Energy Storage System as an Accessory Use, in Codington County, South Dakota.

Enclosed with this application is a project overview and information required for submittal pursuant to Chapter 3.04.02 Conditional Uses requirements of the Codington County Zoning Ordinance.

Please do not hesitate to contact me if you have any questions or concerns.

Sincerely,

Adam Gracia
Senior Project Manager, Development
Crowned Ridge Wind, LLC, and Crowned Ridge Energy Storage I, LLC
Adam.Gracia@nexteraenergy.com

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COMPLETENESS CHECKLIST

Authority	Application Section(s)
Codington County Ordinance, Section 4.05.01. Powers and Jurisdiction Relating to Conditional Uses	
(6) The granting of any conditional use by the Board of Adjustment shall be based upon written findings certifying compliance with the specific rules governing individual conditional uses and that satisfactory provisions and arrangements have been made concerning the following, where applicable.	–
(a) Access	–
(i) The roads providing access to the property shall be determined to be adequate to meet the transportation demands of the proposed condition use. The Board of Adjustment may require the applicant to enter written contract with the applicable road authority regulating the upgrading and continued maintenance of any roads used for conditional use required prior to issuance of a Conditional Use Permit.	4.3.1
(ii) Reasonable provisions have been made for safe vehicular and pedestrian entrance and exit of the property for daily and emergency traffic.	4.3.1
(b) Parking and internal traffic	–
(i) The parking areas and driveways will be covered in material appropriate for the internal traffic generated by the use.	4.3.1; 5.5
(ii) The number of parking spaces is appropriate for the proposed use of the property.	4.3.1
(c) Utilities and refuse	–
(i) The manner by which electricity, water, sewer, natural gas, and other utilities will be provided has been described.	4.3.7
(ii) Consideration has been given to the location of refuse and service areas and manner for disposing of trash, junk, or other debris.	4.3.7; 9.2
(d) Screening, buffering, and open space	–
(i) The type, dimensions, and character of any fences, walls, hedges, or other materials used for screening; and/or open space is appropriate for the proposed use in reference the specific property	4.2.4.1; 4.4
(e) Lighting	–
(i) Lights associated with the use will not create a nuisance nor distract traffic.	4.3.4
(ii) Brightness, intensity, glare of lights will be similar to lighting which would be customarily used for permitted uses in the applicable zoning district	4.3.4
(f) General compatibility with adjacent properties and other property in the district	–
(i) Any use listed as a Conditional Use is generally compatible in the district it is listed in	3

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1 INTRODUCTION

Crowned Ridge Wind, LLC (CRW) and Crowned Ridge Energy Storage I, LLC (CRES), wholly owned, indirect subsidiaries of NextEra Energy Resources, LLC (NextEra Energy Resources), propose to operate the Crowned Ridge Wind Collector Substation (Substation), with a 120-megawatt (MW) Battery Energy Storage System (BESS) as an accessory use, in Codington County, South Dakota (Project). Figure 1 shows the location of the existing Substation and the proposed BESS. The BESS will be located on approximately 15.4 acres within the existing Crowned Ridge I Wind Energy Facility project area, approved by the Codington County Planning Commission/Board of Adjustment on July 16, 2018, and by the South Dakota Public Utilities Commission (Commission) on July 26, 2019 (Commission Docket No. EL 19-003). The BESS will connect to the Substation via an approximately 1,355-foot collection line, and will be located on property for which the applicants have executed a lease with purchase option agreement.

CRW and CRES are submitting this application for a Conditional Use Permit (CUP) under the Codington County Zoning Ordinance, Chapter 3.04: "A" Agricultural Land District; Section 3.04.02: Conditional Uses; No. 11 – Public utility and public service structure including transmission lines, substations, gas regulator stations, pipelines, community equipment buildings, pumping stations, and reservoirs. Section 3 of this application presents the information required by Codington County Zoning Ordinance, Chapter 4.05: Procedures for Conditional Uses, Variances, and Zoning Amendments; Section 4.05.01: Powers and Jurisdiction Relating to Conditional Uses.

2 APPLICANTS

The Project developers and applicants for the Codington County CUP are

Crowned Ridge Wind, LLC (for the Crowned Ridge Wind Collector Substation)
c/o NextEra Energy Resources, LLC
700 Universe Boulevard
Juno Beach, Florida 33408

Crowned Ridge Energy Storage I, LLC (for the Battery Energy Storage System as an accessory use)
c/o NextEra Energy Resources, LLC
700 Universe Boulevard
Juno Beach, Florida 33408

The developer contact for the Project is

Adam Gracia
Senior Project Manager, Development
Crowned Ridge Wind, LLC, and Crowned Ridge Energy Storage I, LLC
(561) 797-5048
Adam.Gracia@nexteraenergy.com

Currently, NextEra Energy Resources owns or operates approximately 31% of the nation's installed wind energy capacity, 31% of the nation's universal energy storage, and 12% of the nation's solar energy capacity. NextEra Energy Resources' distributed battery portfolio consists of 36 projects representing more than 730 MW of operating assets in 10 states as of March 2022.

