COMMERCE DEPARTMENT

May 11, 2020

Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

RE: EERA Comments and Recommendations
Preliminary Draft Site Permit
Three Waters Wind Farm, Jackson County, Minnesota
Docket No. IP-7002/WS-19-576

Dear Mr. Seuffert,

Attached are comments and recommendations of Department of Commerce, Energy Environmental Review and Analysis (EERA) staff in the above matter.

Three Waters Wind Farm, LLC has submitted an application pursuant to Minnesota Rule 7854.0400 for a Site Permit for an up to 201 megawatt wind project in Jackson County, Minnesota.

This initial filing was made on September 30, 2019:

Mark Wengierski, Senior Project Manager
Three Waters Wind Farm, LLC, c/o Scout Clean Energy
4865 Sterling Drive, Suite 200
Boulder, CO 80301

These comments are based on EERA staff review of the Site Permit Application and the record to date. Additionally, staff has taken public and agency comments into consideration in development of the attached Preliminary Draft Site Permit. Staff is available to answer any questions the Commission may have.

Sincerely,

Richard Davis
Environmental Review Manager

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COMMERCE DEPARTMENT

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

COMMENTS AND RECOMMENDATIONS OF MINNESOTA DEPARTMENT OF COMMERCE ENERGY ENVIRONMENTAL REVIEW AND ANALYSIS STAFF

DOCKET NO. IP-7002/WS-19-576

Date: May 11, 2020

EERA Staff: Richard I. Davis 651-539-1846

In the Matter of the Application of Three Waters Wind Farm, LLC for a Large Wind Energy Conversation System Site Permit for the up to 201 MW Three Waters Wind Farm in Jackson County, Minnesota.

Issue(s) Addressed: These comments address whether the Commission should issue a Draft Site Permit (DSP) for the Three Waters Wind Farm, and whether additional conditions are necessary in addition to the permit conditions in the Site Permit Template.

Documents Attached

1. Preliminary Draft Site Permit with Preliminary Turbine Locations Maps

Additional documents and information can be found on the EERA website https://mn.gov/eera/web/project/13761/ or on eDockets https://www.edockets.state.mn.us/EFiling/search.jsp (Year "19" and Number "576").

This document can be made available in alternative formats; i.e. large print or audio tape by calling (651)539-1530.

Introduction and Background

Three Waters Wind Farm, LLC (Applicant) filed an Application[1] with the Public Utilities Commission (Commission) for a Large Wind Energy Conversion System (LWECS) Site Permit on September 30, 2019, to build the Three Waters Wind Farm (Project) in Jackson County, Minnesota.

Three Waters Wind Farm, LLC is a wholly-owned subsidiary of Scout Clean Energy. Scout Clean Energy has developed, constructed, and operates numerous wind energy projects throughout the United States, but Three Waters Wind Farm is the first wind energy project proposed by Scout Clean Energy in the State of Minnesota.

The Applicant has indicated they have entered into a Power Purchase Agreement (PPA) with Minnesota Municipal Power Agency (MMPA). Under this PPA, MMPA has agreed to purchase up to 200 MW of the power generated by the Three Waters Wind Farm. MMPA does not plan to seek Commission approval for the PPA with Three Waters Wind Farm, LLC, and MMPA does not currently have a Commission approved resource acquisition process. Three Waters Wind Farm, LLC has appropriately filed an Application for a Certificate of Need (CN)[2] with the Commission, and specific details about the Project's CN Application process are under Docket number IP-7002/CN-19-154. The Commission accepted the Three Waters Wind Farm CN Application on October 23, 2019.[3]

Project Location

The proposed Project is located to the southwest of the City of Lakefield and west/southwest of the City of Jackson. Portions of the Project are located in Ewington, Round Lake, Sioux Valley, Rost, Hunter, and Minneota Townships in Jackson County. The Applicant would prefer to keep all of the Project's turbines within the State of Minnesota, but they do also have agreements secured for alternate turbine locations in the neighboring Osceola and Dickinson Counties in Iowa.

Project Description

The Project Area, within Minnesota, encompasses approximately 48,087 acres, the initial Application indicated that approximately 21,813 acres are currently leased for the Project. Lands currently under lease agreements was a concern brought up during the Public Information and ER Scoping Meeting. EERA is working with the Applicant to develop and file an updated Lands Under Lease Agreements Map. Additional review and analysis will continue as the Project proceeds through the permitting process.

The Project for which a permit is being requested includes:

1. A wind turbine layout consisting of 71 primary turbine locations and eight alternate turbine locations in Minnesota, the Application describes the primary turbine model

[1] Three Waters Wind Farm, LLC. Site Permit Application and associated Figures and Appendices. Main Document of Site Permit Application, September 30, 2019, eDocket # **20199-156208-01**

[2] Three Waters Wind Farm, LLC. Certificate of Need Application, Appendix A, Appendix B, and Figures. July 31, 2019, eDocket # **20197-154854-02**

[3] Commission. Order Accepting Application, Directing Use of Informal Review Process, and Other Action. October 23, 2019, eDocket # **201910-156842-01**.

selected is the General Electric (GE) 2.82 MW turbine, and the GE 3.03 MW turbine is also being considered for use.

2. The following associated facilities will be constructed and present throughout the operation of the Project,
    a. gravel access roads
    b. underground collection lines
    c. underground communication line system
    d. up to two permanent meteorological tower
    e. a Project substation facility
    f. an operations and maintenance (O&M) facility
    g. an Aircraft Detection Lighting System (ADLS)
    h. an electrical switchyard; and
    i. a less than 1,500 foot long 345 kV transmission line from the Project substation to the point-of-interconnect (POI).

3. Temporary construction areas will include, crane paths, pull sites, access roads, a concrete batch plant, and a laydown yard.

The Applicant's goal is to commence construction of the Project in late 2020, and achieve commercial operation by the end of 2021.

Regulatory Process and Procedures

A site permit from the Commission is required to construct an LWECS, which is any combination of wind turbines and associated facilities with the capacity to generate five megawatts or more of electricity. This requirement became law in 1995. The Minnesota Wind Siting Act is found at Minnesota Statutes Chapter 216F. The rules to implement the permitting requirements for LWECS are in Minn. Rule 7854.

Application Acceptance

Application acceptance is guided by Minnesota Rule 7854.0600. The Commission may elect to accept, conditionally accept, or reject the Application. On December 23, 2019 the Commission accepted the Application as complete, and directed the Applicant to respond to reasonable requests for additional information regarding the project made by the Department of Commerce – Energy Environmental Review and Analysis (DOC-EERA or EERA) staff.[4]

Preliminary Determination on Draft Site Permit

Minnesota Rule 7854.0800 states, "Within 45 days after acceptance of the application by the Commission, the Commission shall make a preliminary determination whether a permit may be issued or should be denied. If the preliminary determination is to issue a permit, the

[4] Commission. Order Accepting the Application, Establishing Procedural Framework, and Varying Rules, December 23, 2019, eDocket # **201912-158553-01**

Commission shall prepare a draft site permit for the project. The draft site permit must identify the permittee, the proposed LWECS, and proposed permit conditions."

Issuing a draft site permit (DSP) does not confer an authority to construct an LWECS. The Commission may change, amend or modify the draft site permit in any respect before final issuance or may deny the site permit at a later date.

Public Participation

The Commission's December 23, 2019 Order waived the 45 day requirement of the rule in order to allow time for public comments and state and federal agencies input on content and additional issues to be addressed in the Draft Site Permit. DOC-EERA staff, Commission staff, and the Applicant held a Public Information and ER Scoping meeting in Jackson, Minnesota on February 20, 2020, to solicit public comments on the scope of the DSP and the scope of the ER. The public comment period was open through February 28, 2020.

EERA Staff Analysis and Recommendations

State Agency and Local Board Comments Addressed

Agency comment letters were provided by the Minnesota Pollution Control Agency (MPCA) and the Department of Administration – State Historic Preservation Office (SHPO). A Jackson County Commissioner and local Township Board Members provided comments at the Public Information and ER Scoping meeting. Rost and Sioux Valley Township Board Chairman provided verbal comments during the February 20th public meeting. A Sioux Valley Township Board Member also provided a written comment during the comment period. One of the Supervisors from the neighboring Dickenson County (Iowa) provided verbal comments during the February 20th public meeting.

The following section specifically addresses comments and topics of concern submitted by State agencies and local boards during the public comment period. EERA has identified the issues that can be addressed appropriately through the State Permit process, and the applicable Preliminary DSP (PDSP) condition or special condition has been identified. If an issue is identified as not appropriate for inclusion in the Preliminary DSP, EERA has provided the reasons for not including the specific issue and a recommendation as to how, if possible, the issue can be addressed.

Minnesota Pollution Control Agency

The MPCA comments[5] focused on the need for additional information within the record concerning the potential impacts to surface waters and floodplain resources, along with information on avoidance, minimization, and mitigation (BMPs) of said impacts. MPCA also identified the potential for the Project needing wetland permits, water quality certification, and stormwater management. MPCA also indicated that based on the information provided

[5] DOC-EERA. Comments – All Written Agency Comments Received by EERA. March 11, 2020, eDocket # **20203-161133-01**

the Project will be compliant with the MPCA noise rules, but they requested the Applicant provide the final Figure 8 and Appendix D Noise Report prior to finalization of the Project plans.

The PDSP specifically requires the Applicant to obtain all other necessary permits, approvals, and authorizations prior to constructing the proposed project. EERA will continue to work with the Applicant, and coordinate with MPCA staff with respect to noise modeling and noise monitoring of the proposed project.

EERA has included the following conditions and special conditions in the attached Preliminary DSP:

- Condition 4.3 Noise – Addresses turbine placement and operation in compliance with the Minnesota Noise Standard.

- Condition 5.3.7 Soil Erosion and Sediment Control – Permittee shall obtain a NPDES/SDS Construction Stormwater Permit, and develop a SWPPP.

- Condition 5.6.2 Other Permits and Regulations – Permittee shall obtain all required permits, authorizations and approvals.

- Special Condition 7.4 Noise Studies - Requires noise monitoring at the Project to confirm and validate the noising modeling completed to determine turbine siting locations.

Minnesota Historical Society – State Historic Preservation Office

The SHPO recommended[6] that the proposed project be designed to avoid impacts to known cultural resources, properties listed in the state historic site network, state register of historic places, and the National Register of Historic Places. Additionally, SHPO recommended that a Phase I archaeological survey should be completed for the proposed project area.

The PDSP includes a condition specific to Archaeological and Historic Resources, which requires field surveys, avoidance of resources, and consultation with SHPO. EERA will continue to coordinate with the Applicant and SHPO as necessary to ensure Archaeological and Historic Resources are appropriately identified and addressed prior to construction of the proposed project

EERA has included the following condition in the attached Preliminary DSP:

- Condition 5.3.16 Archaeological and Historic Resources – Addresses avoidance of archaeological and historic resources during Project construction, and also addresses the need for consultation with the State Historic Preservation Office.

[6] DOC-EERA. Comments – All Written Agency Comments Received by EERA. March 11, 2020, eDocket # **20203-161133-01**

Local Township and County Boards

The Rost Township Chairman provided comments[7] specific to the Applicant needing to get agreements in place with the Townships. He also voiced concerns specific to drainage line and culvert damage, and site restoration.

Sioux Valley Township Chairman provided comments[8] stressing concerns of roadway safety, cemetery setbacks, flooding concerns, wildlife protections, and misleading Project information. The Chairman wants the Applicant to follow the Jackson County Zoning Ordinance (JCZO) turbine setback distance from public roads, which is a distance equivalent to the height of the wind turbine plus one blade length. The Chairman recommended a one mile setback of all turbines from cemeteries, identifying them all as Historical Landmarks, stating that the vibrations from the turbines and construction equipment could cause damage to the stones in the cemeteries. Flooding concerns mentioned by the Chairman appear to focus on the associated roadway damages, and increased turbine setbacks form protected waters within the project area. Additionally, the Chairman recommended at least a ½ mile setback from the wildlife area on the avoidance map (provided by DNR to the Applicant). The Chairman stated he does not believe the Applicant is not being truthful and misleading members of the public to get their project approved.

The Jackson County Commissioner[9] present at the Public Information and ER Scoping meeting indicated that he hopes members of the public will be respectful of each other and to each other's choices with regard to their property. The Commissioner also asked for some clarification on what types of project alternatives would EERA being looking at when completing the ER for the CN process.

The Dickinson County (Iowa) Supervisor[10] that attended the Public Information and ER Scoping meeting indicated that they are in favor of the project. Citing the production tax benefits Dickinson County currently receives from operating wind turbines and the additional income source the turbines provide farmers, as good financial benefits.

Local input into the environmental review process is greatly appreciated. To assist the EERA in completing the environmental review process, and to assist the Commission in making a decision with respect to the Three Waters Wind Farm.

EERA understands the Townships concerns with respect to protecting existing infrastructure during all phases of the proposed Project. The PDSP being recommended by EERA includes multiple conditions which directly address their stated concerns, and those conditions will require the Applicant to coordinate with local road authorities, development of road agreements, maintenance of appropriate drainage, and restoration activities. EERA believes concerns raised about flooding and potential impacts to roadways would fall within the

[7] DOC-EERA. Comments – Public Information and ER Scoping Meeting Minutes. March 11, 2020. eDocket # **20203-161133-02**
[8] DOC-EERA. Comments – Public Information and ER Scoping Meeting Minutes. March 11, 2020. eDocket # **20203-161133-02**
[9] DOC-EERA. Comments – Public Information and ER Scoping Meeting Minutes. March 11, 2020. eDocket # **20203-161133-02**
[10] DOC-EERA. Comments – Public Information and ER Scoping Meeting Minutes. March 11, 2020. eDocket # **20203-161133-02**

Applicant's responsibilities to coordinate with local road authorities, and additional PDSP conditions specific to this issue do not seem appropriate at this time.

EERA has included the following conditions in the attached Preliminary DSP:

- Condition 5.3.13 Public Roads – The Permittee must make arrangements with all road authorities prior to the use of such roads.

- Condition 5.3.14 Turbine Access Roads – Construction of turbine access roads that are low profile, and maintain appropriate drainage.

- Condition 5.3.20 Drainage Tiles – Requires the avoidance, or prompt repair or replacement of damaged tile lines.

The Sioux Valley Township Chairman's recommendation to utilize the JCZO setback of a distance equal to the wind turbine height plus one blade was considered by EERA. The PDSP includes a condition specific to turbine setbacks from public roads, which is a 250 foot setback, which is the standard minimum setback for turbines at permitted LWECS in Minnesota. The JCZO setback is likely based on a total turbine fall down distance if a turbine was to collapse at the base and land with a blade fully extended. EERA does not have any records of a commercial wind turbine experiencing a failure in this manner in the State of Minnesota. This type of turbine failure seems highly unlikely. The Chairman also indicated that the JCZO turbine setback from public roads could be important to reduce the chances of ice throw from the turbines hitting vehicles on the road. Icing on wind turbine blades causes an imbalance of the blades, which triggers the newer turbine models to not operate. Additionally, there have been no confirmed occurrences of turbine ice throw striking a vehicle on a public road in the State of Minnesota. In 2018, there was a reported incident at the Bent Tree Wind Farm in Freeborn County of turbine ice throw striking a semi-truck on Highway 13, but the strike was never confirmed to be the result of turbine ice throw. EERA does not recommend a turbine setback from public roads equal to the total turbine fall down distance.

