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Public Service**

Public Service Commission

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Cat Mosley, Public Affairs Manager
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Dear Ms. Mosley,

Galloo Island Wind, LLC (the Applicant), submitted a Preliminary Scoping Statement (PSS) on June 6, 2016, in which it proposes to construct a 110.4 megawatt (MW) wind-powered electric generating project (Project) under initial consideration in Case 15-F-0327, pursuant to Article 10 of the Public Service Law (PSL) and Pre-Application Procedural regulations at 16 NYCRR §1000.5(c). Staff of the NYS Department of Public Service (Staff or DPS Staff) submit the following comments pursuant to 16 NYCRR §1000.5(g).

/s/

Andrea Cerbin
Assistant Counsel

GENERAL COMMENTS

1. In general, discussions of the scope of the project and its application materials should be expanded to include more detail on issue-specific statements beyond statements such as "the Article 10 application will include information on" a topic.
2. The PSS includes various descriptions of the Project and the Facility, which are not consistent and should be clarified to distinguish the Article 10 Siting Board jurisdictional "Generating Facility" from the Article VII Public Service Commission jurisdictional "Major Transmission Facility." The PSS also fails, however, to acknowledge the requirement of Public Service Law Article 10 to address cumulative impacts of the Generating Facility and related facilities including those of the Major Transmission Facility. See PSL §168.2 and §168.4.
3. This lack of distinction between the Generating Facility and the Transmission Facility is most evident in the descriptions of the "collection substation" in PSS section 2.2 (a) at page 12, the description describes the Generating Facility collection substation as "including the main power transformers." PSS section 2.2(a) at page 13 describes the "low side of the collection station (i.e., 34.5 kV)" as part of the Article 10 Generating Facility; and "the "high side" of the collection station (i.e., 145 kV)" as part of the Article VII Major Transmission Facility. Section 2.3(a)(2) on page 16 states that "the point of interconnect ("POI") is subject to Article VII of the PSL, and therefore will not be evaluated in the Article 10 Application."
4. DPS advises that the main power transformers should be considered part of the Article VII Major Transmission Facility. DPS further advises that Public Service Law (PSL) §168.2 and §168.4 requires that the Siting Board make explicit findings regarding the nature of the probable environmental impacts of the construction and operation of the Generating Facility, "including the cumulative environmental impacts of the construction and operation of related facilities such as electric lines...waste water or other sewage treatment facilities, communications and relay facilities" etc. on a range of environmental and other considerations as listed at §§PSL 168.2 (a)-(d).
5. The Scoping Documents should reflect the jurisdictional distinction of Project components, including details as described above, and also reflect the need for identification of cumulative impact assessments of both the generating and transmission components. Specific comments below will identify specific concerns and recommendations in this regard. (An example of cumulative impact assessment would be that the substation be represented in visual simulations of the Wind Energy Facility).

SPECIFIC TOPIC COMMENTS

Section 1.0 - Introduction

Subsection 1.1 - Project Description

1. At page 1, the PSS states that the Facility Components will include, among others, “a permanent structure for proposed overnight accommodations.” DPS advises that this component should be referred to as a “building” rather than a “structure.”

Section 2.0 – General Content of Application

Subsection 2.3(a)(1) - Proposed Major Electric Generating Facility Locations

At pages 15-16, the PSS lists Facility components that are to be mapped in the application, and refers to Figure 3 in the PSS as containing indications of several Project features.

1. DPS advises that the location of the “on-site generator” listed at 2.3(a)(1) is not shown on PSS Figure 3 - Preliminary Facility Layout; and that the location is not described in the PSS. A revised Figure 3 should be provided to advance proper scoping and development of stipulations.
2. Figure 3 - Preliminary Facility Layout, includes a proposed helicopter landing site. DPS requests clarification as to the intended use of helicopters for this Project. To advance Project scoping, please provide an explanation as to whether helicopters will be used on Galloo Island for aid during construction, for transporting components from the main land to the Project site, transport of personnel to and from the mainland on a regular basis, or otherwise. Further, if there will be a designated helicopter base on the mainland, provide the location on a map.
3. Figure 3 - Preliminary Facility Layout, indicates the proposed location of the “Collection Substation” includes the main Access Road connecting the turbine arrays on the northerly and southerly sides of Galloo Island, as well as Collection Lines, all traversing the center of the Substation site. DPS understands that the site arrangement indicated is only preliminary, however, DPS advises Applicant to evaluate the arrangement to ensure the substation is not designed to include a through access road across the center of the site.

4. Figure 3 - Preliminary Facility Layout, identifies the substation within the falldown zone for the nearest Wind Turbine located easterly of the Collection Substation. DPS recommends increasing the setback from an operating turbine to the critical substation components. DPS advises that the Public Service Commission has stipulated to a standard setback distance of 1.5 times maximum blade tip height from major transmission facilities, which would include the 'high side' of the proposed Collection Substation. (See Case 07-E-0213, Sheldon Energy LLC, Order Granting Certificate of Public Convenience and Necessity and Providing for Lightened Regulation (issued January 17, 2008); note 5, page 12: "In the future, we may, as conditions warrant require a minimum setback distance of 1.5 times maximum turbine blade tip height from the edge of the right-of-way of any electric transmission line designed to operate at 115 kV or more.")

Subsection 2.3(a)(3) - Location of Ancillary Features

1. Ancillary features should be described and assessed as part of cumulative assessment of the Project as required by PSL §168.2 and §168.4.

Subsection 2.3(a)(4) - Location of Article VII Transmission Lines Not Subject to Article 10

1. The PSS notes that "[a]s currently conceived, the related transmission facility (RTF) includes the "high side" of the collection substation on Galloo Island, an approximately 30 mile AC underwater 145 kV transmission line, and a point of interconnection substation near the Mitchell Street Substation in Oswego, NY." There is potentially inconsistent information regarding the voltages of the Project's related facilities throughout the PSS. There are numerous references noting that the voltage of the underwater cable is 145 kV. However, at page 155, the PSS notes that the collection substation will include 34.5 (for collection lines) and 138 kV busses. DPS advises that applicant should confirm the configuration and design and operational voltages of the project facilities and related transmission facility.
2. DPS advises that the location of the Article VII transmission facility – both upland and in-water locations - within the area represented by Figure 3 - Preliminary Facility Layout should be provided in the Article 10 application as well as the Article VII application.

Subsection 2.3(a)(5) - Study Area

1. PSS at page 17 states “the study area for terrestrial ecological communities is essentially equivalent to Galloo Island.” Little Galloo Island is a nearby designated Significant Coastal Habitat, with resident avian species that also utilize areas of Galloo Island. This location should be included in terrestrial ecological community assessment and impact analysis for the Project.

Subsection 2.3(b) - Municipal Boundary Maps

1. DPS recommends use of municipal boundary data including appropriate underwater boundaries, for mapping and analysis of the project and identifying town and village boundaries in the Study Area in relation to the Project and Facility locations.

Section 2.4 - Land Use**Subsection 2.4(a) - Map of Existing Land Uses**

1. PSS states “[t]he Facility will be located on Galloo Island, which is approximately 6 miles from the mainland, therefore the evaluation of land uses will be limited to Galloo Island.” DPS advises that the use of waters surrounding Galloo Island must be included in the assessment of Land Use, including such uses as transportation (aircraft and watercraft uses), recreational boating, fishing, bird-watching, sight-seeing, and related uses in the Project Area and surrounding study area should be identified. The size of the Study Area for these uses should extend to the shoreline; and also include upland locations of ancillary features associated with the Facility as described in subsection 2.3(a)(3) on page 17.
2. DPS advises that a more robust discussion of existing and recent uses of Galloo Island should be provided. Agricultural uses may need to be continued to continue support of resident wildlife populations. Transportation uses, including safe-harbor use of Gill Harbor, small aircraft landing and hanger facilities may need to be maintained. Recreational uses of harbor area and North Pond should be evaluated for sensitivity to proposed Facility development.
3. Land use on Little Galloo Island and Stony Island should be identified as these land areas are within the 5 mile basic study area.

