

State Environmental Quality Review (SEQR)
FINDINGS STATEMENT
March 3, 2010

Pursuant to Article 8 - State Environmental Quality Review Act (SEQR) of the Environmental Conservation Law and 6 NYCRR Part 617, the NYS Department of Environmental Conservation (DEC), as Lead Agency, makes the following findings.

Name of Action: Hounsfield Wind Farm, Galloo Island, Town of Hounsfield, Jefferson County, New York

Project Sponsor: Upstate NY Power Corporation

Acceptance date of final environmental impact statement: December 23, 2009

FEIS is available at: <http://www.dec.ny.gov/permits/54687.html>

Alternative site: <http://upstatenypower.com/feis.html>

Summary Description of Action:

Upstate NY Power Corporation (“the Project Sponsor” or “Upstate Power”) is proposing construction of a 246 megawatt (MW)¹ wind-powered electrical generation facility (the “project”) on Galloo Island in the Town of Hounsfield, Jefferson County.

The project development area consists of 1,934 acres of land and is privately owned. Project components include the following structures and activities:

1. Construction and operation of 82 wind turbine generators (WTG). The proposed WTG will be a 3.0 MW generator with a 90 meter blade rotor diameter and a hub height of 80 meters, for a total maximum height of 125 meters (410 feet) from blade tip to ground.
2. Installation and operation of associated 34.5 KV electrical collection lines connecting all WTG to an on-island electrical substation. The electrical collection lines will be both above ground and below ground.
3. Construction of 18.3 miles of private service roads (up to 38 feet wide) between each WTG.
4. Construction of one permanent meteorological (met) tower, approximately 80 meters in height.
5. Construction of a temporary offloading facility for initial delivery of equipment, labor and materials during the time when the permanent slip is under construction.
6. Construction of a permanent slip channel and offloading/storage area, which together make the offloading facility, to allow for delivery and storage of materials and equipment.
7. Construction of three temporary construction staging areas with a combined total land area between 15 and 20 acres.

¹ These findings describe a new preferred alternative developed through analysis of the DEIS and FEIS records, indicating that wind turbine generators (WTG) # 2 and # 3, together with associated access roads and electrical collection lines, as described in the FEIS project layout, would constitute a “direct take” of habitat that supports a state-listed threatened species, the Upland Sandpiper. This is more fully discussed in Section 9, Avian Species, and Section 18, Alternatives.

8. Construction of a temporary concrete batch plant.
9. Construction of a woody mulch area for disposal of cleared vegetation.
10. Construction of sediment basins for erosion and stormwater control.
11. Construction of operation and maintenance facilities.
12. Construction of permanent and temporary housing facilities for construction, operation and maintenance staff. Permanent residential facilities include two three-story structures of 12 units each, and a community building housing kitchen and dining facilities, infirmary, laundry and recreational facilities. Temporary housing consists of 4 modular buildings, each having 32 rooms.
13. Construction of a potable and fire protection lake water intake system.
14. Construction of a sewage treatment system.
15. Construction of an auxiliary power generating system.
16. Construction of a helicopter pad and garage.

In addition, Upstate Power intends to construct a transmission line to deliver power generated by the Galloo Island wind generation facility to the electrical grid, together with substations for connection to the electrical grid and other related facilities. The transmission line, substations, and connection facilities are subject to review by the New York State Public Service Commission (PSC) under Public Service Law Article VII. While DEC is a statutory party to the Article VII proceeding (Public Service Law §124), it does not have jurisdiction over the transmission line, substations and connection facilities (Public Service Law §130). At the same time, actions of the Public Service Commission under Public Service Law Article VII are excluded from review under the State Environmental Quality Review Act (SEQR) pursuant to ECL §8-0111(5)(b) and (6 NYCRR §617.5(c) (35). The Department of Public Service (DPS) maintains a public website for all information regarding that agency’s review of this Article VII application, at <http://documents.dps.state.ny.us/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=09-t-0049>. DPS staff have been active in the review of the wind turbines on Galloo Island and DEC has been an active participant in the review of the transmission line.

Location: The proposed project is located on Galloo Island in eastern Lake Ontario, approximately 5.6 miles west of the closest mainland shoreline (Stony Point in the Town of Henderson) and approximately 12 miles west of the Village of Sackets Harbor, Town of Hounsfield, Jefferson County, New York. (See Attachment # 1, Site Location, and Attachment # 2, Revised Project Layout).

Agency Jurisdiction(s): Under the Environmental Conservation Law, the following DEC permit approvals are required for this project:

DEC Project No.	Description of DEC Permits	Statutory and Regulatory Authority
6-2238-00193/00001	P/C/I SPDES – Surface Discharge	ECL Article 17 and 6 NYCRR Part 750

DEC Project No.	Description of DEC Permits	Statutory and Regulatory Authority
6-2238-00193/00002	Freshwater Wetlands	ECL Article 24 and 6 NYCRR Part 663
6-2238-00193/00004	Water Quality Certification	Section 401 of the Clean Water Act and 6 NYCRR Part 608
6-2238-00193/00006	Excavation & Fill in Navigable Waters	ECL Article 15 and 6 NYCRR Part 608
6-2238-00193/00010	Incidental Take Permit for State-Listed Threatened and Endangered Species	ECL Article 11
GP-0-10-001	SPDES General Permit for Stormwater Discharges from Construction Activities	ECL Article 17 Titles 7 & 8 and ECL Article 70
GP-0-06-002	SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activities	ECL Article 17 Titles 7 & 8 and ECL Article 70
	State Air Facility Permit (or Registration) for Temporary Power Generators during project construction	ECL Article 19 and 6 NYCRR Part 201

State Environmental Quality Review (SEQR) Process.

Attachment # 3 is a chronology of SEQR milestones that have led to development of these findings. Principal documents related to this SEQR review have been made available on the DEC website at: <http://www.dec.ny.gov/permits/54687.html>, and the Upstate NY Power Corp. website at: <http://upstatenypower.com/SEQRA.html>. Additionally, all SEQR were made available for public review at the following local repositories:

- Town of Hounsfield, Office of the Town Clerk
- Hay Memorial Library, Sackets Harbor
- Henderson Free Library, Henderson

Facts and Conclusions in the EIS Relied Upon to Support the Decision

In developing this SEQR Findings Statement, the DEC has reviewed and considered the following documents:

- *Draft Environmental Impact Statement (DEIS) for the Hounsfield Wind Farm*, accepted February 27, 2009.
- *Final Environmental Impact Statement (FEIS) for the Hounsfield Wind Farm*, issued December 23, 2009.
- *Town of Hounsfield Planning Board SEQR Findings Statement*, adopted January 6, 2010.
- *Engineer's Report for: Wastewater Infrastructure Improvements on Galloo Island, Hounsfield Wind Farm Project, Jefferson County, New York*, May 2009, URS Corporation.
- *Joint Application for Permit for the Hounsfield Wind Farm Project*, January 2010, C&S Engineers, Inc.
- *Endangered/Threatened Species License Application, Supplemental Material*, Upstate NY Power Corp., February 10, 2010.

DEC is required to consider the relevant environmental impacts, facts and conclusions disclosed in the final EIS in its SEQR Findings Statement. Under Environmental Conservation Law section 8-0109, DEC is required to choose alternatives which, consistent with social, economic and other essential considerations, to the maximum extent practicable, minimize or avoid adverse environmental effects, including effects revealed in the environmental impact statement process. Here, the findings begin by setting out the public need and benefits of the project. In the case at hand, the public need and benefits of the project themselves further environmental protection goals related to reduction of green house gases. The findings then set out the categories of resources affected by the project and any significant impacts that the project may have on them. Under each of these headings, DEC has set forth how such impacts have been avoided and if not avoided then mitigated to the maximum extent practicable. DEC then balanced and weighed the residue of impacts against the public need and benefits of the project or social, economic and other essential considerations.

DEC finds that the project has been designed to avoid, or where not completely avoided, minimize and mitigate adverse environmental impacts revealed through the EIS process. DEC also finds that the social, economic and other essential considerations underlying the project are considerable even when balanced against the residue of impact in the preferred alternative. The following facts and conclusions are provided in support of DEC's issuance of a positive SEQR Findings Statement.

1. Public Need and Benefits.

The public need and benefits of the project are best understood with reference to the climate change and energy issues facing the State of New York.

- a. The project will help the State achieve its goal of reducing carbon emissions that contribute to climate change.

Global climate change is one of the most important environmental challenges of our time. There is scientific consensus that human activity is increasing the concentration of greenhouse gases (GHGs) in the atmosphere and that this, in turn, is leading to serious climate change. By its nature, climate change will continue to affect the environment and natural resources of the State of New York.² In response, Governor Paterson's Executive Order 24 establishes a goal to reduce GHG emissions eighty percent by the year 2050, and includes a goal to meet 45% of New York's electricity needs through improved energy efficiency and clean renewable energy by 2015.³ Emissions of CO₂ account for an estimated 88% of the total annual GHG emissions in New York State. The overwhelming majority of these emissions — estimated at 250 million tons of CO₂ equivalent per year — result from fuel combustion. Overall, fuel combustion accounts for approximately 88.3% of total GHG emissions.

- b. The Project will help the State achieve the goals of the 2009 State Energy Plan.⁴

State Energy Law §6-104 requires the State Energy Planning Board to adopt a State Energy Plan.⁵ The New York State Energy Plan contains a series of policy objectives. Among these objectives is to increase the use of energy systems that enable the State to significantly reduce greenhouse gas (GHG) emissions while stabilizing energy costs and improving the State's energy independence through development of in-state energy supply resources. The State Energy Plan recognizes that wind energy projects will play a role in fulfilling this objective.

Based on the State Energy Plan, other public benefits of the project include the following:

- i. Production and use of in-state energy resources can increase the reliability and security of energy systems, reduce energy costs, and contribute to meeting climate change and environmental objectives.
- ii. 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.

²New York State Department of Environmental Conservation. *Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements*. July 15, 2009. <http://www.dec.ny.gov/regulations/56552.html>.

³ New York State. *Executive Order No 24: Establishing A Goal To Reduce Greenhouse Gas Emissions Eighty Percent By The Year 2050 And Preparing A Climate Action Plan*. August 6, 2009. http://www.state.ny.us/governor/executive_orders/xeorders/eo_24.html.

⁴ State Energy Planning Board. *2009 State Energy Plan*. December 2009. <http://www.nysenergyplan.com/stateenergyplan.html>.

⁵ State Energy Law §6-104(5) provides: "The state energy plan shall provide guidance for energy-related decisions to be made by the public and private sectors within the state. Any energy-related action or decision of a state agency... shall be reasonably consistent with the forecasts and the policies and long-range energy planning objectives and strategies contained in the plan....A state agency... may take official notice of the most recent final state energy plan adopted by the board prior to any final energy-related decision by such agency...."

- iii. By focusing energy investments on in-state opportunities, New York can reduce the amount of dollars “exported” out of the State to pay for energy resources.
- iv. By re-directing those dollars back into the State economy, New York can start to increase its economic competitiveness with other states that are less dependent on energy supply imports to support their local economies.⁶
- v. Increasing the percentage of energy derived from renewables will reduce the net retail price of electricity for all customers.
- vi. Renewable energy helps to reduce price volatility of energy supplies. Renewable energy contributes to the reduction of energy price volatility in the long-term.

2. Topography, Geology and Soils

a. Potential Impacts.

1) The FEIS project layout included a proposed a borrow pit on the northeast portion of Galloo Island, between WTGs 71 and 72, approximately 2.1 acres in size, with an additional 3 acres of affected land for processing, stockpiles, a loading area, and sediment basins. This activity would have required a permit from the DEC under Article 23 of the Environmental Conservation Law (ECL) – Mined Land Reclamation, however the Project Sponsor has revised the project to eliminate the need for this borrow pit.

2) 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 the slip channel. Bedrock that is excavated will be reused on the island as material for the roads and aggregate for the concrete batch plant. Given the proposed turbines’ distance from the mainland, there should be no blasting-related impacts to the mainland.

3) Soils at the proposed access roads and turbine locations generally do not present significant engineering or development constraints. Soil disturbance from all anticipated construction activities will total approximately 300 acres. Of this total, approximately 159 acres will be converted to built facilities (such as roads, crane pads and structures), while the remaining soils will be restored to pre-construction conditions and stabilized following completion of construction. Only temporary, minor impacts to topography and geology are expected as a result of construction activities.

b. Discussion and Findings.

1) Because the Project Sponsor has eliminated the need for the proposed borrow pit, no further discussion of impacts related to this component of the project is warranted.

2) Project components have been sited to avoid or minimize, to the maximum extent practicable, temporary and permanent impacts to topography, geology, and soils. The topography of the island limits some of the locations where WTGs can be located. In particular, WTGs will be constructed at least 75 feet or more from the shoreline cliffs to ensure that sufficient counterweight is available to maintain the structural integrity of the foundation. Additional potential adverse environmental impacts associated with soil disturbance (erosion, sedimentation, compaction) have been minimized by siting turbines in relatively level locations where practicable and using existing roads for turbine

⁶ Ibid.

access wherever possible. The Project Sponsor has undertaken steps to minimize the amount of blasting required on the island. All necessary blasting will be subject to oversight by an environmental monitor. In addition, use of Best Management Practices in the revised blasting plan set forth in Appendix L of the FEIS will further reduce adverse impacts.