For reference purposes, and to aid the Commissioners, a total fall down distance for the turbines being considered by the Applicant on this Project would range from 499 to 591 feet.

EERA has included the following condition in the attached Preliminary DSP:

- Condition 4.4 Roads – Wind turbines and meteorological towers shall not be located closer than 250 feet from the edge of the nearest public road right-of-way.

Regarding the Sioux Valley Township Chairman's recommendation of a one mile turbine setback from all cemeteries. EERA does not recommend the inclusion of any condition in the attached PDSP specific to a turbine setback from cemeteries. Known cemeteries will have protections afforded by other conditions included in the PDSP, such that the cemeteries would be considered non-participating lands, the property would be granted wind access buffers as specified in the PDSP. Additionally, EERA believes that cemeteries would

be considered religious or cultural activities, which would place them in MPCA's Noise Area Classification (NAC) 1[11], this is the same classification as residential households.

The Applicant's noise modeling should identify cemeteries within the project area, and site turbines appropriately based on overall noise levels (ambient + turbine). If turbines are setback from known cemetery locations based on appropriate noise modeling, visitor access and use of the cemetery areas will not be restricted or impacted. The Chairman's comments indicated the cemeteries should be considered Historic Landmarks, and EERA does not dispute this classification but that classification does not provide a site additional setback protections unless construction activities or the turbine presence will somehow impact the site or the use of the site. EERA does not have any supporting evidence to suggest that operating turbines or construction equipment working near these areas will create enough vibration to cause damage to the existing headstone and markers.

EERA has included the following conditions and special conditions in the attached Preliminary DSP:

- Condition 4.3 Noise – Addresses turbine placement and operation in compliance with the Minnesota Noise Standard.

- Condition 4.1 Wind Access Buffer – Addresses required turbine setbacks from non-participating property boundaries, which includes public lands (excluding public trails).

- Special Condition 7.4 Noise Studies - Requires noise monitoring at the Project to confirm and validate the noising modeling completed to determine turbine siting locations.

The ½ mile setback from the wildlife area on the DNR's avoidance map, recommended by the Sioux Valley Township Chairman is not supported by any of the wildlife surveys that have been conducted within the project area. When recommending avoidance areas, such as the one mapped, DNR staff generally will include a setback or buffer from features they are concerned about, so the extent of the avoidance area would include that desired setback or buffer. EERA would also like to remind the Commission this a recommended avoidance area, and DNR does not have any regulatory control or vested financial interest over the entire identified avoidance area. The attached PDSP includes a standard condition providing DNR owned and managed lands a wind access buffer, as these lands are considered non-participating.

EERA has included the following conditions and special conditions in the attached Preliminary DSP:

- Condition 4.1 Wind Access Buffer – Addresses required turbine setbacks from non-participating property boundaries, which includes public lands (excluding public trails).

[11] MPCA. A Guide to Noise Control in Minnesota. November 2015. https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf

- Condition 4.5 Public Lands – Establishes that no turbines or project infrastructure will be placed on public lands managed for wildlife.

EERA staff discussed the project alternatives that will be considered in the ER with the Jackson County Commissioner during the Project Information and ER Scoping Meeting. EERA will be evaluating the alternatives to the proposed project as identified in the ER Scoping Decision[12], which includes a no build alternative, a 201 MW LWECS in another location, and a 201 MW solar farm.

Public Comments Addressed

Approximately 40 – 50 people attended the February 20, 2020 Public Information and ER Scoping meeting. Approximately 50 verbal comments/questions were received during the Public Information and Scoping Meeting, and 18 written submittals were received via email, mail, and filing in eDockets during the public comment period. All verbal comments at the Public Information and ER Scoping meeting are available in the meeting minutes[13], and all written comments received by EERA have been filed in eDockets[14].

The verbal comments and questions provided at the Public Information and ER Scoping Meeting and comments submitted in writing included a broad range of topics including; inaccurate depiction of lands under lease or agreement, lease agreement equality, turbine noise (modeling, monitoring, and impacts), turbine generated infrasound, low frequency noise, shadow flicker, interactions between the Applicant and townships, potential wildlife impacts, used turbine blade disposal, turbine setbacks from roads, turbine setbacks from a cemetery, impacts to agricultural tile lines, soil compaction in agricultural fields, crop pollination impacts, turbine interference with internet services, buried turbine communication lines interfering with landline telephone service lines in the area, interference with global positioning systems (GPS) on agricultural equipment, stray voltage, electromagnetic field (EMF), and turbine ice throw. DOC-EERA staff, Commission staff, and Scout Clean Energy staff provided responses and clarifications to a number of verbal comments and questions during the Public Information and ER Scoping Information Meeting. Additional clarification and analysis of issues brought up at the Public Information and ER Scoping Meeting will be addressed in this section, as well as responses to address comments provided in writing.

EERA has identified the issues that can be addressed appropriately through the State Permit process, and the applicable Preliminary DSP condition or special condition has been identified. If an issue is identified as not appropriate for inclusion in the Preliminary DSP, EERA has provided the reasons for not including the specific issue and a recommendation as to how, if possible, the issue can be addressed.

[12] DOC. Decision – MN Dept of Commerce – Environmental Report Scoping Decision – Three Waters Wind Farm. March 18, 2020. eDocket # **20203-161345-01**

[13] DOC-EERA. Comments – Public Information and ER Scoping Meeting Minutes. March 11, 2020. eDocket # **20203-161133-02**

[14] DOC-EERA. Comments – Written Public Comments Received. Six Part Filing. March 11, 2020. eDocket # **20203-161148-01**, **20203-161148-02**, **20203-161148-03**, **20203-161148-04**, **20203-161148-05**, and **20203-161148-06**

Lands Under Lease Agreement

Lands currently under lease agreements was a concern brought up during the Public Information and ER Scoping Meeting, and also identified in some written comments. EERA is working with the Applicant to ensure that they develop and file an updated Lands Under Lease Agreements Map. Additional review and analysis will continue as the Project proceeds through the permitting process. The updated Lands Under Lease Agreements Map will be filed by the Applicant in eDockets in at least 14 days prior to the Public Hearing. This will provide members of the public time to view and comment on the map during the Public Hearing comment period.

Additionally, the attached PDSP has conditions that require maps demonstrating land agreements help and demonstration that wind access buffers from non-participating landowners are being satisfied, must be filed prior to the pre-construction meeting.

EERA has included the following condition and special condition in the attached Preliminary DSP:

- Condition 4.1 Wind Access Buffer – Addresses required turbine setbacks from non-participating property boundaries, which includes public lands (excluding public trails).

- Special Condition 10.1 Wind Rights – The Permittee shall demonstrate they have obtained the wind rights and any other necessary rights to construct and operate the Project.

Lease Agreement Equality

A comment was received that indicated the agreements between the Applicant and landowners in the Project Area should be equal and fair. EERA does not believe it would be appropriate to have a condition or special condition in the PDSP regarding financial limitation, restrictions, or requirements specific to any private business agreements between the Applicant and landowners. EERA believes the site permit conditions and special conditions cannot be superseded by any conditions or waivers included in private contracts or lease agreements between the Applicant and landowner as it relates to the proposed Project. EERA does not recommend any conditions in the PDSP specific to lease agreement equality.

Turbine Noise (modeling, monitoring, and impacts)

Public comments raised concerns specific to the audible noise that will be produced by the wind turbines themselves, and the impacts it may have on the surrounding residents, wildlife and livestock. Some public comments indicated that the wind turbine noise would be much greater than the typical rural background noise levels experienced by local residents. Public commenters expressed concerns with the noise modeling used a ground factor of 0.7 as opposed to 0.5, and they also expressed concerns about the noise monitoring protocols to be used.

EERA staff reviewed the Applicant's Preliminary Noise Compliance Assessment Report[15], which was submitted as part of the initial Site Permit Application (SPA). Upon review EERA had concerns with regard to some of the modeled noise levels for the proposed Project, and questioned the use of a 0.7 ground factor. EERA met with the Applicant to further discuss these issues, and EERA requested the Applicant to provide an updated Report and summary to further explain the use of 0.7 Ground Factor, turbine noise mitigation measures, and the assessment of turbine noise plus ambient conditions. The Applicant provided an Updated Preliminary Noise Compliance Assessment[16] and a Sound Propagation Model Update Summary[17], as EERA requested.

The Project's noise analysis and modeling utilized the A-weighted scale and categorized the residences within the Project Area as Noise Areas Classification (NAC) group 1, which is standard and consistent with the Minnesota Pollution Control Agency (MPCA) 7030 Noise Rules.[18] When considering the modeling used various conservative assumptions such as, the second floor receptor location and the addition of 2 dB to the turbine manufacturer's apparent sound power level, the use of a 0.7 ground factor in the modeling and analysis of the project is within the acceptable range. The use of a 0.5 ground factor as opposed to the 0.7 ground factor, would likely result in an increase of 1 dB or less of turbine only noise levels at the residences within the Project Area. Additionally, if a 0.5 ground factor were used in modeling, the noise modeling standards would allow the Applicant to use the turbine manufacturer's apparent sound power level without the previously mentioned 2 dB addition. Essentially, the additions to the turbine manufacturer's apparent sound power level, is the same as utilizing a 0.5 ground factor in modeling.

The modeling provided predicts the loudest turbine – only sound level to be experienced by any residence would be 47 dBA.[19] Currently the model anticipates that a number of residences could experience sound pressure levels of 49 dBA, but this would only occur when the ambient, or background noise levels are at 45 Dba, and the wind turbine is contributing an additional 47 dBA to the noise profile.[20]

The Project's noise analysis indicates the ambient A weighted nighttime L50 for the on-site monitoring locations ranged from 29 to 34 dBA[21], so during times of turbine operation nearby residents may experience an increase in perceived sound level. However, the noise model predictions do not indicate any sound level increases that will exceed State noise

[15] Three Waters Wind Farm, LLC. Initial Filing – 2019-10-10 Three Waters Appendix D to SP Application. Appendix D - Preliminary Noise Compliance Assessment Report. October 10, 2019. eDocket # **201910-156475-03**
[16] Three Waters Wind Farm, LLC. Other – Preliminary Noise Assessment **Updated**. Appendix D - Updated Preliminary Noise Compliance Assessment Report. February 10, 2020. eDocket # **20202-160279-04**
[17] Three Waters Wind Farm, LLC. Other – Site Permit Sound Propagation Model Update Summary. Three Waters Wind Farm Sound Propagation Model Update Summary. February 10, 2020. eDocket # **20202-160279-03**
[18] MPCA. A Guide to Noise Control in Minnesota. November 2015. https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf
[19] Three Waters Wind Farm, LLC. Other – Preliminary Noise Assessment **Updated**. Appendix D - Updated Preliminary Noise Compliance Assessment Report. February 10, 2020. eDocket # **20202-160279-04**
[20] Three Waters Wind Farm, LLC. Other – Preliminary Noise Assessment **Updated**. Appendix D - Updated Preliminary Noise Compliance Assessment Report. February 10, 2020. eDocket # **20202-160279-04**
[21] Three Waters Wind Farm, LLC. Other – Preliminary Noise Assessment **Updated**. Appendix D - Updated Preliminary Noise Compliance Assessment Report. February 10, 2020. eDocket # **20202-160279-04**

standards which are consistent with standards for sleep, annoyance, and hearing conservation.

Noise monitoring within and outside of the proposed Project Area was conducted in accordance with the DOC-EERA, Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report, dated October 2012, and methods were confirmed to satisfy the July 2019 EERA updated guidance. Noise modeling methodology for the proposed Project was completed in accordance with the International Organization for Standardization (ISO) standard ISO 9613-2, Acoustics – Attenuation of sound during propagation outdoors, Part 2: General Method of Calculation.

Post-construction noise monitoring protocol/methodology will be developed in coordination with EERA staff, and must be filed prior to the pre-construction meeting. Post-construction noise monitoring results and analysis will be filed to determine overall accuracy of the noise modeling and the Project's compliance with the MPCA Noise Rules in Chapter 7030.

The Applicant's noise analysis and modeling does not provide details specific to the potential impacts of the noise generated by the proposed wind turbines on wildlife or livestock within the Project Area. EERA anticipates that livestock operations within the Project Area will be located near rural residences or on agricultural lands. Livestock areas near rural residences are anticipated to experience turbine generated sound levels similar to the residence they are near. In the case of livestock areas near residences, EERA does not anticipate turbine generated sound levels to exceed 47 dBA, as the Applicant's modeling does not identify any residences that are anticipated to experience sound levels over 47 dBA[22]. The MPCA Noise Rules do identify agricultural lands in the NAC 3, which has a daytime and nighttime L_{50} of 75 dBA[23]. EERA did not identify any areas within the Project Area that are anticipated to exceed the 75 dBA standard, with the possible exception being, areas in very close proximity to an operating wind turbine. Non-participating landowners that raise livestock are most likely to be the ones concerned with the placement of a wind turbine in close proximity to a livestock grazing area. Based on the Applicant's modeling[24] the lands in close proximity to an operating wind turbine may experience sound levels in excess of 50 dBA, but EERA does not believe those areas will exceed 75 dBA and it is also anticipated that those landowners are currently participants in the proposed Project.

MPCA Noise Rules do not specifically identify standards for potential wildlife impacts, and they do not specifically identify wildlife areas or habitats within the NAC system. One of the primary concerns with respect to noise impacts on wildlife is the potential for noise to interfere with the calls and vocalizations of various bird species, which are necessary for communication and the ability to attract mates and successfully reproduce. Although species vary in their tolerance of noise, there are numerous bird species that rely on vocalizations and successfully reproduce in urban areas. Typical daytime urban sound levels are generally around 50 dBA, with nighttime sound levels around 40 dBA. EERA utilized NAC 1 noise level standards (the most restrictive), the Applicant's noise modeling

[22] Three Waters Wind Farm, LLC. Other – Preliminary Noise Assessment **Updated**. Appendix D - Updated Preliminary Noise Compliance Assessment Report. February 10, 2020. eDocket # **20202-160279-04**
[23] MPCA. A Guide to Noise Control in Minnesota. November 2015. https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf
[24] Three Waters Wind Farm, LLC. Other – Preliminary Noise Assessment **Updated**. Appendix D - Updated Preliminary Noise Compliance Assessment Report. February 10, 2020. eDocket # **20202-160279-04**

data, and mapped locations of designated wildlife areas to analyze the Project's potential to impact wildlife using areas specifically managed for that intent. EERA did not identify any state or federal designated wildlife areas that are anticipated to experience turbine generated sound levels greater than 50 dBA. Generalist wildlife species are likely to be more tolerant of varying noise levels, as they are more flexible with regard to their habitat requirements. EERA does not anticipate the Project will have any greater noise related impacts on the wildlife species within the Project Area than the current noise levels generated by typical agricultural/farming activities and road traffic.