4. DPS advises that the Scoping Document should be revised to identify other significant and related planning and resource use and protection documents.
5. Application will need to review New York State Open Space Plan (NYS OSP) for consistency of the Project land development proposal with NYS Priority Projects and objectives. The 2014 NYS Open Space Conservation Plan specifically identifies Open Space Conservation in the siting of energy generating facilities in DEC Region 6 (NYS OSP pg. A-140; NYS OSP, Appendix A, 2014). The NYS OSP identifies Lake Ontario and Lake Erie Shorelines, Island and Niagara River as a multi-regional Priority Project (OSP, pp. A-149 – 150). Galloo Island is specifically called out in the NYS OSP as “one of the undeveloped islands worthy of attention. (Id. at pg. 150). The Shorelines and Islands are also identified as a “scarce resource and represent natural habitats, scenic beauty and potential recreational areas.” (Id. at pg. A-152). Further, the NYS OSP specifically indicates that the “Open Space Conservation Objective” for the Lake Ontario islands is public recreation and protection from development” (Id. at pg. 170). DPS advises that the application should provide a robust review of NYS stated open space priority objectives, and compare proposed development with the “no action” alternative in terms of open space conservation and NYS OSP consistency.
6. The land use discussion should fully include and discuss uses in the vicinity of landing areas on the mainland that will be implicated in the transportation of component parts for construction, the transportation of construction and operational personnel and any provisions for emergency management.

Subsection 2.4(l) - Conformance with the Coastal Zone Management Act

1. DPS advises that the Scoping Statement should be revised to reflect the need to update analysis of the proposed land use with Coastal Area policies: the Application should not rely exclusively on previous determination by another agency. A prior determination by the NYS DEC that “the Hounsfield project ... is consistent with the State's coastal policies” is not considered to be binding on any other State agency with the authority to approve, fund or directly undertake an action related to the project. 19 NYCRR Part 600.3(a) clearly states that no State agency shall approve an action until it has complied with the provisions of Article 42 of the NYS Executive Law. The Siting Board may find that its approval of the petitioners' application for a CECPN complies, and does not conflict, with the policies and purposes of Article 42 independently of the findings of any other agency or any prior determination(s), whether the petitions are related or not. Where any Local Waterfront Revitalization

Program (LWRP), approved the NYS Secretary of State exists, DPS Staff's recommendation to the Siting Board will be consistent with the policies and purposes of the LWRP, in compliance with Article 42.

Subsection 2.4(n) - Aerial Photograph Overlays

1. In addition to location of facilities, aerial photographs should provide indication of areas of proposed disturbance for project components.

Section 2.5 - Electric System Effects

As noted in comments above, description of the Related Transmission Facility does not mention upland high-voltage electric cable on Galloo Island or in Oswego. Likewise, PSL §168.2 requires cumulative impact information regarding the Project including the "Related Transmission Facility."

Subsection 2.5(i)(2)(iv) - Notifications and Public Relations for Work in Public Right-of-ways

1. PSS indicates that "there is no work anticipated in public right-of-ways" (pg. 28). DPS advises that the barge landing area and the entire underwater route of the proposed Related Transmission Facility will likely be located in publicly accessible waters, available for navigation and use for private recreation, commercial, research or other transportation, and will be subject to grant of easement from the State of New York. Notification of mariners, fishermen, and other Lake users of ongoing construction during cable installation is likely to warrant notification as well as permitting and construction plan review processes pursuant to PSL Article VII.

Subsection 2.5 (2)(j) Vegetation Management Practices for Substation Yards

1. DPS advises that this topic should be also be addressed in the Article VII application.

Section 2.6 - Wind Power Facilities

Subsection 2.6(a)(1) - Manufacturer's Setback Specifications

1. Setback specifications or recommendations or guidelines of wind turbine manufacturers should be specified, as well as any appropriate analysis criteria

associated with site certification for specific turbines at a project location. Any setback distance guidance from water bodies should be provided.

Subsection 2.6(a)(2) - Applicant's Internal Setback Standards

1. PSS states "this Facility does not have the typical set of constraints given its location on Galloo Island, well removed from occupied residences, etc." DPS advises that PSS identifies overnight residential accommodations that will be provided at existing residential structures and at the proposed O&M building. Consideration of those facilities and relevant worker safety requirements should be provided in developing project layout and design standards (e.g., setback distances, noise exposure, shadow flicker, etc.).
2. Likewise, there are adjacent properties, including public lands, on Galloo Island that while unoccupied or undeveloped, are not under Applicant control. Responsible setback distances from property lines should be established.

Section 2.8 – Electric System Production Modeling

Subsection (a) - Computer-based Modeling Tool

1. The PSS states on page 32 that "[t]he analyses presented in this section of the Article 10 Application will be developed using GEMAPS, PROMOD, or a similar computer-based modeling tool. Prior to preparing this exhibit, the Applicant shall consult with DPS and NYSDEC (to the extent necessary)" DPS advises that the phrase "to the extent necessary" should be deleted entirely, to address the intent of the regulation regarding consultation with DPS and NYS DEC. DPS advises the Applicant to consult early regarding Exhibit 8 and the contents thereof in the Application.

Section 2.9 - Alternatives

Subsection 2.9 (b)(9) - Public Health

1. Subsection 2.9 (b)(9) states "[s]ince the Facility is sited on uninhabited Galloo Island and is approximately 6 miles from the mainland it is not expected to result in any public health concerns." DPS advises that the discussion of potential Public Health impacts in the PSS does not provide a sufficiently detailed basis to support the statement.

Subsection 2.9 (c)(4) - Alternative Turbine Layouts

1. As noted in comments above, setback distances between turbines and the collector substation and O&M or worker residential facilities should be addressed, with alternative arrangements that minimize potential impacts.
2. Consideration of recreational resources should recognize the traditional recreational uses of locations including North Pond, and potential use of the NYS DEC property adjoining the Facility Site, should be evaluated and alternative arrangements that minimize or avoid direct or significant indirect impacts should be considered. Offsite recreational uses such as sightseeing and use of NYS Parks and Historic Sites on mainland areas within the Project viewshed should be considered in evaluating alternative arrangements and alternative designs. Lighting, color and finish options should be identified, including use of RADAR-activated FAA aviation warning lights.
3. Consideration of Cultural Resources impacts and alternative arrangements or designs should recognize the nearby historic resources on Galloo Island as well as sites with views to the Project Area. Measures to minimize impacts on Galloo Island Lighthouse, Sacketts Harbor State Historic Site, and other cultural resources, should be considered in alternative analysis.

Section 2.10 – Consistency with Energy Planning**Subsection 2.10 (g) - Impact on Energy Policy**

1. DPS advises that the application should include a review of project consistency with the relevant goals, objectives and strategies of the current NYS PSC Clean Energy Standard policy and relevant program standards as adopted at the time the Application is submitted.

Section 2.11- Preliminary Design Drawings**Subsection 2.11 (a) - Site Plan**

1. DPS advises that the list of Facility components is not exhaustive of all relevant features and improvements that should be indicated on Site Plans, either at the major Facility site or off of Galloo Island.

2. Additional drawings to show the layout of all offsite facilities and ancillary features are needed for this exhibit. While at PSS page 2 the applicant asserts that off-site ancillary features (i.e., contractor parking, docking improvements) are not considered to be part of the “Major Electric Generating Facility” and will not be part of the Article 10 Application, Staff disagrees with this statement, especially in regard to any laydown areas for construction equipment and wind turbine component storage prior to being hoisted by helicopter or transported by barge. Application should provide locational drawings of any designated areas to be used for construction equipment and oversized/overweight turbine components storage at the Port of Oswego, the Madison Barracks Marina, Henderson Harbor, Point Peninsula and any other potential laydown areas. DPS notes that 16 NYCRR §1001.11 (a) requires that “[a]dditional drawings shall be included depicting the layout of offsite facilities and ancillary features.” Per this regulation, include drawings of all ancillary features, including but not limited to any laydown/marshalling yards, construction parking, docking improvements, etc. including any that are not located on Galloo Island.
3. Due to the limited extent of areas on Galloo Island that are outside of the Facility Site Parcels, DPS recommends that the entire extent of the Island be represented on Exhibit 11 Site Plans.