3) Excavated materials from all construction activities will be stockpiled during construction and subsequently reused on site for re-grading or re-vegetation. Topsoil will be segregated and replaced on top of existing ground surface. Geotechnical investigations will be conducted before construction to confirm DEIS/FEIS conclusions regarding depth to bedrock and surficial and bedrock geology, and to assist in finalizing foundation design. Blasting for the excavation of tower foundations will comply with the blasting plan. Impacts to soils will be further minimized by the following measures:

- Prior to the commencement of construction activities, erosion and sediment control practices will be installed and implemented in accordance with the requirements in the Stormwater Pollution Prevention Plan ("SWPPP") and SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001). Coverage under GP-0-10-001 must be obtained prior to the commencement of construction activity.
- Following construction, all temporarily disturbed areas will be stabilized and restored as specified in the SWPPP.
- Adherence to Best Management Practices to avoid or control erosion and sedimentation, stabilize disturbed areas, and minimize the potential for spills of fuels or lubricants, as set forth in the SWPPP.
- Contractors and subcontractors will be given copies of the final construction documentation and plans, which will contain all applicable soil protection, erosion control, and soil restoration measures.

3. Land and Land Use

a. Potential Impacts.

1) Galloo Island consists of 1,966 acres, with approximately 1,936 acres currently under control of a single private owner. At its closest point the island is approximately 5.6 miles from the mainland of New York State. The current land uses are open space and recreational. Land use on the island involves intensive management to maintain an abundant deer population, including production and storage of feed. Upon obtaining all required approvals for the construction and operation of the project, the Project Sponsor will purchase the privately owned portion of the island and will become the sole landowner for the project. The project will permanently occupy approximately 159 acres of land on Galloo Island with structures such as WTGs, roads, housing and the operations center. The project will additionally impact approximately 141 acres of land temporarily for construction activities, laydown areas and the concrete batch plant.

2) The Lake Ontario shoreline facing Galloo Island includes rural, historic, tourism, residential and farm-oriented land uses. No physical changes to these mainland uses will occur as a result of the project. The Hounsfield Wind Farm is sited on an island in the midst of open water. This location

will allow the project to be seen at a number of locations along the lake shore, but its appearance will be greatly diminished in scale due to the distance of more than six miles (at most locations more than 10 miles) from the shore.

3) A small portion of Galloo Island is owned by the State of New York. This land along the southern end of the Island and near Gill Harbor is designated as State Wildlife Management Area. DEC does not actively manage these areas at this time. Based on the revisions to the project, no facilities or improvements will be placed on New York State Land on Galloo Island. There is also a small parcel controlled by the United States Government. No project facilities or improvements will be located on this parcel.

4) The isolated and remote location and lack of public docking facilities on the island has severely limited use of the publicly owned portion of the island. In recent years the public has used Galloo Island as a location for safe harbor for boats during severe storms and for shore dinners during charter fishing trips. During project operation, DEC does not expect that the project will impair these uses or that there will be additional impacts on regional land use.

b. Discussion and Findings.

1) Following the completion of construction, areas temporarily impacted by construction will be restored to the extent practicable. This will include returning land to preconstruction contours and reseeded, resulting in 141 acres of temporarily impacted land returned to pre-construction conditions.

2) The change in the visual setting to inventoried visual and cultural resources along the Lake Ontario shoreline as a result of the introduction of WTGs into the visual landscape will be offset by mitigation measures designed to enhance the public's enjoyment of these resources at one or more of these locations. These offset projects, which are proposed to enhance the visitor experience at nearby cultural sites, are discussed more fully in Section 13 below.

3) A *Management Plan for the Lake Ontario Islands Wildlife Management Areas*, developed by DEC Region 6 Fish and Wildlife staff in 2002, states that limited habitat management actions have been considered for DEC lands on Galloo Island. On these sites, the agency has considered establishment of perennial wildlife food and cover along with minor clearing and dressing to accommodate wildlife related use. DEC will revise this management plan to reference management activities conducted as part of the wind energy project to improve habitat, such as invasive species control and grassland habitat management.

4) Upstate Power has agreed to allow Gill Harbor, the North Pond area and, if available, the permanent slip, to be utilized as locations of safe harbor for boats during severe weather events.

4. Agricultural Resources

a. Potential Impacts.

1) The majority of land on the island is not classified as prime farmland and is not suitable for agricultural production. However, the project development area contains approximately 164 acres of active agricultural lands located on the northeast portion of the island. Production includes

alfalfa, grains and hay which are used solely to support the abundant deer population on the island. Short-term construction related impacts to agricultural lands will include soil compaction due to vehicular traffic, clearing, grading, trenching and excavation.

2) Long-term impacts include the cessation of agricultural production to support the deer population which, if not actively maintained as grassland, would allow for succession to other cover types. Project components, primarily the re-located substation, will convert approximately 15.15 acres of active agricultural land to built uses.

b. Discussion and Findings.

1) Impacts to agricultural soils from construction activities will be minimized by restricting project equipment and access to designated construction boundaries. Soil erosion will be minimized through the implementation of erosion control measures detailed in the SWPPP referenced above. Topsoil within the designated construction boundaries will be stripped and segregated. Stripped topsoil will be stockpiled immediately adjacent to the work area and separated from other excavated materials to avoid mixing. Following construction, all disturbed agricultural areas will be de-compacted to a depth of 18 inches with a deep ripper or chisel plow. In areas where the topsoil is stripped, soil decompaction shall be conducted prior to topsoil replacement. Stones and rocks larger than 4 inches in diameter will be removed from the surface of the subsoil prior to replacement of topsoil. The topsoil will be restored to the original depth and contours to the maximum extent practicable. Any rock excavated for the burial of electrical connection lines or other uses in the agricultural fields will be removed from these areas or reused on site for foundation aggregate or road bed material.

2) Agricultural land that will not be permanently converted to built uses will be left fallow and may be available for future use either for agriculture or managed as wildlife habitat. The existing deer population on Galloo Island will be reduced to a more sustainable population level once intensive management is ended. Methods to control the deer population will be conducted in accordance with guidance from the DEC Region 6 Division of Fish & Wildlife.

5. Freshwater Wetlands and Protected Surface Waters

a. Potential Impacts.

1) The project will have impacts on New York State regulated wetlands and wetland buffers, however the revised project layout presented in the FEIS has reduced the area of impacts from the original project layout presented in the DEIS. Total impacts to regulated wetlands from directly filling wetlands, or permanent cover type conversion from forested wetland to closely maintained, mowed habitat will total approximately 0.219 acres (this is a reduction of 0.381 acres from the DEIS layout). This includes the clearing and permanent conversion of 0.007 acres of emergent wetland and 0.047 acres of deciduous forested wetland, and the direct filling of 0.078 acres of emergent wetland and 0.087 acres of deciduous forested wetland. In addition, the project will also impact DEC-regulated wetland adjacent areas, including 1.130 acres of forested adjacent area (due to permanent clearing through these forest areas to build access roads and maintain electrical collection lines) and 0.695 acres of non-forested adjacent area. Adjacent area impacts will total 1.85 acres (this is a reduction of 2.007 acres from the DEIS layout). The Project Sponsor has agreed to provide acceptable compensatory mitigation for permanent impacts to freshwater wetlands. A

Conceptual Wetlands Mitigation Plan is included as Appendix E in the FEIS. Construction activities that will impact wetlands require permit authorization from the U.S. Army Corps of Engineers (USACE) and DEC under Article 24 of the Environmental Conservation Law— Freshwater Wetlands, and a Water Quality Certification under Section 401 of the federal Clean Water Act.

2) One stream on Galloo Island will be crossed by a road through the installation of a culvert. The stream carries a DEC “C” classification, indicating that it is not protected under ECL Article 15. The stream will be permanently impacted by the placement of three culverts at one location for development of an access road, resulting in a temporary impact of 26.6 linear feet (0.011 acre) and a permanent impact of 105.8 linear feet (0.037 acre). The current proposal for the three culverts includes burying one culvert below grade at the stream’s thalweg (the lowest point in the stream channel) to provide unrestricted flow at low water conditions. This activity requires permit authorization from the U.S. Army Corps of Engineers (USACE) and DEC under the Freshwater Wetlands Act, and a Water Quality Certification under Section 401 of the federal Clean Water Act.

b. Discussion and Findings.

1) In developing its facility design and site plan, the Project Sponsor has almost completely avoided wetland and stream impacts within the project footprint. The locations of project components were selected to avoid or minimize wetland and stream disturbance. The Project Sponsor has achieved such avoidance by locating WTGs away from wetlands, including forested wetlands, and crossing wetlands at the narrowest points wherever possible. The wetland delineation report prepared for the DEIS identified 361 acres of freshwater wetlands within the 1,966 acre area of Galloo Island, or approximately 18% of the surface area of the island. The proposed project footprint has avoided these areas entirely except for approximately 1/5 acre of wetland fill and forest conversion impacts, and less than 2 acres of wetland adjacent area impact. To further minimize the effects of construction activities on wetlands, the Project Sponsor will install sediment and erosion control measures as part of their construction activities (also see discussion under section on Water Resources - Surface Water Quality and Storm Water Management). The freshwater wetlands permits that are being issued require that these measures be implemented, inspected and maintained during construction. Permanent vegetation must be established on all disturbed areas once construction activities are completed. Compliance with these permit conditions will ensure that impacts to wetlands will be minimized to the maximum extent practicable. To mitigate permanent unavoidable impacts to wetlands that will result from project construction, the applicant will create 0.558 acres of wetland (a 1:2.5 ratio of loss to creation), and 3.65 acres of protected forested adjacent area (a 1:2 ratio of loss to creation). The mitigation as proposed will allow the project to meet requirements of the Freshwater Wetlands Act (Article 24 of the ECL) and 6NYCRR Part 663.

2) To protect stream water quality, perimeter erosion and sediment control measures will be installed around any area to be disturbed. This will include upslope diversion fences, downslope silt fences, or stake-less measures (where limited overburden soils are present) and construction of temporary sediment traps or permanent ponds where required. Burying one of the three culverts at the stream’s thalweg will benefit invertebrates and herpetofauna by allowing unrestricted passage during low water conditions.

6. Water Resources - Surface Water Quality and Storm Water Management

a. Potential Impacts

1) The Project Sponsor has proposed an offloading facility on the south side of the island, which will include a temporary offloading facility (ramp with fill, and associated dolphin piers), a permanent offloading facility (slip), a floating breakwater and three offshore mooring points.

The temporary offloading facility will be used during construction of the permanent facility. It will require 2,250 cubic yards of excavation and 4,300 cubic yards of fill, an articulating ramp, supports for the ramp, hydraulic pistons to raise and lower the ramp, and two free-standing dolphins to guide and secure vessels. The design life of the temporary facility will not exceed three years.

After the permanent offloading facility is completed, the temporary facility will be decommissioned. The fill and dolphins will be removed, and the articulating ramp will be relocated or, if appropriate, incorporated into the permanent offloading facility. The permanent offloading facility will be built to a 14 foot minimum water depth. The total volume of excavation required to create the slip is approximately 80,000 cubic yards, with approximately 70 percent of the excavation onshore (56,000 cubic yards), and 30 percent (24,000 cubic yards) offshore. Three temporary free swinging moorings will be deployed in the open water near the island. A 100 foot wide concrete apron will flank both sides of the slip structure. The apron will be sloped to capture surface water prior to it being discharged into Lake Ontario. A floating breakwater system will be used to inhibit or reduce short-term wave action. Construction of these facilities requires permit authorization from DEC under Article 15 of the ECL – Excavation and Fill in Navigable Waters, USACE, and the NYS Office of General Services (OGS) for operation of the docking facility affecting underwater lands of the State of New York.

2) A water intake pipe will be installed in the lake to provide for fresh water supply to the residential units and operations & maintenance facility. The water intake pipe consists of approximately 575 linear ft of 18-inch diameter ductile iron pipe. The pipe will be buried in an excavated trench approximately three feet below the lake bottom until it reaches a water depth of 15 feet. Beyond this point the pipe will lay on the lake bottom. At the inlet location, the pipe will be buried and terminated at a 6 foot diameter precast concrete pipe section set vertically. The top of the precast section will be set at the 30-foot intake depth (Elevation 213.0 ft).

The concrete batch plant, sewage and wastewater treatment plants will have no point source discharges to the wetlands, small stream or pond on Galloo Island. All sewage and waste water will be collected and treated through a sewage treatment plant prior to discharge to Lake Ontario. The Project Sponsor has designed a wastewater treatment system to accommodate the construction phase, when much more sewage will be generated, and transition to the long term operation and maintenance (“O&M”) phase, when the maximum number of people on site at any one time is estimated to be 50 people. The system will consist of a septic tank and intermittent sand filter and is depicted in Appendix B of the DEIS. The final design of the system will be reviewed by DEC as a permit condition under Article 17 of the ECL - SPDES permit for Private, Commercial or Institutional (P/C/I) Facilities. A conventional sewer pipe and manhole system will convey the discharge from the treatment area to a drop manhole near the cliff at the shoreline. From the drop manhole, buried underwater piping will continue out to the discharge point in the lake. Due to the relatively low flow rate for this system, the pipe will terminate with a single outlet point. The outlet

will consist of a 90-degree ductile iron elbow and a length of vertical pipe to terminate at Elevation 228.0 ft (15 ft of depth at low water level).

