

Table 1-1 (Sheet 1 of 8)
Summary of Potential Impacts and Proposed Mitigation

Aspect of Affected Environment	Potential Impact	Proposed Mitigation
Physiography, Geology, and Soils	Erosion and sedimentation during construction.	A Stormwater Pollution Prevention Plan (SWPPP) will be developed and implemented for the construction period.
	Construction traffic could also create airborne dust.	A Dust Control Plan will be developed and implemented.
	The proposed Project, once built, could potentially cause a minor alteration to existing drainage patterns.	A SWPPP will be developed and implemented for the operational period.
	Impacts to agricultural soils during construction and operation	SLW will follow NYS Department of Agriculture and Markets Guidelines for Siting and Constructing Wind Farms. Applicable soil protection, erosion control and soil restoration measures will be included in the final construction documentation and plans for the contractor(s) and subcontractor(s).
	Shallow bedrock and other geologic challenges (e.g., karst and problematic soils) could be encountered during construction.	Geotechnical studies will be conducted prior to final engineering design.
	Release of hazardous substances associated with construction or operation.	A Spill Prevention, Control, and Countermeasure Plan (SPCCP) will be developed and implemented.
Water Resources	Soil erosion during construction could impact ground water.	A SWPPP will be developed and implemented for the construction period.
	Spills associated with operation of construction equipment (i.e. diesel and gasoline fuels, lubricating oils, and cooling fluids).	Appropriate best management procedures will be used to prevent spills, limit quantities of hazardous materials used on site, and the implementation of the Emergency Response Plan.
	Potential water table reduction or pathway alteration due to dewatering.	Impacts will be avoided through pre-construction surveys and studies and re-location of turbines, if necessary.
Streams, Rivers, and Lakes	Potential temporary impacts during construction could result from clearing and grading near stream banks.	Clearing near surface waters will be kept to a minimum to prevent significant disturbance to the habitats associated with surface waters; A SWPPP will be developed and implemented for the construction period.
	Construction and operation of the Project will result in two surface water body crossings by Access Roads and Interconnects	The installation of environmentally friendly culvert types (i.e., bottomless or arched culverts with a gravel base).
	Construction and operation of the Project will result in seven surface water body crossings by the Overhead transmission line.	Crossings of the Chaumont River and other streams and tributaries will be accomplished by overhead spanning. Poles will be located greater than 50 feet from both sides of the Chaumont River and other streams and tributaries. Cable between these utility poles will be strung in a manner that will not require construction equipment to drive through shallow surface water bodies.
	Construction and operation of the Project will temporarily affect 1.67 acres of wetlands; and result in the placement of 0.33 acres of fill in wetlands and the conversion of 0.34 acres of forested wetlands to non-forested wetland cover.	Wetland areas and open waters temporarily affected during the construction will be restored to pre-construction contours and re-vegetated with native (non-invasive) plant material or seeds immediately following the completion of regulated activities at each site. SLW will develop a Wetland Mitigation Plan to compensate for unavoidable permanent impacts to wetlands and proposes to compensate for the unavoidable permanent fill of wetlands using a 2:1 mitigation ratio.