Subsection 2.11 (c) - Grading and Erosion Control Plans

1. DPS advises that the PSS, while providing discussion of source of elevation data and derivation of 2-foot contours, and preliminary cut-and-fill calculations, it does not explicitly state that erosion control plans will be presented in the application, as required by 16 NYCRR §1001.11(c).

Subsection 2.11 (f) - Architectural Drawings

1. The PSS does not specify that the Application will provide drawings including building and structure arrangements and exterior elevations for all buildings and structures, indicating the length, width, height, material of construction, color and finish of all buildings, structures, and fixed equipment. Include these drawings for the wind turbines, O&M building and any other structures associated with the Facility.

Subsection 2.11 (h) - Interconnection Facility Drawings

1. DPS advises that information sufficient to demonstrate Cumulative Impacts of the Project including the Related Transmission Facilities must be provided for the Article 10 record, regardless of whether the Transmission Facilities are subject to PSL Article VII.

Section 2.12 – Construction

DPS advises that there is nothing in the construction section outlining or detailing the processes for managing contingencies, special inspections required (i.e. cross-referenced with other sections of the document) and final commissioning of the facility. Applicant should develop an outline and details for the full scope of these topics.

Section 2.13 – Real Property**Subsection 2.13 (a) - Real Property Map of Generating Site**

1. Due to the limited extent of areas on Galloo Island that are outside of the Facility Site Parcels, DPS recommends that the entire extent of the Island be represented on Exhibit 13 Tax Map information.

Section 2.15 – Public Health and Safety

PSS statements regarding “ice shedding, tower collapse, blade failure, stray voltage, and fire in the turbines” (PSS page 57) do not give due consideration to on-site worker safety (including short- or long-term use of on-site residential accommodations), users of adjacent properties including private lands and NYS personnel at NYS or Federal lands, or traditional users of shoreline and near-shore areas including Gill Harbor as a safe-harbor, or North Pond as a traditional recreational use of the property. The scope of studies must be revised accordingly.

Subsection 2.15 (e)(2) - Audible Frequency Noise

1. PSS page 59 states “[t]he Facility is not expected to result in any public health and safety issues due to audible frequency noise.” DPS advises that the discussion of Public Health issues related to audible frequency noise and low frequency sounds including infrasound in the PSS does not provide a sufficiently detailed basis to support that statement.

2. DPS Staff notes that 16 NYCRR §1001.15 - Exhibit 15 requires “[a] statement and evaluation that identifies, describes, and discusses all potential significant adverse impacts of the construction and operation of the facility, the interconnections, and related facilities on the environment, public health, and safety, at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence, identifies the current applicable statutory and regulatory framework, and also addresses: ... (e) for wind power facilities, impacts due to blade throw, tower collapse, audible frequency noise, low-frequency noise, ice throw and shadow flicker.” DPS also notes that 16 NYCRR §1001.19 - Exhibit 19(e) requires: “an analysis of whether the facility will produce significant levels of low frequency noise or infrasound.” For these reasons the analysis of potential health impacts from audible noise, low frequency noise and infrasound should be included in the scope. Studies should also consider operational worker exposure at existing and proposed accommodations.
3. DPS advises that the PSS does not propose a methodology, reference or guideline for the evaluation of health effects from noise including low frequency noise and infrasound for the project. Please submit a preliminary list of methodologies, studies, references, standards and/or guidelines that are proposed to be used for evaluation of health effects along with a brief summary and justification for selection. DPS recommends as a minimum, comparing the noise levels from the project with the guidelines and recommendations from the World Health Organization:
 - World Health Organization. Night Noise Guidelines for Europe. 2009.
 - World Health Organization. Guidelines for Community Noise. 1999.

Subsection 2.15 (e)(3) - Low-Frequency Noise

1. The PSS states on page 58 that “[n]umerous studies show that the low frequency content in the sound spectrum of a typical modern wind turbine, like those proposed for this Facility, is no higher than that of the natural background sound level in rural areas (e.g., Sondergaard & Hoffmeyer, 2007; Hessler et al., 2008). There is no evidence that the audible or sub-audible sounds produced by operating wind turbines have any direct adverse physiological effects and the ground-borne vibrations from wind turbines are too weak to be detected by, or to affect, humans (Colby et al., 2009). Furthermore, due to the remote location, lack of public access, lack of permanent residences within 6 miles of the island, and lack of seasonal residences within 2.5 miles (Stony Island), it is not anticipated that there will be any potential for audible or low-frequency noise impacts related to operation of the Facility.” DPS advises that the discussion of adverse impacts from audible, sub-audible and low frequency noise and

ground-borne vibrations in the PSS does not provide a sufficiently detailed basis to support these statements. A thorough literature review of adverse impacts and health effects from noise including audible noise, low frequency noise and infrasound should be included in the Application as pre requirements of 16 NYCRR §1001.15 -Exhibit 15, Public Health and 16 NYCRR §1001.19 - Exhibit 19, Noise and Vibration. Studies should consider operational worker exposure at existing and proposed accommodations.

2. DPS also advises that the scope should include analysis to identify any limitations in future use of private or public lands within Galloo Island that may be imposed by sounds or vibrations from the Facility.

Subsection 2.15 (e)(4) - Winter Conditions

1. See general comment on Exhibit 15 above.

Subsection 2.15 (e)(5) - Shadow Flicker

1. The PSS states “[a]t distances beyond roughly 10 rotor diameters, shadow-flicker effects are generally considered negligible (BERR, 2009; DECC, 2011).” DPS advises that the discussion of shadow flicker in the PSS does not provide a sufficiently detailed basis to support the statement. The Applicant should specify whether sunlight reflections on water bodies could increase the distance of propagation of shadow flicker and whether current commercially available computer modeling tools are capable to predict flicker propagation under those circumstances.
2. The PSS also states “[d]ue to the fact that the distance to the nearest potential residential receptor to the Facility Site is approximately 6 miles from the nearest permanent residence and 2.5 miles from nearest seasonal residence (Stony Island), well beyond the distance equal to 10 rotor diameters, shadow flicker effects are considered negligible and a shadow flicker analysis is not necessary.” The discussion of shadow flicker in the PSS does not provide a sufficiently detailed basis to support the statement. The Applicant should consider all potential receptors sensitive to shadow flicker within the Island, as well. And although not necessarily public-health related, potential exposure of on-island National Register of Historic Places Historic Resources to shadow flicker should also be considered.
3. The scope should specify that the Application will provide analysis to identify

any limitations in future use of private or public lands on Galloo Island that may be imposed by shadow flicker from the Facility. DPS notes that section (a)(9) in 16 NYCRR §1001.24 Exhibit 24: Visual Impacts requires an “analysis and description of related operational effects of the facility such as visible plumes, shading, glare, and shadow flicker” and section 16 NYCRR §1001.24 (b)(8) requires analyses of the operational characteristics of the facility and related facilities, including shading, glare, shadow flicker, or related visible effects of facility operation, including an assessment of the predicted extent, frequency, and duration of any such visible effects created by the facility.

Subsection 2.15 (k) - Mitigation Measures

1. DPS comments above regarding Exhibit 15 should be taken into consideration in revising proposed scope of studies including impact minimization and mitigation measures.

Section 2.18 – Safety and Security

Subsection 2.18 (a)(3) - Security Lighting

1. DPS advises that security lighting should be designed to avoid off-site impacts including light trespass and dark-sky degradation. Lighting control plans generally should give consideration to the use of additional measures including: task lighting, that can be turned on when needed at areas that may require occasional night-time work such as O&M yards; full-cutoff fixtures without drop-down optics, that preclude horizontal or upward-directed light emissions that are not useful or necessary; and review of radar-activated FAA marking lights for night-time use, that are generally only lighted when aircraft approach and trigger activation of lighting for aviation safety.

Subsection 2.18 (b)(3) - Security Lighting

1. DPS advises that security lighting should specify use of full-cutoff fixtures with no drop-down optics to minimize light trespass and un-necessary lighting visibility.

Subsection 2.18 (b)(4) - Aircraft Safety Lighting

1. DPS recommends that the applicant undertake consultation and the application include results of specific consultation with FAA regarding consideration of use of RADAR-activated FAA aviation warning lights on proposed wind turbines.