EERA has included the following condition and special condition in the attached Preliminary DSP:

- Condition 4.3 Noise – Addresses turbine placement and operation in compliance with the Minnesota Noise Standard

- Special Condition 7.4 Noise Studies - Requires noise monitoring at the Project to confirm and validate the noising modeling completed to determine turbine siting locations.

Turbine Generated Infrasound and Low Frequency Noise

Comments were received identifying concerns of infrasound and low frequency noise generated by wind turbines, and the potential human health concerns that may be associated with exposure to infrasound and low frequency noise. The current DSP Template does not contain any conditions or special conditions specific to infrasound or low frequency noise, and at this time EERA does not recommend the addition of any conditions or special conditions specific to infrasound or low frequency noise. Scientific research and field studies specific to low frequency noise generated by large modern "upwind" wind turbines, has shown that the low frequency noise generated by modern turbines is well below the human perceptibility threshold.[25]

Shadow Flicker

Comments were received with respect to the potential human impacts of shadow flicker cast by the rotating wind turbine blades on the windows of residences. EERA does acknowledge that shadow flicker can be annoying to residents that live in close proximity to an operating window turbine, but there is no data that suggests the exposure of humans to shadow flicker, at the rates that are anticipated from the proposed turbine models, will cause negative human health impacts. The Applicant has stated that at maximum speed will result in 15.7 blade revolutions per minute, which equates to a frequency is 0.785 Hz.[26]

Thirty hours of shadow flicker per year has been suggested as a standard in a couple sources of information reviewed by EERA, but those sources do not provide supporting scientific data that would suggest there is a link between shadow flicker in excess of 30

[25] RSG et al. Massachusetts Study on Wind Turbine Acoustics. Massachusetts Clean Energy Center and Massachusetts Department of Environmental Protection. 2016. https://files.masscec.com/research/wind/MassCECWindTurbinesAcousticsStudy.pdf

[26] Three Waters Wind Farm, LLC. Site Permit Application and associated Figures and Appendices. Main Document of Site Permit Application, September 30, 2019, eDocket # **20199-156208-01**

hours per year of exposure and negative human health impacts. The Applicant has completed shadow flicker modeling for the proposed turbine layout, using two different turbine hub heights, 89 meters and 114 meters.[27] The taller the turbine hub is will result in an increase in the distance that a blade shadow can be cast across the landscape, which was reflected in the Applicants shadow flicker modeling. Modeling of turbines with a hub height of 89 meters indicated that 13 residences (seven participating and six non-participating) would experience over 30 hours of shadow flicker per year.[28] When modeled, turbines with a hub height of 114 meters will result in 18 residences (nine participating and nine non-participating) experiencing over 30 hours of shadow flicker per year.[29] The shadow flicker exposure ranged from 30 hours to 78 hours and 23 minutes per year with a turbine hub height of 89 meters, and from 30 hours to 73 hours and 33 minutes per year with a turbine hub height of 114 meters.[30]

The Applicant has committed to mitigating shadow flicker over 30 hours per year at occupied residences by curtailing the operation of contributing turbines or by further refinement of the turbine array.[31] EERA will continue to work with the Applicant on anticipated shadow flicker minimization efforts, and if necessary will provide additional input during the Public Hearing comment period.

EERA has included the following special condition in the attached Preliminary DSP:

- Special Condition 7.2 Shadow Flicker – Requires modeling of potential shadow flicker that may be experienced by participants and non-participants, and how shadow flicker may be avoided, minimized, or mitigated.

Local Authority Coordination and Ordinances

Public comments were received regarding the Applicant working with the local Township boards, and to follow the Jackson County Zoning Ordinance (JCZO) turbine setback distance from public roads, which is a distance equivalent to the height of the wind turbine plus one blade length. These issues have been addressed in detail previously in this letter under the State Agency and Local Board Comments Addressed section, beginning on page 4.

The attached PDSP includes a specific conditions that requires the Applicant to work with local road authorities, including Township boards, with respect to public road use, turbine access roads and drainage. EERA does not support the use of the JCZO turbine setback distance from public roads, and we recommend the use of the 250 foot turbine and meteorological tower setback distance from public roads as included in the PDSP.

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[27] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix E. Appendix E – Shadow Flicker Study. September 30, 2019. eDocket # **20199-156209-01**

[28] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix E. Appendix E – Shadow Flicker Study. September 30, 2019. eDocket # **20199-156209-01**

[29] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix E. Appendix E – Shadow Flicker Study. September 30, 2019. eDocket # **20199-156209-01**

[30] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix E. Appendix E – Shadow Flicker Study. September 30, 2019. eDocket # **20199-156209-01**

[31] Three Waters Wind Farm, LLC. Site Permit Application and associated Figures and Appendices. Main Document of Site Permit Application, September 30, 2019, eDocket # **20199-156208-01**

EERA has included the following conditions in the attached Preliminary DSP:

- Condition 4.4 Roads – Wind turbines and meteorological towers shall not be located closer than 250 feet from the edge of the nearest public road right-of-way.

- Condition 5.3.13 Public Roads – The Permittee must make arrangements with all road authorities prior to the use of such roads.

- Condition 5.3.14 Turbine Access Roads – Construction of turbine access roads that are low profile, and maintain appropriate drainage.

- Condition 5.3.20 Drainage Tiles – Requires the avoidance, or prompt repair or replacement of damaged tile lines.

Potential Wildlife Impacts

Some comments received indicated concerns that the proposed Project will have significant impacts on local wildlife populations. The Applicant has completed various wildlife surveys[32] prior to submitting the SPA. Avian use studies, bat acoustic studies, and raptor nest surveys have been completed by the Applicant in consultation and coordination with the United States Fish and Wildlife Service (USFWS), Minnesota Department of Natural Resources (MN DNR), and EERA. The Applicant has also been in consultation with USFWS and MN DNR to identify potential impacts to Federal and State listed and protected species.

The Avian Use Surveys of the Project Area indicated that the highest avian use of the project site was during spring and fall migration periods.[33] The majority of passerine observations were comprised of various blackbird species, Lapland longspur, and horned lark[34], which are relatively common species and tolerant of disturbed habitats. Species observations worth noting, during fixed-point surveys and incidental observations, included bald eagles, one golden eagle, one Henslow's sparrow, trumpeter swans, one peregrine falcon, large numbers of Franklin's gull, and large numbers of American white pelicans.[35] Three active raptor nests were identified within the Project Area during the 2018 raptor nest survey, but no active bald eagle nests were identified within the Project Area during the 2017 and 2018 aerial raptor nest surveys.[36]

Bat acoustic surveys conducted in 2017 showed a mean of 3.62 bat passes per detector night, and the activity means of the five acoustic detectors ranged from 0.81 to 11.74 bat

[32] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix I. Appendix I – Threatened & Endangered Species, Agency Consultations, and Wildlife Studies. Four Part Filing September 30, 2019. eDocket #**20199-156209-05**, **20199-156209-06**, **20199-156209-07**, and **20199-156209-08**

[33] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix I. Avian Use Reports. Part Two of Four Part Filing September 30, 2019. eDocket #**20199-156209-06**

[34] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix I. Avian Use Reports. Part Two of Four Part Filing September 30, 2019. eDocket #**20199-156209-06**

[35] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix I. Avian Use Reports. Part Two of Four Part Filing September 30, 2019. eDocket #**20199-156209-06**

[36] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix I. 2017 and 2018 Aerial Raptor Nest Surveys. Part Two of Four Part Filing September 30, 2019. eDocket #**20199-156209-06**

passes per detector night.[37] Bat acoustic surveys conducted in 2018 showed a mean of 14.61 bat passes per detector night, and the activity means of the five acoustic detectors ranged from 7.07 to 36.57 bat passes per detector night.[38] Northern long eared bat (NLEB) acoustic surveys did not identify any NLEB calls[39], and there are no known hibernacula or maternity roosts documented within the proposed Project Area. The NLEB has a low probability of occurring within the proposed Project Area.

Various avian and bat species are known to experience collisions with operating wind turbines. Based on fatality monitoring at some operating wind facilities in Minnesota, EERA has calculated the mean bat fatality estimates is between 7 to 8 bat fatalities/MW/search period at Minnesota facilities. EERA has also looked at avian fatality estimates from fatality monitoring conducted at operating wind facilities in Minnesota, and the mean of avian fatalities estimates is 2 to 3 bird fatalities/MW/search period. Small bird species make up the vast majority of avian fatalities at Minnesota wind farms, and only a small number of avian fatalities are composed of large bird species, primarily raptors. The proposed Project is located within a few miles of the Lakefield Wind Farm, which has experienced above average bat fatalities when compared with other operating wind facilities in Minnesota. The Applicant's consultant anticipates a bat fatality rate of less than 20 bats/MW/Year.[40]

Conditions and special conditions are included in the PDSP that will address the proposed Project's potential to impact wildlife; including, turbine setbacks, wildlife habitat impact avoidance and minimization (native prairie, wetlands, vegetation removal, and tree removal) pre- and post-construction survey efforts, fatality reporting, turbine feathering, and development of an Avian and Bat Protection Plan (ABPP).

EERA has included the following conditions and special conditions in the attached Preliminary DSP:

- Condition 4.1 Wind Access Buffer – Addresses required turbine setbacks from non-participating property boundaries, which includes public lands (excluding public trails).

- Condition 4.5 Public Lands – Establishes that no turbines or project infrastructure will be placed on public lands managed for wildlife.

- Condition 4.6 Wetlands – Avoidance of identified protected waters and protected waters wetlands, and permit accusation requirements for public water and public waters wetlands to be crossed by electric collector and feeder lines.

[37] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix I. 2017 Bat Acoustic Survey. Part Two of Four Part Filing September 30, 2019. eDocket #**20199-156209-06**
[38] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix I. 2018 Bat Acoustic Survey. Part Three of Four Part Filing September 30, 2019. eDocket # **20199-156209-07**
[39] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix I. 2017 Summer Bat Survey Report. Part Three of Four Part Filing September 30, 2019. eDocket # **20199-156209-07**
[40] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix I. 2018 Bat Acoustic Survey. Part Three of Four Part Filing September 30, 2019. eDocket # **20199-156209-07**

- Condition 4.7 Native Prairie – Avoidance of native prairie impacts, and development of a Prairie Protection and Management Plan

- Condition 5.3.9 Vegetation Removal – Minimization of vegetation clearing and number of trees removed during Project construction.

- Special Condition 7.1 Biological and Natural Resources Inventories – Establishes requirements for conducting pre-construction wildlife surveys.

- Special Condition 7.5.1 Operational Phase Fatality Monitoring – Requires the Permittee to develop protocol, coordinate with agencies, and conduct avian and bat fatality monitoring during Project operation.

- Special Condition 7.5.2 Avian and Bat Protection Plan - Allows for the continual review and revision of the Project's ABPP, in coordination with EERA, MDNR, and USFWS.

- Special Condition 7.5.3 Quarterly Incident Reports – Requires quarterly reporting of injured or dead avian and bat species identified within the Project for the life of the permit.

- Special Condition 7.5.4 Immediate Incident Reports – Requires reporting, within 24 hours of discovery of a dead or injured state listed species, dead or injured federally listed species, dead or injured golden eagle, dead or injured bald eagle, or five or more dead or injured birds or bats within a five day reporting period.

- Special Condition 8 Turbine Operational Curtailment – The Permittee shall operate all turbines so blades are locked or feathered up to the manufacture's cut-in speed. Turbine feathering to cut-in speed will beginning one half hour before sunset to one half hour after sunrise of the following day, April 1 to October 31 of each year of operation.

Decommissioning and Used Turbine Blade Disposal

Public comments have identified concerns regarding decommissioning of the Project, and even more specifically the disposal of used turbine blades. The PDSP includes a special condition specifically requiring the development of a Decommission Plan for the Project. The Applicant submitted a Draft Decommission Plan[41] with their initial SPA, and that draft plan may be revised during the permit process based on comments received. The PDSP special condition also requires the Decommissioning Plan to be updated and reviewed every five years.

EERA acknowledges that used wind turbine blade disposal is an issue and concern for the entire wind industry at this time. However, EERA does not believe the Site Permit is the appropriate place to require anything other than the appropriate disposal of materials, which is an item addressed in the Decommissioning Plan.

[41] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix K. Appendix K – Draft Decommissioning and Restoration Plan. September 30, 2019. eDocket # **20199-156209-10**

EERA has included the following special condition in the attached Preliminary DSP:

- Special Condition 13.1 Decommissioning Plan – Requires the Permittee to update the decommissioning plan every five years, and also to identify all sureties and financial securities that are established to ensure site restoration.

Impacts to Agricultural Tile Lines

Public comments were submitted which expressed concerns that the construction of the proposed Project will cut or crush tile lines on properties participating in the Project, which will potentially impact non-participating landowners' tile drainage. Some of the comments also indicated that if construction causes impacts to downstream tile outlets, drainage impacts to individuals upstream of the tile impacts may not be noticeable for three years or more.

Comments indicating concerns with respect to tile damage impacts on non-participating lands also identified concerns of how non-participating landowners would be reimbursed for crop damages or loss due to drainage impacts. EERA acknowledges this concern as participating landowners would likely have this topic addressed in contracts/agreements the participating landowners have established with the Applicant, and non-participating landowners would not have such an agreement established. EERA does not believe an additional DSP condition would be appropriate to specifically address the issue of potential crop damages or loss due to drainage impacts. EERA believes the best option to address these issues on non-participating lands would be with Special Condition 11.0 Complaint Procedures as identified in the PDSP. The use of the complaint procedures process will inform EERA and Commission staff if there are any drainage related impacts on non-participating lands, allow the Applicant the opportunity to resolve the issues, and provide reassurance that if an issue goes unresolved EERA and Commission staff can step in to help develop a path for resolution.

The Applicant has committed to repairing all agricultural tile damage that occurs during the construction of the proposed Project.[42]

EERA has included the following condition in the attached Preliminary DSP:

- Condition 5.3.20 Drainage Tiles – Requires the Permittee to avoid, promptly repair or replace all tile lines broken or damaged during all phases of the Project.

- Special Condition 11.0 Complaint Procedures – Requires the Permittee to provide procedures for how they will handle Project related complaints.

[42] Three Waters Wind Farm, LLC. Site Permit Application and associated Figures and Appendices. Main Document of Site Permit Application, September 30, 2019, eDocket # **20199-156208-01**

Soil Compaction in Agricultural Fields

Comments regarding soil compaction caused by construction of the proposed Project were received. EERA acknowledges that soil compaction from construction on agricultural lands can result in reduced crop production yields. The PDSP includes a special condition which requires soil compaction be avoided, minimized, and mitigated during Project construction and restoration activities. EERA has also expanded the special condition language, so that soil decompaction occur on all agricultural lands impacted by construction, even when compaction minimization measures were utilized.

EERA has included the following condition in the attached Preliminary DSP:

- Condition 5.3.6 Soil Compaction – Requires the Permittee to implement measures to minimize soil compaction during construction, and to decompact areas utilized for project construction.