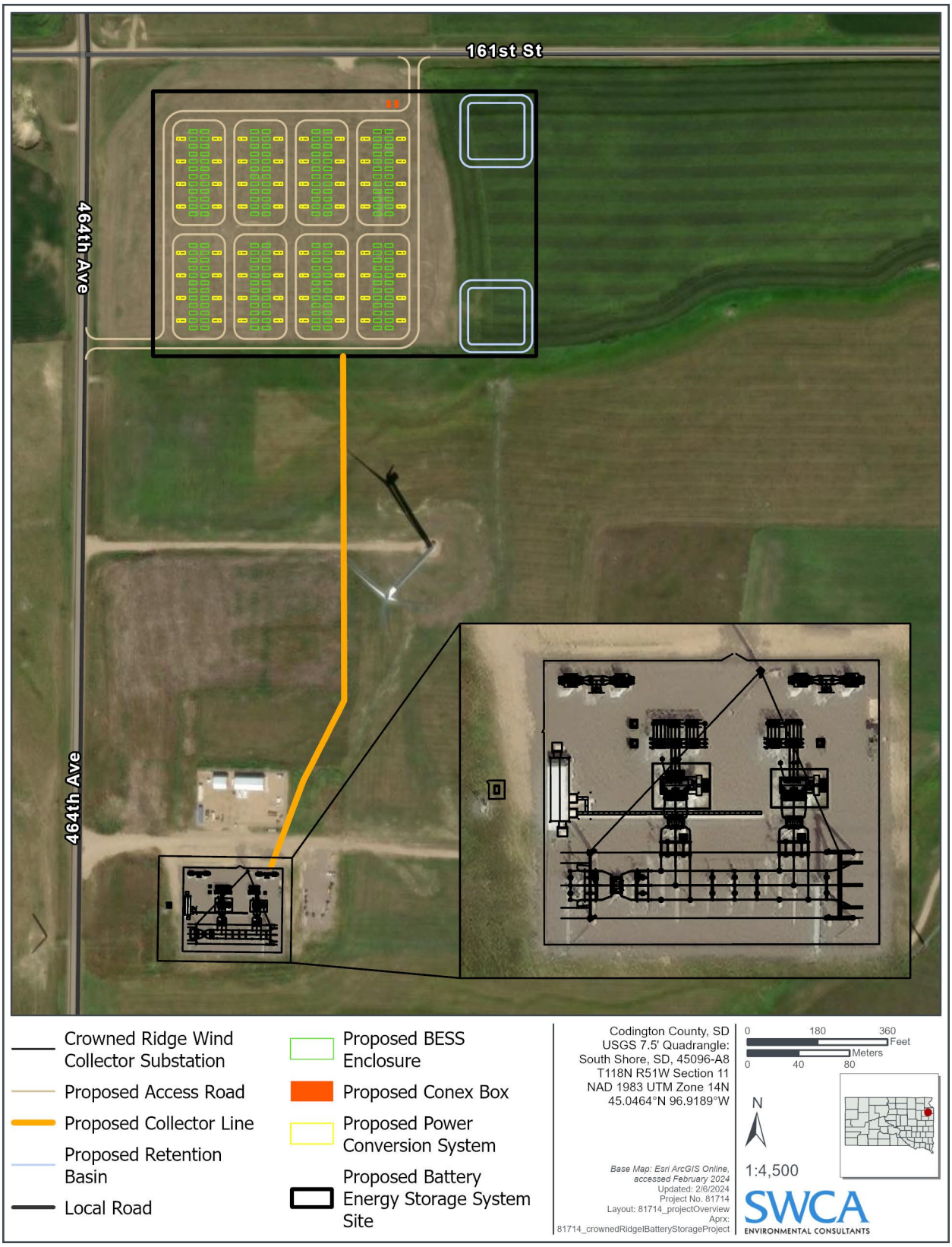


Figure 1. The Crowned Ridge Wind Collector Substation and the Proposed Crowned Ridge I Battery Energy Storage System.

3 PROJECT LOCATION

The Substation is located on 1.4 acres east of 464th Avenue and south of 161st Street (see Figure 1). The proposed BESS will be located on approximately 15.4 acres at the southeast intersection of 464th Avenue and 161st Street (see Figure 1). Current land cover within the proposed BESS is shown in Table 1. Detailed site plans are found in Appendix A. Legal descriptions are provided in Appendix B.

Table 1. Existing Land Cover within the Proposed Crowned Ridge I Battery Energy Storage System Site

Land Cover Type	Acres	Percent Cover
Cultivated Crop	15.3	99.4%
Herbaceous	0.1	0.6%
Total	**15.4**	**100.0%**

The land on which the Substation is located, and the BESS is proposed is zoned as agricultural (Agricultural Zoning District) and is part of the Crowned Ridge Wind I Facility project area. The Crowned Ridge I Wind Facility project area and the Substation were reviewed and approved by the Codington County Planning Commission/Board of Adjustment on July 16, 2018, and by the South Dakota Public Utilities Commission (Commission) on July 26, 2019 (Commission Docket No. EL 19-003). Public utilities are considered permissible as a conditional use in the Agricultural Zoning District.

4 PROJECT DESCRIPTION

4.1 Crowned Ridge Wind Collector Substation

All Crowned Ridge Wind I Facility underground electrical collection cables and communication lines terminate at the Substation. The purpose of the Substation is to step up the electricity generated by the Crowned Ridge I Wind Facility at 34.5 kilovolts (kV) to 230 kV so that it may be transmitted along the transmission system. The Substation includes one power transformer—with capacity for a second transformer should one be needed for future build-out—transmission breakers, feeder breakers, disconnect switches, a control house, a metering unit, and a Substation pull-off superstructure. The Substation is monitored at a remote operations center to ensure it is operating safely. The Substation was designed and constructed in accordance with industry standards and is located within a securely fenced area.

To support the proposed BESS, CRW will expand the Substation pad footprint to accommodate two 2,500-ampere breakers. These breakers will accommodate the 120 MW originating from the BESS. The expansion will occur within the current Substation footprint, which is already disturbed (i.e., graveled).

4.2 Crowned Ridge I Battery Energy Storage System

The sections below provide descriptions of the primary components of the proposed BESS.

4.2.1 Batteries

Individual lithium-ion, or similar technology, battery cells form the core of the BESS. Battery cells are assembled either in series or parallel in sealed battery modules. CRES will install battery modules in self-supporting racks that are electrically connected either in series or parallel. Individual self-supporting racks are then connected in series or parallel to deliver the BESS power rating. CRES has not finalized the battery type for the Project and will select the battery type based on the technology available at the time of construction.

4.2.2 Energy Storage System Cabinets and Battery Management Systems

Multiple self-contained energy storage system cabinets will house the batteries and the battery management systems (BMS) (Figures 2a–2c). The BMSs are used in conjunction with the site-wide programmable logic controller (PLC) to monitor battery voltage, current, temperature, charge, discharge, thermal management, fault diagnosis, and more. Together, the BMS and PLC are a multi-level control system designed to provide a hierarchical system of controls for the battery modules and power conversion system (PCS) up to the point of connection with the Substation. The BMS and PLC ensure that the BESS effectively responds to grid emergency conditions and provide a secondary safety system designed to safely shut down the BESS in the event of an emergency. The self-contained energy storage system cabinets also contain the required heating, ventilation, and air conditioning (HVAC) and fire protection systems for operation. The height of an individual cabinet will not exceed 25 feet.