Section 2.19 – Noise and Vibration

1. General comments: The PSS states: “Modeling will be done in accordance with ISO 9613”.
 - i. The PSS should briefly describe the specifications of the computer model that is proposed to be used for evaluation of operational noise impacts including range of frequencies that will be evaluated and whether the model calculations will be performed in full octave or one-third octave bands, the ground absorption values that are intended to be used, and the meteorological conditions that will be modeled. The applicant should also specify how the meteorological corrections will be assumed or calculated.
 - ii. The PSS should provide a brief discussion about the advantages or disadvantages of the use of the proposed models, methodologies and assumptions as compared to other alternatives. The Applicant should also provide a general discussion about the accuracy of proposed models and methodologies and the correlation between measurements and predictions for documented cases as compared to other alternatives especially as related to sound propagation on highly reflective water bodies.
 - iii. The PSS should also explain how many combinations of scenarios (operational noise and meteorological conditions such as wind speed, wind magnitude and atmospheric stability) are proposed to be modeled for the project so that the operational noise levels as required by 16 NYCRR §1001.19 - Exhibit 19 and by local regulations can be properly calculated. DPS Staff notes that 16 NYCRR §1001.19 -Exhibit 19 requires worst case (L10) and typical (L50) operational noise levels either for a year, summer, winter, daytime or nighttime.
 - iv. PSS states “[s]ound monitoring will be done in accordance with ANSI S12.18, as appropriate.” DPS advises that scope should include consideration of other applicable recommendations of ANSI standards as appropriate, such

as those contained in:

- ANSI/ASA S3/SC1.100-2014/ANSI/ASA S12.100-2014 (Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas),
- ANSI S1.13 2005.(R March 5, 2010) (Measurement of Sound Pressure Levels in Air) and,
- ANSI S.12.9-1992 Part 2 (R2013) (Quantities and Procedures for Description of Environmental Sound. Part 2. Measurement of Long-Term, wide area sound) among other related standards.

Subsection 2.19 (a) - Sensitive Sound Receptor Map

1. The PSS states:” The decommissioned lighthouse located on the southwestern tip of Galloo Island is considered a sensitive receptor due to its listing on the National Registry of Historic Places. The next closest sensitive receptors are seasonal residential facilities located on Stony Island, 2.5 miles or greater from the nearest Facility components. The nearest permanent residential receptor is over 6 miles away on the mainland. The noise contour maps developed in the NIA will show predicted future sound levels at the lighthouse on Galloo Island and the seasonal facilities on Stony Island as well as at the nearest mainland locations.”
2. Since the Applicant has already identified the decommissioned lighthouse at Galloo Island as the closest noise sensitive receptor, DPS-Staff recommends the applicant relocate the proposed monitoring location as indicated in Figure 4 closer to the Lighthouse premises, as feasible.
3. The Applicant should report the current use of existing buildings on the north-eastern portion of Galloo Island and whether ambient sound levels should also be measured close to those receptors.
4. Since The Applicant has already identified seasonal residential facilities on Stony Island as the second sensitive group of receptors, the Applicant should also consider collecting ambient sound information at that location.
5. PSS states: “The Article 10 Application will provide a map of the three nearest mainland landfall locations where the NIA will estimate noise impacts.”DPS-Staff comment: The map should also include all potentially impacted noise sensitive receptors and the noise impacts should be estimated at all identified locations as well.

Subsection 2.19 (b) - Ambient Pre-construction Baseline Noise Conditions

1. PSS States: “Sound level data will be collected in compliance with the regulations using an industry standard, appropriately calibrated sound level

meter and one-third octave band frequency spectrum analyzer.”

DPS Staff comments:

- i. DPS-Staff recommends submitting a sound collection protocol for collection of pre-construction baseline noise levels within the project area to be discussed during the scoping and stipulation phases. DPS Staff also recommends to prepare this protocol based upon the most relevant and applicable portions of the most recent versions of ANSI/ASA standards for measurement of sounds. The sound protocol should include requirements for sound instrumentation (type, sound floor, wind screen, etc.), calibration requirements, meter settings, locations to be tested along with a justification as for why selected locations are considered to be representative potentially impacted noise receptors, noise descriptors to be collected, range of sound frequencies, weather conditions to be tested, testing conditions to be excluded, proposed seasonal schedules and time frames, testing methodologies and procedures, provisions for evaluation of existing tones or sounds with strong low frequency noise content if any, as well as provisions for analysis of results, reporting, and documentation.
 - ii. DPS Staff also recommends that sound instrumentation to be used for ambient sound surveys comply with the following standards:
 - ANSI S1.43-1997 (R March 16, 2007). Specifications for Integrating-Averaging Sound Level Meters.
 - ANSI S1.11-2004 (R June 15, 2009) Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters.
 - ANSI S1.40-2006 (R October 27, 2011) (Revision of ANSI 1.40-1984)
2. Specifications and Verification Procedures for Sound Calibrators.
- iii. DPS-Staff recommends to include in the scope a collection of baseline infrasound levels at Galloo Island which may be later compared to estimates of infrasound levels from the Project at the closest sound sensitive receptors. DPS-Staff notes that 1001.19 Exh. 19 (e) requires an evaluation of whether the facility will produce significant levels of low frequency noise or infrasound. Please specify the lowest frequency that will be evaluated for infrasound.

- iv. DPS Staff recommends starting ambient sound collections after the specifics are discussed within the scoping and stipulation phases.
3. PSS states:” Ground-level wind speed data will also be measured at a minimum of one of the sound level monitors. In addition, detailed weather conditions from the nearest National Weather Service (“NWS”) station in Watertown will be archived for the duration of the survey”

DPS-Staff proposes using at a minimum a portable weather station at the closest noise sensitive location of the facility within Galloo Island to continuously document at minimum temperature, relative humidity, wind speed, wind direction, precipitation, and barometric pressure (optional) during the periods of sound collections. Weather conditions at other locations far from the Project site may be documented with information from the closest meteorological stations. Accuracy for the portable weather station or any hand held anemometers should be as recommended by ANSI Standards.

4. PSS states:” Data will be recorded continuously (24 hours/day) for at least one week during both the summer and winter at representative locations (see Figure 4). “

DPS Staff comment: The applicant should report the temporal accuracy based upon the proposed seven-day sampling period at each location. DPS Staff notes that ANSI/ASA Standard S12.9-1992(R 2013)/Part 2 has several recommendations to either determine the number of days required to achieve a specific temporal accuracy (Survey Class) or to determine temporal accuracy based upon data collection results.

5. PSS states:” The recorded data will be filtered to remove seasonal and intermittent noise.”

DPS-Staff comment: The Applicant should report whether the filtering will be performed by following the recommendations of ANSI/ASA S3/SC1.100-2014/ANSI/ASA S12.100-2014 (Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas)

Subsection 2.19 (c) - Ambient Pre-construction Baseline Noise Conditions

1. Please specify all receptor locations where construction noise impacts are proposed to be evaluated.
2. PSS states:” The model will predict A-weighted sound levels at each of the three locations (see Figure 4), (...)”

DPS-Staff notes that as required by 1001.19 Exhibit 19, section (h), the degree of compliance indicated by computer noise modeling should be estimated at a minimum, at representative external property boundary lines of the facility, related facilities and ancillary equipment sites, and at the representative nearest and average noise receptors. Please identify and include all boundary lines and noise receptors in the scope.

Subsection 2.19 (e) - Future Noise Levels at Receptors During Facility Operation

1. Please specify if acoustical information (such as sound power or sound pressure levels, tones, etc.) from the wind turbines are or will be determined by potential manufacturers by following IEC 61400-11 2012 Part 11, “Acoustic Noise Measurement Techniques,” or any other applicable standard(s). The Applicant should also inform whether Sound Power Level information, as reported by using IEC TS-61400-14 Part 14 (Declaration of apparent sound power level and tonality values), is currently available for potential turbine options.
2. Please identify methodologies for determination of prominent tones from the wind turbines and substation tonal noise sources. Also specify the standards commonly used by potential manufacturers for determination of prominent tones for transformers and wind turbines. DPS Staff notes that there are different methodologies for definition and determination of prominent tones, including but not limited to the following:
 - Section 9.5 of IEC 61400-11 (Wind Turbines –Part 11- Acoustic noise measurements techniques) for the wind turbines.
 - Annex A from ANSI Standard S1.13-2005.
 - Annex C from ANSI Standard S12.9- 2005/Part 4.
3. PSS states:” Amplitude modulation will be addressed by determining whether the area has unusually high wind shear or turbulence that could contribute to the phenomenon. “

DPS-Staff comment: The PSS should also specify any standards that are proposed for evaluation of wind shear and turbulence, such as IEC 61400- 11 Annexes B and D as applicable and appropriate.