Crop Pollination Impacts

Public comments were received identifying concerns with respect to agricultural crop pollination disruption in close proximity to operating wind turbines. EERA is not aware of any evidence of operating turbines causing problems with agricultural crop pollination. Following turbine construction, the area directly below the turbine that was utilized for construction generally shows reduced crop yields. Reduced yields are generally attributed to soil compaction caused during construction, which results in limited root penetration and reduced nutrient and water uptake by the crops growing in those areas. Over time agricultural activities, crop root growth, and freeze/thaw cycles will gradually reduce the soil compaction, and result in improved crop production and yield.

EERA does not believe a condition or special condition specific to crop pollination impacts is justified for inclusion in the PDSP.

Turbine Interference with Fixed Wireless Internet Services

A comment was received regarding potential turbine interference with fixed wireless internet service frequency paths within the Project Area. The Applicant has completed various interference studies[43] for the proposed turbine locations, and they have committed to continue to work to avoid turbine placement that will interfere with licensed internet service frequency paths. EERA will continue to work with the Applicant throughout the permitting process, and EERA will review any proposed turbine location changes for potential interference issues.

EERA has included the following condition in the attached Preliminary DSP:

[43] Three Waters Wind Farm, LLC. Initial Filing – Site Permit Application Appendix F. Appendix F – Telecommunication Studies. September 30, 2019. eDocket # **20199-156209-02**

- Condition 5.3.17 Interference – Requires the Permittee to avoid, minimize, and mitigated for Project related interference with television and radio signal reception, microwave signal patterns, and telecommunications in the project area.

Buried Turbine Communication Lines Interfering with Landline Telephone Service in the Area

Comments received indicated concerns that the buried turbine communication lines for the proposed Project could potentially interfere with the older buried landline telephone service lines within the Project Area. The primary concern being that this type of interference could lead to public health and safety risks for those living within the Project Area, as this may limit emergency service response.

Inductive interference can occur when older buried telephone lines are still utilized in a service area. The older lines are generally made of unprotected cables such as copper based materials. Inductive interference with these older telephone lines has been an issue with some older turbine communication line technology, and it occurred when turbine collector lines or communication lines have been run parallel to the unprotected telephone lines. The local landline provider has not mentioned any concerns with regard to inductive interference as a result of the proposed Project. EERA staff is currently working with the Applicant on this potential issue, and will provide greater detail during the Public Hearing comment period. Additionally, the condition in the PDSP referring to telecommunication interference, would include and cover inductive interference with the buried telephone lines.

EERA has included the following condition in the attached Preliminary DSP:

- Condition 5.3.17 Interference – Requires the Permittee to avoid, minimize, and mitigated for Project related interference with television and radio signal reception, microwave signal patterns, and telecommunications in the project area.

Interference with Global Positioning Systems (GPS) on Agricultural Equipment

Comments were received that indicated concerns that wind turbines will disrupt or interfere with GPS technology used for agricultural equipment. EERA is not aware of any issues of disruption or interference of GPS technology related to the presence of an operating modern wind turbine. There would be potential for a turbine to physically interfere with a guidance satellite and the receiver, but GPS technology functions on the use of multiple satellites and if a physical obstacle blocks the signal from one satellite the GPS receiver would simply connect to another available satellite if necessary. Additionally, the GPS receiver would have to be in very close proximity of a physical obstacle such as a wind turbine to block a significant portion of the sky to interfere with multiple satellite signals.

EERA does not believe inclusion of a condition in the PDSP, specific to agricultural equipment GPS interference is justified at this time. If additional information becomes available that this type of interference occurs regularly and causes impacts to agricultural practices, EERA will provide additional input on the issue during the Public Hearing comment period.

Stray Voltage and Electromagnetic Field (EMF)

Concerns about the potential for stray voltage and electromagnetic field (EMF) impacts associated with the proposed Project were mentioned in the public comments received. Stray voltage impacts are not anticipated to occur as a result of the proposed Project. Stray voltage generally occurs along electrical distribution lines that bring electricity into residences and outbuildings, and in many cases results from improper grounding and a low level of current flows between two points that are not directly connected.[44] Underground collector lines and the short interconnection transmission line are likely the only Project related infrastructure that could generate stray voltage. With the collector lines being buried, being equipped with insulated shielding, and an additional grounding line in the collector line trench any stray voltage is expected to be picked up. The proposed interconnection transmission line would have to run parallel to, or in very close proximity of an electrical distribution line to have stray voltage issues. As proposed the interconnection transmission line will not be located parallel or in close proximity to any electrical distribution lines, and the interconnection transmission line will be appropriately grounded.

The Applicant has indicated that EMF is produced by components of the proposed Project, specifically electrical collector lines, transformers within the turbine nacelles, and the shorter transmission line associated with the project interconnection.[45] Collector lines are proposed to be installed underground, and will have insulated shielding. Electrical fields associated with underground collector lines is negligible and dissipated almost adjacent to the line, and any magnetic field associated with the collector lines would dissipate within 20 feet on either side of the line. Any EMF created by the transformers within the turbine nacelles is anticipated to dissipate within 5 feet of the point of origin.[46] EMF created by the short transmission line would be greatest directly below the line, and dissipate moving out from under the line.

The PDSP includes multiple conditions that will help in safe guarding against human safety issues associated with stray voltage and EMF. Minimum turbine setback distances from residences allow for adequate turbine transformer EMF dissipation distance, and appropriate infrastructure placement and safety codes will also provide protections.

EERA has included the following conditions in the attached Preliminary DSP:

- Condition 4.2 Residences – Provides for a 1,000 foot turbine setback from residences.

- Condition 5.4 Electrical Collector and Feeder Lines – Addresses the engineering, design, and layout of the collector and feeder line systems. Requires the Applicant to provide necessary details to allow for appropriate review prior to line placement.

[44] Three Waters Wind Farm, LLC. Site Permit Application and associated Figures and Appendices. Main Document of Site Permit Application, September 30, 2019, eDocket # **20199-156208-01**
[45] Three Waters Wind Farm, LLC. Site Permit Application and associated Figures and Appendices. Main Document of Site Permit Application, September 30, 2019, eDocket # **20199-156208-01**
[46] Three Waters Wind Farm, LLC. Site Permit Application and associated Figures and Appendices. Main Document of Site Permit Application, September 30, 2019, eDocket # **20199-156208-01**

- Condition 5.5.1 Safety Codes and Design Requirements – Requires that all associated facilities are designed to meet or exceed all relevant local, state, and national electrical safety codes.

Turbine Ice Throw

Comments were received regarding concerns of turbine ice throw. Turbine blades can accumulate ice when icing weather conditions exist, and ice falling from blades can be a significant risk for individuals standing on the ground below the turbines rotor swept area. If ice is present on the blades as they begin to rotate the turbine sensors and software are programmed to detect an imbalance, and are intended to shut the turbine down. This automated shut down can fail, and the turbine can ramp up into normal operation. Once operational, a turbine ice throw event can occur, but the level of potential risk of an object being struck is extremely rare and is dependent on a variety of factors. The distance ice travels from an operating turbine blades depends on a variety of factors, blade speed at time of ice detachment, size of the piece of ice, prevailing wind direction and speed, and blade angle within rotation at the time of detachment.

It is important to consider that icing conditions in southern Minnesota only occur on a limited number of days throughout a given year. Additionally, ice particles large enough to cause damage, and be thrown a greater distance is an extremely small percentage. Turbine setback distances to residences within the proposed Project area do vary, but are all over 1,320 feet due to required setbacks to meet the State Noise standards. The closer proximity potential target for an ice throw strike would be a vehicle traveling on a public road, as the turbines can be placed closer to public roads as opposed to residences. The potential risk of a turbine ice throw event striking a vehicle traveling on a public road is likely as rare of an event as ice throw striking a residence. Although the public road and vehicle could be closer to the turbine, the probability of a moving vehicle traveling on the public road and in the trajectory of an ice throw event seems very rare.

There has never been a confirmed case of a turbine ice throw event impacting or damaging a vehicle traveling on a public road in the State of Minnesota. At this time EERA staff does not believe any changes to the PDSP conditions regarding turbine setbacks from public roads or residences is necessary, and we don't believe a condition specific to turbine ice throw events is justified for inclusion in the PDSP. EERA staff is continuing to look into the topic of turbine ice throw, and the potential risks it poses to public safety. If any knew information is identified that will give us greater clarity on the issue of public safety risks associated with turbine ice throw from the proposed Project, EERA staff will bring the information forward during the Public Hearing comment period.

EERA Recommended Revisions to the Draft Site Permit Template

EERA utilized the Draft Site Permit Template[47] submitted to eDockets by Commission staff to develop the attached Preliminary Draft Site Permit for the Commission's consideration in the issuance of a Draft Site Permit for the proposed Three Waters Wind Farm. EERA did edit

[47] Commission. Briefing Papers – December 12, 2019 Agenda – Sample Permit. December 4, 2019. eDocket # **201912-158050-02**

portions of the Draft Site Permit Template. Some edits are considered minor in nature, but edits EERA believes to potentially affect the language, intent, and enforceability of permit conditions and special conditions have been included below.

EERA has provided the proposed revisions to Draft Site Permit conditions and special conditions language in a format that will show proposed deletions (strike-through and red text) and proposed additions (underlined and blue text). The conditions and special conditions outlined previously in this letter and in the following proposed revision language, have used the condition and special condition numbering from the attached Preliminary Draft Site Permit, which includes EERA proposed revisions.

Proposed Revisions to Draft Site Permit Template Conditions

5.3.6 Soil Compaction

The Permittee shall implement measures to minimize soil compaction of all lands during all phases of the project's life and shall confine compaction to as small an area as practicable. Soil decompaction measures shall be utilized on all lands utilized for project construction and travelled on by cranes, heavy equipment, and heavy trucks; even when soil compaction minimization measures are used.

5.3.13 Public Roads

At least 14 days prior to the pre-construction meeting, the Permittee shall identify all state, county, or township roads that will be used for the project and shall notify the Commission and the state, county, or township governing body having jurisdiction over the roads to determine if the governmental body needs to inspect the roads prior to use of these roads. Where practical, existing roadways shall be used for all activities associated with the project. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles, and all other heavy components to and from the turbine sites.

The Permittee shall, prior to the use of such roads, make satisfactory arrangements (approved permits, written authorizations, road use agreements, development agreements, etc.) with the appropriate state, county, or township governmental body having jurisdiction over roads to be used for construction of the project, for maintenance and repair of roads that may be subject to increased impacts due to transportation of equipment and project components. The Permittee shall notify the Commission of such arrangements upon request.

5.6.2 Other Permits and Regulations

~~The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the project and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits and regulations. A list of the permits known to be required is included in the permit application. The Permittee shall submit a copy of such permits to the Commission upon request.~~

The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the project and comply with the conditions of those permits

unless those permits conflict with or are preempted by federal or state permits and regulations. A list of the permits known to be required is included in the permit application. At least 14 days prior to the preconstruction meeting, the Permittee shall submit a filing with a detailed status update of all permits, authorizations, and approvals that have been applied for specific to the project. The detailed status update shall include the permitting agency or authority, the name of the permit, authorization, or approval being sought, contact person and contact information for the permitting agency or authority, brief description of why the permit, authorization, or approval is needed, application submittal date, and the date the permit, authorization, or approval was issued or is anticipated to be issued.

The Permittee shall demonstrate that it has obtained all necessary permits, authorizations, and approvals by filing an affidavit stating as such, prior to commencing project construction. The Permittee shall provide a copy of any such permits, authorizations, and approvals upon Commission request.

The Permittee shall comply with all terms and conditions of permits or licenses issued by the counties, cities, and municipalities affected by the project that do not conflict with or are not preempted by federal or state permits and regulations.

Proposed Revisions to Draft Site Permit Template Special Conditions

7.5.1 Operational Phase Fatality Monitoring

The Permittee shall utilize a qualified third party to conduct a minimum of two full years of avian and bat fatality monitoring following the commencement of the operational phase of the project. Monitoring activities and results will be coordinated directly with MN DNR, USFWS, and the Commission. Detailed monitoring protocols, agency coordination, and any avoidance and minimization measures will be detailed in the project's ABPP.

~~7.5.1~~ 7.5.2 Avian and Bat Protection Plan

The Permittee shall comply with the provisions of the ~~[date of Avian and Bat Protection Plan]~~ most recently filed and accepted version of the Avian and Bat Protection Plan (ABPP). The initial version of the ABPP submitted for this project as part of the ~~[date if submitted with Site Permit Application]~~ September 30, 2019 Site Permit Application, and all necessary revisions ~~resulting~~ that occur during the permit issuance process will be incorporated into a Permit Version. The Permit ~~v~~Version of the ABPP will be filed with the Commission 14 days before the preconstruction meeting, and revision will include any updates associated with the final construction plans and site plans. ~~from the annual audit of ABPP implementation. The first annual audit and revision will be filed with the Commission 14 days before the preconstruction meeting and revisions should include any updates associated with final construction plans.~~ The ABPP must address steps to be taken to identify and mitigate impacts to avian and bat species during the construction phase and the operation phase of the project. The ABPP shall also include formal and incidental post-construction fatality monitoring, training, wildlife handling, documentation (e.g., photographs), and reporting protocols for each phase of the project.

The Permittee shall, by the 15th of March following each complete or partial calendar year of operation, file with the Commission an annual report detailing findings of its annual audit of ABPP practices. The annual report shall include summarized and raw data of bird and bat fatalities and injuries and shall include bird and bat fatality estimates for the project using agreed upon estimators from the prior calendar year. The annual report shall also identify any deficiencies or recommended changes in the operation of the project or in the ABPP to reduce avian and bat fatalities and shall provide a schedule for implementing the corrective or modified actions. The Permittee shall provide a copy of the report to the Department of Commerce – Energy Environmental Review and Analysis, Minnesota Department of Natural Resources and to the U.S. Fish and Wildlife Service (FWS) at the time of filing with the Commission.

~~7.5.3~~ 7.5.4 Immediate Incident Reports

The Permittee shall notify the Commission, EERA, the FWS, and the DNR within 24 hours of the discovery of any of the following:

(a) five or more dead or injured birds or bats, at an individual turbine location, within a five day reporting period;

~~(a)~~(b) twenty or more dead or injured birds or bats, across the entire facility, within a five day reporting period;

~~(b)~~ (c) one or more dead or injured state threatened, endangered, or species of special concern;

~~(c)~~(d) one or more dead or injured federally listed species, including species proposed for listing; or

~~(d)~~(e) one or more dead or injured bald or golden eagle(s).

In the event that one of the four discoveries listed above should be made, the Permittee must file with the Commission within seven days, a compliance report identifying the details of what was discovered, the turbine where the discovery was made, a detailed log of agencies and individuals contacted, and current plans being undertaken to address the issue.

9 Aircraft Detection Lighting System

Lighting installed pursuant to Section 5.3.28 of this permit shall comply with Aircraft Detection Lighting System standards specified in FAA Circular AC 70/7460-IL CHG 1 Chapter 14.