Construction of the on-land portions of the water intake and wastewater discharge lines will be by conventional methods, with the exception that much of the trench excavation will likely be in rock. Depending upon the degree of weathering of the rock, various methods may be required, but it is not expected that blasting will be required for the pipe trenches. Weathered rock will most likely be removed with a backhoe and standard excavation bucket. If necessary, a ripping tooth and/or a hoe ram will be used. In extreme situations, a rotary rock cutting head may be required on the backhoe. Underwater pipe excavation will be performed from one or more barges equipped with excavation equipment. Excavation will proceed from the shore to the inlet or outfall structure. A single equipment barge with an excavator will be used if a conventional bucket can penetrate the rock. More likely, a second barge with an excavator with a hoe ram will be required to break the rock so it can be removed with the other excavator.

3) Installation of turbine foundations and crane pads, with associated roads, buried interconnect line, and construction staging areas, together with permanent meteorological (met) towers, substation, workers' residences and operations & maintenance facility, will permanently occupy approximately 159 acres of land. In addition, approximately 141 acres of land will be subject to temporary disturbance resulting from construction activities, laydown areas and the concrete batch plant. Soil disturbance from construction activities can create conditions where stormwater runoff increases soil erosion and carries sediment into wetlands and streams. In accordance with the requirements of the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001), a SWPPP must be developed to address these concerns as well as post-construction stormwater runoff from permanently developed areas. Coverage under GP-0-10-001 must be obtained prior to the commencement of construction activity.

4) A number of activities proposed to be conducted during construction and operation of the project have been determined to be industrial activities as defined in 40 CFR §122.26(b)(14)(i-ix and xi) for purposes of coverage under the SPDES Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activities (GP-0-06-002). All general requirements of GP-0-06-002 are applicable to drainage areas discharging stormwater associated with any covered industrial activity. Sector-specific requirements included in Part VIII of the permit apply to the specific drainage areas in which activities are conducted, and the outfalls discharging stormwater from those drainage areas. The activities identified as meeting the criteria for industrial activities include:

- Maintenance, Cleaning and Fueling at Water Transportation facilities.
- Concrete Batch Plant.
- Land Transportation.

b. Discussion and Findings.

1) Construction of the offloading facility will include measures to minimize adverse impacts to surface water quality and aquatic organisms. Sediment basins will be constructed to allow suspended sediment to settle out of stormwater and water from dewatering operations before being

discharged. A *Conceptual Blasting Plan for Construction of the Galloo Island Offloading Facility* has been developed for implementation during in-water construction. The plan includes turbidity controls consisting of a floating turbidity barrier in Lake Ontario that will surround the excavation area in the lake. The barrier consists of a heavy duty mono-filament filter fabric tensioned, ballasted, and secured with a series of heavy, galvanized steel tension cables, ballast chains, and anchor chains. This system will help reduce any impacts from turbidity and also help, to some extent, to keep fish from the blasting area. Before blasting, the Project Sponsor will conduct an aquatic survey in conjunction with a detailed geotechnical investigation. These surveys and investigations will gather important baseline data as to the current condition (prior to blasting or construction), and this data will be used by the aquatic ecologist performing the monitoring of the blasting and excavation as well as by the Blaster-In-Charge in designing the final detailed blasting plan. The plan will conform to the State of Alaska Department of Fish and Game's *Blasting Standards for the Protection of Fish*⁷ (Alaska Standards) to determine the exclusion zone for aquatic organisms that provides protection from excessive water pressure from blasting. DEC has determined that the method for calculating the exclusion zone contained in the Alaska standards will provide adequate protection from blast pressure to aquatic organisms. The Project Sponsor will submit a final blasting plan based on the aquatic survey and geotechnical investigation to the DEC for review and approval, as a condition of permit authorization. A post construction offshore aquatic survey will also be performed to ascertain the extent to which, if any, the underwater environment will have been altered by the blasting and construction of the offloading facility.

Other Best Management Practices that will reduce impacts from the construction of the slip include the following:

- Only daylight shots will be allowed. Many aquatic species are more mobile during at nighttime. Performing only daylight shots will reduce the potential for negative impacts, especially on species such as Walleye, which tend to feed in shallower water at night. This is also an added safety measure for the persons performing the blasting.
- Use of detonation cords will be limited to reduce the potential for large shock waves in the lake water.
- Blasts will have a 25-millisecond delay interval between decks of the same hole and large separations of holes with sequential separations of 9 milliseconds or greater; sequential timing intervals of less than 9 milliseconds will be avoided. The delay in the timing intervals between detonations of charges is done to reduce the additive effect on compression waves and particle velocities in order to stay within the Alaska Standards, which limit over pressures to 2.7 pounds per square inch (psi) and peak particle velocity to 0.5 inches per second (ips).

2) The water intake line will include a screen cap to prevent debris, fish, and other organisms from entering the intake. The cap will consist of a barrack frame which will support a finer screen with 2 millimeter maximum openings. The proposed configuration will limit through-screen velocity for combined fire protection and potable water maximum flows, to less than 0.5 feet per second. The sanitary system outflow will conform to State established standards, as detailed in the SPDES

⁷ Alaska Department of Fish and Game. *Blasting Standards for the Protection of Fish*. February 15, 1991. http://www.habitat.adfg.alaska.gov/tech_reports/standards_techniques/akdofg%20blasting%20standards.pdf.

permit for a point source discharge. These permits establish criteria for both effluent limits and testing standards following the construction of the wastewater treatment system. Prior to lakebed disturbance associated with construction of the water intake and discharge lines, an aquatic survey will be conducted to gather important baseline data as to the current condition (prior to construction), and this data will be used by the aquatic ecologist performing the monitoring of the excavation. A post construction offshore aquatic survey will also be performed to ascertain the extent to which, if any, the underwater environment has been altered by the construction of the discharge line. Permit conditions will include seasonal restrictions for construction and turbidity limits for all underwater excavation.

3) The Project Sponsor will be utilizing and conforming to the applicable requirements of the State Pollutant Discharge Elimination System (SPDES) General Stormwater Permit for Construction Activities (GP-0-10-001), including development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will include erosion and sediment controls and post-construction stormwater management practices. The requirements include submission of a Notice of Intent (NOI) form for the general permits. The submission of the NOI forms will obligate the Project Sponsor to comply with the terms and the conditions of the general permit.

4) To obtain coverage under MSGP, a complete Notice of Intent (NOI) must be submitted to the Department at least 30 days prior to commencement of industrial activities. Coverage may be modified to include activities/outfalls as they commence, and eliminate requirements when associated activities cease by submitting a Notice of Intent or Termination (NOI/T).

7. Groundwater

a. Potential Impacts.

The project will add only small areas of impervious surface, which will be dispersed throughout the project development area, and will have a negligible effect on groundwater recharge. Construction of the proposed project could result in certain localized impacts to groundwater. Project construction and operation on the island could impact groundwater particularly from accidental spills or releases of petroleum products during construction or operation.

b. Discussion and Findings.

In accordance with best management practices the project will operate under an active Spill Prevention Control, Countermeasures and Containment Plan (SPCC) as per federal requirements for facilities (Appendix B of the FEIS) that store and handle petroleum products. DEC permits issued for project construction will include a condition that the SPCC be submitted to the DEC Region 6 Spills Engineer for review and final approval. All measures and requirements included in the approved plan will be enforceable conditions of DEC permits. Dewatering may be required to facilitate construction of foundations. If this is necessary the groundwater pumped from excavations will be handled in accordance with SPDES GP-0-10-001 requirements and the procedures detailed in the SWPPP (Appendix D of the DEIS).

8. Flora and Fauna

a. Potential Impacts.

The DEIS included reports of studies to identify what types of flora and fauna exist on Galloo Island. An Ecological Resources Survey evaluated the types of habitat on the island and approximate acreage. Agricultural (164 acres), forested (613 acres), open field (783 acres), rocky shoreline (30 acres), wetlands (350 acres) and developed (29 acres) areas were identified. Impacts to wetlands and the rocky shoreline were avoided to the extent practicable. The project will permanently impact the following acres and percentage of island habitats: agricultural (15 acres, 9.3%), forested (66 acres, 10.8%), open field (72 acres, 9.2%), rocky shoreline (0.03 acres, 0.1%), wetlands (0.19 acres, 0.1%) and developed areas (4.7 acres, 16.3%). The permanent impacts from the construction of the project are approximately 159 acres which is approximately 8.08% of the total land area (1,966 acres) of the island.

Plant species were also noted in the various habitat types. Two state-listed threatened species were identified, Rock Cress and Troublesome Sedge. The Rock Cress was found along the cliffs on the north side of the island and will not be affected by the construction or operation of the project. Troublesome Sedge was ubiquitous across the island in most habitat types. Since individual plant locations were not identified it is likely some individuals will be impacted by the project. However, because this species is abundant throughout the island, the potential disturbance to a small number of individuals is not a significant impact.

Two invasive species were also found across the island, Canada thistle and pale swallow-wort. Canada thistle is an invasive species found in many locations in New York State. Pale swallow-wort is an invasive species of particular concern for several reasons. Currently the spread of pale-swallow-wort is fairly limited, although there are certain locations on the mainland that are impacted, including Robert G. Wehle State Park. Construction on the island, if not carefully done, could spread pale swallow-wort to uninvaded sites on the island and mainland.

The study also noted animals that were seen on the island, including deer, coyote, vole and other small mammals. Although some individual animals will be displaced during construction, and perhaps during operation, no significant impacts to other mammals will occur. The existing deer herd on Galloo Island is currently managed to maintain a population above the natural carrying capacity of the island. The Project Sponsor will cull the existing deer herd to prevent overcrowding on the island once active management to maintain the large deer herd ceases.

A number of amphibians and reptiles were noted on the island; however none were rare or unique. Turtle trapping was also done to identify turtles on the island. Following the original survey of limited trapping, DEC requested an additional study focusing on the potential presence of Blanding's turtles (a state-listed threatened species). The survey involved 21 nights of searches for evidence of Blanding's turtles nesting, and deployment of 300 trap-nights in habitat that would be good for Blanding's turtles. No evidence of Blanding's turtle on Galloo Island was found, and DEC has determined that no further surveys for this species are warranted. Other than incidental killing of a small number of individual amphibians or reptiles no significant impacts are expected to occur.

b. Discussion and Findings.

In developing its facility design and site plan, the Project Sponsor has reduced impacts to flora and fauna, and has developed a plan to improve habitat on the island through implementation of a pale swallow-wort control program in open and forest understory areas. Compared to the original proposed layout presented in the DEIS, the revised project layout in the FEIS reduced permanent impacts to forested areas by approximately 13 acres through collocation of certain roads and the electrical connection system. The Project Sponsor has proposed a pale swallow-wort control plan (Appendix F of the FEIS). This goal of this plan is to prevent spread of this invasive species to uninvaded sites on the mainland, and reduce the areal coverage of this species on Galloo Island. The Project Sponsor will implement a mowing protocol to ensure that areas that are currently open field are maintained as grassland habitat to provide opportunity for use by grassland bird species. The currently managed deer herd will be culled in accordance with DEC Region 6 Fish & Wildlife guidance.

9. Avian species

a. Potential Impacts.

The DEIS and FEIS contain extensive surveys of avian species that use the island for breeding, nesting, feeding, or that migrate across the island during spring and fall migration periods, and include almost two full years of survey data, beginning in the Fall of 2007 through the Fall of 2009. Summaries of these reports and potential adverse impacts are discussed below.

Winter Bird Surveys

2007-2008 Winter Bird Survey (DEIS Appendix P.2)

The 2007-2008 Winter Bird Survey was conducted from November 28, 2007 – March 10, 2008. No prior winter bird surveys are known to have been conducted on Galloo Island. This survey identified raptor species, specifically Rough-legged Hawks, Red-tailed Hawks, Bald Eagles, Golden Eagle, Cooper's Hawk, Northern Harrier, Snowy Owl, Northern Strike and Northern Raven. No Short-eared Owls were observed. The 2007-2008 Winter Bird Survey suggests that Galloo Island is involved with winter raptor concentrations that periodically occur in the grasslands proximal to northeastern Lake Ontario. While large numbers of wintering waterfowl were documented in the waters surrounding the island, very little transit of any waterfowl species was observed crossing the island. Very few landbirds were observed on Big Galloo during the winter 2007-2008 surveys. However, the landbirds observed included the Horned Lark and Cooper's Hawk, both listed as species of Special Concern in New York State.

