5.11 Wind Energy Resources

Loyalist Township supports the development of wind energy systems for electricity production, as a source of renewable energy for the economic and environmental benefit of the municipality and the Province.

5.11.1 Definitions

For the purposes of Section 7.6, the following definitions shall apply:

"Wind Energy Generating System" means a structure that converts wind energy to electrical energy, including but not limited to a wind charger or wind turbine.

"Commercial-Scale Wind Energy Generating System" means one or more Wind Energy Generating Systems that individually or collectively produce more than a total of 150 Kilowatts (150 kW) based upon the nameplate rating capacity, and that are connected to the provincial or local electrical transmission grid for commercial purposes and includes the associated transformers and power transmission lines.

"Agriculture-Related Wind Energy Generating System" means a maximum of three Wind Energy Generating Systems on one property that individually or collectively produce a maximum of 150 kilowatts (150 kW) based on "nameplate rating capacity", are intended for agriculture/farm use, and may be connected to the provincial or local electrical transmission grid.

"Small-Scale Wind Energy Generating System" means a maximum of one Wind Energy Generating System with a maximum nameplate rating capacity of 40 kilowatts (40 kW).

"Nameplate Rating Capacity" means the maximum electrical energy generating potential of a Wind Energy Generating System.

"Point of Reception" for any participating and non-participating sensitive receptor means any point on the premises within 30 metres of the sensitive receptor, consistent with Ministry of Environment publication "Interpretation for Applying MOE NPC Technical Publications to Wind Turbine Generation".

"Sensitive Receptor" or "Sensitive Land Use" has the meaning as defined in Section 8.21.21 of the Official Plan and as defined by the Ministry of Environment Land Use Compatibility Guidelines.

"Wind Energy Generating System Accessory Facility" means a use, building or structure, transformer station, or associated mechanical equipment that is normally incidental, subordinate and exclusively devoted to a Wind Energy Generating System, and is located on the same lot as the Wind Energy Generating System.

"Windmill" means a tower structure with blades that are turned by the wind, is normally accessory and incidental to an agricultural land use, and is normally used for pumping water or an agriculture-related function. A windmill shall not be considered as a Wind Energy Generating System for the purposes of this Official Plan.

5.11.2 General Policies

5.11.2.1 Nothing in this Section shall restrict the installation or operation of a Wind Energy Generating System that is mounted directly on the roof of a dwelling or other structure, without a self-supporting pole or tower, and which has a maximum nameplate rating capacity of 10 kilowatts (10 kW).

5.11.3 Policies for Commercial-Scale Wind-Energy Generating Systems

5.11.3.1 Commercial-Scale Wind-Energy Generating Systems shall generally be located on Amherst Island, and in Concessions Broken Front, 1 and 2 on the mainland, where wind speed resources are rated acceptable or very good by the Ministry of Natural Resources' Ontario Wind Atlas.

5.11.3.2 Commercial-Scale Wind-Energy Generating Systems shall only be allowed in Rural, Agriculture and Industrial land use designations and shall not be located on lands adjacent to Environmental Protection and Environmentally Sensitive classifications unless a satisfactory Environmental Impact Assessment~~Statement~~ has been prepared that demonstrates that there will be no negative impacts on the natural features, or on their ecological functions.

For the purpose of interpreting "adjacent lands", Sections 4.2.2 (Environmental Protection Areas) and 4.2.3 (Environmentally Sensitive Areas) of this Plan shall be read.

5.11.3.3 Commercial-Scale Wind-Energy Generating Systems ~~should~~ shall be separated from urban land uses (except Industrial), ~~in~~ the Hamlet and Shoreline Residential designations on Schedule A and residential land use designations on Schedule C, D and E in order to reduce the potential impact of safety, noise and visual intrusion on these areas.