Permittee may install an FAA approved lighting system without ADLS if the Permittee demonstrates, in a request for a site permit amendment, that despite its reasonable efforts to secure FAA approval for an ADLS, one of the following conditions exists:

1) The FAA denies the Permittee's application for an ADLS system,
2) Permittee is unable to secure FAA approval in a timely manner,

If any of the above conditions occur, the permittee may request a site permit amendment approval of a non-ADLS based system. The permit amendment request will be processed on an expedited basis following receipt of comments from the Department of Commerce, Energy Environmental Review and Analysis.

~~11.1~~ 13.1 Decommissioning Plan

The Permittee shall comply with the provisions of the most recently filed and accepted Decommissioning Plan. The initial version of the Decommissioning Plan was submitted for this project as part of the September 30, 2019 Site Permit Application. The Permittee shall file an updated decommissioning plan, incorporating comments and information from the permit issuance process and any updates associated with the final construction plans, with the Commission 14 days before the preconstruction meeting. The decommissioning plan shall be updated every five years following the commercial operation date.
~~The Permittee shall submit a decommissioning plan to the Commission at least fourteen 14 days prior to the pre-operation meeting and provide updates to the plan every five years thereafter.~~
The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration of the project in accordance with the requirements of Minn. R. 7854.0500, subp. 13. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of turbines, turbine foundations, underground collection cables, access roads, crane pads, substations, and other project components. The plan may also include anticipated costs for the replacement of turbines or repowering the project by upgrading equipment.

The Permittee shall also submit the decommissioning plan to the local unit of government having direct zoning authority over the area in which the project is located. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

DOC-EERA has attached a proposed Preliminary Draft Site Permit with necessary Project specific details and information. DOC-EERA has also included permit conditions and special conditions in the Preliminary Draft Site Permit that are appropriate for the Commission to carry forward for the issuance of a Draft Site Permit for the Three Waters Wind Farm.

STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

SITE PERMIT FOR A
LARGE WIND ENERGY CONVERSION SYSTEM

IN
JACKSON COUNTY

ISSUED TO
THREE WATERS WIND FARM, LLC

PUC DOCKET NO. IP-7002/WS-19-576

In accordance with the requirements of Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854 this site permit is hereby issued to:

Three Waters Wind Farm, LLC

The Permittee is authorized by this site permit to construct and operate a Large Wind Energy Conversion System of up to 201 megawatts (MW) consisting of up to 71 turbines. The Large Wind Energy Conversion System and associated facilities shall be built within the site identified in this permit and as portrayed on the site maps and in compliance with the conditions specified in this permit.

This site permit shall expire thirty (30) years from the date of this approval.

Approved and adopted this____day of _____

BY ORDER OF THE COMMISSION

_____

Will Seuffert
Executive Secretary

To request this document in another format such as large print or audio, call 651.296.0406 (voice). Persons with a hearing or speech impairment may call using their preferred Telecommunications Relay Service or email consumer.puc@state.mn.us for assistance.

Contents

ATTACHMENTS

1 SITE PERMIT

The Minnesota Public Utilities Commission (Commission) hereby issues this site permit to Three Waters Wind Farm, LLC (Permittee) pursuant to Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854. This permit authorizes the Permittee to construct and operate the Three Waters Wind Farm, a 201 megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Jackson County, Minnesota. The LWECS and associated facilities shall be built within the site identified in this permit and as identified in the attached site maps, hereby incorporated into this document.

1.1 Preemption

Pursuant to Minn. Stat. § 216F.07, this permit shall be the sole site approval required for the location, construction, and operation of this project and this permit shall supersede and preempt all zoning, building, and land use rules, regulations, and ordinances adopted by regional, county, local, and special purpose governments.

2 PROJECT DESCRIPTION

The Three Waters Wind Farm will be a 201 MW nameplate capacity LWECS in Jackson County, Minnesota. The LWECS will consist of 71 General Electric (GE) 2.82 MW turbines or 66 GE 3.03 MW turbines. The Project also includes eight alternate turbine locations that can be used should any of the primary turbine locations be determined to not be adequate for construction or operation.

The project area includes approximately 48,087 acres of land, and the Permittee currently holds easements and participation agreements on 21,813 acres of land within the project area. Upon completion of Project construction and restoration, the project site will include no more than 165 acres of land converted to wind turbines and associated facilities approved by this site permit.

2.1 Associated Facilities

Associated facilities for the Project will include the following:

a. gravel access roads
b. underground collection lines
c. underground communication line system
d. up to two permanent meteorological tower
e. a Project substation facility
f. an operations and maintenance (O&M) facility

g. an Aircraft Detection Lighting System (ADLS)
h. an electrical switchyard; and
i. a less than 1,500 foot long 345 kV transmission line from the Project substation to the point-of-interconnect (POI).

Temporary disturbance areas to allow for the construction of the Project will include, crane paths, pull sites, access roads, a concrete batch plant, and a laydown yard.

2.2 Project Location

The project is located in the following:

County	Township Name	Township	Range	Sections
Jackson	Ewington	102N	38W	12, 13, 24, 25
Jackson	Hunter	102N	36W	30, 31
Jackson	Minneota	101N	36W	6
Jackson	Rost	102N	37W	7-10, 15-23, 25-36
Jackson	Round Lake	101N	38W	11-15, 20-29, 32-36
Jackson	Sioux Valley	101N	37W	1-35

3 DESIGNATED SITE

The site designated by the Commission for the Three Waters Wind Farm is the site depicted on the site maps attached to this permit. The project area encompasses approximately 48,087 acres. Upon completion, the project will occupy no more than 165 acres of land converted to wind turbines and associated facilities approved by this permit. Within the project boundary, the LWECS and associated facilities shall be located on lands for which the Permittee has obtained wind rights.

3.1 Turbine Layout

The preliminary wind turbine and associated facility layouts are shown on the site maps attached to this permit. The preliminary layout represents the approximate location of wind turbines and associated facilities within the project boundary and identifies a layout that seeks to minimize the overall potential human and environmental impacts of the project, which were evaluated in the permitting process.

The final layout depicting the location of each wind turbine and associated facility shall be located within the project boundary. The project boundary serves to provide the Permittee

with the flexibility to make minor adjustments to the preliminary layout to accommodate requests by landowners, local government units, federal and state agency requirements, and unforeseen conditions encountered during the detailed engineering and design process. Any modification to the location of a wind turbine and associated facility depicted in the preliminary layout shall be done in such a manner to have comparable overall human and environmental impacts and shall be specifically identified in the site plan pursuant to Section 10.3.

4 SETBACKS AND SITE LAYOUT RESTRICTIONS

4.1 Wind Access Buffer

Wind turbine towers shall not be placed less than five rotor diameters on the prevailing wind directions and three rotor diameters on the non-prevailing wind directions from the perimeter of the property where the Permittee does not hold the wind rights, without the approval of the Commission. This section does not apply to public roads and trails.

4.2 Residences

Wind turbine towers shall not be located closer than 1,000 feet from all residences or the distance required to comply with the noise standards pursuant to Minn. R. 7030.0040, established by the Minnesota Pollution Control Agency (MPCA), whichever is greater.

4.3 Noise

The wind turbine towers shall be placed such that the Permittee shall, at all times, comply with noise standards established by the MPCA as of the date of this permit and at all appropriate locations. The noise standards are found in Minnesota Rules Chapter 7030. Turbine operation shall be modified, or turbines shall be removed from service if necessary to comply with these noise standards. The Permittee or its contractor may install and operate turbines as close as the minimum setback required in this permit, but in all cases shall comply with MPCA noise standards. The Permittee shall be required to comply with this condition with respect to all homes or other receptors in place as of the time of construction, but not with respect to such receptors built after construction of the towers.

4.4 Roads

Wind turbines and meteorological towers shall not be located closer than 250 feet from the edge of the nearest public road right-of-way.

4.5 Public Lands

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be located in publicly-owned lands that have been designated for recreational or conservation purposes, including, but not limited to, Waterfowl Production Areas, State Wildlife Management Areas, Scientific and Natural Areas or county parks, except in the event that the public entity owning those lands enters into a land lease and easement with the Permittee. Wind turbines towers shall also comply with the setbacks of Section 4.1.

4.6 Wetlands

Wind turbines and associated facilities including foundations, access roads, underground cable and transformers, shall not be placed in public waters wetlands, as shown on the public water inventory maps prescribed by Minnesota Statutes Chapter 103G, except that electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and approvals by the Minnesota Department of Natural Resources (DNR) and the United States Army Corps of Engineers (USACE), and local units of government as implementers of the Minnesota Wetlands Conservation Act.

4.7 Native Prairie

Wind turbines and associated facilities including foundations, access roads, collector and feeder lines, underground cable, and transformers shall not be placed in native prairie, as defined in Minn. Stat. § 84.02, subd. 5, unless addressed in a prairie protection and management plan and shall not be located in areas enrolled in the Native Prairie Bank Program. Construction activities, as defined in Minn. Stat. § 216E.01, shall not impact native prairie unless addressed in a Prairie Protection and Management Plan.

The Permittee shall prepare a Prairie Protection and Management Plan in consultation with the DNR and Commerce if native prairie, as defined in Minn. Stat. § 84.02, subd. 5, is identified within the site boundaries. The Permittee shall file the plan 30 days prior to submitting the site plan required by Section 10.3 of this permit. The plan shall address steps that will be taken to avoid impacts to native prairie and mitigation to unavoidable impacts to native prairie by restoration or management of other native prairie areas that are in degraded condition, by conveyance of conservation easements, or by other means agreed to by the Permittee, the DNR, and the Commission.

4.8 Sand and Gravel Operations

Wind turbines and all associated facilities, including foundations, access roads, underground cable, and transformers shall not be located within active sand and gravel operations, unless otherwise negotiated with the landowner.

4.9 Wind Turbine Towers

Structures for wind turbines shall be self-supporting tubular towers. The towers may be up to 110 meters (361 feet) above grade measured at hub height. The wind turbine specifications in the table below were provided in the Permittee's September 30, 2019, Three Waters Wind Farm, LLC, Site Permit Application.

Design Feature	**GE 2.82/127**	**GE 2.82/127**	**GE 3.03/140**
Capacity	2.82	2.82	3.03
Total Height (ground to fully extended blade tip)	152 meters 499 feet	178 meters 584 feet	180 meters 591 feet
Hub Height	89 meters 292 feet	114 meters 374 feet	110 meters 361 feet
Rotor Diameter	127 meters 417 feet	127 meters 417 feet	140 meters 459 feet

4.10 Turbine Spacing

The turbine towers shall be constructed within the site boundary as shown on the site maps. The turbine towers shall be spaced no closer than three rotor diameters in the non-prevailing wind directions and five rotor diameters on the prevailing wind directions. If required, up to 20 percent of the towers may be sited closer than the above spacing, but the Permittee shall minimize the need to site the turbine towers closer.

4.11 Meteorological Towers

Permanent towers for meteorological equipment shall be free standing. Permanent meteorological towers shall not be placed less than 250 feet from the edge of the nearest public road right-of-way and from the boundary of the Permittee's site control, or in compliance with the county ordinance regulating meteorological towers in the county the tower is built, whichever is more restrictive. Meteorological towers shall be placed on property the Permittee holds the wind or other development rights.

Meteorological towers shall be marked as required by the Federal Aviation Administration (FAA). There shall be no lights on the meteorological towers other than what is required by the FAA. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

4.12 Aviation

The Permittee shall not place wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of private and public airports (as defined in Minn. R. 8800.0100, subp. 24(a) and 24(b)) in Minnesota, adjacent states, or provinces. The Permittee shall apply the minimum obstruction clearance for private airports pursuant to Minn. R. 8800.1900, subp. 5. Setbacks or other limitations shall be followed in accordance with the Minnesota Department of Transportation (MnDOT), Department of Aviation, and the FAA. The Permittee shall notify owners of all known airports within six miles of the project, of the project's anticipated construction start date, at least 14 days prior to the pre-construction meeting.

4.13 Footprint Minimization

The Permittee shall design and construct the LWECS so as to minimize the amount of land that is impacted by the LWECS. Associated facilities in the vicinity of turbines such as electrical/electronic boxes, transformers, and monitoring systems shall, to the greatest extent feasible, be mounted on the foundations used for turbine towers or inside the towers unless otherwise negotiated with the affected landowner.

5 GENERAL CONDITIONS

The Permittee shall comply with the following conditions during construction and operation of the LWECS and associated facilities over the life of this permit.

5.1 Permit Distribution

Within 30 days of permit issuance, the Permittee shall send a copy of the permit and the complaint procedures to any regional development commission, county auditor and environmental office, and city and township clerk in which any part of the site is located.

Within 30 days of permit issuance, the Permittee shall provide all affected landowners with a copy of this permit and the complaint procedures. In no case shall the landowner receive this site permit and complaint procedures less than five days prior to the start of construction on

their property. An affected landowner is any landowner or designee that is within or adjacent to the permitted site.

5.2 Access to Property

The Permittee shall contact landowners prior to entering private property or conducting maintenance within the project site, unless otherwise negotiated with the affected landowner.

5.3 Construction and Operation Practices

The Permittee shall comply with the construction practices, operation and maintenance practices, and material specifications described in the September 30, 2019, Three Waters Wind Farm, LLC, Site Permit Application, and the record of the proceedings unless this permit establishes a different requirement in which case this permit shall prevail.

5.3.1 Field Representative

The Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this permit during construction of the project. This person shall be accessible by telephone or other means during normal business hours throughout site preparation, construction, cleanup, and restoration.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the field representative 14 days prior to the pre-construction meeting. The Permittee shall provide the field representative's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to the pre-construction meeting. The Permittee may change the field representative at any time upon notice to the Commission, affected landowners, local government units and other interested persons.

5.3.2 Site Manager

The Permittee shall designate a site manager responsible for overseeing compliance with the conditions of this permit during the commercial operation and decommissioning phases of the project. This person shall be accessible by telephone or other means during normal business hours for the life of this permit.

The Permittee shall file with the Commission the name, address, email, phone number, and

emergency phone number of the site manager 14 days prior to the pre-operation meeting for the facility. The Permittee shall provide the site manager's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to the pre-operation meeting for the facility. The Permittee may change the site manager at any time upon notice to the Commission, affected landowners, local government units and other interested persons.

5.3.3 Employee Training and Education of Permit Terms and Conditions

The Permittee shall inform and educate all employees, contractors, and other persons involved in the construction and ongoing operation of the LWECS of the terms and conditions of this permit.

5.3.4 Public Services and Public Utilities

During construction, the Permittee shall minimize any disruption to public services and public utilities. To the extent disruptions to public services or public utilities occur these will be temporary, and the Permittee will restore service promptly. Where any impacts to utilities have the potential to occur the Permittee will work with both landowners and local agencies to determine the most appropriate mitigation measures if not already considered as part of this permit.

5.3.5 Topsoil Protection

The Permittee shall implement measures to protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with the affected landowner.

5.3.6 Soil Compaction

The Permittee shall implement measures to minimize soil compaction of all lands during all phases of the project's life and shall confine compaction to as small an area as practicable. Soil decompaction measures shall be utilized on all lands utilized for project construction and travelled on by cranes, heavy equipment, and heavy trucks; even when soil compaction minimization measures are used.