4. PSS states: “The potential of the Facility to produce infrasound and low-frequency sound will also be evaluated, in the context of sound attenuating approximately 6 miles to the nearest sensitive receptors” (e.g. Spherical, cylindrical).

DPS Staff comment: Sound sensitive locations closer than the 6-mile proposed distance should also be evaluated for Infrasound and Low frequency sounds. The Applicant should also report the divergence pattern that will be assumed for propagation of infrasound at long distances.

5. PSS states:” a discussion of infrasound impacts will be based on other recent wind projects where actual post-construction sound data is publicly available, and/or the literature.”

DPS Staff comment: The Applicant should clarify whether the evaluation of infrasound impacts will be based upon sound data information that was collected from wind turbine projects with the same potential turbine models operating at similar conditions. DPS Staff also requests that the Applicant includes a list of the sound data and the literature references mentioned in this section.

Subsection 2.19 (f) - Predicted Sound Levels Table

1. Please specify whether ambient and operational sound data for periods when the turbines will not be operational will be excluded from the calculations, when reporting the levels required by 16 NYCRR §1001.19 - Exhibit 19(f). DPS Staff recommends reporting both results, including and excluding the periods when the turbines will not be operational at least for the closest potentially impacted noise sensitive receptor locations.
2. PSS states: “The Article 10 Application will provide the A-weighted/dBA sound levels, in tabular form, for the operating Facility. Predicted sound levels will be shown through graphical isolines of A-weighted decibels. “

DPS advises that the scope should identify the minimum and maximum noise

contour level (dBA) that will be rendered along with the incremental steps in between. DPS-Staff recommends rendering noise contours at a minimum in 5-dBA steps and detailed renders in 1-dBA steps at project boundaries adjacent to any identified noise sensitive receptors in Galloo Island.

a. **Subsections 2.19 (f) (1), (2), and (3):**

- i. Please specify the time range proposed for determination and reporting of the L90 statistical descriptor (e.g. 1-hour, 15-hour (daytime), 9-hour (nighttime), 7-day, 14-days, etc.).

b. **Subsection 2.19 (f) (4):**

- i. Please clarify that the L10 statistical noise descriptor corresponds to estimates for one year of operation.

c. **Subsection 2.19 (f) (5):**

- i. Please clarify whether the L10 statistical noise descriptor is proposed to be estimated for the summer nighttime period for one year of operation.

d. **Subsection 2.19 (f) (6):**

- i. Please clarify whether the L10 statistical noise descriptor is proposed to be estimated for the winter nighttime period for one year of operation.

e. **Subsections 2.19 (f) (7):**

- i. Please clarify that this calculation will include both summer and winter data.

f. **Subsections 2.19 (f) (8) and (9):**

- i. Please clarify that the L50 statistical noise descriptor corresponds to the daytime in a year.

Subsection 2.19 (g) - Applicable Noise Standards

1. The PSS should include design goals for the Facility for issues that may be better addressed in terms of absolute noise guidelines (e.g. sleep disruptions, outdoor and indoor speech interference, hearing loss, annoyance, complaint potential and health issues). The Applicant should explain whether the analysis of annoyance and complaints may also require an additional evaluation in terms of relative noise

guidelines and include the references for such methodologies/guidelines. Please see additional DPS-Staff comments in subsection 2.19. (k) below.

Subsection 2.19 (h) - Noise Standards Comparison Table

1. PSS states: “A table outlining noise standards applicable to the Facility, including any local regulations and noise design goals will be provided with the Article 10 Application, including the degree of compliance at three nearest mainland landfall locations, indicated by the above-referenced noise modeling.” Please see DPS-Staff comments on subsection 2.19(a)

Subsection 2.19 (j) - Noise Abatement Measures for Facility Design and Operation

1. The new studies should analyze all potential impacts (e.g.: noise, vibration, public health) and whether abatement measures are necessary.
2. DPS Staff also notes that 16 NYCRR §1001.19 -Exhibit 19(j) requires “An identification and evaluation of reasonable noise abatement measures for the final design and operation of the facility including the use of alternative technologies, alternative designs, and alternative facility arrangements”.

Subsection 2.19 (k) - Community Noise Impacts.

1. PSS states:” The potential for the Facility to result in hearing damage will be addressed using OSHA standards”
2. Please add the recommendations of the United States Environmental Protection Agency and the guidelines of the World Health Organization as criteria for evaluation of potential for hearing loss. While OSHA standards may be suitable to analyze potential for hearing loss for Facility workers during work shifts, the potential for hearing loss at sensitive receptors should be better analyzed under the USEPA and WHO guidelines which are not to exceed a level of 70 dBA Leq 24-h for long-term exposure to continuous noise sources.
3. PSS states:” Indoor and outdoor speech interference will be addressed using the EPA Guideline Level, which is protective of activity interference.”
4. DPS-Staff notes that Indoor and outdoor speech interference should also be evaluated by using the World Health Organization guidelines.

5. PSS states:” Community complaint potential will be addressed using WHO Guidelines for Community Noise serious and moderate annoyance criteria, ANSI S12.9 Part 5, (...)”
6. DPS-Staff comment: WHO guidelines criteria for serious and moderate annoyance and ANSI S12.9 Part 5 seem to be based on the analysis of annoyance from transportation noise sources (traffic, aircraft and railroad noise) and not on Wind Turbine Noise cases. WHO guidelines also recommends considering lower values than those listed in its guidelines for noise sources with low frequency noise content. Therefore, DPS-Staff considers that the potential for annoyance and complaints should be analyzed with studies that are specifically related to annoyance and complaint potential from wind turbine noise.
7. The applicant should specify the community noise impacts that are proposed to be analyzed under the NYSDEC noise policy (e.g., community complaint potential) and how the policy is planned to be applied to the project including the noise descriptors that will be used to describe ambient and operational sounds, a summary of the procedures that will be followed for determination of change in noise levels along with a discussion about whether the interpretation, the noise descriptors and the procedures that are proposed are also consistent with applicable methodologies to evaluate the noise impacts under consideration. DPS Staff notes that the NYSDEC noise policy advises the following: “thresholds as indicators of impact potential should be viewed as guidelines subject to adjustment as appropriate for the specific circumstances one encounters.”
8. The NYSDEC policy also lists several examples of methodologies that may be used for noise analyses prepared for projects such as the Composite Noise rating (CNR), Community Noise Equivalent Level (CNEL) and Day-Night Noise Levels (Ldn).
9. The applicant should explain whether proposed methodologies and criteria were developed based upon data related to annoyance or complaints from wind turbine projects. DPS Staff recommends evaluation of annoyance and community complaint potential based on a thorough review of literature specifically as related to wind turbine noise.
10. PSS states:” The Applicant is not aware of a wind project that resulted in structural

damage due to noise or vibrations, and this Facility is not anticipated to result in any structural damage. The Applicant is not aware of any technical, industrial, or medical activities that take place on Galloo Island that are sensitive to vibration or infrasound. Therefore, impacts to such activities and instruments are not anticipated, and will not be discussed in the Article 10 Application.”

