Preliminary Scoping Statement

Galloo Island Wind Energy Facility

Town of Hounsfield, Jefferson County, New York

Case No. 15-F-0327

June 2016

Prepared for:

Apex Clean Energy

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1.0 INTRODUCTION

Galloo Island Wind, LLC. ("the Applicant") intends to submit an Application to construct a major electric generating facility under Article 10 of the Public Service Law ("PSL"). Pursuant to the rules of the New York State Board on Electric Generation Siting and the Environment ("Siting Board"), any applicant proposing to submit an Application to construct a major electric generating facility under Article 10 must submit a Preliminary Scoping Statement ("PSS"). Under 16 NYCRR § 1000.5(c), an Applicant must file an electronic copy and 10 paper copies with the Siting Board no less than 90 days before the date on which an Application is filed. This document represents the PSS for the Galloo Island Wind Energy Facility (the "Facility") and is intended to satisfy the filing requirements set forth at 16 NYCRR § 1000.5(c) (See Section 3.0 of this PSS for additional information). Pursuant to 16 NYCRR 1000.5(g), within 21 days after the filing of this PSS, in this case by June 27, 2016, any person, agency or municipality may submit comments on this PSS by serving such comments on the applicant and filing a copy with the Secretary. Further details for filing comments on this PSS are provided in the Notice accompanying this document. (See Appendix A; copy of the Notice).

1.1 PROJECT DESCRIPTION

The Major Electric Generating Facility (the "Facility") is an approximately 110.4 megawatt ("MW") wind powered electric generating project located within the Town of Hounsfield, Jefferson County, New York (Figure 1). The Facility location and surrounding area is depicted on Figure 2. The Facility will be located on the approximately 1,966 acre Galloo Island in Lake Ontario. The majority of land on Galloo Island, approximately 1,936 acres, is owned by one landowner and is under option by the Applicant (the "Facility Site"). The Applicant will be the fee owner of the Facility Site prior to commencement of construction.

The Major Electric Generating Facility Components include the installation and operation of up to 32 wind turbines, together with approximately 14 miles of associated electric collection lines and access roads, collection substation (including the main power transformers), two permanent meteorological ("met") towers, one operation and maintenance ("O&M") building along with potable and waste water treatment, a barge landing site, a permanent structure for proposed overnight accommodations, a helicopter landing site, a borrow area, a temporary batch plant, and a temporary construction staging/laydown area, as depicted on Figure 3. With regard to the permanent structure for proposed overnight accommodations, in addition to living quarters integrated into the O&M building, the Applicant intends to utilize existing functional buildings that are already located on the Facility Site to be used as housing in times of inclement weather and/or extended stays at the Facility. All of these components collectively constitute the "Major Electric Generating Facility" as defined in 16 NYCRR 1000.2(v).

There are off-site ancillary features anticipated on the mainland (i.e., contractor parking, docking improvements), these are generally minor and/or will consist of using existing features. However, these off-site ancillary features are not considered to be a part of the "Major Electric Generating Facility" and will not be part of the Article 10 Application. Any off-site ancillary features will be subject to applicable state and local laws and regulations.

To deliver electricity to the New York State power grid, the Applicant proposes to construct a collection substation, an approximately 30 mile AC underwater cable outside of the Article 10 Facility Site, and a point of interconnection substation (hereafter referred to as "related transmission facility" or "RTF") near the Mitchell Street Substation in Oswego, NY. Since the design of the AC underwater cable is greater than 100 kilovolts ("kV") and the length exceeds 10 miles, these components (i.e., high side of the collection substation, underwater cable, and Point of Interconnect substation) of the Facility are considered a "Major Utility Transmission Facility" and will be regulated under and subject to Article VII of the Public Service Law.

Article VII of the New York State Public Service Law sets forth a review process for the consideration of any application to construct and operate a Major Utility Transmission Facility and requires an applicant to apply for a Certificate of Environmental Compatibility and Public Need ("Certificate") and meet the Article VII requirements before constructing any such transmission line. Therefore, the need for, and environmental impact of, the RTF will not be evaluated in the Facility's Article 10 Application. It is anticipated that the Applicant will submit its Article VII Application at the same time as the Article 10 Application, and that the two application processes will run concurrently.

Information regarding the Article VII RTF and the Article 10 Facility will be provided to the public and the various involved agencies throughout the pre-application process for both Applications.

1.1.2 Project Benefits

The project has potential to have local, state and federal benefits. On an immediate timeline, benefits of utility scale renewable projects, such as the Facility, include economic development for the community, and advancement of State and Federal renewable energy and other policy objectives. In addition, there are significant environmental benefits associated with the generation of electricity from wind because the operation of the Facility will not result in impacts to air and water resources, ignore email carbon dioxide. The State Energy Plan recognizes that wind energy may also provide long term benefits such as below-market electricity prices by avoiding reliance on commodity fuel costs and a healthier environment associated with electricity generation that does not involve greenhouse gas and other harmful emissions.

The Project will help the State achieve the goals of the 2015 State Energy Plan. The Facility is consistent with State policies designed to encourage the development of renewable energy projects, fight climate change, and contribute to the transition of New York's energy markets. State Energy Law 6-104 requires the State Energy Planning Board to adopt a State Energy Plan. The latest iteration of the New York State Energy Plan was announced on June 25, 2015. The State Energy Plan contains a series of policy objectives and coordinates with the Reforming Energy Vision ("REV") initiative and the objectives to increase the use of energy systems that enable to the State to significantly reduce greenhouse gas ("GHG") emissions while stabilizing energy costs. According to the Plan, the Plan is a "comprehensive strategy to create economic opportunities for communities and individual customers throughout New York." Through the State Energy Plan, New York has committed to achieving a 40% reduction in GHG emissions from 1990 levels by 2030 and reducing total carbon emissions 80% by 2050. In addition, the State Energy Plan calls for 50% of generation of electricity from renewable energy sources by 2030. The proposed Facility fully advances the objectives of the State Energy Plan and assists the State in achieving the 50% renewable energy generation objective.

Unlike other states with a Renewable Portfolio Standard ("RPS"), in New York, the New York State Energy Research and Development Authority ("NYSERDA") is responsible for obtaining the targets established in the RPS through competitive bidding and contract procurements. To date, NYSERDA has conducted 10 Main Tier (larger, utility scale resources) solicitations in pursuit of the RPS target. From the ten completed solicitations, NYSERDA currently has contracts with electricity generators for 68 large-scale projects. These projects will add more than 2,137 MWs of new renewable capacity to the State's energy mix. However, as of December 2015, the State has only procured enough renewable energy to meet 60% of the RPS targets. (NYSERDA, 2016). The Public Service Commission is currently conducting a proceeding to implement Governor Cuomo's directive to achieve the policy goals identified above (referred to as the "Clean Energy Standard") (Case No. 15 – E – 0302) and transition from the expiring RPS to a new process for developing and promoting large-scale renewable energy projects such as the Facility.

In addition to the significant clean energy and climate change benefits, the Facility will have positive impacts on socioeconomics in the area through employment opportunities, specifically by generating approximately 120 temporary construction jobs. Local construction employment will primarily benefit those in the construction trades, including equipment operators, truck drivers, laborers, and electricians. In addition, Facility operation will generate up to five full-time jobs, including a Site Manager, Wind Technicians, and an Assistant Site Manager. The Facility will also result in increased revenues to County and local municipal tax base, payments to the local hospitality industry, and purchase of local supplies and goods.

In fulfillment of President Obama's commitment under the 2013 Climate Action Plan, EPA proposed "Clean Power Plan" or "CPP" regulations in 2014 establishing a framework for states to regulate carbon dioxide emissions from

existing fossil fuel-fired electric generating units (See 79 Federal Register 34830; June 18, 2014). Once the guidelines are issued, states must develop plans that explain how they will achieve those guidelines (the State CPP Plan). Nationwide, the CPP calls for reducing CO2 from the power sector by approximately 30% from 2005 emission levels by 2030. The CPP establishes emission rate-based CO2 goals for each state as well as guidelines for the development, submission and implementation of state plans to achieve those goals. The CPP relies on four basic building blocks: (1) reducing the carbon intensity of generation at individual units through heat rate improvements; (2) substituting less carbon-intensive generating units (e.g., replacing coal with natural gas); (3) increasing reliance on low or zero-carbon generation sources such as solar and wind; and (4) increasing reliance on demand-side energy efficiency programs. The proposed Facility fully advances the objectives of the CPP and could provide an early incentive for the State CPP Plan.

1.2 SUMMARY OF PRE-APPLICATION ACTIVITIES

Prior to submitting this PSS, a Public Involvement Program ("PIP") plan in accordance with 16 NYCRR § 1000.4, which was filed with the Siting Board, and the Facility was assigned a case number (Case No. 15-F-0327). The initial draft of the PIP was submitted to the Siting Board on June 16, 2015, comments on the PIP were received from the New York State Department of Public Service ("DPS") on July 15, 2015, and the PIP was updated, finalized and filed by the Applicant on August 14, 2015. Please note, on May 9, 2016 an update to the PIP was provided to the Siting Board to update the project contact information.[1] The PIP can be accessed, viewed and downloaded on the online case record maintained by the Siting Board ("DMM") and on the Facility-specific website maintained by the Applicant:

- (http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=15-F-0327)
- (http://www.gallooislandwind.com/)

According to 16 NYCRR § 1000.4(c), a PIP must include: (1) consultation with the affected agencies and other stakeholders; (2) pre-application activities to encourage stakeholders to participate at the earliest opportunity; (3) activities designed to educate the public as to the specific proposal and the Article 10 review process, including the availability of funding for municipal and local parties; (4) the establishment of a website to disseminate information to the public; (5) notifications; and (6) activities designed to encourage participation by stakeholders in the certification and compliance process. It is anticipated that this will be an ongoing, evolving process throughout all phases of the Article 10 review process (pre-application phase, application phase, hearing and decision phase, and post-certification

[1] Galloo Island Wind Farm, LLC (aka Galloo Project Company, LLC) purchased the Facility and all rights related thereto from Hudson North Country Wind 1, LLC pursuant to an Asset Purchase Agreement dated as of Q4 2015.

phase) intended to disseminate and gather information regarding the Facility to and from stakeholders, and generally foster participation in the Article 10 review.

The Applicant is committed to providing information to stakeholders about the Project in accordance with all applicable laws and regulations relating to public/stakeholder interactions including:

- Facility Representative (for the public and stakeholders to contact with questions, concerns, etc.): Cat Mosley, Public Affairs Manager; 310 4th Street NE, Suite 200, Charlottesville, VA 22902; info@gallooislandwind.com; (434) 234-4405
- Local Document Repositories:
    - Hay Memorial Library; 105 South Broad Street, Sackets Harbor, NY 13685 (315-646-2228)
    - Henderson Free Library; 8939 New York 178, Henderson, NY 13650 (315-938-7169)
    - Oswego Public Library; 120 East 2nd Street, Oswego, NY 13126 (315-341-5867)

In support of this PSS, the Applicant has consulted with the public, affected agencies and other stakeholders, as required by 16 NYCRR § 1000.5(b). All such consultations have been documented in a log maintained by the Applicant. The Applicant will continue to prepare a Facility-specific log on an approximate monthly basis throughout the duration of the Article 10 review process and file with the Siting Board. See Section 2.2(c) of this PSS for additional information regarding PIP implementation.

1.3 PREVIOUS THIRD PARTY PROJECT PROPOSAL

Upstate NY Power Corp, an unrelated third party, previously proposed a wind project on Galloo Island in 2007 which was known as the Hounsfield Wind Farm. Specifically, the Hounsfield Wind Farm was an 84 turbine project capable of generating up to 252 megawatts of power and was evaluated through the State Environmental Quality Review Act ("SEQRA") process with the New York State Department of Environmental Conservation (NYSDEC) acting as the lead agency. Through the previous SEQRA process, as more fully described below, the resources on Galloo Island, and the impacts associated with constructing and operating a wind power project on Galloo Island, were thoroughly evaluated. It is the Applicant's understanding that the project was abandoned and is now no longer feasible because Galloo Island Wind Farm, LLC is under option to purchase the majority of land on the island.

Based on a preliminary layout the current Facility differs from the previous project in two significant aspects: 1) the current Facility proposes substantially fewer turbines (32 instead of 84); and 2) proposes an entirely underwater/underground interconnect solution avoiding the need for extensive overhead transmission infrastructure.

Both of these differences contribute substantially to reducing the visual impact of the Facility and associated transmission facilities.

Project Element	Hounsfield Wind	Galloo Island Wind
Number of Turbines	84	32
Project Size in MW	254	110.4
Height of Turbines	410	574
Miles of Access Road	20	14
Miles of Underwater Power Cable	14	31
Miles of Overhead Transmission Line	41	0

A summary of the previous SEQRA process is summarized below:

- November 20, 2007 – Town of Hounsfield Planning Board received an Application for Site Plan Approval and SEQRA Environmental Assessment Form ("EAF"). It was determined by the Planning Board that the Project would be a Type I Action under the SEQRA;
- December 5, 2007 – The Planning Board circulated Lead Agency Coordination Letters and the EAF Part I to Involved and Interested Parties;
- January 4, 2008 – NYSDEC, as an Involved Agency, objected to the Town of Hounsfield Planning Board serving as Lead Agency;
- April 24, 2008 – The Commissioner of the NYSDEC determined that the NYSDEC should act as Lead Agency, in accordance with 6 NYCRR §617.6(b)(5)(v), stating this role *"is particularly appropriate given that the anticipated impacts of the action being considered are primarily of statewide and/or regional significance, as opposed to local significance. In addition, given the number and nature of the permits required, DEC has the greatest capability for providing the most thorough environmental assessment";*
- May 21, 2008 – NYSDEC determined that the Project may have potential for a significant adverse environmental impact and that a Draft Environmental Impact Statement would be required. In accordance with 6 NYCRR §617.8 the NYSDEC required Public Scoping for the Proposed Action and in accordance with 6 NYCRR §618 a Draft Scoping document was prepared;
- June 17, 2008 – NYSDEC held a Public Scoping Session at the Town of Hounsfield Court Building in Sackets Harbor, to accept verbal and/or written comments on the Draft Scoping document;
- September 22, 2008 – Final Scoping Document for the DEIS was issued by the NYSDEC;
- February 27, 2009 – NYSDEC accepted the DEIS as adequate for public review and published the Notice of Completion of the DEIS;

- May 18, 2009 – Public hearing held in the Town of Hounsfield to allow for public comments to the DEIS;
- May 29, 2009 – 90 Day public comment period concludes; December 23, 2009 – NYSDEC, as Lead Agency, issues the Final Environmental Impact Statement (FEIS); and
- March 3, 2010 – NYSDEC issues SEQRA Findings Statement finding that the projects potential impacts on the environment have been avoided, minimized and mitigated to the extent practicable; and
- The SEQRA record was upheld by Supreme Court, Jefferson County on July 26, 2010 and later on appeal to the Appellate Division, Fourth Department on January 31, 2012.

The Applicant has reviewed the studies and analyses submitted to the public as part of the Hounsfield Wind Farm SEQRA process which are still applicable and appropriate to consider for characterizing potential impacts associated with the Facility and setting forth the scope and methodology of proposed additional studies to be conducted in support of the Article 10 Application. Information relevant to the pending Article 10 Application is discussed in subsequent sections of this PSS.

1.4 POTENTIAL IMPACTS

Regarding Facility-related potential impacts the following general information is provided in accordance with 16 NYCRR § 1000.5(l)(2)(ii):

The proposed Facility will result in significant long-term economic benefits to the Town of Hounsfield, the Sackets Harbor School District, and Jefferson County. When fully operational, the Facility will provide up to 110.4 MW of electric power generation with no emissions of pollutants or greenhouse gases to the atmosphere and without the need for the use of significant quantities of water. Despite the positive effects anticipated as a result of the Facility, its construction and operation will necessarily result in certain unavoidable impacts to the environment. However, these impacts will not be outweighed by the Facility's positive effects, especially in light of the mitigation measures the Applicant intends to implement as described more fully in other sections of this PSS.

Over 1,700 MW's of utility-scale wind resources have been developed in New York State and the potential environmental impacts associated with the operation and construction of a wind project are generally well known. The majority of these environmental impacts will be temporary, and will result from construction activities. The primary construction-related impacts will be the disturbance of soils during the development of the temporary construction staging areas, the O&M building, docking facility, and the installation of access roads, turbine foundations, permanent meteorological towers, electric collection systems, and collection substation. Earth moving and general soil

disturbance will increase the potential for wind/water erosion and sedimentation into surface waters, particularly in areas with moderate erosion hazards. Applicant's mitigation measures to address these impacts are described below.

During construction, potential direct or indirect impacts to wetlands and surface waters may also occur. Direct impacts, including clearing of vegetation, earthwork (e.g., grading activities), and the direct placement of fill in wetlands and surface waters, are typically associated with the development of access roads and workspaces around turbines. The construction of access roads is anticipated to result in both permanent (loss of wetland/surface water acreage) and temporary impacts to wetlands. The development and use of temporary workspaces will result in only temporary impacts to wetlands/streams. The installation of above-ground or buried electrical lines will temporarily disturb wetlands/streams during construction as a result of clearing (brushhogging, or similar clearing method requiring no removal of rooted woody plants), potential conversion of wetland communities as a result of construction activities (i.e., forested to scrub-shrub) and soil disturbance from burial of the electrical 34.5 kV collection. Indirect impacts to wetlands and surface waters may result from sedimentation and erosion caused by adjacent construction activities (e.g., removal of vegetation and soil disturbance).

Facility construction will also result in temporary and permanent impacts to vegetation and wildlife habitat. Construction-related impacts to vegetation include cutting/clearing, removal of stumps and root systems, and increased exposure/disturbance of soil. Along with direct loss of (and damage to) vegetation, these impacts can result in a loss of wildlife food and cover, increased soil erosion and sedimentation, a disruption of normal nutrient cycling, and the introduction or spread of invasive plant species. Habitat fragmentation is also a potential Facility-related impact, which divides once continuous, large populations into many smaller ones, and can be a significant threat to threatened and endangered species.

In addition to construction impacts, impacts associated with operation and maintenance of the Facility may be associated with turbine visibility from some locations within the Facility Study Area. Some of the typical operational impacts associated with wind farms (i.e., shadow flicker, noise) are not anticipated with this Facility because it is located approximately 6 miles from the nearest permanent residence and 2.5 miles from nearest seasonal residence (Stony Island). However, the Facility operation may cause a permanent loss of forest land, wildlife habitat changes, and some level of avian and/or bat mortality associated with bird/bat collisions with the turbines. Additional information regarding potential Facility impacts is included in Section 2.0 below.

With careful planning and design, many of the potential impacts associated with wind facilities will be avoided or minimized to be compatible with the surrounding areas. To the extent that certain impacts cannot be avoided, mitigation measures can be implemented to reduce the environmental impact from the Facility.

1.5 IMPACT AVOIDANCE AND MITIGATION MEASURES

With respect to general avoidance, minimization, and mitigation measures, the following information is provided in accordance with 16 NYCRR § 1000.5(l)(2)(v) and (vi):

Compliance with the Conditions of the Article 10 Certificate, and other various federal regulations, as well as certain applicable state and local regulations governing the development, design, construction and operation of the proposed Facility will serve to avoid and minimize adverse impacts. Construction activities and Facility engineering will be in compliance with applicable state and local building codes and federal OSHA guidelines to protect the safety of workers and the public. Federal and applicable state permitting typically required by the USACE and/or the NYSDEC will serve to protect water resources, along with implementation of a state-approved SPDES permit. Coordination between state and federal agencies will ensure that natural resource impacts are avoided to the extent practicable and that minimization and mitigation programs are in place to monitor potential impacts and ensure effective mitigation is in place. Highway permitting typically authorized at the local, county, and state level will assure that safety, congestion, and damage to highways in the area is avoided or minimized. In addition, the final Facility layout will be in accordance with various siting criteria, guidelines, and design standards that serve to avoid or minimize adverse environmental impacts. These include:

- Minimizing the number of stream and wetland crossings.
- Designing all electrical lines to minimize the possibility of stray voltage.
- Minimizing overhead collection lines and designing any overhead collection line in accordance with Avian Power Line Interaction Committee ("APLIC") guidelines to minimize impacts on birds.
- Limiting turbine lighting to the minimum required by the FAA to reduce nighttime visual impacts, and following lighting guidelines to reduce the potential for bird collisions.
- Designing, engineering, and constructing the Facility in compliance with various codes and industry standards to assure safety and reliability.
- Installing turbines with appropriate grounding and redundant shutdown/braking capabilities to minimize public safety concerns.
- Complying with the NYSA&M guidelines in order to minimize impacts on agricultural land and farming practices.

Facility development, construction and operation will also include specific measures to mitigate potential impacts to specific resources, which are anticipated to generally include the following:

- Developing and implementing various plans to minimize adverse impacts to air, soil, and water resources, including a dust control plan, sediment and erosion control plan, and Spill Prevention, Control, and Countermeasure (SPCC) plan.
- Employing an environmental monitor/inspector to oversee construction activities at sensitive areas such as stream and wetland crossings.
- Implementing an Invasive Species Control Plan.
- Implementing a Blasting Plan, if required.
- Developing and implementing a complaint resolution procedure to address concerns throughout Facility construction and operation.
- Preparing a historic resource mitigation program to be developed in consultation with the State Historic Preservation Office (SHPO).
- Preparing a compensatory wetland mitigation plan, if required, to mitigate impacts to streams and wetlands.
- Entering into a Payment in Lieu of Taxes ("PILOT") agreement with the local taxing jurisdictions to provide a significant predictable level of funding for the towns, county, and school districts.
- Developing of an emergency and fire response plan with local first responders.
- Implementing a Decommissioning Plan.

1.6 ORGANIZATION OF THE PSS

To facilitate an understanding of the intended content and organization of the pending Application, and to identify the proposed methodology or scope of the studies to be conducted in support of the Application, this PSS has been organized in accordance with 16 NYCRR § 1001 (Content of an Application). Specifically, all sub-sections of Section 2.0 (Content of the Application) below correspond directly to each Exhibit that will be included in the Application as set forth in 16 NYCRR § 1001 (e.g., Section 2.1 corresponds to 16 NYCRR § 1001.1, Section 2.2 corresponds to 16 NYCRR § 1001.2, etc.). As a result of this sequence, Exhibits that are not necessarily applicable to the Facility have been included as individual PSS sections in order to maintain consistency. However, Exhibits that are not applicable to this Facility (i.e., Natural Gas Power Facilities, Nuclear Facilities) have been identified in the corresponding PSS section as Not Applicable.

With respect to the remaining PSS requirements set forth at 1000.5(l), a content matrix is provided in Section 3.0 (Summary and Conclusions) of this PSS, which cross-references the requirements of 16 NYCRR § 1000.5(l) with the sections of this PSS.

2.0 CONTENT OF APPLICATION

2.1 GENERAL REQUIREMENTS

(1) Applicant Information

The Applicant, Galloo Island Wind, LLC ("Galloo"), is a limited liability company incorporated under the laws of the State of Delaware and is an indirect subsidiary of Apex Clean Energy Holdings, LLC ("Apex"). Apex's headquarters are located in Charlottesville, Virginia, and Galloo Island Wind, LLC, maintains a local Project office in Sackets Harbor, New York. Apex is an independent renewable energy company focused on building utility-scale renewable generation facilities. Apex is constructing one of the nation's largest, most diversified portfolios of renewable energy resources, capable of producing more than 12,000 MW of clean energy. This past year, Apex brought five new U.S. wind energy facilities online, comprising 1,160 MW of capacity. Apex's website is www.apexcleanenergy.com.

(2) Project Website

The Project Website can be found at: http://www.gallooislandwind.com

(3) Public Contact

The Project's public contact is Cat Mosley, Public Affairs Manager. Her contact information is:
Apex Clean Energy
Court Square Building
310 4th Street NE, Suite 200
Charlottesville, VA 22902
(434) 234-4405 (o)
(434) 220-3712 (f)
info@gallooislandwind.com

(4) Principal Officer

Galloo is a member managed entity. Its managing member is Apex GCL, LLC. Contact information is:
c/o Apex Clean Energy, Inc.
Court Square Building
310 4th Street NE, Suite 200
Charlottesville, VA 22902
(315) 215-2934 (o)
(434) 220-3712 (f)

(5) Document Service

Comments or questions about the Facility should be directed to Cat Mosley, Public Affairs Manager.

(6) Type of Business

Galloo Island Wind, LLC ("Galloo"), is a limited liability company incorporated under the laws of the State of Delaware and is an indirect subsidiary of Apex.

(7) Documents of Formation

The facility will be owned by Galloo Island Wind, LLC. The certification of formation for Galloo Island Wind, LLC is included as Appendix C to this PSS.

2.2 OVERVIEW AND PUBLIC INVOLVEMENT

(a) Brief Description of the Proposed Facility

The proposed Facility is a utility scale wind facility located on Galloo Island, Lake Ontario in the Town of Hounsfield Jefferson County, New York. Galloo Island consists of approximately 1,966 acres of private and public land, and the general landscape is a mix of grass land and forest land. Stony Island is the nearest land mass, located approximately 2.5 miles east of Galloo Island, and the nearest location of the mainland is Stony Point in the Town of Henderson located approximately 6 miles to the east.

The Facility will consist of up to 32 utility scale wind turbines, with a generating capacity of 110.4 MW. Other proposed island components will include: access roads, above and underground collection lines, collection substation (including the main power transformers), two permanent met towers, one O&M building along with potable and waste water treatment, a barge landing site, a permanent structure for proposed overnight accommodations, a helicopter landing site, a borrow area, a temporary batch plant, and a temporary construction staging/laydown area. With regard to the permanent structure for proposed overnight accommodations, in addition to living quarters integrated into the O&M building the Applicant intends to utilize existing functional buildings that are already located on the Facility Site to be used as housing in times of inclement weather and/or extended stays at the Facility. All of these components collectively constitute the "Major Electric Generating Facility" as defined in 16 NYCRR 1000.2(v).

There are off-site ancillary features anticipated on the mainland (i.e., contractor parking, docking improvements), these are generally minor and/or will consist of using existing features. However, these off-site ancillary features are not considered to be a part of the "Major Electric Generating Facility" and will not be part of the Article 10 Application. Any off-site ancillary features will be subject to applicable state and local laws and regulations.

To deliver electricity to the New York State power grid, the Applicant proposes to construct a collection substation, an approximately 30 mile AC underwater cable outside of the Article 10 Facility Site, and a point of interconnection substation near the Mitchell Street Substation in Oswego, NY. Since the design of the AC underwater cable is greater than 100 kilovolts (kV) and the length exceeds 10 miles, this component of the Facility is considered a "Major Utility Transmission Facility" and will be regulated under and subject to Article VII of the Public Service Law.

The Application will provide a range of turbine models that may ultimately be selected. It is currently anticipated that the Facility will consist of up to 32 turbines. Currently, the proposed total length of access roads is approximately 14 miles. The proposed length of collection lines that will collect power from the turbines to deliver to the collection substation is approximately 14 miles. The collection station will step up electricity generated by the Facility turbines from 34.5 kV to 145 kV. The "low side" of the collection station (i.e., 34.5 kV) will be considered part of the Facility and fall under the jurisdiction of Article 10 of the PSL, and the "high side" of the collection station (i.e., 145 kV) is not considered part of the Facility and falls under the jurisdiction of Article VII of the PSL. See Figure 2 for a graphical depiction of Article 10 jurisdiction versus Article VII jurisdiction. Please see Section 2.32 of this PSS for additional information on the Article VII process.

The Article 10 Application will clearly depict all turbine locations, along with the footprint of all other Facility components subject to regulation under Article 10. However, to facilitate public and agency review of the PSS, a Preliminary Facility layout, based on a 32 turbine layout, is included herein as Figure 3.

(b) Brief Summary of the Application Contents

The Application will contain a complete analysis of all exhibits required under Part 1001 (Content of an Application) except the following that are assumed to not apply to the proposed Facility:

- Exhibit 7: Natural Gas Power Facilities
- Exhibit 16: Pollution Control Facilities
- Exhibit 30: Nuclear Facilities
- Exhibit 36: Gas Interconnection
- Exhibit 37: Back-up Fuel
- Exhibit 38 Water Interconnection
- Exhibit 39: Wastewater Interconnection
- Exhibit 41: Application to Modify or Build Adjacent

(c) Brief Description of the Public Involvement Program before Submission of Application

The initial draft of the PIP was submitted to the Siting Board on June 16, 2015, comments on the PIP were received from the New York State Department of Public Service ("DPS") on July 15, 2015, and the PIP was updated, finalized and filed by the Applicant on August 14, 2015. Please note, on May 9, 2016 an update to the PIP was provided to the Siting Board to update the project contact information. The PIP can be accessed, viewed and downloaded on the online case record maintained by the Siting Board ("DMM") and on the Facility-specific website maintained by the Applicant:

- (http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=15-F-0327)
- (http://www.gallooislandwind.com/)

The first goal of the PIP plan is to identify affected stakeholders. Exhibit 4 (Master List of Stakeholders) of the PIP presented this information. Applicant maintained and updated this master list which is presented in Appendix D of this PSS. The next step required for PIP implementation is consultation with stakeholders. In the PIP, a prescriptive plan for consulting with stakeholders was established (see Exhibit 8 of the PIP). To date, the Applicant has completed consultations as shown in Appendix B.

The Applicant is committed to transparent, thorough and responsible distribution of Project information to and from stakeholders and has a Facility specific website (www.gallooislandwind.com) which stakeholders and the public can submit comments and questions, along with a phone number (315 215-2934) to call with any questions and comments. The Applicant hosted public forums to distribute information about the Project and paper copies of all documents presented are now available at the following repositories:

- Hay Memorial Library; 105 South Broad Street, Sackets Harbor, NY 13685 (315-646-2228)
- Henderson Free Library; 8939 New York 178, Henderson, NY 13650 (315-938-7169)
- Oswego Public Library; 120 East 2nd Street, Oswego, NY 13126 (315-341-5867)

Electronic copies of significant Facility documents (i.e., PIP, PSS, Stipulations, Article 10 Application) are on the Applicants website, and all documents and filings are on the Facility-specific website (DMM) maintained by the Siting Board (http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=15-F-0327).

Prior to submission of the Article 10 Application, the Applicant intends to continue stakeholder education opportunities. The Applicant will continue to attend municipality meetings and will hold at least one additional public forum for education prior to submitting the Application. These stakeholder efforts will be tracked in a log summarizing the Facility's PIP activities to date, which is available on the Facility website.

(d) Brief Description of the Public Involvement Program after Submission of Application

Following submission of the Application, the Applicant will continue to attend Town Board meetings at the host municipalities. In addition, the Applicant will continue to be available to meet with other stakeholders such as the New York Sea Grant, Great Lakes Fishery Commission, International Joint Commission, and the Sackets Harbor Chamber of Commerce Economic Development Committee. The Applicant has met with representatives from the Henderson Guides Association and plans to participate in opportunities to provide education on the project.

The PIP, in Section 5.3, requires the Applicant to identify additional activities to encourage stakeholder participation during the certification process including hearing and decision phase and post-certification phase. These additional activities may include more public forums, participation in community events, or Project update mailings. The Applicant will continue to identify these additional activities and include additional detail/description in the Application.

All of the above ongoing PIP activities will be tracked and filed in the monthly log posted to the Applicants' website. Any stakeholder wishing to obtain information in regard to the project or provide comments may do so by emailing info@gallooislandwind.com. The Applicant will respond to suggestions and written comments or questions to the commenter and will summarize the response in an email log.

(e) Brief Overall Analysis

This section will provide an overview analysis of how the relevant and material facts from the Application, together with the information gleaned from the studies conducted in support of the Application, provide a basis for the Siting Board to make the required Findings on the proposed Facility and a decision to grant the Certificate.

2.3 LOCATION OF FACILITIES

(a) Topographic Maps

The Article 10 Application will provide maps showing the location of the components of the proposed Facility including up to 32 wind turbines, together with approximately 14 miles of associated electric collection lines and access roads, collection substation (including the main power transformers), two permanent met towers, one O&M building along with potable and waste water treatment, a barge landing site, a permanent structure for proposed overnight accommodations, a helicopter landing site, a borrow area, a temporary batch plant, and a temporary construction staging/laydown area. These Facility components will be mapped on the 2013 (or more recent) version of the United

States Geological Survey ("USGS") 1:24,000 edition Galloo Island and Point Peninsula topographic quadrangles available from the USGS National Map Viewer, which will include such features as contours, transportation with road names, streams and other water features, etc.

(1) Proposed Major Electric Generating Facility Locations

For the purposes of the Article 10 Application, the Facility Site will be defined as those parcels owned by or under the control of the Applicant and containing facility components, on Galloo Island. A map of the preliminary layout of all Facility components within the Facility Site is included as Figure 3 and contains the following:

- wind turbine generators
- access roads
- collection lines
- permanent meteorological towers
- substation facility
- O&M building, including wastewater treatment
- laydown/staging areas
- batch plant
- barge landing site
- helicopter landing site
- fuel storage area
- waste disposal area
- potable water intake
- on site generator (diesel/propane)

As explained in Section 2.9 on Alternatives, the presentation of the location of alternatives in Exhibit 9 of the Article 10 Application will be limited to locations owned by or under the control of the Applicant.

(2) Interconnection Location

As indicated above, all Facility components that are subject to Article 10 will be located within the defined Facility Site and therefore will be mapped in accordance with (a)(1) of this section of the Article 10 Application. The point of interconnect ("POI") is subject to Article VII of the PSL, and therefore will not be evaluated in the Article 10 application.

(3) Location of Ancillary Features

Off-site ancillary features associated with the Facility will be located on the mainland, and are anticipated to include the following:

- Temporary parking for construction workers
- Temporary public road improvements (e.g., intersection geometry)
- Temporary construction offices
- Dock improvements

These off-site ancillary features are not subject to the Board's jurisdiction under PSL Article 10, but will be mapped in accordance with the Article 10 regulations.

(4) Location of Article VII Transmission Lines Not Subject to Article 10

The Related Transmission Facility components of this project are subject to Article VII of the PSL. As currently conceived, the RTF includes the "high side" of the collection substation on Galloo Island, an approximately 30 mile AC underwater 145kV transmission line, and a point of interconnection substation near the Mitchell Street Substation in Oswego, NY. A preliminary map of these components and their proposed location is provided as Figure 2, and will also be mapped in the Article 10 application. See Section 2.32 for additional information on the Article VII process.

(5) Study Area

The study area for a given resource is generally related to the context of that resource. For instance, the study area for terrestrial ecological communities is essentially equivalent to Galloo Island, whereas the study area for transportation analyses will be associated with Great Lakes shipping routes, ports, and/or roadways. These study areas are addressed in more detail in the respective sections of this PSS.

As indicated in Section 2.24 of this PSS (Visual Impacts), a preliminary visibility assessment and identification of visually sensitive resources will include the area within 15 miles of the proposed Facility boundary. The purpose of including analysis out to 15 miles is to identify any regionally significant areas or resources of concern.

(b) Municipal Boundary Maps

Data from the United States Census Bureau (TIGER/line files), the NYS GIS Clearing House, and from ESRI Online will be used to map the Facility in relation to municipal boundaries, taxing jurisdictions, and designated neighborhoods or community districts.

(c) Description of Proposed Facility Locations

The Facility will be located on private land on Galloo Island in the Town of Hounsfield, Jefferson County, New York. The Facility will include up to 32 wind turbines, together with approximately 14 miles of associated electric collection lines and access roads, collection substation (including the main power transformers), two permanent met towers, one O&M building along with potable and waste water treatment, a barge landing site, a permanent structure for proposed overnight accommodations, a helicopter landing site, a borrow area, a temporary batch plant, and a temporary construction staging/laydown area. With regard to the permanent structure for proposed overnight accommodations, in addition to living quarters integrated into the O&M building, the Applicant intends to utilize existing functional buildings that are already located on the Facility Site to be used as housing in times of inclement weather and/or extended stays at the Facility. A written description of the relation of the Facility to affected municipalities, taxing jurisdictions, and designated neighborhoods or community districts (if any) will be provided in the Article 10 Application.

2.4 LAND USE

The Facility will be located on Galloo Island, which is approximately 6 miles from the mainland, therefore the evaluation of land uses will be limited to Galloo Island.

(a) Map of Existing Land Uses

A map of existing land uses on Galloo Island will be prepared using publicly available data from the Jefferson County Real Property Department and the Classification codes of the New York Office of Real Property Services ("NYSORPS"). It is anticipated that the following classification codes will be used: 100 – Agricultural; 200 – Residential; 300 – Vacant Land; 400 – Commercial; 500 – Recreation and Entertainment; 600 – Community Services; 700 – Industrial; 800 – Public Services; 900 – Wild, Forested, Conservation Lands and Public Parks. Land use will be further described, refined, and mapped based on site-specific investigations and documentation.

(b) Transmission Facilities Map

There are no existing overhead and underground major transmission facilities for electric, gas or telecommunications on Galloo Island.

(c) Tax Parcel Map

The Article 10 Application will include a map depicting parcels where Facility components will be located, along with all remaining parcels on Galloo Island. The map will show land use, tax parcel number, and owner of record of each property, and any publically known proposed land use plans for any of these parcels. Data will be obtained from the Jefferson County Real Property Department.

(d) Zoning District Map

A map delineating existing and proposed zoning districts on Galloo Island will be created by data obtained from local governments. The Article 10 Application will also include an associated description of the permitted and prohibited uses within each zone.

(e) Comprehensive Plan

The Article 10 application will include a detailed review of the Town of Hounsfield Comprehensive Plan, adopted by the Town of Hounsfield Town Board in June of 2014 (http://www.townofhounsfield-ny.gov/pdf/Hounsfield-lo-res-2014.pdf). The Application will also describe if the proposed Facility land use is consistent with the Town of Hounsfield Comprehensive Plan. The NYSDEC Lake Ontario Lakewide Action and Management Plan will also be reviewed and a detailed review will be included with the Article 10 Application. Please note that Jefferson County does not have a comprehensive plan.

(f) Map of Proposed Land Uses

Maps of publicly known proposed land uses on Galloo Island will be developed from publically available data sources, planning officials input, review with them of pending applications, the PIP implementation/PSS development process, and/or other sources. For example, such discussions with the New York State Office of Park, Recreation and Historic Preservation ("NYSOPRHP") have resulted in the identification of data associated with trails which have or will be implemented at various state parks on the shore of Lake Ontario. The Applicant will coordinate with NYSOPRHP to obtain updated trail data to be provided in the Application.

(g) Map of Specially Designated Areas

Maps designating coastal areas, inland waterways, and other specially designated areas on Galloo Island will be created using the following data:

Table 1. Sources of Data to Be Used In Mapping of Specially Designated Areas

Mapping Requirement	Source
Designated coastal areas.	NYS GIS Clearinghouse, NYS Dept. of State
Inland waterways and local waterfront revitalization program areas.	NYS GIS Clearinghouse, NYS Dept. of State
Groundwater management zones.	NYS GIS Clearinghouse
Agricultural districts.	NYS GIS Clearinghouse
Flood prone areas.	NYS GIS Clearinghouse, FEMA
Critical environmental areas.	NYSDEC

(h) Map of Recreational Areas and Other Sensitive Land Uses

Maps of all recreation areas and other sensitive land uses known to the Applicant on Galloo Island will be created using the following data:

Table 2. Sources of Data to Be Used In Mapping of Recreational and Sensitive Areas.

Requirement	Source
Wild, scenic and recreational river corridors.	National Wild and Scenic Rivers System.
Open space.	NYS GIS Clearinghouse and local governments as available.
Areas identified in the Adirondack Park State Land Master Plan.	Not applicable
Conservation easement lands.	National Conservation Easement Database; NYS GIS Clearinghouse
State and federal scenic byways.	NYSDOT; NYS GIS Clearinghouse
Nature preserves.	NYS GIS Clearinghouse
Designated trails.	NYS GIS Clearinghouse and local Governments as available
Public-access fishing areas.	NYS GIS Clearinghouse, NYSDEC
Major communication and utility uses and infrastructure.	Comsearch or other equally qualified vendor.

Requirement	Source
Institutional, community and municipal uses and facilities	ESRI; TIGER/line files; NYS GIS Clearinghouse

(i) Compatibility of the Facility with Existing and Proposed Land Uses

The Facility will be located on Galloo Island which is private property and is approximately 6 miles from the mainland. The majority of Galloo Island is comprised of a single 1,935-acre parcel primarily used as a seasonal residence classified as an estate. The rural landscape is used for hunting, fishing, and other outdoor recreational activities. Aerial photography (United States Department of Agriculture's ("USDA") National Agriculture Imagery Program, 2015) reveals a predominately undeveloped landscape comprised mostly of deciduous forest, grasslands, shrub/scrub, and active agriculture.

