ONTARIO'S DEVELOPMENT OF OFFSHORE WIND IN THE GREAT LAKES, *COMES TO A SCREECHING HALT*

Independent Study Spring 2007
University at Buffalo Law School

Written by
Chanel White

June 2007

Table of Contents

Introduction....…….. p.3

I. ONTARIO DEVELOPS ONSHORE, LARGE-SCALE, COMMERCIAL WIND PROJECTS TO MEET ITS RENEWABLE ENERGY INITIATIVE…… p.4

- **a.** ***Wind Power Capacity*……...…….. p.5**
- **b.** ***Development of Crown Land for Large-Scale, Commercial Wind Projects*…… p.5**
- **c.** ***Ontario Large-Scale, Commercial Wind Projects Face Opposition*…..... p.6**

II. ONTARIO EXAMINES THE POTENTIAL OF OFFSHORE WIND DEVELOPMENT……...….. p.8

III. PROPOSED OFFSHORE WIND DEVELOPMENT PROJECTS…….. p.9

- **a.** ***Trillium Wind I – Prince Edward County, Lake Ontario*……..……. p.10**
- **b.** ***Southpoint Power Wind – Point Pelee, Lake Erie*…….…..... p.11**

IV. MINISTRY OF NATURAL RESOURCES MORATORIUM ON ALL OFFSHORE WIND PROJECT PROPOSALS…….…... p.13

V. CURRENT CANADIAN ENVIRONMENTAL REVIEW PROCESS……. p.15

- **a.** ***Ministry of Natural Resources Control of the Crown Lakebed*…..... p.17**
- **b.** ***Ministry of Natural Resources Shared Responsibility for Fisheries and Fish Habitat with the Department of Fisheries and Oceans Canada*……... p.18**
- **c.** ***Ministry of Natural Resources Shared Responsibility for Birds and Bird Habitats with Environment Canada-Canadian Wildlife Service*……. p.21**

VI. BI-NATIONAL CONSIDERATIONS……...…… p.23

VII. CONCLUSION…….……...…… p.26

INTRODUCTION

The development of sustainable energy practices in Canada are necessary to meet global initiatives battling the effects of climate change by striking a balance between curbing pollution and meeting society's energy demands. Canada's parliamentary structure of government gives individual provinces the power to regulate environmental standards; whereas in America the regulatory system lies within the control of the federal government. Canada entered into the Kyoto Protocol, the international treaty focused on limiting the effects of climate change; however the parliamentary system required each individual province, not the federal government, to impose industry regulations to meet the Kyoto standards. As a result, the provinces set varying environmental standards and regulations including the establishment of renewable energy goals and initiatives to promote the development of renewable energy.

Like other Canadian provinces, Ontario appears to be committed to developing renewable energy opportunities to reduce the effects of climate change. In 2004, the Ontario Government set a target to increase renewable energy production to 5% (1,350 megawatts (MW)) of its electricity needs by 2007, 10% (2,700 MW) by 2010 and have 15,700 MW of installed renewable energy capacity by 2025.[1] To jump start the development of renewable energy projects the province initiated a series of renewable energy Requests for Proposals (RFPs) and by the end of 2005, the government had contracted for over 1,300 MW of clean renewable energy from wind, water, landfill gas and biogas projects.[2]

---

[1] ONTARIO ENVIRONMENTAL REGISTRY, POLICY PROPOSAL NOTICE; EBR REGISTRY NUMBER PB07E6036 *available at* http://www.ebr.gov.on.ca

[2] ONTARIO MINISTRY OF ENERGY, RENEWABLE ENERGY TARGETS *available at* http://www.energy.gov.on.ca/index.cfm?fuseaction=renewable.targets