4.2.2.1 HEATING, VENTILATION, AND AIR CONDITIONING

Each self-contained energy storage system cabinet will be equipped with HVAC and liquid cooling or other thermal management systems for thermal management of batteries. Power for the thermal management systems will be provided through excess capacity in the batteries when charging and discharging or via the grid when idle.



Figure 2a. Example self-contained energy storage system cabinet.



Figure 2b. Example self-contained energy storage system cabinet.



Figure 2c. Example self-contained energy storage system cabinet.

4.2.2.2 FIRE DETECTION AND PROTECTION SYSTEMS

CRES will incorporate fire detection systems into the BESS design in accordance with National Fire Protection Association safety standards, adopted Codington County requirements, and codes as applicable to stationary energy storage.

4.2.3 Power Conversion System

The PCS will be located in the BESS and consists of an inverter, protection equipment, direct current (DC) and alternating current (AC) circuit breakers, filter equipment, equipment terminals, and a connection cabling system. Electric energy is transferred from the existing power grid to the batteries during a battery charging cycle and from the batteries to the grid during a battery discharge cycle. The PCS converts electric energy from AC to DC when energy is transferred from the grid to the battery and from DC to AC when energy is transferred from the battery to the grid. The energy conversion is enabled by a bidirectional inverter that connects the DC battery system to the AC electrical grid. The PCS will also include a transformer that converts the AC side output of the inverter to medium AC voltage to increase the overall efficiency of the BESS and to protect the PCS in the event of system electrical faults.

4.2.4 Sound Mitigation

CRES will install a 20-foot sound barrier encompassing the BESS site (Figures 3a and 3b). The barrier will block line-of-sight sound transmission and absorb sound energy originating from the BESS equipment. The barrier will be composed of material that is performance rated for sound absorption, such as galvanized steel material, including corrosion-resistant coating to protect underlying components. The sound barrier also will be weather-resistant and will consider use of aesthetic features.



Figure 3a. Example of sound barrier (IAC Acoustics 2023).



Figure 3b. Example of sound barrier (IAC Acoustics 2023).

4.3 Ancillary Facilities

4.3.1 Site Access and Parking

Access to the existing Substation is from 464th Avenue (see Figure 1). Access is securely gated and locked. Open gravel areas provide limited on-site parking spaces necessary for operations and maintenance (O&M) personnel when on-site.

Access to the BESS site would be off of 464th Avenue and 161st Street (see Figure 1). Access roads would have a gravel or aggregate base depending on site-specific geotechnical studies and the final site geotechnical report. Each entrance to the BESS site will be gated with an approximately 40-foot swing gate and locked. Site access would comply with Codington County Fire Protection District requirements. On-site parking spaces would be provided in open gravel areas and in accordance with Codington County requirements.

4.3.2 Fencing and Security

A 7-foot-tall chain-link fence topped with 1 foot of three-strand barbed wire encompasses the existing Substation. Likewise, CRES will install approximately 3,333 linear feet of permanent security fencing along the perimeter of the BESS site, excluding minor portions of access roads. Perimeter fencing will be comprised of a 6-foot-tall chain-link fence topped with 1 foot of three-strand barbed wire.

Fencing will be installed in accordance with industry standards and will comply with the National Electrical Code. The fencing system is designed to prevent the public from gaining access to electrical equipment, which could lead to injury.

4.3.3 Signage

Warning signs relaying information regarding the high voltage at the Substation and the hazardous nature of the facility to unqualified persons are posted on the access gates and at intervals along the Substation perimeter fencing.

CRES will install a sign reading “Crowned Ridge I Battery Energy Storage System” at the entrances off of 464th Avenue and 161st Street. Signs will be sized in accordance with Codington County requirements. In addition, required safety signs to identify high voltage within the BESS, as well as information for emergency services, will be installed on the fence near the entrances and at swing gates.

4.3.4 Lighting

Low-elevation, controlled security lighting is installed at the Substation. The lighting switches on through manual activation (i.e., a switch). Lighting is shielded so that light is directed downward to minimize illumination of the night sky or spillover onto adjacent properties. Permanent lighting in the Substation control building is controlled by manual switch. All safety and emergency services signs are lit when lights are on.

Low-elevation, controlled security lighting will be installed at access gates and the entrances to the BESS site. Lighting will operate the same as that installed in the Substation and will be shielded to direct light downward.

4.3.5 Stormwater Facilities

The Substation does not include stormwater management facilities.

CRES will manage stormwater in the BESS site through installation of stormwater management facilities (e.g., retention basins) required to satisfy National Pollutant Discharge Elimination System stormwater management requirements and through implementation of a site-specific Stormwater Pollution Prevention Plan (SWPPP). A SWPPP is required in South Dakota for all permitted construction and industrial stormwater sites. The SWPPP will describe stormwater runoff and management, including how CRES will ensure runoff leaving the BESS site will not become contaminated with pollutants, such as dirt or trash. A SWPPP will be developed prior to construction.

CRES designed the assumed locations, sizes, and approximate number of stormwater management facilities to capture water without requiring additional grading to direct flow, thereby reducing overall soil impacts (see Figure 1).

4.3.6 Electrical Collection System

Energy to and from the batteries will be routed through a series of underground cables, which make up the electrical collection system that will connect to the Substation. The electrical collection system will be designed to meet applicable requirements of the National Electrical Safety Code. The design work includes a load flow analysis for the BESS to ensure it will meet the power factor and voltage control specifications.

The electrical collection system will be direct buried cable. Underground cables will be installed in a trench that will be 3.0 to 4.0 feet deep. Cables will be installed deeper (i.e., 6.0 to 8.0 feet deep) if the cables are stacked.

The electrical collection system will include a 34.5-kV collection line between the BESS and the Substation. The conductor type and exact length and position of the collection line will be determined during detailed electrical design. The collection line will be direct buried cable installed as described above.

4.3.7 Utilities and Refuse

Electrical power to supply the Substation access gates and lighting is provided by Codington-Clark Electric Cooperative. CRES anticipates that electrical power to supply the BESS access gates and lighting would also be obtained from Codington-Clark Electric Cooperative.