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Aspect of Affected Environment	Potential Impact	Proposed Mitigation
Vegetation	Clearing for construction may temporarily impact abundant vegetation communities.	Clearing of vegetation will be minimized in areas that are ecologically sensitive, such as forested uplands, forested wetlands and the banks of creeks crossed by the overhead transmission line. All temporary disturbances will be restored.
	Potential for the introduction of invasive species into areas disturbed during construction activities.	SLW has prepared an Invasive Species Management Plan to ensure that all disturbed areas will be returned to a native vegetative state once construction is complete.
Non-bat Mammals	Minor, temporary displacement of individuals and disturbance of wildlife habitat will be limited to the construction right-of-way and adjacent areas. Forested habitat will be cleared within portions of the laydown areas at 6 turbines sites and along limited portions of the overhead transmission line right-of-way.	The Project was designed to avoid significant impact to wildlife. Project infrastructure is sited away from high quality wildlife habitat and forested clearing has been minimized.
Bats	Bat collision with wind turbines is a potential impact.	Post-construction monitoring studies will be implemented to estimate the mortality and habitat displacement experienced by bats as a result of the Project, to verify the environmental impacts estimated by pre-construction studies, and to provide supporting value to the overall conservation measures that will ultimately benefit the species or population. Conservation measures including Project design, seasonal restrictions on tree clearing and formal consultation with the USFWS, USACE, and NYSDEC will be implemented before or during construction to avoid and minimize potential Indiana bat mortality during construction and operation of the Project.
Migrating Birds	During operation of the Project, there is the potential that migratory birds could collide with wind turbines.	SLW has selected the proposed Project layout to minimize impacts to sensitive Potential impacts associated with migratory bird collision with wind turbines have been mitigated by maximum turbine spacing, placing electrical collection lines between turbines and the collector substation underground rather than above ground, and implementing the minimum FAA safety lighting requirements. SLW will also implement a post-construction avian fatality monitoring program.
Breeding Birds	Construction and operation of the proposed Project will likely result in minor, temporary impacts to breeding birds. During construction, clearing and work activities in open habitats will temporarily displace nesting and foraging individuals from the work area and suitable adjacent habitats.	The proposed Project will encourage continued farming activities in the area by supplementing area farmers' income. This will also result in the maintenance of open grassland habitats since the regional climate favors traditional late season harvest which is beneficial for grassland birds. Areas associated with grassland species nesting will be avoided until after the breeding season.
	Approximately 17 acres of second growth deciduous forest will be cleared for Project components, which could result in temporary and permanent minor habitat loss for some forest-nesting avian species.	Mitigation is not necessary because conversion of forest habitat in the Project Area will benefit birds that nest and forage in open habitats which are relatively more important in the region. Mitigation for habitat loss has been performed by sighting Project components to minimize disturbance and restoring all temporarily disturbed areas.

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Summary of Potential Impacts and Proposed Mitigation

Aspect of Affected Environment	Potential Impact	Proposed Mitigation
	There is a low potential risk that local breeding birds could collide with the wind turbines. Impacts at the St. Lawrence Wind Energy Project will be similar to other wind projects; therefore, avian mortality is likely to range between 122 to 509 birds/year	SLW is studying potential avian impact at the Project site. The Project site is anticipated to pose a low risk to breeding birds. SLW will fund an operational (post-construction) monitoring program to estimate direct and indirect impacts of the wind farm on breeding grassland birds
Over wintering Birds	Impacts to wintering birds, in particular waterfowl, are likely to be minimal.	SLW has selected the proposed Project layout to minimize impacts to sensitive receptors including wintering roosting and foraging birds. Any necessary above ground power lines will follow the Avian Power Line Interaction Committee suggested practices for protecting avian species.
Threatened and Endangered Species	Individual bats or bat colonies for the Indiana bat and the small-footed myotis have been documented in Jefferson County, within approximately 15 to 40 miles of the proposed Project. No impacts are anticipated.	SLW, working with the USACE, USFWS, and NYSDEC, is in the process of preparing a Biological Assessment (BA) to evaluate in greater detail the possible impacts to Indiana Bat populations due to construction and operation of the Project. The BA will be used to initiate formal consultation with the USFWS under the Endangered Species Act in connection with SLW's application for permits from the USACE. Results of the consultation process will determine whether conservation measures in addition to those outlined herein are necessary to avoid, minimize, or mitigate potential impacts from the Project on Indiana bats.
	There is a slight risk of collision for migrating raptors.	The Project site is anticipated to pose a low risk to threatened or endangered raptor species. SLW will consult with the USFWS to address the potential impacts and if any mitigation measures are warranted.
	There is a slight risk of collision for breeding birds.	To mitigate temporary impacts to breeding listed species, clearing activities will occur prior to the breeding season where appropriate.
	Potential impacts to State listed plants, Michigan lily and autumnal water-starwort.	Impacts to listed plant species will be avoided through avoidance of sensitive ecological communities, such as wetlands, and minimizing permanent impacts to vegetation to the greatest extent practicable.
	Potential impacts to State listed Reptiles and amphibians, Blanding's turtle	Barriers and culverts will be installed to either prevent or to facilitate movement across Project components. Silt fence will be installed to isolate potential Blanding's turtle wetlands habitat from construction activity. In addition, barriers (silt fence) will be installed to direct the movements of nesting turtles in a manner that limits the potential for road mortality.
Transportation	The potential need for the Project to improve transportation infrastructure to accommodate construction equipment and oversize vehicles delivering or repair damage to roads caused by construction traffic.	SLW will obtain all necessary permits from NYSDOT and local highway department(s) in order to make necessary road improvements and to operate oversized vehicles on the roads. Construction related wear and tear to County and local roads will be discussed with the entities that manage the transportation system and an appropriate strategy for road restoration will be developed.