5.11.3.4 In addition to the foregoing, Commercial-Scale Wind-Energy Generating Systems shall ~~generally~~ be located so as to have regard for:

a) Sensitive land uses, as defined by the Ministry of the Environment Land Use Compatibility Guidelines.

b) Bird migration routes, feeding areas, bat and raptor populations.

5.11.3.5 The proposed sites for Commercial-Scale Wind-Energy Generating Systems shall have suitable access to a public road with the existing design capacity to accommodate the necessary construction and maintenance vehicles. Any upgrades needed to public roads to facilitate the transfer of wind turbine components and necessary construction and maintenance vehicles shall be undertaken at the full expense of the owner of the Commercial-Scale Wind Energy Generating System and shall not negatively impact heritage stone fencing found along roads on Amherst Island. Any proponent proposing wind turbine development on Amherst Island ~~should~~ shall be aware that the Amherst Island ferry is not capable of being used to transport unusually large objects due to its physical capacity and its side-loading configuration.

5.11.3.6 Commercial-Scale Wind Energy Generating Systems greater or equal to two megawatts (2 MW) are made subject to the *Environmental Assessment Act* by the Electricity Projects Regulation 116/01. Proponents must conduct an environmental screening according to the Ministry of the Environment's "Guide to Environmental Assessment Requirements for Electricity Projects".

5.11.3.7 Commercial-Scale Wind Energy Generating Systems shall be permitted as-of-right in the Industrial designation and may be permitted by zoning by-law amendment in the Rural and Agriculture land use designations, where the applicant demonstrates, through appropriate studies undertaken by qualified professionals, that all issues related to the amendment application have been addressed.

The applicant is required to contact the municipality prior to commencing the background studies~~,~~ to determine the nature and scope of the issues that need to be addressed. The ~~Cataraqui Region~~ Conservation Authority shall also be consulted prior to the commencement of background studies noted below on natural heritage features and birds and bats.

At a minimum, ~~T~~the proponent ~~may be~~shall ~~required to~~ undertake ~~one or more of~~ the following applicable studies to the Township's satisfaction~~At a minimum, the proponent shall undertake one or more of the following applicable studies to the Township's satisfaction~~:

a) A noise impact study ~~will be undertaken~~ to determine setbacks from Commercial-Scale Wind Energy Generating Systems and attendant transformers so that noise levels will not exceed the Ministry of the Environment noise standards for sensitive land uses. Amherst Island shall be considered a Class 3 (Rural) area for the purposes of determining noise impacts. Class 3 is defined by "Interpretation for Applying MOE NPC Technical Publications to Wind Turbine Generation" and by NPC-232: Sound Level Limits for Stationary Sources in Class 3 (Rural) Areas. Sensitive land uses include the points of reception of participating and non-

participating sensitive land uses and vacant lots of record that are capable of being developed by a sensitive receptor. The noise study shall include the following: the characteristic frequency and sound level emanating from individual wind turbines and transformers; distance of the turbine or transformer from the point of reception; wind speed and, in particular, the variation of wind speed with height; air absorption based upon frequency; ground effects such as vegetation, buildings and topography including a 3 dBA penalty for sound frequencies below 300 Hz to account for coherent reflection from the ground; a 5 dBA penalty for tonal noise and a 5 dBA penalty for periodic or impulsive noise sources as defined by the Ontario noise guideline NPC-104; broadband noise created by the interaction of blade motion with turbulent air; and the cumulative effect of multiple turbines;