Of the various renewable energy initiatives promoted by the Ontario government, this paper will briefly discuss the development and present status of large-scale, commercial, wind projects in Ontario, focusing on the development of commercial wind projects in Ontario's Great Lakes, Erie and Ontario. First, the paper will examine the Ontario Government's aggressive renewable energy initiative and the role of wind energy. Second, the paper will examine the potential for large-scale commercial wind development projects offshore in Ontario's Great Lakes. Third, a discussion of two large –scale commercial projects offshore, one in Lake Erie and another in Lake Ontario followed by the opposition leading to the implementation of a Ministry of Natural Resources moratorium for an indefinite period. Fourth, the paper will examine the evolving environmental process, exploring the particularities associated with the use of the Crown lakebed. Lastly, the paper outlines the unique bi-national characteristics of the Great Lakes, exploring the potential bi-national considerations of a large-scale offshore wind development project.

I. ONTARIO'S RENEWABLE ENERGY INITIATIVE AND THE ROLE OF ONSHORE, LARGE-SCALE, COMMERCIAL WIND DEVELOPMENTS

Ontario's 2010 renewable energy objective is an ambitious initiative given the complexities of any commercial development project, particularly an energy project. Ontario's total renewable energy production in 2005 was 8,150 MW of which 413 MW

was generated by wind power.[3] The Ontario Power Authority (OPA) recommended that the province develop 5,000 MW of wind projects over the next twenty years.[4]

a. Wind Power Capacity

Wind power capacity across Canada more than doubled in 2006 with a record of 1,500 MW of energy produced by wind.[5] The Canadian Wind Energy Association (CanWEA) estimates that close to 1,000 MW of wind energy are currently scheduled, for completion across Canada in 2007, approximately 450 MW produced in Quebec, 275 MW in Ontario and 135 MW in Alberta. [6]

Ontario's wind resource is concentrated around the northern and eastern shores of the Great Lakes.[7] Collectively, the Great Lakes have the potential to produce an estimated 249 gigawatts (GW) of generating power, approximately 14 GW from Lake Ontario and 68 GW from Lake Erie.[8] 20% of Ontario's energy demand could be met with wind energy.[9]

b. Development of Crown Land for Large-Scale, Commercial Wind Projects

In 2004, Ontario policy changes encouraged the development of renewable energy by permitting developers to enter into long power purchase agreements.

---

[3] AN OVERVIEW OF RENEWABLE ENERGY IN ONTARIO, revised version December 2006 *available at* http://www.ivey.uwo.ca/lawrence centre/energy/Overview_Renewable_Energy.pdf

[4] Id at 4 *see also* ONTARIO POWER SYSTEM PLANNING: SUPPLY MIX ADVICE AND RECOMMENDATIONS, December 9, 2005 *available at* http://www.powerauthority.on.ca/Page.asp?PageID=1224&SiteNodeID=127

[5] *See* Tyler Hamilton, *Ontario Takes Wind Out of Turbine*, Toronto Star, November 24, 2006

[6] Id.

[7] AN ANALYSIS OF THE IMPACTS OF LARGE-SCALE WIND GENERATION ON THE ONTARIO ELECTRICITY SYSTEM, prepared by AWS TrueWind, LLC., for CanWEA April 26, 2005

[8] *See generally* David Bradley, A GREAT POTENTIAL: THE GREAT LAKES AS A REGIONAL RENEWABLE ENERGY SOURCE (February 6, 2004) *available at* http://greengold.org/wind/documents/107.pdf

[9] *See* Tyler Hamilton, *Time's a Wastin' on Environment*, Toronto Star, February 5, 2007

Furthermore, the Crown Land Decision permitted the use of Crown Land for the development of wind farms.[10] Subject to the authority of the Ministry of Natural Resources (MNR), the use of Crown Land is governed by *the Crown Land Management Agreement*.[11] Ontario Crown Land comprises 87% of Ontario's landmass or 937,000 km^2. Of this area, the size of British Columbia, 164,000 km^2 are comprised of lakebeds and waterways, most of which is within the Great Lakes and connecting waterways.[12]

c. Ontario Large-Scale, Commercial Wind Projects Face Opposition

Thus far, the Ontario government's wind energy initiative has been largely successful, encouraging the development of large-scale commercial wind farms. However, many large-scale commercial wind developments have faced significant opposition from citizens groups including the Windfarm Action Group[13] and the Citizens Against Lake Erie Wind Turbines[14]. The development of Crown Land for wind farms is essential for meeting Ontario's renewable energy objectives.[15] Opposition to a designated use for Crown Land may be appealed to the Ontario Municipal Board.[16]