5.3.7 Soil Erosion and Sediment Control

The Permittee shall implement those erosion prevention and sediment control practices recommended by the MPCA Construction Stormwater Program. If construction of the facility

disturbs more than one acre of land, or is sited in an area designated by the MPCA as having potential for impacts to water resources, the Permittee shall obtain a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit from the MPCA that provides for the development of a Stormwater Pollution Prevention Plan (SWPPP) that describes methods to control erosion and runoff.

The Permittee shall implement reasonable measures to minimize erosion and sedimentation during construction and shall employ perimeter sediment controls, protect exposed soil by promptly planting, seeding, using erosion control blankets and turf reinforcement mats, stabilizing slopes, protecting storm drain inlets, protecting soil stockpiles, and controlling vehicle tracking. Contours shall be graded as required so that all surfaces provide for proper drainage, blend with the natural terrain, and are left in a condition that will facilitate re-vegetation and prevent erosion. All areas disturbed during construction of the facilities shall be returned to pre-construction conditions.

5.3.8 Wetlands and Water Resources

Construction in wetland areas shall occur during frozen ground conditions to minimize impacts, to the extent feasible. When construction during winter is not possible, wooden or composite mats shall be used to protect wetland vegetation. Soil excavated from the wetlands and riparian areas shall be contained and managed in accordance with all applicable wetland permits. Wetlands and riparian areas shall be accessed using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts.

Wetland and water resource areas disturbed by construction activities shall be restored to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. All requirements of the U.S. Army Corps of Engineers, Minnesota Department of Natural Resources, Minnesota Board of Water and Soil Resources and local units of government shall be met.

5.3.9 Vegetation Removal

The Permittee shall disturb or clear vegetation on the project site only to the extent necessary to assure suitable access for construction, and for safe operation and maintenance of the project. The Permittee shall minimize the number of trees removed in selecting the site layout specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences, and other vegetation, to the extent that such actions do not violate sound engineering principles.

5.3.10 Application of Pesticides

The Permittee shall restrict pesticide use to those pesticides and methods of application approved by the Minnesota Department of Agriculture (MDA), DNR, and the U.S. Environmental Protection Agency (EPA). Selective foliage or basal application shall be used when practicable. All pesticides shall be applied in a safe and cautious manner so as not to damage adjacent properties including crops, orchards, tree farms, apiaries, or gardens. The Permittee shall contact the landowner or designee to obtain approval for the use of pesticide at least 14 days prior to any application on their property. The landowner may request that there be no application of pesticides on any part of the site within the landowner's property. The Permittee shall provide notice of pesticide application to affected landowners and known beekeepers operating apiaries within three miles of the project site at least 14 days prior to such application.

5.3.11 Invasive Species

The Permittee shall employ best management practices to avoid the potential introduction and spread of invasive species on lands disturbed by project construction activities. The Permittee shall develop an Invasive Species Prevention Plan to prevent the introduction and spread of invasive species on lands disturbed by project construction activities and file with the Commission 14 days prior to the pre-construction meeting.

5.3.12 Noxious Weeds

The Permittee shall take all reasonable precautions against the spread of noxious weeds during all phases of construction. When utilizing seed to establish temporary and permanent vegetative cover on exposed soil, the Permittee shall select site appropriate seed certified to be free of noxious weeds. The Permittee shall consult with landowners on the selection and use of seed for replanting. To the extent possible, the Permittee shall use native seed mixes.

5.3.13 Public Roads

At least 14 days prior to the pre-construction meeting, the Permittee shall identify all state, county, or township roads that will be used for the project and shall notify the Commission and the state, county, or township governing body having jurisdiction over the roads to determine if the governmental body needs to inspect the roads prior to use of these roads. Where practical, existing roadways shall be used for all activities associated with the project. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles, and all other heavy components to and from the turbine sites.

The Permittee shall, prior to the use of such roads, make satisfactory arrangements (approved permits, written authorizations, road use agreements, development agreements, etc.) with the appropriate state, county, or township governmental body having jurisdiction over roads to be used for construction of the project, for maintenance and repair of roads that may be subject to increased impacts due to transportation of equipment and project components. The Permittee shall notify the Commission of such arrangements upon request.

5.3.14 Turbine Access Roads

The Permittee shall construct the least number of turbine access roads necessary to safely and efficiently operate the project and satisfy landowner requests. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class 5 gravel or similar material. Access roads shall not be constructed across streams and drainage ditches without required permits and approvals. When access roads are constructed across streams, drainage ways, or drainage ditches, the access roads shall be designed and constructed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed. Any access roads that are constructed across streams or drainage ditches shall be designed and constructed in a manner that maintains existing fish passage. Access roads that are constructed across grassed waterways, which provide drainage for surface waters that are ephemeral in nature, are not required to maintain or provide fish passage. Access roads shall be constructed in accordance with all necessary township, county or state road requirements and permits.

5.3.15 Private Roads

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when obtaining access to the site, unless otherwise negotiated with the affected landowner.

5.3.16 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to identified archaeological and historic resources when constructing the facility. In the event that a resource is encountered, the Permittee shall consult with the State Historic Preservation Office (SHPO) and the State Archaeologist. Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize project impacts on the resource consistent with SHPO and State Archaeologist requirements.

Prior to construction, workers shall be trained about the need to avoid cultural properties, how

to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction at such location and promptly notify local law enforcement and the State Archaeologist. Construction at such location shall not proceed until authorized by local law enforcement and the State Archaeologist.

5.3.17 Interference

At least 14 days prior to the pre-construction meeting, the Permittee shall submit to the Commission an assessment of television and radio signal reception, microwave signal patterns, and telecommunications in the project area. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television or radio reception, microwave patterns, or telecommunications in the event residents should complain about such disruption or interference after the turbines are placed in operation. The Permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.

The Permittee shall not operate the project so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications Commission (FCC) regulations or other law. In the event the project or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.

5.3.18 Livestock Protection

The Permittee shall take precautions to protect livestock during all phases of the project's life.

5.3.19 Fences

The Permittee shall promptly replace or repair all fences and gates removed or damaged during all phases of the project's life unless otherwise negotiated with the affected landowner. When the Permittee installs a gate where electric fences are present, the Permittee shall provide for continuity in the electric fence circuit.

5.3.20 Drainage Tiles

The Permittee shall take into account, avoid, promptly repair or replace all drainage tiles broken or damaged during all phases of project’s life unless otherwise negotiated with the affected landowner.

5.3.21 Equipment Storage

The Permittee shall not locate temporary equipment staging areas on lands under its control unless negotiated with affected landowner. Temporary equipment staging areas shall not be located in wetlands or native prairie as defined in Sections 4.6 and 4.7.

5.3.22 Restoration

The Permittee shall, as soon as practical following construction of each turbine, restore the areas affected by construction to the condition that existed immediately before construction began, to the extent possible. The time period to complete restoration may be no longer than 12 months after the completion of construction, unless otherwise negotiated with the affected landowner. Restoration shall be compatible with the safe operation, maintenance and inspection of the project. Within 60 days after completion of all restoration activities, the Permittee shall advise the Commission in writing of the completion of such activities.

5.3.23 Cleanup

All waste and scrap that is the product of construction shall be removed from the site and all premises on which construction activities were conducted and properly disposed of upon completion of each task. Personal litter, including bottles, cans, and paper from construction activities shall be removed on a daily basis.

5.3.24 Pollution and Hazardous Waste

All appropriate precautions to protect against pollution of the environment shall be taken by the Permittee. The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of all wastes generated during construction and operation of the facility.

5.3.25 Damages

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction.

5.3.26 Public Safety

The Permittee shall provide educational materials to landowners adjacent to the site and, upon request, to interested persons about the project and any restrictions or dangers associated with the project. The Permittee shall also provide any necessary safety measures such as warning signs and gates for traffic control or to restrict public access. The Permittee shall submit the location of all underground facilities, as defined in Minn. Stat. § 216D.01, subd. 11, to Gopher State One Call following the completion of construction at the site.

5.3.27 Tower Identification

All turbine towers shall be marked with a visible identification number.

5.3.28 Federal Aviation Administration Lighting

Towers shall be marked as required by the FAA. There shall be no lights on the towers other than what is required by the FAA. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

5.4 Communication Cables

The Permittee shall place all communication and supervisory control and data acquisition cables underground and within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner.

5.5 Electrical Collector and Feeder Lines

Collector lines that carry electrical power from each individual transformer associated with a wind turbine to an internal project interconnection point shall be buried underground. Collector lines shall be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner.

Feeder lines that carry power from an internal project interconnection point to the project substation or interconnection point on the electrical grid may be overhead or underground. Feeder line locations shall be negotiated with the affected landowner. Any overhead or underground feeder lines that parallel public roads shall be placed within the public rights-of-way or on private land immediately adjacent to public roads. If overhead feeder lines are located within public rights-of-way, the Permittee shall obtain approval from the governmental unit responsible for the affected right-of-way.

Collector and feeder line locations shall be located in such a manner as to minimize interference with agricultural operations including, but not limited to, existing drainage patterns, drain tile, future tiling plans, and ditches. Safety shields shall be placed on all guy wires associated with overhead feeder lines. The Permittee shall submit the engineering drawings of all collector and feeder lines in the site plan pursuant to Section 10.3.

5.6 Other Requirements

5.6.1 Safety Codes and Design Requirements

The LWECS and associated facilities shall be designed to meet or exceed all relevant local and state codes, Institute of Electrical and Electronics Engineers, Inc. (IEEE) standards, the National Electric Safety Code (NESC), and North American Electric Reliability Corporation (NERC) requirements. The Permittee shall report to the Commission on compliance with these standards upon request.

5.6.2 Other Permits and Regulations

The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the project and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits and regulations. A list of the permits known to be required is included in the permit application. At least 14 days prior to the preconstruction meeting, the Permittee shall submit a filing with a detailed status update of all permits, authorizations, and approvals that have been applied for specific to the project. The detailed status update shall include the permitting agency or authority, the name of the permit, authorization, or approval being sought, contact person and contact information for the permitting agency or authority, brief description of why the permit, authorization, or approval is needed, application submittal date, and the date the permit, authorization, or approval was issued or is anticipated to be issued.

The Permittee shall demonstrate that it has obtained all necessary permits, authorizations, and approvals by filing an affidavit stating as such, prior to commencing project construction. The Permittee shall provide a copy of any such permits, authorizations, and approvals upon Commission request.

The Permittee shall comply with all terms and conditions of permits or licenses issued by the counties, cities, and municipalities affected by the project that do not conflict with or are not preempted by federal or state permits and regulations.

6 SPECIAL CONDITIONS

Special conditions shall take precedence over other conditions of this permit should there be a conflict.

7 SURVEYS AND REPORTING

7.1 Biological and Natural Resource Inventories

The Permittee, in consultation with the Commission and the DNR, shall design and conduct pre-construction desktop and field inventories of existing wildlife management areas, scientific and natural areas, recreation areas, native prairies and forests, wetlands, and any other biologically sensitive areas within the project site and assess the presence of state- or federally-listed or threatened species. The results of the inventories shall be filed with the Commission at least 30 days prior to the pre-construction meeting to confirm compliance of conditions in this permit. The Permittee shall file with the Commission, any biological surveys or studies conducted on this project, including those not required under this permit.

7.2 Shadow Flicker

At least 14 days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the project boundary potentially subject to turbine shadow flicker exposure. Information shall include the results of modeling used, assumptions made, and the anticipated levels of exposure from turbine shadow flicker for each residence. The Permittee shall provide documentation on its efforts to avoid, minimize and mitigate shadow flicker exposure. The results of any modeling shall be filed with the Commission at least 14 days prior to the pre-construction meeting to confirm compliance with conditions of this permit.

7.3 Wake Loss Studies

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission the pre-construction micro-siting analysis leading to the final tower locations and an estimate of total project wake losses. As part of the annual report on project energy production required under Section 10.8 of the permit the Permittee shall file with the Commission any operational wake loss studies conducted on this project during the calendar year preceding the report.

7.4 Noise Studies

The Permittee shall file a proposed methodology for the conduct of a post-construction noise study at least 14 days prior to the pre-construction meeting. The Permittee shall develop the post-construction noise study methodology in consultation with the Department of Commerce. The study must incorporate the Department of Commerce Noise Study Protocol to determine the operating LWECS noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. The Permittee must conduct the post-construction noise study and file with the Commission the completed post-construction noise study within 18 months of commencing commercial operation.

7.5 Avian and Bat Protection

7.5.1 Operational Phase Fatality Monitoring

The Permittee shall utilize a qualified third party to conduct a minimum of two full years of avian and bat fatality monitoring following the commencement of the operational phase of the project. Monitoring activities and results will be coordinated directly with MN DNR, USFWS, and the Commission. Detailed monitoring protocols, agency coordination, and any avoidance and minimization measures will be detailed in the project's ABPP.

7.5.2 Avian and Bat Protection Plan

The Permittee shall comply with the provisions of the most recently filed and accepted version of the Avian and Bat Protection Plan (ABPP). The initial version of the ABPP submitted for this project as part of the September 30, 2019 Site Permit Application, and all necessary revisions that occur during the permit issuance process will be incorporated into a Permit Version. The Permit Version of the ABPP will be filed with the Commission 14 days before the preconstruction meeting, and revision will include any updates associated with the final construction plans and site plans.

The ABPP must address steps to be taken to identify and mitigate impacts to avian and bat species during the construction phase and the operation phase of the project. The ABPP shall also include formal and incidental post-construction fatality monitoring, training, wildlife handling, documentation (*e.g.*, photographs), and reporting protocols for each phase of the project.

The Permittee shall, by the 15th of March following each complete or partial calendar year of operation, file with the Commission an annual report detailing findings of its annual audit of ABPP practices. The annual report shall include summarized and raw data of bird and bat

fatalities and injuries and shall include bird and bat fatality estimates for the project using agreed upon estimators from the prior calendar year. The annual report shall also identify any deficiencies or recommended changes in the operation of the project or in the ABPP to reduce avian and bat fatalities and shall provide a schedule for implementing the corrective or modified actions. The Permittee shall provide a copy of the report to the Department of Commerce – Energy Environmental Review and Analysis, Minnesota Department of Natural Resources and to the U.S. Fish and Wildlife Service (FWS) at the time of filing with the Commission.

7.5.3 Quarterly Incident Reports

The Permittee shall submit quarterly avian and bat reports to the Commission. Quarterly reports are due by the 15th of January, April, July, and October commencing the day following commercial operation and terminating upon the expiration of this permit. Each report shall identify any dead or injured avian and bat species, location of find by turbine number, and date of find for the reporting period in accordance with the reporting protocols. If a dead or injured avian or bat species is found, the report shall describe the potential cause of the occurrence (if known) and the steps taken to address future occurrences. The Permittee shall provide a copy of the report to the DNR and to the FWS at the time of filing with the Commission.