2008-2009 Winter Bird Survey (FEIS Appendix H)

The 2008-2009 winter avian survey was conducted from November 12, 2008 – March 12, 2009. Bald Eagles were found in lower numbers than observed in the winter of 2007-2008. The winter 2008-2009 winter survey found high daily counts of one American Kestrel, two Cooper's Hawks, and two Northern Harriers. Two Snowy Owls were also observed. No Short-eared Owls were observed. Similar to 2007-2008, Northern Raven and Northern Shrike were seen in small numbers throughout this survey. Numbers of waterfowl were significantly lower during this survey than the

2007-2008 survey but the general species pattern seemed to be similar. The second winter bird survey (2008-2009) supports the conclusion reached in the 2007-2008 report that Galloo Island is involved with the winter raptor concentration phenomenon that periodically occurs in the grasslands proximal to northeastern Lake Ontario, but is variable from year to year. The surveys did document Northern Harrier, a New York State listed species, but in lower ratios than other nearby regions. There also appears to be significant annual variation in winter season waterfowl numbers on Galloo Island. Landbirds were relatively scarce in both winter surveys.

Nocturnal Radar Migrant Surveys

Spring 2008 Radar Survey Report (DEIS Appendix P.4)

During spring 2008, nocturnal radar surveys of bird and bat flight activity at the Hounsfield Wind Farm Project area were conducted. Radar surveys are used to count the number of flying migrants passing over the site, and how high they fly, but cannot be used to determine the species of the migrants, or whether they are birds or bats. The overall mean passage rate for the entire survey period was 624 (plus or minus 55) targets per kilometer per hour (t/km/hr). About 19 percent of the targets flew below 125 meters (the maximum turbine height) and varied by night from 4 to 48 percent. The percentage of targets flying below turbine height is very similar to most studies conducted at inland sites during spring mitigation periods. The results of the spring radar surveys fall within the range of other surveys conducted in the Northeast that used the same methods, data analysis procedures and equipment.⁸ Since on all nights the targets were evenly distributed around the radar (within its range) it is likely that there is a broad front migration pattern rather than channeling to any part of the island.

Fall 2008 Radar Survey Report (DEIS Appendix P.5)

Nocturnal radar surveys were also conducted during Fall 2008. Radar efforts were supplemented by ceilometer/night vision visual surveys. The overall mean passage rate for the fall survey period was 281 (plus or minus 10) t/km/hr. Hourly, nightly, and seasonal mean flight heights showed trends similar to other inland studies with varying topography. The results of the fall surveys fall within the range of other surveys conducted in the Northeast that used the same methods, data analysis procedures and equipment.⁹ The fall study, similar to the spring study, indicates a broad front migration rather than channeling to any particular part of the island.

Avian Acoustic Survey

2008 Acoustic Study of Avian Night Migration (DEIS Appendix P.7)

Acoustic monitoring was conducted to determine if there are species on the island that would not be detected during visual observations. The study documented avian flight calls from the lower stratum of the atmosphere (< 700 m) for 10 hours a night beginning around sunset. The data revealed flight calls of two cryptic species that are difficult to detect in diurnal surveys, and which were not detected in other avian surveys on Galloo Island in 2008: Common Moorhen and Least Bittern. The data also suggest that there is gull activity over Big Galloo all night long during the breeding

⁸ New York State Department of Environmental Conservation. *Publicly Available Radar Results for Proposed Wind Sites in New York*. May 29, 2008. http://www.dec.ny.gov/docs/wildlife_pdf/radarwindsum.pdf .

⁹ Ibid.

season, and that it increases substantially toward dusk and dawn. These data along with the altitude and passage rate data from the diurnal movement study indicate that gulls might constitute a significant portion of the targets documented in the spring radar study.

Breeding Bird Surveys

2008 Breeding Bird Study (DEIS Appendix P.3)

A breeding bird study was carried out on Galloo Island during the spring and summer 2008. The breeding birdlife on Galloo Island is dominated by common species such as American Robin, Eurasian Starling, Yellow Warbler and House Wren – generally similar to the composition of common breeding species on the mainland. New York State-listed species detected in this study include three species listed as Threatened (Northern Harrier, Upland Sandpiper, Bald Eagle) and five species listed as Special Concern (Common Loon, American Bittern, Cooper’s Hawk, Common Nighthawk, Whip-poor-will). In addition, the Black-billed Cuckoo, Bobolink, and Canada Warbler are included on the USFWS’s 2002 Birds of Conservation Concern list for the Lower Great Lakes/St. Lawrence Plain region, which includes Big Galloo Island. No Federally listed birds were documented in the 2008 Big Galloo breeding bird survey.

2009 Breeding Bird Study (FEIS Appendix H)

A second year of breeding bird surveys was conducted on Galloo Island in 2009. The following species detected in the 2009 breeding bird study are New York State-listed: Pied-billed Grebe (Threatened), Bald Eagle (Threatened), Northern Harrier (Threatened), Upland Sandpiper (Threatened), Common Loon (Special Concern), American Bittern (Special Concern), Cooper’s Hawk (Special Concern). The additional intensive surveying in the 2009 breeding season produced strong circumstantial evidence that Northern Harrier and Upland Sandpiper were involved with breeding activity on Galloo in 2009. Upland Sandpiper activity consistent with nesting was observed in a native grassland area in the vicinity of WTGs #2 and #3. While no young Upland Sandpipers were noted in summer 2009, the observation of territorial behavior of one adult in this area is strongly suggestive of breeding activity. No federally listed bird species were documented in the 2009 survey and no other New York State-listed grassland birds were documented except for Northern Harrier and Upland Sandpiper. In regard to other breeding birds, the 2009 survey indicated that most species showed very similar patterns of abundance from 2008 to 2009.

Diurnal Bird Movement Surveys

2008 Diurnal Bird Movement Study (DEIS Appendix P.6)

Diurnal bird movement surveys were carried out from late March through mid-November, 2008. The goal was to assess avian flight activity and flight characteristics (e.g., altitude & direction) over the island with particular attention toward the Little Galloo Island colonial waterbirds -- gulls, Caspian Tern, and Double-crested Cormorant. Flight activity of all species above 30 meters above ground level was noted. The 2008 study found that Little Galloo colonial waterbirds made regular feeding flights across Big Galloo Island.

2009 Diurnal Bird Movement Study (FEIS Appendix H)

The 2009 Diurnal Bird Movement Study used a protocol similar to that used in 2008 survey, with five survey points added in accordance with DEC recommendations. The additional data provided by the 2009 Diurnal Bird Movement Study showed passage rates over Big Galloo Island for Caspian Terns, Ring-billed Gulls and Double-crested Cormorants as peaking in early June through early July. The data from the 2009 study of diurnal bird movement over Big Galloo Island confirms the general avian flight patterns documented in the 2008 diurnal bird movement study and supports the idea that these are annual patterns. This includes the passage rates, flight altitudes, and temporal activity patterns of gulls, Double-crested Cormorants, and Caspian Terns that nest on nearby Little Galloo Island.

Ecological Resource Survey - Avian Species Observations (DEIS Appendix N)

Field surveys were conducted during various periods of time from November 2007 to September 2008. During this survey a total of 116 species of birds were observed in various habitat types. Most of the species were common and widespread throughout New York State, except for nine species. These include the Peregrine Falcon, Short-eared Owl, Bald Eagle, Northern Harrier, American Bittern, Sharp-shinned Hawk, Red-headed Woodpecker, and Cerulean Warbler. Bird species observed in the upland forested areas included Wild Turkey, Northern Flicker, Wood Thrush, Gray Catbird, Cedar Waxwing, Black-and-white Warbler, Rose-breasted Grosbeak and American Goldfinch. Avian species in the mixed forest wetland areas were Great Horned Owl, Downy Woodpecker, Eastern Wood-pewee, Blue Jay and House Wren. Most of the northern portion of the island contained these habitat types and avian species.

Summary of potential impacts.

The studies described above were reviewed to assess the potential for adverse impacts to avian species from construction and operation of the Hounsfield Wind Farm. Adverse impacts can include direct mortality from construction activities or from blade strikes during operation; displacement from loss of habitat to built uses; or avoidance of habitat by species sensitive to the change in landscape (particularly the presence of tall structures).

Impact to Shorebirds

Galloo Island has higher shorebird usage than interior areas in New York State (except those proximal to inland shorebird staging areas like Montezuma National Wildlife Refuge) but lower than coastal sites along the eastern Lake Ontario shore. The level of shorebird activity on Galloo Island indicates that risk of shorebird collision with wind turbines is likely to be greater than at mainland wind project sites.

Impact to Waterfowl

The Hounsfield Wind Farm would appear to have lower risk to waterfowl than a nearby site like Wolfe Island, but would have greater risk than an inland wind energy site like Maple Ridge that has less waterfowl feeding flight activity. The latter project does have a local population of Canada Geese and Mallards, and a few of these species have been documented as fatalities there.

Impact to Raptors

Winter bird surveys confirmed that winter raptors aggregate on Galloo Island when food is available. Collision fatalities of raptors have been noted at wind projects in North America and Europe, however in North America most raptor fatalities have been documented in the western half of the continent. Based on periodic winter raptor concentration, collision risk (especially Rough-legged and Red-tailed Hawks) can be expected to be greater in the winter on Galloo Island than at mainland wind farms in New York State. On the other hand, the Hounsfield wind project may have lower overall raptor mortality during the migration periods (especially spring) than other sites in the northeastern coastal region of Lake Ontario. Based on the 2008 data, Galloo may have the highest usage of wintering Bald Eagles of any currently proposed or existing wind project site in New York State. On the basis of these observations, there may be a higher collision risk for Bald Eagles, particularly in February and March, than exists at other New York wind projects.

Impact to Little Galloo Colonial Waterbirds

Diurnal bird movement studies documented that the colonial nesters on Little Galloo Island make regular foraging flights over Galloo Island. Collision fatalities of Ring-billed Gulls might occur at the Hounsfield project if gulls continue to make foraging flights across the Island once the project is built. The potential for Caspian Tern collision fatalities was assessed by reviewing European studies of similar species near wind farms. One study in particular showed that a tern species of similar size to the Caspian Tern (Sandwich Tern) did experience collision mortality, though not at a level that threatened the viability of the nearby colony. The data and analysis provided in the FEIS indicate that the risk to Caspian Tern at this site would likely be less than for those species studied in Europe. Therefore this is not a significant impact. Based on the lower trans-island flight altitude noted for Double-crested Cormorants, it is not expected that collision mortality would be high for this species. The Double-crested Cormorant nesting population on Little Galloo is managed by DEC to be around 1,500 pairs.

NY Threatened & Endangered Species

Golden Eagle (*NY: Endangered*) - In addition to its threatened listing in New York State, this species is federally protected by the Bald & Golden Eagle Protection Act. The species is an uncommon migrant through the region and a rare winter and summer visitor. The Hounsfield wind project would introduce collision risk for the occasional Golden Eagle that may visit Galloo Island.

Short-eared Owl (*NY: Endangered*) - It is possible that in some years Short-eared Owls overwinter on Galloo as there is suitable habitat and, especially in high vole years, there is prey. This species would theoretically be at some risk of collision with wind turbines on Galloo during migration and during the breeding season, if the species did attempt to nest on the island, however wintering birds would be unlikely to be involved in wind turbine collisions because of their low-altitude foraging behavior. Construction of the project may also lead to a decrease potential breeding habitat, and may discourage some nomads from accessing the island, either for foraging or nesting.

Peregrine Falcon (*NY: Endangered*) - One individual was seen on several occasions in late summer and early fall 2008. The species is an uncommon migrant through the region and a rare winter and summer visitor. The Hounsfield wind project would introduce collision risk for the occasional Peregrine Falcon that may visit Galloo Island.

Bald Eagle (*NY: Threatened*) - In addition to its threatened listing in New York State, this species is federally protected by the Bald & Golden Eagle Protection Act. Bald Eagles were present year round on Galloo in 2008. There were no active nests or other evidence of breeding. The closest active nests are east of Sacket's Harbor, New York (> 20 km). The most likely collision risk appears to be during the late winter months when the ice-edge attracts numbers of eagles. The Hounsfield wind project would have a greater risk to wintering Bald Eagles than other currently operating or proposed wind energy projects in New York, but evidence suggests the numbers of eagles at risk would be low. To date there are no confirmed collision fatalities of Bald Eagles at wind projects, although there is one unconfirmed report of a Bald Eagle collision fatality at a wind farm near Lake Erie.

Northern Harrier (*NY: Threatened*) - Surveys conducted on Galloo Island produced evidence that Northern Harrier was involved in breeding activity on the island. The observation of three young Harriers on August 20-21 is evidence of successful 2009 breeding of this species on Galloo. This species would be at some risk of collision with wind turbines on Galloo. Construction of the project may also lead to a decrease potential breeding habitat, and may discourage some nomads from accessing the island, either for foraging or nesting.

Upland Sandpiper (*NY: Threatened*) - The Upland Sandpiper has a small breeding presence on Galloo and is anticipated to be a regular migrant in small numbers. Two individuals, presumed to be a pair attempting to breed, were documented in the grasslands at the southern end of the island during the 2008 breeding bird survey. Calls from a single bird (presumed to be a migrant) were recorded during late September in the acoustic monitoring survey. Additional surveys in 2009 produced evidence that Upland Sandpiper was involved in breeding activity on Galloo. While no young Upland Sandpipers were noted in summer 2009, the observation of territorial behavior of one adult in the southern grassland area is strongly suggestive of breeding activity. The Hounsfield wind project would introduce a new collision hazard in the vicinity of their breeding site. Construction of the project may also lead to a decrease potential breeding habitat, and may discourage some nomads from accessing the island, either for foraging or nesting.