11. DPS-Staff advises that this section should contain four subjects that may need to be evaluated separately:

i. Potential for some construction activities (such as blasting, pile driving, excavation, horizontal directional drilling (HDD) or rock hammering, if any) to produce any cracks, settlements or structural damage on any existing proximal buildings, including any residences and historical buildings.

ii. Potential for ground-borne transmitted vibrations from the operation of the Facility to reach a noise sensitive receptor and cause vibrations on the floor or on building envelope elements that may be perceived by the receptor. The Applicant may want to consider the criteria and procedures discussed in the following national and international standards:

- ANSI S2.71-1983 (Guide to the Evaluation of Human Exposure to Vibration in Buildings (R 2012))
- ISO 2631-2-2003 (Evaluation of Human Exposure to Whole-body Vibration Part 2: Vibration in buildings (1 Hz to 80 Hz)).
- Additional information may also be found in ASHRAE Handbook-HVAC Applications 2011, chapter 48, Noise and vibration control, Vibration Criteria p.p. 48.43-48.44.

iii. Potential for air-borne induced vibrations from the operation of the facility to generate annoyance, cause rumbles or vibration and rattles in windows, walls or floors of sensitive receptor buildings.

- The applicant may want check the Hubbard’s Methodology to evaluate this issue or,
- The outdoor criteria established in annex D of ANSI standard S12.9 - 2005/Part 4.
- Applicable portions of ANSI 12.2 (2008) may be used for the evaluation of frequency bands where ANSI 12.2 (2008) may be a more restricting criteria or if it is expected ANSI S12.9-2005/Part 4-Annex D guidelines being met but still represent a potential for perceptible vibrations at indoor locations of sensitive sound receptors, if any.

iv. Potential of low-frequency noise including infrasound and vibration from operation of the facility to cause any interference with the closest seismological and infrasound monitoring systems.

For this subject DPS Staff recommends that the Application include a map in proper size and scale to show the location of the closest seismological and infrasound stations on both sides of the border between US and Canada in relation to the Project site, and a table with approximate GPS coordinates and distances from identified stations to the Project site.

For a discussion about potential issues the Applicant may want to consult, among others, the following references:

- Technological Information and Guidelines on the Assessment of the Potential Impact of Wind Turbines on Radio Communication, Radar and Seism Acoustic Systems. Radio Advisory Board of Canada (RABC). Canadian Wind Energy Association (CanWEA). April 2007.
- Micro Seismic and Infrasound Monitoring of Low Frequency Noise and Vibrations from Wind farms. Recommendations on the siting of Wind Farms in the vicinity of Eskdalemuir, Scotland. Styles, Stimpson, Toon, England, Wright. Applied and Environmental Research Group. Earth Sciences and Geography. School of Physical and Geographical Sciences. Keele University. 18 July 2005.

For information about Seismic Stations in the U.S. that are part of the USGS monitoring system, the Applicant may want to consult the USGS website.

For information about seismic stations in Canada, the Applicant may want to consult the NRCAN website.

For information about the existing and planned infrasound and seismic stations that are part of the International Monitoring System (IMS) the Applicant may want to visit the CTBTO (Comprehensive Nuclear Test Ban Treaty Organization) website www.ctbto.org.

Subsection 2.19 (l) - Post-construction Noise Evaluation Studies

1. Consistent with 16 NYCRR §1001.19 -Exhibit 19 (m) please add a description of post-construction noise evaluation studies that shall be performed to establish conformance with operational noise design goals.

Subsection 2.19 (m) - Operational Controls and Mitigation Measures to Address Reasonable Complaints

1. PSS States: “The NIA will include a discussion of any potential post-construction mitigation measures and procedures for implementing operational controls to address reasonable complaints or any noise-related issues that are identified during post-construction evaluation.” DPS Comment: For illustrative purposes, please list general examples of post-construction mitigation measures that may be applied to address reasonable complaints.

Section 2.20 – Cultural Resources**Subsection 2.20 (a)(3) - Current Recommendations for Additional Work**

1. DPS advises that it is not clear that the Related Transmission Facilities (RTF) location on Galloo Island was previously considered in archeological survey evaluations performed for the Hounsfield Wind Project. The PSS discussion does not clearly indicate whether the substation and landfall location of the RTF correspond with prior survey areas. DPS advises that this should be discussed in developing the final scope of studies.
2. The location of the RTF underwater in Lake Ontario involves locations that were not addressed in previous reviews of the Hounsfield Wind Project. Cumulative impact assessments of all related facilities is required per the Siting Board findings necessary to comply with PSL §168.2 and §168.4. Scoping document should be revised to address how and when the evaluation of underwater and upland resources associated with the RTF will be undertaken and reported
3. DPS advises that additional documentation should be provided regarding the potential for additional areas of Facility visibility in the Project Study Area landscape, due to increased height of wind turbines proposed in the current project versus previous study of the Hounsfield Wind Project. Since proposed turbine locations, maximum turbine height, and study area distance are already known, preliminary viewshed maps can be readily prepared, and areas of predicted Facility visibility determined for the present project compared with the previous studies of the Hounsfield Wind Project. The need for additional historic resource evaluations for any additional areas of visibility can then be determined. This would also allow consideration of historic resources that may have been identified since the previous studies were done in 2009.

Section 2.21 – Geology, Seismology, and Soils**Subsection 2.21(d) - Fill, Gravel, Asphalt, and Surface Treatment Material**

1. PSS Section 2.21, page 85, calculation of the amounts of fill, gravel, asphalt, and surface treatment materials should be based on the proposed layout of turbines, access roads, collection lines, staging areas and all other project facilities and construction areas, and not just based on “typical details.”

Subsection 2.21 (d)-(f) - Fill, Gravel, Asphalt, and Surface Treatment Material - Excavation Techniques to be employed

1. PSS Section 2.21, pages 85-87, Applicant should provide a detailed plan describing the scope of geotechnical investigations that will be performed prior to the Application. The Geotechnical Investigation Plan should provide a full description of the proposed geotechnical investigations proposed for evaluating the subsurface conditions in the project area and include test borings in representative locations of turbine foundations, road construction, underground collection line installation, and areas where horizontal directional drilling (HDD) is considered for installation of collection lines. Any available information regarding geotechnical investigations and feasibility of the associated interconnection facilities should also be provided. Reasonable preliminary calculations of the amounts of necessary cut and fill materials, designation of cut and fill storage areas, excavation techniques require detailed geotechnical investigations prior to the Application to assess the suitability of excavated materials for re-use as fill.

Subsection 2.21 (o) - Soil Types Map

1. PSS Section 2.21, pages 89-90, describes the surficial soils in the project area as primarily glacial till underlain by limestone. Soils containing large quantities of limestone may be corrosive to steel, particularly if soils are located in an area of a shallow water table. The existing soils in the project area are expected to have a high potential for the corrosion of steel. The Application should evaluate the suitability of existing soils types for reuse as backfill, particularly in areas where reinforcement steel will be used in foundation design. Additionally, provide a description of additional protection of reinforcement in accordance with American Concrete Institute ACI 318, section 7.7.5. This evaluation should be considered in the preliminary calculations of fill materials that will be required for the project.

Subsection 2.21 (r) - Foundation Evaluation

1. PSS Section 2.21, page 91, states that “[f]oundation construction occurs in several stages, which typically includes excavation, pouring of concrete mud mat, rebar and cage assembly, outer form setting, casting and finishing of concrete, removal of forms, backfilling and compacting, and site restoration.” Provide a description of the testing procedures and any special inspections to be performed during rebar and cage assembly and concrete installations.

Section 2.22 – Terrestrial Ecological and Wetlands

DPS advises that the Project Site is nearby to Little Galloo Island, a designated Significant Coastal Fish and Wildlife Habitat area, and should be identified as within the appropriate Study Area. Assessment of wildlife usage of the shoreline and mainland areas of Galloo Island and its airspace are important considerations. NYS DEC has had management success and reestablishment of rare species since the prior Hounsfield Wind Project was reviewed. Assessment of Little Galloo Island use as a wildlife management area must be addressed in detail in the proposed Scope of Studies and results of studies reported in the Application.

Section 2.23 – Water Resources and Aquatic Ecology**Subsection 2.23(a)(1) - Hydrologic Information**

1. Although the publicly available data may be limited, groundwater data, including groundwater depth, quality and flow direction, should be obtained during the advancement of geotechnical test borings within the project area. The results of groundwater investigations should be included in the application. Because of the generally anticipated shallow depth of the groundwater table in the project area, it is expected that dewatering will be required. The Application should include a detailed description of the proposed dewatering practices and a demonstration of how the proposed dewatering will avoid and/or minimize flooding, surface water runoff, and transport of fine-grained soils into existing surface water bodies. Any locations where permanent dewatering will be required should be identified and permanent dewatering practices should be described in detail.