The Facility's consistency with local and regional plans will be summarized in the Article 10 Application, including the Jefferson County, New York Comprehensive Economic Development Strategy 2012, the North Country Regional Economic Development Council – Strategic Plan 2012, the North Country Regional Sustainability Plan- Cleaner, Greener Communities, and the North Country Regional Economic Development Council – Upstate Revitalization Initiative. Additional detail regarding the Facility's compatibility with existing and proposed land uses will be included in the Article 10 Application.

(j) Compatibility of Above-Ground Interconnection with Existing and Proposed Land Uses

It is currently anticipated that the Facility may use above-ground interconnect and collector lines where necessary, including (but not limited to) crossing of wetlands, and a detailed assessment of compatibility with existing and proposed land uses will be presented in the Article 10 Application. Since the Facility is located on one parcel, which occupies the majority of the island and is zoned Marine, it is anticipated the proposed above-ground interconnection is compatible with existing land use.

(k) Compatibility of Underground Interconnections with Existing and Proposed Land Uses

A detailed assessment of the compatibility of underground interconnects with existing, potential, and proposed land use within 300 feet of the interconnects will be presented in the Article 10 Application. The construction of buried interconnects in open land will result in a temporary disturbance; however, these disturbed areas will be restored following construction. Therefore, permanent land use impacts associated with underground interconnects are not

anticipated. In addition, to minimize impacts in forested land, buried underground interconnect will be placed in areas of existing disturbance to the maximum extent practicable.

(l) Conformance with the Coastal Zone Management Act

The Facility location is within a designated coastal area. Therefore, conformance with the Coastal Zone Management Act is applicable and will be analyzed in the Article 10 application. It should be noted that, the "DEC previously determined that the [Hounsfield] project is consistent with the State's coastal policies." This section of the Application will look at changes and updates to the State's coastal policies and consistency with the State's energy policies for development of renewable energy sources in the State and update the information that was previously presented in the SEQRA record for the Hounsfield Project.

(m) Aerial Photographs

In satisfaction of this requirement, the Article 10 Application will use 1-meter resolution natural color orthoimagery from the USDA National Agriculture Imagery Program captured during the 2015 growing season. The aerial photograph mapping will be prepared for all properties on Galloo Island, and will be depicted on multiple 8.5 x 11 or 11x17 sheets at a scale that will allow the identification and discrimination of natural and cultural features.

(n) Aerial Photograph Overlays

The Facility footprint will be overlaid on aerial photographs. These maps will be created using ArcGIS software and will depict centerlines of proposed access roads and electrical collection and transmission lines, point symbols to depict turbine and permanent meteorological tower locations, and polygon symbols to depict substations, operation and maintenance buildings, and construction laydown areas.

(o) Source of Aerial Photographs

The aerial photographs to be used will be those captured in May of 2015 by USDA's National Agriculture Imagery Program and are available through the USDA Geospatial Data Gateway (http://datagateway.nrcs.usda.gov/), unless more recent photographs are available, and readily known to be available by the Applicant.

(p) Community Character

A description of community character on Galloo Island will be included in the Article 10 Application, including defining features and interactions of the natural, built and social environment, and taking into account local land use and zoning.

The compatibility of the Facility with the existing and proposed future uses will be evaluated in the Application in accordance with subpart (e) above.

The Article 10 Application will also address Facility-specific studies, such as a Visual Impact Assessment (see Exhibit 24) and Cultural Resources Studies (see Exhibit 20). In addition to evaluating potential effects on their respective resources, these studies will also be used to evaluate the Facility's potential effects on community character.

Any effect the Facility might have on the Watertown (ART) and Kingston/Normon (YGK) airports will be addressed in Exhibit 25 (Effect on Transportation) of the Article 10 Application.

2.5 ELECTRIC SYSTEM EFFECTS

The Applicant proposes a Related Transmission Facility ("RTF") to carry power from Galloo Island to the mainland, along NY State owned submerged lands, via a submarine power cable to be interconnected to the existing electrical grid. As currently conceived, the RTF includes the "high side" of the collection substation on Galloo Island, an approximately 30 mile AC underwater 145kV transmission line, and a point of interconnection substation near the Mitchell Street Substation in Oswego, NY. The RTF components of this Facility are subject to Article VII of the PSL, and therefore will not be evaluated in the Article 10 application.

(a) System Reliability Impact Study

A System Reliability Impact Study ("SRIS") will be prepared for the Facility on behalf of the New York Independent System Operator ("NYISO"). The SRIS is scheduled to be completed late summer 2016. The SRIS contains critical infrastructure information and is required by NYISO to remain confidential. The SRIS will be submitted and filed under separate confidential cover pursuant to Section 87(2)(d) of the New York State Public Officers Law and the Commission's regulations and 16 NYCRR 6-1.4.

(b) Potential Reliability Impacts

The Article 10 Application will describe the impact of the proposed Facility and interconnection on transmission system reliability in the State in detail.

(c) Benefits and Detriments of the Facility on Ancillary Services

The Article 10 Application will provide greater detail on benefits and detriments of the Facility on ancillary services and the electric transmission system, including impacts associated with reinforcements and new construction necessary as a result of the Facility.

(d) Reasonable Alternatives to Mitigate Adverse Reliability Impacts

The draft Facility Study performed by NYISO in the spring of 2016 found no adverse reliability impacts. Therefore there will be no discussion in the Application of any reasonable alternatives that would mitigate adverse reliability impacts.

(e) Estimated Change in Total Transfer Capacity

The Article 10 Application will provide an estimate of the increase or decrease in the total transfer capacity across each affected interface. If a forecasted reduction in transfer capability across affected interfaces violates reliability requirements, the discussion will include an evaluation of reasonable corrective measures that could be employed to mitigate or eliminate said reduction.

(f) Criteria, Plans, and Protocols

(1) Applicable Engineering Codes, Standards, Guidelines, and Practices

The Facility and interconnection will be designed in accordance with applicable standards, codes, and guidelines. Such standards include (but are not limited to):

- ANSI - American National Standards Institute,
- IEEE - Institute of Electrical and Electronic Engineers,
- ASTM - American Society for Testing and Materials,
- OSHA - Occupational Safety and Health Administration,
- NESC - National Electrical Safety Code,
- ASCE – American Society of Civil Engineers,
- NEC – National Electric Code,
- NERC – North American Electric Reliability Council,
- NPCC - Northeast Power Coordinating Council, Inc.,
- NYSRC - New York State Reliability Council,
- Building Code of New York State,

The Article 10 Application will describe which codes and standards are applicable to each Facility and interconnection component.

(2) Generation Facility Type Certification

The Article 10 Application will provide typical type certifications for the wind turbine models under consideration to be installed at the proposed Facility, if they are available. This submittal will also include any supporting documents issued by the certifying organization.

(3) Procedures and Controls for Inspection, Testing, and Commissioning

Turbine commissioning will occur once the wind turbines and substation are fully installed and the NYISO is ready to accept transport of power to the New York grid. The commissioning activities will consist of testing and inspection of electrical, mechanical, and communications systems. The Article 10 Application will fully describe these procedures, which are summarized below:

- Equipment Required: Support trucks, which will be driven to the construction site.
- Materials brought on site: Gearbox oil, lubricating grease, two temporary portable generators. The only chemicals required for this phase are oils, gasoline, and grease used to operate construction equipment and portable generators, gearbox oil, and lubricants. Fuel-handling will be conducted in compliance with the required mitigation measures and the Facility-specific NYSDEC approved SWPPP.
- Material generated: Some packing material waste will be generated. The recyclable material will be separated from the non-recyclable material on site. Both streams of waste will be removed by a licensed sub-contractor.

(4) Maintenance and Management Plans, Procedures, and Criteria

Operation and maintenance of the Facility will follow industry standard best management practices, to be incorporated into the Facility-specific plans and procedures. To maintain and operate Galloo Island Wind, the Facility will be staffed by full time technical and administrative employees. The primary workers will be wind technicians, along with a site supervisor and administrator. O&M staff offices will be located in the O&M building. Staff will be on duty during normal business hours, with weekend shifts and extended hours as required. The Facility will always have an on-call local technician who can respond in the event of any emergency. In the event of turbine or facility outages, the supervisory control and data acquisition ("SCADA") system will send alarm messages to on-call technicians to notify them of the outage. The wind turbines will typically be operating whenever

wind speeds are within the operating range and there are no component malfunctions or NYISO grid constraints. Each turbine has a comprehensive control system that monitors the subsystems within the turbine and the local wind conditions to determine whether the conditions are suitable for operation. If an event occurs which is considered to be outside the normal operating range of the turbine (such as low hydraulic pressures, unusual vibrations, or high generator temperatures), the wind turbine will immediately and automatically shut down and report the condition to the operations center. A communication line connects each turbine to the operations center, which closely monitors and, as required, controls the operation of each turbine. The wind turbine system will be integrated with the electric interconnection SCADA system to ensure that the Facility critical controls, alarms, and functions are properly coordinated for safe and reliable operation.

The Facility's Operations and Maintenance Plan will be submitted with the Article 10 Application. Additional information about what this plan will contain is provided below in section (i).

(g) Heat Balance Diagrams

Since there is no thermal component, this requirement is not applicable to the proposed Facility.

(h) Interconnection Substation Transfer Information

(1) Description of Substation Facilities to be Transferred and Timetable for Transfer

National Grid is the connecting transmission owner for this Facility. The point of interconnection ("POI") will be a new National Grid 115 kV 3 breaker ring bus to be constructed along the Indeck to South Oswego line segment. The Article 10 Application will describe the substation facilities to be transferred and provide a timetable for the transfer.

(2) Transmission Owner's Requirements

The Article 10 Application will describe how the substation-interconnection design meets the transmission owner's requirement. In summary, the POI will be designed to National Grid's standards (i.e., the transmission owner), and will be in accordance with their requirements.

(3) Operational and Maintenance Responsibilities

National Grid, as the transmission owner, will define the operational and maintenance responsibilities for the POI substation. The Applicant will assume such responsibilities, to be implemented in accordance with the transmission owner's standards, as directed by National Grid.

(i) Facility Maintenance and Management Plans

The Applicant will be responsible for the operation, inspection, and maintenance requirements of all Facility components. These activities can generally be classified as scheduled inspection/maintenance, unscheduled maintenance/repairs, or electrical system inspection/maintenance. Each of these are briefly described below.

(1) Turbine Maintenance and Safety Inspections

All maintenance and repair activities will be in accordance with applicable permits and associated conditions. To the extent practicable, repairs will be facilitated through use of existing Facility-related infrastructure (e.g., permanent gravel access roads, crane pads, etc.). If existing infrastructure is not adequate to accommodate certain repairs, any additional infrastructure improvements will be conducted in accordance with the applicable regulations (e.g., widening of an access road within or adjacent to a wetland will be conducted in accordance with Section 401 and 404 of the Clean Water Act, and Article 24 of the Environmental Conservation Law, as applicable).

Scheduled Inspection and Maintenance

Routine and preventative wind turbine maintenance activities are scheduled at six month intervals with specific maintenance tasks scheduled for each interval. Maintenance is done by removing the turbine from service and having two to three wind technicians climb the tower carrying out maintenance activities.

Consumables such as various greases used to keep the mechanical components operating and oil filters for gearboxes and hydraulic systems are used for routine maintenance tasks. Following all maintenance work on the turbine, the area is cleaned up. All surplus lubricants and grease-soaked rags are removed and disposed of as required by applicable regulations. All maintenance activities will adhere to the same spill prevention industry best practices undertaken during the construction phase.

Unscheduled Maintenance/Repairs

Modern wind turbines are very reliable and the major components are designed to operate for over 20 years. However, wind turbines are large and complex electromechanical devices with rotating equipment and many

components. As a result, at times, turbines will require repair, most often for small components such as switches, fans, or sensors; typically, such repairs will take the turbine out of service for a short period of time until the component is replaced. These repairs can usually be carried out by a single technician visiting the turbine for several hours. Events involving the replacement of a major component such as a gearbox or rotor are not typical. If they do occur, the use of large equipment, sometimes as large as that used to install the turbines, may be required. Typically only a small percentage of turbines would need to be accessed with large equipment during their operating life.

(2) Electric Transmission and Collection Line Inspections

(i) Vegetation Clearance Requirements

Vegetation control will be required immediately adjacent to the interconnect line to ensure safe operation and prevent damage to the line. The Article 10 Application will provide the vegetation clearance requirements for the gathering and interconnect lines associated with the Facility.

(ii) Vegetation Management Plans and Procedures

Vegetation will be managed in accordance with best management practices, to be incorporated into the Facility-specific plans and procedures. The Facility's Vegetation Management Plan will be submitted with the Article 10 Application.

(iii) Inspection and Maintenance Schedules

The electrical system will require periodic preventative maintenance. Routine maintenance will include condition assessment for aboveground infrastructure and protective relay maintenance of the substation, in addition to monitoring of the secondary containment system for traces of oil. The Article 10 Application will contain an inspection and maintenance schedule for the electrical system associated with the Facility.

(iv) Notifications and Public Relations for Work in Public Right-of-Ways

If work is to be performed in a public right-of-way, notification and any permit(s) to work will be addressed with the appropriate agencies prior to starting the work. However, due to the remote location of the Facility there is no work anticipated in public right-of-ways.

(v) Minimization of Interference with Distribution Systems

The Article 10 Application will describe measures that will be used to minimize interference with electric and communications distribution systems associated with the Facility.

(j) Vegetation Management Practices for Substation Yards

The Article 10 Application will describe vegetation management practices for switchyard and substation yards, specifications for clearances, inspection and treatment schedules, and environmental controls to avoid off-site effects. The vegetation management practices for substation yards will be included in the Facility's Vegetation Management Plan, to be submitted with the Article 10 Application in accordance with Section (i)(2)(ii) above.

(k) Criteria and Procedures for Sharing Facilities with Other Utilities

The Article 10 Application will describe the criteria and procedures by which the Applicant will review proposals for sharing above ground facilities with other utilities (e.g., communications, cable, phone, cell phone relays, etc.).

(l) Availability and Expected Delivery Dates for Major Components

The Article 10 Application will provide an assessment of equipment availability and expected delivery dates for major Facility components, including wind turbines and transformers.

(m) Blackstart Capabilities

Blackstart is the procedure to recover from a total or partial shutdown of the transmission system. It entails isolated power stations being started individually, and then gradually being reconnected to each other to re-establish an interconnected system. In general, power stations need an electrical supply to start up; under normal operation this supply would come from the transmission or distribution system. Under emergency conditions, blackstart stations receive this electrical supply from small auxiliary generating plant located onsite. Not all power stations have or need blackstart capability (National Grid, 2015). Wind energy facilities, such as the proposed Facility, are not designed for blackstart and must rely on the grid to be energized to start generating.

2.6 WIND POWER FACILITIES

(a) Statement of Setback Requirements/Recommendations

The primary goal of wind turbine siting and design is to maximize the capture of wind energy to assure economic viability, while providing a design that minimizes environmental impacts and meets turbine vendor site suitability requirements and local law considerations. As such, this is an iterative process with the final Facility array design reflecting a balance of these factors. The proposed location and spacing of the wind turbines and support facilities is initially based upon site develop-ability, landowner participation, wind resource assessment, environmental resource factors, proximity to existing transmission and review of the site's zoning constraints. Factors considered during preliminary and final placement of turbines and other Project components include the following:

- Wind Resource Assessment
- Distance from Residences and Other Buildings, Non-participating Land Parcels, Roads, and Other Infrastructure
- Sufficient Spacing (i.e., avoid turbine wake effects)
- Biological and Cultural Resources
- Unusual Landform Areas
- Wetland Avoidance
- Minimization of Visual, Shadow Flicker and Noise Impacts

As indicated previously, up to 32 wind turbines, together with approximately 14 miles of associated electric collection lines and access roads, collection substation (including the main power transformers), two permanent met towers, one O&M building along with potable and waste water treatment, a barge landing site, a permanent structure for proposed overnight accommodations, a helicopter landing site, a borrow area, a temporary batch plant, and a temporary construction staging/laydown area will be located completely on Galloo Island in Lake Ontario. One of the primary objectives of developing the Facility layout has been to avoid and/or minimize interaction with sensitive natural resources (e.g., wetlands, streams). More detailed discussion on the Facility's relationship to these features and other resources, such as historic properties is provided in other sections of this PSS, and will be further detailed in the respective sections of the Article 10 Application.

(1) Manufacturer's Setback Specifications

The Article 10 Application will outline how the Applicant plans to meet the manufacturer's setback specifications, if any. The Applicant is not currently aware of any such manufacturer specifications; however, the Article 10 Application will provide a review of manufacturer setback specifications (to the extent available) for the range of potential turbines to be presented in the Application.

(2) Applicant's Internal Setback Standards

When identifying appropriate setbacks for a given project, the Applicant generally considers the following: a) abiding by any applicable regulations, b) ensuring the safety of public and neighboring parcels by siting turbines away from non-participating property lines, and other residential infrastructure at a distance of at least the maximum blade tip height, c) minimizing impacts at residential or other sensitive structures related to sound or shadow flicker, and d) minimizing impacts to sensitive resources such as wetlands. However, this Facility does not have the typical set of constraints given its location on Galloo Island, well removed for occupied residences, etc. The Applicant's setbacks specific to this Facility location will be set forth in the Application.

(3) Setbacks Required by Local Law or Ordinance

Zoning jurisdiction within Jefferson County is at the Town level. The Town of Hounsfield has not adopted laws specific to large scale wind energy development and therefore does not have any local laws or ordinances specifically governing wind turbines. As such there are no local laws or ordinances specifically pertaining to setbacks for turbines. The Town of Hounsfield does have generic setback requirements for uses in the Marine District. The Applicant will further discuss applicable substantive laws, including setback requirements, in Exhibit 31 of the Application.

(b) Explanation of the Degree to which the Facility Layout Accommodates Turbine Setbacks

The Facility's adherence to all appropriate setbacks will be addressed in the Application.

(c) Third-party Review and Certification of Wind Turbines

Equipment reliability is an important criterion in turbine selection. The Applicant has not made a final determination of the wind model or manufacturer. However, based on preliminary evaluations, 3.0 to 3.6MW represent the range of turbine size types considered for this Facility. These turbines are independently certified as meeting international design standards by independent product safety certification organizations such as Germanischer Lloyd and Underwriters Laboratories. These certifications require that the wind turbines have a design life of at least 20 years for the specified wind regime. The wind regime considers factors such as weather extremes, average wind speed, wind gusts, and turbulence intensity. The Article 10 Application will include a discussion regarding the status and results of third-party review and certification (type and project) of wind turbines proposed for construction and operation at the electric plant.

(d) Wind Meteorological Analyses

The intent of the wind resource analysis is to optimize the turbine layout to maximize energy production within the context of the existing, site-specific constraints. During the course of the wind analysis, micro-scale wind modeling tools such as OpenWind is utilized in order to develop the energy yield analysis for the given layout. The OpenWind model is a linear flow model, which will determine the resultant wind regime at all turbine positions given data from on-site meteorological towers and high-resolution terrain from a digital elevation model. Four meteorological towers were erected to generate the site-specific data necessary for modeling purposes. A preliminary turbine layout is then devised utilizing the resulting wind resource map from the OpenWind model. The final layout is determined by correlating the most energetic layouts with the most constructible and logistically economical designs. The detailed results of these analyses are proprietary and are typically retained as trade secrets. The Applicant will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

2.7 NATURAL GAS POWER FACILITIES

The proposed Facility is a Wind Power Facility, and as such, the requirements of this exhibit are not applicable.

2.8 ELECTRIC SYSTEM PRODUCTION MODELING

(a) Computer-based Modeling Tool

The analyses presented in this section of the Article 10 Application will be developed using GEMAPS, PROMOD, or a similar computer-based modeling tool. Prior to preparing this exhibit, the Applicant shall consult with DPS and NYSDEC (to the extent necessary) to develop an acceptable input data set to be used in the simulation analyses, including modeling for the Applicant's proposed facility and inputs for the emissions analysis. Portions of the data to be provided below are proprietary and are typically retained as trade secrets. The Applicant will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

(1) Estimated Statewide Levels of Greenhouse Gas Emissions

Wind turbines generate electricity without combusting fuel or releasing pollutants into the atmosphere. The operation of this Project is anticipated to have a positive impact on air quality by producing electricity with zero emissions (except for very small emissions from vehicles servicing the facility). The Article 10 Application will estimate the statewide levels of SO2, NOx, and CO2 emissions both with and without the proposed Facility, at in service date.

(2) Estimated Prices Representative of all NYISO Zones

The Article 10 Application will estimate the minimum, maximum, and average annual spot prices representative of all NYISO Zones within the New York Control Area, both with and without the proposed facility.

(3) Estimated Capacity Factor

The Article 10 Application will provide the estimated capacity factor for the proposed facility. A wind resource campaign consisting of at least two meteorological towers equipped with anemometers, wind vanes, temperature and pressure sensors will be completed with at least 12 full and concurrent months of measurements at multiple heights from the surface to 60 meters above ground level. The data from these measurements is validated and screened for erroneous values to create annual wind frequency distributions at each mast position. Based on the observed time period of the measurements compared to a nearby long-term reference station, the observed mast data is adjusted to represent a long-term average at the positions to reduce the variability with time. Wind speed data from at least two levels on each mast will then be used to extrapolate and predict the mean wind speeds at the planned hub height of the wind turbines, and computer wind flow models will horizontally extrapolate this data to the wind turbine positions based on topography and elevation difference. A long-term adjusted and annual wind frequency distribution at each turbine position is then calculated in the wind flow model. From this validated and long-term adjusted distributions at each turbine position, the overall wind farm gross production is calculated based on the specific turbine power curve and the turbine specific wind distribution. Typical losses assumptions for availability, environmental, curtailment and any other potential sources of energy losses are then taken from the gross production to yield a long term net energy yield and capacity factor.

(4) Estimated Annual and Monthly Output Capability Factors

The Article 10 Application will provide the estimated annual and monthly, on peak, shoulder, and off-peak MW output capability factors for the proposed facility. Data collection from the masts consist of 10 minute average values for wind speed, wind direction, ambient temperature and pressure. Gross monthly averages are determined from the observed 10 minute data in each specific month and long-term adjustments are made to the monthly data set based on historical monthly norms as described in (3) above. Based on the long-term adjusted average energy yield for each month, a monthly energy distribution for the year can be determined. Monthly specific loss assumptions for availability, environmental and curtailment are then taken from the gross monthly production distribution to yield a long term net monthly energy yield. Based on the number of days in each month and the predicted net energy yield for that month, a monthly net capacity factor is determined. An annual net capacity

factor can be determined from the sum of all monthly net energy yields and the total now of hours in each specific year.

(5) Estimated Annual and Monthly Production Output

The Article 10 Application will provide the estimated average annual and monthly production output for the facility in megawatt-hours ("MWh"). Monthly energy yield averages are determined from the observed 10 minute data in each specific month and long-term adjustments are made to the monthly data set based on historical monthly norms as described in (3) above. Based on the long-term adjusted average energy yield for each month, a gross monthly energy distribution for the year can be determined. Monthly specific loss assumptions for availability, environmental and curtailment are then taken from the gross monthly production distribution to yield the 12 estimated monthly productions in MWh. An annual production output is determined from the sum of all monthly net energy yields in MWh.

(6) Estimated Production Curve Over an Average Year

The Article 10 Application will provide an estimated production curve for the facility over an average year. The long-term adjusted annual wind frequency distributions at each turbine position calculated in the wind flow model, produces the number of hours at each specific wind speed bin for each turbine position. The specific wind turbine power curve will show the expected production at each wind speed bin. Combining these two sets of data at each turbine yields the expected annual production curve (MWh at each wind speed). The sum of all turbine's production at each wind speed bin produces the facility estimated production curve over an annual year.

(7) Estimated Production Duration Curve Over an Average Year

The Article 10 Application will provide an estimated production duration curve for the facility over an average year. An estimated production duration curve can be calculated based on the long-term adjusted annual wind frequency distributions at all turbine positions and the specific turbine power curve. Each turbine's wind frequency distribution will describe the number of hours at each wind speed and resulting power level in MWh. The sum of all hours at each specific power level from all turbines results in a facility production duration curve (total Power in MWh versus number of hours expected at those MWh levels).

(8) Effect of the Facility on the Energy Dispatch of Existing Must-run Resources

The Article 10 Application will describe the estimated effects of the proposed facility on the energy dispatch of existing must-run resources, to include existing wind, hydroelectric and nuclear facilities, as well as cogeneration facilities to the extent they are obligated to output their available energy because of their steam hosts.

(b) Digital Copies of Inputs Used in the Above Simulations

The Article 10 Application will provide digital copies of all inputs used in the simulations required in subdivision (a) of this section. The Applicant will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

2.9 ALTERNATIVES

(a) Description of Reasonable Alternative Location Sites

In order to create an economically viable wind-powered electrical-generating facility, which will provide a significant source of renewable energy to the New York power grid, the Applicant proposes to take advantage of the available wind resource on Galloo Island. The preferred alternative is to construct a facility that can produce up to 110.4 MW of renewable energy. This will be enough electricity to meet the average annual consumption of approximately 45,000 households, based on average annual electric consumption of 10.9 MWh for the U.S. and 7.1 MWh for New York State, respectively (USEIA, 2015).

Given the unique nature of Galloo Island, it is not feasible to describe reasonable and available alternate location sites for the proposed on-island Facility location. In addition, please also note that the Applicant is a private facility applicant, does not have, and does not anticipate having, eminent domain authority, and therefore the identification and description of reasonable and available alternate site locations to be addressed in the Article 10 Application will be limited to sites owned by or under contract to the Applicant. Irrespective to this, it is worth noting that the preliminary selection of wind turbine locations on a regional or statewide basis is constrained by several factors that are essential for the Facility to operate in a technically and economically viable manner. These factors include the following:

- adequate wind resource
- adequate access to the bulk power transmission system, from the standpoints of proximity and ability of the system to accommodate the interconnection and accept and transmit the power from the Facility
- contiguous areas of available land
- compatible land use
- willing land lease participants and host communities
- limited population/residential development

- avoiding areas of high statewide significance and/or environmental sensitivity

One of the major benefits of this Facility location is that it falls within a single remote property on Galloo Island. The Applicant does not intend to develop a full comparison between the proposed Facility Site and alternative locations, rather, the Article 10 Application will focus on comparing alternative project sizes and turbine arrangements that were previously analyzed for the DEIS, FEIS, and presented in the Findings Statement (see (c)(4) below for additional detail).

(b) Comparison of Advantages and Disadvantages of Proposed and Alternative Locations

Given the unique nature and constraints associated with the siting of wind-powered electric generation facilities (i.e. adequate wind resource, willing land lease participants and host communities, and adequate access to the bulk power transmission system), particularly on an island approximately 6 miles from the mainland, the Applicant does not intend on providing a fully developed evaluation of comparative advantages and disadvantages of alternate locations.

It is simply not practicable to procure land contracts, perform environmental and engineering studies, enter into and progress through multiple interconnection permit processes, and conduct community outreach for alternative locations. Additionally, the Applicant has selected an island location which has been previously evaluated for environmental impacts by the NYSDEC and deemed desirable for a wind farm. Therefore, the Applicant will provide the following general information in this section of the Article 10 Application regarding the Facility Site.

(1) Environmental Setting

The Facility Site is located within the Erie-Ontario Lowlands physiographic province of New York State (New York State Geologic Survey, 2016). The Facility Site is relatively flat, with elevations ranging from between 250 feet to 305 feet (amsl). The bedrock that underlies Galloo Island is chiefly composed of limestones from the Trenton Group, which were deposited 505 to 440 million years ago during the Ordovician Period (USDA 1989; New York State Museum 1991). The Article 10 Application will provide more detailed information on the environmental setting of the Facility.

(2) Recreational, Cultural, and Other Concurrent Uses of the Site

In regards to the comparison of alternate locations, the Article 10 Application will provide a summary of the previous applicable studies and reports conducted for the DEIS and FEIS, and where necessary provide more detailed and/or updated information on recreational, cultural, and other concurrent uses of the site.

(3) Engineering Feasibility

A Preliminary Geotechnical Evaluation is planned, including a literature review of publicly available data. This information will be used to specifically address the suitability of the on-site surface/subsurface conditions to support turbine foundations, and provide specific recommendations based on the site-specific conditions. With respect to interconnections, please see (b)(4) below.

As discussed in Section 2.6(d) of this PSS, the Applicant is conducting a rigorous wind resource analysis for this Facility, the intent of which is to optimize the turbine layout to maximize energy production within the context of the existing, site-specific constraints. The detailed results of these analyses are proprietary and are typically retained as trade secrets. Therefore, a copy of the wind meteorological analysis sufficient to meet the requirements of Exhibit 6 will not be provided with the Article 10 Application, but will be provided to the Hearing Examiners under separate cover with the requisite confidential protections. The Applicant will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

(4) Reliability and Electric System Effects

A Feasibility Study with NYISO was completed in 2016 to evaluate the feasibility of the project's interconnection to the New York State Transmission System. The Project will continue through the NYISO interconnection process to perform a System Reliability Impact Study (SRIS) and a Facility Study to evaluate the impact of the Facility on the reliability of the New York State Transmission System and to evaluate alternatives to eliminate adverse reliability impacts, if any, resulting from the Facility. The Facility is not expected to result in adverse impacts to transmission system; however, the Article 10 Application will provide a more detailed description of the effects of reliability with the Facility.

(5) Environmental Impacts

Despite the positive effects anticipated as a result of the Facility, its construction and operation will necessarily result in certain unavoidable impacts to the environment. The majority of these environmental impacts will be temporary, and will result from construction activities. However, long-term unavoidable impacts associated with operation and maintenance of the Facility are anticipated, and include turbine visibility from select (and distant) locations. The overall contrast of the turbines with the landscape, as determined through evaluation by an expert panel of landscape architects, will be detailed in the Article 10 Application. Facility operation may also result in a minor loss/change in wildlife habitat, and some level of avian and/or bat mortality associated with bird/bat collisions with the turbines. The significance of these impacts will be evaluated in the Article 10 Application. However, the

Facility is uniquely suited to meet the needs of New York's State Energy Plan, the Reforming Energy Vision and Clean Energy Standard, in that many of the potential impacts associated with the construction and operation of a wind farm near populated areas are avoided due to the location of the Facility on Galloo Island.

It should also be noted that electricity generated from zero-emission wind energy can displace the electricity generated from conventional power plants, thereby reducing the emissions of conventional air pollutants, such as sulfur and nitrogen oxides (acid rain precursors); mercury, and carbon dioxide (linked to global climate change). This conclusion is supported by a 2008 U.S. Department of Energy, National Renewable Energy Laboratory report that states, "Wind energy is a preferred power source on an economic basis, because the operating costs to run the turbines are very low and there are no fuel costs. Thus, when the wind turbines produce power, this power source will displace generation at fossil fueled plants, which have higher operating and fuel costs." On a long-term basis, wind generated power also reduces the need to construct and operate new fossil fueled power plants (Jacobsen & High, 2008). The proposed Facility is anticipated to have significant, long-term beneficial effects on the use and conservation of energy resources. The operating Facility will generate up to 110.4 MW of electricity without consuming cooling water or emitting pollutants.

(6) Economic Considerations

The Application will provide an estimate of the total capital costs of the Facility. This estimate will be more exact than an order of magnitude cost estimate but will nevertheless be only an estimate. Capital costs will include development costs, construction design and planning, equipment costs, and construction costs. The Application will include an internal work paper that describes the assumptions in estimating the total capital costs as described in 1001.14 (a). However, this information is proprietary and typically retained as trade secrets. Therefore, the Applicant will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

(7) Environmental Justice

As indicated in the PIP plan, and Section 2.28 of this PSS, the Facility is not expected to have an impact on any environmental justice areas.

(8) Security, Public Safety, and Emergency Planning

Since the Facility is located on one parcel of land with no public access overall safety and security risks associated with the Facility are anticipated to be minimal. The Article 10 Application will describe the methodology to be used

to determine potential security risks, during both construction and operation of the Facility. Please see Section 2.18 of this PSS (Safety and Security), which provides additional detail on preliminary plans for site security during construction and operation. As indicated in the DEIS and Section 2.18 of this PSS, an Emergency Action Plan ("EAP") will be developed before the start of construction and will outline the safety plans of the Facility throughout its lifecycle. The information contained in the EAP will be developed in conjunction with local emergency service providers, and will be made available to the employees of the Applicant and any visitors or workers to the Facility Site of the procedures to follow in the event of an emergency.

(9) Public Health

Since the Facility is sited on uninhabited Galloo Island and is approximately 6 miles from the mainland it is not expected to result in any public health concerns. See Section 2.15 of this PSS for additional detail.

(10) Vulnerability to Seismic Disturbances and Climate Change Impacts

Based on the 2014 New York State Hazard Map (USGS, 2014), the Facility is located in an area of relatively low seismic hazard, with a 2 % or less chance that peak ground acceleration in a 50 year window is between 8% and 10% of standard gravity. There are no mapped faults located within the immediate vicinity of the Facility (Jacobi, 2002). Furthermore, the USGS Earthquake Hazards Program does not list any young faults, or faults that have had displacement in the Holocene epoch within the vicinity of the Facility. The Article 10 Application will provide a more detailed description of the Facility's potential vulnerability to seismology.

With respect to climate change, as stated above electricity generated from zero-emission wind energy can displace the electricity generated from conventional power plants, thereby reducing the emissions of conventional air pollutants, such as sulfur and nitrogen oxides (acid rain precursors); mercury, and carbon dioxide (linked to global climate change). Displaced emissions occur because renewable electric generation sources have low marginal operating costs (i.e., fuel). Therefore, renewable energy sources become first run sources because of their low marginal operating cost, displacing generation at fossil fuel plants that have higher marginal operating costs. The proposed Facility is anticipated to have significant, long-term beneficial effects on the use and conservation of energy resources. The operating Facility will generate up to 110.4 MW of electricity without consuming cooling water or emitting pollutants.

(11) Objectives and Capabilities of the Applicant

The Applicant, Galloo Island Wind, LLC, is a privately held limited liability company and a wholly owned subsidiary of Apex Clean Energy Holdings, LLC. Apex is the managing entity of Galloo Island Wind, LLC. Apex's headquarters are located in Charlottesville, Virginia and the Galloo Island Wind, LLC, maintains a local Facility office in Sackets Harbor, New York. Apex Clean Energy is an independent renewable energy company focused on building utility-scale generation facilities. Apex is constructing one of the nation's largest, most diversified portfolios of renewable energy resources, capable of producing more than 12,000 MW of clean energy. Last year, Apex brought five new U.S. wind energy facilities online, comprising 1,160 MW of capacity. Apex's website is www.apexcleanenergy.com.

The objective of the proposed Facility is to create an economically viable wind-powered electrical-generating facility that will provide a source of renewable energy to the New York power grid to assist New York State in meeting its proposed State Energy Plan goal of 50% renewable energy by 2030.

(c) Description of Reasonable Alternatives to the Proposed Facility at the Proposed Location

Unlike state or municipal entities, Galloo Island Wind, LLC does not have the power of condemnation or eminent domain. Consequently, the Applicant does not have the unfettered ability to locate projects in any area or on any parcel of land. Facilities can only be sited on private property where the landowner has agreed to allow such construction. Moreover, private landowner agreements strictly limit the use of land to a wind power project, and as such, do not allow for the siting of other alternative energy production facilities (e.g., solar, hydro, biomass, or fossil fuel). Accordingly, other power generation technologies are not reasonable alternatives, and do not warrant consideration in the Article 10 Application.

(1) General Arrangement and Design

The general arrangement and design of the Facility is influenced by a number of factors, as discussed in detail in (c)(4) below.

(2) Technology

The turbines proposed for the Facility will utilize the latest in wind power generation technology to enhance Facility efficiency and safety and minimize impacts. Additional detail regarding wind turbine technology will be provided in the Article 10 Application.

(3) Scale or Magnitude

As mentioned previously, various siting constraints dictate the size and layout of a wind power project. These constraints make a significantly larger number of turbines than what is proposed within the Facility Site technically infeasible. A larger number of turbines would result in greater wake loss and unsuitable turbine stress. The size of the Facility reflects the Project Sponsor's ability to maximize the generation of electricity and advancement of State policy promoting the development of the wind resource from the available wind resource on the island. The Applicant is doing business in a wholesale electric market that is highly competitive and extremely price-sensitive. Given the economies of scale involved in the development and construction of a wind project, all other things being equal, a larger scale Facility will produce lower cost energy. Facility components of alternate size and number will be considered. The Article 10 Application will address alternate scale and magnitude of the Facility in the context of the interconnection agreement (i.e., a 110.4 MW Facility). Information regarding economic benefit to local communities such as PILOT payments, and construction expenditures related to a Facility of this size will also be addressed.

(4) Alternative Turbine Layouts

The proposed location and spacing of the wind turbines are directly related to a number of factors, including a wind resource assessment, and environmental resource factors. Factors considered during the layout design process include the following:

- *Wind Resource Assessment*: Through the use of on-site meteorological data, topographic and surface roughness data, wind flow modeling, and wind plant design software, the wind turbines will be sited to optimize exposure to wind from all directions, with emphasis on exposure to the prevailing southwest wind direction in the Facility area.
- *Sufficient Turbine Spacing*. Siting turbines too close to one another can result in decreased electricity production and excessive turbine wear, due to the creation of wind turbulence between and among the turbines. Each operating wind turbine creates downwind turbulence in its wake. As the flow proceeds downwind, there is a spreading of the wake and recovery to free-stream wind conditions. The Facility turbines will be located with enough space between them to minimize wake losses and maximize the capture of wind energy.
- *Wetlands and Waterbodies.* Facility components will avoid and/or minimize impacts to wetlands/streams to the greatest extent practicable.

- *Communication Interference*. Turbines will be sited outside of known microwave pathways or Fresnel zones to minimize the effect that they may have on existing communications, noting that no such pathways exist within the proposed project area.
- *Recreational Resources*. There are no Town or County existing or proposed trails, trail facilities, or recreation areas within or near the project area.
- *Cultural Resources*. Facility construction will be conducted in such a way that does not cause any significant impact to prehistoric or historic archeological resources.

In addition to the preferred layout for the Facility, this section of Exhibit 9 will also evaluate the previous wind farm arrangements proposed for Galloo Island. Specifically, the Article 10 Application will summarize the following alternatives previously evaluated in the Hounsfield Wind SEQRA record:

- 98-turbine layout
- 82-turbine layout
- 51-turbine layout
- 8-turbine layout
- Lower turbine height

(5) Timing of In-service Date in Relation to Other Capacity Changes to the Electric System

Based upon the findings in the draft FES this Facility is not anticipated to have any adverse effects on the New York State Power Grid. Please see Section 2.5 of this PSS for additional information.

(d) Why the Proposed Location Best Promotes Public Health and Welfare

As noted throughout this section, the Galloo Island Wind Farm is unique in that it enables a significant contribution to the State's renewable energy portfolio without the typical potential community related impacts and concerns of a mainland utility scale energy production facility. With the exceptions of two small parcels owned by the NYSDEC and one small parcel privately owned, Galloo Island is almost entirely comprised of private property. The island is accessible only by boat, plane or helicopter. There are no public access ports, docks, or airstrips on the island. There is not anticipated to be any public access to the island during the construction and operation of the Facility. Therefore, due to the remote nature of the Facility the proposed location on Galloo Island is best suited to promote public health and welfare.

(e) Why the Proposed Facility Best Promotes Public Health and Welfare

The benefits of the Facility are anticipated to include positive impacts on socioeconomics (e.g., increased employment, increased revenues to Local municipalities and school districts, air quality (through reduction of emissions from fossil-fuel-burning power plants), and climate (reduction of greenhouse gases that contribute to global warming). By eliminating pollutants and greenhouse gases, the Facility will also benefit ecological and water resources and human health. The Article 10 Application will include a statement of the reasons why the proposed technology, scale, and timing of the Facility is best suited to promote public health and welfare.

(f) No Action Alternative

As stated by the NYSDEC in the March 3, 2010 SEQR Findings Statement, “the 'No Action" alternative is not a reasonable alternative”. The no action alternative assumes that Galloo Island would continue to exist as is. This no action alternative would not beneficially nor adversely affect current land use, and would maintain the area’s current community character, socioeconomic, and energy-generating conditions as they currently exist. The Article 10 Application will include a statement of the reasons why the no action alternative to the Facility is not best suited to promote public health and welfare.