Opposition to large-scale wind developments have included complaints pertaining to the location of transmission lines and turbines near residential neighborhoods,

---

[10] Ministry of Natural Resources press release March 31, 2004 McGuinty Government Creates Renewable Energy Opportunities http://www.mnr.gov.on.ca
See generally WIND POWER DEVELOPMENT ON CROWN LAND DECISION *available at* http://www.ene.gov.ca/envregistry/020073ep.htm.

[11] *See generally* ONTARIO MINISTRY OF NATURAL RESOURCES, CROWN LAND MANAGEMENT *available at* http://www.mnr.gov.on.ca/MNR/crownland/

[12] http://www.mnr.gov.on.ca/MNR/crownland/

[13] *See generally* http://www.windaction.org/

[14] *See generally* http://www.lakeeriewindturbines.org/

[15] Ministry of Natural Resources press release March 31, 2004 McGuinty Government Creates Renewable Energy Opportunities http://www.mnr.gov.on.ca

[16] *See generally* ONTARIO MUNICIPAL BOARD *available at* http://www.omb.gov.on.ca/

precipitating Not In My Back Yard (NIMBY) complaints.[17] NIMBY complaints have forced the cancellation of at least three (3) large-scale, commercial wind projects in Ontario in 2006.[18] NIMBY complaints are typically fueled by residents concerns regarding noise, visibility and bird mortality.[19] Additionally, some complaints have referenced health and safety concerns, claiming that the noise level of a dense wind farm could exacerbate pre-existing medical conditions such as high blood pressure and cardiac arrhythmia during a person's sleep.[20] Furthermore, the opposition has raised concerns regarding the capability of large-scale commercial wind farms to produce reliable energy citing a European report by the Renewable Energy Foundation, which states that, "onshore wind projects in Britain were underperforming".[21]

Many analysts believe the solution to NIMBY complaints and reliability concerns pertaining to large-scale commercial wind developments is to site such projects offshore.[22] Typically, offshore wind developments are affiliated with ocean projects however, a 2005 study conducted by Helimax Energy, Inc., found that the winds of the Great Lakes are strong and consistent, with the potential to generate up to 47,000 MW of electricity.[23] Several large-scale, commercial wind installations have been developed in Europe and two projects are under way in the United States (Cape Wind and Long Island Wind Project). Canada's first offshore commercial wind installation project is located in

---

[17] *See* April Lindgren, *Ontario Wind Farms Creating Huge Gusts of Opposition*, CanWest News Service, September 2, 2006
[18] Id.
[19] Paul Gipe and James Murphy: ONTARIO LANDOWNER'S GUIDE TO WIND ENERGY; OSEA 2005
[20] Presentation for Kingsville Public Meeting by Dr. John D. Lee, P.Eng., PhD., October 8, 2006; *available at* http://www.lakeeriewindturbines.org/pdf/2006-10-08-Final%20Format-Kingsville-public-meetign.pdf
[21] *See* Tyler Hamilton, *Ontario Takes Wind Out of Turbine*, Toronto Star, November 24, 2006
[22] Id.
[23] ANALYSIS OF WIND POWER POTENTIAL IN ONTARIO, prepared by Helimax, Inc., for *Ontario Power Authority*, November, 2005

British Columbia just off the shores of Prince Rupert Island and is currently in the environmental review phase.[24]