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Summary of Potential Impacts and Proposed Mitigation

Aspect of Affected Environment	Potential Impact	Proposed Mitigation
	The need for the Project to temporarily relocate overhead lines, traffic lights, cable and phone lines to accommodate oversize vehicles.	A Transportation and Traffic Plan will be created for the Project and will address this issue.
	Traffic delays and road closures due to transportation improvements or construction traffic; potential disruption of tourism in the Thousand Islands; and increased traffic over local roads during construction	SLW will assess work areas two weeks ahead of construction and will provide schools (during the school-year), police, fire, and emergency service agencies with advance notice of lane or road closures.
	Increased traffic generally over local roads during construction.	A Transportation and Traffic Plan will be created for the Project and will address this issue. The proposed Project transportation routes have been selected to minimize impacts to roads and surrounding communities. The number of roads used for material and equipment transportation has been limited to the minimum needed for construction. Aside from the oversized vehicles delivering turbine and tower components, construction vehicles will be similar in nature to vehicles currently traveling over the road network and therefore will likely not require special mitigation measures. Construction equipment and the personal vehicles of construction workers will not be parked along public roadways, but rather in designated parking areas, so as to preserve safety along local roadways (unless exceptions are requested and granted by the appropriate authorities). In consultation with appropriate local officials, a Project speed limit will be established.
	Project construction traffic may create fugitive dust.	A Dust Control Plan will be developed and implemented for the construction period.
Transportation - Cumulative	If the SLW Project and BP projects are built during the same construction season, it is possible that similar construction transportation routes may be chosen.	If construction is concurrent, coordination between the projects may be required to ensure that responsibilities for road impacts and remediation are properly recognized and assigned. To the extent there is any overlap in project construction schedules, SLW will coordinate road construction or improvements and transportation activity with the other projects and will seek to modify its traffic management plan, if necessary, to mitigate local transportation cumulative effects.
Land Use and Zoning	The Project will have temporary, construction-related impacts and permanent, long-term impacts on land use. The Towns of Cape Vincent and Lyme have no specific requirements for development of wind projects in their jurisdictions, but have general zoning and land use regulations established for development.	The Project is designed to meet or exceed all of the requirements in the Towns of Cape Vincent and Lyme land use and zoning ordinances; and is compliant with current local zoning and land use regulations in Cape Vincent and Lyme.
	Construction of the Project will result in the temporary disturbance of approximately 425 acres of agricultural land and permanent conversion of 41 acres of agricultural land to wind turbine structures, a substation and pervious access roads.	SLW will follow NYS Department of Agriculture and Markets Guidelines for Agricultural Mitigation for Wind Power Projects.

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Summary of Potential Impacts and Proposed Mitigation