(g) Energy Supply Source Alternatives

Alternative power generation technologies, such as fossil-fuel and biomass combustion, would not meet the goals of the Facility, are not the area of expertise of the Applicant, and would pose more significant adverse environmental impacts, particularly on air quality but also on land use, water resources and public health and welfare.

In regard to other renewable sources of generation, hydroelectric plants have significant impacts on terrestrial and aquatic ecological resources, land use, and aesthetics. Like wind power projects they are also resource dependent, and can also only be developed in places with appropriate water volumes and topographic conditions (which do not exist within the Facility Area). Other renewable energy technologies, such as solar power, would result in different impacts and would not result in the same energy generation capacity, in this location, as a wind power project. The Article 10 Application will limit the identification and description of alternative energy supplies to those that are feasible considering the objectives and capabilities of the Applicant (i.e., a wind power project).

(h) Source and Demand-Reducing Alternatives Comparison of Advantages and Disadvantages of Proposed and Alternative Energy Sources

Due to the nature of the Facility (wind), source and demand–reducing alternatives will not be evaluated in the Article 10 Application.

(i) Why the Proposed Project Best Promotes Public Health and Welfare

As previously described in (d) and (e) above, the Article 10 Application will include a statement of the reasons why the proposed Facility is best suited to promote public health and welfare.

2.10 CONSISTENCY WITH ENERGY PLANNING OBJECTIVES

(a) Consistency with State Energy Plan

In 2014, Governor Cuomo launched New York's signature energy policy, Reforming the Energy Vision ("REV"). REV is designed to protect the environment, lower energy costs, and create opportunities for economic growth. On June 25, 2015 the State Energy Plan was updated to provide a roadmap for REV and foster economic prosperity and environmental stewardship.

The Facility will help the State achieve the goals of the 2015 State Energy Plan. The State Energy Plan contains a series of policy objectives and coordinates with the REV initiative and the objectives to increase the use of energy systems that enable the State to significantly reduce greenhouse gas ("GHG") emissions while stabilizing energy costs. According to the State Energy Plan, the Plan is a "comprehensive strategy to create economic opportunities for communities and individual customers throughout New York." Through the 2015 State Energy Plan and the REV initiative New York has committed to achieving a 40% reduction in GHG emissions from 1990 levels by 2030 and reducing total carbon emissions 80% by 2050. In addition, the 2015 State Energy Plan calls for 50% of generation of electricity from renewable energy sources by 2030, also known as the 50 by 30 goal (NYSEPB, 2015). Overall the State Energy Plan seeks to reduce energy demand while cleaning up the energy supply by getting more electricity from renewable sources. The Facility will play a key role in helping New York achieve its energy goals.

The Article 10 Application will explain how Galloo Island Wind advances the objectives of the State Energy Plan and assists the State in achieving the renewable energy generation objective set forth therein.

(b) Impact on Reliability

A System Reliability Impact Study ("SRIS") is scheduled to be prepared during the spring and summer of 2016. A Feasibility Study is expected to be completed in May of 2016.

(c) Impact on Fuel Diversity

The Facility will improve fuel diversity within the state by increasing the amount of electricity produced by wind power. The New York electric utility system relies on supply from numerous fuel sources, including natural gas, hydroelectric, nuclear, wind, oil, and coal, as well as interconnections with its neighbors and demand-response resources. Maintaining and improving fuel diversity in New York will lead to less volatile electric prices, improved reliability, and positive environmental impacts (NYISO, 2008). The Article 10 Application will include discussion of the current electric generation capacity by fuel type to demonstrate that the addition of the Facility will increase fuel diversity. Fuel mix data at in-service date will be obtained from NYISO.

(d) Impact on Regional Requirements for Capacity

The regional capacity requirements of New York's wholesale electricity markets and location-based pricing encourage investments in areas where the demand for electricity is the highest. As a result, over 80 percent of the generating capacity brought online since 2000 is located in New York City, on Long Island, and in the Lower Hudson Valley. Other additions to New York's power-producing resources are determined by physical factors, such as the suitability of wind conditions in the northern and western regions of the state, and upgrades to existing nuclear and hydropower plants in upstate regions (NYISO, 2015). The proposed Facility falls into the latter category, with siting driven by available wind resource. The Article 10 Application will discuss the Facility's impacts on regional requirements for capacity.

(e) Impact on Electric Transmission Constraints

New York State has a diverse mix of generation resources compared to many other states. However, much of the renewable power is provided by hydroelectric projects and wind farms located in western and northern localities, while the southeastern region hosts power plants fueled primarily by natural gas. Taking full advantage of statewide fuel diversity will require upgrades and enhancements of the transmission system. These transmission enhancements will help move energy from upstate regions with a surplus of generating capacity to more populous areas with higher power demands, such as the Hudson Valley, New York City, and Long Island (NYISO, 2015). The Article 10 Application will discuss Facility impacts on electric transmission constraints, based on the New York State Transmission Assessment and Reliability Study and other NYISO reports/data.

(f) Impact on Fuel Delivery Constraints

The proposed Facility will generate electricity without the use of fuel. Consequently, there will be no adverse fuel delivery impacts. By producing additional electricity that does not require fuel, the Facility will contribute toward reducing overall demand for fuel and easing fuel delivery constraints.

(g) Impact on Energy Policy

The immediate benefits of utility scale renewable energy projects, such as Galloo Island Wind, include economic development and jobs for the community, greater stability in customer bills, cleaner air, and compliance with State and Federal mandates. As recognized by the State Energy Plan, long-term benefits may be similar to those New York currently enjoys from the State's hydroelectricity facilities: below-market electricity prices and a healthier environment. Through the State Energy Plan, New York has committed to achieving a 40% reduction in GHG emissions from 1990 levels by 2030 and reducing total carbon emissions 80% by 2050. In addition, the State Energy Plan calls for 50% of generation of electricity from renewable energy sources by 2030 (NYSEPB, 2015).

In an effort to encourage and incentivize the shift of New York State's energy sector from reliance on GHG emitting fuel sources to renewable energy sources, the State has established a RPS which initially called for an increase in renewable energy used in the State to 25% by the year 2013 (PSC, 2004). In an Order issued in January 2010, the New York Public Service Commission (PSC) expanded the RPS target from 25% to 30% and extended the target date from 2013 to 2015. The RPS is expected to reduce CO2 emissions by 50 million tons over the life of the projects (NYSERDA, 2015). NYSERDA has proposed a comprehensive Clean Energy Fund (CEF) to ensure continuity of the State's clean energy programs after 2015. The CEF is one part of New York State's Reforming the Energy Vision (REV) initiative, a 10-year $5 billion funding program to support clean energy market development and innovation and to secure renewable energy resources as part of New York's clean energy future. As stated by the PSC in the REV Order, "A significant increase in the penetration of renewable resources is essential to meeting our objectives, state goals and proposed federal requirements" (PSC, 2015).

Large-scale renewables ("LSR"), which are larger utility-scale renewable energy project developments, such as Galloo Island Wind, are a key component of the REV Order, which outlines the issues and tasks to begin to resolve the technical, marketplace, and regulatory challenges necessary to achieve the REV plan and goals. REV recognizes that large-scale renewables, such as wind farms, which require more capital and take more planning than other facilities, will be critically important to meeting greenhouse gas emissions reduction goals. However, due to the issues and concerns raised about how to maximize the benefits associated with large-scale renewables, the REV Order created a separate REV LSR track devoted to addressing issues related to LSR. To begin development of the LSR track, PSC

staff and NYSERDA worked together to develop an options and assessment paper, entitled "*Large-Scale Renewable Energy Development in New York: Options and Assessment* (NYSERDA, 2015a). This paper examines range of policies, frameworks and structures available for procuring and financing LSR resources. The public comment period on the paper was open until August 24, 2015. On December 2, 2015, Governor Andrew Cuomo directed the DPS to develop a Clean Energy Standard ("CES"), which would change the targets identified in the State Energy Plan to required mandates. The CES is still under development, and it will be presented by the DPS to the PSC in the June, 2016 session. On January 21, 2016 the scope of the LSR proceeding was expanded to encompass the CES. DPS staff produced a *Staff White Paper on Clean Energy Standard* on January 25, 2016 that supported a requirement on electrical distribution companies to procure an appropriate percentage of the renewable energy credit targets through long term contracts with renewable energy generators, while also supporting opportunities to incent a fully-functioning, self-initiated renewable energy market for both suppliers and producers (DPS Staff, 2016). Shifting renewable energy goals to mandates in the CES only strengthens the consistency of Galloo Island Wind with State policy. The Facility will contribute to State policy objectives (whether they are mandates or simply goals) by providing additional electrical capacity produced by renewable energy.

In addition to policies in New York State, federal policy has also recognized the need for increased supply of energy to the U.S., and for new renewable energy resources. The Facility is consistent with Executive Order 13212 (dated May 18, 2001), which states, "The increased production and transmission of energy in a safe and environmentally sound manner is essential to the well-being of the American people. In general, it is the policy of this Administration that executive departments and agencies shall take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or conservation of energy." On June 25, 2013, President Obama announced the Climate Action Plan, and on August 3, 2015, the final rule of EPA's Clean Power Plan was announced. The Plan represents a national plan for tackling climate change. The Plan directs the Environmental Protection Agency ("EPA") to establish the first ever restrictions on carbon pollution from power plants, the largest source of unregulated CO2 emissions in the U.S. The Plan states, "With abundant clean energy solutions available, and building on the leadership of states and local governments, we can make continued progress in reducing power plant pollution to improve public health and the environment while supplying the reliable, affordable power needed for economic growth. By doing so, we will continue to drive American leadership in clean energy technologies" (Executive Office of the President, 2013).

In fulfillment of President Obama's commitment under the 2013 Climate Action Plan, EPA proposed "Clean Power Plan" regulations in 2014 establishing a framework for states to regulate carbon dioxide emissions from existing fossil fuel-fired electric generating units (see 79 Federal Register 34830; June 18, 2014). Once the guidelines are finalized, states must develop plans that explain how they will achieve those guidelines. Nationwide, the Plan calls for reducing

CO2 from the power sector by approximately 30% from 2005 emission levels by 2030. The Plan establishes emission rate-based CO2 goals for each state as well as guidelines for the development, submission and implementation of state plans to achieve those goals. Each state must then develop a plan that explains how they intend to achieve their state-specific CO2 emission rate goal that includes enforceable CO2 emission limits applicable to each affected unit. States would be expected to begin making CO2 emission reductions by 2022, with full compliance to be achieved by 2030.

The Article 10 Application will address the Facility's impacts on state and federal energy policies.

(h) Comparison of Advantages and Disadvantages of Proposed and Alternative Locations

Given the unique nature and constraints associated with the siting of wind-powered electric generation facilities (i.e. adequate wind resource, willing land lease participants and host communities, and adequate access to the bulk power transmission system), and the further unique nature and characteristics associated with the Facility location (Galloo Island), the Applicant has not developed a full comparison between the proposed and alternative Facility locations. Rather, the Article 10 Application will focus on comparing alternative facility configurations within Galloo Island. This is consistent with the previous alternatives review conducted during the SEQRA review for the Hounsfield Wind Farm Project. Such alternatives will include alternative facility layouts, alternative project size, alternative turbine models, and a no action alternative. A comparison of Facility alternatives will be provided in Exhibit 9 of the Article 10 Application.

(i) Why the Proposed Location and Source Best Promotes Public Health and Welfare

Some level of operational-related impacts will result from the Facility due to its location on Lake Ontario and surrounding shoreline hamlets and villages (e.g. visual impact). The Applicant will design the Facility layout to optimize the balance between energy generation with the protection of environmental and aesthetic resources, as well as community welfare. The Article 10 Application will provide a statement on how the proposed Facility minimizes these impacts when compared to other alternatives considered as summarized below.

Please also note that the Facility will have a positive impact on public health and welfare by producing electricity with zero emissions (except for very small emissions from vehicles servicing the facility). Despite recent developments in clean and renewable energy, conventional power plants still comprise the majority of the United States' energy generation. As of 2015, fossil fuel combustion was responsible for about 67% of total electricity generation, while wind energy was only around 5%. Of the fossil fuels used for electricity generation, coal and natural gas are still the most prevalent, each representing about 33% of overall fossil fuel combustion (USEIA, 2016). There have been some

reductions in emissions by coal combustion in recent years. Much of the reduction has been due to regulations imposed by the EPA for coal emissions, first under the Clean Air Interstate Rule ("CAIR") of 2005 and later under the Cross-State Air Pollution Rule (CSAPR) of 2011. These regulations were passed in order to reduce emissions that contribute to ozone and fine particle pollution, which negatively impact human health. The target of CSAPR is to reduce SO2 and NOx emissions by 73% and 54%, respectively (EPA, 2011). Despite these reductions, the coal industry is still a major polluter and adverse impacts to human health from air pollution are well documented (Burt et al., 2013).

In addition, state, federal, and international agencies agree that the scientific evidence for the existence of climate change is unambiguous and that society will experience adverse impacts from it. The NYSDEC determined that "air and water quality, forests, fish and wildlife habitats, and people and communities, are at risk from climate change" (NYSDEC 2010). In the Commissioner's Policy on Climate Change and DEC Action, NYSDEC outlined a strategy containing climate change mitigation objectives, including curbing greenhouse gas emissions, so that New York can play its part in reducing the severity of global warming (NYSDEC, 2010). On an international level, the Intergovernmental Panel on Climate Change (IPCC), a consortium of experts on climate change from around the world, agree that "Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems" (IPCC, 2014). Fossil fuel-based energy production has played a major part in causing global warming. Electricity generation from coal and natural gas is responsible for about one third of all greenhouse gas emissions in the U.S., so moving toward renewable energy technologies in the energy industry represents one important way to mitigate climate change and improve public health and welfare. Although efforts have been made to reduce greenhouse gas emissions, current levels are about six percent higher than they were in 1990 (EIA, 2015).

Historically, New York State has been proactive in establishing goals to reduce greenhouse gas emissions, including Executive Order 24, which seeks to reduce GHG emissions by 80% by the year 2050 and also includes a goal to meet 45% of New York's electricity needs through improved energy efficiency and clean renewable energy by 2015 (Paterson, 2009). Fuel combustion accounts for approximately 89% of total GHG emissions in New York State (NYSDEC, 2009). The operation of this Facility is anticipated to have a positive impact on air quality and public health and welfare by producing electricity with zero emissions (except for very small emissions from vehicles servicing the facility). Electricity delivered to the grid from wind energy projects can off-set the generation of energy at existing conventional power plants. According to a 2008 U.S. Department of Energy National Renewable Energy Laboratory report, "Wind energy is a preferred power source on an economic basis, because the operating costs to run the turbines are very low and there are no fuel costs. Thus, when the wind turbines produce power, this power source will displace generation at fossil fueled plants, which have higher operating and fuel costs." On a long-term basis, wind generated power also reduces the need to construct and operate new fossil fueled power plants (Jacobsen & High, 2008). Natural

gas is the most frequent marginal fuel unit in New York's power pool, or the one that is turned on or off as the load fluctuates (Patton et al., 2015). When the proposed Facility is generating power, electricity generation from natural gas would be reduced within the region, thereby eliminating the associated emissions.

2.11 PRELIMINARY DESIGN DRAWINGS

All drawings prepared in support of the Article 10 Application will be prepared using computer software (e.g., AutoCAD, MicroStation), will be labeled "preliminary" and "not for construction purposes", and will be prepared under the direction of a professional engineer, landscape architect, or architect who is licensed and registered in New York State.

(a) Site Plan

Drawings generated in support of the site plan will likely be prepared at a scale of 1" = 100', and will depict the layout of the Facility components (turbines, access roads, collection lines, collection substation (including the main power transformers), permanent meteorological towers, O&M building, a docking facility, permanent housing for staff, and a collection substation). Adjoining properties will be depicted using publicly available parcel data.

(b) Construction Operations Plan

The construction operations plan will depict the location of all anticipated construction staging/material laydown areas, docking facility, contractor trailers/offices and parking areas. Notable excavations associated with the Facility are anticipated to be limited to turbine foundation locations, which will be identified on the construction operations plan, and the offloading/docking area on the island. However, minor excavations associated with the installation of collection lines and access roads area also anticipated. Excess soil will be stockpiled along the construction corridors and used in site restoration.

(c) Grading and Erosion Control Plans

Unlike a conventional energy generating facility in which a large tract of contiguous acreage must be graded in order to properly site the facility, the footprint of a wind power project is relatively small, is more spread out, and is designed to fit within the existing land form. Publicly available data from the United States Geological Service (USGS) will be used to identify existing contours (data available at 10-foot intervals). Using suitable computer software (i.e., AutoCAD), the USGS 10-foot contours will be interpolated to indicate contours at 2-foot intervals in order to show the proposed grading at the required interval. Information regarding soil types and depth to bedrock will also be based on publicly available data.

The Application will include preliminary cut and fill calculations based on the publicly available interpolated contour data. The Article 10 Application will also generally describe the typical scenarios that would result in cut and fill necessary to construct the facility, such as constructing an access road on a side slope.

(d) Landscaping Plan

Landscaping and site restoration plans will be developed a part of the Preliminary Design Drawings. These plans will indicate area to be replanted or restored following construction as well as areas to be improved with plantings to improve general landscape character of the site (i.e., substation). To determine those areas where trees may be removed, the Facility footprint will be depicted on recent aerial imagery, and the acreage of tree removal will be discussed in the Article 10 Application. However, an on-site survey of all trees to be removed will not be included in the Application.

(e) Lighting Plan

Lighting specifications for FAA lights on turbines, and lights to be used at the collection station, permanent structure for proposed overnight accommodations, and O&M facility, will be included in the Article 10 Application. Measures to be taken to prevent unnecessary light trespass beyond the Facility property line will also be addressed.

(f) Architectural Drawings

The Application will contain a typical drawing of an O&M building based on the Applicant's experience. Specifically, the typical drawing will be based on the Applicant's standard O&M building design, layout and specifications, and current industry standards along with any specific state building code requirements or the local law provisions. Minor changes to the typical O&M building drawings may be necessary based on final design. The O&M building is the only stand-alone building the Applicant anticipates constructing as part of the Facility. With regard to the permanent structure for proposed overnight accommodations, in addition to living quarters integrated into the O&M building, the Applicant intends to utilize existing functional buildings that are already located on the Facility Site to be used as housing in times of inclement weather and/or extended stays at the Facility. As such, no dedicated architectural drawings will be included in the Application for the permanent housing.

(g) Typical Design Detail Drawings

The preliminary design drawings will include relevant drawings depicting typical design details and notes associated with the Facility, such as access roads, buried and above-ground interconnect, turbine laydown areas, wind turbines,

and wind turbine foundations. In addition, the Article 10 Application will include specifications associated with the range of turbine types anticipated to be used for the Facility.

(h) Interconnection Facility Drawings

The Applicant proposes a Related Transmission Facility to carry power from Galloo Island to the mainland, along NY State owned submerged lands, via a submarine power cable to be interconnected to the existing electrical grid. As currently conceived, the RTF includes the "high side" of the collection substation on Galloo Island, an approximately 30 mile AC underwater 145kV transmission line, and a point of interconnection substation near the Mitchell Street Substation in Oswego, NY. The RTF components of this Facility are subject to Article VII of the PSL, and therefore will not be evaluated in the Article 10 application.

(i) Engineering Codes, Standards, Guidelines, and Practices

The list of codes and standards that have been and will be considered during the design, construction, and operation of this facility is extensive. The following is provided as a representative list of applicable codes and standards, which will be updated as needed in support of the Article 10 Application:

- American National Standards Institute ("ANSI")
- Institute of Electrical and Electronics Engineers ("IEEE")
- Insulated Cable Engineers Association ("ICEA")
- American Society of Mechanical Engineers ("ASME")
- National Electric Code ("NEC")
- National Electrical Safety Code ("NESC")
- National Electric Manufacturers Association ("NEMA")
- National Fire Protection Association ("NFPA")
- Uniform Building Code ("UBC")
- Uniform Plumbing Code ("UPC")
- United Laboratories ("UL")
- American Iron and Steel Institute
- American Institute of Steel Construction
- International Building Code ("IBC") 2006
- AASHTO Standard for Aggregates
- ASCE 7-05 Minimum Design Loads for Buildings and Other Structures

- Federal OSHA 1910.269 Training

2.12 CONSTRUCTION

(a) Preliminary Quality Assurance and Control Plan

A Quality Assurance and Control Plan is typically the responsibility of the Balance of Plant ("BOP") contractor, who is responsible for the construction of the wind farm, and to create and implement the Quality Assurance and Control Plan. The Applicant will require the BOP to provide a final Quality Assurance and Control Plan prior to starting construction. All sub-contractors will be required to follow the Quality Assurance and Control Plan. The Quality Assurance and Control Plan is site specific and therefore not developed until the BOP has been selected and the Facility is proceeding with construction. The Applicant will submit the final Quality Assurance and Control Plan to the Board prior to the start of construction.

Below is a general outline of the components of a Quality Assurance and Control Plan. This outline was developed based on the Applicant's historical experience and quality assurance and control plans for its operational wind farms. The Preliminary Quality Assurance and Control Plan that will be provided in the Application will be based upon this outline. In addition, the Preliminary Quality Assurance and Control Plan will be provided to all BOP contractors who bid on the construction of the Facility. At a minimum, the final Preliminary Quality Assurance and Control Plan to be included with the Article 10 Application will include the following components.

1. Statement of Authority and Responsibility
2. Organization
3. Safety
4. Quality Assurance Program
5. Facility Communication
6. Document Control
7. Control of Client/Customer Supplied Material and Services
8. Inspections and Test Control
9. Non-conformance reporting
10. Corrective and Preventive Action & Continual Improvement
11. Documentation
12. Field Audits and Surveillances

(b) Conformance with Public Service Commission Requirements

(1) Protection of Underground Facilities

The Applicant and its BOP contractor will follow the requirements of Public Service Law §119-b. The Application will include in Exhibit 12 a statement from a responsible company official that the Applicant and its contractors will conform to the requirements for protection of underground facilities contained in Public Service Law §119-b, as implemented by NYCRR Part 753.

(2) Pole Numbering and Marking Requirements

It is anticipated that all collection lines will be buried, however if above-ground collection lines are necessary (i.e., to avoid wetland impacts), the Applicant will comply with pole number and marking requirements, as implemented by 16 NYCRR Part 217.

(c) Plans to Avoid Interference with Existing Utility Systems

Because the facility is located on an island, rather than a more suburban or urban setting, there are fewer existing utility systems with which the Facility may interfere. However, efforts will be made to avoid impacts and conflicts. These will be documented in the Article 10 Application.

Following construction, the Applicant will register with one-call to ensure that its utilities and any underground collection lines are registered so that they are not impacted by future excavation or utility work.

(d) Procedures for Addressing Public Complaints and Disputes

The Applicant will develop a Complaint Resolution Plan that will be provided in the Application. The Complaint Resolution Plan will discuss specifically how public complaints and disputes should be raised, documented and resolved during construction and operation. The Complaint Resolution Plan will consist of the following components:

- Communications protocol and contacts for construction and operation
- Registering a complaint
- Process for gathering and analyzing information regarding the complaint
- Complaint Response and Tracking
- Complaint Response follow up

The Application will describe each of these steps in the Complaint Resolution process in significant detail and will also include general information on community outreach and communications in the Article 10 Application.

2.13 REAL PROPERTY

(a) Real Property Map of Generating Site

The Article 10 Application will include a tax parcel map of the Facility which clearly depicts the tax parcel ID, current land use and zoning, relevant easements, grants and related encumbrances. Data for this map will be obtained from the Jefferson County Real Property Department (parcels) and the NYS GIS Clearinghouse. These data will also be used to identify owners of record of all parcels adjacent to the Facility (such information may be depicted on the maps and/or included on associated tables).

(b) Real Property Map of Interconnection Facilities

Using the data referenced above, maps showing all proposed interconnection facilities and associated access drives/laydown areas will be prepared. However, all interconnection facilities and associated access roads/laydown areas will be located in one parcel on Galloo Island (95.00-1-2), and therefore no off-property access is anticipated.

(c) Demonstration that the Applicant Has Obtained Title or Lease Interest in Facility Site

The Article 10 Application will provide a description of the title or lease for parcel 95.00-1-2, owned by Galloo Island Corporation, and that is secured for the Facility. Since the Facility is proposed to be wholly located within one parcel on Galloo Island, no ingress/egress access to public or private roads is necessary.

(d) Demonstration that the Applicant Has Obtained Property Rights to Interconnection Site

The Article 10 Application will provide a statement that the Applicant has access to parcels needed for the Facility interconnects as it relates to jurisdiction under Article 10 and provide a summary of the status of the land control necessary for the interconnection location subject to the Article VII proceeding.

(e) Improvement District Extensions

The Facility is not anticipated to need any improvement district extensions, and therefore demonstration that the Applicant can obtain such extensions is not applicable.

2.14 COST OF FACILITIES

(a) Total Capital Costs

The Application will provide an estimate of the total capital costs of the Project. Total estimated capital and intangible costs will be provided. Capital costs will include development costs, construction design and planning, equipment costs, and construction costs. Capital costs will be broken down by:

- Overall turbine cost
- Civil and electrical
- Construction contingency
- Development
- Insurance
- Legal

(b) Source of Cost Estimates

The cost estimate will be based on the following sources:

- Wind industry standards Company experience
- Historical and current price quotes

(c) Work Papers

The Application will include an internal work paper that describes the assumptions in estimating the total capital costs as described in 1001.14 (a). However, this information is proprietary and typically retained as trade secrets. Therefore, the Applicant will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

2.15 PUBLIC HEALTH AND SAFETY

Wind generated power is in many ways safer and healthier than other forms of electricity generation. Unlike conventional power plants, wind farms produce energy without emitting pollutants that decrease air quality. This is a major public health benefit since the negative effects of air pollution and climate change are well understood.

New York State's 2015 State Energy Plan involves reducing GHG emissions from the energy sector, as this is critical to protecting the health and welfare of New Yorkers. Clean air is essential to New Yorkers' health and quality of life. New York's energy system is the source of many benefits for New Yorkers; however, it is also the cause of significant impacts on the State's natural resources and public health, principally because of emissions of a variety of substances, some of which find their way into water and other resources. Air pollutants emitted when carbon-based fuels are burned are associated with serious health conditions and contribute to the climate change that threatens New York's residents. Combustion of fossil fuels is the dominant source of energy-related emissions. The kinds of health risks associated with the combustion of carbon-based fuels are not associated with solar energy, wind, and hydroelectric power. As indicated in the SEQR Findings Statement for the Hounsfield Wind Farm, prepared by the NYSDEC and released on March 3, 2010 "To the extent that renewable resources and natural gas are able to displace the use of higher emitting fossil fuels, relying more heavily on these in-state resources will also reduce public health and environmental risks posed by all sectors that produce and use energy".

Ice shedding, tower collapse, blade failure, stray voltage, and fire in the turbines are all potential public health issues raised regarding the operation of a wind farm. However, due to the remote location and lack of permanent residences within 6 miles of the island and lack of seasonal residences within 2.5 miles (Stony Island), impacts to the public from these events will be minimal (or more likely non-existent).

(a) Gaseous, Liquid, and Solid Wastes to be Produced During Construction and Operation

One of the advantages of producing electricity from wind is that it does not produce gaseous, liquid or solid wastes during operation. With respect to construction, the generation of gaseous, liquid and/or solid waste is primarily limited to standard operation of construction equipment and will be handled by the BOP contractor in accordance with all applicable laws and regulations pertaining to such wastes.

Facility construction will generate relatively minor amounts of solid waste, consisting primarily of plastic, wood, cardboard and metal packing/packaging materials, construction scrap, and general refuse. This material will be collected from turbine sites and other Facility work areas, and disposed of in dumpsters located at the construction staging area(s). At set intervals, solid waste will be transferred by barge to shore, and then by truck to a licensed solid waste disposal facility. The Article 10 Application will identify the local solid waste collection services and landfills/transfer stations.

Exhibit 15 of the Article 10 Application will also address wastewater disposal including sanitary facilities for workers during facility construction; and assessment and permits needed for development of wastewater septic or alternative

system at permanent O&M facilities site. If an existing building is proposed for use as an O&M facility, evaluation of suitability of existing wastewater system and any improvements or replacement will be included.

(b) Anticipated Volumes of Wastes to be Released to the Environment

Beyond that which will be addressed per (a) above, the Facility will not result in additional volumes of waste to be released to the environment, during construction or operation of the Facility.

(c) Treatment Processes to Minimize Wastes Released to the Environment

Beyond that which will be addressed per (a) above, the Facility will not need to treat additional waste to be released to the environment.

(d) Procedures for Collection, Handling, Storage, Transport, and Disposal of Wastes

Beyond that which will be addressed per (a) above, the Facility will not need to identify procedures for the collection, handling, storage, transport and disposal of waste.

(e) Identification of Potential Wind Power Facility Impacts

(1) Blade and Tower Incidents

The regulations require the Application to address the potential for wind turbine towers to collapse or a rotor blade dropping or otherwise malfunctioning such that it is no longer connected to the nacelle. While extremely rare, such incidents have occurred; however, to the best of the Applicant's knowledge, no member of the public has ever been injured as a result of these incidents. Additionally, the remote location of this Facility further minimizes potential impact to non-Facility structures, infrastructure or the public.

The reasons for such potential incidents vary depending on conditions and tower type. The main causes of blade and tower incidents are a control system failure leading to an over speed situation, a lightning strike, or a manufacturing defect in the blade (Garrad Hassan America, Inc., 2010). Technological improvements and mandatory safety standards during turbine design, manufacturing, and installation have significantly reduced the potential for these incidents (Garrad Hassan, 2007).

As stated above, due to the remote location, lack of public access, and lack of residences (seasonal) within 2.5 miles of the island, the occurrence of blade or a tower failure does not pose the potential for impact for the Facility.

(2) Audible Frequency Noise

The Facility is not expected to result in any public health and safety issues due to audible frequency noise. Please see Section 2.19 of this PSS for additional information on the proposed updated noise analysis.

(3) Low-Frequency Noise

No impact is expected from Facility-related infrasound or low frequency noise. Infrasound is sound pressure fluctuations at frequencies below about 20 Hz, and is generally not audible. Low frequency sound is in the audible range of human hearing (i.e., above 20 Hz, but below 100 to 200 Hz, depending on the definition). Numerous studies show that the low frequency content in the sound spectrum of a typical modern wind turbine, like those proposed for this Facility, is no higher than that of the natural background sound level in rural areas (e.g., Sondergaard & Hoffmeyer, 2007; Hessler et al., 2008). There is no evidence that the audible or sub-audible sounds produced by operating wind turbines have any direct adverse physiological effects and the ground-borne vibrations from wind turbines are too weak to be detected by, or to affect, humans (Colby et al., 2009). Furthermore, due to the remote location, lack of public access, lack of permanent residences within 6 miles of the island, and lack of seasonal residences within 2.5 miles (Stony Island), it is not anticipated that there will be any potential for audible or low-frequency noise impacts related to operation of the Facility.

(4) Winter Conditions

Wind turbines can accumulate ice under certain atmospheric conditions. Weather conditions can then cause this ice to be shed. Ice shedding refers to the phenomena that can occur when ice accumulates on rotor blades and subsequently breaks free and falls to the ground. Although a potential safety concern, no serious accidents caused by ice being "thrown" from an operating wind turbine have been reported (IEA Wind, 2012).

Under certain weather conditions, ice may build up on the rotor blades and/or sensors, slowing the rotational speed, and potentially creating an imbalance in the weights of the individual blades. Such effects of ice accumulation can be sensed by the turbine's computer controls and would typically result in automatic shutdown of the turbine until the ice melts. Field observations and studies of ice shedding indicate that most ice shedding occurs as air temperatures rise and the ice on the rotor blades begins to thaw. Therefore, the tendency is for ice fragments to drop off the rotors and land near the base of the turbine (Morgan et al., 1998; Ellenbogen, et al., 2012). Ice can potentially be “thrown” when ice begins to melt and stationary turbine blades begin to rotate again;

if ice falls from a stationary turbine during very high wind conditions that are strong enough to carry the ice some distance; or in the event of a failure of the turbine's control system.

The distance traveled by a piece of ice depends on a number of factors, including: the position of the blade when the ice breaks off, the location of the ice on the blade when it breaks off, the rotational speed of the blade, the shape of the ice that is shed (e.g., spherical, flat, smooth), and the prevailing wind speed. Data gathered at existing wind farms have documented ice fragments on the ground at a distance of 50 to 328 feet from the base of the tower. These fragments were in the range of 0.2 to 2.2 pounds in mass (Morgan et al., 1998). Ice shedding observations are also available from a wind turbine near Kincardine, Ontario, where the operator conducted 1,000 inspections between December 1995 and March 2001. Only 13 of the 1,000 inspections noted ice fragments, which were documented on the ground at a distance up to 328 feet (100 meters) from the base of the turbine, with most found within 164 feet (50 meters) (Garrad Hassan America, Inc., 2007). While the height of wind turbines is also a factor to be considered, the "Wind Turbine Health Impact Study" prepared by an independent expert panel for the Massachusetts Department of Public Health concluded that, "ice is unlikely to land farther from the turbine than its maximum vertical extent" (Ellenbogen, 2012).

Due to the remote location, lack of public access, and lack of seasonal residences within 2.5 miles and permanent residences within 6 miles of the island, it is not anticipated that there will be any potential impact to public health and safety resulting from ice shedding during operation of the Facility. However, the Applicant will provide the results of a literature review to identify potential public health and safety concerns from ice shedding in the Article 10 Application.

(5) Shadow Flicker

Shadow flicker refers to the moving shadows that an operating wind turbine casts over an identified receptor at times of the day when the turbine rotor is between the sun and a receptor's position. Shadow flicker is most pronounced in northern latitudes during winter months because of the lower angle of the sun in the winter sky. However, it is possible to encounter shadow flicker anywhere for brief periods before sunset and after sunrise (U.S. Department of the Interior, 2005).

The distance between a wind turbine and a potential shadow-flicker receptor affects the intensity of the shadows cast by the blades, and therefore the intensity of flickering. Shadows cast close to a turbine will be more intense, distinct, and focused. This is because a greater proportion of the sun's disc is intermittently blocked by the turbine

(BERR, 2009). At distances beyond roughly 10 rotor diameters, shadow-flicker effects are generally considered negligible (BERR, 2009; DECC, 2011).

Due to the fact that the distance to the nearest potential residential receptor to the Facility Site is approximately 6 miles from the nearest permanent residence and 2.5 miles from nearest seasonal residence (Stony Island), well beyond the distance equal to 10 rotor diameters, shadow flicker effects are considered negligible and a shadow flicker analysis is not necessary.

(f) Public Health and Safety Maps

The required maps will be prepared and included in the Article 10 Application, and data sources are anticipated to include the NYS GIS Clearinghouse, FEMA, NOAA, and the USGS.

(g) Significant Impacts on the Environment, Public Health, and Safety

As indicated above in subsections (a) through (d), the Facility is not expected to result in any significant public health or safety concerns associated with gaseous, liquid, or solid wastes. Wind energy facilities are safer than other forms of energy production, since significant use and storage of combustible fuels are not required. Public safety concerns associated with the operation of a wind power project are somewhat more unique. As discussed in subsection (e) above, due to the remote nature of the Facility it is not anticipated to result in any significant impacts due to blade throw and tower collapse, audible frequency and low frequency noise, ice shedding and ice throw, and shadow flicker. The Article 10 Application will include a summary of all significant impacts on the environment, public health, and safety associated with the information identified above in subsection (a) through (e).

(h) Unavoidable Adverse Impacts and Appropriate Mitigation/Monitoring Measures

The Article 10 Application will address potential adverse impacts on the environment, public health, and safety that cannot be reasonably avoided, and measures for monitoring and mitigating such impacts, however, given the unique location of the Facility, there are not anticipated to be such potential adverse impacts.

(i) Irreversible and Irretrievable Commitment of Resources

The proposed Facility will require the irreversible and irretrievable commitment of certain human, material, environmental, and financial resources. Human and financial resources will be expended by numerous entities including the Applicant, the State of New York (i.e., various state agencies), Jefferson County, and the Town of

Hounsfield for the planning and review of the Facility. The expenditure of funds and human resources will continue throughout the permitting and construction phases of the Facility.

The Facility will also represent a commitment of land for the life of the Facility, which is expected to be approximately 25 years, associated with its footprint (e.g., the land to be developed for wind turbines, access roads, the O&M building, permanent meteorological towers, and the related transmission facility). However, because the turbines/met towers may be removed at the end of their useful life, the commitment of this land to the Facility may not be irreversible or irretrievable. Additionally, the remote location and lack of public access significantly limits potential development activities on the island, thus limiting irreversible/irretrievable impacts.

Various types of manufacturing and construction materials and building supplies will be committed to the Facility. The use of these materials, such as gravel, concrete, reinforcement steel, cables etc., will represent a long-term commitment of these resources, which will not be available for other projects. However, some of these materials (e.g., steel, gravel) may be retrievable following the operational life of the Facility.

The Article 10 Application will provide additional detail regarding the Facility's irreversible and irretrievable commitment of resources.

(j) Impact Minimization Measures

Based on the Applicant's experience developing other wind projects, if a given project is properly sited and designed, minimization measures are generally not necessary because significant impacts to public health and safety can be avoided. The remote location of this facility, as previously mentioned in subsection (a) through (f), will minimize public safety issues such as ice shedding, ice throw, tower collapse, noise, and shadow flicker for the Facility. The Article 10 Application will provide additional details regarding measures proposed by the Applicant to further avoid or minimize public safety impacts.

(k) Mitigation Measures

Due to the remote location of the island and limited public access, it is anticipated that the Facility will have limited if any public health or safety impacts. In order to construct and operate the Facility safely and securely, all Facility components will be constructed and operated in accordance with federal, State and local building codes, including New York State Fire and Building Codes.

In addition, as previously mentioned the Applicant will implement a Complaint Resolution Plan, which will consist of the following:

- Communications protocol and contacts for construction and operation
- Registering a complaint
- Process for gathering and analyzing information regarding the complaint
- Complaint Response and Tracking
- Complaint Response follow up

The Application will describe each of these steps in the Complaint Resolution process in significant detail, and will identify any other measures proposed by the Applicant to mitigate such impacts.

(l) Proposed Monitoring

In addition to the measures identified above in subsection (k), the engineering standards of the wind turbines that will be used for this Facility will be of the highest level and meet all federal, state, and local building codes. In the turbine design phase, state and local laws require that licensed professional engineers review and approve the structural elements of the turbines. State of the art braking systems, pitch controls, sensors, and speed controls on wind turbines have greatly reduced the risk of tower collapse and blade throw, and sensors also monitor for ice buildup on blades. The wind turbines will be equipped with two fully independent braking systems that allow the rotor to be brought to a halt under all foreseeable conditions, and they will also cease operation if significant vibrations or rotor blade stress is sensed by the turbines' blade monitoring systems. The Article 10 Application will identify any monitoring proposed by the Applicant.

2.16 POLLUTION CONTROL FACILITIES

The proposed Project is not expected to require pollution control facilities, and as such, the requirements of this exhibit are not applicable to this Project. Please see Exhibit 17 for information on temporary emissions during construction, and Exhibit 23 for information on the Facility's State Pollution Discharge Elimination System (SPDES) General Permit for construction.

2.17 AIR EMISSIONS

Generally, this Exhibit is not applicable to the Facility because the Facility operations will not generate emissions. However, given the air and climate related benefits of the Facility and the fact that it generates electricity without the

combustion of fossil fuels and the resulting air emissions, this Exhibit will briefly discuss the air related benefits of the Facility. As indicated in the SEQRA Findings Statement for the Hounsfield Wind Farm, prepared by the NYSDEC and released on March 3, 2010, "Global climate change has been recognized as one of the most important environmental challenges of our time. There is scientific consensus that human activity is increasing the concentration of greenhouse gases ("GHG") in the atmosphere and that this, in turn, is leading to serious climate change. By its nature, climate change will continue to impact the environment and natural resources of the State of New York (NYSDEC, 2009). Historically, New York State has been proactive in establishing goals to reduce GHG emissions. Most recently, in the 2015 State Energy Plan, New York has committed to achieving a 40% reduction in GHG emissions from 1990 levels by 2030 and reducing total carbon emissions 80% by 2050. In addition, the State Energy Plan calls for 50% of generation of electricity from renewable energy sources by 2030 (New York State Energy Planning Board, 2015). Fuel combustion accounts for approximately 89% of total GHG emissions in New York State (NYSDEC, 2009). In part due to the positive impact renewable energy sources have in addressing global climate change and producing electricity without harmful carbon and other emissions, New York State has been a national leader in advancing large scale renewable energy policies and goals to promote the development of clean, emission free, electricity production sources.