The Substation is uninhabited with no bathroom facilities or running water. During construction and decommissioning of the BESS site, restroom facilities would be provided by portable units to be serviced by licensed providers. During operations, the BESS would be uninhabited with no bathroom facilities or running water.

CRES will adhere to all state and local requirements for disposal of all refuse resulting from construction and/or operation of the Substation and BESS.

4.4 Screening

There are no vegetative or installed screening features at the existing Substation.

CRES also will install a 20-foot sound wall within the perimeter fence and encompassing the main BESS components (see Section 4.2.4.1).

4.5 Setbacks

The Substation is set back approximately 268 feet from 464th Avenue and approximately 2,092 feet from 161st Street.

The BESS is set back at least 100 feet from the property boundaries to comply with the definitions of a remote outdoor installation. Additionally, the distance from the BESS site to the nearest road right-of-way (ROW) (at 161st Street) is approximately 68 feet; from the closest BESS component to the nearest road ROW is approximately 170 feet; from the BESS site to the nearest residence (located north of the BESS site on 46th Avenue) is approximately 2,630 feet; and from the BESS site to the nearest wind turbine (located south of the BESS site) is approximately 500 feet.

5 CONSTRUCTION

5.1 Timeline

Substation construction began in August 2019, and the Substation has been operational since December 2019. Because the Substation is currently operational, it is not discussed further in this section.

Table 2 depicts the anticipated schedule for the BESS development milestones, assuming all permits and authorizations are issued and obtained.

Table 2. Crowned Ridge I Battery Energy Storage System Development Milestones

Milestone	Estimated Timeline
Construction	June 2025–August 2026
Energization	November 2025–August 2026
Commissioning and testing	June 2026–December 2026
Commercial operation date	December 2026

CRES will continue to update the anticipated construction table as needed and submit a finalized construction schedule prior to construction.

CRES anticipates that BESS construction will require up to 60 employees per week for up to 15 weeks (Table 3). CRES will require all workers to operate safely and in compliance with all applicable local, state, and federal safety regulations.

5.2 Deliveries

Material and equipment needed to construct the BESS would reach the site through on-road truck delivery using both 464th Avenue and 161st Street. The majority of truck deliveries would be for BESS components (e.g., energy storage system cabinets and controller, PCSs) and aggregate material (e.g., gravel, rock).

Table 3. Crowned Ridge I Battery Energy Storage System Construction Information

Construction Phase	Phase Duration (weeks)	Number of Construction Employees per Day	Average Daily Worker Vehicle Trips (one-way)	Average Daily Vendor Truck Trips (one-way)
Site Preparation	1	20	40	2
Grading	1	20	40	2
Component Installation	12	60	120	20
Collection Line Installation	1	20	40	4

Typically, components will be hauled to the site using low-bed transfer trucks. Such loads typically are limited to approximately 40 tons (80,000 pounds), with a typical load being approximately 25 tons (50,000 pounds). Low-bed transport trucks also would transport construction equipment to the BESS site, unless the equipment can be driven (e.g., boom trucks). The size of low-bed transport trucks used will depend on the component or equipment being transported.

Aggregate material would be delivered via bottom dump trucks or transfer trucks with six axles.

5.3 Site Preparation

Construction would begin with site preparation. During this phase, CRES would prepare the BESS site for construction. Although the BESS site is fairly level (1,971–1,994 feet above mean sea level), grading and minor earthwork may occur to support the installation of stormwater management facilities (e.g., retention basins), perimeter fencing, foundations, and access roads. Road surfaces would be at-grade to allow water to sheet flow across the site as it currently does. During site preparation, temporary staging area(s) will be designated within the BESS site to serve as the storage area(s) for materials and equipment during construction. The construction contractor would determine the specific location of temporary staging area(s).

Site preparation and grading would be accomplished using various equipment that could include scrapers, graders, dozers, compaction equipment, and water trucks (to control dust). Water consumption during construction (and decommissioning) would be needed for dust suppression and earthwork. During operation, water use would be minimal and only as needed. Water would most likely be delivered by truck from an off-site source. During construction, water pumped directly into 2,000–4,000-gallon water trucks may be stored in overhead, approximately 12,000-gallon, water storage towers/tanks (up to 16 feet tall) to assist in the availability of water for trucks and to expedite filling.

5.4 Component Installation

The BESS components would be off-loaded from low-bed transport trucks and installed using cranes, boom trucks, forklifts, rubber-tired loaders, rubber-tired backhoes, and other small- to medium-sized construction equipment, as needed. Foundation pads for the energy storage system cabinets would be poured, followed by installation, including wiring of battery modules, of all BESS components.

5.5 Personnel and Traffic

As shown in Table 3, construction is anticipated to require up to 60 construction workers per day. The maximum average daily number of one-way worker vehicle trips would be 120 and the maximum average daily number of one-way vendor truck trips would be 20. CRES anticipates that construction crews would

work 8 to 10 hours per day, with work occurring Monday through Friday. Overtime and weekend work would be used only as necessary to meet scheduled milestones or to accelerate the construction schedule and would comply with applicable South Dakota labor laws.

5.6 Erosion and Sediment Control and Pollution Prevention

Construction of the BESS would result in disturbance of an area greater than 1 acre of land (see Table 1 for current land cover data). Therefore, CRES would be required to obtain coverage under the South Dakota Department of Agriculture and Natural Resources General Permit Authorizing Stormwater Discharges Associated with Construction Activities. To enroll under this permit, CRES will prepare a SWPPP, which would be based on the final engineering design. The SWPPP will be prepared by a qualified engineer or erosion control specialist and would be implemented during construction. The SWPPP would include best management practices (BMPs), including erosion and sediment control measures such as stormwater runoff quality control measures and watering for dust control. The SWPPP would be submitted to the South Dakota Department of Agriculture and Natural Resources and Codington County prior to issuance of any building or grading permits.

6 OPERATIONS AND MAINTENANCE

The Substation operates 365 days per year. The Substation is operated and monitored remotely through a supervisory control and data acquisition (SCADA) system. During operation of the Substation, O&M staff visit the facility periodically for switching and other operation activities. Maintenance trucks are used to perform routine maintenance, including but not limited to equipment testing, monitoring, repair, routine procedures to ensure service continuity, and standard preventative maintenance. Routine operations require one to two workers in a light utility truck to visit the Substation on a weekly basis. Typically, one major maintenance inspection occurs annually.