II. ONTARIO EXAMINES THE POTENTIAL OF OFFSHORE WIND DEVELOPMENT

The development of the Great Lakes offshore wind energy potential has been discussed as a feasible alternative. Ontario's population is concentrated in the southernmost area of the province, along the shores of Lake Erie and Lake Ontario and the power grid transmission lines are located in close proximity to the population. Considering these factors offshore wind development in the Great Lakes appears to be a feasible alternative. Even in 2004, the McGuinty government predicted Ontario wind development would occur in and around the Great Lakes.[25] Energy Probe, a Toronto energy watchdog group, predicts that the wind industry will be forced to focus wind development offshore because offshore turbines experience greater wind speeds and present fewer noise, health and safety concerns, yet still can be located in close proximity to the grid transmission lines. [26] Furthermore, it is easier to transport large turbines and blades via water and thereby install larger units.

Typically, offshore wind developments are associated with ocean projects and in such instances would present many advantages. They would be less obtrusive, having minimal visibility issues, would be far enough from shore to alleviate noise concerns and the health and safety issues previously mentioned would be mitigated. Avian concerns would still be present and sufficient migratory bird studies would likely be required.

[24] NaiKun Wind Energy Group *available at* http://www.naikun.ca/
[25] Id.
[26] Tyler Hamilton, *Ontario takes wind out of turbine*, Toronto Star, November 24, 2006

However, large-scale, commercial developments off the shores of the Great Lakes may not always boast the same advantages. In many instances, the wind installations would be located at a significantly closer distance to shore than those of an ocean project and therefore visible from shore. For example, the Southpoint Power Wind project discussed herein is proposed a mere kilometer to kilometer and a half from the shores of Leamington and Kingsville, Ontario.[27]. Avian concerns will also be present and may be more relevant in a Great Lakes offshore commercial wind installation. As Tom Adams of Energy Probe stated "the dilemma for Ontario is the best wind sites also happen to be in the picturesque cottage country on the shores of the Great Lakes…"[28]

The concentration of Ontario's population, the location of the transmission lines, the strong consistent winds of the Great Lakes, make the siting of a large-scale, commercial wind project off the shores of Lake Ontario and Erie seem logical and perhaps even inevitable. Even the best sites for large-scale wind developments, are intertwined with numerous considerations and concerns that could potentially cripple a project.

III. PROPOSED OFFSHORE WIND DEVELOPMENT PROJECTS

At the time of the writing of this paper, two large-scale commercial offshore wind installations have been formally proposed in Ontario. A Lake Ontario project, Trillium Power Wind I; and a Lake Erie project Southpoint Power Wind.

---

[27] PROJECT DESCRIPTION FOR ENVIRONMENTAL ASSESSMENT: LAKE ERIE WIND POWER PROJECTS, prepared by Southpoint Wind Power, September 27, 2006 at p.4.

[28] *See* April Lindgren, *Ontario Wind Farms Creating Huge Gusts of Opposition*, CanWest News Service, September 2, 2006

a. Trillium Power Wind I – Prince Edward County, Lake Ontario

A Lake Ontario offshore project, proposed by Trillium Power Energy Corporation, a Toronto based company producing renewable energy since the 1980's. The project, coined Trillium Power Wind I, is considered one of the most ambitious wind projects in North America. It consists of 140 turbines, generating 5 MW of power each, yielding a combined 710 MW of renewable energy.[29] The Trillium project is located just south of Belleville, Ontario, approximately 15 kilometers off the shores of Prince Edward County, Ontario between Toronto and Montreal.[30]

Source: Google Maps *available at* http://maps.google.com/maps?f=q&hl=en&q=leamington,+ontario&ie=UTF8&ll=42.079878,-82.54303&spn=0.913266,1.851196&z=9&om=1