(a) Compliance with Applicable Federal, State, and Local Regulatory Requirements

In accordance with Section 111 of the Clean Air Act Extension of 1970, the U.S. EPA established New Source Performance Standards ("NSPS") to regulate emissions of air pollutants from new stationary sources. These standards apply to a variety of facilities including landfills, boilers, cement plants, and electric generating units fired by fossil fuels. The NYSDEC Division of Air Resources administers an air permitting program as required by the Clean Air Act and 6 NYCRR Part 201. The two most common types of permit for air contamination sources are State facility and Title V facility permits. Because wind turbines generate electricity without releasing pollutants into the atmosphere, the proposed facility will not be subject to NSPSs, and will not require air pollution control permits under Clean Air Act or New York State law or regulation.

The 1984 State Acid Deposition Control Act required the reduction of sulfur dioxide ("SO2") emissions from existing sources and nitrogen oxides ("NOx") emission controls on new sources in New York State. SO2 and NOx are the primary causes of acid rain. The Acid Rain Program was created under Title IV of the 1990 Clean Air Act Amendments, with the goal of reducing emissions of SO2 and NOx for the environmental and public health benefits. These regulations are also not applicable to the proposed Facility, since it will generate electricity without releasing SO2 or NOx.

There are no applicable local regulatory requirements pertaining to air emissions from the Facility.

(b) Assessment of Existing Ambient Air Quality Levels and Trends in the Region

The NYSDEC Division of Air Resources publishes air quality data for New York State annually. The most recent summary of air quality data available for the state is the *New York State Air Quality Report for 2014* (NYSDEC, 2015). Included in this report are the most recent ambient air quality data, as well as long-term air quality trends derived from data that have been collected and compiled from numerous state and private (e.g., industrial, utility) monitoring stations across the state. These trends are assessed and reported by NYSDEC regions. The proposed facility is located in NYSDEC Region 6, which encompasses Oneida, Herkimer, Jefferson, Lewis, and St. Lawrence Counties. There are four monitoring stations in Region 6, one in Herkimer County that monitors O_3 and SO_2, one in Jefferson County that monitors O_3, and two stations in Oneida County that monitor O_3 and Inhalable particulates ($PM_{2.5}$) Continuously.

The Clean Air Act requires the EPA to set National Ambient Air Quality Standards ("NAAQS") for pollutants considered harmful to public health and the environment. In 2014, all Region 6 sampling points were within the acceptable levels established by the NAAQS for all tested parameters (NYSDEC, 2015). No local air monitoring data is available to further characterize air quality in the immediate vicinity of the proposed facility.

(c) Emissions by Combustion Sources Table

Wind turbines generate electricity without combusting fuel or releasing pollutants into the atmosphere. Therefore, the table required by 1001.17(c) summarizing the rate and amount of emissions is not applicable to the proposed facility and will not be included in the Article 10 Application.

(d) Potential Impacts to Ambient Air Quality

As indicated above, wind turbines generate electricity without combusting fuel or releasing pollutants into the atmosphere. Therefore, the specific requirements of 1001.17(d) pertaining to pollutant emissions are not applicable to the proposed facility and will not be included in the Article 10 Application.

During the site preparation and construction phases of the Facility, temporary minor adverse impacts to air quality could result from the operation of construction equipment and vehicles. Such impacts could occur as a result of emissions from engine exhaust and from the generation of fugitive dust during earth moving activities and travel on unpaved roads. The increased dust and emissions will not be of a magnitude or duration that would significantly impact local air quality. Any impacts from fugitive dust emissions from travel on unpaved roads are anticipated to be short-term and localized and will be avoided or corrected quickly. Dust control procedures will be implemented to minimize

the amount of dust generated by construction activities, in a manner consistent with the Standards and Specifications for Dust Control, as outlined in the *New York State Standards and Specifications for Erosion and Sediment Controls* (NYSDEC, 2005). Potential impacts due to dust generated from construction activities will be addressed in Exhibit 12 of the Article 10 Application.

The operation of this Facility is anticipated to have a positive impact on air quality by producing electricity with zero emissions (except for very small emissions from vehicles servicing the facility). Electricity delivered to the grid from wind energy projects can off-set the generation of energy at existing conventional power plants. According to a 2008 U.S. Department of Energy National Renewable Energy Laboratory report, "Wind energy is a preferred power source on an economic basis, because the operating costs to run the turbines are very low and there are no fuel costs. Thus, when the wind turbines produce power, this power source will displace generation at fossil fueled plants, which have higher operating and fuel costs." On a long-term basis, wind generated power also reduces the need to construct and operate new fossil fueled power plants (Jacobsen & High, 2008).

Natural gas is the most frequent marginal fuel unit in New York's power pool, or the one that is turned on or off as the load fluctuates (Patton et al., 2015). When the proposed facility is generating power, electricity generation from natural gas would be reduced within the region, thereby eliminating the associated emissions. The Article 10 Application will quantify, in tons, the estimated annual displacements resulting from facility operation for the following pollutants: CO2, NOx, SO2, mercury compounds, and lead compounds. However, the Article 10 Application will not include a detailed air emissions analysis or study typically associated with a fossil fuel generation facility.

(e) Offsite Consequence Analysis for Ammonia Stored Onsite

No ammonia will be stored onsite during Facility construction or operation. Therefore, the offsite consequence analysis required by 1001.17(e) is not applicable to the proposed facility and will not be included in the Article 10 Application.

2.18 SAFETY AND SECURITY

Overall safety and security risks associated with the Facility are anticipated to be minimal given the remote location of the Facility Site. The Application will describe the methodology to be used to determine potential security risks, during both construction and operation of the Facility, based on the Applicant's experience with other projects and reasonable expectations associated with Galloo Island Wind. The Application will also identify a "Safety Protocol" regarding the safety and security of the wind turbine construction and operation stages, starting with off-site transport and including all the steps through turbine erection and operation.

(a) Preliminary Plans for Site Security during Facility Construction

To reduce safety and security concerns, public access to the Facility shall be limited. The contractor will be required to provide a site security plan for Facility construction, which will be developed by the contractor selected to lead the construction of the Facility (i.e., BOP contractor) post certification. Preparation of the site security plan will initiate immediately following selection of the BOP contractor, and will be provided to the Energy Siting Board upon completion. The Application will provide a preliminary, typical site security plan for construction, which will include the following:

(1) Access Controls

Traditional access controls such as fences, gates, and bollards will not be required during construction, as the Facility is located on a private island with limited public access. The unique island setting of the Facility will limit access to the site as the island is currently private and has no public access. Additionally signage will by posted at all docking facilities advising of no public access.

(2) Electronic Security and Surveillance Facilities

Trespassing is generally not an issue during construction of wind power projects. However, if problems arise, video cameras or other surveillance technology may be set up to monitor activity.

(3) Security Lighting

Security lighting is not expected to be required given the remote setting of the Facility unless otherwise required by local codes, rules, or regulations.

(4) Setback Considerations

Please see Section 2.6(a) of this PSS for information related to setbacks, and Section 2.15(j) regarding minimizing safety concerns through appropriate setbacks. The Application will provide additional details associated with setbacks and related safety concerns.

(b) Preliminary Plans for Site Security During Facility Operation

The Article 10 Application will contain a preliminary site security plan for operation, which will likely include the following:

(1) Access Controls

The unique island setting of the Facility will limit access to the site as the island has no public access. Additionally, signage will by posted at all docking facilities advising of no public access. All wind turbines have access doors at their bases that are closed and locked, and substations are fenced, gated, and locked at all times. To further deter tower trespass and access, motion detection may also be available depending on the turbine model ultimately selected for the Facility.

(2) Electronic Security and Surveillance Facilities

Substations will have alarms systems and video recording in place. No other electronic security is currently anticipated for the Facility.

(3) Security Lighting

The Article 10 Application will provide a detailed description of security lighting activities associated with the Facility. External lighting on all buildings will be designed in consideration of required ingress and egress during emergency situations. Lighting will be directed downward where possible to minimize the effects of light pollution to the extent practical. Lights will be kept turned off when not in use, either manually or through the use of motion sensors, heat sensors, timers, or other automatic means.

(4) Aircraft Safety Lighting

Lighting of the turbines (and other infrastructure as needed) will be in accordance with FAA regulations, and will follow specific design guidelines to reduce collision risk. The Article 10 Application will provide details associated with preliminary consultation with the FAA, including correspondence received specific to Galloo Island Wind.

(5) Setback Considerations

Please see Section 2.6(a) of this PSS for information related to setbacks, and Section 2.15(j) regarding minimizing safety concerns through appropriate setbacks. The Application will provide additional details associated with setbacks and related safety concerns.

(6) Cyber Security Program

The Article 10 Application will provide a discussion on how the Applicant will comply with the North American Electric Corporations ("NERC") CIP standards. These mandatory Reliability Standards include CIP standards 001 through 009, which address the security of cyber assets essential to the reliable operation of the electric grid. To date, these standards (and those promulgated by the Nuclear Regulatory Commission) are the only mandatory cybersecurity standards in place across the critical infrastructures of the United States. Subject to FERC oversight, NERC and its Regional Entity partners enforce these standards, which are developed with substantial input from industry and approved by FERC, to accomplish NERC's mission of ensuring the security and reliability of the electric grid (NERC 2013).

The Applicant is partnered with an Industry Leading Managed Security Services Provider that is compliant with the necessary NERC CIP standards. All firewalls and servers are monitored 24 hours/day, 7 days/week by a Security Operations Center.

(c) Preliminary Safety Response Plan

An Emergency Action Plan ("EAP") will be developed before the start of construction and will outline the safety plans of the Facility throughout its lifecycle. The information contained in the EAP will be developed in conjunction with local emergency service providers, will be made available to the employees of the Applicant and any visitors or workers to the Facility, and will outline the procedures to follow in the event of an emergency. The EAP, a draft of which will be provided with the Application, is established to give additional awareness to the following:

- Identify alarm and emergency evacuation procedures.
- Identify procedures to be followed by site personnel who remain to operate critical operations before they evacuate.
- Identify rescue and medical duties for all site personnel following emergency evacuation.
- Identify persons who can be contacted for further information or explanation of duties under this plan.
- Establish training guidelines for site personnel regarding this plan to support safe practices in the event of an emergency.

(1) Identification of Contingencies that Would Constitute an Emergency

The EAP as described above will outline the contingencies that would constitute a safety or security emergency. A draft EAP will be provided in the Article 10 Application.

(2) Emergency Response Measures by Contingency

In the event an emergency response measure is necessary the EAP described above will provide detailed instructions to site personnel, the general public, and emergency responders.

(3) Evacuation Control Measures by Contingency

Facility-related operations are not anticipated to require evacuation. Although unlikely, natural disasters (e.g., tornadoes, earthquakes) represent the only possible circumstances that may require evacuation. However, in the event an evacuation from the Facility Site is necessary the EAP described above will provide detailed instructions to site personnel and emergency responders.

(4) Community Notification Procedures by Contingency

The EAP as described above will outline the community notification procedures should an emergency situation occur.

(d) Provision of Security and Safety Plans to NYS Division of Homeland Security

The Application will include documentation of submittal of the preliminary security plans to the New York State Division of Homeland Security and Emergency Services. Upon approval the plan would be implemented within the first 3 months of operation.

(e) Provision of Security and Safety Plans to Local Office of Emergency Management

The Facility Site is not located within any part of a city that has a population over one million and therefore a review by the local office of emergency management is not required. However, the Applicant will coordinate with the Jefferson County Emergency Services Department and the US Coast Guard and provide a copy of our Emergency Action Plan to them.

(f) Onsite Equipment to Respond to Fire Emergencies or Hazardous Substance Incidences

The EAP, as described above, will include a detailed list of all equipment available for responding to fire emergencies or hazardous substance incidences. In general, the Applicant will provide fire extinguishers, automated external

defibrillators, first aid kits, spill kits, and Spec Pak at all sites. There will also be emergency descent rescue devices at the site to allow personnel to escape from a turbine in the event of a serious injury, fire, etc.

(g) Contingency Plans for Fire Emergencies or Hazardous Substance Incidences

The Application will include contingency plans that would be implemented in the event a fire emergency or hazardous substance incident occurs. Drills with site personnel at the Facility would occur at least once a year. Drill activities would be jointly decided between site management and emergency responders. In addition, a detailed Spill Prevention, Control and Countermeasure ("SPCC") plan will be prepared, and implemented, for both the construction and operation phases of the Facility. The SPCC plans will provide a detailed assessment of potential hazardous substances that could be utilized during the construction, operation or maintenance of the Facility. Typically, potential hazardous substances would consist of various oils such as hydraulic oil, mineral oil, and lubricating oil.

(h) Provision of Security and Safety Plans to Local Emergency First Responders

Galloo Island, because of its remote setting, is not served by local emergency first responders. The EAP, as described above, will be provided to the appropriate emergency support groups including Air Methods air rescue, Jefferson County Emergency Services, and the US Coast Guard. Such consultation will be documented in the Article 10 Application.

2.19 NOISE AND VIBRATION

The Facility Site is entirely situated on an island in Lake Ontario approximately 6 miles from the mainland, and it is expected that the location of the Facility will not result in noise impacts to mainland receptors. A noise assessment was conducted for the 82 turbine Hounsfield Project as part of the SEQRA process and NYSDEC, as Lead Agency, found "that the potential for a significant increase in noise levels at the receptor locations on the mainland, even assuming a theoretical 'worst case' scenario that might occur for limited periods of time under a specific set of atmospheric conditions, is not significant and does not warrant further evaluation or mitigation at this time."

This review of potential noise impacts associated with the construction and operation of a wind farm project on Galloo Island will be updated and modified to address the current Facility proposal and the Article 10 requirements. A Noise Impact Assessment ("NIA") of the noise impacts of the construction and operation of the facility, related facilities and ancillary equipment will be prepared by Robert O'Neal of Epsilon Associates, Inc. (Epsilon). Mr. O'Neal has over twenty-five years of experience in the areas of community noise impacts, meteorological data collection, and analyses. His noise impact evaluation experience includes the design and implementation of sound level measurement programs,

modeling of future impacts, conceptual mitigation analyses, and compliance testing. He is Board Certified by the Institute of Noise Control Engineering ("INCE") in Noise Control Engineering and is a Certified Consulting Meteorologist ("CCM") by the American Meteorological Society. Both of these certifications are national programs. Modeling will be done in accordance with ISO 9613. Sound monitoring will be done in accordance with ANSI S12.18, as appropriate.

(a) Sensitive Sound Receptor Map

A map showing the location of sensitive sound receptors in relation to the Facility, related facilities and ancillary equipment will be created by data generated by the Applicant. The decommissioned lighthouse located on the southwestern tip of Galloo Island is considered a sensitive receptor due to its listing on the National Registry of Historic Places. The next closest sensitive receptors are seasonal residential facilities located on Stony Island, 2.5 miles or greater from the nearest Facility components. The nearest permanent residential receptor is over 6 miles away on the mainland. The noise contour maps developed in the NIA will show predicted future sound levels at the lighthouse on Galloo Island and the seasonal facilities on Stony Island as well as at the nearest mainland locations. The Article 10 Application will provide a map of the three nearest mainland landfall locations where the NIA will estimate noise impacts.

(b) Ambient Pre-construction Baseline Noise Conditions

Ambient pre-construction sound level data will be collected at three representative locations (see Figure 4), determined based upon distance to nearest mainland landfall. Sound level data will be collected in compliance with the regulations using an industry standard, appropriately calibrated sound level meter and one-third octave band frequency spectrum analyzer. Ground-level wind speed data will also be measured at a minimum of one of the sound level monitors. In addition, detailed weather conditions from the nearest National Weather Service ("NWS") station in Watertown will be archived for the duration of the survey. Data will be recorded continuously (24 hours/day) for at least one week during both the summer and winter at representative locations (see Figure 4). The recorded data will be filtered to remove seasonal and intermittent noise.

(c) Future Noise Levels at Receptors During Facility Construction

Facility construction will require the operation of heavy equipment for activities such as right-of-way clearing, access road construction, material and component delivery, installation of electrical interconnect, turbine foundation construction, turbine erection, and site restoration. The noise generated by these activities will be associated with gasoline and diesel-powered engines as well as impact noise from jackhammers and/or rock drills, or even localized blasting, if required due to geotechnical conditions. It is expected that Facility-related construction noise will be similar

to that of typical road or utility construction projects. Construction generated noise is likely to go unnoticed on the mainland approximately 6 miles from Galloo Island. To the extent it is audible, it is not expected to have an impact. However, construction noise impacts will be evaluated in the Article 10 Application, as described below.

A computer model of the noise-related construction impacts will require data from the USDOT, Federal Highway Administration ("FHWA") Roadway Construction Model ("RCNM") regarding the typical sound level of the construction equipment to be used. In order to ensure the accuracy of the model, the following variables will be taken into account:

- the ability to model multiple pieces of construction equipment working either independently or simultaneously;
- the character of noise emission, be it impulsive noise or more steady noise;
- the ability to account for distances from each piece of equipment to each receptor location;
- the influence of time-of-day, be it daytime, evening, or nighttime;
- the expected duration of work;
- the propagation (ground) characteristics of the pathway between the equipment and the receptors;
- the attenuation effects of any man-made or natural barriers;
- the potential shielding or reflective effects of nearby buildings; and
- to a lesser degree, the meteorological effects on noise propagation.

Future noise levels generated by Facility construction, based on the modeling described above, will be included in the Article 10 Application.

(d) Estimated Noise Levels to be Produced by Operation of the Facility

The Article 10 Application will include an estimate of the noise level to be produced by the wind turbines and substation, assuming sound propagation under worst-case wind and atmospheric conditions using the ISO 9613-2 standard.

(e) Future Noise Levels at Receptors During Facility Operation

The model will predict A-weighted sound levels at each of the three locations (see Figure 4), based on any of the non-construction specific variables listed above in 19(c) as well as information from the turbine manufacturer regarding the unique operational noise characteristics of the selected turbine model. Tonal prediction will be based upon the sound power of the wind turbines. That is, if the sound power is not tonal, the receiving sound will not be tonal. For substation transformers, the modeled results at the worst-case receiver will be evaluated to assess the prominence of transformer tones. Amplitude modulation will be addressed by determining whether the area has unusually high wind shear or turbulence that could contribute to the phenomenon. The potential of the Facility to produce infrasound and low-

frequency sound will also be evaluated, in the context of sound attenuating approximately 6 miles to the nearest sensitive receptors. Since infrasound data (below 20 Hz) is not required as part of the wind turbine supplier acoustic standard (IEC 61400-11), a discussion of infrasound impacts will be based on other recent wind projects where actual post-construction sound data is publicly available, and/or the literature.

(f) Predicted Sound Levels Table

The Article 10 Application will provide the A-weighted/dBA sound levels, in tabular form, for the operating Facility. Predicted sound levels will be shown through graphical isolines of A-weighted decibels. The table will state the sound pressure levels at the three locations (see Figure 4) for scenarios described in 1001.19 of the Article 10 Regulations. The table will include the following:

1) The daytime ambient noise level will be calculated from summer and winter background sound level monitoring data. This will be equal to the lower tenth percentile (L90) of sound levels measured during the daytime (7 AM to 10 PM) at each of the monitoring locations.
2) The summer nighttime ambient noise level will be calculated from summer background sound level monitoring data. This will be equal to the lower tenth percentile (L90) of sound levels measured at night (10 PM to 7 AM) , during the summer at each of the monitoring locations.
3) The winter nighttime ambient noise level will be calculated from background sound level monitoring data. This will be equal to the lower tenth percentile (L90) of sound levels measured at night, during the winter at each of the monitoring locations.
4) The worst case future noise level during the daytime period will be determined by logarithmically adding the daytime ambient sound level (L90), calculated from background sound level monitoring, to the modeled upper tenth percentile sound level (L10) of the Facility.
5) The worst case future noise level during the summer nighttime period will be determined by logarithmically adding the summer nighttime ambient sound level (L90), calculated from background sound level monitoring, to the modeled upper tenth percentile sound level (L10) the Facility.
6) The worst case future noise level during the winter nighttime period will be determined by logarithmically adding the winter nighttime ambient sound level (L90), calculated from background sound level monitoring to the modeled upper tenth percentile sound level (L10) the Facility.
7) The daytime ambient average noise level will be calculated by logarithmically averaging sound pressure levels (Leq) from the background sound level measurements over the daytime period at each monitoring location.

8) Typical facility noise levels will be calculated as the median sound pressure level emitted by the Facility. The median sound pressure level will be calculated by determining the frequency of site specific meteorological conditions and sound emissions of the Facility due to those conditions.
9) Typical facility daytime noise levels will be calculated as the daytime equivalent average sound level (Leq) that was measured at each monitoring location, logarithmically added to the median Facility sound pressure level (L50).

(g) Applicable Noise Standards

Exhibit 19 will provide a complete description of the noise standards that are applicable to the Facility and a discussion of the Facility's level of compliance with those standards. The predicted worst-case sound levels from the Facility will be compared to the NYSDEC Noise Guideline document to assess noise impacts. The NYSDEC Guidelines state, "in non-industrial settings the sound pressure level ("SPL") should probably not exceed ambient noise by more than 6 dBA at the receptor," and the addition of any noise source, in a non-industrial setting, should not raise the ambient noise level above a maximum of 65 dBA." Increases ranging from 0-3 dB should have no appreciable effect on receptors. Increases from 3-6 dB may have potential for adverse noise impact only in cases where the most sensitive receptors are present. Sound pressure increases of more than 6 dB may require closer analysis of impact potential depending on existing SPLs and the character of surrounding land use and receptors (NYSDEC, 2001).

(h) Noise Standards Comparison Table

A table outlining noise standards applicable to the Facility, including any local regulations and noise design goals will be provided with the Article 10 Application, including the degree of compliance at three nearest mainland landfall locations, indicated by the above-referenced noise modeling.

(i) Noise Abatement Measures for Construction Activities

A description of the noise complaint resolution plan during the construction period shall be provided as part of the Article 10 Application. The protocol shall include noise abatement measures for Facility activities along with procedures for handling complaints. Such efforts may include:

- Implementing BMPs for sound abatement during construction, including keeping equipment in good working condition, use of appropriate mufflers
- Notifying potentially impacted landowners in advance of loud events, such as jackhammering.

(j) Noise Abatement Measures for Facility Design and Operation

Adverse noise impacts will be avoided or minimized through careful siting of Facility components based on the results of the sound model that will be developed for the Facility. Given the location of the Facility and the Findings in the previous SEQRA review for the 82 turbine Hounsfield project, it is anticipated that the Facility will comply with NYSDEC guidelines on noise, and local noise ordinances. The Article 10 Application will include a discussion of different mitigation options that are available for wind turbines and ancillary equipment if significant adverse noise impacts are anticipated.

(k) Community Noise Impacts

The potential for the Facility to result in hearing damage will be addressed using OSHA standards. Indoor and outdoor speech interference will be addressed using the EPA Guideline Level, which is protective of activity interference. Community complaint potential will be addressed using WHO Guidelines for Community Noise serious and moderate annoyance criteria, ANSI S12.9 Part 5, and/or scientific studies specific to wind turbine annoyance and NYSDEC's Noise Guideline. Information found in these sources, compared with sound propagation modeling of the Facility will help determine the potential for complaints. The Applicant is not aware of a wind project that resulted in structural damage due to noise or vibrations, and this Facility is not anticipated to result in any structural damage. The Applicant is not aware of any technical, industrial, or medical activities that take place on Galloo Island that are sensitive to vibration or infrasound. Therefore, impacts to such activities and instruments are not anticipated, and will not be discussed in the Article 10 Application.

(l) Post-construction Noise Evaluation Studies

The NIA will include a plan for post-construction noise evaluation to determine compliance with applicable standards.

(m) Operational Controls and Mitigation Measures to Address Reasonable Complaints

The NIA will include a discussion of any potential post-construction mitigation measures and procedures for implementing operational controls to address reasonable complaints or any noise-related issues that are identified during post-construction evaluation.

(n) Input Parameters, Assumptions, and Data Used for Modeling

Specific modeling parameters, assumptions, and any associated data used in sound propagation modeling will be included as an appendix to the NIA prepared by Epsilon, which will be included with the Article 10 Application.

2.20 CULTURAL RESOURCES

Consistent with 16 NYCRR § 1001.20 and the New York State Historic Preservation Office Guidelines for Wind Farm Development Cultural Resources Survey Work (the *SHPO Wind Guidelines*; NYSOPRHP, 2006), the Applicant has initiated consultation with the New York State Office of Parks, Recreation, and Historic Preservation ("NYSOPRHP") to develop the scope and methodology for cultural resources studies for the Facility. To date, formal consultation with NYSOPRHP has included initiating project review and consultation through NYSOPRHP's Cultural Resources Information System ("CRIS") website[2] and submission of one technical scoping report: a Cultural Resources Survey and Work Plan (this report is attached as Appendix E). This submission is described in greater detail below.

On June 3, 2016, the Applicant submitted an initial project review request to NYSOPRHP via their on-line CRIS portal. The initial consultation submission included the following attachments:

- A copy of the PIP prepared as part of the Article 10 process, and released in August 2015 to provide NYSOPRHP with information regarding the Project.
- A Cultural Resources Summary & Work Plan for Galloo Island Wind, which summarized previous cultural resources surveys conducted in association with the Hounsfield Wind Farm, and provided a work plan for additional cultural resources work, which is fully described below.

Review of the potential environmental impacts of the previously proposed Hounsfield Wind Project included consultation with the NYSOPRHP (under Project Review No. 07PR06733). To support that consultation, Panamerican Consultants, Inc. ("PCI"), between 2008 and 2009, conducted cultural resources investigations to investigate the Hounsfield Wind Project's potential effect on archaeological and historic-architectural resources. As part of the SEQRA permitting and review process, PCI conducted a Phase 1A cultural resources survey (PCI, 2008), Phase 1B archaeological resources survey (PCI, 2009a), Phase II scope of work (PCI, 2009b), and a 10-mile-radius study of historic architectural resources (PCI, 2009c) for the Hounsfield Wind Farm. The results of these surveys are summarized below.

Taking into account the previous Hounsfield Wind Project surveys and studies, the Applicant prepared a work plan that included recommendations for additional cultural resources surveys and ongoing consultation with NYSOPRHP where appropriate to address potential impacts to archaeological and historic resources. See (a) and (b) below for further discussion of the work plans relative to Archaeological and Historic Resources, respectively.

[2] NYSORPHP's Cultural Resources Information System is accessible at: http://www.nysparks.com/shpo/online-tools/.

(a) Archaeological Resources

The Article 10 Application will contain a full analysis of the potential impacts of the construction and operation of the Facility on archaeological resources. Several previous archaeological surveys have been conducted on Galloo Island associated with the previously proposed Hounsfield Wind Farm, resulting in the identification of four archaeological sites. The findings and recommendations of these previous surveys with regard to archaeological site avoidance and mitigation are summarized below. No additional archaeological surveys are proposed for Galloo Island Wind.

(1) Summary of Potential Impacts and Proposed Avoidance and Mitigation

The Applicant will design the proposed Facility layout with the intent to avoid impacts to the four previously identified archaeological sites. If any archaeological resources cannot be avoided by Facility design, the Applicant will review the commitments made in the SEQRA Findings Statement (with respect to archaeological resources) with NYSOPRHP (including the proposed scopes for Phase 2 investigations, if applicable), and continue to consult with NYSOPRHP to minimize or mitigate impacts to archaeological resources.

Previous Phase 1A Cultural Resources Survey

PCI's Phase 1A report (PCI, 2008) included background research, a discussion of historic and prehistoric archaeological sensitivity, and recommendations regarding further archaeological survey work. The document also summarized existing architectural resources and made recommendations for additional historic architectural survey work. PCI (2008) concluded that prehistoric archaeological sensitivity of the island was low to moderate and historic archaeological sensitivity was limited primarily to areas associated with map-documented structures, nine of which were identified.

In conclusion to the Phase 1A report, PCI (2008) recommended:

1. A Phase 1B survey to locate and map foundation remains observed during the Phase 1A site visit and identify any additional foundation remains and/or middens associated with map documented structures. Additionally, they recommended attempting to determine the likely locations of any island-interior refuse disposal areas.
2. An 8-10% sample of the approximately 300 acres of the island which had been identified as sensitive for prehistoric archaeology.

Previous Phase1B Archaeological Survey

The Phase 1B archaeological survey report (PCI, 2009a) included an archaeological survey research design which proposed:

1. Testing 35 one-acre blocks with 5-meter interval shovel tests (169 shovel tests per acre; or a total of 5,915 proposed shovel tests).
2. Excluding areas of exposed bedrock and mapped wetlands from archaeological survey.
3. Focusing nine one-acre survey areas on locations of map-documented structures and placing the remaining 26 one-acre survey areas arbitrarily across the testable portions of the island (i.e., non-bedrock, non-wetland).

During the Phase 1B archaeological survey, PCI (2009a) excavated 6,043 shovel tests, consisting of 5,901 shovel tests within 35 one-acre survey areas, as well as an additional 142 shovel tests at seven locations added to investigate areas of potential interest not included in the original research design. The Phase 1B archaeological survey identified four historic archaeological sites (Unique Site Numbers [USNs] A04510.000047, A04510.000048, A04510.000049, and A04510.000050). PCI (2009) recommended three of the archaeological sites as not eligible for listing on the NRHP with no further work and one of the sites as potentially eligible for listing on the NRHP. PCI (2009a) recommended site avoidance or Phase II investigations for this last site. No prehistoric/pre-contact Native American archaeological resources were identified on Galloo Island.

NYSOPRHP reviewed the Phase 1A and Phase 1B reports concurrently and issued a response on April 8, 2009 (Blakemore, 2009) which recommended that the Hounsfield Wind Project design be revised to avoid impacts to the four archaeological sites identified during the Phase 1B survey, or, if avoidance was not feasible, that Phase 2 archaeological investigations of these sites would be necessary. In response, PCI drafted Phase 2 work plans for the four historic archaeological sites identified during the Phase 1B archaeological survey (PCI, 2009b). However, these Phase 2 investigations were not conducted due to the previously proposed project being put on hold in 2009.

(2) Previous Commitments Regarding Archaeological Resources

The following is a summary of commitments made throughout the SEQRA process for the previously proposed Hounsfield Wind project regarding archaeological resources:

- In the review of the Phase 1B, NYSOPRHP recommended avoidance of all four sites and noted that if avoidance was not possible, Phase II investigations should be conducted (Blakemore, 2009).
- The SEQRA Findings Statement (NYSDEC, 2010) noted that three of the archaeological sites were being avoided by facility layout but that one of the sites (USN A04510.000048) was located at the proposed location for the permanent boat slip and could not be avoided. Therefore, the Applicant committed to a Phase II investigation at Site A04510.000048, per NYSOPRHP recommendations (Blakemore, 2009).
- The SEQRA Findings Statement (NYSDEC, 2010: 30-31) further states:

> "In addition to providing the basis for historical off-set projects, the MOA will contain an Avoidance Plan which will include a number of measures to ensure protection of archaeologically sensitive resources such as:
>
> 1. Temporary fencing will be installed demarking a 50-foot buffer from the archaeological sites and marked with signs indicating "Sensitive Area/No Access".
> 2. Final construction plans will include a notation regarding the avoidance measures for the archaeological areas.
> 3. The preconstruction meeting will include a discussion regarding the avoidance measures for the archaeological areas.
> 4. The SHPO Human Remains Discovery Protocol will be included in the construction plans for the Engineer-in-Charge in the unlikely event that human remains are encountered during construction.
> 5. The SHPO plan for Unanticipated Discoveries will be included in the construction plans for the Engineer-in-Charge."

(3) Current Recommendations for Additional Work

It is currently recommended that, given significant reductions in the scope (and corresponding ground disturbance) of the proposed Facility relative to the previously proposed Hounsfield Wind Project, the results of PCI's (2009a) Phase 1B archaeological survey provide an adequate basis to evaluate the potential for archaeological resources to be located within the Facility's Direct APE. The Direct APE relative to archaeological resources is defined as those areas where soil disturbance is proposed to occur during construction. The *SHPO Wind Guidelines* (NYSOPRHP, 2006) are based on the assumption that additional archaeological survey work is not necessary if project components move around during the project development process, as long as the total area of ground disturbance for the project does not increase. As mentioned previously, the number of proposed turbines for the Galloo Island Project (32) is significantly fewer than the number of turbines in the previously studied Hounsfield Wind Farm (84). In addition, the current Facility layout includes a corresponding reduction in ground disturbance

associated with access roads, buried interconnects, and other project components relative the Hounsfield Wind Project layout that was surveyed in 2008/2009. Based on the reduced size of the Direct APE, and the scope of the previously conducted Phase 1B archaeological survey (PCI, 2009), additional archaeological survey is not warranted or necessary for the proposed Facility.

(4) Potential for Phase 2 Archaeological Investigations

If avoidance is not possible for one or more of the archaeological sites, then it is anticipated that Phase 2 investigations would be required. If Phase 2 investigations become necessary, PCI's *Phase II Scopes-of-Work* (2009b) will be reviewed and revised (in consultation with NYSOPRHP) to reflect the current circumstances. Revised Phase 2 scopes of work will then be provided to NYSOPRHP for review prior to initiating any additional archaeological investigations. The goal of Phase 2 investigations is to evaluate a site's eligibility for listing on the NRHP. If Phase 2 investigations determine one or more of the previously identified archaeological sites to be eligible for listing on the NRHP, Phase 3 data recovery investigations may be warranted if the site(s) cannot be avoided by Facility design at that time. If the Phase 2 investigations determine the site(s) to be ineligible for listing on the NRHP, then no further archaeological work will be required.

(5) Curation of Archaeological Materials

As described above, the archaeological surveys conducted for the previously proposed Hounsfield Wind Farm provide an adequate basis for evaluation the proposed Facility's potential effect on archaeological resources. The Applicant has designed the Facility to avoid impacts to the four archaeological sites that were identified in previous surveys, and does not anticipate that any additional archaeological investigations will be necessary. However, in the event that Phase 2 investigations of any of the four sites are required, then all archeological materials recovered during archaeological investigations shall be cleaned, catalogued, inventoried, and curated according to New York Archaeological Council Standards.

(6) Unanticipated Discovery Plan

The Article 10 Application will include an Unanticipated Discovery Plan that will identify the actions to be taken in the unexpected event that resources of cultural, historical, or archaeological importance are encountered during Facility construction. The plan will include a provision for work stoppage upon the discovery of possible archaeological or human remains. Evaluation of such discoveries, if warranted, will be conducted by a professional archaeologist, qualified according to the NYAC Standards. The Unanticipated Discovery Plan will specify the degree to which the methodology used to assess any discoveries follows the NYAC Standards.

(b) Historic Resources

The Article 10 Application will contain a full analysis of the impacts of the construction and operation of the Facility on historic architectural resources. A previous historic architectural resources survey was conducted for the Hounsfield Wind Farm in 2009, the results of which are summarized below. No additional historic-architectural resources survey are necessary within the areas of the APE previously surveyed in 2009. Due to the differences in layout between the Hounsfield Wind Farm and the Facility, an updated historic architectural resources visual effects analysis will be conducted to assess the potential visual impacts on previously identified NRHP-listed and NRHP-eligible resources located within the APE of the Facility.

(1) Previous Work Pertaining to Historic-Architectural Resources

The Historic Building Survey of Ten-Mile APE for the Proposed Hounsfield Wind Farm, Galloo Island, Town of Hounsfield, Jefferson County, New York (PCI, 2009c) conducted for the Hounsfield Wind Farm resulted in identification of a total of 66 resources previously listed in or determined eligible for the NRHP:

- Nine resources previously listed in or determined eligible for the NRHP
- One historic district (Sackets Harbor Village Historic District) previously listed in or determined eligible for the NRHP
- 37 newly surveyed resources determined to be potentially eligible for the NRHP
- 19 properties surveyed but assigned an "Unevaluated" status due to a lack of access

Based on the survey results included within the *Historic Building Survey of Ten-Mile APE,* NYSOPRHP determined that a total of 238 resources are previously listed in or determined eligible for the NRHP within the ten-mile APE for the Hounsfield Wind Farm, including 156 contributing resources located within the NRHP-Listed Sackets Harbor Village Historic District, as well as numerous contributing resources included within NRHP listings for the Galloo Island Light House Complex, and Sackets Harbor Battlefield and Madison Barracks, 13 properties within the NRHP-eligible Association Island Historic District, and 11 properties within the NRHP-eligible Lighthouse Road Historic District (Bonafide, 2009).

(2) Area of Potential Effect Relative to Historic Architectural Resources

The Facility will have no physical impacts to historic architectural resources (i.e., no historic structures will be damaged or removed). The Facility's potential effect on a given historic property would be a change in the

property's visual setting, resulting from the introduction of wind turbines. Therefore, the Indirect Area of Potential Effect (APE) for visual effects on historic resources must include those areas where Facility components (including wind turbines) will be visible and where there is a potential for a significant visual effect.

The *SHPO Wind Guidelines* request that the consultant participate in a meeting to verify the APE for visual impacts to historic resources prior to undertaking the historic resources survey. Due to the high visibility created by the "unobstructed expanses of open water between the island and the mainland" (Bonafide, 2009), the visual APE for indirect effects for the Hounsfield Wind Farm was recommended to be ten miles, with a portion extended to 13 miles to include the Village of Sackets Harbor per the recommendation of NYSOPRHP during the previous SEQRA process (PCI, 2009c; Bonafide, 2009).

The Applicant has met with NYSOPRHP staff and reviewed the previous historic architectural resources survey. Due to the relatively recent date of the previous survey (2009), it is anticipated that the results of this survey are sufficient with regard to identifying historic architectural resources located within the indirect APE of the Facility, and no additional historic architectural resources surveys will be conducted.

(3) Previously Identified Historic Architectural Resources Located in the Area of Potential Effect

The locations of all resources previously determined NRHP-eligible as part of the *Historic Building Survey of Ten-Mile APE* (PCI, 2009c) will be digitized and mapped using ArcGIS. The NYSOPRHP CRIS website will also be reviewed to identify any additional NRHP-eligible resources not included as part of these surveys, which will also be digitized and mapped. It is worth noting that the locations of historic architectural resources previously determined not NRHP-eligible will not be digitized as part of this task. A GIS shapefile of all previously surveyed historic architectural resources, including name (if applicable), address, and Unique Site Number ("USN") will be provided to NYSOPRHP via the CRIS website.

Methodology to Assess Potential Visual Effects of the Facility

The Applicant will prepare an analysis of the potential visual effect of the Facility on properties determined by NYSOPRHP to be NRHP-eligible as part of the previous historic architectural resources survey (Bonafide, 2009; PCI, 2009c), including consideration of distance and the effect of vegetation and other landscape features that may screen or minimize views of the Facility from historic resources. The visual effects analysis will specifically address impacts from the NRHP-listed key receptors previously identified by NYSOPRHP in the June 23, 2009 letter (Galloo Island Light House Complex, Sackets Harbor Battlefield, Madison Barracks, and Sackets Harbor Village Historic District), and will include visual simulations where appropriate in response

to NYSOPRHP concerns regarding impacts to these concentrations of historic resources. The report will also include a discussion of mitigation efforts based on a review of previous recommendations for mitigation of visual impacts to historic resources found in the SEQRA Findings Statement (NYSDEC, 2010).

In addition, consideration of the Facility's potential effects on cultural resources will include evaluation of the potential for noise-related impacts to the NRHP-listed Galloo Island Light House Complex. These effects will be considered in Exhibit 19 of the Application, as well as Exhibit 24.

The historic resources visual effects analysis will be provided to NYSOPRHP via the CRIS website and provide the basis for the evaluation of potential visual effects on historic resources included in Exhibit 24 of the Article 10 Application. The completed Historic Architectural Resources Effects Analysis will be submitted as part of the Article 10 Application.