The BESS, once constructed, will also operate 365 days per year and will be monitored remotely through the SCADA system. Periodic augmentation of batteries would occur within the site. Only occasional, on-site maintenance is expected to be required following commissioning, including replacement of inverter power modules and filters, and miscellaneous electrical repairs on an as-needed basis. During O&M, CRES anticipates one to two workers will require access to the site at a given time. That access would be infrequent (estimated at one to two times/week) and intermittent (e.g., in the event of equipment malfunction).

7 SOUND

Codington County does not have a sound limit that is applicable to the substation and BESS. However, CRW and CRES will abide by South Dakota Public Utilities Commission limits of 50 dBA at participating receptors and 45 dBA at non-participating receptors.

8 EMERGENCY ACTION PLAN

CRES will develop an Emergency Action Plan (EAP) for the BESS. The EAP will be provided to Codington County and to all Project personnel prior to initiating construction. The EAP will establish

actions to be taken by the personnel responsible for the BESS in the event of an emergency. The following topics will be discussed in the EAP:

- Document Records
- Safety Protocols
- State and Federal Compliance
- Emergency Contacts
- Training and Annual Drills
- Information for Outside Responders
- Fire Responder Information
- General Emergency Event Procedures
- Natural Disaster and Severe Weather
- Fire Response
- Physical and Cyber Security
- Environmental
- Gas or Oil Pipeline
- Pandemic
- Immediate or Delayed Site Evacuation
- Designated Evacuation Egress Routes and Muster Areas
- Personnel Injuries and Serious Health Conditions

Safety and training programs also will be described in the EAP as they are a critical asset when managing emergency conditions. Personnel that respond to emergency events will have all required electrical qualifications up to date and keep safety top of mind. CRES is committed to providing a safe and healthy work environment for all employees and requires that safety should not be compromised for any other business priority.

9 DECOMMISSIONING

Decommissioning of the Substation is described in detail in CRW's Decommissioning Plan for the Crowned Ridge Wind Energy Facility dated January 29, 2019, and submitted as Appendix L of CRW's Application to the Public Utilities Commission of the State of South Dakota for a Facility Permit to Construct a 300 Megawatt Wind Facility (January 30, 2019).

The sections below summarize decommissioning of the BESS.

9.1 Timeline

CRES currently estimates that the BESS will have a useful life of at least 30 years based on its experience operating projects, models, and technology. At that time, CRES may either extend and continue operations or decommission the BESS. If operations continue, either existing equipment will be used or

equipment will be upgraded with newer technologies. If operations are not extended, the BESS will be decommissioned. One year in advance of anticipated decommissioning, CRES will provide notice to Codington County that decommissioning will occur. After that time, the BESS would be decommissioned, and the existing equipment would be removed as described below. Decommissioning may require up to 9 months to complete, depending on weather and other considerations. Decommissioning equipment and the number of personnel would be similar to or less than that required for construction.

9.2 Removal and Disposal of Facilities

The goal of decommissioning is to remove the installed power generation equipment and to return the site to a condition as close to preconstruction as feasible. Disposal of components will meet applicable provisions of state and local waste requirements and all receiving facilities will be licensed or certified to accept the specific types of equipment and material discussed.

- **Power conversion systems, BESS, and CONEX boxes.** All equipment will be inspected and tested, if applicable, prior to being disconnected and removed. Operable or usable equipment will be packed and shipped to an off-site facility for reuse or resale. Nonworking equipment will be packed and shipped for recycling or other appropriate disposal methods at an appropriate facility. CRES will assess resale options upon decommissioning. Batteries include lithium-ion, which degrades but can be recycled or repurposed. Energy storage enclosures would include steel or aluminum, with concrete foundations—all of which may be recycled.
- **Electrical collection system.** Assuming the electrical collection system, including the collection line, no longer serves a purpose for the site; it will be disassembled and removed. CRES will remove all buried cables up to 4 feet. All cables and lines will be recycled or disposed of at an appropriate facility.
- **Fences.** All fence parts, including foundations, will be disconnected and disassembled, and all parts will be removed. The fence parts will then be subject to one of the following actions: reconditioning and reuse, sold as scrap, recycled, or disposed of at an appropriate facility.
- **Access roads.** Gravel access roads will be stripped. Compacted soils may require ripping to loosen before revegetation. Foreign road materials will be removed and reused or disposed of in accordance with applicable local regulations. Roads will be restored so that they become a part of the natural surroundings and are no longer recognizable, to the greatest extent practicable, as needed or as agreed upon in consultation with the landowner. Road gravel will be used to backfill foundation locations to within 6 inches of final grade. The landowners will have the choice, when the Project is decommissioned, as to whether the Project access roads are to be removed. To facilitate the various uses for the property, the owner may choose to leave the roads in place. If the roads are left, maintenance of the roads will become the responsibility of the respective landowner. All remaining access roads will conform to applicable Codington County regulations in effect at the time of decommissioning.
- **Stormwater facilities.** CRES will grade stormwater facilities (e.g., retention basins) to match surrounding contours and drainage patterns, decompact soils, and spread topsoil to accommodate agricultural activities or desired future land use.
- **Hazardous materials.** All hazardous materials will be stored, handled, removed, and transported in full compliance with all applicable federal, state, and local laws and regulations. Fuel, hydraulic fluids, and oils will be transferred directly to a tanker truck from the respective tanks and vessels. Storage tanks and vessels would be rinsed and transferred to tanker trucks. If an item cannot be removed at the point of generation for a period of time, such as lubricants, paints, and

solvents, it would be kept in a locked utility structure with integral secondary containment that meets applicable requirements for hazardous waste storage until removal for proper disposal and recycling. All hazardous materials will be removed from the facility in a timely manner. CRES anticipates that all oils would be recycled at an appropriate facility. Site personnel involved in handling these materials would be trained in proper handling procedures.

Transportation of the removed hazardous materials would comply with applicable regulations for transporting hazardous materials, including those set by the U.S. Department of Transportation, U.S. Environmental Protection Agency, South Dakota Department of Agriculture and Natural Resources – Waste Management, South Dakota Highway Patrol, and South Dakota State Fire Marshal.