Aspect of Affected Environment	Potential Impact	Proposed Mitigation
Utilities and Community Services	The Project will result in minor short- and long-term increases in energy usage associated with construction and operation of the Project.	Mitigation is not necessary as neither of these represents significant impacts on energy resources.
	There is a remote possibility that some overhead electrical distribution lines will have to be temporarily relocated to accommodate crane routes.	SLW will collaborate with the utility owners to reduce impacts to their facilities to the maximum extent practicable.
	During construction, large vehicles and temporary roads closures could block emergency vehicle access to area farms and homes.	SLW will assess work areas two weeks ahead of construction and will provide schools (during the school-year), police, fire, and emergency service agencies with advance notice of lane or road closures. SLW will issue press releases to local newspapers and radio stations regarding lane or road closures. SLW in collaboration with the Cape Vincent Fire Department (CVFD), has developed an Emergency Response Plan to define prevention and emergency response measures for hazardous materials spills, medical/fire/law enforcement, weather emergencies, and evacuation.
	Local fire department concerns regarding inexperience with the components of the new wind facility, during construction and operation of the wind power facility,	SLW will maintain an appropriate level of preparedness and equipment for emergency rescue operations involving the nacelle and tower. SLW Project personnel will meet with the local emergency service personnel (police, fire, ambulance, and health care) to review and discuss the planned construction process.
	Impacts from Ice shedding	Compliance with setbacks and measures to control public access, such as fences and warning signs, will minimize public safety risks associated with ice shedding.
Cultural Resources	The Project will not affect archeological resources that are potentially eligible for the NRHP. In the event of future archeological discoveries in the archeological APE, SLW intends to avoid impacts to archeological resources that may be potentially eligible to the NRHP.	Archeologically sensitive areas to be avoided during project construction will be clearly identified as "No Access" on Project construction maps. Prior to the start of construction, an Unanticipated Discoveries Plan will be developed, describing actions to be taken in the event that archeological sites, including possible human remains, are accidentally discovered during Project construction.
	The proposed project will have an adverse visual effect on historic architectural resources.	SLW will continue drafting a Memorandum of Agreement for Visual Impact Mitigation, to be approved by the Towns of Cape Vincent and Lyme and by SHPO.
Visual Resources	The Project will be visible from a variety of locations within 5 miles of the proposed Project Area.	Although the visual mitigation options are limited given the nature of the Project and its siting criteria, the following mitigation measures are proposed for the Project: <ul style="list-style-type: none"> ▪ Turbines will be painted white or light grey with non-specular material and not be used for commercial advertising. ▪ The turbine areas and facilities will be kept orderly and maintained on a regular basis. ▪ Turbines will not be allowed to rust.

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Summary of Potential Impacts and Proposed Mitigation

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		<ul style="list-style-type: none"> ▪ To the extent practicable, the electrical interconnect between turbines will be installed underground. Overhead electrical transmission from the turbines to the 115 kV transmission line, to the greatest extent practicable, will be sited away from where such infrastructure can be viewed from roads. The developer will also minimize clearing necessary for the installation of the electrical interconnect. ▪ The proposed turbines will maintain appropriate buffers from property lines, nearby residences, roads and other nearby visually sensitive areas. ▪ Perimeter screen plantings will be used to minimize visibility of the proposed substations and Operations and Maintenance Building. Appropriate plantings will be assessed after construction.
	Some residences located within 10 turbine diameters will experience some degree (less than 30 hours per year) of shadow flicker in the Town of Cape Vincent.	<ul style="list-style-type: none"> ▪ The proposed turbines will maintain appropriate buffers to minimize visual impact and extended shadow flicker. ▪ Settlement agreements could be used to purchase landscape screening (trees, shrubs), or exclusionary treatments such as curtains or blinds.
	The United States Department of Transportation Federal Aviation Administration (FAA) requires aviation warning lights on the turbines, which could present a potential adverse visual impact from some viewing locations.	Aviation warning lighting will be limited to the minimum required by the FAA. The Project will purchase aviation warning lights that are shielded or otherwise directed so that they are the least visible from the ground. Due to the height of the proposed turbines, the FAA requires red flashing aviation obstruction lighting to be placed atop the nacelle on 34 turbines to assure safe flight navigation in the vicinity of the Project.
Visual - Cumulative	Construction of the SLW Project and the BP projects in relatively close proximity to one another may have the potential to create cumulative visual impacts. There may be locations where turbines from projects will be visible, either at the same time or in rapid succession while traveling on area roadways. In most locations within the study area, only small portions of either project will be visible. However, in some open elevated settings, it is possible that large portions of projects will be visible.	The proposed mitigation described above will be employed.
Air Quality	During construction there may be short-term localized air quality impacts. Temporary minor adverse impacts to air quality may result from the operation of construction equipment and vehicles.	Standard mitigation control measures to maintain air quality will include: <ul style="list-style-type: none"> ▪ Vehicles used during construction will comply with applicable Federal and State air quality regulations; ▪ Limiting engine idling time and equipment shut down when not in use;