7.5.4 Immediate Incident Reports

The Permittee shall notify the Commission, EERA, the FWS, and the DNR within 24 hours of the discovery of any of the following:

(a) five or more dead or injured birds or bats, at an individual turbine location, within a five day reporting period;

(b) twenty or more dead or injured birds or bats, across the entire facility, within a five day reporting period;

(c) one or more dead or injured state threatened, endangered, or species of special concern;

(d) one or more dead or injured federally listed species, including species proposed for listing; or

(e) one or more dead or injured bald or golden eagle(s).

In the event that one of the four discoveries listed above should be made, the Permittee must

file with the Commission within seven days, a compliance report identifying the details of what was discovered, the turbine where the discovery was made, a detailed log of agencies and individuals contacted, and current plans being undertaken to address the issue.

8 Turbine Operational Curtailment

The Permittee shall operate all facility turbines so that all turbines are locked or feathered up to the manufacturer's standard cut-in speed from one-half hour before sunset to one-half hour after sunrise of the following day from April 1 to October 31 of each year of operation. All operating turbines at the facility must be equipped with operational software that is capable of allowing for adjustment of turbine cut-in speeds.

9 Aircraft Detection Lighting System

Lighting installed pursuant to Section 5.3.28 of this permit shall comply with Aircraft Detection Lighting System standards specified in FAA Circular AC 70/7460-IL CHG 1 Chapter 14.

Permittee may install an FAA approved lighting system without ADLS if the Permittee demonstrates, in a request for a site permit amendment, that despite its reasonable efforts to secure FAA approval for an ADLS, one of the following conditions exists:

1) The FAA denies the Permittee's application for an ADLS system,
2) Permittee is unable to secure FAA approval in a timely manner,

If any of the above three conditions occur, the permittee may request a site permit amendment approval of a non-ADLS based system. The permit amendment request will be processed on an expedited basis following receipt of comments from the Department of Commerce, Energy Environmental Review and Analysis.

10 AUTHORITY TO CONSTRUCT LWECS

10.1 Wind Rights

At least 14 days prior to the pre-construction meeting, the Permittee shall demonstrate that it has obtained the wind rights and any other rights necessary to construct and operate the project within the boundaries authorized by this permit. Nothing in this permit shall be construed to preclude any other person from seeking a permit to construct a wind energy conversion system in any area within the boundaries of the project covered by this permit if the Permittee does not hold exclusive wind rights for such areas.

10.2 Power Purchase Agreement

In the event the Permittee does not have a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project at the time this permit is issued, the Permittee shall provide notice to the Commission when it obtains a commitment for purchase of the power. This permit does not authorize construction of the project until the Permittee has obtained a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project. In the event the Permittee does not obtain a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason for not having such commitment. In such event, the Commission may determine whether this permit should be amended or revoked. No amendment or revocation of this permit may be undertaken except in accordance with Minn. R. 7854.1300.

10.3 Failure to Commence Construction

If the Permittee has not completed the pre-construction surveys required under this permit and commenced construction of the project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason construction has not commenced. In such event, the Commission shall make a determination as to whether this permit should be amended or revoked. No revocation of this permit may be undertaken except in accordance with applicable statutes and rules, including Minn. R. 7854.1300.

11 COMPLAINT PROCEDURES

Fourteen (14) days prior to the pre-construction meeting, the Permittee shall submit to the Commission the procedures that will be used to receive and respond to complaints. The procedures shall be in accordance with the requirements of Minn. R. 7829.1500 or Minn. R. 7829.1700, and as set forth in the complaint procedures attached to this permit.

Upon request, the Permittee shall assist the Commission with the disposition of unresolved or longstanding complaints. This assistance shall include, but is not limited to, the submittal of complaint correspondence and complaint resolution efforts.

12 COMPLIANCE REQUIREMENTS

Failure to timely and properly make compliance filings required by this permit is a failure to comply with the conditions of this permit. Compliance filings must be electronically filed with the Commission.

12.1 Pre-Construction Meeting

Prior to the start of any construction, the Permittee shall participate in a pre-construction meeting with the Department of Commerce and Commission staff to review pre-construction filing requirements, scheduling, and to coordinate monitoring of construction and site restoration activities. Within 14 days following the pre-construction meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees. The Permittee shall indicate in the filing the construction start date.

12.2 Pre-Operation Meeting

At least 14 days prior to commercial operation of the facility, the Permittee shall participate in a pre-operation meeting with the Department of Commerce and Commission staff to coordinate field monitoring of operation activities for the project. Within 14 days following the pre-operation meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees.

12.3 Site Plan

At least 14 days prior to the pre-construction meeting, the Permittee shall provide the Commission, the Department, the Jackson County Department of Environmental Services, and the Jackson County Department of Public Works with a site plan that includes specifications and drawings for site preparation and grading; specifications and locations of all turbines and other structures to be constructed including all electrical equipment, collector and feeder lines, pollution control equipment, fencing, roads, and other associated facilities; and procedures for cleanup and restoration. The documentation shall include maps depicting the site boundary and layout in relation to that approved by this permit. The Permittee shall document, through GIS mapping, compliance with the setbacks and site layout restrictions required by this permit, including compliance with the noise standards pursuant to Minnesota Rules Chapter 7030. At the same time, the Permittee shall notify affected landowners and city and town clerks that the site plan is on file with the Commission and the Jackson County Department of Environmental Services and the Jackson County Department of Public Works. The Permittee may submit a site plan and engineering drawings for only a portion of the project if the Permittee intends to

commence construction on certain parts of the project before completing the site plan and engineering drawings for other parts of the project.

The Permittee may not commence construction until the 30 days has expired or until the Commission has advised the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this permit. If the Permittee intends to make any significant changes to its site plan or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission, the Department, the Jackson County Department of Environmental Services and the Jackson County Department of Public Works, city and town clerks, and the affected landowners at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this permit.

In the event that previously unidentified human and environmental conditions are discovered during construction that by law or pursuant to conditions outlined in this permit would preclude the use of that site as a turbine site, the Permittee shall have the right to move or relocate turbine site. Under these circumstances, the Permittee shall notify the Commission, the Department, the MPCA, the DNR, the Jackson County Department of Environmental Services and the Jackson County Department of Public Works, city and town clerks, and the affected landowners of any turbines that are to be relocated, and provide the previously unidentified environmental conditions and how the movement of the turbine mitigates the human and environmental impact at least five days before implementing the changes. No changes shall be made that would be in violation of any terms of this permit.

12.4 Status Reports

The Permittee shall file status reports with the Commission on progress regarding site construction. The Permittee need not report more frequently than monthly. Reports shall begin with the commencement of site construction and continue until completion of restoration. Reports shall describe construction activities and progress and activities undertaken in compliance with this permit. Reports shall include text and photographs.

12.5 Labor Statistic Reporting

The Permittee shall file quarterly reports with the Commission within 45 days of the end of the quarter regarding construction workers that participated in the construction of the project. The reports shall (a) detail the Permittee's efforts and the site contractor's efforts to hire Minnesota workers, and (b) provide an account of: (i) the gross number of hours worked by or full-time equivalent workers who are Minnesota residents, as defined in Minn. Stat. § 290.01, subd. 7; (ii)

the gross number of hours worked by or full-time equivalent workers who are residents of other states, but maintain a permanent residence within 150 miles of the project; and (iii) the total gross hours worked or total full-time equivalent workers. Permittee shall work with its contractor to determine the suitable reporting metric. The report may not include personally identifiable data.

12.6 In-Service Date

At least three days before the facility is to be placed into service, the Permittee shall notify the Commission of the date on which the facility will be placed into service and the date on which construction was completed.

12.7 As-Builts

Within 90 days after completion of construction, the Permittee shall submit copies of all final as-built plans and specifications developed during the project.

12.8 GPS Data

Within 90 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information (*e.g.*, ArcGIS compatible map files, GPS coordinates, associated database of characteristics) for all structures associated with the LWECS.

12.9 Project Energy Production

The Permittee shall, by February 1st following each complete or partial year of project operation, file a report with the Commission on the monthly energy production of the project including:

(a) the installed nameplate capacity of the permitted project;

(b) the total monthly energy generated by the project in MW hours;

(c) the monthly capacity factor of the project;

(d) yearly energy production and capacity factor for the project;

(e) the operational status of the project and any major outages, major repairs, or turbine

performance improvements occurring in the previous year; and

(f) any other information reasonably requested by the Commission.

This information shall be considered public and must be filed electronically.

12.10 Wind Resource Use

The Permittee shall, by February 1st following each complete or partial calendar year of operation, file with the Commission the average monthly and average annual wind speed collected at one permanent meteorological tower during the preceding year or partial year of operation. This information shall be considered public and must be filed electronically.

12.11 Emergency Response

The Permittee shall prepare an Emergency Response Plan in consultation with the emergency responders having jurisdiction over the facility prior to project construction. The Permittee shall submit a copy of the plan, along with any comments from emergency responders, to the Commission at least 14 days prior to the pre-construction meeting and a revised plan, if any, at least 14 days prior to the pre-operation meeting. The Permittee shall provide as a compliance filing confirmation that the Emergency Response Plan was provided to the emergency responders and Public Safety Answering Points (PSAP) with jurisdiction over the facility prior to commencement of construction. The Permittee shall obtain and register the facility address or other location indicators acceptable to the emergency responders and PSAP having jurisdiction over the facility.

12.12 Extraordinary Events

Within 24 hours of discovery of an occurrence, the Permittee shall notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, acts of sabotage, collector or feeder line failure, and injured worker or private person. The Permittee shall, within 30 days of the occurrence, file a report with the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

13 DECOMMISSIONING, RESTORATION, AND ABANDONMENT

13.1 Decommissioning Plan

The Permittee shall comply with the provisions of the most recently filed and accepted Decommissioning Plan. The initial version of the Decommissioning Plan was submitted for this project as part of the September 30, 2019 Site Permit Application. The Permittee shall file an updated decommissioning plan, incorporating comments and information from the permit issuance process and any updates associated with the final construction plans, with the Commission 14 days before the preconstruction meeting. The decommissioning plan shall be updated every five years following the commercial operation date.

The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration of the project in accordance with the requirements of Minn. R. 7854.0500, subp. 13. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of turbines, turbine foundations, underground collection cables, access roads, crane pads, substations, and other project components. The plan may also include anticipated costs for the replacement of turbines or repowering the project by upgrading equipment.

The Permittee shall also submit the decommissioning plan to the local unit of government having direct zoning authority over the area in which the project is located. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

13.2 Site Restoration

Upon expiration of this permit, or upon earlier termination of operation of the project, or any turbine within the project, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables and lines, foundations, buildings, and ancillary equipment to a depth of four feet. Any agreement for removal to a lesser depth or no removal shall be recorded with the county and shall show the locations of all such foundations. To the extent feasible, the Permittee shall restore and reclaim the site to pre-project conditions, including topography and topsoil conditions. All access roads shall be removed unless written approval is given by the affected landowner requesting that one or more roads, or portions thereof, be retained. All such

agreements between the Permittee and the affected landowner shall be submitted to the Commission prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within 18 months of termination.

13.3 Abandoned Turbines

The Permittee shall advise the Commission of any turbines that are abandoned prior to termination of operation of the project. The project, or any turbine within the project, shall be considered abandoned after one year without energy production and the land restored pursuant to Section 11.2 unless a plan is submitted to and approved by the Commission outlining the steps and schedule for returning the project, or any turbine within the project, to service.

14 COMMISSION AUTHORITY AFTER PERMIT ISSUANCE

14.1 Final Boundaries

After completion of construction, the Commission shall determine the need to adjust the final boundaries of the site required for this project in accordance with Minn. R. 7854.1300, subp. 1.

14.2 Expansion of Site Boundaries

No expansion of the site boundaries described in this permit shall be authorized without the approval of the Commission. The Permittee may submit to the Commission a request for a change in the boundaries of the site for the project. The Commission will respond to the requested change in accordance with applicable statutes and rules.

14.3 Periodic Review

The Commission shall initiate a review of this permit and the applicable conditions at least once every five years. The purpose of the periodic review is to allow the Commission, the Permittee, and other interested persons an opportunity to consider modifications in the conditions of this permit. No modification may be made except in accordance with applicable statutes and rules.

14.4 Modification of Conditions

After notice and opportunity for hearing, this permit may be modified or amended for cause, including but not limited to the following:

(a) violation of any condition in this permit;

(b) endangerment of human health or the environment by operation of the project; or

(c) existence of other grounds established by rule.

14.5 More Stringent Rules

The issuance of this permit does not prevent the future adoption by the Commission of rules or orders more stringent than those now in existence and does not prevent the enforcement of these more stringent rules and orders against the Permittee.

14.6 Right of Entry

The Permittee shall allow Commission designated representatives to perform the following, upon reasonable notice, upon presentation of credentials and at all times in compliance with the Permittee's site safety standards:

(a) To enter upon the facilities easement of the property for the purpose of obtaining information, examining records, and conducting surveys or investigations.

(b) To bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations.

(c) To sample and monitor upon the facilities easement of the property.

(d) To examine and copy any documents pertaining to compliance with the conditions of this permit.

14.7 Proprietary Information

Certain information required to be filed with the Commission under this permit may constitute trade secret information or other type of proprietary information under the Data Practices Act or other law. The Permittee must satisfy requirements of applicable law to obtain the protection afforded by the law.

15 PERMIT AMENDMENT

This permit may be amended at any time by the Commission in accordance with Minn. R.

7854.1300, subp. 2. Any person may request an amendment of the conditions of this permit by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required.

16 TRANSFER OF PERMIT

The Permittee may request at any time that the Commission transfer this permit to another person or entity. The Permittee shall provide the name and description of the person or entity to whom the permit is requested to be transferred, the reasons for the transfer, a description of the facilities affected, and the proposed effective date of the transfer. The person to whom the permit is to be transferred shall provide the Commission with such information as the Commission shall require to determine whether the new permittee can comply with the conditions of the permit. The Commission may authorize transfer of the permit after affording the Permittee, the new permittee, and interested persons such process as is required. The Commission may impose additional conditions on any new permittee as part of the approval of the transfer.

Within 14 days of beginning operation, the Permittee shall file a notice describing its ownership structure, identifying, as applicable:

(a) the owner(s) of the financial and governance interests of the Permittee;

(b) the owner(s) of the majority financial and governance interests of the Permittee's owners; and

(c) the Permittee's ultimate parent entity (meaning the entity which is not controlled by any other entity).

The Permittee shall immediately notify the Commission of:

(a) a change in owner(s) of the majority* financial or governance interests in the Permittee;

(b) a change in owner(s) of the majority* financial or governance interests of the Permittee's owners; or

(c) a sale which changes the parent entity of the Permittee.

**When there are only co-equal 50/50 percent interests, any change shall be considered a*

change in majority interest.

The Permittee shall notify the Commission of:

(a) the sale of a parent entity or a majority interest in the Permittee;

(b) the sale of a majority interest of the Permittee's owners or majority interest of the owners; or

(c) a sale which changes the entity with ultimate control over the Permittee.