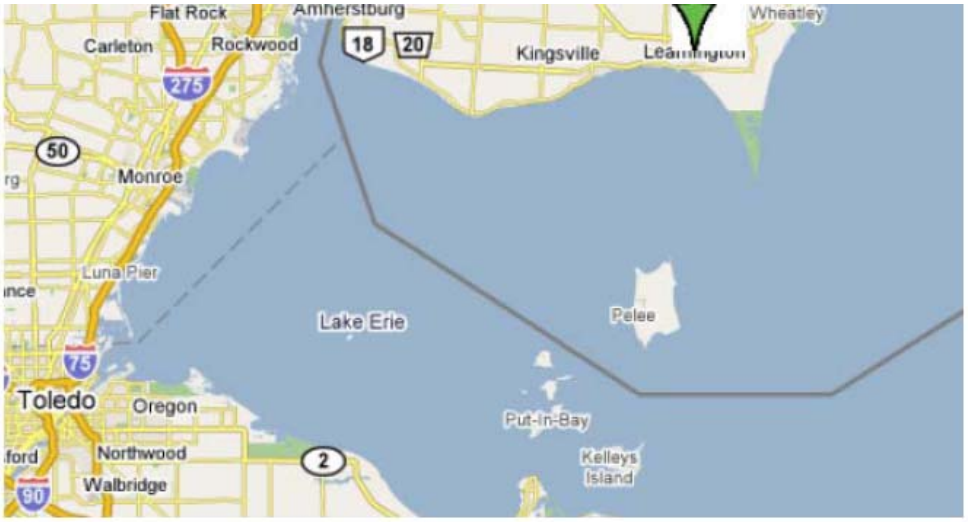
According to an interview with the Toronto Star in May 2006 John Kourtoff, President of Trillium Power Energy Corp., aspires to complete the project by 2010 to contribute to Ontario's 2,700 MW target.[31] Kourtoff estimates that the project will cost approximately $1 billion dollars but says that the financial backers are already in place.[32]

[29] Tyler Hamilton *Ontario takes wind out of turbine*, Toronto Star, November 24, 2006
[30] Id.
[31] Tyler Hamilton, *Wind project planned in lake*, Toronto Star, May 31, 2006
[32] Id.

The company must complete an environmental assessment and negotiate a long-term power supply agreement with the Ontario Power Authority.[33]

b. Southpoint Power Wind – Essex County, Lake Erie

Further south approximately 1-1.5 kilometers off the shores of Lake Erie, a phased wind project totaling 120 turbines divided between three adjacent towns was proposed.[34] Specifically, for an area off the shores of Leamington, Union and Kingsville collectively Essex County.[35]



Source: Google Maps *available at* http://maps.google.com/maps?f=q&hl=en&q=leamington,+ontario&ie=UTF8&ll=42.079878,-82.54303&spn=0.913266,1.851196&z=9&om=1

The developer, Southpoint Power Wind (hereinafter "Southpoint"), is a division of 1037195 Ontario Ltd., which is one of a group of companies owned and operated by

[33] Id.
[34] PROJECT DESCRIPTION FOR ENVIRONMENTAL ASSESSMENT: LAKE ERIE WIND POWER PROJECTS, prepared by Southpoint Wind Power September 27, 2006 at p.4
[35] Id.

the Liovas family.[36] Phase I of the proposed project planned for the construction of 9.99 MW (five turbines) at each adjacent site.[37] The combined energy output of the three locations upon completion of Phase I in October of 2008 would be 29.97 MW.[38] Each additional phase of the project would duplicate the initial phase by constructing an additional 9.99 MW at each location until the maximum 120 turbines were erected.[39] In September 2006, Southpoint was in the process of securing the necessary municipal easements to connect to the power grid.[40]

The project met fierce opposition from citizen organizations including *Citizens Against Lake Erie Wind Turbines* (CALEWT)[41] and the recently formed *Essex County Wind Action Group* (ECWAG).[42] In addition to opposition from concerned citizens, the Walpole aboriginal community opposed the project, laying claim to the Lake Erie waters of the project site.[43] The newly formed Essex County Wind Action Group claims to be a proponent of sustainable energy while vehemently opposing the development of a large-scale commercial wind anywhere in Essex County.[44] More specifically, issues raised at a Kingsville public meeting on June 20, 2006 included concerns pertaining to noise and vibration, the shadow flicker from the rotating blades, the danger of ice being thrown from the blades, visual effects, and the lack of restriction as to the location of the turbines.[45]