New York State Species of Special Concern

Nine species listed of special concern in NY were documented as migrants, possible breeders, and/or occasional visitors to Galloo: Common Loon, American Bittern, Cooper's Hawk, Sharp-shinned Hawk, Common Nighthawk, Whip-poor-will, Redheaded Woodpecker, Horned Lark, and Cerulean Warbler. None were confirmed breeding on Galloo and only one or two individuals were observed except for Horned Lark (a flock of 10 birds were seen in winter bird study) and Common Nighthawk (6 migrants were seen in late May). These species could be subject to minor collision risk.

Impact to Birds on the Mainland

There is no evidence or theoretical grounds for indicating that the Hounsfield wind energy project will have any impact to bird populations on the mainland, including the Point Peninsula Bird Conservation Area.

b. Discussion and Findings.

DEC has determined that the project layout as proposed in the FEIS would result in a “take” of habitat that supports state-listed threatened or endangered grassland bird species, particularly the Short-eared Owl (*Asio flammeus*), Northern Harrier (*Circus cyaneus*) and Upland Sandpiper (*Bartramia longicauda*). The 2009 Breeding Bird Survey confirmed a 58-acre grassland habitat area at the south end of the island (the “southern grassland area”) is a likely nesting area for the state-listed threatened species Upland Sandpiper and potentially Northern Harrier. The Project Sponsor had originally proposed two turbines, WTG #2 and #3, together with associated access roads and electrical collection lines, within this habitat. The DEIS project layout shows that this would have permanently converted 2.91 acres of the southern grassland area to built uses. A revised layout presented in the FEIS was proposed that would have limited the area of disturbance to approximately 1.03 acres, by relocating access roads and electrical collection lines. DEC determined, however, that any permanent disturbance within this 58-acre southern grassland area would result in a “direct take” of Upland Sandpiper habitat. The Project Sponsor has submitted a revised layout that eliminates all development within the 58-acre southern grassland area, including WTG # 2 and # 3, and associated access roads and electrical collection lines. This revised 82-turbine layout minimizes of the risk for “direct take” of the southern grassland area habitat. DEC has additionally determined that WTGs proposed in close proximity to the southern grassland area would result in an indirect take of a portion of the grassland habitat by virtue of turbines (#1, #4, #7, and #8) placed adjacent to but not within the southern grassland. The Project Sponsor will provide mitigation for this indirect loss of 58 acres of Upland Sandpiper habitat on Galloo Island by providing 250 acres of suitable habitat, through easement or fee title, on the mainland. This mitigation acreage, together with conditions set forth in the Article 11 permit described below, will avoid, minimize or mitigate adverse impacts, and result in a net conservation benefit for the state-listed grassland bird species. Conditions of the Article 11 permit will include:

- If any active threatened or endangered bird species nests are discovered within a construction, ground clearing or grading site, the Regional DEC Natural Resources Supervisor will be notified and the nest site will be avoided until notice to continue construction at that site is granted.
- Seasonal limitations will be placed on construction activities in grassland areas (outside of the 58-acre southern grassland area) unless a DEC-approved biologist/ornithologist is present on site to monitor the presence of threatened or endangered bird species. All grassland habitat temporarily modified during construction will be restored to quality grassland habitat.
- Grasslands on the island will be mowed on a three year rotational cycle, to prevent their succession to shrubland or forest. Mowing will occur only after active nesting season by the state-listed species.
- An Invasive Species Control Program, in particular to curtail pale swallow-wort, will be carried out during the construction and operation of the wind farm. The goal of the plan is to reduce the areal coverage of pale swallow-wort in open areas and forest under-story by 20% per year each year for five years. By removing areas of pale swallow-wort and seeding with appropriate native vegetation the project will make more potential habitat areas available for mammal and avian species.

- If the “incidental take” of state-listed threatened or endangered species exceeds limits established in the Article 11 permit, the permittee will immediately consult with DEC to re-evaluate the conditions of the permit with regard to avoidance and mitigation measures.

In addition to measures identified to address mortality and/or displacement of state-listed species, the Project Sponsor has included a number of Best Management Practices in the design of the project to reduce overall avian collision risks. These Best Management Practices include the following:

- Guy wire supports to met towers are a known source of high collision risk to birds. The permanent met tower at the project will be a free-standing tower without guy wires. Five temporary meteorological (guyed monopole) towers are anticipated to be removed by 2011.
- WTGs and met towers are designed with a single large diameter tubular tower (steel monopole), rather than lattice tower, which reduces the perching opportunities for birds. WTGs will be painted in white, off-white or a pale color to be readily visible to migrating birds.
- To the extent practicable, electrical collection lines will be buried to reduce both habitat impacts and collision risks.
- Overhead lines will comply with Avian Power Line Interaction Committee Guidelines for insulation and spacing to reduce the impact on birds.
- Most species of nocturnal migrant songbirds are attracted (to varying degrees) to artificial lights. Unnecessary lighting will be turned off after evening activity hours of people residing on the island. Any required lighting will be shielded and pointed in the downward direction to minimize bird attraction.
- Fragmentation of habitat has been minimized to the extent practicable through the design and layout of the project features. Fragmentation has been further minimized by the redesigned layout of the project in the FEIS. The layout reduces habitat fragmentation by collocating electrical collection lines and access roads in a number of locations. The substation was also moved to the agricultural area located at the eastern edge of the island, resulting in reduced impacts to forested areas by 12.78 acres.
- The Project Sponsor will cull the existing artificially high deer population on Galloo Island, and maintain a deer herd that does not exceed the natural carrying capacity of the island. Carcasses resulting from culling will be removed so that they do not encourage congregation of raptors.

10. Bats

a. Potential Impacts.

In order to assess the effects of the project on the bat population of Galloo Island, preconstruction field monitoring was conducted in accordance with study protocol reviewed and accepted by DEC, and a bat risk assessment was prepared. The survey of bats on Galloo Island involved collecting data by two methods:

1) Acoustic monitoring.

This method uses monitors to listen for bat calls. Interpretation of calls recorded by these monitors can be used to estimate the level of bat activity and determine generally what types of bats are in the vicinity of the monitor. The study identified a number of bat species that use Galloo Island, including hoary bats and big brown bats. The acoustic monitoring detected 5.3 calls per detector per hour.

2) Mist netting.

This method uses nets to capture bats in flight for direct observation and identification. The mist netting effort found little brown bat and silver-haired bat.

Bat habitat included a colony in a barn on the island and various forested areas of the island. No state or federally listed bats were found on the island. Construction-related impacts to bats are anticipated to be limited to incidental injury and mortality (if any) due to construction activity and vehicular movement, habitat disturbance/loss associated with the clearing of forests and earth-moving activities, and displacement due to increased noise and human activities. None of the construction-related impacts described above will be significant enough to affect local populations of any bat species. There is some collision mortality risk to bats, particularly migratory tree bats, from operation of the project. Migratory bat activity on Galloo Island was found to be similar to other wind development sites in terms of the temporal and altitudinal distribution of bat activity. Most of the bat activity occurs near the ground and was highest during the summer months relative to the migratory season. Based on these studies, it was determined that fatality numbers at the project site are likely to be similar in composition but higher in magnitude (on a per turbine basis) compared to other wind projects sites in the northeastern United States.

b. Discussion and Findings.

1) The FEIS project layout reduced the amount of forest impact through the collocation of roads and ECS, and relocation of the substation from a forested area to the agricultural land on the eastern end of the island. These changes reduced impacts to forest-areas by approximately 13 acres.

2) White Nose Syndrome (WNS) has drastically reduced local and regional populations of many of New York's bat species, particularly *Myotis* spp, and some of these may become candidates for becoming state-listed threatened or endangered species. Because of this decline in bat population, mortality from wind turbines is more of a concern now than what was the case just a few years ago before the presence of WNS. The combined effect of WNS and mortality from wind turbines warrants continued and vigilant monitoring to determine the overall impacts to all bat species in New York.

11. Post-construction monitoring and Operational Management

The Project Sponsor will be required to prepare a Post-Construction Monitoring Plan for Birds and Bats. A draft plan was included as Appendix I of the FEIS. The final plan will be developed in consultation with DEC and the United States Fish and Wildlife Service that meets conditions of DEC permits required for development of the project. The two basic components of the plan are a three-year collision fatality survey and a three year bird habituation and avoidance study. The

fatality study will encompass searches for bird and bat carcasses at turbines to estimate mortality. The habituation and avoidance study will recreate the pre-construction diurnal movement and breeding bird surveys to estimate how the presence of turbines impacts the use of the area by birds. A post-construction winter raptor study will also be done to compare winter raptor use of the island to baseline data collected and included in the DEIS/FEIS. Assessments of impacts related to turbine-caused bat mortalities will also recognize that White-nose Syndrome (WNS) has resulted in a serious decline of certain bat species in New York State. The final plan will include a requirement that any if mortality of any bird or bat species exceeds pre-construction estimates, or if there is mortality to any state- listed threatened or endangered species, the Project Sponsor will consult with DEC to determine if additional study and/or mitigation are required. Such measures may include:

- Research to identify the factors contributing to the mortality (e.g., weather conditions, time of year) and if this was an isolated incident or a pattern of risk.
- Increase survey frequency.
- Increase reporting frequency.
- Additional behavior or movement studies, above what was detailed in the Post Construction Monitoring Plan, depending on the species involved.
- Additional offsite mitigation for grassland bird species or Bald Eagle.
- Consultation with DEC to determine if some of the following operational controls such as, early alert, repellent techniques, blade feathering or turbine shutdown will be required. These operational controls will be considered after exhausting reasonable efforts to determine the cause of mortality and the establishment of a pattern of risk, as determined through discussion with DEC, and determining that other actions cannot sufficiently reduce the magnitude of the impact. In such circumstances, the Project Sponsor may be required to implement technically and economically feasible operational controls to reduce the identified impacts. Such operational controls may include, but would not be limited to, reducing operations at certain times of day, under certain meteorological conditions, or other periods of time identified as high risk; increasing the cut-in speed, or feathering turbine blades during periods of high risk for bats.

12. Fish and Aquatic Species

a. Potential Impacts.

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 Hounsfield wind farm would arise during construction of the temporary and permanent boat slips, water intake line and wastewater discharge line. Details regarding construction of these project components are described in Section 6 of these findings.

Located near Galloo Island are several Significant Coastal Fish and Wildlife Habitats. In particular, the shoals near Stony Island are regionally significant for lake trout and smallmouth bass spawning. These habitats will not be impacted by the construction or operation of the wind generation project on Galloo Island. Potential impacts associated with the proposed underwater transmission cable route through this area will be assessed in the Public Service Law Article VII process before the Public Service Commission.

b. Discussion and Findings.

Potential impacts to fish and other aquatic species will be reduced by construction and operational Best Management Practices described in Section 6 of these findings.

13. Visual, Historic and Cultural Resources

a. Potential Impacts.

1) The DEIS and FEIS provided analyses of the potential for change in the visual setting according to the DEC visual policy. The most significant visual impacts anticipated resulting from construction and operation of the project are the foreground views from the island itself or near island views from Lake Ontario. Turbines that are close to the viewer (i.e., less than 1.5 miles), will heighten a project's contrast with the landscape in color, line, texture, form, and especially scale. Persons observing Galloo Island from coastal vantage points will view the project from far background distance (5.6 miles and greater). Turbine structures will decrease in visibility, clarity and perceived importance with increasing distance away from the turbines. The viewshed analysis demonstrates that views of the project will be substantially limited at shoreline locations. Nonetheless, this project will result in a change to the visual setting on the horizon from vantage points along the Lake Ontario shore, including scenic and historic resources of statewide significance.

In the assessment of visual impacts to inventoried resources, DEC relied primarily upon comments from the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), the SHPO, the New York State Department of Public Service (DPS), the Town of Hounsfield and the Village of Sackets Harbor. OPRHP identified concerns for potential impacts on six state park facilities. These were identified as Wehle State Park, Chaumont Boat Launch, Westcott Beach, Sackets Harbor Battlefield, Stony Creek Boat Launch, and Southwick Beach State Park. Of the six park locations identified, the visual analysis in the DEIS identified only five as having potential views of the wind farm (Stony Creek Boat Launch was determined to not have visibility to the proposed project).

In making an assessment regarding visual impacts, DEC policy requires staff to verify the potential significance by comparing the “qualities of the resource” and “the juxtaposition...of the proposal as the guide for the determination.” The example used in the policy is that of a cooling tower plume interfering with the view from a state park overlook.¹⁰ Using this criterion, the visibility of the project to the Chaumont Boat Launch would not be considered an adverse impact because the main function of this facility is boat access not necessarily related to the quality of the visual experience at that location. The other four park resources identified by OPRHP (Wehle State Park, Westcott

¹⁰ Ibid.