b) A visual impact study ~~will be undertaken~~ to ~~determine~~ demonstrate that the shadow or reflection of light coming from any part of the wind turbine on all points of reception of non-participating sensitive receptors satisfies the internationally accepted upper limit of 30 hours per year under the worst case scenario (full sun and continuous blade rotation) of shadow flicker~~the impact and mitigation measures required for the shadow or reflection of light coming from any part of the wind turbine on adjacent sensitive land uses~~;
c) A visual impact study ~~will be undertaken~~ to determine the impact and mitigation measures required for wind turbines on the landscape as ~~viewed~~ observed from key vistas, views from clusters of sensitive land uses, key sensitive receptors, Lake Ontario, Loyalist Parkway, municipal roads or other public access lands;
d) Where natural heritage features or functions are identified in the Official Plan, an ~~environmental impact study~~Environmental Impact Assessment shall be undertaken on the features and functions, and it must be demonstrated that there are no negative impacts on the natural features, or on the ecological functions;
e) Analysis of any impacts on environmental features and functions such as bird migration, raptor and bat populations and feeding activities;
f) A planning justification report, which demonstrates that the proposed wind turbines are located on lower priority agricultural lands, where possible, and which demonstrates wind turbine placement minimizes the disruption to agricultural uses and normal farming practices;
g) Where a significant amount of agricultural land is proposed to be removed from agricultural use for the development of a wind farm, Council shall require the proponent to demonstrate that the proposed wind farm is a secondary use, protects agricultural uses and infrastructure and normal farm practices, and is compatible with and will not hinder surrounding agricultural operations.
h) A safety study to determine the appropriate setback from all points of reception (participating and non-participating) of sensitive land uses,

property lines, municipal roads, shorelines and public access lands to protect against ice throw and blade throw;

i) A tree inventory to identify key woodland features and individual trees that are to be retained.

j) An archaeological assessment where turbines are proposed in areas that meet the criteria of policy 5.5.1.d. of the Official Plan.

k) A decommissioning and site rehabilitation plan which indicates the circumstances under which removal of the turbines and all related infrastructure will be undertaken. Findings from this study will be implemented through a site plan agreement.

l) A traffic impact assessment for projects on Amherst Island to address logistics of construction and labour traffic which plan to use the Amherst Island ferry.

m) An assessment of a Commercial-Scale Wind Energy Generating System's potential effects on the property values of non-participant lands to address the concerns of any adjacent and/or visually impacted property owner.

5.11.3.8 Loyalist Township may retain at the expense of the applicant independent qualified professionals to review all or any part of studies arising out of Section 5.11 or any other relevant study identified in the Official Plan.

5.11.3.9 No application for a zoning by-law amendment shall be considered by Loyalist Township until the studies arising from Section 5.11 or any other relevant study identified in the Official Plan are completed to the satisfaction of Loyalist Township.

~~5.11.3.8~~5.11.3.10 The implementing zoning by-law shall regulate provisions for Commercial-Scale Wind Energy Generating Systems governing such matters as height and setbacks from roads, sensitive land uses, lot lines and other features adjacent to a Generating System.

~~5.11.3.9~~5.11.3.11 A zoning by-law amendment to permit a Wind Energy Generating System may include a Holding provision under Section 35 of the *Planning Act* and in accordance with Section 8.5.1 of this Plan. Holding provisions shall set out conditions that must be satisfied before the Holding symbol is removed, and may include, but not be limited to, a requirement that a contract has been executed with the appropriate authority to allow the system to be connected to a transmission grid for electrical distribution and completion of an Environmental Screening Report, as defined in Ontario Regulation 116/01, that is acceptable to the Ministry of Environment.

~~5.11.3.10~~5.11.3.12 The implementing zoning by-law may include setbacks for new sensitive land uses in areas adjacent to an established Commercial-Scale Wind Energy Generating Systems. A consent or subdivision shall be prohibited unless the subject property can be spatially separated from any active Commercial-Scale Wind Energy Generating Systems to sufficiently address noise emissions.

5.11.3.13 Subject to federal and provincial requirements, and where feasible, the development of new private transmission and distribution facilities for Commercial Scale Wind Energy Systems along public right-of-ways and electricity corridors shall be located below grade and/or co-located with existing infrastructure. The development of new private transmission and distribution infrastructure within private energy projects shall be located below grade, except where environmental or site characteristics dictate otherwise.