9.3 Erosion and Sediment Control and Pollution Prevention

Decommissioning activities would involve exposure and disturbance of soil. Therefore, CRES or the owner will implement erosion and sediment control measures in accordance with applicable regulations in effect at that time, which are anticipated to include implementation of a SWPPP and standard BMPs. BMPs implemented during decommissioning activities may include installation of erosion control measures in disturbance areas where potential for erosion exists, consistent with stormwater management objectives and requirements.

9.4 Restoration/Reclamation

CRES would submit a reclamation plan containing details regarding decommissioning and site reclamation to Codington County prior to initiating decommissioning activities. CRES will restore the site to approximate preconstruction conditions to the extent possible. The goal of restoration will be to restore natural hydrology, soil conditions, and vegetation to the greatest extent practicable while minimizing new disturbance. The decommissioning effort will include implementation of BMPs, including the following measures:

- Remediate any petroleum product leaks and chemical releases prior to completion of decommissioning.
- Minimize new disturbance to the greatest extent practicable.
- Remove equipment and access roads up to 4 feet below surrounding grade, backfill with subgrade material, and cover with suitable topsoil to allow adequate root penetration for vegetation.
- Decompact footprints if needed and grade to match surrounding characteristics and contours.
- During decommissioning activities, remove and stockpile topsoil and designate and separate it from other excavated material. Prior to restoration, topsoil will be decompacted to match characteristics of the surrounding area. CRES will replace topsoil to its original depth and original surface contours to the extent practical. CRES will mitigate topsoil deficiencies and settling using imported, locally sourced (from a location within 50 miles of the site) topsoil consistent with the characteristics and quality of soils in the site, if necessary.
- Restore disturbed areas using seed agreed upon with the landowner, if applicable. An appropriate seed mixture would be broadcast or drilled across the site and weed-free mulch would be applied to stabilize the soil and retain moisture for seedling germination and establishment.

10 CONCLUSION

This application demonstrates CRW's and CRES's compliance with the Codington County Zoning Ordinance and with the general and specific standards and requirements for conditional land uses as described in Section 4.05.01, Powers and Jurisdiction Relating to Conditional Uses.

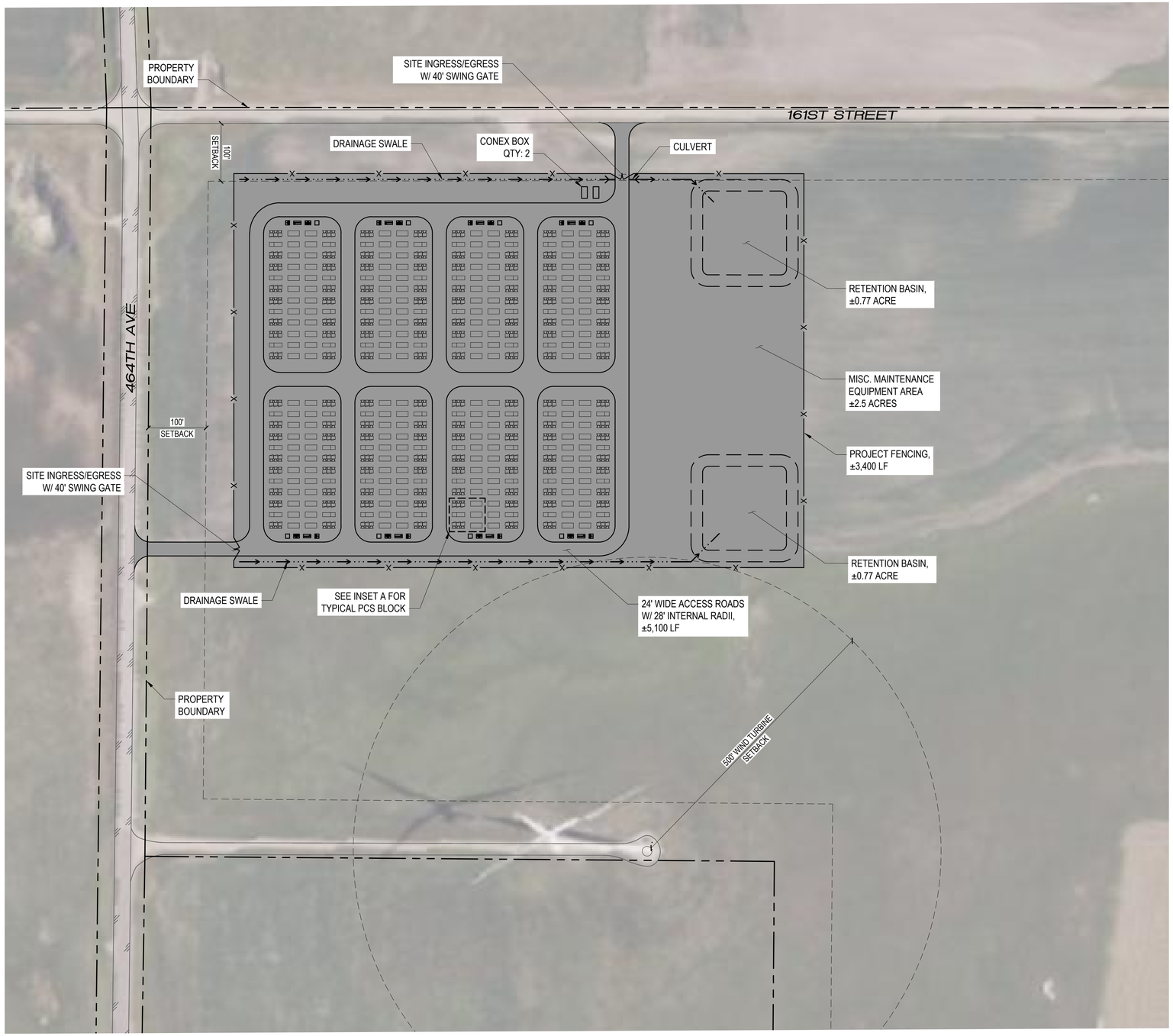
CRW and CRES look forward to the opportunity to continue investing in Codington County for the future.