Beach, Southwick Beach, and Sackets Harbor Battlefield) all have one or more features where the visual environment is an important element of the visitors' experience. Westcott Beach (12.4 miles) and Southwick Beach (13.3 miles) provide for visual overlook and interpretation (though it should be noted that at Southwick Beach, the overlook already provides a direct view to the Nine Mile Point Nuclear Power Plant). Robert Wehle Park includes two overlook locations with a relatively close mainland view (5.6 miles) to Galloo Island. Sackets Harbor Battlefield State Historic Site includes a view to Galloo Island, although from a far background distance of more than 12 miles. In addition to the resources identified by OPRHP, the SHPO, the Town of Hounsfield and the Village of Sackets Harbor also identified the historic Madison Barracks complex as an inventoried visual resource with a direct, albeit distant, view to Galloo Island (13.4 miles).

DEC concurs that, at the inventoried resources identified above with visibility to the project, the change in the visual setting created by the project may detract from public enjoyment of those features where the view to the horizon on Lake Ontario is an important component (overlooks and historic settings). This impact is most pronounced at the Sackets Harbor Battlefield Historic Site and Madison Barracks. These sites use the existing vista looking out to Galloo Island as part of their historic museum programs. The visible turbine field will be an additional modern visual element in the background of this existing vista. Although this feature will alter the landscape on the horizon, it is not the first, and would not be the only, modern alteration that has occurred at these historic settings. The view from these locations includes other modern elements such as modern watercraft on the lake, residential development across Black River Bay in the Town of Brownfield, with both daytime and nighttime visibility, new residential development contiguous to the battlefield site including nighttime street lighting and modern transportation features within the battlefield.

DEC also recognizes that the proposed wind power project development differs from other development activity in that the turbines are required to be removed, and the resulting views to Galloo Island will revert to its prior condition, if and when the project is decommissioned. In this sense, the change in visual setting may be considered long-term – possibly twenty to forty years, but temporary when considered against the full sweep of time that this historical viewshed has existed.

The Galloo Island Lighthouse was also identified as a listed historic resource which will experience a direct foreground view to the project. While it is clear that the viewshed at the lighthouse site will be dramatically altered, the site is currently in private ownership, does not have approved public access, and is not located on any designated scenic transportation routes, other than recreational boat traffic on the lake. Therefore, although the magnitude of the change in visual setting is large at this location, the impact to the public is very small, especially when compared to the number of visitors to mainland resources such as the Sackets Harbor Battlefield and the Madison Barracks sites.

2) Impacts to historic resources are closely related to the visual impact assessment, since properties listed or eligible for listing in the State and National Registers of Historic Places are included on the list of "inventoried" visual resources in the DEC visual policy. The June 23, 2009 SHPO letter (FEIS Appendix Q) determined that approximately 238 resources listed or eligible for listing on the State or National Registers of Historic Places are located within the area surveyed in accordance

with that agency's guidelines.¹¹ Within the survey area, SHPO identified several key receptors where visual impacts should be carefully assessed. These include the Galloo Island Lighthouse Complex, the Sackets Harbor Battlefield, the Madison Barracks Complex, and the Sackets Harbor Village Historic District. The SHPO indicated that the visual assessment provided in the DEIS sufficiently assessed these resources. The SHPO's assessment concluded that, although the full extent of potential impacts for the proposed undertaking cannot be assessed absent the as of yet unsubmitted survey data for the transmission line portion of the project, sufficient information does exist to determine that under 36CFR Part 800.5(v) the undertaking will have an adverse effect on cultural resources.

3) A Phase IB Cultural Resources Investigation involved surface inspection and shovel testing in selected portions of the project area designed to meet the requirements of the SHPO for surveys of archeological resources. No prehistoric artifacts were found on Galloo Island. Four historic sites were identified and all were associated with the discovery of partial structures or foundations. The proposed project layout avoids three of these sites. One of the sites is at the site of the proposed permanent boat slip; therefore this site cannot be avoided by project re-design.

b. Discussion and Findings.

1) The Project Sponsor has explored means to minimize visual impacts including assessing potential options for camouflage or disguise including a review of different colors for the WTGs, and minimizing FAA-required lighting. However, direct mitigation of visual impacts from the project is difficult, particularly at this project site which, as the SHPO has pointed out, is unlike previously evaluated wind farm projects, being sited on an island in the midst of open water, with a much higher visibility potential than previously reviewed mainland based projects. DEC's Visual Policy states that after all traditional mitigation strategies have been employed staff should pursue offsets and decommissioning to help achieve the balancing required by SEQR. Correction of an existing aesthetic problem identified within the viewshed of a proposed project or enhancing the setting may qualify as an offset or compensation for residual project impacts, after traditional mitigation measures have been applied. The notion here is to improve the experience of visitors at these sites by enhancing their visual and interpretive elements.

Since practicable means to further mitigate these distant views have not been identified, DEC has evaluated potential visual offset mitigation proposals provided by OPRHP and the Town of Hounsfield/Village of Sackets Harbor. These are included in Appendix Q of the FEIS. DEC has determined that the following proposed offset measures will create a net visual improvement, will add to the visitors' experience and appreciation of the resources, and are therefore the preferred mitigation offsets.

- Sackets Harbor Battlefield State Historic Site. OPRHP recently acquired 40 waterfront acres of the original War of 1812 Battle of Sackets Harbor battlefield site. Plans are underway to open the new property to visitors and to provide improved access and interpretation. A new interpretive plan to incorporate the new acquisition into the existing Battlefield storyline and define appropriate interpretive media will be developed. New walking trails, with design and fabrication of new directional and interpretive signage, will be required. A new, permanent

¹¹ New York State Historic Preservation Office. *New York State Historic Preservation Office Guidelines for Wind Farm Development Cultural Resources Survey Work*. March 8, 2006. <http://www.nysparks.com/shpo/environmental-review/documents/CulturalResourceSurveyGuideWindProjects.pdf>.

archaeology exhibit will be developed in the Historic Site's farmhouse to chronicle the archaeology work that has been conducted at this archaeologically rich property over the past decades. Visitors to the Sackets Harbor Battlefield State Historic Site will be able to enjoy an improved experience at the battlefield notwithstanding the far distant view of the turbine field on Galloo Island.

- **Pickering Beach Museum.** Located adjacent to the Sackets Harbor State Historic Site near Lake Ontario, the Museum is in the Village Core National Register Historic District, Sackets Harbor Heritage Area and Sackets Harbor Local Waterfront Revitalization Program area. With the assistance of New York State and the Sackets Harbor Historical Society, the Village completed a major restoration of the house. However, there was not sufficient funding to complete renovation of the cottage and much needed work on the extensive collection. Completion of this project would improve the visual setting at the Battlefield site by restoring a deteriorated historic structure and enhance the interpretive experience for visitors.
- **Robert G. Wehle State Park.** Project work would include improvements to picnic areas and amenities along the scenic bluffs on Lake Ontario, trail improvements, attention to ADA requirements, and directional and interpretive signage. New interpretive themes to be addressed and interpreted include the extensive military history of the park, geology, natural history, and resource management (in particular invasive species such as swallow-wort). Here again, visitors to Robert G. Wehle State Park will be able to enjoy an improved visitor experience along the shoreline of the park notwithstanding the far distant view of the turbine field on Galloo Island.
- **Stone Hospital at Madison Barracks.** Located overlooking Lake Ontario (with a direct line-of-sight to Galloo Island), the Stone Hospital is in the Madison Barracks National Register Historic District, Sackets Harbor Heritage Area and Sackets Harbor Local Waterfront Revitalization Program area. With funding from New York State and private foundations, significant progress has been made to restore the exterior masonry structure and the imminent threat of collapse of this historic building has been averted. But substantial work still remains, including replacement of the roof and complete renovation of the interior. When completed, the Stone Hospital will house a Military Heritage Center which will provide an enhanced interpretive experience at this historic structure within the viewshed.
- **Westcott Beach State Park.** The park's scenic overlook provides a commanding and sweeping view of Lake Ontario. The existing panoramic interpretive signage that interprets this view is proposed to be re-done to include the Hounsfield Wind Farm as a new feature in this viewscape. Upgrades to the landscape and hardscape at this site, plus continuing maintenance such as tree trimming, will improve and preserve public access to this scenic overlook, thereby improving the net visual and interpretive experience at the site.

DEC will require, as a condition of permits issued for construction of the wind generation project, that the Project Sponsor develop a visual impact offset mitigation plan that includes the offset mitigation activities identified above, or an alternative of greater or equal significance that meets DEC Visual Policy qualifications for visual offsets.

2) Because the project requires permits from the U.S. Army Corps of Engineers (USACE), the project is subject to review under Section 106 of the National Historic Preservation Act. As stated

above, the June 23, 2009 SHPO letter (FEIS Appendix Q) determined the undertaking will have an adverse effect on cultural resources. Based on SHPO's determination that the project may result in an adverse effect, the Project Sponsor will enter into a Memorandum of Agreement ("MOA") with SHPO and the USACE as part of the Section 106 process. With respect to visual impacts to historic structures/properties, as stated in the SHPO letter, direct impact mitigation of impacts to these resources is not feasible. Therefore, alternative offset mitigation is proposed. The Project Sponsor is proposing to provide funding for one or more of the following projects suggested by the Town (Included in Appendix Q of the FEIS) to be included in the MOA prepared pursuant to the Section 106 process:

- Renovation and restoration of National Register of Historic Places Listed ("NRL") District Schoolhouse #19 located in the Sulphur Springs Cemetery, Hounsfield, New York.
- Repair and restoration of the NRL Sulphur Springs Cemetery, Hounsfield, New York.
- Repair and restoration of the Lakeside Cemetery, Hounsfield, New York.
- Repair and restoration of the Military Cemetery, Village of Sackets Harbor, New York.
- Upgrades to historic exhibits at the East Hounsfield Library, Hounsfield, New York.
- Production and installation of historic markers at historic locations in the Village of Sackets Harbor and Town of Hounsfield, New York.
- Renovation and preservation of the Pickering Beach Cottage Museum, Hounsfield, New York.
- Restoration and preservation of historically significant exhibits for the Pickering Beach Cottage Museum, Hounsfield, New York.
- Repair of the Sackets Harbor Bank Building, Sackets Harbor, New York.
- Rehabilitation and restoration of Stone Hospital, Sackets Harbor, New York.

DEC notes that this discussion of mitigation related to Section 106 above is appropriate under SEQR only for the limited portion of the project subject to SEQR review, and does not result from a full analysis of impacts associated with the entire undertaking, i.e., the transmission line. Any further discussion of avoidance or reduction of adverse effects can only be undertaken after the full survey information for the proposed transmission portion of the undertaking is submitted to the parties involved in the Section 106 process and the full scope of the affects on historic/cultural resources is assessed for the entire undertaking.

3) A letter from SHPO, dated April 8, 2009 (FEIS Appendix Q), recommended that each of four identified archeological sites be avoided, as they may contribute to the ability to interpret the history of the island, but if at any of these sites avoidance is not feasible, the SHPO recommended that a Phase II investigation be conducted. Three of the four sites have been avoided. DEC will require a Phase II investigation be conducted at the proposed boat slip location prior to construction as a condition in DEC permits for the project. 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 archeologically sensitive resources such as:

- Temporary fencing will be installed demarking a 50-foot buffer from the archeological sites and marked with signs indicating “Sensitive Area/No Access”.
- Final construction plans will include a notation regarding the avoidance measures for the archeological areas.
- The preconstruction meeting will include a discussion regarding the avoidance measures for the archeological areas.
- 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.
- The SHPO Plan for Unanticipated Discoveries will be included in the construction plans for the Engineer-in-Charge.

14. Decommissioning

a. Potential Impacts.

In its findings for this project, dated January 6, 2010, the Town of Hounsfield Planning Board determined that the potential for adverse impacts exists if the project is not completed, is abandoned, or reaches the end of its useful life. The Project Sponsor has provided a decommissioning plan that is set out in Appendix U of the DEIS. No changes were made to it in the FEIS. DEC finds that decommissioning plan presented in the DEIS is adequate to restore the site at the end of the useful life of the project.

15. Mandated FAA Lighting

a. Potential Impacts.

While aviation obstruction lights on communications towers are common visible nighttime elements, the high concentration of red flashing lights over a relatively large area is somewhat unique to wind farms. Aviation obstruction lighting is relatively low intensity and does not create atmospheric illumination (sky glow); however a number of red lights flashing in unison will be conspicuous and discordant with the current dark nighttime conditions at this point on the horizon. The magnitude of this impact will depend on how many lighted turbines are visible and existing ambient lighting conditions present within any particular view. According to the DEIS, twenty-three of the WTG for the project will be constructed with the FAA mandatory lighting. This represents turbines along the outer perimeter of the island which are proposed to be spaced no more than a half mile apart. The FAA mandated lighting will have a 2,000 candela intensity, the minimum intensity allowed by the FAA. All FAA lighting will be red and will flash simultaneously to minimize disturbance to the night landscape. Visual simulations provided in the FEIS demonstrated that the FAA lighting will be visible along much of the coastline depending on the season and meteorological conditions, though the lights will be distant and a background feature.

The FAA lighting would also be visible from certain locations within the five New York State Parks in the region.

b. Discussion and Findings.