~~5.11.3.11~~5.11.3.14 Commercial-Scale Wind Energy Generating Systems shall be subject to municipal site plan control under Section 41 of the *Planning Act* to address, at a minimum, the following issues: road access, parking, accessory buildings and structures, vegetative buffers and other landscaping, fencing, lighting, signage, topsoil retention, electrical cables and other utilities on site, the finish and colour of the exterior surface of the Commercial-Scale Wind Energy Generating System, location of external works/facilities such as but not limited to power transmission lines and electrical substations, outdoor storage, storm water management/drainage and erosion control, tile drainage, decommissioning and site rehabilitation information and any other identified impact mitigation measures. No surface of the Commercial-Scale Wind Energy Generating System shall bear any sign or commercial identification except for a small plate containing safety and warning information.

~~5.11.3.12~~5.11.3.15 The Township ~~may~~ will require proponents of Commercial-Scale Wind Energy Generating Systems to set out a Dispute Resolution Protocol, to the satisfaction of the Township, to deal with areas of potential conflict such as noise and shadow flicker complaints.

~~5.11.3.13~~5.11.3.16 If Commercial-Scale Wind Energy Generating Systems are decommissioned, the site shall be appropriately rehabilitated to the satisfaction of Loyalist Township in conformity with the decommissioning and site rehabilitation plan for a use permitted by the applicable policies of the plan. Loyalist Township may require the posting of securities for decommissioning and site rehabilitation costs.

5.11.4 Policies for Agriculture-Related Wind-Energy Generating Systems

5.11.4.1 Agriculture-Related Wind Energy Generating Systems shall be permitted as-of-right in the Rural and Agricultural designations of this Plan, as an accessory use to an existing and permitted farm or agriculture-related use.

5.11.4.2 A Wind Energy Generating System Accessory Facility shall be a permitted accessory use with an Agriculture-Related Wind Energy Generating System.

5.11.4.3 Agriculture-Related Wind Energy Generating Systems shall be subject to municipal site plan control under Section 41 of the *Planning Act*. Site plan issues to be addressed include those listed in policy 5.11.3.14.

5.11.4.4 Council may require a report from a professional engineer concerning the design of a proposed Agriculture-Related Wind Energy Generating System. The Township may retain a professional engineer to undertake an independent peer review of the design of the system at the expense of the applicant.

5.11.4.5 Agriculture-Related Wind Energy Generating Systems shall satisfy all requirements of the Ministry of the Environment and/or Ministry of Energy concerning noise attenuation and all other applicable provincial or federal requirements.

5.11.4.6 The implementing zoning by-law shall take into account the compatibility of Agriculture-Related Wind Energy Generating Systems with the surrounding land uses, as well as the safety of the system in relation to adjacent land uses.

5.11.5 Policies for Small-Scale Wind-Energy Generating Systems

5.11.5.1 Small-Scale Wind Energy Generating Systems shall be permitted as-of-right in the Rural and Agricultural designations of this Plan.

5.11.5.2 A Wind Energy Generating System Accessory Facility shall be a permitted accessory use with a Small-Scale Wind Energy Generating System.

5.11.5.3 Small-Scale Wind Energy Generating Systems shall be subject to municipal site plan control under Section 41 of the *Planning Act*.

5.11.5.4 Council may require a report from a professional engineer concerning the design of a proposed Small-Scale Wind Energy Generating System. The Township may retain a professional engineer to undertake an independent peer review of the design of the system at the expense of the applicant.

5.11.5.5 Small-Scale Wind Energy Generating Systems shall satisfy all requirements of the Ministry of the Environment and/or Ministry of Energy concerning noise attenuation and all other applicable provincial or federal requirements.

5.11.5.6 The implementing zoning by-law shall take into account the compatibility of Small-Scale Wind Energy Generating Systems with the surrounding land uses, as well as the safety of the system in relation to adjacent land uses.