2.21 GEOLOGY, SEISMOLOGY, AND SOILS

(a) Existing Slopes Map

Galloo Island is generally flat, with cliffs of up to 48 feet present along the western side of the island. All Facility components will be sited away from these cliffs to ensure protection of these geological features. A map delineating existing slopes (0-3%, 3-8%, 8-15%, 15-25%, 25-35%, 35% and over) on and within the drainage area potentially influenced by the Facility will be prepared using the USGS National Elevation Dataset. Digital Elevation Model ("DEM") data, and will be processed using ESRI ArcGIS® Software to delineate a drainage area and develop slope mapping.

(b) Proposed Site Plan

For the purpose of the Article 10 Application it is assumed that the preliminary design drawings prepared in support of Exhibit 11 will serve as the proposed site plan for the Facility. Publicly available data from the USGS will be used to identify existing contours (data available at 10-foot intervals). Using suitable computer software (i.e., AutoCAD), the USGS 10-foot contours will be interpolated to indicate contours at 2-foot intervals in order to show the proposed grading at the required interval. Information regarding soil types and depth to bedrock will also be based on publicly available data. These plans will be included in the Article 10 Application.

(c) Cut and Fill

The Application will include preliminary cut and fill calculations based on the publically available information and the preliminary layout and grading included in the Preliminary Design Drawings. The Article 10 Application will also

generally describe the typical scenarios that would result in cut and fill necessary to construct the facility, such as turbine foundation excavation. Separate calculations for topsoil, sub-soil and rock will be roughly approximated based on publically available data from the County Soil Survey. These preliminary cut and fill assessment will be summarized in the Article 10 Application.

With respect to the introduction and/or transport of invasive species by the transport of soil fill material to or from the site, there will be no transport of fill material from outside the Facility Site, nor will there be any fill transported offsite (see Section 2.21(e) below for additional information). In addition, the Applicant will prepare an Invasive Species Control Plan based on the Pale Swallow-wort Control Plan that was approved by the NYSDEC during the SEQRA review for the Hounsfield Wind Farm Project. Specific measures in the plan will be informed by on-site observations of existing conditions on Galloo Island and any changes regarding the spread of Pale Swallow-wort since the issuance of the SEQRA Findings Statement for the Hounsfield Project. Adherence to the Invasive Species Control plan will avoid and minimize adverse impacts associated with invasive species result from cut and fill during Facility.

(d) Fill, Gravel, Asphalt, and Surface Treatment Material

The preliminary calculation of the amount of fill, gravel, etc. will be based on typical details (e.g., access road cross section) to be included with the Article 10 Application.

(e) Type and Amount of Materials to be Removed from the Facility

No materials will be removed. Stockpiled soils along the construction corridors will be used in site restoration, and all such materials will be re-graded to approximate pre-construction contours.

(f) Excavation Techniques to be employed

The activities associated with constructing wind power projects in New York State are well understood, and although a given site can have unique characteristics in comparison to other sites, construction methodologies can be reasonably anticipated based on the Applicant's experience (in New York and other states) and available site conditions data. The majority of excavation activities will be associated with turbine foundations, while additional excavations will be associated with other aspects of Facility construction in specific locations as needed (i.e., collection station). For example, it is anticipated that the majority of the Facility's buried electrical interconnect will be installed through use of a cable plow, chain or wheel trencher; however, in select locations a backhoe may excavate a trench for cable installation due to the subsurface characteristics.

The Applicant does not expect Facility-related excavation to result in adverse impacts to geology or soils (see Section (m) below for additional detail). However, the Article 10 Application will provide a more detailed description of construction methodologies and activities associated with the Facility, including the anticipated excavation techniques to be employed. This information and analysis will be based on the site-specific Preliminary Geotechnical Investigation, which is described in Section 2.21(h) below.

(g) Temporary Cut and Fill Storage Areas

All temporary cut or fill storage areas will be adjacent to excavation locations, and the process of determining excavation locations will be described, and preliminary cut and fill locations will be identified, in the Article 10 Application. Final cut and fill storage areas will be available following Certification, and included in the final construction drawings.

(h) Suitability for Construction

The Article 10 Application will include the results of a Preliminary Geotechnical Investigation, which will include the following:

- Literature review and obtaining publicly available data regarding surface and subsurface soil, bedrock, and groundwater conditions
- Test borings, to be completed if literature review is determined to be insufficient, at a sub-set of turbine locations and the substation locations
- Data analysis
- A report that generally describes the following:
    - Surface Soils
    - Subsurface Soils
    - Bedrock Conditions
    - Hydrogeologic Conditions
    - Chemical and Engineering Properties
    - Laboratory Testing
    - Seismic Considerations
    - Construction Suitability Analysis and Recommendations

The Preliminary Geotechnical Investigation will be summarized in Exhibit 21 of (and included as an appendix to) the Article 10 Application. This stand-alone report will be based on a Facility-specific site visit conducted by a geotechnical expert, review of publicly available data (anticipated to include the Surficial Geologic Map of New York, Geologic (Bedrock) Map of New York, Soil Survey of Jefferson County, Deep Wells in New York State, Geology of Jefferson County, Tectonic Units and Preliminary Brittle Structures of New York, Aquifers of New York State, Geology of New

York – A Simplified Account, New York State Building Code), and test borings to be completed at a subset of turbine/substation locations.

In addition, before construction commences, a site survey will be performed to stake out the exact location of proposed Facility components. Once the surveys are complete, a detailed geotechnical investigation will be performed to verify subsurface conditions and allow development of final wind turbine foundation and electrical design, and other facility components as necessary. The geotechnical investigation involves a drill rig obtaining borings to identify the subsurface soil and rock types, strength and chemical properties (such as establishing sulfate content etc.), and will also document the presence and depth of any groundwater encountered. Testing is also done to measure the soil's electrical properties to ensure proper grounding system design. Geotechnical borings will be conducted as determined necessary by a professional engineer to allow foundation design to be finalized for turbine and substation locations. General descriptions of the corrosivity of soils found in the Facility Site, and their effects on building materials, are provided below.

(i) Preliminary Blasting Plan

Impacts to bedrock are anticipated from blasting during construction. Blasting of bedrock will be required for the construction of turbine foundations, portions of the electrical connection lines, and for construction of turbine component landing facility. Bedrock that is excavated will be reused on the island as material for the Facility access roads. Given the proposed turbines' distance from the mainland, there should be no blasting-related impacts to the mainland. A Preliminary Blasting Plan will be included as an Appendix to the Article 10 Application. The Blasting Plan sets forth procedures and Best Management Practices that will be utilized to ensure that blasting is conducted in a safe, consistent manner, while simultaneously reducing environmental impacts to the maximum extent practicable.

(j) Potential Blasting Impacts

As indicated above, impacts to bedrock are anticipated as a result of blasting during construction of the Facility. Galloo Island are generally shallow, and there are many areas of exposed limestone bedrock. While there are no mapped bedrock hazards such as limestone karst on the island, the Trenton Group (which does occur on the island) is comprised of carbonate rocks that are susceptible to dissolution and sinkhole formation (ACP, 2009). According to GIS data available from the NYSDEC, there are no natural gas wells located on Galloo Island, and therefore no potential impacts to such features will occur. The DEIS states that there is one water well located on the island used for potable water (ACP, 2009). Since blasting is not anticipated to occur near the existing well, buildings, or other relevant infrastructure no impacts to the well are anticipated. Impacts to island cliffs will be avoided through appropriate setbacks/siting, and additional detail will be provided in the Article 10 Application.

(k) Mitigation Measures for Blasting Impacts

Blasting will be conducted in accordance with the Facility-specific blasting plan, and all required blasting will receive oversight by an Environmental Monitor. A Preliminary Blasting Plan will be included as an Appendix to the Article 10 Application. Any additional measures will be discussed in the Article 10 Application.

(l) Regional Geology, Tectonic Setting, and Seismology

The proposed Facility is located on Galloo Island in eastern Lake Ontario, which occurs within the Ontario-Lowlands Physiographic Province of New York State (New York State Geological Survey 2015). The island is approximately 4.5 miles long and up to 1.5 miles wide with elevation ranging from 250 to 305 feet (amsl). The island is generally flat, with steep, sloping scarp at the northern end of the island (ACP 2009). The remainder of the island gently slopes southwest towards the main basin of Lake Ontario. The topography of Galloo Island, and much of the surrounding region, is a result of glacial erosion from Pleistocene-era glaciers and post-glacial surface water drainage (USDA 1989).

Galloo Island and the surrounding islands in northeastern Lake Ontario comprise part of an area known as the Galloo Rock Outcrop (USDA 1989), which occurs within the Galloo and Stony Basin, and the Northeast Lake Ontario-St. Lawrence Basin. Within these basins a series of broad, low, northeast to southwest trending ridges combine to form a complex ridge that extends from the west near Prince Edward Point, Ontario, to the east near Stony Point, New York. This ridge complex has a relief that ranges from 20 to 30 meters, and consists of steep, northeast-facing scarps, and gently sloping southwest-facing surfaces. The cuesta features of these ridges are gently rounded to flat, and in some cases are capped by islands, such as Main Duck, Stony, and Galloo Islands. Additionally, submerged bedrock can be observed immediately adjacent to Galloo Island along the east, south, and west sides of the island (ACP 2009).

The bedrock that comprises Galloo Island and the surrounding area is chiefly composed of limestones from the Trenton Group, which were deposited 505 to 440 million years ago during the Ordovician Period (New York State Museum 1991). Limestone is naturally susceptible to dissolution by acidic groundwater, fractures, joints, and faults. Additionally, while no limestone (karst) hazards have been mapped on Galloo Island, the Trenton Group is comprised of carbonate rocks that are susceptible to dissolution and sinkhole formation, especially with joints and factures that are common in limestone. An orthogonal joint system has developed in bedrock surrounding the island, and can be seen in shallow water from the air (ACP 2009).

With respect to seismicity, earthquakes have been recorded in Jefferson County, although they are typically below 3 on the Modified Richter Scale. The only potential seismic hazard for Galloo Island and the proposed Facility would

likely be seismic activity generated from the St. Lawrence Rift System, which is suspected to extend in to Lakes Ontario and Erie (ACP 2009).

The New York State Seismic Building Code Seismic Hazard Map breaks the state into four distinct zones (Seismic Zone A through D). The geographic area described as Zone A (located in south-central New York) is considered as having the lowest seismic risk, while geographic areas described as Zones B through D are considered as moderate seismic risk areas. Each zone has a corresponding seismic zone factor of "Z". The "Z" numerically corresponds to effective peak acceleration in g, where g equals the earth's gravity acceleration (Klaus, 1993). The building code seismic hazard map for New York State uses these four zone factors, which are based on an exceedance probability of 10% in about 100 years (Klaus, 1993). "S" takes into account differences in seismic characteristics of soils types and bedrock found in each Seismic Zone. Five soil-type factors (S0-very hard rocks through S4-very soft soils) have been identified in the code (which includes a soil liquefaction screening procedure). Review of the Seismic Zoning Map for New York State indicates that Galloo Island lies within the Seismic Zone C and has a "Z" factor of 0.15. Furthermore, the Facility Site has a soil type factor designation of S2 (soft soil). This indicates that the Facility Site is in a zone of moderate seismic risk (Gergely 1993).

(m) Facility Impacts on Regional Geology

The Facility is not anticipated to result in any significant impacts to regional geology. However, as outlined in the Findings Statement, only temporary, minor impacts to local soils and geology are expected as a result of construction activities. Additional detail regarding impacts on regional geology will be provided in the Article 10 application based on the Facility-specific Preliminary Geotechnical Investigation.

(n) Impacts of Seismic Activity on Facility Operation

Despite the relatively low risk of seismic activity adversely impacting the Facility, the design of the facility will account for a potentially significant seismic event. There will be no significant impacts to the public because Galloo Island is uninhabited. In addition, wind turbines are now equipped with technology that allows for operational control and emergency shut off in case of an emergency such as a significant seismic event.

(o) Soil Types Map

A map delineating soil types on the Facility Site will be prepared using data from the USDA NRCS Web Soil Survey. It is anticipated that soil data from this source will be categorized by mapping unit and hydric characteristics, at a minimum.

(p) Characteristics of Each Soil Type and Suitability for Construction

The Soil Survey of Jefferson County, New York (USDA, 1989) indicates that the majority of soils found of Galloo Island consist of two general soil associations. These are the Benson-Newstead-Galoo-Rock Outcrop, and the Chaumont-Galoo-Wilpoint-Guffin associations. From these associations, there are four soil series within the Facility Site, which together represent 85% of the total surface area of Galloo Island. General descriptions of these four series are described below.

Table 4. Soil series and their characteristics within the Facility Site.

Soil Series	Characteristics
Galloo Series	• 51% of the Galloo Island • Formed in thin layer of glacial till • Very shallow, 2 to 10 inches in depth • Underlain by limestone or calcareous sandstone bedrock • Slopes range from 0 to 8 %
	• Somewhat excessively drained to excessively drained
Newstead Series	• 19 % of the Galloo Island • Formed in glacial till dominated by limestone • Moderately deep, 20 to 40 inches in depth • Underlain by limestone bedrock • Slopes range from 0 to 3 % • Somewhat poorly drained to poorly drained soils
Benson Series	• 11% of Galloo Island • Formed in glacial till or wind-and water-deposited mixed with till or congeliturbate • Shallow, 20 inches or less in depth • Underlain by limestone bedrock • Slopes range from 0 to 50 % • Somewhat excessively drained to excessively drained
Chaumont Series	• 3.5 % of Galloo Island • Formed in clayey lacustrine sediments on lake plains • Moderately deep, 20 to 40 inches in depth • Underlain by limestone bedrock • Slopes range from 0 to 8 % • Somewhat poorly drained

Source: Soil Survey of Jefferson County (USDA, 1989)

(q) Bedrock Analyses and Maps

Maps, figures, and analyses will be prepared using information obtained from the USGS Online Spatial Geology Data, the USDA NRCS Web Soil Survey, and the Preliminary Geotechnical Analysis conducted for the Facility. These data will identify depth to bedrock and underlying bedrock types, including vertical profiles showing soils, bedrock, water table, and seasonal high groundwater, in relation to typical foundation depths on the Facility Site, and any area to be disturbed for roadways to be constructed, and all off-site interconnections required to serve the facility.

(r) Foundation Evaluation

Foundation construction occurs in several stages, which typically includes excavation, pouring of concrete mud mat, rebar and bolt cage assembly, outer form setting, casting and finishing of the concrete, removal of the forms, backfilling and compacting, and site restoration. Excavation and foundation construction will be conducted in a manner that will minimize the size and duration of excavated areas required to install foundations.

(1) Preliminary Engineering Assessment

As previously indicated a Preliminary Geotechnical Evaluation is planned including a literature review of publicly available data, a site visit to observe surficial features and assess general constructability of the proposed Facility, and a preliminary subsurface investigation conducted at a subset of test borings. This information will be used to specifically address the suitability of the on-site surface/subsurface conditions to support turbine foundations, and provide specific recommendations based on the site-specific conditions. The suitability analysis will be included in the Preliminary Geotechnical Evaluation, which will be summarized in Exhibit 21 of (and appended to) the Article 10 Application.

Following Facility certification, additional geotechnical borings will be performed as determined necessary by a professional engineer to allow foundation design to be finalized for turbine locations. This information will be used to support the final structural design of the Facility.

(2) Pile Driving Assessment

It is not anticipated that pile driving will be needed for this Facility.

(3) Mitigation Measures for Pile Driving Impacts

It is not anticipated that pile driving will be needed for this Facility.

(s) Vulnerability to Earthquake and Tsunami Events

As previously indicated, the Facility appears to have minimal vulnerability associated with seismic events based on review of publicly available data. However, the Article 10 Application will include a literature review to determine frequency of past events and likelihood of impacts on Facility.

2.22 TERRESTRIAL ECOLOGY AND WETLANDS

(a) Plant Communities

A detailed characterization of plant communities within the Facility Site was conducted during an on-site vegetation cover and land use inventory performed by Terrestrial Environmental Specialists ("TES") in support of the DEIS for the Hounsfield Wind Farm Project, which was proposed to be located on Galloo Island. The Ecological Resources Report (TES, 2009), detailing the methods and results of the surveys, was Appendix N to the DEIS. The vegetation cover inventory took place in the fall of 2007 and the spring and summer of 2008. Plant communities were designated based on dominant plant species present, and all plant species observed on-site were recorded. Part of the vegetation inventory included surveys targeting areas where rare plants might occur. TES identified the following upland vegetation cover types on Galloo Island: developed, open field (including pale-swallow wort areas, a clear cut cedar forest area, Canada thistle areas, and characteristic open field areas), agricultural land, cliffs, scrub-shrub uplands, deciduous forest uplands, and mixed forest uplands. Wetland community types were designated as follows: rocky shoreline, emergent wetland, wet meadow, scrub-shrub wetland, deciduous forest wetland, and mixed forest wetland.

The plant community inventory conducted by TES will be confirmed and updated during the course of other resource-specific surveys, such as wetland delineations and rare plant surveys (please see 2.22(i) for more information on wetland delineations and 2.22(f) for more information on rare plant surveys). If additional plant communities or species beyond those identified in the TES inventory are observed, they will be documented. The Article 10 Application will describe the plant communities of the Facility Site based on results on on-site observations from 2007-2008 vegetation inventory, field verification from on-site surveys to take place during 2016, and review of recent aerial imagery. Depending on on-site observations, the Applicant may use the classification outlined in the TES Ecological Resources Report, or may use a different classification that more accurately categorizes vegetative cover types. A description of the wildlife habitat that each community provides will also be included. In addition, a plant species list will be provided with the Article 10 application, which will include all species identified in the TES Ecological Resources Report as well as any additional species observed within the Facility Site during on-site surveys.

(b) Impact to Plant Communities

Temporary and permanent impacts to plant communities resulting from construction and operation of the proposed Facility will be presented in the Article 10 Application. A map depicting existing vegetation cover/plant communities and those areas that will be disturbed or removed will be included with the Application. Impacts will be calculated using GIS software and assumptions regarding the area of temporary vegetation disturbance and permanent vegetative loss anticipated to result from construction of each Facility component. Impacts to plant communities as identified in 1001.22(a) will be calculated based on the assumptions presented in table 22-1, below.

Table 5. Impact Assumptions.

Facility Components	Typical Area of Vegetation Clearing	Area of Total Soil Disturbance (temporary and permanent)	Area of Permanent Vegetation Loss
Wind Turbines and Workspaces	Up to 200' radius per turbine	Up to 200' radius per turbine	0.20 acre per turbine (pedestal plus crane pad)
Access Roads	75' wide per linear foot of road	60' wide per linear foot of road	20' wide per linear foot of road
Buried Electrical Gathering Lines	40' wide per linear foot of line per collection line circuit	40' wide per linear foot of line per collection line circuit	None
Overhead Collection Line	100' wide per linear foot of line	100' wide per linear foot of line	100' wide per linear foot of line
Permanent Meteorological Towers	1 acre per tower	1 acre per tower	1 acre per tower
Substation	5 acres	5 acres	3 acres
O&M Building	5 acres	5 acres	5 acres
Laydown/Staging Areas	10 acres per staging area	10 acres per staging area	None
Batch Plant	3 acres	3 acres	None
Barge Landing Site	1 acre	1 acre	1 acre

Invasive species occurring within the Facility Site were identified during the on-site surveys conducted by TES. The SEQRA Findings Statement indicates that two invasive species were found on Galloo Island: Canada thistle (*Cirsium arvense*) and pale swallow-wort (*Cynanchum rossicum*). However, the Ecological Resources Survey also notes

presence of other invasive plant species (i.e., common reed (*Phragmites australis*), and purple loosestrife (*Lythrum salicaria*)). The Article 10 Application will include a list of all invasive species known from the Facility Site, including those observed during 2007 and 2008 surveys and any additional invasive species observed during 2016 on-site surveys. As of 2008, pale swallow-wort had invaded large portions of Galloo Island, and only a few small areas on the island remained free of this species. It is likely that this species has expanded its presence on the island since that time. The presence of pale swallow-wort will be evaluated during on-site surveys such as wetland delineations and rare plant surveys. The results of these investigations will be used to inform an Invasive Species Control Plan ("ISCP"), which will be attached to the Article 10 Application. The ISCP will describe the invasive plant survey protocol that will be used to determine occurrence of invasive plants within the area anticipated to be disturbed by Facility construction. It is likely that such a survey will take place as close to the start of construction as possible, in order to document conditions existing the time of construction initiation. The ISCP included with the Article 10 Application will describe measures to prevent the introduction and spread of invasive species. Depending on the current status of pale swallow wort, the ISCP is anticipated to focus on control measures that would prevent spread of pale swallow-wort off of the island.

(c) Measures to Avoid or Minimize Plant Community Impacts

The Article 10 Application will include a detailed description of those measures that will be implemented to avoid or minimize impacts to plant communities within the Facility Site. It is anticipated such measures will include siting considerations, demonstrated avoidance of sensitive vegetative communities/rare species locations, locating Facility components within existing disturbances (e.g., on-site gravel roads), and restrictive measures to be implemented during construction and operation.

(d) Characterization of Vegetation, Wildlife, and Wildlife Habitats

<u>Vegetation</u>

See Plant Communities discussion above in association with 1001.22(a). Vegetation will be included in the plant communities information presented in the Article 10 Application.

<u>Wildlife</u>

A number of wildlife studies were conducted in support of permitting for the Hounsfield Wind Farm Project. Table 6 lists all such studies. The Findings Statement concluded that the SEQRA record contained extensive survey effort, such that potential adverse impacts to wildlife could be assessed.

Table 6. Wildlife Studies Completed in Support of Wind Energy Permitting on Galloo Island

Study	Dates	Consultant	Location in Public Record
Winter Bird Study	2007-2008	Old Bird	Hounsfield DEIS Appendix P.2
Spring and Summer Breeding Bird Survey	2008	Old Bird	Hounsfield DEIS Appendix P.3
Spring Nocturnal Migrant Radar Survey	2008	Stantec	Hounsfield DEIS Appendix P.4
Fall Nocturnal Migrant Radar Survey	2008	Stantec	Hounsfield DEIS Appendix P.5
Spring, Summer, and Fall Diurnal Bird Movement Study	2008	Old Bird	Hounsfield DEIS Appendix P.6
Acoustic Study of Avian Nocturnal Spring and Fall Migration	2008	Old Bird	Hounsfield DEIS Appendix P.7
On-Site Bird Species Inventory (in the Ecological Resources Report)	2007-2008	Terrestrial Environmental Specialists	Hounsfield DEIS Appendix N
Turtle Trapping Survey (in the Ecological Resources Report)	2008	Terrestrial Environmental Specialists	Hounsfield DEIS Appendix N
Bat Risk Assessment and Pre-construction Monitoring	2008	North East Ecological Services	Hounsfield DEIS Appendix O
Winter Bird Surveys	2008-2009	Old Bird	Hounsfield FEIS Appendix H
Breeding Bird Survey	2009	Old Bird	Hounsfield FEIS Appendix H
Diurnal Bird Movement Study	2009	Old Bird	Hounsfield FEIS Appendix H
Blanding's Turtle Survey	2009	Terrestrial Environmental Specialists	Hounsfield FEIS Appendix G
Breeding Bird Survey	2015	Old Bird	Will be in Article 10 Application
Diurnal Movement Study	2015	Old Bird	Will be in Article 10 Application
Avian Risk Assessment	2015	Old Bird	Will be in Article 10 Application
Acoustical Bat Study	2015	Old Bird	Will be in Article 10 Application
Mist-Netting Bat Study	2015	Old Bird	Will be in Article 10 Application

Subsequent to conclusion of SEQRA permitting for the Hounsfield Wind Farm Project, the Applicant initiated consultation with the NYSDEC/USFWS regarding studies to be conducted in support of permitting for the Galloo Island

Wind Project. The outcome of these discussions was the conclusion that the status of Galloo Island's state-listed threatened and special concern breeding species needed to be reassessed. Therefore, the Applicant developed a Preconstruction Avian Work Plan (attached as Appendix F), reviewed by the agencies, which outlined the following studies to be conducted in 2015: breeding bird survey, diurnal movement study, avian risk assessment. In addition, consultation with the agencies resulted in the conclusion that additional bat studies were warranted, and a Preconstruction Bat Work Plan (attached as Appendix F) was developed. In 2015, acoustical and mist-netting bat studies were conducted in accordance with the Work Plan (see Table 6, above). All bird and bat studies initiated in 2015 have been completed and will be included in the Article 10 Application. Results from those surveys and relevant surveys from the Hounsfield Wind Farm Project will inform the characterization of wildlife in the Article 10 Application, and allow for an assessment of potential impacts to wildlife species that may occur as a result of the Facility.

The subheadings below provide additional information on each of the major wildlife groups to be discussed in the Article 10 Application, per the Article 10 Regulation 1001.22(d).

Mammals

As stated above, information on mammals presented in the Article 10 Application will be obtained from the Ecological Resources Report and the acoustic and mist-netting survey report prepared for the Hounsfield DEIS, as well as the acoustic and mist-netting survey studies performed in 2015 in support of permitting for the Galloo Island Wind Facility. A discussion of the extent, methodology, and results of the above studies will be provided in Exhibit 22(h)(1) of the Article 10 Application.

Birds

To determine the type and number of bird species present on or near the Facility Site and characterize avian use of the project site, the Applicant will compile occurrence data from on-site surveys conducted by Old Bird, Inc., Stantec Consulting, and TES. Please see Table 6, above, for a list of studies performed on Galloo Island in support permitting for the Hounsfield Wind Energy Project and the Galloo Island Wind Project. A discussion of the extent, methodology, and results of these studies will be provided in Exhibit 22(h)(1) of the Article 10 Application.

The NYS Breeding Bird Atlas ("BBA") is a comprehensive, statewide survey that indicates the distribution of breeding birds in New York State. The Ecological Resources Report conducted by TES contained an inventory of bird species documented from the BBA survey blocks that encompass the Town of Hounsfield (Blocks 3786D and 3886C). Data presented were from both the 1980-1985 Atlas and the 2000-2005 Atlas. No new data have been published by the BBA subsequent to the release of the 2000-2005 Atlas; therefore, the BBA data compiled by TES is still valid, and will be included in the Article 10 Application without being updated.

Data from the Audubon's Christmas Bird Count ("CBC") provide an overview of the birds that inhabit the region during early winter. The primary objective of the CBC is to monitor the status and distribution of wintering bird populations across the Western Hemisphere. The closest CBC count circle is the Amherst Island circle, whose outer perimeter is located approximately 11 miles northwest of the Facility Site. The outer perimeter of the Watertown CBC circle is located approximately 12 miles east of the Facility Site. Because there are no CBC circles within the vicinity of the Facility Site, and because ample data on presence of avian species (including a winter bird survey) has been collected on-site, CBC data will not be included in the Article 10 Application. The application will rely on the winter bird studies completed by Old Bird in 2007-8 and 2008-2009 to characterize the winter avian community onsite.

The North American Breeding Bird Survey ("BBS"), overseen by the Patuxent Wildlife Research Center of the USGS, is a long-term, large-scale, international avian monitoring program that tracks the status and trends of North American bird populations. Each survey route is 24.5 miles long, with 3-minute point counts conducted at 0.5-mile intervals. The closest BBS route to the Facility Site is approximately 18 miles away from the Facility Site in northwestern New York State. This route is inland, not near the shore of Lake Ontario. Due to the significant distance between the Facility Site and nearest BBS route, available BBS data are not applicable to the Facility Site, and no BBS data will be included with the Article 10 Application. The application will rely on the breeding bird studies completed by Old Bird in 2008 and 2015.

Amphibians and Reptiles

The Article 10 Application will contain information on amphibians and reptiles occurring on the Facility Site, based on on-site surveys conducted by TES in 2008. The herpetofauna survey included sound and sight observations, and identified one salamander species, one toad species, four frog species, three species of turtles, and two species of snake. Turtle trapping surveys were also conducted at the Facility Site at the request of NYSDEC in order to determine whether the State-listed threatened Blanding's turtle occur on Galloo Island. The Blanding's turtle survey included over 300 trap-nights, with traps placed in suitable Blanding's turtle habitat around the island. The surveys did not uncover any evidence of this species, and as indicated in the Findings Statement the NYSDEC determined that no further survey effort was warranted. Because amphibian and reptile surveys conducted in 2008 comprehensively characterized the amphibian and reptile community of the Facility Site, no further amphibian or reptile surveys will be conducted in support of Facility permitting. However, reptiles and amphibians documented during other onsite surveys in 2016 will be recorded.

The New York State Amphibians & Reptile Atlas Project ("Herp Atlas") was a survey conducted over ten years (1990-1999), that was designed to document the geographic distribution of New York State's herpetofauna. The USGS 7.5 minute topographic quadrangle is the unit of measurement for data collection for the Herp Atlas. TES reviewed the Herp Atlas in the Ecological Resources Report in support of the DEIS for the Hounsfield Wind Farm Project. No data for the Galloo Island quadrangle is available through the Herp Atlas. Therefore, TES compiled a list of amphibians and reptiles known from adjacent quadrangles. The Herp Atlas has not been updated subsequent to the TES review. Therefore, the data compiled from the Herp Atlas in the Ecological Resources Report is still valid, and will be included in the Article 10 Application.

Terrestrial Invertebrates

The Article 10 Application will provide a description of the major groups of terrestrial invertebrates likely to occur within the Facility Site based upon available habitat and observations made during other onsite surveys in 2016.

Wildlife Habitat

Significant Coastal Fish and Wildlife Habitats ("SCFWH") are areas designated by the New York State Department of State (DOS) that are the most important or significant coastal habitats. NYSDEC manages all aspects of the SCFWH program, including evaluating and recommending areas for designation under the program. SCFWH are located within the federally-approved Coastal Area Boundary ("CAB") of New York State. The Facility Site is within the Great Lakes and St. Lawrence River portion of the State's CAB. Galloo Island is not an SCFWH, and no SCFWH overlap the Facility Site. However, many of the islands in Lake Ontario are designated as SCFWH, including some in the vicinity of Galloo Island. The three closest SCFWH to Galloo Island are Little Galloo Island (approximately 1.1 miles from the Facility Site), Calf Island (approximately 2.1 miles from the Facility Site), and Stony Island (approximately 2.5 miles from the Facility Site). The shoals within the Stony Island SCFWH support regionally significant lake trout and smallmouth bass spawning habitats (DOS, 1993). The Findings Statement for the Hounsfield Wind Farm Project stated that no impacts to these habitats would result from construction or operation of the Hounsfield Wind Farm Project. Because no SCFWH is present at the Facility Site, no impacts to SCFWH are anticipated as a result of the Facility, and SCFWH will not be further discussed in the Article 10 Application.

The New York State Natural Heritage Program ("NYNHP") maintains data on the occurrences of significant natural communities that occur within the State. In 2008 NYNHP identified two such communities in their response to a request for data for the Hounsfield Wind Farm Project: calcareous pavement barrens and calcareous shoreline outcrop. NYNHP noted that these two ecological communities occurred on the mainland shore in the Town of Henderson. The underwater transmission line for the Hounsfield Wind Project was proposed to come onto the mainland in this vicinity. However, the underwater transmission line for the proposed Facility will take a substantially different route, connecting

with mainland transmission systems in Oswego. Therefore, no impacts to significant natural communities identified by NYNHP in 2008 will occur as a result of the Facility. Furthermore, the underwater transmission line will not be permitted under the Article 10 process, but rather will seek a Certificate under the Article VII of the New York State Public Service Law. A request for data on sensitive resources, including significant natural communities, within the vicinity of the Facility Site was provided to NYNHP on March 15, 2016, and NYNHP replied on April 6, 2016 (please see Appendix F). No significant natural communities were identified in this letter. However, the Ecological Resources Report from 2008 identified the calcareous shoreline outcrop community as occurring on Galloo Island. Impacts to this significant ecological community type are not anticipated, because the currently proposed barge landing is located on an area of the island that was not identified as having cliffs or rocky shorelines. However, the Article 10 Application will address impacts to calcareous shoreline outcrops if final site design indicates there could be impacts to this ecological community.

All of the plant community types to be identified in 1001.22(a) serve as habitat for various wildlife species. Therefore, descriptions of wildlife habitat and use of vegetative communities by wildlife will be presented with the descriptions of plant communities rather than provided in 1001.22(d).

(e) Species List

The information regarding wildlife provided in Exhibits 22(d) will be compiled into a Wildlife Species Inventory. This list will be attached as an appendix to the Article 10 Application. Data on terrestrial invertebrates occurring in the Facility Site is generally not publicly available; therefore, the major taxonomic groups of terrestrial invertebrates will be included in the inventory, based on available suitable habitat and on-site observations of any notable species observed during the course of other investigations.

(f) Impacts to Vegetation, Wildlife, Wildlife Habitats, Wildlife Travel Corridors, and Protected Species

<u>Vegetation</u>

With respect to impacts to vegetation, such impacts will be addressed in the Article 10 Application in 1001.22(b). Impacts to special status plant species and significant ecological communities, if any, will be discussed in 100122(f), in association with the discussion of state-listed threatened and endangered ("T&E") species impacts.

Wildlife and Wildlife Habitats

With respect to wildlife and wildlife habitat impacts, the Article 10 Application will address construction-related impacts, including construction-related silt and sedimentation impacts on aquatic organisms, habitat disturbance/loss associated with clearing and earth-moving activities, possible injury and mortality due to construction activity and vehicular

movement, and displacement of wildlife due to increased noise and human activities. Operational impacts will also be addressed, which may include minor loss of habitat, habitat fragmentation, wildlife displacement due to the presence of facility infrastructure, and avian and bat mortality resulting from collisions with the wind turbines.

Wildlife Travel Corridors

Travel corridors on Galloo Island were studied during 2008 and 2009 diurnal bird movement studies. The studies found that colonial waterbirds, including ring-billed gulls, Caspian terns, and double-crested cormorants fly from Little Galloo Island across Galloo Island regularly in order to access feeding grounds, with the middle portion of the island used less frequently used than either the northeast or the southwest ends of the island. The Findings Statement for the Hounsfield Wind Farm Project concluded that there was some potential for collision fatalities of ring-billed gull (also known as seagull). Some mortality of Caspian tern were likely as well, however, the number of collision fatalities anticipated to result from Caspian tern collisions with wind turbines was not expected to be significant, according to the Findings Statement. Double-crested cormorants were not anticipated to have high collision mortality, based on their low flight heights. Although the Facility could result in collision impacts where waterbirds cross the island, the impacts are not expected to be significant; therefore, no significant impacts to travel corridors are anticipated as a result of the Facility.

Threatened, Endangered, and Protected Species

The Article 10 Application will also present information regarding the presence of declining species, state and federal T&E species, and Species of Greatest Conservation Need ("SGCN"), as well as the Facility's potential to impact such species or their habitats. Information presented in the Application will come from the numerous avian, bat, and ecological studies already conducted on Galloo Island in 2007, 2008, 2009, and 2015 (see Table 6, above). In order to identify all species of concern for the Facility by the agencies, the Applicant initiated correspondence with NYNHP on March 15, 2016, requesting data on any known threatened, endangered, or special concern plant or wildlife species or habitats, as well as significant natural communities that may occur in the vicinity of the Facility Site. NYNHP responded on April 6, 2016. According to this correspondence, the only protected bird species known to occur on Galloo Island is the upland sandpiper, which has breeding habitat on the island. The letter also identified nine protected birds known to occur within 10 miles of the Facility Site, including common tern, short-eared owl, black tern, sedge wren, northern harrier, pied-billed grebe, upland sandpiper, Caspian tern, and cattle egret. A list of protected bats within 40 miles of the Facility Site was also provided, which included Indiana bat, northern long-eared bat, and eastern small-footed myotis. The Applicant also queried the U.S. Fish and Wildlife Service ("USFWS") Information for Planning and Conservation database ("IPaC") for information on federally-listed and candidate species that may occur within or near the Facility Site. IPaC identified Indiana bat and northern long-eared bat as listed species that could potentially be affected by the Facility. No plant species, significant natural communities, or critical habitats were identified by either NYNHP or IPaC.

Additional protected species not included on the NYNHP and IPaC information were documented in the 2008 and 2015 studies. A list of all state- and federally-listed T&E species, NYNHP-designated species of special concern, and SGCN designated under New York State's Comprehensive Wildlife Conservation Strategy known to use the Facility will be compiled in the Article 10 Application using data from on-site surveys as well as records from public databases. The Article 10 Application will also identify any potential significant impacts to these species as a result of the construction and operation of the Facility. Impacts to wildlife as a result of the Facility are anticipated to be as stated in the SEQRA documents (i.e., DEIS, FEIS, Findings Statement) for the Hounsfield Wind Farm, but updated to account for changes to the Facility design/layout and associated changes in anticipated impact, as well as any changes in the protection status of wildlife species.

With respect to birds, the Findings Statement concluded that the Facility would introduce collision risk and/or decrease in breeding habitat for six listed species (golden eagle, short-eared owl, peregrine falcon, bald eagle, northern harrier, and upland sandpiper) and nine state species of special concern (common loon, American bittern, Cooper's hawk, sharp-shinned hawk, common nighthawk, whip-poor-will, redheaded woodpecker, horned lark, and cerulean warbler). However, despite these impacts, the Findings Statement concluded that the applicant had included numerous avoidance and mitigation measures that would sufficiently reduce impacts to avian species. The Findings Statement also concluded that the Hounsfield project would result in potential indirect take of upland sandpiper breeding habitat, which consists of grasslands that also support listed species northern harrier and short-eared owl. The applicant consulted with NYSDEC regarding mitigation measures for this species. The applicant agreed to avoidance and mitigation measures for this take, including providing 250 acres of mainland breeding sandpiper habitat, seasonal restrictions on breeding habitat areas, eliminating turbines from the layout, period mowing to preserve grasslands on the island, and controlling invasive pale swallow-wort. These and other mitigation measures were to be included in an Article 11 take permit issued by NSYDEC. The Applicant will design the currently-proposed Facility in order to avoid impacts to special status species, including upland sandpiper, to the extent practicable, and will consult with NYSDEC and USFWS regarding mitigation measures appropriate for the currently proposed Facility. Impacts and mitigation will be discussed in the Article 10 Application.

With respect to bats, listed bat species were not identified in acoustic or mist-netting surveys. Additional acoustic and mist net surveys were conducted in 2015. The Article 10 Application will include the 2015 surveys, which will inform the discussion of impacts to listed and special concern bat species for the Facility.

With respect to listed reptiles and amphibians, despite extensive trapping efforts, state listed Blanding's turtle was not identified on Galloo Island. The Findings Statement concluded that no further surveys for Blanding's turtle were warranted. Therefore, Blanding's turtle will not be discussed in the Article 10 Application.

Two state-listed threatened terrestrial plant species were documented on Galloo Island during on-site plant surveys conducted in 2008: rock cress (also known as rock whitlow-grass, *Draba arabisans*) and troublesome sedge (*Carex molesta*). Rock cress was found growing on cliffs on the island, where no Facility components were proposed, and impacts to this species were therefore not anticipated. The Findings Statement characterized troublesome sedge as "ubiquitous" across Galloo Island. Because the species was so well-established and common throughout the island, the Findings Statement concluded that significant impacts to this species would not result, even if some individuals were disturbed during construction. An additional terrestrial species documented from the NYNHP Watch List, small skullcap (*Scutellaria parvula* var. *parvula*), was also found within the Facility Site. Species on the Watch List are considered rare, uncommon, or declining in numbers and need continued periodic monitoring to decide if they should be added to the active rare plant list or removed. A survey for these three terrestrial plant species will be conducted during the growing season of 2016. The survey will confirm whether the Facility is still sited away from cliffs where rock cress occurs, whether troublesome sedge is still common enough on the island that disturbance of individuals is unlikely to adversely impact populations, and whether small skullcap occurs within the area proposed for disturbance.

NYNHP identified one state-listed threatened species, autumnal water-starwort (*Callitriche hermaphroditica*), as potentially affected by the Hounsfield project in 2008 due to a proposed transmission line route in Snowshoe Bay in the Town of Henderson. The Article VII transmission line has a significantly different alignment that is not in the vicinity of Snowshoe Bay, and updated information on rare species provided by NYNHP on April 6, 2016 did not identify autumnal water-starwort as a species that could potentially be affected by the Facility. Therefore, the Facility is not anticipated to result in impacts to autumnal water-starwort.

(g) Measures to Avoid or Mitigate Impacts to Vegetation, Wildlife and Wildlife Habitat

The Article 10 Application will include a detailed description of those measures that will be implemented to avoid or minimize impacts to vegetation within the Facility Site. It is anticipated such measures will include siting considerations, demonstrated avoidance of sensitive vegetative communities/rare species locations, locating Facility components within existing disturbances (e.g., on-site gravel roads), and restrictive measures to be implemented during construction and operation.