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		<ul style="list-style-type: none"> ▪ Dust suppression on unpaved access roads, parking areas and staging areas, and using water or DOT approved dust suppression materials in compliance with State and local regulations; ▪ Traffic speeds on access roads will be kept to 25 mph to minimize generation of dust; ▪ Car-pooling among construction workers will be encouraged to minimize construction-related traffic and associated emissions; ▪ Disturbed areas will be re-planted or graveled to reduce wind-blown dust; and ▪ Erosion control measures will limit deposition of silt to roadways.
Noise	The proposed Project will generate noise during construction.	<p>The following mitigation measures will be applied to Project construction, as necessary and practicable:</p> <ul style="list-style-type: none"> ▪ Adhering to regular construction work hours Mondays through Saturdays, and typically not working on Sundays or after dark; ▪ All construction equipment will be maintained in good working condition in order to reduce general noise emissions; ▪ When practical, heavy equipment will be shut down when not active, to minimize idling noise; ▪ All internal combustion engines will be fitted with appropriate muffler systems; and ▪ Adjacent landowners will be advised in advance of any significant noise-causing activities and these will be scheduled to create the least disruption to residents.
	The Project will not have significant noise impacts during operation.	It is not expected that mitigative measures will be required during Project operations; however, if needed, a complaint resolution program will be implemented whereby neighboring residents can contact SLW with their concerns. Complaints will be promptly investigated to resolve any verifiable issue or exceedance condition, and mitigation may be taken on a case-by-case basis.
Telecommunications	It is unlikely that there will be a significant impact to television signal coverage during Project operation.	FCC's mandate to transition all off-air television broadcasts from analog signals to digital signals by February 2009 will eliminate turbine-related interference problems as digital signals are not subject to interference from intervening structures.
	It is unlikely that the Project will impact government communications.	Should the NTIA identify any Project-related concerns related to signal blockage following their 30-day review of the Project, SLW will mitigate impacts as required.
	There is a remote possibility that ice shed from turbines could cause personal or property injury.	The use of buffers from roads and property lines and public control measures will minimize already low public safety risk of ice shed. All turbines will have automatic braking and shutdown. Ice detectors will be installed at previously determined locations to notify maintenance personnel of icing conditions, which will allow the operator to take the appropriate actions.

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Summary of Potential Impacts and Proposed Mitigation

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Safety and Security	There is a remote possibility that tower collapse or turbine failure could cause personal or property injury.	The use of buffers from roads and property lines and public control measures will minimize the already low public safety risk associated with tower collapse or blade failure. The standard engineering design and protection systems incorporated into modern wind turbines will prevent and minimize problems that could lead to tower collapse or blade failure.
	Wind power facilities have the potential to create stray voltage only if the electrical system is both poorly grounded and located near underground or poorly grounded metal objects.	Stray voltage concerns will be addressed through proper electrical engineering design and installation of all Project electrical components.
	Due to their height, physical dimensions, and complexity, wind turbines may present response difficulties to local emergency responders should a fire occur within or near the structures. Storage and use of diesel fuels, lubricating oils, and hydraulic fluids within the Project boundary also create the potential for fire or medical emergencies.	An Emergency Response Plan has been developed for the Project to ensure the safety of company employees and local residents, visitors, and their property. Prior to the commencement of construction SLW will present, review and revise of necessary the Emergency Response Plan in cooperation with local fire departments.
	Due the height and materials used to construct, the wind turbines are susceptible to lightning strikes.	The standard lightning protection system installed within the rotor blades will be used to prevent and minimize problems associated with lightning strikes.
	It is not anticipated that the proposed Project will be a target for any homeland security concerns.	SLW will design all facilities in accordance with guidance and regulations of the Department of Homeland Security.