17 REVOCATION OR SUSPENSION OF PERMIT

The Commission may take action to suspend or revoke this permit upon the grounds that:

(a) a false statement was knowingly made in the application or in accompanying statements or studies required of the Permittee, and a true statement would have warranted a change in the Commission's findings;

(b) there has been a failure to comply with material conditions of this permit, or there has been a failure to maintain health and safety standards;

(c) there has been a material violation of a provision of an applicable statute, rule, or an order of the Commission; or

(d) the Permittee has filed a petition with the Commission requesting that the permit be revoked or terminated.

In the event the Commission determines that it is appropriate to consider revocation or suspension of this permit, the Commission shall proceed in accordance with the requirements of Minn. R. 7854.1300 to determine the appropriate action. Upon a finding of any of the above, the Commission may require the Permittee to undertake corrective measures in lieu of having this permit suspended or revoked.

18 EXPIRATION DATE

This permit shall expire 30 years after the date this permit was approved and adopted.

MINNESOTA PUBLIC UTILITIES COMMISSION
COMPLAINT HANDLING PROCEDURES FOR
PERMITTED ENERGY FACILITIES

A. Purpose

To establish a uniform and timely method of reporting and resolving complaints received by the permittee concerning permit conditions for site preparation, construction, cleanup, restoration, operation, and maintenance.

B. Scope

This document describes complaint reporting procedures and frequency.

C. Applicability

The procedures shall be used for all complaints received by the permittee and all complaints received by the Minnesota Public Utilities Commission (Commission) under Minn. R. 7829.1500 or Minn. R. 7829.1700 relevant to this permit.

D. Definitions

Complaint: A verbal or written statement presented to the permittee by a person expressing dissatisfaction or concern regarding site preparation, cleanup or restoration or other site and associated facilities permit conditions. Complaints do not include requests, inquiries, questions or general comments.

Substantial Complaint: A written complaint alleging a violation of a specific permit condition that, if substantiated, could result in permit modification or suspension pursuant to the applicable regulations.

Unresolved Complaint: A complaint which, despite the good faith efforts of the permittee and a person, remains unresolved or unsatisfactorily resolved to one or both of the parties.

Person: An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

E. Complaint Documentation and Processing

1. The permittee shall designate an individual to summarize complaints for the Commission. This person's name, phone number and email address shall accompany all complaint submittals.

2. A person presenting the complaint should to the extent possible, include the following information in their communications:

    a. name, address, phone number, and email address;
    b. date of complaint;
    c. tract or parcel number; and
    d. whether the complaint relates to a permit matter or a compliance issue.

3. The permittee shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:

    a. docket number and project name;
    b. name of complainant, address, phone number and email address;
    c. precise description of property or parcel number;
    d. name of permittee representative receiving complaint and date of receipt;
    e. nature of complaint and the applicable permit condition(s);
    f. activities undertaken to resolve the complaint; and
    g. final disposition of the complaint.

F. Reporting Requirements

The permittee shall commence complaint reporting at the beginning of project construction and continue through the term of the permit. The permittee shall report all complaints to the Commission according to the following schedule:

Immediate Reports: All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to the Commission's Consumer Affairs Office at 1-800-657-3782 (voice messages are acceptable) or consumer.puc@state.mn.us. For e-mail reporting, the email subject line should read "PUC EFP Complaint" and include the appropriate project docket number.

Monthly Reports: During project construction and restoration, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be filed by the 15th of each month to Will Seuffert, Executive Secretary, Public Utilities Commission, using the eDockets system. The eDockets system is located at: https://www.edockets.state.mn.us/EFiling/home.jsp

If no complaints were received during the preceding month, the permittee shall file a summary indicating that no complaints were received.

G. Complaints Received by the Commission

Complaints received directly by the Commission from aggrieved persons regarding site preparation, construction, cleanup, restoration, operation and maintenance shall be promptly sent to the permittee.

H. Commission Process for Unresolved Complaints

Commission staff shall perform an initial evaluation of unresolved complaints submitted to the Commission. Complaints raising substantial permit issues shall be processed and resolved by the Commission. Staff shall notify the permittee and appropriate persons if it determines that the complaint is a substantial complaint. With respect to such complaints, each party shall submit a written summary of its position to the Commission no later than ten days after receipt of the staff notification. The complaint will be presented to the Commission for a decision as soon as practicable.

I. Permittee Contacts for Complaints and Complaint Reporting

Complaints may filed by mail or email to:

[*Name*]
[*Mailing Address*]
[*Phone*]
[*Email*]

This information shall be maintained current by informing the Commission of any changes as they become effective.

MINNESOTA PUBLIC UTILITIES COMMISSION
COMPLIANCE FILING PROCEDURE FOR
PERMITTED ENERGY FACILITIES

A. Purpose

To establish a uniform and timely method of submitting information required by Commission energy facility permits.

B. Scope and Applicability

This procedure encompasses all known compliance filings required by permit.

C. Definitions

Compliance Filing: A filing of information to the Commission, where the information is required by a Commission site or route permit.

D. Responsibilities

1. The permittee shall file all compliance filings with Will Seuffert, Executive Secretary, Public Utilities Commission, through the eDockets system. The eDockets system is located at: https://www.edockets.state.mn.us/EFiling/home.jsp

General instructions are provided on the eDockets website. Permittees must register on the website to file documents.

2. All filings must have a cover sheet that includes:

    a. Date
    b. Name of submitter/permittee
    c. Type of permit (site or route)
    d. Project location
    e. Project docket number
    f. Permit section under which the filing is made
    g. Short description of the filing

3. Filings that are graphic intensive (e.g., maps, engineered drawings) must, in addition to being electronically filed, be submitted as paper copies and on CD. Paper copies and CDs should be sent to: 1) Will Seuffert, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN 55101-2147, and 2) Department of Commerce, Energy Environmental Review and Analysis, 85 7th Place East, Suite 500, St. Paul, MN 55101-2198.

The Commission may request a paper copy of any electronically filed document.

PERMIT COMPLIANCE FILINGS[1]

PERMITTEE: Three Waters Wind Farm, LLC
PERMIT TYPE: LWECS Site Permit
PROJECT LOCATION: Jackson County, Minnesota
PUC DOCKET NUMBER: IP-7002/WS-19-576

Filing Number	Permit Section	Description of Compliance Filing	Due Date
1	4.7	Prairie Protection and Management Plan	30 days prior to submitting Site Plan, as deemed necessary
2	4.12	Notification to Airports	14 days prior to the pre-construction meeting
3	5.1	Notification of Permit and Complaint Procedures	30 days of permit issuance
4	5.3.1	Field Representative	14 days prior to the pre-construction meeting
5	5.3.2	Site Manager	14 days prior to the pre-operation meeting
6	5.3.7	National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater Permit	In accordance with Minnesota Pollution Control Agency
7	5.3.10	Notification of Pesticide Application	14 days prior to application
8	5.3.11	Invasive Species Protection Plan	14 days prior to pre-construction meeting
9	5.3.13	Identification of Roads	14 days prior to pre-construction meeting

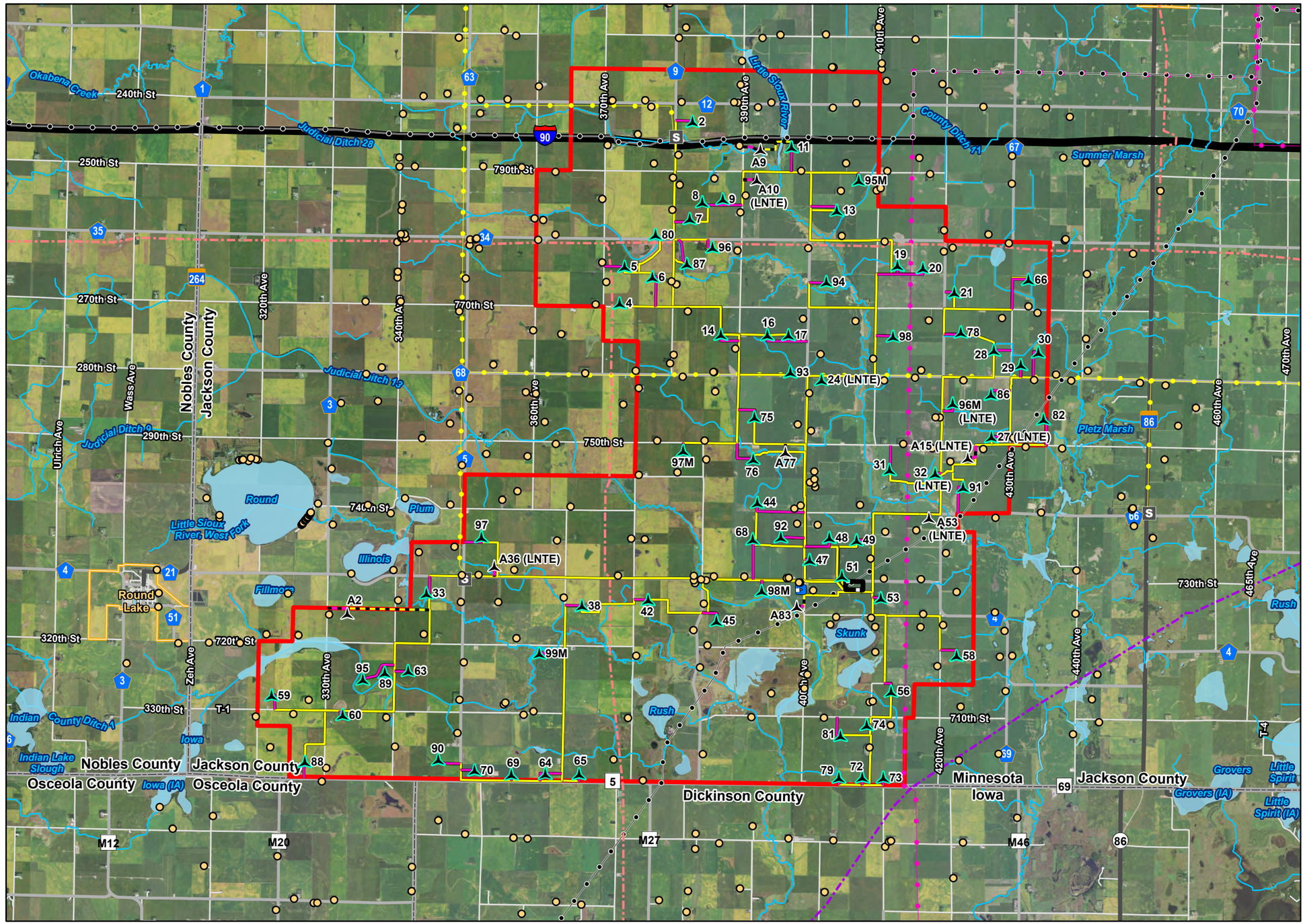
[1] This compilation of permit compliance filings is provided for the convenience of the permittee and the Commission. It is not a substitute for the permit; the language of the permit controls.

Filing Number	Permit Section	Description of Compliance Filing	Due Date
10	5.3.17	Assessment of Television and Radio Signal Reception, Microwave Signal Patterns, and Telecommunications	14 days prior to pre-construction meeting
11	5.3.22	Site Restoration Notification	60 days after completion of restoration
12	5.3.26	Public Safety – Submit location of underground facilities to Gopher State One Call	After completion of construction at the site
13	5.5	Electrical Collector and Feeder Lines	Submit with the Site Plan, 14 days prior to pre-construction meeting
14	5.6.2	Detailed Status Update on Other Permits and Regulations	14 days prior to pre-construction meeting
15	5.6.2	Affidavit Filing Demonstrating Obtaining all Necessary Permit, Authorizations, and Approvals	Prior to Commencing Construction
16	7.1	Biological and Natural Resource Inventories	30 days prior to pre-construction meeting
17	7.2	Shadow Flicker Data	14 days prior to pre-construction meeting
18	7.3	Wake Loss Studies	14 days prior to pre-construction meeting and annual wake loss with annual report
19	7.4	Post-Construction Noise Methodology	14 days prior to pre-construction meeting
20	7.4	Post-Construction Noise Study	18 months of commercial operation
21	7.5.1	Permit Version - Avian and Bat Protection Plan	14 days prior to pre-construction meeting

Filing Number	Permit Section	Description of Compliance Filing	Due Date
22	7.5.1	Annual Report - Avian and Bat Protection Plan (Annual Audit)	15th of March each year or partial year of operation
23	7.5.2	Quarterly Incident Reports	15th of January, April, July, and October the day following commercial operation
24	7.5.3	Immediate Incident Reports	24 hours of discovery and a report within 7 days
25	10.1	Demonstration of Wind Rights	14 days prior to pre-construction meeting
26	10.2	Power Purchase Agreement or Other Enforceable Mechanism	Prior to the Commencement of Construction
27	10.3	Failure to Construct	Within two years issuance of permit
28	110	Complaint Procedures	14 days prior to the pre-construction meeting
29	12.1	Pre-Construction Meeting Summary	14 days following meeting
30	12.2	Pre-Operation Meeting Summary	14 days following meeting
31	12.3	Site Plan	14 days prior to pre-construction meeting
32	12.3	Turbine Relocation (After Construction Approval)	5 days prior to implementing the change
33	12.4	Construction Status Reports	Monthly

Filing Number	Permit Section	Description of Compliance Filing	Due Date
34	12.5	Labor Statistics Reporting	Quarterly reporting during construction, within 45 days of the end of the quarter
35	12.6	Beginning Commercial Operation	3 days prior to commercial operation
36	12.7	As-Builts	90 days after completion of construction
37	12.8	GPS Data	90 days after completion of construction
38	12.8	Project Energy Production	February 1st following each complete or partial year of project operation
39	12.10	Wind Resource Use	February 1st following each complete or partial year of project operation
40	12.11	Emergency Response Plan	14 days prior to pre-construction meeting and revisions 14 days prior to pre-operation meeting
41	12.12	Extraordinary Event	Within 24 hours of discovery, and detailed report within 30 days of discovery
42	13.1	Decommissioning Plan	14 days prior to pre-operation meeting
43	16.0	Notice of Ownership	14 days after operation
44	16.0	Notice of Ownership Change and Notice of Sale	Immediate Notification

Three Waters Wind Farm, LLC - LWECS Site Permit - Attachment 3



- Proposed Turbine
- Proposed Turbine Alternate
- Proposed Access Road
- Proposed Access Road Alternate
- Proposed Collection
- Proposed Collection Alternate
- Proposed O&M
- Proposed Substation/ Switchyard
- Project Area
- Residential Structure
- City Boundary
- County Boundary
- River/Stream
- Lake/Pond
- Existing Substation

Existing Transmission Lines
- 69 kV
- 161 kV
- 345 kV

Existing Pipeline
- Gas Transmission Pipeline
- Hazardous Liquid Pipeline

Data Source: Scout Clean Energy, MNDOC, MNDNR, MNDOT, Census Bureau
Imagery Source: National Map USGS NAIP Imagery Service

N

1.5 0.75 0 1.5

Miles

THREE WATERS WIND PROJECT - JACKSON CO, MINNESOTA

Project Area and Facilities

SCOUT CLEAN ENERGY

SEPT 2019

Figure 2