Subsection 2.23(b)(3) – Drinking Water Supply Intakes

1. Although the applicant notes that there are no known drinking water wells or water supply intakes within or near the project area, there is a private rental lodge on Galloo

Island. Applicants should identify the water source for the rental lodge and address mitigation measures that will be implemented to avoid impacts to lodge's source water and facilities.

Subsection 2.23 (b)(4) - Impacts to Surface Waters

1. The surface waters within the project area drain into Lake Ontario, a Class A water body suitable for domestic potable water supply, public bathing and general recreation use, and support of aquatic life. The Application should include a detailed description of erosion control measures that will be implemented to avoid transport of fine-grained soils and turbidity impacts to the lake during construction. Prevention of transport of stockpiled fine-grained soils should be addressed.
 - (a) DPS advises that PSL §168.2 requires the Siting Board to make explicit findings regarding the nature of the probable environmental impacts, including cumulative environmental impacts of related facilities, of the construction and operation of the proposed facility. Although the Applicant intends to address the underwater transmission cable in an Article VII Application, the feasibility of the proposed wind energy facility is dependent upon the interconnection cable, and therefore details of the underwater transmission facility should be provided. The Applicant shall provide in its application a cumulative project impact analysis characterizing the nature and extent of impacts associated with the construction and operation of the Related Transmission Facilities, including the 30-mile 145 kV underwater transmission facility. A description of the feasibility (including a general statement noting construction and operation of the underwater cable is feasible) and proposed installation methods of the underwater transmission facility should be provided. This should include a general description of the HDD layouts and cofferdam locations for transitioning the underwater cable upland at both of the proposed landfall (mainland and Galloo Island) locations. Potential impacts on aquatic ecology and water quality, including identification of the locations and description of potential impacts to operations of surface water intakes within Lake Ontario, should be reported. (Staff recommends advancing a complete scope of studies for development of an Article VII application in addition to the general comment provided here. Such studies should include a geotechnical survey of the bathymetric conditions along proposed route of the underwater transmission facility.).

Section 2.24 – Visual Impacts

Subsection 2.24 (a) - Visual Impact Assessment

DPS advises that the reference to the methodology developed by “the State of Vermont (2012)” is not relevant to New York State, being based in large part on legal opinions and court decisions for land use projects under an entirely different regulatory standard in that state.

Subsection 2.24 (a)(1) - Character and Visual Quality of the Existing Landscape

As stated in the PSS, there is potential for mis-interpretation of the proposed Visual Study Area: the PSS states “it is proposed to include areas between 5 and 15 miles from the Facility to identify any regionally significant areas or resources of concern” (PSS, p. 115). DPS advises that there are significant visual receptor locations within 5 miles of the Facility site, and one interpretation of the PSS as drafted would omit those locations, instead focusing on the “areas between 5 and 15 miles from the Facility” (Id. at page 115).

Subsection 2.24 (a)(2) - Visibility of the Facility

1. Referring to field verification of likely visibility of proposed Facility structures, the PSS states “[t]his determination will be made based on the visibility of Galloo Island and/or helium filled balloons that provide a locational and scale reference for the proposed Facility” (Id. at page 116). DPS advises that some important viewing locations in the Study Area do not have direct views of Galloo Island due to intervening topography or vegetation, but would have views of tall wind turbine structures, blades, and lighting. DPS advises that details of a plan for balloon launch and field verification should be provided for review in developing scoping stipulations.

Subsection 2.24 (a)(3) - Visibility of Above-ground Interconnections and Roadways

1. The PSS states that “no viewshed analysis of other Facility infrastructure (other than the meteorological towers) is proposed” (Id. at page 116). DPS advises that the Facility and the Related Transmission Facility Substation location is within 2 miles of the NRHP-listed Galloo Island Lighthouse and NYS DEC Lighthouse Property, a NYS Wildlife Management Area on Galloo Island; and is nearby to NYS DEC Wildlife Management Area parcel on Little Galloo Island; as well as the designated

Coastal Area comprising the setting of the Project at Galloo Island. While the substation will have a much lower profile than the proposed wind turbines, visibility of the proposed substation including lighting should be considered in the visual assessment, particularly from nearby viewpoints.

Subsection 2.24 (a)(4) - Appearance of the Facility Upon Completion

1. DPS advises that photographic simulations should include the proposed substation, as per preceding comment.

Subsection 2.24 (a)(5) – Lighting

1. The PSS includes typographical error: “phots” should be “photographs” (PSS, pg. 117).
2. DPS advises that discussion of lighting should include any lighting to be used at the ‘high’ side as well as the “low side of the collection substation.” (Id., pg. 117). As discussed throughout DPS comments on the PSS document, cumulative assessment of the Project warrants including the entire substation in the visual assessment of the proposed Generating Facility.
3. DPS advises that Facility and Project lighting should be designed to avoid off-site impacts including light trespass and dark-sky degradation. Lighting control plans generally should give consideration to the use of additional measures including: task lighting, that can be turned on when needed at areas that may require occasional night-time work such as O&M yards; full-cutoff fixtures without drop-down optics, that preclude horizontal or upward-directed light emissions that are not useful or necessary; and review of radar-activated FAA marking lights for night-time use, that are generally only lighted when aircraft approach and trigger activation of lighting for aviation safety.

Subsection 2.24 (a)(7) - Nature and Degree of Visual Change from Operation

1. PSS states that “[t]he methodology utilized in this evaluation will be a simplified version of the U.S. Department of the Interior, Bureau of Land Management (“BLM”) contrast rating methodology (USDOI BLM, 1980) that was developed by EDR” (PSS, pg. 118). DPS advises for clarification that the BLM contrast rating methodology was not developed by EDR. DPS requests that applicant provide copies of EDR’s text or outline of methodology, guidance documents, and any rating

criteria, rating forms, or other documentation of the proposed methodology, for consideration by parties in scoping and development of stipulations.

Subsection 2.24 (a)(9) - Operational Effects of the Facility

1. PSS reasons that shadow flicker is not necessary, due to permanent residences being located far from the Facility site. DPS advises that the scope should consider potential for shadow flicker on proposed residential accommodations for facility workers at existing residential structures and O&M building, as well as the NRHP-listed Galloo Island Lighthouse and keeper's residence structures and the US Coast Guard buildings. (See other DPS comments regarding shadow flicker above at review of Section 2.15.)

Subsection 2.24 (a)(10) - Measures to Mitigate for Visual Impacts

1. PSS states “Mitigation options for the operating Facility are limited, given the nature of the Facility and its siting criteria (tall structures on high elevation sites)” (PSS, pg. 119). DPS advises that proposed structure sites are not referenced as “high elevation” at any other reference in the PSS. Applicant should explain whether the proposal is to significantly raise the elevation of wind turbine sites on Galloo Island; and if so, to indicate the proposed site elevations, and propose revisions to other sections of the PSS as appropriate to reflect this design proposal.
2. DPS advises that the reference citation to “NYSDEC Program Policy (NYSDEC, 2000)” at page should also be used at paragraph (a) Visual Impact Assessment, at citation on PSS page 114, indicated as “New York State Department of Environmental Conservation (not dated).”

Subsection 2.24 (a)(11) - Description of Visual Resources to be Affected

1. The PSS specifically identifies only four sensitive visual resources, which are all NYS State Parks. There are many other visual resources that should be listed as an initial inventory for the visual impact assessment. DPS requests that the applicant provide a list of known resources to advance consideration of sensitive visual receptor locations in outreach and consultation efforts.
2. DPS advises that the process of soliciting input from municipal and agency representatives would be greatly enhanced by the Applicant providing:

- photographs of representative landscape settings from various resource locations in the Study Area;
- mapping of visually sensitive resource locations, mapping of landscape similarity zones, as well as mapping of foreground, middleground and background distance zones, so that all such locations and zones are readily related graphically to areas of predicted visibility (viewshed maps);
- results of Historic Architectural studies to identify any NRHP- listed or -eligible resource locations; and
- initial recommendations by the Applicant as to its proposal for selecting viewpoints and a summary of the supporting rationale for its recommendations.