With respect to wildlife and wildlife habitat, the Article 10 Application will include a detailed description of those measures to be implemented to avoid or mitigate impacts to wildlife and wildlife habitat within the Facility Site. It is anticipated such measures will include site design (e.g., utilizing existing roads, avoiding sensitive habitat, and minimizing disturbance to the extent practicable), adherence to designated construction disturbance limits, and avoiding areas designated as off-limit sensitive

(h) For Proposed Wind-Powered Facilities:

(1) Avian and Bat Impacts

As previously mentioned, numerous pre-construction avian and bat studies were conducted on Galloo Island in 2007-8 and 2015. A discussion of the extent, methodology, and results of the avian and bat pre-construction studies conducted in support of permitting for the Hounsfield Wind Farm and Galloo Island Wind will be provided in the Article 10 Application. The Application will also describe the anticipated impacts to avian and bat species and their habitats, based on information collected in 2007-8 and in 2015 and any other publicly available avian and bat data collected at nearby wind projects.

(2) Avian and Bat Post-Construction Monitoring

The Article 10 Application will provide details associated with a proposed post-construction monitoring program to be implemented to assess direct and indirect impacts of the Facility on avian and bat species. The monitoring program will be developed in consultation with the NYSDEC and USFWS, and will include details such as study duration, search frequency, search areas, and number and location of turbines to be searched.

(3) Avian and Bat Impact Avoidance and Mitigation Plan

The Article 10 Application will discuss the need for development of a plan to avoid, minimize and mitigate impacts to avian and bat species, and the criteria necessary to demonstrate need for such a plan.

(i) Map Showing Delineated Wetland Boundaries

Wetland and stream delineations were conducted in 2008 in support of permitting for the Hounsfield Wind Farm (DEIS Appendix L). These delineations will be updated in 2016 to address the revised project boundary and any potential changes. Results of the new delineation will supersede those from 2008. On-site field delineations will take place within a 200-foot wide corridor centered on linear Facility components (e.g., access roads, buried electrical interconnect), and within a 200-foot radius of turbines and other components such as permanent meteorological towers, O&M building,

and substations. The determination of wetland boundaries will be made according to the three-parameter methodology described in the U.S. Army Corps of Engineers ("USACE") *Wetland Delineation Manual* (Environmental Laboratory, 1987), and further described by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeastern Region* (USACE, 2012). Wetland boundaries will be defined in the field by sequentially numbered pink surveyor's flagging marked "wetland delineation", which will be located using Global Positioning System ("GPS") technology with reported sub-meter accuracy.

A map(s) showing the boundaries of wetlands in the vicinity of Facility components will be included with the Article 10 Application. As set forth at 1001.22(i), the Article 10 regulations require identification of wetland boundaries "…*within 500 feet of areas to be disturbed by construction…"* Field delineations and associated wetland boundary flagging and GPS surveying will take place within those areas specified above. To define boundaries out to 500 feet from Facility components, GIS software will be used in consultation with aerial photo interpretation, existing databases, and the results of on-site studies, to extend delineated wetland boundaries. Wetland boundaries identified this way will be referred to as Approximate Wetland Boundaries. Any of the wetlands identified during 2008 delineations located outside of the delineation study corridor, but within the 500 feet of Facility components, will be included on the wetlands maps. These wetland boundaries are expected to be more accurate than those identified by desktop analysis, because they were identified through survey-level effort. Therefore, the wetland delineation mapping included with the Article 10 Application will depict continuous wetland boundaries out to a distance of 500 feet from Project components, and all wetlands will be identified as "2016 Delineated Wetland Boundary," "2008 Delineated Wetland Boundary", or "Approximately Wetland Boundary" (or similar names representing these three categories).

On-site wetland delineations and desktop approximations will be supported by existing databases of state- and federally-mapped wetlands. Review of NYSDEC Freshwater Wetland mapping indicates that four state-regulated wetlands occur within the Facility Site. Table 7 provides a summary of these wetlands. All State-regulated wetlands are entirely encompassed within the Facility Site. Please see Figure 5 for a depiction of all state-mapped wetlands on site.

Table 7. NYSDEC-Mapped Wetlands

Wetland	Class[1]	Size Within Facility Site (Acres)
GL-1	II	26.9
GL-2	III	245.2
GL-3	III	24.3
GL-4	II	26.3

[1]NYS classification system. Four separate classes that rank wetlands according to their ability to provide functions and values (Class I having the highest rank, descending through Class IV).

National Wetland Inventory ("NWI") mapping includes 47 wetland communities within the Facility Site, totaling approximately 390 acres (see Figure 5). The NWI data indicate that freshwater forested/shrub wetlands comprise the majority of wetland communities on-site, totaling approximately 325 acres. Other NWI-mapped wetland communities on-site include freshwater emergent wetlands (48 acres), and freshwater ponds (13 acres). Lake Ontario, is identified as a NWI wetland that surrounds Galloo Island.

(j) Description of Wetlands

The characteristics of all field-delineated wetlands will be described in the Article 10 Application, which will also include a summary of the field data collected regarding wetland vegetation, soils, and hydrology. In addition, it is anticipated that copies of the USACE *Wetland Determination Data Forms* completed for each field delineated wetland will be included as part of a wetland delineation report that will be an attachment to the Article 10 Application.

(k) Wetland Functional Assessment

The Applicant proposes to conduct a wetland functions and values assessment following the general methodology described in the *Wetlands Functions and Values: Descriptive Approach* in the September 1999 supplement to *The Highway Methodology Workbook* (Supplement) by the New England Division of the USACE (USACE, 1995). For each wetland, the Applicant's consultant will note conditions that contribute to functions and values, including observed vegetation conditions, hydrologic conditions, size, adjacent area conditions, and the availability of public access. These observations will serve as the basis for assigning qualitative primary functions and values of each wetland on-site. Functions and values that may be assigned are identified in Section 1001.2(k) of the Article 10 Regulations, including groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal/retention/transformation, sediment/shoreline stabilization, wildlife habitat, recreation, uniqueness/heritage, visual quality/aesthetics, and protected species habitat.

(l) Offsite Wetlands Analysis

The hydrologic connectivity of all delineated wetlands will be described in the Article 10 Application, including a summary of those wetlands anticipated to fall under NYSDEC jurisdiction (under Article 24 of the Environmental Conservation Law) and/or USACE jurisdiction (under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act). However, final jurisdictional status of all delineated wetlands will be determined in consultation with these agencies. Determination of connectivity of delineated wetlands to other jurisdictional wetlands will largely be informed by on-site observations, examination of topographical maps, and aerial imagery.

(m) Wetland Impacts

During construction, potential direct or indirect impacts to wetlands and surface waters may occur as a result of the installation of a barge landing, access roads, above-ground or buried electrical interconnects, and the development and use of temporary workspaces around the turbine sites. It is assumed that the turbines themselves will be sited outside of wetlands. Direct impacts, including clearing of vegetation, earthwork (excavating and grading activities), and the direct placement of fill in wetlands and surface waters, are typically associated with the development of access roads and workspaces around turbines. The construction of access roads is anticipated to result in both permanent (loss of wetland/surface water acreage) and temporary impacts to wetlands. The development and use of temporary workspaces around turbines will result in only temporary impacts to wetlands/streams. The installation of above-ground or buried electrical lines (transmission and interconnects) will temporarily disturb streams and wetlands during construction as a result of vegetation clearing (brushhogging, or similar clearing method requiring no removal of rooted woody plants), and soil disturbance from burial of the electrical collection lines. Indirect impacts to wetlands and surface waters may result from sedimentation and erosion caused by adjacent construction activities (e.g., removal of vegetation and soil disturbance). This indirect impact may occur at wetlands adjacent to work areas where no direct wetland impacts are anticipated, including areas adjacent to proposed access road upgrade/construction, electrical collection and transmission routes, turbine sites, staging area(s), wind measurement towers, or the substations.

The Article 10 Application will quantify both temporary and permanent impacts to wetlands, based on the level of detail available at the time of submittal (i.e., potential impacts based on application of impact assumptions, or applied actual impacts calculated at a site-specific level based on Facility design drawings).

(n) Measures to Avoid/Mitigate Wetland Impacts

The Article 10 Application will discuss measures to be implemented to avoid and mitigate wetland impacts. It is anticipated that direct impacts to wetlands/streams will be minimized by utilizing existing or narrow crossing locations whenever possible. Additional measures may include special crossing techniques, equipment restrictions, herbicide use restrictions, and erosion and sedimentation control measures.

(o) State and Federal Endangered or Threatened Species

State and federal T&E species documented within or adjacent to the Facility Site, along with potential impacts to such species, will be identified in the Article 10 Application. Please see the T&E species discussion above in association with 1001.22(f) for more information.

(p) Invasive Species Prevention and Management Plan

The invasive species control plan discussion within the Article 10 Application will reference and/or build upon the Impact to Plant Communities section, which also addresses invasive species, in accordance with 1001.22(b).

(q) Agricultural Impacts

According to the Ecological Resources Report prepared by TES for the Hounsfield Wind Farm Project DEIS, there is some agricultural land on Galloo Island, mostly hayfields maintained to provide whitetail deer feed. The Article 10 Application will discuss the presence and types of agricultural land based on site-specific field investigations and review of aerial imagery. All impacts to active agricultural land will be based on GIS calculations, as described above in association with 1001.22(b), and mitigation is anticipated to follow the guidelines established by the New York State Department of Agriculture and Markets ("NYSDAM").

2.23 WATER RESOURCES AND AQUATIC ECOLOGY

This exhibit will include a study of the groundwater, surface water, and aquatic ecology impacts of the Facility consisting of the identification and mapping of existing conditions, an impact analysis, and proposed impact avoidance and mitigation measures.

(a) Groundwater

(1) Hydrologic Information

According to data from the Web Soil Survey compiled for each soil mapping unit within the Facility Site, depth to groundwater ranges from the ground surface to greater than 200 centimeters throughout the Facility Site, with high water tables most common in low-lying areas in and adjacent to wetlands. Depth to bedrock ranges from just 12 centimeters to over 200 centimeters. There are also some bedrock outcrops on Galloo Island, where soils are very thin or non-existent. Approximately 51% of the Facility Site has soils with depth to bedrock 12 centimeter or less (Soil Survey Staff, 2016). The Article 10 Application will include maps showing depth to high groundwater and bedrock throughout the Facility Site, based on data provided by the Web Soil Survey.

(2) Groundwater Aquifers and Recharge Areas

According to preliminary review of publicly available data, there are no mapped aquifers within the Facility Site or anywhere on Galloo Island, including primary aquifers, principal aquifers, sole source aquifers, or surficial aquifers (Bugliosi and Trudell, 1988; USGS, 1998; USGS, 2008; NYSDEC, 2008; NYSDEC, 2011; USEPA, 2011).

Groundwater recharge likely happens locally in wetland locations, and through infiltration from Lake Ontario. Because publicly available data sources do not identify any aquifer locations, groundwater aquifers, groundwater recharge areas, groundwater flow direction, and groundwater quality will not be included on maps provided with the Article 10 Application. There are no known wells on the island. If a well is identified a map will be provided that shows this well in relation to Facility components and identifies the location, depth, yield, and use of the well, if such data are available.

(3) Groundwater Impacts

The proposed Facility will add only small areas of impervious surface, which will be dispersed throughout the Facility Site, and will have a negligible effect on groundwater recharge. The Facility is not anticipated to result in any significant impacts to groundwater quality or quantity, drinking water supplies, or aquifer protection zones. Additional detail regarding groundwater impacts will be provided in the Article 10 Application.

(b) Surface Waters

(1) Surface Waters Map

A map will be prepared identifying all surface waters within the Facility Site. Surface waters will include rivers, streams, lakes, and ponds, consistent with the Protection of Waters Program (Article 15). Per Article 10 Regulations, mapping of surface waters will include intermittent streams. (to the extent such streams are identified in publically available data). Sources of information will include publicly available data from the NYSDEC, and ESRI, along with stream data collected during the on-site wetland delineation. This map will be included with the Article 10 Application. Please note that U.S. Army Corps of Engineers ("USACE") jurisdictional wetlands will be provided in maps of delineated wetlands associated with Exhibit 22.

(2) Description of Surface Waters

Under Article 15 of the Environmental Conservation Law (Protection of Waters), the NYSDEC has regulatory jurisdiction over any activity that disturbs the bed or banks of protected streams. Any stream, or particular portion of a stream, that has been assigned by the NYSDEC any of the following classifications or standards is considered a protected stream: AA, AA(t), A, A(t), B, B(t) or C(t) (6 NYCRR Part 701). A classification of AA or A indicates that the best use of the stream is as a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing and non-contact activities,

and Class D waters represent the lowest classification standard. Streams designated (t) indicate that they support trout, and also include those more specifically designated (ts) which support trout spawning.

The Facility Site lies within the Lake Ontario drainage basin (USGS Hydrologic Unit 4150200), which includes approximately 2,460 square miles of land and 326 miles of shoreline in New York State (NYSDEC, 2016). Surface waters on Galloo Island consists of one small tributary to Lake Ontario and a small pond, both of which are designated as Class C. The Article 10 Application will identify the classification for all NYSDEC mapped surface waters within the Facility Site (see Figure 5). Characteristics of the streams in the Facility Site will be described in the Article 10 Application, based on publically available data and when available, supplemented by field data collected during the on-site wetland and stream delineations.

Lake Ontario is an important habitat for a number of fish and aquatic species, and provides sport fishing for walleye, smallmouth bass, largemouth bass, brown trout, Chinook salmon, Coho salmon, Atlantic salmon, northern pike, and a stocked lake trout population. The most significant concerns for impacts to fish and aquatic species from construction of the Facility would arise during construction of the docking facilities and water intake line. Details regarding construction of these Facility components will be described in the Article 10 Application. In addition, the Article 10 Application will provide a summary of the previous applicable studies and reports conducted for the DEIS and FEIS, and where necessary provide more detailed and/or updated information on aquatic species potentially impacted by the Facility.

Specific to invasive species, please note that common aquatic invasive species, as identified by the NYSDEC (http://www.dec.ny.gov/animals/50272.html), observed while conducting delineations and field investigations will be documented and included in the Article 10 Application. However, a comprehensive inventory of aquatic species or aquatic invasive species is not anticipated.

(3) Drinking Water Supply Intakes

Since the Facility is approximately 6 miles from the nearest permanent residence and 2.5 miles from nearest seasonal residences (Stony Island), is not expected to result in any impacts to drinking water supply intakes. The Applicant is unaware of any drinking water supply intakes within one-mile of the Facility Site. There nearest drinking water supply intake is anticipated to be a private supply for a seasonal retreat on Stony Island, approximately 2.5 miles away. In addition, there are numerous municipal and private water supplies located along the shoreline of Lake Ontario. The Article 10 Application will discuss any potential effects to the nearest downstream surface water drinking water supply intake, if any.

(4) Impacts to Surface Waters

Facility components will be sited to avoid or minimize both temporary and permanent impacts to surface waters to the extent practicable. Large built components of the Facility, including wind turbine foundations, O&M facility, and collection substation, are anticipated to avoid surface waters to the maximum extent practicable. In addition, large temporary construction facilities (e.g., staging areas) will avoid surface water impacts to the maximum extent practicable. Certain Facility components, including docking facilities, water intake, and wastewater discharge sites, are sited on the shores of Galloo Island, and as such will come into contact with waters of Lake Ontario. Such facilities are necessary for the delivery of construction and maintenance materials and equipment, and/or facility operations and cannot be designed so as to avoid all impacts to lake waters. Therefore, it is anticipated that the Facility will result in impacts to very small portions of Lake Ontario waters near the Facility Site. The Article 10 Application will further discuss such impacts.

During construction, potential direct or indirect impacts to surface waters on Galloo Island may occur as a result of installation of access roads, the installation of above ground or buried electrical interconnects, the development and use of temporary workspaces around the turbine sites, and temporary workspaces around the substation. Direct impacts include 1) an increase in water temperature and conversion of cover type due to clearing of vegetation, 2) siltation and sedimentation due to earthwork, such as excavating and grading activities, 3) disturbance of stream banks and/or substrates resulting from buried cable installation, and 4) the direct placement of fill in surface waters to accommodate road crossings. Indirect impacts to surface waters may result from sedimentation and erosion caused by construction activities (e.g., removal of vegetation and soil disturbance).

As previously stated, an on-site wetland and stream delineation will be conducted and a detailed Wetland and Stream Delineation Report will be prepared and included with the Article 10 Application. Based on the Facility layout (i.e., proposed footprint of all Facility components) and the delineated stream boundaries, calculations will be performed to determine the approximate acreage of surface waters to be temporarily and permanently impacted. The Article 10 Application will also address potential Facility-related impacts to drinking water supplies. Potential Facility-related impacts to wetlands will be discussed in Exhibit 22 of the Article 10 Application.

(5) Measures to Avoid or Mitigate Surface Water Impacts

Direct impacts to surface waters will be minimized by utilizing existing or narrow crossing locations whenever possible. Upgrading existing crossings that are under-maintained/undersized will have a long-term beneficial effect on water quality, as it will help to keep maintenance vehicles out of surface waters. Special crossing

techniques, equipment restrictions, herbicide use restrictions, and erosion and sedimentation control measures will be utilized to reduce adverse impacts to water quality, surface water hydrology, and aquatic organisms. In addition, clearing of vegetation along stream banks will be kept to an absolute minimum.

Where crossings of surface waters are required, Best Management Practices will be utilized, as recommended by the NYSDEC and the USACE. Specific mitigation measures for protecting surface water resources may include the following:

- *No Equipment Access Areas:* Except where crossed by permitted access roads or through non-jurisdictional use of temporary matting, streams will be designated "No Equipment Access," thus prohibiting the use of motorized equipment in these areas.
- *Restricted Activities Area:* A buffer zone of 100 feet, referred to as "Restricted Activities Area", will be established where Facility construction traverses streams, wetlands and other bodies of water. Restrictions will include:
    - No deposition of slash within or adjacent to a waterbody;
    - No accumulation of construction debris within the area;
    - Herbicide restrictions within 100 feet of a stream or wetland (or as required per manufacturer's instructions);
    - No degradation of stream banks;
    - No equipment washing or refueling within the area;
    - No storage of any petroleum or chemical material; and
    - No disposal of excess concrete or concrete wash water.

- *Sediment and Siltation Control*: A soil erosion and sedimentation control plan will be developed and implemented as part of the SPDES General Permit for the Facility. Silt fences, hay bales, and temporary siltation basins will be installed as necessary and maintained throughout Facility construction. Exposed soil will be seeded and/or mulched to assure that erosion and siltation is kept to a minimum along wetland and water boundaries. Specific control measures will be identified in the Facility Stormwater Pollution Prevention Plan (SWPPP), and the location of these features will be indicated on construction drawings and reviewed by the contractor and other appropriate parties prior to construction. These features will be inspected on a regular basis to assure that they function properly throughout the period of construction, and until completion of all restoration work.

Dewatering of excavation sites may be necessary at times to facilitate proper placement of foundations. Impacts to unconfined, unconsolidated, shallow groundwater resources and/or natural springs (if encountered) may include temporary lowering of the water table within the immediate vicinity of tower excavations via pumping. The Article 10 application will contain additional information about dewatering and mitigation measures for impacts to groundwater.

(c) Stormwater

(1) Stormwater Pollution Prevention Plan

The Article 10 Application will contain a Preliminary Stormwater Pollution Prevention Plan ("SWPPP"), which will describe in general terms the erosion and sediment control practices that will likely be implemented during construction activities, and the stormwater management practices that will be used to reduce pollutants in stormwater discharges after Facility construction has been completed. The Preliminary SWPPP will provide typical information on temporary and permanent erosion and sediment control measures (vegetative and structural), construction phasing and disturbance limits, waste management and spill prevention, and site inspection and maintenance.

(2) Post-Construction Erosion and Sediment Control Practices

As described above, the Preliminary SWPPP and associated erosion and sedimentation control plan will address the anticipated stormwater management practices that will be used to reduce the rate and volume of stormwater runoff after Facility construction has been completed.

Following Certification of the Facility, it is anticipated that hydrologic models (e.g., Hydraflow Hydrographs Extension for AutoCAD Civil 3D software) based upon measurable watershed characteristics will be utilized by professional engineers to calculate stormwater discharges. Stormwater runoff rates discharged from the site under existing conditions (pre-construction) will provide the basis for evaluation and comparison to proposed conditions (post-construction). Design points of interest will be established where stormwater runoff exits the site. These design points will provide fixed locations at which existing and proposed stormwater quantities can be compared. The areas draining to these design points will be delineated using land survey information and proposed grading plans, and a hydrologic analysis of each of the drainage areas will be conducted to model their discharges (typically for the 1, 2, 10, 25, 50 and 100-year storm events). As stated above, because final engineering will not be completed until the Facility has been certified, a final SWPPP will not be included in the Application. Following

Certification of the Facility, the Applicant will conduct the detailed engineering necessary to prepare a final SWPPP, in accordance with the State Pollution Discharge Elimination System ("SPDES") General Permit.

(d) Chemical and Petroleum Bulk Storage

(1) Spill Prevention and Control Measures

The Article 10 Application will contain a Preliminary Spill Prevention, Containment and Counter Measures ("SPCC") Plan that will be implemented during Facility construction and operation to minimize the potential for unintended releases of petroleum and other hazardous chemicals into surface waters. This plan will describe safe storage and handling procedures and will not allow refueling of construction equipment within 100 feet of any stream or wetland. The plan will require that all contractors handling petroleum or other hazardous material keep materials on hand to control and contain a petroleum spill (e.g., shovel, tank patch kit, and oil-absorbent materials) and will present response plans for implementation in the event that spills do occur. Any spills, should they occur, will be reported in accordance with state and/or federal regulations, and the BOP contractor will, at a minimum, be required to adhere to the SPCC.

(2) Compliance with New York State Chemical and Petroleum Bulk Storage Regulations

It is anticipated that the Facility will require the on-site storage or disposal of large volumes of substances subject to regulation under the State of New York's chemical and petroleum bulk storage programs (e.g., fuel oil, petroleum, etc.). Should the O&M facility require petroleum or other hazardous chemical be stored on-site, the Article 10 Application will identify such substances and demonstrate compliance with the State laws.

(3) Compliance with Local Laws for Storage of Chemicals or Petroleum

There are no local laws regarding the storage of chemicals or petroleum. However, since it is anticipated that the Facility will require the on-site storage or disposal of large volumes of substances typically subject to regulation, federal and state regulations will be followed. Should the O&M facility require such regulated chemicals be stored on-site, the Article 10 Application will identify such substances and demonstrate compliance with the federal and state regulations.

(e) Aquatic Species and Invasive Species

(1) Impact to Biological Aquatic Resources

The Article 10 application will contain the results of the updated on-site wetland and stream delineation field effort, which will be used to micro-site various Facility components (as needed) so as to further minimize impacts to surface waters, as practicable. Based on the Facility layout and the delineated stream and wetland boundaries, calculations will be performed to determine the anticipated acreage of surface waters to be temporarily and permanently impacted. The identification of the locations of surface waters to be impacted will allow for an analysis of potential impacts on biological aquatic resources.

As described in Section 2.22, data on threatened and endangered aquatic species within the vicinity of the Facility Site have been provided by both the NYNHP and USFWS (via the Information for Planning Conservation online screening tool). Neither the NYNHP nor USFWS identified any rare, threatened, or endangered aquatic species that could potentially be impacted by the Facility. Therefore, it is not anticipated that the Facility will result in adverse impacts to listed endangered, threatened, or special concern aquatic species.

A comprehensive inventory of aquatic species or aquatic invasive species is not anticipated; however, those observed while conducting delineations and field investigations, will be documented and included in the Article 10 Application.

(2) Measures to Avoid or Mitigate Impacts to Aquatic Species

The Article 10 Application will evaluate reasonable avoidance measures (e.g., different crossing techniques, restricted access areas) to minimize impacts to surface waters and biological aquatic resources. The Article 10 Application will also include an Invasive Species Control Plan ("ISCP"), which will identify the following measures to control the spread of invasive species: 1) construction materials inspection; 2) target species treatment and removal; 3) construction equipment sanitation; and 4) restoration. Where impacts to aquatic species are unavoidable, the Article 10 application will identify appropriate mitigation measures.

As described above in 2.23(e)(1), it is not anticipated that the Facility will result in adverse impacts to listed endangered, threatened, or special concern aquatic species. Therefore, measures to avoid or mitigate impacts to these species are unlikely to be necessary.

(f) Cooling Water

The proposed Facility does not involve the use of cooling water, and as such, the requirements of this section are not applicable to this Facility. Therefore, information related to cooling water systems, intake, and discharge will not be included in the Article 10 Application.

2.24 VISUAL IMPACTS

(a) Visual Impact Assessment

A Visual Impact Assessment ("VIA") will be conducted to determine the extent and assess the significance of Facility visibility. The VIA procedures used for this study will be consistent with methodologies developed by various state and federal agencies, including the U.S. Department of the Interior, Bureau of Land Management (1980), U.S. Department of Agriculture, National Forest Service (1974), the State of Vermont (2012), and the New York State Department of Environmental Conservation (not dated). The components of the VIA will include identification of visually sensitive resources, viewshed mapping, confirmatory visual assessment fieldwork, visual simulations (photographic overlays), visual impact evaluation, and review of potential visual impact mitigation measures. The VIA, which will be included as an appendix to the Article 10 Application, will address the following issues:

(1) Character and Visual Quality of the Existing Landscape

Per the definition set forth at 1000.2(ar), the Visual Study Area to be used for analysis of major electric generating facilities is defined as "*an area generally related to the nature of the technology and the setting of the proposed site. For large facilities or wind power facilities with components spread across a rural landscape, the study area shall generally include the area within a radius of at least five miles from all generating facility components, interconnections and related facilities and alternative location sites. For facilities in areas of significant resource concerns, the size of a study area shall be configured to address specific features or resource issues.*"

A visibility assessment and identification of visually sensitive resources will include the area within 15 miles of the proposed Facility Site (Visual Study Area). Since the Facility is approximately 6 miles from the nearest permanent residence and 2.5 miles from nearest seasonal residences (Stony Island), it is proposed to include areas between 5 and 15 miles from the Facility to identify any regionally significant areas or resources of concern. This is consistent with the visual study area used for the previously proposed Hounsfield Wind Project, and includes essentially all areas of the mainland and shoreline of Lake Ontario within the United States that could have unobstructed views of the Facility within the Visual Study Area. The only Canadian land within the Visual Study Area is the southern portion of Wolf Island (this island contains operating wind turbines), and Main Duck Island. The 15-mile Visual Study Area boundaries for the Facility include approximately 649 square miles (see Figure 6).

The definition of landscape types found in a given study area provides a useful framework for the analysis of available visual resources and viewer circumstances. These landscape types, referred to as Landscape Similarity

Zones, will be defined based on the similarity of features such as landform, vegetation, water, and land use patterns.

(2) Visibility of the Facility

The VIA will include an analysis of potential Facility visibility and will assist in identification of locations within the Visual Study Area where it may be possible to view the proposed wind turbines, together with the associated above ground infrastructure (i.e., meteorological towers). This analysis will include identifying potentially visible areas on viewshed maps and verifying line of sight conditions in the field. The purpose of the field visit will be to verify the existence of direct lines of sight to the Facility as indicated by viewshed analysis, and to obtain photographs for subsequent use in the development of visual simulations.

During the field verification, EDR staff members will drive public roads, access Lake Ontario, and visit scenic resources previously identified as part of the SEQRA review for the Hounsfield project and other public vantage points within the Visual Study Area to document locations from which the proposed Facility structures would likely be visible, partially screened, or fully screened. This determination will be made based on the visibility of Galloo Island and/or helium filled balloons that provide a locational and scale reference for the proposed Facility. Photos will be taken from representative viewpoints throughout the Visual Study Area. All photos will be obtained using a digital SLR camera with a focal length between 28 and 35 mm (equivalent to between 45 and 55 mm on a standard 35 mm film camera). This focal length is the standard used in visual impact assessment because it most closely approximates normal human perception of spatial relationships and scale in the landscape. Viewpoint locations will be documented, using hand-held global positioning system ("GPS") units and high-resolution aerial photographs (digital ortho quarter quadrangles). The time and location of each photo will be documented on all electronic equipment (camera, GPS unit, etc.) and noted on field maps and data sheets. Viewpoints photographed during field review will generally represent the most open, unobstructed available views toward the Facility.

(3) Visibility of Above-ground Interconnections and Roadways

Due to the distance of the proposed Facility from shoreline vantage points, visibility of other above-ground infrastructure is anticipated to be minimal. Therefore, no viewshed analysis of other Facility infrastructure (other than the meteorological towers) is proposed. Visibility, or lack thereof, of the other above-ground infrastructure will be demonstrated through photo documentation conducted during the course of field work and visual simulations.

(4) Appearance of the Facility Upon Completion

To show what the Facility will look like, high-resolution computer-enhanced image processing will be used to create realistic photographic simulations of the completed Facility from the selected viewpoints. The photographic simulations will be developed by constructing a three-dimensional computer model of the proposed turbine and turbine layout based on specifications and coordinates provided by the Applicant. Along with the turbines, proposed clearing limits and the location and appearance of proposed meteorological towers or other visible components of the Facility will also be incorporated into the photographic simulations.

(5) Lighting

Viewshed analysis based on the anticipated FAA lighting plan will show where the Facility lights will potentially be visible at night. Several viewpoints will also be selected for the development of nighttime simulations as well. The selected nighttime views will need to be in dark settings with minimal ambient lighting to allow successful nighttime photography, however, an attempt will be made to obtain phots that show variety in sky conditions (degree of darkness), number of lighted turbines, and other lights in the landscape. In addition, lighting specifications for FAA lights on turbines, and typical lights to be used at the low side of the collection substation, permanent structure to intermittently house operational staff, and O&M facility, will be included in the Article 10 Application. The usage of such lights in the context of safety, lumens, etc. will also be addressed.

(6) Photographic Overlays

Photographic simulations will be developed by using Autodesk 3ds Max Design® to create a simulated perspective (camera view) to match the location, bearing, and focal length of each existing conditions photograph. Existing elements in the view (e.g., buildings, shorelines, roads) will be modeled based on aerial photographs and DEM data in AutoCAD Civil 3D 2014®. A three dimensional ("3-D") topographic mesh of the landform (based on DEM data) will then be brought into the 3-D model space. At this point minor adjustments are made to camera and target location, focal length, and camera roll to align all modeled elements with the corresponding elements in the photograph. This assures that any elements introduced to the model space (i.e., the proposed wind turbines) will be shown in proportion, perspective, and proper relation to the existing landscape elements in the view. Consequently, the alignment, elevations, dimensions and locations of the proposed Facility structures will be accurate and true in their relationship to other landscape elements in the photograph.

Using the camera view as guidance, the visible portions of the modeled Facility components will be imported to the landscape model space described above, and set at the proper coordinates. Once the proposed Facility is

accurately aligned within the camera view, a lighting system will be created based on the actual time, date, and location of the photograph. Using the Mental Ray Rendering System® with Final Gather and Mental Ray Daylight System® within the Autodesk 3ds Max Design® software, light reflection, highlights, color casting, and shadows will be accurately rendered on the modeled Facility based on actual environmental conditions represented in the photograph.

The rendered Facility will then be superimposed over the photograph in Adobe Photoshop ® and portions of the Facility that fall behind vegetation, structures or topography are masked out. Photoshop is also used to take out any existing structures or vegetation proposed to be removed as part of the Facility. Once the new Facility components are added to the photo, any shadows cast on the ground by the proposed structures are also included by rendering a separate "shadow pass" over the DEM model in Autodesk 3ds Max Design® and then overlaying the shadows on the simulated view with the proper fall-off and transparency using Adobe Photoshop CS5®.

(7) Nature and Degree of Visual Change from Construction

Short term visual impacts associated with the construction of access roads, installation of collection lines, erection of turbines, and general construction activity will occur for the duration of construction. These impacts will be described in the VIA and illustrated with photos of typical construction activities.

(8) Nature and Degree of Visual Change from Operation

Impacts to visual resources resulting from Facility operation will be evaluated by a panel of registered landscape architects using a standardized rating form. The methodology utilized in this evaluation will be a simplified version of the U.S. Department of the Interior, Bureau of Land Management ("BLM") contrast rating methodology (USDOI BLM, 1980) that was developed by EDR, and has been used for visual impact evaluation on numerous electric transmission and generation projects in New York.

(9) Operational Effects of the Facility

As part of the visual impact analysis, a study of potential shadow flicker impact on nearby residences would normally be conducted. However, the distance from the nearest potential residential receptor to the Facility Site is well over the 10 rotor diameter distance at which shadow flicker is generally acknowledged to be negligible. Since the Facility is approximately 6 miles from the nearest permanent residence and 2.5 miles from nearest seasonal residences (Stony Island), shadow flicker effects will be imperceptible, and a shadow flicker analysis is not necessary. See Section 2.15(e)(5) for additional information on shadow flicker.

(10) Measures to Mitigate for Visual Impacts

Mitigation options for the operating Facility are limited, given the nature of the Facility and its siting criteria (tall structures on high elevation sites). However, the Article 10 Application will provide an assessment of various mitigation strategies including screening (landscaping), architectural design, visual offsets, relocation or rearranging facility components, reduction of facility component profiles, alternative technologies, facility color and design, and lighting options. Mitigation will also be assessed in relation to NYSDEC Program Policy (NYSDEC, 2000).

(11) Description of Visual Resources to be Affected

Visually sensitive resources of statewide significance will be identified within the Visual Study Area. As defined in the NYSDEC Visual Policy, these will include the following types of resources:

- Properties listed on or determined eligible for listing on the National Register of Historic Places.
- State Parks.
- Urban Cultural Parks (now referenced to as New York State designated Heritage Areas).
- The State Forest Preserve (i.e., the Adirondack or Catskill Parks).
- National Wildlife Refuges, State Game Refuges, and State Wildlife Management Areas.
- National Natural Landmarks.
- The National Park System, Recreation Areas, Seashores, or Forests.
- Rivers designated as National or State Wild, Scenic or Recreational Rivers.
- A site, areas, lake, reservoir, or highway designated or eligible for designation as scenic.
- Scenic Areas of Statewide Significance.
- A State or federally designated trail, or one proposed for designation.
- State Nature and Historic Preserve Areas.
- Bond Act Properties purchased under Exceptional Scenic Beauty or Open Space category.

The Article 10 Application will build off of the inventory of visually sensitive resources of statewide significance that have been previously identified within the Hounsfield Visual Resource Report and identified in the NYSDEC Hounsfield Findings Statement. The proposed VIA will consider visual impacts to, but not be limited to, the following sensitive resources of statewide significance:

- Robert G. Wehle State Park

- Westcott Beach State Park
- Southwick Beach State Park
- Sackets Harbor Battlefield

In addition, the Applicant will engage in outreach with local stakeholders and municipalities to identify additional visually sensitive resources of local significance within the 15-mile study area. These areas are anticipated to include places of concentrated activity such as village centers and heavily used roadways, or landscapes of high aesthetic merit that may be considered important by local residents. See (b)(3) below for additional detail on visually sensitive resources.

(b) Viewshed Analysis

The Visual Impact Assessment will include identification of locations within the Visual Study Area where it may be possible to view the proposed wind turbines from ground-level vantage points. This analysis includes identifying potentially visible areas on viewshed maps. The proposed methodology to be employed is described below.

(1) Viewshed Maps

Viewshed maps define the maximum area from which any turbine within the completed Facility could potentially be seen within the Visual Study Area. Maps showing the results of viewshed analysis prepared based on the screening effect of topography alone, and the combined screening effect of mapped forest vegetation and topography will be prepared separate. Viewshed analyses will be prepared based on 1) maximum blade tip height and 2) proposed height of the FAA obstruction warning lights. These maps will be presented on the most recent edition 1:24,000 scale topographic base map, and in addition to the results of the viewshed analysis, the maps will also depict visually sensitive sites, viewpoint locations, and Landscape Similarity Zones.

With respect to line of sight profiles, please note that the computer model program defines the viewshed (when evaluating topography only for instance) by reading every cell of the digital elevation model ("DEM") data and assigning a value based upon the existence of a direct, unobstructed line of sight to turbine location/elevation coordinates from observation points throughout the entire Visual Study Area. Therefore, for the purposes of the Article 10 Application, the viewshed analyses will serve to document the line of sight profiles for resources of statewide and local significance.

(2) Viewshed Methodology

Fifteen-mile radius viewshed maps will be prepared to determine the extent of potential turbine visibility based on existing topography and vegetation, and the location and height of the proposed wind turbines. Topographic viewshed maps will be prepared using 10m USGS DEM data (7.5-minute series), coordinates/dimensions of all proposed turbines, an assumed viewer height of 5.5 feet (1.7 meters), and Environmental Systems Resource Institute (ESRI) ArcGIS® software with the Spatial Analyst extension. The viewshed analyses will be based upon a maximum of 180-meter (591 feet) blade tip height (the largest turbine models contemplated for this Facility so as to present a worst-case scenario). The analysis will also be based upon a 112-meter (367 feet) FAA warning light height, at the location of all proposed turbines. The analyses run at blade tip height illustrates maximum potential day time visibility, while the analyses run at the height of the FAA aviation warning light defines maximum potential nighttime visibility (based on the anticipated FAA lighting plan, if available). The resulting topographic viewshed maps define the maximum area from which any turbine within the completed Facility could potentially be seen within the Visual Study Area (ignoring the screening effects of existing vegetation and structures). Because the screening provided by vegetation and structures is not considered in this analysis, the topographic viewsheds represent a "worst case" assessment of potential Facility visibility and identifies those areas where the turbines will definitely be screened from view.

A vegetation viewshed will also be prepared to illustrate the potential screening provided by mapped forest vegetation. The vegetation viewshed will be prepared in the same manner as the topographic viewshed, except that a base vegetation layer will be created using the 2011 USGS National Land Cover Dataset ("NLCD") to identify the mapped location of forest land (including the Deciduous Forest, Evergreen Forest, and Mixed Forest NLCD classifications) within the Visual Study Area. Based on standard visual assessment practice, the mapped locations of the forest land will be assigned an assumed height of 40 feet and added to the DEM. The viewshed analysis will then be re-run, as described above. Once the initial vegetation viewshed analysis is completed, a Spatial Analyst conditional statement is used to assign zero visibility to all areas of mapped forest, resulting in the final vegetation viewshed. Because it accounts for the screening provided by mapped forest stands, the vegetation viewshed is a much more accurate representation of potential turbine visibility. However, it is important to note that because screening provided by buildings and street/yard trees, as well as characteristics of the proposed turbines that influence visibility (color, narrow profile, distance from viewer, etc.), are not taken consideration in the viewshed analyses, being within the viewshed does not necessarily equate to actual Facility visibility. The Article 10 Application will include both topographic and vegetation viewsheds based on the blade tip height and FAA lighting height.

(3) Sensitive Viewing Areas

To identify visually sensitive resources within the Visual Study Area, a variety of data sources including digital geospatial data (shapefiles) obtained primarily through the NYS GIS Clearinghouse or the ESRI will be used to identify visually sensitive resources of local and statewide significance. This data consists of numerous national, state, county and local agency/program websites as well as websites specific to identified resources; the DeLorme Atlas and Gazetteer for New York State; USGS 7.5-minute topographical maps; and web mapping services such as Google Maps. Identified aesthetic resources of statewide or local significance, areas of intensive land use within 15 miles of the proposed Facility, location of visually sensitive resources, as well as locations outlined in (a)(11) above, within the visual study will be included with the Article 10 Application.

(4) Viewpoint Selection

It is anticipated that views from numerous visually sensitive resources, area of high public use, and areas that provide views of the proposed Facility from representative landscape settings will be documented (photographed) during the field review for the Visual Impact Assessment. A subset of these photographs will be selected for the development of visual simulations. These representative viewpoints will be selected based upon the feedback provided by municipal planning representatives and state agencies including DPS, NYSDEC and OPRHP; and various criteria to ensure that a variety of views are represented. Specifically, the selected viewpoints should:

- Provide open views toward the Facility Site from different directions throughout the Visual Study Area (as determined through field verification).
- Illustrate the most open views available from potentially significant public resources within the visual study area.
- Illustrate open, representative views from the various Landscape Similarity Zones within the Visual Study Area.
- Illustrate open views of the proposed Facility that may be available to representative viewer/user groups within the Visual Study Area.
- Illustrate views of different numbers of turbines and other Facility infrastructure, from a variety of viewer distances, and under different lighting/sky conditions, to illustrate the range of visual change that could occur with the Facility in place.