All lighting (including turbines and the helipad location) will be kept to the minimum recommended by the FAA. New FAA guidelines do not require daytime lighting for turbines painted “bright white”, and allow for nighttime lighting of perimeter turbines only, at a maximum spacing of 0.5 mile. Medium or low intensity pulsing red lights will be used at night, rather than white or red strobes, or steady burning red lights. Lighting at the substation will be kept to a minimum. In comparison to existing wind power projects, it should be noted that nighttime visibility/visual impacts by the project may be reduced due to new FAA guidelines (issued on February 1, 2007) that result in fewer aviation warning lights than required on earlier projects.

16. Air Resources

a. Potential Impacts.

Temporary impacts to air quality could occur during project construction as a result of both emissions from temporary generators, the concrete batch plant and from the generation of fugitive dust during earth moving activities and travel on unpaved roads. These impacts are anticipated to be minor, temporary, and localized.

b. Discussion and Findings.

A dust control plan will be implemented to minimize the amount of dust generated by construction activities. In addition, the Project Sponsor will be obtaining the requisite air permit from the DEC for operation of the temporary diesel generators to be used as the electrical power supply on the island during construction. These will remain on the island as an emergency back-up power supply. The Project Sponsor will obtain generators manufactured after 2007 with modern emissions controls which meet current air quality emissions standards.

17. Noise

a. Potential Impacts.

The proposed project area is located approximately 3.5 miles from Stony Island, to the east of Galloo Island in Lake Ontario, and 5.6 miles from the nearest mainland shoreline, Point Peninsula in the Town of Lyme. In response to comments on the DEIS, a noise propagation study was conducted to assess potential noise impacts at the nearest shoreline locations including South Shore Road Extension in Lyme, Beach Road in Lyme, Flanders Road in Lyme, Fox Island Road on Fox Island, Pillar Point in Brownsville, the shoreline of Stony Island, and the on-island Worker Housing area. The study is included as Appendix N of the FEIS. The modeling results indicated that the maximum noise level resulting from operation of the wind turbines would be 32.5 dBA at the closest shoreline location (South Shore Road Extension), 40.6 dBA at the shore of Stony Island, and 58.1 dBA at the location of the proposed worker housing complex.

Because the study did not include field measurements of ambient noise levels at these locations, DEC agreed that ambient noise levels developed by field measurements at a similar offshore wind project (the Cape Wind Project) could be used to estimate ambient sound levels at the five shoreline receptors. The ambient Leq sound level selected for this analysis was 50.7 dBA. Using this ambient noise level as the basis for analysis, the study concluded that at the closest shoreline location (South Shore Road Extension), the additive effect of the 32.5 dBA noise level generated by the wind turbines on Galloo Island would result in a noise level of 50.8 dBA, or an increase of 0.1 dBA. Similarly, at the shore of Stony Island, the additive effect of the 40.6 dBA noise level generated by the wind turbines on Galloo Island would result in a noise level of 51.1 dBA, or an increase of 0.4 dBA. The predicted maximum outdoor sound level at the worker housing area on Galloo Island is 58.1 dBA, which is in compliance with the OSHA action level of 85 dBA. An outdoor sound level of 58 dBA is typical for an urban area and does not interfere with outdoor activities at the worker residential buildings.

The study also modeled the levels of low-frequency noise expected from the project and determined that at the Stony Island and shoreline locations, there will be no perceptible infrasound (20 Hz and below) resulting from operation of the Hounsfield wind farm.

b. Discussion and Findings.

DEC has received comments disagreeing with the use of the 50.7 dBA ambient noise level from the Cape Wind project at the shoreline locations chosen for this study. In particular, commentators have pointed out that under certain atmospheric conditions, the wind speed at turbine blade height may be fast enough to operate the turbines (thus generating turbine noise) while surface winds may be slight or nonexistent, resulting in a lower ambient noise level. It has been suggested that under these conditions, 25 dBA may be more representative of night-time ambient noise levels. In fact, Table 1, *Common Indoor and Outdoor Sound Levels*, included in this study, shows 25 dBA as what one would experience in a quiet rural area – nighttime, or an empty concert hall. Using a standard noise combination calculator,¹² if a theoretical ambient sound level of 25dBA were chosen for this analysis, the combined effect of the wind turbine noise level (32.5 dBA) that would be heard at the closest shoreline location (South Shore Road Extension), together with an ambient of 25 dBA, would be a noise level of 33.2 dBA, or an increase of 8.2 dBA above the ambient. Despite the theoretical 8.2 dBA increase under this scenario, it should be noted that the resulting sound level of 33.2 dBA is shown in the table as somewhere between a quiet bedroom at night and quiet suburb – nighttime (also note that in the DEC noise guidelines, this level is equivalent to “library (soft whisper)” and “very quiet.”¹³) Furthermore, DEC noise policy does not state, contrary to common interpretation, that an increase of 6 dBA above the ambient sound level is an absolute threshold for determination of adverse impact. In the discussion of the increase in dBA in a non-industrial setting, the policy states, “In non-industrial settings the SPL (the “sound pressure level” or noise level resulting from combination of all noise sources) should probably not exceed ambient noise by more than 6 dBA at the receptor. An increase of 6 dBA may cause complaints. There may be occasions where an increase in SPLs of greater than 6 dBA might be acceptable. The addition of

¹² Spirax Sarco Inc., Blythewood, SC. *Combined Noise Source & Distance Calculator*. http://www.snapfour.com/CombinedNoise_Calculations.aspx.

¹³ New York State Department of Environmental Conservation. *Assessing and Mitigating Noise Impacts- Program Policy # DEP-00-1*. February 2, 2001. <http://www.dec.ny.gov/permits/6224.html>.

any noise source, in a nonindustrial setting, should not raise the ambient noise level above a maximum of 65 dB(A).”¹⁴

Wolfe Island Wind Farm, which has been in operation since June 2009, employs a noise complaint management protocol to investigate and mitigate noise-related complaints related to operation of the wind farm. This protocol includes an interview with the affected individuals, recording of related weather data at the time of the complaint, and mechanical evaluation of the turbines likely to be the cause of the noise complaint. If the problem persists, sound measurements are taken to compare noise levels at the receptor site to the Ontario action level for wind-generator noise at receptor locations (40 dBA). Since the time this facility commenced operation, two noise complaints have been received by the project operator, both from residents in close proximity to wind turbines. The wind farm operator has not received noise-related complaints from the mainland in Kingston, Ontario, or from the American side of the St. Lawrence River. These mainland locations are 4-7 kilometers from the operating windfield, with mostly water surface in between.¹⁵

On the basis of modeling projections prepared for this project, and current experience with a similarly-sited wind project in the region, DEC finds 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.

18. Alternatives

The purpose of an alternatives assessment is to explore project alternatives that either avoid or reduce identified environmental impacts. For the Hounsfield wind project, the primary impacts of concern are visual and potential mortality to avian and bat resources. The DEIS/FEIS included a description and evaluation of the “no action” alternative, alternative project design/layout, alternate project scale and magnitude, and alternative technologies. An additional alternative has resulted from the DEC requirement, described in the FEIS, for the Project Sponsor to obtain an Article 11 incidental take permit for state-listed threatened and endangered species on Galloo Island.

No Action.

A “No Action” alternative was reviewed to assess the effect of the project not being built. The DEIS stated that if the project were not built, there would be no impacts to wetlands, no excavation of soils or blasting, no mortality to avian or bat resources, and there would be no new visual impacts.

If the project were not built, the State would lose the opportunity for adding a significant source of clean, renewable energy to New York’s energy mix that would lessen the State’s dependence on imported fossil fuels. There would also be a lost opportunity to reduce the emissions of greenhouse gases, SO₂ and NO_x. Finally, the no action alternative would be contrary to the State’s goals in the RPS program, since the project site represents one of the best wind resources in the State. There would also be no benefits to the town, county and school district from PILOT payments. Also, the

¹⁴ Ibid.

¹⁵ Personal Communication, Mr. Garry Perfect, Canadian Renewable Energy Corp., Wolfe Island, Ontario, January 27, 2010.

approximately 200 temporary and 24 permanent jobs would be lost. On balance, the ‘No Action’ alternative is not a reasonable alternative.

98-turbine project.

The Project Sponsor also assessed a “maximum build-out” on the island which would allow for the construction of 98 wind turbines. While the maximum build-out would result in the creation of more renewable energy and contribute more in PILOT revenues than the DEIS project layout, the impacts to wetlands and forest land would increase dramatically, and potential for mortality to avian and bat resources, including impact to state-listed threatened and endangered species, would be increased. The net increase of renewable energy and PILOT revenues do not justify the loss of approximately 25 acres of wetlands and the increased potential for mortality to avian and bat species. On balance, the 98-turbine alternative is not a reasonable alternative.

51-turbine project.

This alternative would only provide incremental reductions in visibility of the project and impacts to avian and bat resources. The wind turbines would be visible almost to the same degree as the selected 82-turbine layout. From the mainland, especially, there would be no appreciable visual difference between having 51 or 82 turbines on the horizon. As to other impacts, they have been adequately avoided or minimized. There is no real environmental gain in reducing the number of turbines at Galloo Island. A decrease in the number of turbines would come at a cost of 93 MW of renewable energy that could theoretically be produced as well as a loss of significant local economic benefits. The 51-turbine alternative does not significantly reduce impacts sufficient to balance the loss of renewable energy and the public policies that favor the development of such energy resources.

8-turbine project.

This alternative would avoid all impacts to wetlands and other sensitive habitat on the island. Under this alternative the Project Sponsor would erect 8 turbines. Like the No Action alternative, this alternative was rejected as the State would lose the benefits of renewable energy and the proportionate decrease in local economic benefits. This alternative would result in a decrease of 228 installed MW capacity (representing 90.5% of the potential capacity). Given the embedded costs of constructing the project, and the loss of renewable energy, the 8-turbine alternative is neither reasonable nor practicable. It is also, on balance, not a desirable alternative from the perspective of public need.

Lower turbine height.

A lower turbine height was assessed in the DEIS. This alternative was assessed primarily to determine if lowering turbine heights would have any effect on the potential visual impact of the project. DEC has concluded that a lower turbine height would not significantly reduce the visual impacts of the project. The DEIS project layout proposed maximum tip height of 125 m (410 feet), while the smallest GE 1.5 MW wind turbine has a maximum tip height of 103.5 m (339.5 feet). Because of the clear line of site from water based or shoreline views the shorter turbine would not result in a significant reduction to visual impacts. As shown in Figures 3.6-1 and 3.6-2 of the DEIS, the reduction of 21.5 m (approximately 70.5 feet) in the tip height (a change of 17.2%) would not

significantly alter the views that would be most impacted (within 5 miles of the island). Additionally, due to the distance from land the turbines as proposed are minimally visible and therefore the impact is extremely low as noted in Section 2.6 of the DEIS. Therefore requiring the Project Sponsor to use a turbine with a lower height would not significantly reduce the visual impacts of the project. A reduction in the turbine height would result in a significant loss in power output. The total installed capacity of the 82 3.0 MW turbines in the preferred project layout is 246 MW. If a 1.5 MW turbine is used, the efficiency of the project in producing energy would be halved to 123 MW of installed capacity. This would result in an inefficient use of the site's unique wind resource while not significantly reducing impacts. On balance, the benefit of this alternative does not outweigh its shortcomings in terms of the amount of renewable electricity that could be produced.

84-turbine alternative layout.

An alternative to the DEIS project layout was evaluated as part of the FEIS based on agency comments on the DEIS. The FEIS project layout focused on a redesigned layout of the project components, particularly the WTG layout, the substation location, and co-location of the electrical collection lines with roads. The result of this layout was to further avoid or minimize impacts by:

- Reducing impacts to forested land by moving the substation from a forested area to an area currently in agricultural fields.
- Protecting NYS owned land by relocating WTG 1 and associated improvements to property owned by Galloo Island Corporation.
- Avoiding a potential archeologically significant area by relocating WTG 3.
- Meeting the 1.5 tip height setback from any aboveground transmission line components or the substation by shifting 4 WTGs.
- Allowing for a 1.5 tip height setback from the back-up power generation facilities by shifting 2 WTGs.
- Reducing impacts to forested areas (by 6,780.9 linear feet and 12.78 acres) by relocating 22,000 linear feet of electrical collection lines to co-locate with roads.
- Avoiding a potential archeologically significant location by making minor adjustments to the footprint of the temporary off-loading facility.

Although this alternative layout did reduce impacts identified in the FEIS, it was deemed less desirable than the 82 –turbine layout which resulted in a further reduction in the potential for impact to the Upland Sandpiper, which is a state-listed threatened species.

82-turbine project.