---

[36] Id. at 5. *The Liovas' family has been operating family businesses in the Leamington area since 1964. Leamington is their hometown.*
[37] Id. at 4
[38] Id.
[39] Id.
[40] Id. at 6
[41] CITIZENS AGAINST LAKE ERIE WIND TURBINES *see generally* http://www.lakeeriewindturbines.com/
[42] ESSEX COUNTY WIND ACTION GROUP *see generally* http://www.ecwag.org/
[43] Brian Cross, *Province kills lake wind farm: Waters of Kingsville, Leamington can't be used,* Windsor Star, October 4, 2006
[44] [44] ESSEX COUNTY WIND ACTION GROUP *see generally* http://www.ecwag.org/
[45] Kingsville Report to Planning Committee, meeting of June 20, 2006

Ultimately, the highly controversial project resulted in the imposition of an Ontario Ministry of Natural Resources issuance of a province wide moratorium on all offshore wind power projects in the Great Lakes.[46] The MNR imposed a minimum one (1) year moratorium on all offshore wind proposals on November 22, 2006[47] and recently the municipality of Leamington imposed a similar moratorium.[48]

IV. MINISTRY OF NATURAL RESOURCES MORATORIUM ON ALL OFFSHORE WIND PROJECT PROPOSALS

The moratorium is in effect for a minimum of one year but could potentially be indefinite.[49] At the time of the writing of this paper there was not a specific environmental review process in place for large-scale commercial offshore wind projects. The Ministry of Natural Resources like, other provincial and federal agencies have procedures and review processes in place for similar onshore projects. In October 2006, prior to, the moratorium being imposed the Ministry of Natural Resources released a draft guideline to ensure that the fisheries and fish habit values are considered during the review of proposed wind power development in or near water.[50] The *Guideline to Assist in the Review of Wind Power Proposals in or Near Water, Potential Impacts to Fisheries* (Fisheries Guideline) presumably to address the specific fisheries concerns associated

[46] Deferral of Off-shore Wind Power Development notice found at http://www.extranet.mnr.gov.on.ca/renewable/windpower/notice.html further confirmed by March 16, 2007 telephone interview of Renewable Energy, Policy Advisor, Sharon Brickman of the Ministry of Natural Resources.
[47] Id.
[48] WIND FARMS FACE MORATORIUM: LEAMINGTON, ONTARIO, BANS WIND ENERGY PROJECTS FOR ONE YEAR, May 16, 2007 *available at* http://www.wind-watch.org/news/2007/05/16/leamington-ontario-bans-wind-energy-projects-for-one-year/
[49] Tyler Hamilton, *Wind project planned in lake*, Toronto Star,(May 31, 2006
[50] GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS IN OR NEAR WATER: POTENTIAL IMPACTS TO FISHERIES (DRAFT OCTOBER 2006) at p.3

with offshore commercial wind development.[51] Simultaneously, the Ministry of Natural Resources created a similar, draft guideline focused on birds, *The Guideline to MNR Staff in the Review of Wind Power Proposals: Potential Impacts to Birds and Bird Habitats* (Avian Guideline). This Guideline is not specific to the development of offshore wind projects but rather to all wind projects.[52] Prior to the moratorium and the release of the Draft Guidelines there was not a specific review approach to large-scale commercial wind projects located offshore. Clearly, the Ministry of Natural Resources recognized the necessity to consider the fisheries and fish habitat, thereby developing a review for the fisheries.[53] The purpose of the Draft Guidelines is to establish a consistent, province wide review process for the development of wind projects while minimizing the potential adverse effects on the wildlife.[54] The issuance of the moratorium prevents the Ministry of Natural Resources from accepting any proposals for offshore development. Presumably the Ministry sought to finalize the environmental reviews necessary for such projects or perhaps the political pressure from citizen action groups have caused the agency to proceed with caution.