11 LITERATURE CITED

IAC Acoustics. 2023. IAC Acoustics Noishield Continuline Sound Barriers. Available at: https://www.iacacoustics.com/noishield-continuline-sound-barriers. Accessed February 5, 2024.

APPENDIX A

Preliminary Site Plan for the Crowned Ridge I Battery Energy Storage System

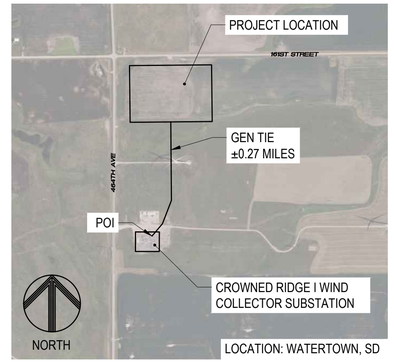


1 C-100 NORTH

PRELIMINARY SITE PLAN

SCALE: 1"-100'-0"

1"=100'-0" 0 50 100 200 300



VICINITY MAP

UNIT	VALUE
BESS NAMEPLATE CAPACITY	120MW / 4HR
AUTHORITY HAVING JURISDICTION	CODINGTON COUNTY, SD
PCS (BESS INVERTER & TRANSFORMER)	64 EA
BESS ENCLOSURES	192 EA
FENCED AREA IN ACRES	15.4 ACRES
TOTAL AREA IN ACRES	283.4 ACRES

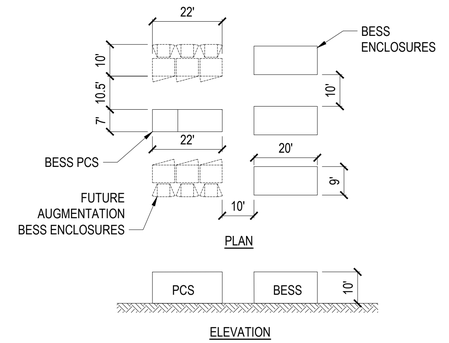
SYSTEM SUMMARY

NOTES:

1. DIMENSIONS ARE APPROXIMATE AND MAY VARY BASED ON FINAL DESIGN.
2. SCADA SYSTEM HAS ACTIVE POWER CONTROL CAPABILITY TO LIMIT TOTAL PLANT INPUT AND OUTPUT TO PREVENT EXCEEDING THE MAXIMUM INTERCONNECTION CAPACITY. ADDITIONAL BESS EQUIPMENT IS SHOWN TO ACCOUNT FOR POTENTIAL CHANGES IN OPERATIONAL STRATEGY.
3. PRELIMINARY SITE LAYOUT IS SHOWN. LAYOUT MAY BE MODIFIED BASED ON SITE GRADING DESIGN DUE TO VARIABLE TOPOGRAPHY ON SITE OR SOIL CONDITIONS. PROPERTY LINES AND SITE FEATURES SHOWN IN APPROXIMATE LOCATIONS, AWAITING FINAL SURVEY.

ABBREVIATIONS:

BESS	BATTERY ENERGY STORAGE SYSTEM
PCS	POWER CONVERSION SYSTEM
POI	POINT OF INTERCONNECTION



INSET A - TYPICAL PCS BLOCK

COFFMAN ENGINEERS
11080 Circle Point Road, Suite 220
Westminster, CO 80020
ph 720.805.1955
www.coffman.com

PRELIMINARY - NOT FOR CONSTRUCTION

NEXTERA

NEXTera ENERGY RESOURCES

CROWNED RIDGE I BESS

REV	DATE	DESCRIPTION

PROJ. NO.	231105
DRAWN	NAD
CHECKED	LJB
DATE	05/2023

© COFFMAN ENGINEERS INC.

SHEET TITLE:

PRELIMINARY SITE PLAN

SHEET NO:

C-100

APPENDIX B

Legal Descriptions of the Crowned Ridge Wind Collector Substation and Crowned Ridge I Battery Energy Storage System Sites

EXHIBIT A

Legal Description of Land

North Half (N½) of Section 11, LESS one (1) acre in the Northeast corner of the Northwest Quarter (NW¼), Township 118 North, Range 51 West of the 5th P.M., Codington County, South Dakota.

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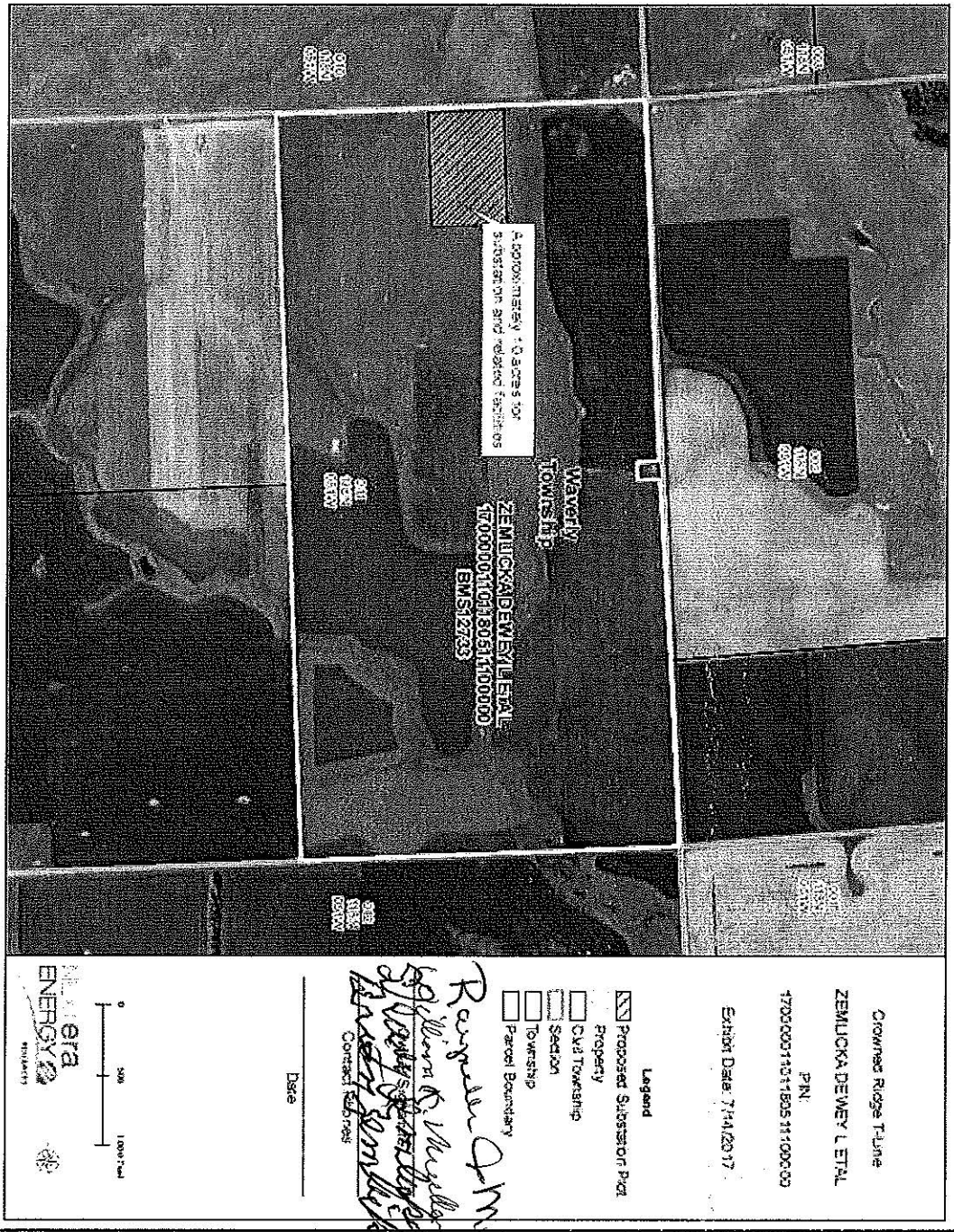
EXHIBIT B
Depiction of Property