The consultation process with municipal planning representatives is anticipated to take place during the spring/summer of 2016. Specifically, the Applicant will prepare a Visual Outreach Letter, which will 1) introduce the Facility, 2) provide information on the Article 10 process, 3) identify the Facility's Visual Study Area, 4) present

the results of a preliminary viewshed analyses and a preliminary desktop inventory of visually sensitive resources, 5) and a summary of the process by which viewpoints are selected for preparation of visual simulations. Finally, the Visual Outreach Letter will request feedback to assist in the identification of important or representative viewpoints. A complete copy of the Visual Outreach Letter, including all associated tables and graphics, will be included as part of the VIA appended to the Article 10 Application.

The Applicant has met with NYSOPRHP staff and reviewed the previous historic architectural resources survey. Due to the relatively recent date of the previous survey (2009), it is anticipated that the results of this survey are sufficient with regard to identifying historic architectural resources located within the indirect APE of the Facility, and no additional historic architectural resources surveys will be conducted.

(5) Photographic Simulations

The Article 10 Application will show anticipated visual changes associated with the proposed Facility. To accomplish this, high-resolution computer-enhanced image processing will be used to create photo-realistic simulations of the completed turbines and other visible Facility infrastructure from each of the selected viewpoints. As indicated in (b)(4) above, viewpoints will be selected, in part, for their open views and as such there will be no significant screening of the proposed Facility due to vegetation in the photographic simulations. Therefore, it is not anticipated that both leaf-on and leaf-off simulations will be required. As previously mentioned, representative viewpoints will be selected based upon the feedback provided by municipal/agency input and the other factors stated above.

(6) Additional Simulations Illustrating Mitigation

Due do the typical height of individual turbines and the geographic extent of a given wind power project, mitigation measures such as screening of individual turbines with earthen berms, fences, or planted vegetation will generally not be effective in reducing visibility. Therefore, additional simulations specific to mitigation are not anticipated. Simulations from the previously proposed Hounsfield Wind Project will be used to illustrate the effect of alternate number, height, and arraignment of turbines on Facility visual impact.

(7) Simulation Rating and Assessment of Visual Impact

As previously mentioned, potential Facility-related impacts will be evaluated by a panel of landscape architects. A meeting will be held with the rating panel to describe the proposed Facility and Visual Study Area, and to review the impact evaluation process and each viewpoint being evaluated. Background information will be reviewed with

the panel including 1) general land use and visual character of the study area, 2) results of scenic resources research and field review conducted for the Facility, 3) a map of visually sensitive scenic resources, and 4) a viewpoint location map. The viewer type(s) and scenic resources represented by each viewpoint will be reviewed with the panel, along with the rating forms to be used for the visual impact assessment. The visual simulations for the viewpoints will be provided as digital files and 11 x 17 inch color prints. Digital files containing additional context photos taken at each viewpoint will also be made available to the panel.

Rating form instructions will be provided to the panel to ensure consistency among the panel members in their use of terms and understanding of what information is being requested on the rating forms. The instructions will provide 1) background concerning the landscape setting, viewer types, and scenic resources in the Visual Study Area; 2) guidance regarding how best to describe landscape components depicted in each viewpoint (e.g., in terms of landscape composition, form, line, color, texture, focal point, order, atmospheric conditions, lighting direction, and visual clutter); 3) guidance regarding evaluation of viewpoint sensitivity (in terms of both scenic quality and viewer exposure); and 4) guidance regarding terms and concepts used in contrast rating. The instructions will also include the following guidance to improve consistency and reliability in the panel's understanding of each of the factors under consideration:

Landform: Please consider the effect of the Facility relative to the appearance of the landform or topography, including the strength and range of color, the density of relief, the space as defined by the landform, and the extent of its scale.

Water: Please consider the effect of the Facility relative to the appearance of water features in terms of the form of the water body(ies), its (their) shorelines, color, and texture (which refers here to movement), reflection, degree of enclosure, and the scale (or extent) of the presence of water in the view. Waterbodies typically attract viewer attention, provide a focal point in the view, and are generally associated with higher scenic quality.

Vegetation: Please consider the effect of the Facility relative to the appearance of the form(s) and variety of vegetation, including the extent of clearing, the range of color, the density of texture, space as defined by the vegetation, and its hierarchy/diversity of scale.

Land Use: Please consider the effect of the Facility relative to the appearance of identifiable land use(s) in the view, and evaluate the degree to which the Facility is compatible/consistent with the appearance of existing land use(s) in the view.

Sky: Please consider the effect of the Facility relative to the appearance of the sky in terms of form (including the appearance of clouds), the edges of its lines (perhaps in terms of the horizon), clarity of color, texture (which here could refer to cloudiness or other atmospheric conditions), the degree of openness or enclosure, and the scale (or extent) of the sky in the view.

Viewer Activity: Please consider the effect of the Facility on the viewer's perception of the scenic quality and potential enjoyment of the view, taking into account the viewpoint location and context, viewer type, and duration of the view.

Comments from the panel members will be solicited to obtain input on the following considerations:

1. The expectations of the typical viewer;
2. The Facility's effect on viewer enjoyment of the scenic resource;
3. The extent of Facility visibility from the scenic resource;
4. The scale of the proposed Facility relative to surrounding topography and existing structures;
5. The duration and direction of the typical view of the elements of the proposed Facility; and
6. The effect of intervening screening between the scenic resource and the proposed Facility.

The rating panel members will then evaluate the before and after views from each viewpoint, and assign each view quantitative contrast ratings on a scale of 0 (insignificant) to 4 (strong). The ratings are based on consideration of five landscape components (Iandform, water, vegetation, land use, and sky), along with viewer activity. Following the panel's evaluation, each panel member's contrast ratings will be compiled as an individual average for each viewpoint. The individual ratings will then be averaged to generate a composite contrast rating for each viewpoint. Comments provided by the raters will be reviewed to identify consistent observations and the range of varying perception regarding baseline scenic quality and the effect of the Facility at each viewpoint. These are then used to generate narrative descriptions of the existing view and the overall visual effect of the Facility on the scenic resources and viewers represented by each of the selected viewpoints.

(8) Visible Effects Created by the Facility

As previously mentioned, part of a visual impact analysis for a wind power facility typically includes a study of potential shadow flicker impacts on nearby residences. However, because of the distance of the proposed Facility from the nearest permanent residence and 2.5 miles from nearest seasonal residences (Stony Island), a shadow flicker analysis is not proposed.

2.25 EFFECT ON TRANSPORTATION

(a) Conceptual Site Plan

The island setting of the Facility creates unique transportation circumstances. All personnel, equipment, materials, supplies and turbine components must be delivered to site by water from various ports of embarkation. Additionally, all construction activity, separate from delivery or work crew transport, will take place on private property on the island where there are no public roads or public access. Consequently, these components are not expected to traverse public roads. However, on-site access roads and driveways will be shown on a conceptual plan included in the Article 10 Application.

(b) Description of the Pre-construction Characteristics of Roads in the Area

As indicated above, the island setting of the Facility generally precludes the use of roads in the area. Notably, the oversized/overweight ("OS/OW") turbine components – blades, towers, and nacelles are anticipated to be delivered to the port of Oswego by rail or ship then transferred to a barge at the port for delivery to Galloo Island. A summary of expected points of embarkation with description of use is provided below:

Point of Embarkation	Anticipated use
Port of Oswego, City of Oswego	Receiving, by ship or rail, and loading out turbine components to barge, loading out of bulk materials – cement, aggregate.
Madison Barracks Marina, Sackets Harbor	Transfer of work force, arriving by car/pickup, to crew boats for transit to Galloo Island
Henderson Harbor	Transfer of equipment and material, arriving by truck, to barge
Point Peninsula	Transfer of equipment and material, arriving by truck, to barge

- Port of Oswego – The Port of Oswego is served by rail and truck routes as well as a deep water pier facility. No modifications to facilities are anticipated in support of the Facility

- Madison Barracks Marina – The Madison Barracks Marina has docking facilities suitable for crew boats to embark and disembark construction workers traveling to and from Galloo Island. The parking area at the Madison Barracks Marina may require limited improvements to accommodate the construction crews. However, these minor impacts are not considered part of the Facility and are considered to be off-site ancillary features not subject to the Board's jurisdiction under PSL Article 10.

- Henderson Harbor – Commercial dock facilities could be used as alternative site for transfer of crew and equipment to Galloo Island

- Point Peninsula – Existing boat house and boat ramp, controlled by the Facility, is located on Point Peninsula and could be utilized as alternative site for transfer of equipment to Galloo Island

(c) Facility Trip Generation Characteristics

(1) Number, Frequency, and Timing of Vehicle Trip

An estimate of the number, frequency and timing of vehicle trips will be based on the above-referenced site plan and location of turbines as presented in the Article 10 Application, along with the number of phases, estimated quantities of earthwork and materials to construct facilities. Exact scheduling of construction work and required vehicles will be determined by the contractor. Therefore, the study to be conducted and included in the Article 10 Application will only provide an estimate based on typical volume of materials and number of vehicles per turbine installation. The Application will tabulate anticipated construction vehicle volumes for each site, including cranes, raw material trucks, and contractor worker's vehicles.

(2) Approach and Departure Routes for Trucks Carrying Water, Fuels, or Chemicals

During Facility construction, all trucks carrying water, fuels, or chemicals will utilize the same delivery routes used by other construction vehicles/component delivery haulers. Additional detail will be provided in the Article 10 Application.

(3) Cut and Fill Activity

The Article 10 Application will provide, based on site plan and location of towers, anticipated quantities of earthwork and materials to construct facilities. An estimate based on typical volume of materials and number of vehicles per turbine installation will be provided. In addition, an estimate of construction vehicle volumes for each turbine site will be mapped and included. However, no major cut activity is anticipated (i.e., no spoils will be removed from the Facility Site) and essentially all fill is anticipated to be associated with access road construction (e.g., gravel). Additional documentation regarding cut and fill volumes will be included in Exhibit 11 of the Application.

(4) Approach and Departure Routes for Workers and Employees

Any workers and employees in regular vehicles (pick-up truck size and smaller) will access worker parking areas through use of whichever public road route is most logical and efficient for the respective individual/vehicle. Employees and workers accessing the site with heavy haul/construction equipment (i.e., dump trucks or larger), or anything that exceeds the posted weight limits on public roads, will follow the final haul routes.

Please note that the final haul routes cannot be determined until the turbine manufacture has been selected and has reviewed and approved, or amended, the haul routes. Therefore, the final haul routes will be provided to the Siting Board prior to Facility construction. However, conceptual haul routes will be identified by an experienced transportation engineer, and will be included in the Article 10 Application.

(d) Traffic and Transportation Impacts

The following sections provide a discussion of the potential or possible range of construction and operations related impacts to area transportation infrastructure, based upon what is presently known about the Facility. Specific adverse impacts would be addressed in the Application, Exhibit 25, based upon the development of Facility layout details and the results of studies and further data collection.

(1) Future Traffic Conditions With and Without the Proposed Facility

Based on the experience of the Applicant, analysis of traffic volumes from other wind projects and the isolated island location of the Facility, typical operations of the Facility will have a negligible increase to existing traffic volumes. Software will be utilized, if needed, to determine levels of service for linear segments of highways used by construction and delivery vehicles. The Facility is not in a congested urbanized area requiring detailed intersection analysis.

(2) Adequacy of the Road System

Construction

Generally, Facility construction is expected to result in some temporary impacts to roadway infrastructure associated with the concentration of deliveries and work force traveling to points of embarkation. The Facility will generate both standard truck and OS/OW vehicular traffic. Construction traffic is anticipated to consist of:

- Flatbed trucks for delivery of steel reinforcement of turbine foundations;
- Low bed trailers for delivery of crane, construction vehicles, batch plant;

- Conventional semi-trailers for delivery of various other components and materials;
- Escort vehicles for OS/OW traffic;
- And pickup trucks/cars/buses for construction support (e.g., delivery of equipment and tools or transportation of construction workers).

In addition to road use damage that could occur because of construction traffic, the Facility could result in minor delays for motor vehicles, bicyclists, and pedestrians, along delivery routes. Any delays experienced would occur only when roads are being used by OS/OW vehicles. The use of escort vehicles, flag persons, and/or temporary traffic signals typically allows traffic to continue to flow smoothly, and provides for increased safety during construction-related use of public roads.

Prior to construction, the Applicant and/or contractor will obtain all necessary permits from affected jurisdictions and the NYSDOT for Facility activities, which may include operating OS/OW vehicles on highways. Special hauling permits are required for loads that exceed legal dimensions or weights. County and Town road use agreements may be developed in consultation with the Highway Departments in the Towns of Hounsfield, Lyme and Henderson and the Jefferson County Highway Department as the final routing plan dictates. These agreements typically provide a procedure for assessing existing road conditions and a plan to repair any extraordinary over-run or damage caused by vehicles during Facility construction. Roads affected by construction would be repaired by the Applicant to the standards outlined in the road use agreement. Establishment of a road use reparation fund or purchase of a reparation bond may be used as a means to provide financial assurance that roads damaged by construction activities can be repaired to the agreed upon standards. The road use agreements may also provide a method for post-construction inspections to assure that mitigation measures have satisfied repair and restoration requirements.

As previously indicated the majority of the equipment will be delivered via barge from ports along Lake Ontario and direct impact to roads will generally be negligible. For the roads at or near these port facility's the final transportation routing plan will detail any necessary upgrades that may be required to accommodate construction vehicles. Design plans will be completed for any necessary public road improvements and will be provided to the affected jurisdiction for review prior to the initiation of construction activities.

During construction, erection of the turbine towers has the potential to introduce flight obstruction to aircraft. Potential impacts to aircraft are primarily related to public safety and disruptions to air traffic control or FAA Long Range Radar systems. Issues of public safety are discussed in Section 2.15. Issues related to air traffic control and FAA Long Range Radar are discussed in Section 2.26.

Operation and Maintenance

Facility operation and maintenance will not generate a significant volume of traffic or involve the use of OS/OW vehicles on a regular basis. Operation-related travel would generally consist of employees traveling to and from a mainland operations office and to and from mainland marina to Galloo Island by crew boat (ice free conditions) or by helicopter from mainland airport to Galloo Island in winter conditions. Thus, following the completion of construction on-going traffic and transportation impacts are not anticipated. In the event that more substantial repair work requires the use of OS/OW vehicles, including cranes, impacts could include damage to local roadways, and minor delays in traffic flows. These impacts are anticipated to be localized and temporary, occurring only during the maintenance/repair effort.

The Article 10 Application will identify the anticipated delivery routes to be utilized, and the adequacy of these routes to accommodate construction and operation of the Facility. This information will be presented in a stand-alone Route Evaluation and Transportation Impact Study or similar.

(3) Over-sized Deliveries

While the majority of the large deliveries (i.e., blade, towers, etc.) will be shipped to the Port of Oswego and transported to the island via barge. However, a transportation routing plan will be designed to avoid or minimize safety issues associated with the use of approved haul routes and will confine any OS/OW travel to select roads. This will likely include the use of escort vehicles, flagmen, and/or temporary signals to assure safe passage of vehicles, bicycles, pedestrians and horse-drawn carriages on public roads as needed. A turning template of anticipated delivery vehicles will be included in the Article 10 Application, and a review of aerial photography and online street view maps in conjunction with driving all potentially impacted roads will be conducted to identify physical restrictions (widths, turning radius, overhead clearance). In addition, the Applicant's consultant will utilize the CADD® turning template (or similar program) for delivery vehicles to check turning radii and impacts. Required temporary improvements will be identified and a location map will be developed and included in the Article 10 Application.

(4) Measures to Mitigate for Impacts to Traffic and Transportation

To adequately address and evaluate potential adverse impacts to transportation infrastructure and traffic, the Applicant will, at a minimum, address all of the requirements of the Certificate Application contained within 16 NYCRR § 1001.25 (a)-(f) (Exhibit 25). To support the evaluation, a Route Evaluation and Transportation

Impact Study will be prepared. In accordance with Exhibit 25, the Route Evaluation and Transportation Impact Study will:

- Propose a delivery route for Facility components;
- Provide a conceptual site plan depicting Facility site driveway and roadway intersections;
- Describe the pre-construction characteristics of the roadways in the vicinity of the facility;
- Estimate the trip generation characteristics during construction and operation; and,
- Analyze and evaluate the traffic and transportation impacts of the Facility.

The Route Evaluation and Transportation Impact Study or similar, will begin with a desktop evaluation of the conceptual site plan with potential delivery routes and identification of intersections and other areas that require more detailed investigation. The study will include a site investigation component, where all potential routes will be reviewed. The site investigation will evaluate the anticipated delivery vehicle path(s) from the Interstate System to the construction site(s). This will include evaluating the condition(s) of the roadway pavements, lateral clearances, vertical clearances, intersecting roadway control, speed limits, posted truck size and weight restrictions, major roadway intersection configurations, primary route selection, and development of preliminary mitigation measures.

The study will also include evaluating traffic and traffic mitigation measures along multi- jurisdictional (state, county and local) roadways associated with the construction of the proposed wind farm. Traffic evaluation will include a review of available traffic volume data, posted roadway speed limits, and roadway conditions. Traffic mitigation measures will consist of determining potential roadway mitigation measures to improve the accessibility of the points of embarkation to the construction site by construction and delivery vehicles. The evaluation will also consider available traffic data and anticipated construction deliveries and trips.

Delivery route evaluations will be carried out in consultation with the NYSDOT, Highway Departments in the Towns of Hounsfield, Lyme and Henderson, the Jefferson County Department of Public Works, as well as local school districts regarding bus routes. Coordination with these stakeholders will allow specific concerns to be identified and evaluated.

Additional detail regarding measures to mitigate traffic and transportation impacts will be included in the Article 10 Application.

(5) Road Use and Restoration Agreements

This section of the Article 10 Application will identify and tabulate all anticipated County and Town road use agreements that will be required for construction and post-construction use of public roads, including highway work permits and special use permits from the NYSDOT. The Applicant will provide a draft Road Use Agreement for these roads as an Appendix to the Article 10 Application.

(e) Impact of the Facility on Mass Transit Systems

No rail or bus mass transit systems are expected to be impacted by this Facility. The Article 10 Application will provide in-depth description of airspace usage (including military operations) in the vicinity of the Facility using available aeronautical charts, airport approach plates, airport 5010 forms, and other available sources. The Applicant will confirm tower locations and heights have no obstruction impacts on the local airports.

(f) Federal Aviation Administration Review

The Certificate Application will include a discussion and associated correspondence regarding any potential impacts on military operations and airspace designated by the FAA. As applicable, the Certificate Application will include a statement regarding consultation with the Department of Defense ("DOD"), in accordance with 16 NYCRR § 1001.25 (f)(1). The Certificate Application will also include an analysis of impacts on airports, including private airstrips, in accordance with 16 NYCRR § 1001.25 (f)(2)(i-iii). This will include any detailed consultation that may be necessary with the operators of such facilities.

2.26 EFFECT ON COMMUNICATION

(a) Existing Broadcast Communication Sources

This section of the Article 10 Application will identify all existing broadcast communication sources in the area, including AM Radio, FM Radio, Television, Telephone, Microwave Transmission, Emergency Services, Municipal/School District Services, Public Utility Services, Doppler/Weather Radar, Air Traffic Control, Armed Forces, GPS, LORAN, and Amateur Radio Licenses.

The AntennaSearch.com database contains information on towers and antennas used for cellular, microwave, paging, and other commercial purposes. An initial review of this database indicates that there are no towers (more than 200 feet in height) and 3 antennas (generally less than 200 feet in height) within 4 miles of the Facility Site. These 3 antennas are located at the southwest end of Stony Island more than 2.5 miles from the Facility Site.

The Facility Site was studied in 2008 by Comsearch and no microwave beam path came within 10 miles of Galloo Island. This study will be updated to examine any new potential sources and the results will be included in Exhibit 26 of the Article 10 Application.

The Applicant will provide written notification of the project to the National Telecommunications and Information Administration ("NTIA"). Upon receipt of a notification, the NTIA will provide plans for the proposed Facility to the federal agencies represented in the Interdepartment Radio Advisory Committee ("IRAC"), which include the DOD, Department of Education ("DOE"), Department of Justice ("DOJ"), and the FAA. The NTIA will then identify any project-related concerns during a 45-day review period and issue a letter to the Applicant detailing the findings of this review. The review letter will be included be in Exhibit 26 of the Certificate Application.

(b) Existing Underground Cable and Fiberoptic Lines within Two Miles

Due to the Facility's remote location, there are no underground cables or fiberoptic lines anticipated within two miles of the Facility. The Article 10 Application will identify existing underground cable and fiberoptic lines within 2 miles of the proposed Facility.

(c) Anticipated Effects on Communication Systems

The following sections provide a discussion of the *potential* or *possible range* of construction and operations related impacts on area communication infrastructure, based upon what is presently known about the Facility. Specific adverse impacts would be addressed in the Certificate Application, Exhibit 26, based upon the development of Facility layout details and the results of studies and further data collection.

(1) Construction

Temporary communication interference may occur as a result of Facility construction. Cranes used during construction activities (and the individual turbine components being raised by the cranes) can cause temporary obstruction of microwave links, as well as some degradation to television and radio signals. However, individual turbines are typically sited to avoid interference with microwave paths, and since there are no microwave paths in the Facility Site, no interference is expected to occur. Any impact on television or radio reception or other communication systems caused by construction equipment would be temporary, as turbine assembly and erection at each turbine site is typically completed within one to three days. Construction activities also have the potential to cause physical disturbance to any buried or overhead distribution lines (e.g., telephone lines) located in the

Facility Site. Since there are no buried or overhead distribution lines in the Facility Site no disturbance is expected to occur.

(2) Operation

As noted above, improperly sited turbines may disrupt communications signals between microwave links. This may occur when a turbine is located in the direct line of site between antennas or within a mathematical distance around the center axis known as the Fresnel zone. Since there are no microwave paths in the Facility Site, no interference is expected to occur.

Wind turbine blade motion may cause variations in analog television signal levels, which may result in distortions in the contrast, brightness, and clarity of the video. In addition, changing reflections produced by the motion of wind turbine blades may cause ghosting. Digital television signals are also subject to level variations and reflections, but as long as the signal remains above the operational threshold of the receiver, the video produced is unaffected. Wind turbines can cause signal attenuation in both analog and digital signals. However, because they require a much lower signal level to produce excellent video, digital signals can withstand the attenuation effect to a greater extent. For analog television, as the signal is degraded by external effects, video quality is reduced in a sliding scale of performance. For digital television, as the signal is degraded, the video quality remains excellent until the signal level falls below the operational threshold of the receiver. Since the conversion to digital broadcast, there has been an improvement in television reception in the vicinity of wind energy facilities (Polisky, 2011).

AM radio frequency broadcast coverage can be affected when turbines are located within 3.2 kilometers of stations with directive antennas or within 0.8 kilometer of stations with non-directive antennas. The coverage of FM stations can be affected when turbines are located within 4.0 kilometers of a station. The Facility Site is well outside of these distances.

First responder, industrial/business land mobile sites, area-wide public safety, and commercial E911 communications are not anticipated to be impacted by Facility operation for the following reasons:

- These networks are designed to operate reliably in a non-line-of-sight environment;
- Many land mobile systems are designed with multiple base transmitter stations covering large areas with overlap between adjacent transmitter sites resulting in users receiving signals from multiple transmitter locations; and

- The frequencies of operation for these services allow the signal to propagate through wind turbines.

Mobile phone users often receive signals from multiple transmitter locations due to coverage overlap and should not experience a disruption in service even if one of these signals is attenuated by a turbine in a particular location. However, the potential impact to mobile phone service will be evaluated and will be included in Exhibit 26 of the Certificate Application.

Potential disturbances to other communication sources (e.g. air traffic control, armed forces infrastructure, and weather radar) resulting from Facility operation are similar to those described above and include:

- Interference with broadcast patterns by re-radiation of signals;
- Blocking line-of-sight; and

(d) Evaluation of Design Configuration

To adequately address and evaluate potential adverse impacts to communication resources, the Applicant will, at a minimum, address all of the requirements of the Certificate Application contained within 16 NYCRR § 1001.26 (a)-(f) (Exhibit 26).

It is anticipated that, in addition to an update of the microwave study mentioned above, the Applicant will prepare a complete communication study based upon the Facility layout and present the results in Exhibit 26 of the Certificate Application. This study will include an identification of all existing broadcast communication sources. The scope of analysis will include the following:

- Microwave 3-D GeoPlanner: Identify and map licensed non-Federal Government microwave paths that intersect the coordinate block that covers the Facility site. Determine the actual 3-D fresnel zone for each path. Identify which wind turbines may cause an obstruction, if applicable.
- AM and FM radio: Identify and map any Federal Communication Commission (FCC) licensed AM and FM stations within 30 kilometers of the Facility Site. Detailed technical data will be provided for each station with impact analysis and engineering recommendations for mitigation, if necessary.
- Off-Air TV Analysis: Identify and map any off-air TV stations in a 150 kilometer radius of the Facility Site. Define the communities serve. Detailed technical data would be provided for each station followed by an impact assessment and engineering recommendations for mitigation, if necessary.

- Communication Tower Study: Identify tower structures and wireless communication antennas in the Facility Site. Provide technical data and tower owner/license and contact information and potential additional studies based upon search results, if necessary.
- Land Mobile and Emergency Services Report: Identify and plot site based and area wide industrial, business, public safety and first responder licenses in the Facility Site. Detailed technical data will be provided for each license with an impact assessment and engineering recommendations for mitigation, if necessary.
- Commercial Doppler RADAR System Analysis: Determine the Doppler RADAR systems owned by TV stations and commercial interests that are within 150 miles of the Facility Site. Conduct an analysis of potential wind turbine obstruction to systems. If an obstruction condition is determined, quantify with respect to azimuth and elevation of each RADAR systems coverage. Prepare path profiles detail the coverage for each system.
- Government RADAR Systems Analysis: Determine if there would be any degradation to the operational coverage of RADAR systems for DoD military systems, the weather service systems and the FAA Long Range RADAR.

Additional Facility information and the Facility layout will also be provided to the NTIA in order to assess impacts to the following resources:

- Weather radar;
- Armed forces communications infrastructure;
- Global Positioning Systems; and
- LORAN (While the U.S. Coast Guard began shutting down this system in 2010, dismantling and disposal of associated infrastructure was halted in 2014. This system may be put into use as a backup for GPS navigation. Consultation with the National Telecommunications and Information Administration (NTIA) will seek to assess the potential of the Facility to impact this system.)

Turbine locations and dimensions will be provided to the FAA and DOD for assessment of potential impacts to air traffic control. Information will also be provided to the FCC to determine the presence of licensed amateur radio operators in the area and to assess potential impacts to these users.

(e) Identify and Mitigate Adverse Effects on Communication Systems

(1) Construction

If disruptions to existing communication systems occur as a result of Facility construction, they will be temporary, and will only occur during the erection of a limited number of turbines. Because turbine installation/crane activity

will occur at different locations and at different times during the construction period, any degradation/disruption to existing communications will not represent a constant interference to a given television/radio reception area or microwave signal. In addition, turbine erection will be performed as efficiently as possible. A Complaint Resolution Procedure will be developed to resolve issues and complaints that may arise within the local community. The procedure will outline the steps for investigation and resolution of such complaints.

(2) Operations

Alterations of the Facility layout during the initial design will be the primary means of avoiding and minimizing communication resource impacts but given the remote location of the Facility, communication resource impacts are not expected.

If issues arise during operation of the Facility, the operator will resolve those issues on an individual basis. Mitigation of impacts may involve such measures as the installation of auxiliary antennas to maintain coverage in affected areas, adjusting existing receiving antennas, upgrading antennas, or providing cable television or satellite television systems to affected residences. Given the distance of the Facility Site to antennas issues are not anticipated.

(f) Potential Interference with Radar

As described above, the Applicant will send a written notification of the proposed Facility to the NTIA. Upon receipt of a notification, the NTIA will provide plans for the proposed Facility to the federal agencies represented in the IRAC, which include the DOD, DOE, DOJ, and the FAA. The NTIA will then identify any Facility-related concerns during a 45-day review period and issue a letter to the Applicant detailing the findings of this review. The review letter will be included be in Exhibit 26 of the Article 10 Application.

2.27 SOCIOECONOMIC EFFECTS

The Facility is located on Galloo Island which is part of the Town of Hounsfield, Jefferson County, New York. Galloo Island, lies approximately 6 miles from the mainland. Galloo Island is uninhabited and receives no services from the Town of Hounsfield or Jefferson County. While part of the Town of Hounsfield from a municipal perspective the island falls within the view shed of other coastal towns in Jefferson County and is geographically closer to portions of the Town of Lyme and the Town of Henderson than mainland Hounsfield. Information regarding population, educational attainment and race within the Town of Hounsfield and Jefferson County is summarized:

Population	*Town of Hounsfield*	*Jefferson County*
2010 Total Population [1]	3,466	116,229
2014 ACS 5-Year Population Estimate	3,547	118,885
Median Age	34.6 years	31.9 years
Educational attainment		
% high school graduate or higher	85.1%	91.7%
Total housing units	1,939	58,308
Median household income	$57,143	$48,613
Foreign born population	197	4,978
Individuals below poverty level	526	16,917
Veterans	389	11,098
Race and Hispanic Origin		
White alone	3,376	102,932
Black or African American alone	14	6,177
American Indian and Alaska Native alone	0	552
Asian alone	40	1,744
Native Hawaiian & Other Pacific Islander	0	331
Some Other Race alone	45	2,442
Two or More Races	72	4,707
Hispanic or Latino (of any race)	69	7,809
White alone, Not Hispanic or Latino	3,478	111,076

[1] Demographic profile of 2010 US Census. All other data is from the 2010-2014 American Community Survey 5- Year Estimates

Quantifying the economic impacts of the Facility is essential to understanding the potential benefits for the local economy. Wind power development, like other commercial development projects, can expand the local economy through both direct and indirect means. Income generated from direct employment during the construction and operation phases is subsequently used to purchase local goods and services, creating a ripple effect throughout the local economy. The Article 10 Application will analyze three levels of impact that the proposed Facility may have on the economy:

- On-site labor impacts: These are the direct impacts experienced by the companies engaged in the construction and operation of the Facility. This value estimates the dollars spent on labor and professional services by project developers, consultants, and construction contractors, as well as operations and maintenance personnel. On-site labor impacts do not reflect material expenditures.
- Local revenue and supply chain impacts: These impacts measure the estimated increase in demand for goods and services in industry sectors that supply or otherwise support the companies engaged in construction and operation (also known as "backward-linked" industries). Indirect measures account for the demand for goods and services such as turbine components, project analysis, legal services, financing, insurance, etc.

- Induced impacts: Induced impacts measure the estimated effect of increased household income resulting from the Facility. Induced impacts reflect the reinvestment of earned wages, as measured throughout the first two levels of economic impact. This reinvestment can occur anywhere within the economy, on household goods, entertainment, food, clothing, transportation, etc.

Each of these three categories can be measured in terms of three indicators: jobs (as expressed through the increase in employment demand), the amount of money earned through those jobs, and the overall economic output associated with each level of economic impact. These indicators are described in further detail below:

- Jobs: Jobs refer to the increase in employment demand as a result of Facility development. These positions are measured across each level of impact, so that they capture the estimated number of jobs on site, in supporting industries, and in the businesses that benefit from household spending. For the purposes of this analysis, this term refers to the total number of year-long full-time equivalent ("FTE") positions created by the development. Persons employed for less than full time or less than a full year are included in this total, each representing a fraction of a FTE position (e.g. a half-time, year-round position is 0.5 FTE).
- Earnings: This measures the wages earned by the employees described above.
- Output: Output refers to the value of industry production in the state or local economy, across all appropriate sectors, associated with each level of impact. For the manufacturing sector, output is calculated by total sales plus or minus changes in inventory. For the retail sector, output is equal to gross profit margin. For the service sector, it is equal to sales volume.

To quantify the local economic impacts of constructing and operating the Facility, the Job and Economic Development Impact ("JEDI") model will be used, which was created by the National Renewable Energy Laboratory ("NREL"), a facility of the United States Department of Energy. The JEDI model requires Facility-specific data input (such as year of construction, size of Facility, turbine size and location), and then calculates the impacts described above through the use of conservative state-specific multipliers. These multipliers account for the change in jobs, earnings, and output likely to occur throughout the local, regional, and statewide economy as a result of Facility-related expenditures. The resulting data are paired with industry standard values (e.g., wage rates) and data reflecting personal spending patterns (e.g., percent of household income dedicated to housing expenditures) to calculate on-site, supply chain, and induced impacts. This model allows impacts to be estimated for both the construction and operation phases of the proposed development.

(a) Construction Workforce

The Article 10 Application will identify the estimated construction workforce associated with the Facility, as indicated above. The results of the JEDI model output will be evaluated by the Applicant's construction management team to provide an estimate of the average work force, by discipline, for each quarter during construction.

(b) Construction Payroll

The Article 10 Application will identify the estimated annual construction payroll and non-payroll expenditures associated with the Facility, as indicated above. The results of the JEDI model output will be evaluated by the Applicant's construction management team to provide an estimate of the annual construction payroll by trade.

(c) Secondary Employment and Economic Activity Generated by Facility Construction

The Article 10 Application will identify the estimated secondary employment and economic activity associated with Facility construction, as indicated above. The input variables and results of the JEDI model output will be evaluated by the Applicant's construction management team and the basis of any economic multiplier factor or other assumption(s) used will be described in the Application.

(d) Workforce, Payroll, and Expenditures during Facility Operation

The Article 10 Application will identify the estimated number of jobs associated with Facility operation, as indicated above. The results of the JEDI model output will be evaluated by the Applicant's asset management team to estimate on-site payroll by discipline. The Article 10 Application will also provide an estimate of other expenditures likely to be made in the vicinity of the Facility during operation.

(e) Secondary Employment and Economic Activity Generated by Facility Operation

The Article 10 Application will identify the estimated secondary employment and economic activity associated with Facility operation, as indicated above.

(f) Incremental School District Operating and Infrastructure Costs

The Facility is not expected to result in any additional operating or infrastructure costs to the local school district. The Article 10 Application will provide additional detail.

(g) Incremental Municipal, Public Authority, or Utility Operating and Infrastructure Costs

The Facility is not expected to result in any additional operating or infrastructure costs to local municipalities, authorities, or utilities. The Article 10 Application will provide additional detail.

(h) Jurisdictions that Will Collect Taxes or Benefits

The Facility is anticipated to result in economic benefits for the following jurisdictions:

- Jefferson County (subsuming and benefiting all towns and villages that the county serves)
- Town of Hounsfield
- Sackets Harbor Central School District

This Facility is anticipated to have economic benefits across all municipalities in Jefferson County due to the direct PILOT payments to the County. The jurisdictions listed above will be the ones receiving direct tax revenue benefits. A summary of economic impacts, including a literature review of reports/data pertaining to the Facility's effect on property values will be included in the Article 10 Application.

(i) Incremental Amount of Annual Taxes or Payments

The Applicant will seek a PILOT agreement with local tax jurisdictions but the specific terms of the PILOT agreement have not yet been negotiated. The PILOT payments will increase the revenues of the local taxing jurisdictions, and will represent a significant portion of their total tax levy.

The Article 10 Application will provide more detail regarding the anticipated PILOT agreement with local tax jurisdictions as well as the involvement of the Jefferson County Industrial Development Authority.

(j) Comparison of Incremental Costs and Incremental Benefits

As indicated above, the Facility is not expected to result in any additional costs to local tax jurisdictions, but will result in significant benefit through implementation of a PILOT agreement.

(k) Equipment or Training Deficiencies in Local Emergency Response Capacity

The local emergency responders are not expected to have specialized equipment in order to respond to a fire, hazardous substance, or medical emergency beyond the typical equipment that would be at a local fire and emergency department. For example, fire and emergency responders are not expected to have boats or helicopters available to

respond to an emergency on an off-shore island, or the necessary equipment to bring injured personnel down from the tower to ground level. As outlined in Appendix S of the Hounsfield DEIS, and the Emergency Response Plan, because of the remote location of the Facility most of these services will not be readily available to the workers on the island. Therefore the Facility operators will maintain the primary responsibility of emergency management and response.

The Application will provide specific details on the emergency equipment that the Applicant will keep on site in order to respond to a fire or medical emergency. The Application will also contain a fire and emergency responder training and communication plan in order to address any training deficiencies. This plan will include a list of the equipment, at minimum, that the Applicant will have on site for a fire or medical emergency.

(l) Consistency with State Smart Growth Public Infrastructure Criteria

The New York State Smart Growth Public Infrastructure Policy Act is meant to maximize the social, economic, and environmental benefits from public infrastructure development by minimizing the impacts associated with unnecessary sprawl. State infrastructure agencies, such as the NYS Department of State, shall not approve, undertake, or finance a public infrastructure project, unless, to the extent practicable, the Facility is consistent with the smart growth criteria set forth in ECL § 6-0107.

The Facility will not result in the construction or operation of public infrastructure and will not result in unnecessary sprawl, nor will approvals from the NYS Department of State be required. Therefore, the Article 10 Application will not provide a detailed statement regarding the Facility's consistency with smart growth criteria.

2.28 ENVIRONMENTAL JUSTICE

Exhibit 28 of the Article 10 Application requires the Applicant to provide sufficient information for the NYSDEC and others to assess the potential impact of the project on Environmental Justice communities. However, it should be noted that the general intent of an Environmental Justice evaluation is to determine if air quality and associated health impacts are disproportionately affecting certain communities or populations.

Based on data obtained from the NYSDEC's *Geospatial Information System (GIS) Tools for Environmental Justice* website (www.dec.ny.gov/public/911.html), and as reported in the Facility's PIP plan, the nearest Potential Environmental Justice Area to the Facility is approximately 18 miles from the EJ Impact Study Area in the Towns of Cape Vincent and Clayton (block group ID: 360450602003) (see Figure 7). The Applicant provided this information in the PIP and, to date, no comments have been received regarding potential impacts to Environmental Justice areas or the need to further revise the Impact Study Area. Because it is sited so far from the nearest Potential Environmental

Justice Area, the Facility is not expected to have an impact on any Environmental Justice areas and the full Environmental Justice Analysis required by 6 NYCRR 487.6 is not required. Moreover, it should be noted that NYSDEC did not require an Environmental Justice review in the SEQRA process for the Hounsfield Wind Farm. This information will be summarized and included in the Article 10 Application.

2.29 SITE RESTORATION AND DECOMMISSIONING

(a) Performance Criteria

The Article 10 Application will provide a statement of the performance criteria proposed for the restoration or decommissioning of the Facility. It is currently anticipated to include an acceptable form of security, in the form of a decommissioning bond, taking into account the independently estimated salvage value and/or resale value of the Facility components for the decommissioning of the Facility at the end of its useful life (approximately 25 years) including site restoration. Specifically, the Applicant shall provide a bona fide estimate from an independent engineer for the review by the Town of Hounsfield that will describe and calculate the salvage and/or resale value and decommissioning costs. The amount of security is typically calculated as the independently estimated decommissioning cost net of the salvage and/or resale value of the Facility components. The Article 10 Application will provide a decommissioning plan that provides more specifics on site restoration and decommissioning. Unless otherwise agreed between the towns and the Applicant, the Decommissioning Plan is likely to include:

- Provision describing the triggering events for decommissioning of wind power facilities.
- Provisions for the removal of all above-ground structures and debris, and below grade structures to a depth of 36 inches below grade or the depth at which bedrock is encountered, whichever is less, agricultural land.
- Provisions for the removal of all below-ground structures to 36 inches below grade for non-agriculture land and 48 inches for agriculture land or the depth at which bedrock is encountered, whichever is less, in active agricultural land.
- Provisions for the restoration of the soil and vegetation.
- A timetable for site restoration.
- The method of estimating decommissioning costs, including restoration, certified by an independent, Professional Engineer.
- The method of estimating the salvage and any resale value of Facility components
- Provisions for updating the decommissioning costs and salvage/resale value
- Provisions that any Road Use Agreements will apply to the decommissioning of wind power facilities to ensure roads are adequately restored to their original condition or better prior to decommissioning activities.