Ministry of Natural Resources Renewable Energy Policy Advisor, Sharon Brickman described the moratorium as an action fueled more by "political controversy" than environmental concerns. Ms. Brickman indicated that the agency was willing to work through a yet to be established environmental review process step by step with

[51] GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS IN OR NEAR WATER: POTENTIAL IMPACTS TO FISHERIES (DRAFT OCTOBER 2006)
[52] *See generally* GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS: POTENTIAL IMPACTS TO BIRDS AND BIRD HABITATS (DRAFT OCTOBER 2006)
[53] *See generally* Kingsville Report to Planning Committee, meeting of June 20, 2006
[54] *See generally* GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS IN OR NEAR WATER: POTENTIAL IMPACTS TO FISHERIES (DRAFT OCTOBER 2006) *and also* GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS: POTENTIAL IMPACTS TO BIRDS AND BIRD HABITATS (DRAFT OCTOBER 2006)

experienced developer, however the political outcry regarding the Southpoint project (the Lake Erie project) was considerable.[55] Southpoint, she explained is a small family operation that may have lacked the "where withal" to adequately present and manage the sensitive public relations necessary for large-scale commercial offshore wind project.[56] Ms. Brickman further clarified that any offshore wind development proposals submitted to the MNR with regard to the Southpoint project, have been Phase I proposals, limited to permit requests to test the viability of potential offshore development sites.[57] These proposals, she explained, are distinguished from Phase II "project proposals" for the purposes of environmental review.[58] The moratorium affects all proposals related to the development of any offshore wind project, commercial or otherwise.[59] The moratorium includes the preliminary proposals necessary to test the viability of a proposed development site.[60] Regardless of the events that triggered the Ontario Ministry of Natural Resources to impose the moratorium, it is presumed that the MNR and other provincial and federal agencies are utilizing this time to further study the environmental impacts of large-scale commercial wind projects in the Great Lakes to continue developing the programmatic environmental review process referenced as the *Wind and Water Power Projects in Ontario: The Ministry of Natural Resources "Guide to Coordinated Environmental Approval Processes"*.

[55] Telephone Interview of Ministry of Natural Resources: Renewable Energy Policy Advisor, Sharon Brickman, March 16, 2007
[56] Id.
[57] Id.
[58] Id.
[59] Id.
[60] Id.

V. CURRENT CANADIAN ENVIRONMENTAL REVIEW PROCESS

The moratorium issued by the Ministry of Natural Resources was an exercise of regulatory authority pursuant to the Public Lands Act.[61] More specifically, by enacting the moratorium the agency was exercising its duty to the province pursuant to the Crown Land Management Program.[62] The Great Lakes lakebeds are Crown land subject to the regulation of the Ministry of Natural Resources.[63] The Crown Land Management Program outlines the ministry's mission "to contribute to the environmental, social and economic well-being of the province by providing for the orderly use and sustainable development of Ontario's Crown land." [64]

Various Federal approvals would also be required for a large-scale commercial wind development. A federal environmental assessment would be required pursuant to the *Canadian Environmental Assessment Act (CEAA)* for any project that might have a possible effect on Navigable waterways.[65] The Canadian Wind Energy Association (CanWEA) has released a comprehensive list of federal and provincial agencies that may be required to review and approve certain components of a wind development project and the specific instances in which such reviews may be triggered.[66] The attached appendices are not specific to the development of large-scale commercial wind farms but rather wind power facilities generally, that may include one or wind turbines.[67] The