This selection of the 82-turbine project is based on the following information: Results of the 2009 Breeding Bird Survey, included as an additional study in the FEIS, confirmed the presence and likely breeding activity of a state-listed threatened species, the Upland Sandpiper, within a native

grassland area at the south end of the island. The FEIS project layout proposed to limit permanent disturbance to this grassland habitat to approximately 1.03 acres by relocating access roads to WTG # 2 and # 3. This was a reduction of 1.88 acres from the 2.91 acres of proposed disturbance in the DEIS project layout. Upon further analysis, DEC determined that the proposed 1.03 acre of disturbance within this native grassland area constitutes a “direct take” of the state-listed species. In addition to direct loss of habitat, the presence of proposed project elements, particularly tall turbine structures, may result in future avoidance of this nesting habitat by this and other grassland bird species. Identification of these impacts resulted in a DEC determination that the project sponsor must obtain a permit under ECL Article 11 to address potential impacts of the project to state-listed threatened and endangered species. DEC further determined that in order to demonstrate avoidance of a “direct take” of this state-listed species, WTGs # 2 and # 3, and all associated access roads, must be removed from the project layout, and furthermore that no future permanent disturbance be conducted in this area (the “No Build”) area. The Project Sponsor has submitted an application under Article 11 that includes the following changes to the 84-turbine alternative:

- 1) WTG # 2 and # 3, with associated access roads and electrical connection lines, are eliminated from the “No-Build” zone.
- 2) The location of several turbines in close proximity to the “No Build” zone to reduce impacts to this area.
- 3) 250 acres of offset mitigation is provided through acquisition and management of Upland Sandpiper habitat on the mainland.

DEC has determined that this revised 82-turbine layout is the alternative that avoids or minimizes adverse environmental impacts to the maximum extent practicable and is consistent with social, economic and other essential considerations.

19. Coastal Zone Consistency

The project is located within the “coastal area” of New York State. *See* 19 NYCRR 600.2(h). The project is subject to a final EIS. Therefore, DEC, as lead agency in the review of the project, must make a written finding that the project is consistent with the applicable policies set forth in 19 NYCRR 600.5 (Coastal Policies).

The Coastal Policies include 44 policies divided into 11 categories as follows: Development; Fish and Wildlife; Flooding and Erosion Hazards; General Safeguards; Public Access; Recreation; Historic and Scenic Resources; Agriculture; Energy and Ice Management; Water and Air Resources; and Wetlands. The project’s consistency with the policies is assessed in Section 2.17 of the FEIS and in Appendix O of the FEIS (which contains the Consistency Assessment Form or “CAF” and a complete statement of the Coastal Policies).

DEC concurs with the findings of consistency and discussion for coastal policies 1-5, 11, 12, 14, 15, 17, 18-22 for the reasons set out in the coastal assessment contained in the FEIS. With regard to Policies 1-5, DEC further notes that the essence of these policies is to encourage dynamic and working waterfronts. The project is consistent with the policies as it will create economic activity, particularly during the construction phase, to the Port of Oswego, and, to a less extent, Henderson Harbor, as staging areas for construction.

A number of coastal policies have parallels in DEC's core jurisdictions and hence are also the subject of extensive discussion in these findings. These are the following policies: Fish and Wildlife policies 7 and 8; Water and Air Resources policies 30, 32-39, and 43; and Wetlands policy 44. DEC incorporates the discussion of these resource areas and potential impacts of the project by reference. DEC finds that the project is consistent with such policies.

The discussion of policies 23 and 25 in the FEIS (relating to historic and scenic resources) and policy 26 (agriculture) is supplemented with the discussion of impacts to those areas in these findings. DEC finds the project is consistent with those policies.

Coastal Policies 6, 9, 10, 13, 16, 24, 28, 29, 40 through 42 are not applicable. Policy No. 2 is most probably irrelevant as the project uses the shoreline incidentally only for purposes of access to the island where the wind turbines will be located.

Policies 27 and 29 relating to energy deserves special mention. For the DEC and perhaps other agencies, consistency review with respect to development of wind power along the coastlines is a relatively new area of environmental assessment. As a result, DEC looks to the general coastal policies of the Federal government which appear to foster wind development.

The United States Department of Commerce, National Oceanic and Atmospheric Administration, which administers the Coastal Zone Management Act at the Federal level, has made the judgment that the development of wind and other energy resources in the coastal areas being a high national priority consistent with the protection of other coastal resource.¹⁶

At the State level, the closest analogy would be the State's coastal policies for Long Island Sound (19 NYCRR 600), albeit relating to a different water body. They provide the following policy with respect to the development of wind power in Long Island Sound:

- (2) Promote alternative energy sources that are self-sustaining, including solar and wind powered energy generation.
 - (i) In siting such facilities, avoid interference with coastal resources, including migratory birds, and coastal processes.

Alternative energy and wind power in particular are therefore recognized by the Federal and State coastal agencies as beneficial uses of the State's coastal areas. Coastal policies, however, recognize that development of coastal wind resources may come at a price in terms of impacts to other coastal resources such as migratory birds. DEC, through the FEIS and these findings, has paid very close attention to avian impacts. In DEC's judgment, as set out earlier in these findings, avian impacts have been mitigated or avoided to the maximum extent practicable, as set out earlier in these findings. The same applies to impacts to other coastal resources such as scenic qualities. Accordingly, DEC finds that the project is consistent with the State's coastal policies.

¹⁶ U.S. Department of Commerce, National Oceanic and Atmospheric Administration, *Energy and Government Facility Siting*, October 12, 2007. http://coastalmanagement.noaa.gov/ene_gov.html.

20. Growth Inducing Aspects

The Project Sponsor evaluated the potential for the project to cause secondary (residential or commercial) growth in the project area. During project construction the work force will mostly stay on Galloo Island and will be transported to the Island from Sackets Harbor. With the exception of shift changes and time-off, there will be little impact associated with the construction crew on the mainland. Secondary effects may accrue to service businesses that provide commodities used by workers such as food, clothing, household items and personal need items etc. However, it is not anticipated that new businesses will be developed solely to support construction of the project. A permanent increase of up to 50 people (workers and families) will represent an approximate 1.5% increase in population. The increase from the permanent workforce is anticipated to be absorbed locally. Therefore, the project as currently proposed will not create demand for significant growth and therefore, mitigation is not necessary.

21. Cumulative Impacts

Cumulative impacts occur when multiple actions affect the same resource(s).¹⁷ DEC reviewed cumulative impacts with respect to avian and bat species and visual impacts as only those two resources were likely to be the subject of cumulative impacts.

a. Avian and Bat Impacts.

Cumulative impacts to avian and bat populations were reviewed by DEC using study results from this project as well as publicly available data and studies from the proposed Cape Vincent Wind Farm, the proposed St. Lawrence Wind Power Project, the proposed Horse Creek-Clayton Wind Project, the proposed Roaring Brook Wind Project, and the operational Maple Ridge and Wolfe Island Wind Power Projects.

The project in combination with other wind farms may introduce cumulative risk to migrating avian and bat species as individuals move across Northern New York and Southwestern Ontario or migrate northward from Lake Ontario to northern Ontario. Migration through this area would expose avian and bat species to hazards from each wind farm they encounter along their route.

Based on post-construction study results from the Maple Ridge Wind Farm, potential for cumulative impacts may exist for Red-Tail Hawks and Sharp-shinned Hawks as they migrate throughout the region. In addition, cumulative impacts would occur to Caspian Terns if the Cape Vincent Wind Farm projects are built in addition to the Hounsfield Wind Farm. These impacts have the potential to become cumulative but would not significantly threaten the viability of the species in the region. Wind farm projects located near water have the likelihood of cumulatively impacting Ring-billed Gull populations. However, the population of Ring-billed Gulls is currently increasing and the overall viability of this species will not be significantly impacted. While impacts may occur to waterbirds, these species are populous in nature. Thus, any impact that may occur is not expected to affect species viability.

¹⁷ Department of Environmental Conservation, SEQR Handbook, Determining Significance, <http://www.dec.ny.gov/permits/47716.html>

Relatively low displacement impacts will be experienced by breeding birds on Galloo Island with the potential exception of the Upland Sandpiper. This impact will be minimized by removal of two turbines in the revised 82-turbine layout and mitigated through acquisition and management of 250 acres of Upland Sandpiper habitat on the mainland, as described earlier. These actions can be expected to result in a net conservation benefit to grassland bird species such as the Upland Sandpiper.

DEC anticipates that impacts to bat species from the construction and operation of the project are likely to be similar in composition to other wind farms in New York State. Collision mortality risk to bat species observed in the project development area may be additive, particularly for the three migratory species that move throughout the region. Given the recent development of White Nose Syndrome (WNS) which has drastically reduced local and regional populations of many of New York's bat species, mortality from wind turbines is more of a concern now than what was the case just a few years ago before the presence of WNS. The combined effect of WNS and mortality from wind turbines dictates that DEC require vigilant post construction monitoring at all wind energy sites in order to track any changes in bat abundance and mortality. Should higher levels of mortality be disclosed than predicted DEC will require adaptive operational management measures to be implemented.

b. Visual Impacts

DEC considered the potential cumulative visual impacts that may arise from interactions between the impacts of the project and nearby projects of Maple Ridge and Roaring Brook from the perspective of the Seaway Trail Scenic Byway (Route 3) in the Town of Henderson, New York. No cumulative visual impacts are expected from the three projects as their viewsheds do not overlap. Visual simulations from the Seaway Trail toward the Maple Ridge and Roaring Brook Wind Farms have not been conducted; however these projects are located approximately 28 miles from the Seaway Trail Scenic Byway at their closest points in the Town of Henderson, New York.

Cumulative visibility of the project and the Upstate Power Transmission Line was reviewed in the FEIS. There is a portion of views from the lake that have potential visibility of both the transmission line and the project. However, it is very unlikely that a viewer from these in-water locations would see both the major transmission line and the WTG simultaneously, as one view would be to the northwest and the other to the southeast of a viewer located between Robert G. Wehle State Park and Stony Island. Very little area on the mainland will have views of both the transmission line and wind farm. There is the possibility from some locations of a simultaneous view of the transmission line and project. These areas of cumulative visibility are generally along Henderson Harbor. Two of these locations are along the Seaway Trail at the intersection of Route 3 and Route 178 and along Route 3 north of this intersection. However, at these locations the wind farm would be nearly 10 miles away and partially screened by Stony Island. Neither of these locations is visible from the Seaway Trail Scenic Byway Overlook.

In the FEIS, DEC described the potential cumulative visual impact of the build-out of all existing and formally proposed wind projects in the Lake Ontario/St. Lawrence River region (Hounsfield Wind Farm, St. Lawrence Windpower, Cape Vincent Wind Farm, Horse Creek Wind Farm, and Wolfe Island Wind Farm). If all projects formally proposed at this time were to be built, it would result in approximately 350 utility-scale wind generating turbines spread throughout the region, each likely exceeding 390 feet in height. While not continuously visible, wind-generating turbines

would be a dominant and widespread visual feature from local roadways, homes and various places of interest. Turbines would also be visible on the horizon from vantage points on Lake Ontario and the St. Lawrence River along approximately 50 miles of waterway, from Clayton west and south to Southwick Beach State Park in Jefferson County. At this time only the Wolfe Island project has been completed and applications for permits have been received by DEC for 53-turbine St. Lawrence Windpower project in the Town of Cape Vincent.

It should also be noted that in the context of cumulative analysis, the proposed wind turbines on the mainland present a larger foreground visual impact than those proposed on Galloo Island, therefore the scale of the visual impact from the Galloo Island project will be different than for a mainland-based wind project. Nonetheless the Galloo Island turbines, although distant, would represent a change to the visual setting on the horizon at vantage points along the Lake Ontario shore. These changes have been identified in the DEIS and FEIS, and DEC has determined that mitigation identified in these findings would provide reasonable offsets for the anticipated change in visual setting that will result from this project. Furthermore, in these findings, DEC must balance such visual changes against the benefits of bringing additional renewable energy into the State's electric grid.

DEC is aware that the New York Power Authority (NYPA) has issued a request for proposals (RFP) for the development of offshore wind power projects in the New York State waters of Lake Erie and/or Lake Ontario.¹⁸ However, at this time, no details are available regarding any specific proposals for wind power projects in the Great Lakes; therefore any discussion of these would be purely speculative in the context of this cumulative review. Specific project proposals that are developed in response to the RFP would be subject to the SEQR process, including consideration of cumulative impacts.

Transmission Line

DEC has included a discussion of DEC's regulatory jurisdiction regarding the transmission line in the summary description of the action in these findings. As set out on page 2, the transmission line is excluded from SEQR as it is subject to review under Article VII of the Public Service Law and is therefore considered a Type II action under 6 NYCRR 617.5(c)(35) (actions requiring a certificate of environmental compatibility and public need under articles VII, VIII or X of the Public Service Law and the consideration of, granting or denial of any such certificate). Nonetheless, Department of Public Service staff have actively participated in the SEQR review and DEC is a statutory party to the transmission line proceeding. The Department of Public Service has commenced a proceeding wherein the impacts of the transmission line are being reviewed as well as alternative routes. The information provided in the DEIS/FEIS was provided for informational purposes only. Therefore, no findings can or will be made regarding impacts from the transmission line in this record.

¹⁸ New York Power Authority. *NYPA President Kessel Calls for Proposals to Develop the First Fresh Water Wind Energy Initiative in the Nation: Increasing Emissions-Free Wind Power Will Contribute to Cleaner Air and Job Growth*. December 1, 2009. <http://www.nyopa.gov/press/2009/091201.htm>.