- The types of financial assurance, as needed and secured by the Applicant, for the purpose of adequately performing decommissioning, in an amount equal to the Professional Engineer's certified estimate of decommissioning cost, less the expected salvage value and/or resale value of the wind farm components.
- Identification of procedures for the town to access financial assurances.
- A provision that the terms of the Decommissioning Plan shall be binding upon the Applicant or any of their successors, assigns, or heirs.
- A Provision that the towns shall have access to the site, pursuant to reasonable notice, to inspect the results of complete decommissioning.
- Removal of machinery, equipment, tower, and all other materials related to the Facility is to be completed within two years of decommissioning.

(b) Decommissioning and Restoration Plan

Megawatt-scale wind turbine generators typically have a life expectancy of 20 to 25 years. The current trend in the wind energy industry has been to replace or "re-power" older wind energy projects by upgrading older equipment with more efficient turbines. However, if not upgraded or if the turbines are non-operational for an extended period of time (such that there is no expectation of their returning to operation), they will be decommissioned, in accordance with the Decommissioning Plan. Decommissioning would consist of the following activities: all turbines, including the blades, nacelles, and towers will be disassembled, and transported off site for reclamation and sale. All of the transformers will also be transported off-site for reuse or reclamation. Foundations will be removed in non-agricultural lands to a depth of 36 inches below grade or the depth at which bedrock is encountered, whichever is less and to a depth of 48 inches below grade or the depth at which bedrock is encountered, whichever is less, in active agricultural land. Except as described otherwise for active agricultural fields, all buildings, structures, wind turbines, access roads and/or driveways and foundations at depths greater than 36 inches below finished grade, or depth of bedrock, whichever is less, will be left in place. Areas where subsurface components are removed will be graded to match adjacent contours, stabilized with an appropriate seed mix, and allowed to re-vegetate naturally. A complete decommissioning plan will be provided in the Article 10 Application, including a plan for removal of access roads. An updated decommissioning plan that details the exact financial assurance, if needed, estimated cost, salvage/resale value, and site restoration will be provided to the Town of Hounsfield prior to Facility construction. All decommissioning and restoration activities will be in accordance with all applicable federal, state, and local permits and requirements and will include the following:

Turbine removal: Cranes and/or other machinery will be used for the disassembly and removal of the turbines. Electronic components and controls, and internal cables will be removed. The rotor and nacelle will be lowered to the ground for disassembly. The tower sections will be lowered to the ground where they will be further disassembled for

transporting. The rotor, nacelle, and tower sections will either be transported whole for reconditioning and reuse or dissembled into salvageable, recyclable, or disposable components.

Turbine foundation removal: Turbine foundations will be removed down to a level 42 inches below grade or the depth of bedrock, whichever is less, and the material will be transported to a pre-approved disposal location. The remaining excavation will be filled with clean sub-grade material, compacted to a density similar to surrounding sub-grade material, and finished with topsoil.

Collection cables: All overhead collection cables and associated poles will be removed. Except as described otherwise for active agricultural fields, all cables buried less than 36 inches will be removed. All cables buried deeper than 36 inches, will be kept in place.

Access roads and crane pads: A plan for removal of access road will be provided in the Article 10 Application.

(c) Description of Decommissioning/Restoration Agreements Between Applicant and Landowners

Facilities are not contemplated on land not owned by the Applicant.

2.30 NUCLEAR FACILITIES

The proposed Facility is a Wind Power Facility, and as such, the requirements of this exhibit are not applicable.

2.31 LOCAL LAWS AND ORDINANCES

For purposes of this section the Applicant has focused on the Town of Hounsfield and Jefferson County since Galloo Island is located in the Town of Hounsfield and Jefferson County.

During preparation of the Article 10 Application, the Applicant will continue its consultation with the municipalities whose requirements are the subject of the exhibit to determine whether all such requirements have been correctly identified, and to determine whether any potential request by the Applicant that the Board elect not to apply any such local requirement could be obviated by design changes to the proposed facility.
The AC underwater cable is regulated and subject to Article VII of the public service law, and is not part of the local law analysis for the Article 10 Application.

(a) List of Applicable Local Ordinances and Laws of a Procedural Nature

The Applicant has compiled the following preliminary listing of local ordinances, laws, resolutions, regulations, standards, and other requirements of a procedural nature required for the construction or operation of the proposed facility:

Town of Hounsfield Zoning Law with Amendments

- *Article I, General Provisions, Section 120 (A): Application of this Local Law* – All Buildings, Structures and Lands shall be constructed in conformity with the regulations
- *Article IV, District Regulations, Section 400: General Provisions (A)-(B)* – Permitted uses must obtain a zoning permit, other uses require a Site Plan Review Use or a Special Permit Use
- *Article IV, District Regulations, Section 425*: MR, *Marine District (A)-(C)* – List of permitted uses and site plan review uses
- *Article VI-A, Site Plan Review, Section 605: Purpose and Scope (B)-(C)* – Uses subject to Site Plan Review are required to comply and no uses subject to Site Plan Review shall be commenced until Site Plan Approval
- *Article VI-A, Site Plan Review, Section 610: Application for Site Plan Review (A)-(P)* – Site Plan Application Requirements
- *Article VI-A, Site Plan Review, Section 610: Application for Site Plan Review (2)-(4)* - Site Plan Application Requirements
- *Article VI-A, Site Plan Review, Section 615: Review Criteria (A)-(N)* – Factors Town Planning Board shall consider when reaching a determination on a Site Plan Review
- *Article VI-A, Site Plan Review, Section 620: Guarantees for Installation and Maintenance Improvements (A)-(B)* – Town Planning Board may require Applicant complete improvements before final approval is granted or enter into an agreement with Town
- *Article VI-B, Special Use Permits, Section 640: Application Requirements* - Form and content requirements for Special Use Permits
- *Article VI-B, Special Use Permits, Section 645: Procedure (A)-(I)* – Review and approval process for Special Use Permits
- *Article VI-B, Special Use Permits, Section 650: Review Criteria (A)-(G)* – Criteria Planning Board shall follow in determining whether to grant a Special Use Permit
- *Article VIII, Administration and Enforcement, Section 805: Zoning Permits (A)-(I)(1)-(3)* – Procedures and Requirements for Zoning Permits
- *Article VIII, Administration and Enforcement, Section 810: Certificate of Occupancy (A)-(F)*- Procedures for granting of Certificates of Occupancy
- *Article VIII, Administration and Enforcement, Section 830: Fees*
- *Article VIII, Administration and Enforcement, Section 835: Violations and Penalties (A)-(C)* – Procedure for violations of code

These local procedural requirements are supplanted by PSL Article 10 unless the Board expressly authorizes the exercise of the procedural requirement by the local municipality or agency.

(b) Local Procedural Requirements Requiring Board Authorization

There are no local procedural requirements that the Applicant requests the Board expressly authorize exercise thereof.

(c) Identification of Municipal Agency Qualified to Review and Approve Building Permits

The Applicant will consult with the Town of Hounsfield and the County of Jefferson to identify who shall review and approve the building plans, inspect the work, and certify compliance with the New York State Uniform Fire Prevention and Building Code, the Energy Conservation Construction Code of New York State, and the substantive provisions of any applicable local electrical, plumbing or building code.

In the Application the Applicant will describe any preliminary arrangements made between the Applicant and the entity that shall perform the review, approval, inspection, and compliance certification, including any arrangements made to pay for the cost thereof including the costs for any consultant services necessary due to the complex nature of such facilities.

(d) List of Applicable Local Ordinances and Laws of Substantive Nature

The Applicant has compiled the following preliminary listing of local ordinances, laws, resolutions, regulations, standards, and other requirements of a substantive nature required for the construction or operation of the proposed facility:

<u>Town of Hounsfield Zoning Law with Amendments</u>

- *Article IV, District Regulations, Section 425*: *MR, Marine District (D)-(E)* – Dimensional Regulations
- *Article V, General Regulations, Section 510: Parking and Off-Street Loading (A)(1)-(7), (B)(1)-(4)* – Parking and off-street loading requirements
- *Article VI-A, Site Plan Review, Section 625: Performance Standards (A)-(G)* – Requirements for Traffic, Screening, Drainage, Lighting, Parking Areas/Lots, Access Drives/Driveways, and Signs
- *Article VI-A, Site Plan Review, Section 630: Regulations Concerning Specific Uses (B) Multi Family Dwellings* – Criteria for multi-family dwellings

The location of the proposed Facility will conform to all such local substantive requirements, except any that the Applicant requests that the Board elect to not apply. Copies of zoning, floodplain, and similar maps, tables and/or documents related to local substantive requirements will be included in the Article 10 Application.

(e) List Of Substantive Local Ordinances/Laws That the Applicant Requests the Board Not Apply

At this time the Applicant has not identified any local substantive ordinances or laws that they anticipate requesting the Board not apply; however, the Applicant will continue to consult with the Town of Hounsfield and County of Jefferson and will provide more detail in the article 10 Application. The Applicant anticipates requesting that the siting Board apply the substantive requirements as summarized in (d) above.

(f) List Of Procedural Local Ordinances/Laws Related to Use of Water, Sewer, or Telecommunication Lines

Town of Hounsfield Zoning Law with Amendments

- *Article VI-A, Site Plan Review, Section 610: Application for Site Plan Review (2)(F), (2)(H) & (2)(L)* – Site Plan Application Requirements regarding sewage and drainage
- *Article VI-A, Site Plan Review, Section 615: Review Criteria (H)-(J)* – Drainage and sewage review criteria
- *Article VI-A, Site Plan Review, Section 620: Guarantees for Installation and Maintenance Improvements (A)-(B)* – Town Planning Board may require Applicant complete improvements before final approval is granted or enter into an agreement with Town

(g) List Of Substantive Local Ordinances/Laws Related to Use of Water, Sewer, or Telecommunication Lines

Town of Hounsfield Zoning Law with Amendments

- *Article VI-A, Site Plan Review, Section 625: Performance Standards (A)-(G)* – Drainage

(h) Local Ordinances/Laws Related to Use of Water/Sewer that the Applicant Requests the Board Not Apply

At this time the Applicant has not identified any local substantive ordinances or laws related to the use of water/sewer that they anticipate requesting the Board not apply; however, the Applicant will continue to consult with the local municipalities and will provide more detail in the article 10 Application. The Applicant anticipates requesting that the siting Board apply the substantive requirements as summarized in (g) above.

(i) Summary Table of Substantive Local Requirements

The Article 10 Application will provide a summary table that has two columns, one consisting of applicable substantive requirements to the Facility and the second containing a description of how the Applicant plans to meet compliance.

(j) Zoning Designation

Zoning regulations for the Facility area are described within the Towns' Zoning Laws. According to the Town of Hounsfield Zoning Law, Galloo Island is zoned MR: Marine District. Essential services, which include publically regulated utilities, are considered Site Plan Review Uses which are permitted in the Marine District with site plan approval.

The Article 10 Application will outline how the turbine locations within the Facility area will be located and how they will comply with zoning districts to allow for the construction of wind energy generation facilities by special permit or otherwise.

2.32 STATE LAWS AND REGULATIONS

During preparation of the Article 10 Application, the Applicant will consult with the state agencies and authorities whose requirements are the subject of the exhibit, to determine whether all such requirements have been correctly identified. To the extent that the requirements below are applicable, the Applicant intends to comply with such requirements unless the Applicant specifically requests relief from the Siting Board.

(a) List of State Approvals, Consents, Permits, Certificates, or Other Conditions of a Procedural Nature

The Applicant has compiled a preliminary listing of state approvals, consents, permits, or other conditions of a procedural nature required for the construction or operation of the proposed Facility, as summarized in the following table:

Table 8. List of All State Approvals for the Construction and Operation of the Facility that are Procedural in Nature and supplanted by PSL Article 10

State Agency	Requirement	Discussion
New York State Department of Environmental Conservation	Water Quality Certification (WQC), Section 401 of the Clean Water Act	The Applicant anticipates submitting a permit application to the U.S. Army Corps of Engineers after the Facility receives the Article 10 Certification. Therefore, the request for WQC is not included in this Application and will be submitted at a later date.
New York State Office of Parks, Recreation, and Historic Preservation (OPRHP)	Consultation Pursuant to §14.09 of the New York State Historic Preservation Act	The Applicant has initiated (and will continue) consultation with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) to ensure compliance with §14.09 of the New York State Historic Preservation Act.
New York State Department of Environmental Conservation	Endangered and Threatened Incidental Take Permit Article 11, 6 NYCRR Part 182	The NYSDEC may issue a license or permit to take, transport, sell, import and/or possess any species listed as endangered, threatened, or species of special concern for purposes it deems legitimate. This permit may be required if, in consultation with state agencies, it is determined that the project could result in incidental take of state-listed fish or wildlife species. If this permit is required, the procedural requirements are supplanted by Article 10.

State Agency	Requirement	Discussion
New York State Department of Environmental Conservation	Permit for Protection of Waters Article 15, 6 NYCRR Part 608	This permit would be required for the crossing of protected streams by Facility components. Protected streams are particular portions of streams designated by the NYSDEC with one of the following classifications: AA, AA(t), A, A(t), B, B(t) or C(t). The permit is required for any change, modification, or disturbance of any protected streams, streambeds, or stream banks. If this permit is required, the procedural requirements are supplanted by Article 10.
New York State Department of Environmental Conservation	Permit for Freshwater Wetlands Article 24, 6 NYCRR Part 663	This permit would be required for the crossing of regulated freshwater wetlands or adjacent areas by Facility components. Regulated freshwater wetlands are designated and mapped by the NYSDEC, and are generally 12.4 acres or larger. Around every regulated freshwater wetland is an adjacent area of 100 feet that is also regulated to provide protection for the wetland. If this permit is required, the procedural requirements are supplanted by Article 10.
New York State Department of Environmental Conservation	SPDES General Permit for Construction Activity	This permit is required for construction projects that disturb one or more acres of soil. In accordance with 1001.32(a) of the PSL this is identified as a state procedural requirement issued by the NYSDEC pursuant to federal recognition of state authority. This approval is subject to review by the NYSDEC independent of the Article 10 process.
Department of Transportation	Special Use Permit for Oversize/Overweight Vehicles	Special hauling permits from the New York State Department of Transportation (NYSDOT) are required for loads that exceed legal dimensions or weights. Thus, transport of the blades, nacelles, tower sections, and cranes will require a variety of special hauling permits. Actual loads and permits will depend on the specific turbine supplier, crane equipment chosen, and degree of disassembly of the crane. These permits are typically obtained by the contractor immediately prior to construction. Although these ministerial permits are supplanted by Article 10, it is anticipated that the Applicant will request that the Siting Board authorize the DOT to issue these permits because of the timing of these submissions and the likelihood that the information will not be available from the contractor until post-Certification.
Department of State	Coastal Management Program Consistency Review	An applicant seeking approval from a federal agency which is subject to the New York State CMP shall complete an assessment form for any proposed activity that will occur within and/or directly affect the State's Coastal Area. This form is intended to assist in determining if an activity is consistent with New York State's CMP as required by U.S. Department of Commerce regulations (15 CFR 930.57). The Department of State will use the completed form and accompanying information in its review of the applicant's certification of consistency.

As indicated in the table above, some of these state procedural requirements are supplanted by PSL Article 10, except for permits to be issued by the NYSDEC pursuant to Federal recognition of State authority, or pursuant to federally delegated or approved authority, in accordance with the Clean Water Act, the Clean Air Act and the Resource Conservation and Recovery Act, and permits pursuant to Section 15-1503, Title 9 of Article 27, and Articles 17 and 19 of the ECL, unless the Board expressly authorizes the exercise of such authority by the state agency. In addition, certain grants of authority for property rights are not supplanted by Article 10.

(b) List of Procedural State Approvals/Permits/Etc. that the Applicant Requests the Board Not Apply

As indicated in the chart above, the Applicant anticipates requesting that the Siting Board authorize the DOT to issue the applicable over-sized vehicle permits. Generally, these approvals are issued immediately prior to construction and are submitted by the contractor. It is anticipated that the information required to be included in the submission will not be available until after a contractor is selected and post-certification. The Applicant will provide an additional explanation of why such an authorization would be desirable and/or appropriate in the Article 10 Application.

(c) List of State Approvals, Consents, Permits, Certificates, or Other Conditions of a Substantive Nature

The Applicant will construct and operate the Facility in a manner that conforms to all State substantive requirements for those approvals, consents, permits, certificates, or other conditions. As part of the Article 10 Application, substantive requirements associated with necessary state approvals, consents, permits, certificates, or other conditions will be provided in a summary table demonstrating the degree of compliance with the substantive provision. The Article 10 Application will clarify which of the identified requirements apply to the proposed Facility based on the final layout and consultation with the appropriate state agencies and authorities.

(d) Summary Table of Substantive State Requirements

The substantive state requirements preliminarily identified above in (c) will be presented in a table in the Article 10 Application, and formatted per the associated requirements.

(e) State Approvals/Permits/Etc. for Offsite Features Not Encompassed by Major Electric Generating Facility

In order to deliver the electricity from the Facility to the New York State power grid, the Applicant proposes to construct a collection substation, an approximately 30 mile AC underwater cable, and a point of interconnection substation collectively referred to as the RTF, near the Mitchell Street Substation in Oswego, NY. Since the design of the AC underwater cable is greater than 100 kV and the length exceeds 10 miles, this component of the Facility is considered

a “Major Utility Transmission Facility” and will be regulated under and subject to Article VII of the Public Service Law. Therefore, the need for, and environmental impact of, the RTF will be evaluated in the Facility’s Article VII Application.

To the extent that offsite ancillary features, which are not considered part of the Major Electric Generating Facility, are needed, a list of all state approvals, consents, permits, certificates, or other conditions for the construction or operation of said offsite ancillary features will be listed in Exhibit 32.

2.33 OTHER APPLICATIONS AND FILINGS

(a) Other Applications or Filings Concerning the Subject Matter of the Proceeding

As stated previously in Section 1.0, a wind power project was previously proposed on Galloo Island in 2007 by Upstate NY Power Corp known as the Hounsfield Wind Farm project. The Hounsfield Wind Farm was reviewed under SEQRA and the NYSDEC as Lead Agency issued SEQRA Findings on March 3, 2010. However, the sponsor never moved forward with the project and abandoned their efforts and interests in the Hounsfield project. On May 22, 2013 DPS dismissed Upstate NY Power Corp’s Article VII Application for lack of progress.

It is anticipated that the Article VII process and the Article 10 process for the Galloo Island Wind Farm will run concurrently and obviously, the granting of a Certificate in either proceeding will have an effect on the other proceeding. Likewise, although it is not anticipated, if either Certificate is denied, it may have an effect on the other proceeding.

Besides the RTF Article VII Application and subject to the list of approvals identified in Section 2.32 and below in subparagraph (b), the Applicant does not have, and is not aware of, any other application or filing before any governmental agency, department or court which concerns the subject matter of this proceeding (i.e., Galloo Island Wind).

(b) Federal Permits, Consents, Approvals, or Licenses Required for Construction or Operation

The following table summarizes any anticipated federal permit, consent, approval, or license needed for the proposed Facility. This information will be confirmed and/or updated in the Article 10 Application.

Table 9. Federal Permits and Approvals for the Galloo Island Wind Energy Facility

Agency	Anticipated Application Date[1]	Description of Permit or Approval Required
U.S. Army Corps of Engineers	TBD	Section 10 of the Rivers and Harbors Act of 1898 Section 404 or Nationwide Permit for Placement of Fill in Federal Jurisdictional Wetlands/Waters of the U.S. NEPA Compliance Compliance with Section 106 of the NHPA Compliance with Section 7 of the Endangered Species Act
Federal Aviation Administration	TBD	Lighting Plan and Clearances for Potential Aviation Hazard. Includes formal consultation with Department of Defense
New York State Office of General Services	TBD	Coastal Zone Consistency under Federal Coastal Zone Management Act
U.S. Fish and Wildlife Service	TBD	Consultation Pursuant to Section 7 of the Endangered Species Act, Associated with the Aforementioned Section 404 Permit

[1] The anticipated application submittal date will be identified in the Article 10 Application.

2.34 ELECTRIC INTERCONNECTION

(a) Design Voltage and Voltage of Initial Operation

A transformer within or at the base of the tower will raise the voltage of electricity produced by the turbine generator from 650 volts up to the 34.5 kilovolts (kV) voltage level of the collection system. The electrical collection system will total approximately 12 miles in length, and will be installed adjacent to Facility access roads to the extent practicable. Up to six incoming circuits will converge at the collection substation, which is the terminus of the 34.5 kV collection system. The collection substation, to be located on the south east side Galloo Island, will increase the voltage of the collection system from 34.5 kV to 145 kV.

The underwater 145 kV generator lead line will run approximately 30 miles south from the collection substation to a POI along the Indeck to South Oswego line, in the City of Oswego. The generator lead and associated POI infrastructure are the subject of a separate Article VII preceding.

(b) Type, Size, Number, and Materials of Conductors

Information relating to conductors for the generator lead line will be included within the Article VII Application and not part of the Article 10 Application.

(c) Insulator Design

Information relating to insulators for the generator lead line will be included within the Article VII application and is not part of the Article 10 Application.

(d) Length of the Transmission Line

Information relating to the length of for the generator lead line will be included within the Article VII application and not part of the Article 10 Application.

(e) Typical Dimensions and Construction Materials of the Towers

Information relating to dimensions and construction materials for the generator lead line will be included within the Article VII application and not part of the Article 10 Application.

(f) Design Standards for Each Type of Tower and Tower Foundation

Information relating to design standards for the generator lead line will be included within the Article VII application and not part of the Article 10 Application.

(g) Type of Cable System and Design Standards for Underground Construction

From the transformer in or near each wind turbine, three power cables along with the fiber optic communication cables that comprise a single circuit will collect the electricity produced by wind turbine generators. Direct burial methods such as use of a cable plow, rock saw, rock wheel trencher and/or similar equipment will be used during the installation of underground electrical collection system whenever possible. If a rock saw is used, water or other nonhazardous compound would be used as a lubricant. Direct burial will involve the installation of bundled cable (electrical and fiber optic bundles) directly into a "rip" in the ground created by the plow, saw blade or rock wheel. The rip disturbs an area approximately 24 inches wide with bundled cable installed to a minimum depth of 36 inches in most areas, and 48 inches in active agriculture and pasture lands. Sidecast material will be replaced with a small excavator or small bulldozer. All areas will be returned to approximate pre-construction grades and restored.

The Article 10 Application will provide more detail on the type of collection cable system to be used and the design standards for that system. Information relating to design standards of underground construction of the generator lead line will be included within the Article VII application and not part of the Article 10 Application.

(h) Profile of Underground Lines

The Article 10 Application will include drawings of the collection system that illustrate the depth of the underground collection cables, along with the location of any oil pumping stations and manholes.

(i) Equipment to be Installed in Substations or Switching Stations

The collection substation will include 34.5 and 138 kV busses, a transformer, circuit breakers, towers, a control building, metering units, and air break switches. The Article 10 Application will include design drawings illustrating the equipment to be installed in the collection substation.

(j) Any Terminal Facility

The only terminal facility expected is the collection substation. The Application will describe this Facility in further detail as outlined above.

(k) Need for Cathodic Protection Measures

The Article 10 Application will describe any necessary cathodic protection measures and standards to be followed.

2.35 ELECTRIC AND MAGNETIC FIELDS

Electromagnetic fields ("EMF") are generated by the operation of Facility components such as the turbine generator, electrical collection lines, and transformers. EMF strength decreases with the square of the distance from the source (the electric charges or currents) for power lines and the cube of the distance from point sources such as substations. For an electric transmission line, EMF levels are highest next to the transmission lines and directly under an overhead line, and decrease rapidly as the distance from the transmission corridor increases. The height of the turbine generator above the ground, the location of electrical collection cables underground, and the location of substation transformers and other electrical equipment inside a fenced yard provide separation of these components from the general public, livestock, and wildlife. Therefore, generally, EMF exposure from Facility components is expected to be non-existent or very limited.

The PSC established electric field strength standards in Opinion 78-13 (issued June 19, 1978). Electric field strength is limited to 1.6 kilovolts per meter (kV/m) for electric transmission lines, at the edge of the right-of-way, one meter above ground level, with the line at the rated voltage. Facility components will comply with this standard.

Magnetic field standards established by the PSC are described in the Interim Policy Statement on Magnetic Fields, issued September 11, 1990. The interim policy established a magnetic field strength interim standard of 200 milligauss ("mG"), measured at one meter above grade, at the edge of the right-of-way, at the point of lowest conductor sag. The measurement is based on the expected circuit currents being equal to the winter-normal conductor rating. Facility components will comply with this standard. While EMF will be generated by the operation of Facility components, the strength of these EMF will not be significant at any of the measurement locations listed by the PSC. The height of the turbine generator above ground; the depth of electrical collection cables underground; the width of the transmission line ROW, if any; and the location of substation transformers, will adequately separate these components from any human receptors. No significant adverse health impacts from EMF are anticipated and no further minimization or avoidance measures will likely be necessary.

To adequately address and evaluate potential adverse impacts from EMF, the Applicant will, at a minimum, address all of the requirements of the Certificate Application contained within 16 NYCRR § 1001.35 (a)-(d) (Exhibit 35). This will include:

- Identification of every right-of-way segment having unique EMF characteristics;
- Proposed and "base case" cross-sections for each identified right-of-way segment;
- Aerial photo mapping that depicts the identified right-of-way segment, cross-section, nearest occupied structure, and distance between the right-of-way edge and the nearest edge of the identified structure; and
- An EMF study with calculation tables and field strength graphs for each identified right-of-way segment cross-section.

2.36 GAS INTERCONNECTION

The proposed Facility is not expected to require gas interconnection facilities, and as such, the requirements of this exhibit are not applicable to this Facility.

2.37 BACK-UP FUEL

The proposed Facility is not expected to require back-up fuel, and as such, the requirements of this exhibit are not applicable to this Facility.

2.38 WATER INTERCONNECTION

The proposed Facility will include potable water for the O&M building. It is anticipated that the water sources will be island based (i.e., well or lake fed) and will not require interconnection with existing municipal water supplies, and as such, the requirements of this exhibit are not applicable to this Facility.

2.39 WASTEWATER INTERCONNECTION

The proposed Facility will include on-site wastewater treatment for the O&M building (i.e., septic system or package plant). Due to the remote location of the island, the Facility will not include an interconnection to municipal sewers and as such, the requirements of this exhibit are not applicable to this Facility. However, the on-site treatment will require approval from Jefferson County Department of Health.

The plans and analysis required by Jefferson County Department of Health (i.e., engineering plans, calculations and description of compliance to County standards) will be by summarized and/or included in the Article 10 Application.

2.40 TELECOMMUNICATIONS INTERCONNECTION

The proposed Facility will have fiber optic connectivity to the mainland via the Article VII transmission cable. The island is currently served by cellular phone and data service. Additionally, a point to point line of site private microwave communications link may be deployed for redundancy. A design description, capacity analysis, and description of how the system will be installed and maintained, will be fully described in the Article 10 application.

3.0 SUMMARY AND CONCLUSIONS

This Preliminary Scoping Statement has been prepared for Galloo Island Wind, which is proposed to include up to 32 turbines and generate up to 110.4 MW of renewable energy with no emissions of pollutants or greenhouse gases to the atmosphere and without the need for the use of significant quantities of water. This document has been prepared to facilitate an understanding of the proposed Facility, to further solicit input from the various stakeholders, and to satisfy the requirements of 1000.5(l) of the New York Public Service Law.

The proposed Facility is a utility scale wind facility located on Galloo Island, Lake Ontario in the Town of Hounsfield Jefferson County, New York. Galloo Island consists of approximately 1,966 acres of private and public land, and the general landscape is a mix of grass land and forest land. Stony Island is the nearest land mass, located approximately 2.5 miles east of Galloo Island, and the nearest location on the mainland is Stony Point in the Town of Henderson located approximately 6 miles to the east.

The proposed Facility includes 32 wind turbines, together with approximately 14 miles of associated electric collection lines and access roads, collection substation (including the main power transformers), two permanent meteorological ("met") towers, one operation and maintenance ("O&M") building along with potable and waste water treatment, a barge landing site, a permanent structure for proposed overnight accommodations, a helicopter landing site, a borrow area, a temporary batch plant, and a temporary construction staging/laydown area. All of these components collectively constitute the "Major Electric Generating Facility" as defined in 16 NYCRR 1000.2(v).

There are off-site ancillary features anticipated on the mainland (i.e., contractor parking, docking improvements), these are generally minor and/or will consist of using existing features. However, these off-site ancillary features are not considered to be a part of the "Major Electric Generating Facility" and will not be part of the Article 10 Application. Any off-site ancillary features will be subject to applicable state and local laws and regulations.

To deliver electricity to the New York State power grid, the Applicant proposes to construct a collection substation, an approximately 30 mile AC underwater cable outside of the Article 10 Facility Site, and a point of interconnection substation near the Mitchell Street Substation in Oswego, NY. Since the design of the AC underwater cable is greater than 100 kilovolts ("kV") and the length exceeds 10 miles, these components (i.e., high side of the collection substation, underwater cable, and Point of Interconnect substation) of the Facility are considered a "Major Utility Transmission Facility" and will be regulated under and subject to Article VII of the Public Service Law. Therefore, the need for, and environmental impact of, the RTF will not be evaluated in the Facility's Article 10 Application. It is anticipated that the

Applicant will submit its Article VII Application at the same time as the Article 10 Application, and that the two application processes will run concurrently.

The Applicant is committed to transparent, thorough and responsible distribution of Project information to and from stakeholders and has a Facility specific website (www.gallooislandwind.com) which stakeholders and the public can submit comments and questions, along with a phone number (315 215-2934) to call with any questions and comments. Prior to submission of the Article 10 Application, the Applicant intends to continue stakeholder education opportunities. These stakeholder efforts will be tracked in a log summarizing the Facility's PIP activities to date, which is available on the Facility website.

Section 2.0 (Content of Application) of this PSS has been organized in accordance with 16 NYCRR § 1001 (Content of an Application). Specifically, all sub-sections of Section 2.0 correspond directly to 16 NYCRR § 1001 (e.g., Section 2.1 corresponds to 16 NYCRR § 1001.1, Section 2.2 corresponds to 16 NYCRR § 1001.2, etc.). These subsections of the PSS identify numerous Facility-specific support studies that will be conducted and included in the Article 10 Application, including:

- Emergency Action Plan
- Complaint Resolution Plan
- Noise Impact Assessment
- Historic Architectural Resources Visual Effects Analysis
- Preliminary Geotechnical Investigation
- Preliminary Blasting Plan
- Invasive Species Control Plan
- Preliminary Stormwater Pollution Prevention Plan
- Preliminary Spill Prevention Containment and Countermeasure Plan
- Plant and Wildlife Species Inventory
- Wetland and Stream Delineation Report
- Visual Impact Assessment
- Route Evaluation and Transportation Impact Study
- Draft Decommissioning Plan

Finally, as previously indicated, the Applicant has prepared a content matrix to allow for a comparison of the content of this document with the requirements of 1000.5(l), which is provided below as Table 3.0-1.

Table 10. PSS Content Matrix

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Galloo Island Wind PSS	Notes
PSL 1000.5 (l)(1)	as much information as is reasonably available concerning the proposed facility, generally in the form (though in less detail) that it will appear in the application;	Section 2.0	This Section, and all associated subsections, of the PSS contain reasonably available information related to existing conditions, potential impacts and minimization/mitigation.
PSL 1000.5 (l)(2)	a preliminary scope of an environmental impact analysis containing a brief discussion, on the basis of reasonably available information, of the following items:	Section 1.5	This section includes general information regarding Facility-related impacts.
PSL 1000.5 (l)(2)(i)	a brief description of the proposed facility and its environmental setting;	Section 1.1, Sections 2.21(l), 2.22(a), 2.22(d), 2.23(a), 2.23(b)	Section 2.1 provides a brief description of the Facility, while Sections 2.21(l), 2.22(a), 2.22(d), 2.23(a), 2.23(b) provide a brief description of its environmental setting
PSL 1000.5 (l)(2)(ii)	potentially significant adverse environmental and health impacts resulting from the construction and operation of the proposed facility including also an identification of particular aspects of the environmental setting that may be affected, including any material impacts or effects identified in consultations by the public, affected agencies, and other stakeholders, and a responsive analysis by the Applicant as to those issues identified in consultations;	Section 1.5, Sections 2.15(e) and 2.17(d), Sections 2.21 (m), 2.22 (b), 2.22(f), 2.22(m), 2.22(q), 2.23(b)(4), 2.23(e)(1), 2.24(b)(7), 2.25(d)(2)	Section 1.5 includes general information regarding Facility-related impacts, Sections 2.15(e) and 2.17(d) provide information regarding potential health impacts, and Sections 2.21 (m), 2.22 (b), 2.22(f), 2.22(m), 2.22(q), 2.23(b)(4), 2.23(e)(1), 2.24(b)(7), 2.25(d)(2) provide information regarding potential environmental impacts. As of the date of the filing of this PSS, no material impacts have been identified during any consultations.
PSL 1000.5 (l)(2)(iii)	the extent and quality of information needed for the application to adequately address and evaluate each potentially significant adverse environmental and health impact, including existing and new information where required, and the methodologies and procedures for obtaining the new information;	Section 2.0	This Section, and all associated subsections, identify the extent and quality of information that is proposed to be included in the Article 10 Application, including numerous stand-alone support studies.

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Galloo Island Wind PSS	Notes
PSL 1000.5 (l)(2)(iv)	for proposed wind-powered facilities, proposed or on-going studies during pre-construction activities and a proposed period of post-construction operations monitoring for potential impacts to avian and bat species;	Sections 2.22(d) and 2.22(h)(1), Section 2.22(h)(2)	Sections 2.22(d) and 2.22(h)(1) discuss the methodology by which the Applicant proposed and implemented pre-construction avian and bat surveys, while Section 2.22(h)(2) discusses post-construction monitoring.
PSL 1000.5 (l)(2)(v)	a description of how the applicant proposes to avoid adverse impacts to the environment and health;	Section 1.5, Sections 2.15(j) and 2.17(d), Sections 2.22 (c), 2.22(g), 2.22(n), 2.22(q), 2.23(b)(5), 2.23(e)(2), 2.24(a)(10), 2.25(d)(4)	Section 1.5 includes general information regarding Facility-related avoidance, minimization and mitigation measures, Sections 2.15(j) and 2.17(d) describe avoidance, minimization and mitigation measures associated with health impacts, and Sections 2.22 (c), 2.22(g), 2.22(n), 2.22(q), 2.23(b)(5), 2.23(e)(2), 2.24(a)(10), 2.25(d)(4) describe avoidance, minimization and mitigation measures associated with environmental impacts.
PSL 1000.5 (l)(2)(vi)	for those adverse environmental and health impacts that cannot be reasonably avoided, an identification of measures proposed to mitigate such impacts;	see above	see above
PSL 1000.5 (l)(2)(vii)	where it is proposed to use petroleum or other back-up fuel for generating electricity, a discussion and/or study of the sufficiency of the proposed on-site fuel storage capacity and supply;	Not applicable to this Facility	

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Galloo Island Wind PSS	Notes
PSL 1000.5 (l)(2)(viii)	a description and evaluation of reasonable and available alternative locations for the proposed facility, including a description of the comparative advantages and disadvantages of the proposed and alternative locations, except that a private facility applicant may limit its description and evaluation of alternative locations to parcels owned by, or under option to, such private facility applicant or its affiliates;	Section 2.9	This Section of the PSS specifically addresses alternatives, including a "no action" alternative and a statement of the reasons why the primary proposed location and source, taking into account the potentially significant and adverse environmental impacts, is best suited, among the alternatives, to promote public health and welfare, including the recreational and other concurrent uses that the site may serve. However, as indicated in Section 2.9, the Applicant does not intend to develop a full comparison between the proposed Facility Site and alternative locations, rather, the Article 10 Application will focus on comparing alternatives that were previously evaluated in the Hounsfield Wind SEQRA record.
PSL 1000.5 (l)(2)(ix)	If the proposed facility affects any land or water use or natural resource of the coastal area and federal authorization or funding is necessary, a preliminary analysis of the consistency of the proposed facility with the enforceable policies of the New York State coastal management program or, where the action is in an approved local waterfront revitalization program area, with the local program;	Section 2.4(g)(l)	This Section of the PSS will address the Facility's conformance with the Coastal Zone Management Act is applicable.

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Galloo Island Wind PSS	Notes
PSL 1000.5 (l)(2)(x)	a statement of the reasons why the primary proposed location and source, taking into account the potentially significant and adverse environmental impacts, is best suited, among the alternatives, including a "no action" alternative, to promote public health and welfare, including the recreational and other concurrent uses that the site may serve, except that a private facility applicant may limit its description and evaluation of alternative locations to parcels owned by, or under option to, such private facility applicant or its affiliates and its description and evaluation of alternative sources to those that are reasonable alternatives to the proposed facility that are feasible considering the objectives and capabilities of the sponsor;	Section 2.9	This Section of the PSS specifically addresses alternatives, including a "no action" alternative and a statement of the reasons why the primary proposed location and source, taking into account the potentially significant and adverse environmental impacts, is best suited, among the alternatives, to promote public health and welfare, including the recreational and other concurrent uses that the site may serve. However, as indicated in Section 2.9, the Applicant does not intend to develop a full comparison between the proposed Facility Site and alternative locations, rather, the Article 10 Application will focus on comparing alternatives that were previously evaluated in the Hounsfield Wind SEQRA record.
PSL 1000.5 (l)(2)(xi)	a preliminary identification of the demographic, economic and physical attributes of the community in which the facility is proposed to be located and in which any alternative location identified is located, and a preliminary environmental justice evaluation of significant and adverse disproportionate environmental impacts of the proposed facility and any alternative facility identified that would result from construction and operation considering, among other things, the cumulative impact of existing sources of emissions of air pollutants and the projected emission of air pollutants from the proposed or alternative facility in a manner that is in accordance with any requirements for the contents of an Article 10 preliminary scoping statement contained in 6 NYCRR Part 487 promulgated by the DEC for the analysis of environmental justice issues; and	Sections 2.27 and 2.28	Section 2.27 provides demographic information for the host town and Jefferson County, while Section 2.28 specifically address Environmental Justice, including identification of the nearest Potential Environmental Justice Area

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Galloo Island Wind PSS	Notes
PSL 1000.5 (l)(2)(xii)	an identification of any other material issues raised by the public and affected agencies during any consultation and the response of the applicant to those issues.	Appendix B	As of the date of filing this PSS, no material issues have been raised by the public or affected agencies during consultations. However, Appendix B of the PSS includes the most recently filed Meeting Log, which outlines all consultation activities conducted by the Applicant since filing the PIP.
PSL 1000.5 (l)(3)	an identification of all other state and federal permits, certifications, or other authorizations needed for construction, operation or maintenance of the proposed facility;	Sections 2.32 and 2.33	Section 2.32 addresses state laws and regulations, which Section 2.33(b) addresses anticipated federal permits and approvals.
PSL 1000.5 (l)(4)	a list and description of all state laws and regulations issued thereunder applicable to the construction, operation or maintenance of the proposed facility and a preliminary statement demonstrating an ability to comply;	Section 2.32	Section 2.32 addresses state laws and regulations.
PSL 1000.5(l)(5)	a list and description of all local laws, and regulations issued thereunder, applicable to the construction, operation, or maintenance of the proposed facility and a statement either providing a preliminary assessment of an ability to comply or indicating specific provisions that the applicant will be requesting the Board to elect not to apply, in whole or in part, and a preliminary explanation as to why the Board should elect not to apply the specific provisions as unreasonably burdensome in view of the existing technology or the needs of or costs to ratepayers whether located inside or outside of such municipality;	Section 2.31	Section 2.31 addresses local laws and ordinances.

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Galloo Island Wind PSS	Notes
PSL 1000.5 (l)(6)	a description of the applicant, its formation, status, structure, holdings, affiliate relationships, powers (including whether it has or will seek to obtain the power of eminent domain, either directly or indirectly), franchises and consents;	Section 2.1	Section 2.1 describes the applicant, including the type of business and its formation. The Applicant does not plan to seek to obtain the power of eminent domain.
PSL 1000.5 (l)(7)	a description of the applicant's property rights and interests or those it proposes to acquire to all lands of the proposed facility and any private or public lands or private or public streets, highways or rights-of-way crossed by any interconnections necessary to serve the facility such as, but not limited to, electric lines, gas lines, water supply lines, waste water or other sewage treatment facilities, communications and relay facilities, access roads, rail facilities, or steam lines; and	Section 2.13	Section 2.13 provides information regarding the applicant's property rights and interests.
PSL 1000.5 (l)(8)	any other information that the Applicant may deem to be relevant.	Entire PSS	Any other information deemed relevant by the Applicant has been included in the PSS.

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