Final Exhibit B to be provided with Option Notice.

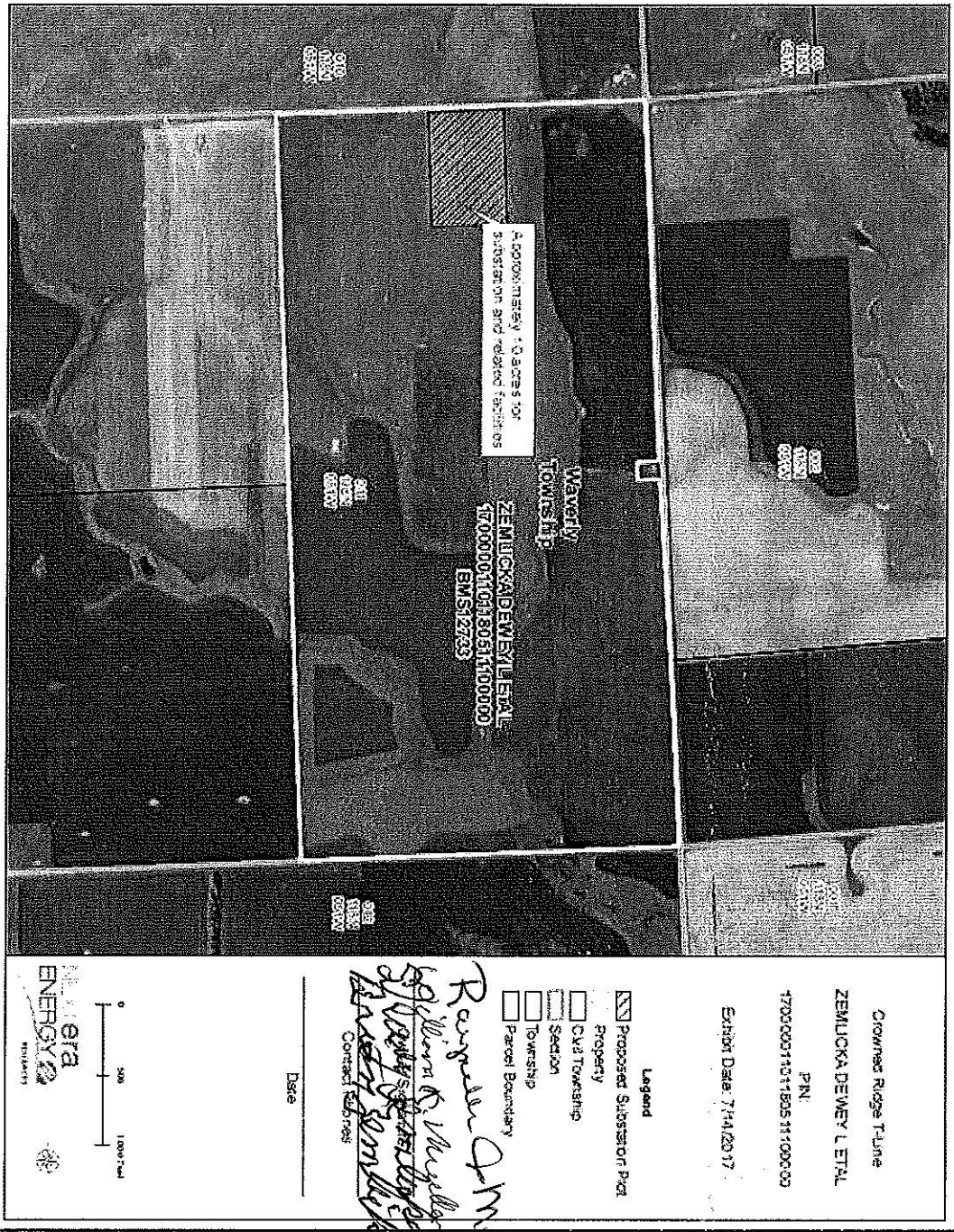
EXHIBIT A

Legal Description of Land

North Half (N½) of Section 11, Township 118 North, Range 51 West of the 5th P.M., Codington County, South Dakota, less 1 acre in the Northeast Corner of the Northwest Quarter (NW¼).

QLA ID: 17125

EXHIBIT B
Depiction of Property



Final Exhibit B to be provided with Option Notice.

Appendix C – Local Review Committee Meeting Minutes