Subsection 2.24 (b)(1) - Viewshed Maps

1. DPS advises that the PSS discussion of line of sight profiles (PSS pg. 120) should be revised to the extent that viewshed analysis does not completely substitute for graphic line of sight analysis in consideration of facility component location, screening vegetation heights, and consideration of mitigation measures. This may be of particular importance in documenting potential visibility in low-terrain landscapes such as the Project setting.

Subsection 2.24 (b)(2) - Viewshed Methodology

1. Discussion of “vegetation viewshed” and use of 2011 NLCD land cover data should provide consideration of potential land cover modifications. 2011 USGS National Land Cover Dataset is based on data now five years old. Provide an assessment of significant areas of forest clearing that may have occurred in the Project Study Area based on evaluation of recent edition aerial photography and comparison of NLCD forest cover areas.
2. Provide consideration of using NLCD USFS Tree Canopy Analytical Data (percent tree canopy cover, and standard error analysis) versus Tree Canopy Cartographic data, to provide characterization of degree of screening provided by forest canopy.

Subsection 2.24 (b)(4) - Viewpoint Selection

1. Consultation with state, regional and local agencies and stakeholder interest groups should be made upon development of preliminary Project layout and viewshed mapping of areas of predicted Project Visibility to solicit input on resources and locations within areas potentially affected. Since proposed turbine locations,

- maximum turbine height, and study area distance are already known, preliminary viewshed maps can be readily prepared and provided to stakeholders for consideration in finalizing visual scoping.
2. DPS recommends that NYS agencies and municipal planning representatives be consulted directly at working meetings convened to achieve consensus on selection of viewpoints. Review of project viewshed mapping, landscape similarity zones, distance zones and known visual resource locations will advance consultation efforts.
 3. DPS recommends including NYS Dept. of State Coastal Resources bureau staff in the list of agencies to be consulted.

Subsection 2.24 (b)(6) -Additional Simulations Illustrating Mitigation

1. DPS advises that the stated rationale for limiting depiction of mitigation to previous assessment of alternate arrangements of the Hounsfield Wind Project is mis-placed: the analysis of Hounsfield is an assessment of “alternate number, height and arrangement of turbines” (PSS, pg. 123). Thus this proposal is an alternatives assessment, not a mitigation assessment.
2. Since no analysis of impacts of the present project has been presented, there is no specific basis for stipulating what mitigation may be appropriate. Mitigation options that are available to the Galloo Island project may include measures such as: moving or re-arranging turbines to meet appropriate setback distances or to avoid site-specific impacts on facilities or resources; deleting one or more turbines; moving the southern met tower away from the NRHP-listed Galloo Island Lighthouse; using RADAR-activated aviation warning lights; providing screen plantings near visual receptor locations; or other mitigation measures as appropriate to identified impacts at particular receptor locations.

Subsection 2.24 (b)(7) - Simulation Rating and Assessment of Visual Impact

1. DPS requests that the proposed rating forms and instruction pages be provided for consideration in scoping.
2. DPS requests that the application include information regarding the professional review panel members. The scope should specify that CV of rating panel members will be provided, along with list of previous major project visual impact assessment experience.

Subsection 2.24 (b)(8) - Visible Effects Created by the Facility

1. See DPS comments above regarding shadow flicker and the need for assessment and consideration of nearby receptors.

Section 2.25 – Effect on Transportation**Subsection 2.25 (a) - Conceptual Site Plan**

1. DPS advises that for wind turbine access road locations and widths, the application should include characterizations of road location suitability. The proposed access road through the collection and voltage step-up substation should be evaluated for clearances and suitability for co-locating these facility and Related Transmission Facility components, as indicated at PSS Figure 3.

Subsection 2.25 (b) - Description of the Pre-construction Characteristics of Roads in the Area

1. DPS advises that a characterization of the types, dimensions, weight and amount of equipment and material that would be delivered and transferred for delivery to Galloo Island from the Madison Barracks Marina, Henderson Harbor and Point Peninsula locations should be provided for consideration in scoping.
2. DPS advises that roads in the areas of identified points of embarkation should be reviewed for available load bearing and structural rating information for expected facility traffic routes. This should also be performed for structural integrity of points of embarkation (for applicable oversized/overweight road deliveries).

2.27 – Socioeconomic Effects**Subsection 2.27 (l) - Consistency with State Smart Growth Public Infrastructure Criteria**

1. The PSS mistakenly concludes that the Smart Growth Infrastructure Criteria do not apply to the proposed project. The smart growth criteria set forth in ECL § 6-0107 are required to be evaluated as set forth in 16 NYCRR 1001.26. DPS advises that this is a required evaluation of reasonable planning goals, objectives and considerations for major infrastructure projects, in this case a major electric generating facility. The

other requirements of ECL § 6-0107 do not apply to the project. (The PSS dismissal of NYS Department of State approval at page 142 is incorrect and is addressed in other sections of this document, notably discussion of Land Use and Coastal Area evaluations.)

Section 2.31 – Local Laws and Ordinances

1. DPS requests that complete copies of local laws, regulations, ordinances, and resolutions be provided in an appendix to the application.

Subsection 2.31 (b) - Local Procedural Requirements Requiring Board Authorization

1. DPS recommends that applicant consider requesting local review of building permits; water and wastewater treatment permits; and occupancy permits for O&M and residential-type buildings; etc. In the alternative, the applicant should explain the basis for not requesting this authorization, and the authority and means by which such permits would be issued.

Section 2.32 – State Laws and Regulations

Subsection 2.32 (a) - List of State Approvals, Consents, Permits, Certificates, or Other Conditions of a Procedural Nature

1. DPS advises that the Siting Board regulations specifically delegate Section 401 Water Quality Certification to DPS, rather than to NYS DEC. DPS agrees that request for 401 WQC should not be filed until a federal ACOE permit application is filed; however the Article 10 Application should identify the 401 WQC as a permit to be requested in the future.
2. DPS advises that future communications and consultation with OPRHP regarding §14.09 of the New York State Historic Preservation Act should involve DPS as the principal agency with responsibility for consultation under that statute. To date, DPS has not been involved or made aware of any such communications or consultation with OPRHP by the Applicant.
3. DPS advises that the NYS Department of State's (DOS) consistency review is authorized by federal law and is an integral part of the federal decision-making process. DOS's review is not authorized by State law, is not a delegated federal

authority and is not supplanted by the PSL Article 10 process. Rather, the Siting Board has responsibility for review of Coastal Area policy conformance, pursuant to Executive Law (see comment above regarding PSS section 2.4(l)).

4. DPS further advises that lease for underwater lands of New York State for installation of facilities must be sought from NYS Office of General Services.

Subsection 2.32 (e) - State Approvals/Permits/Etc. for Offsite Features Not Encompassed by Major Electric Generating Facility

1. DPS reiterates its comment that PSL §168.2 requires cumulative assessment of impacts associated with the overall Project, not only the Article VII facility components. Characterization and summary of probable environmental impacts of the Related Transmission Facility and any other related facilities should be reported in the Article 10 Application.

Section 2.33 - Other Applications and Filings

Subsection 2.33 (b) - Federal Permits, Consents, Approvals, or Licenses Required for Construction or Operation

1. DPS advises that NYS Department of State (DOS), not the NYS Office of General Services (OGS), provides a federal consistency decision pursuant to 15 CFR 930. The DOS federal consistency determination is authorized by the Coastal Zone Management Act of 1972, as amended, and is binding on all federal agencies with jurisdiction to authorize, fund or directly undertake an activity associated with the project that may have direct or indirect effects on land and water uses or natural resources on the State's designated coastal area (CZMA section 307). No federal agency may provide an authorization for a project that is denied concurrence with an applicant's consistency certification by the NYS Department of State (15 CFR Part 930.63).

APPENDIX D – Master List of Stakeholders

Several listed organizations do not include direct point-of-contact information, as listed below. DPS advises that the applicant should continue to update and refine its Stakeholder contacts and outreach efforts through the pre-application process, and include a contact name for each stakeholder without a contact name.

- Hay Memorial Library

- Henderson Free Library
- Oswego Public Library
- Air Methods Helicopter Rescue Watertown NY
- Kingston Norman Rogers Airport