---

[61] *See generally* PUBLIC LANDS ACT AND THE ONTARIO MINISTRY OF NATURAL RESOURCES CROWN LAND MANAGEMENT *available at* http://www.mnr.gov.on.ca/MNR/crownland/
[62] Id.
[63] *See generally* PUBLIC LANDS ACT AND THE ONTARIO MINISTRY OF NATURAL RESOURCES CROWN LAND MANAGEMENT *available at* http://www.mnr.gov.on.ca/MNR/crownland/
[64] INTRODUCTION TO CROWN LAND MANAGEMENT *available at* http://www.mnr.gov.on.ca/MNR/crownland/p8003392.html
[65] Appendix 1 attached hereto;
Source:http://www.canwea.ca/images/uploads/File/Wind_Energy_Policy/Municipal_Policy/Rural_Municipalities_Review_and_Approval_Processes_-_Final.pdf
[66] Id.
[67] Id.

focus of this paper is on the Ontario Ministry of Natural Resources approval process and the moratorium issued regarding offshore wind development.

a. Ministry of Natural Resources Control of the Crown Lakebed

In Ontario, all activities involving the Crown lakebed are subject to the "Beds of Navigable Waters Act" R.S.O. 1990, c.4 B.4.[68] Wind development on Crown Land is specifically, governed by Public Lands Act § 4.10.04.[69] Any use of Crown land either for testing or for development is subject to rental fess pursuant to Public Lands Act § 6.01.02.[70] The moratorium imposed by the Ontario Ministry of Natural Resources indefinitely halts all Ontario offshore wind development in Lake Ontario and Lake Erie.[71]

The MNR approval process for any wind power development project on Crown land is composed of a two-phase process: Phase I is required to test potential sites for wind power potential and subsequently, Phase II is the cumulative project proposal.[72] The moratorium issued by the Ministry of Natural Resources prevents the agency from accepting any Phase I proposals to test potential sites within Lake Erie or Lake Ontario thus preventing the agency from accepting any Phase II project proposals to construct and operate any wind development within the either Lake Erie or Lake Ontario.[73]

---

[68] "BEDS OF NAVIGABLE WATERS ACT" R.S.O. 1990, c.4 B.4

[69] PUBLIC LANDS ACT § 4.10.04

[70] "PUBLIC LANDS ACT 6.01.02 STATES THE CROWN LAND RENTAL POLICY AND FEES.

[71] Deferral of Off-shore Wind Power Development notice found at http://www.extranet.mnr.gov.on.ca/renewable/windpower/notice.html further confirmed by telephone interview of Ministry of Natural Resources: Renewable Energy Policy Advisor, Sharon Brickman, March 16, 2007

[72] GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS IN OR NEAR WATER: POTENTIAL IMPACTS TO FISHERIES (DRAFT OCTOBER 2006) at p.3; *see also* GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS: POTENTIAL IMPACTS TO BIRDS AND BIRD HABITATS (DRAFT OCTOBER 2006) at p.9 & 10

[73] Telephone interview of Ministry of Natural Resources: Renewable Energy Policy Advisor, Sharon Brickman, March 16, 2007

Large-scale commercial, onshore wind projects require the review of numerous federal and provincial agencies and conceivably those same agencies would be implicated in the development of an offshore wind project in addition to the considerations pertaining to fisheries and navigable water. Thus far, there is no standardized, programmatic review process in place for large-scale commercial wind developments offshore. The issuance of the moratorium halts any project reviews previously underway and will likely have a significant impact on the further and final development of the Draft Guidelines currently proposed by the MNR.[74]

b. Ministry of Natural Resources Shared Responsibility for Fisheries and Fish Habitat with the Department of Fisheries and Oceans Canada

In addition to overseeing Crown land the Ontario Ministry of Natural Resources shares the responsibility for fisheries and fish habitat with the Federal Department of Fisheries and Oceans Canada (DFO).[75] The Draft Guidelines issued by the MNR indicate that the agency is currently developing a coordinated review and approval process for wind power projects entitled the *Wind and Water Power Projects in Ontario: The Ministry of Natural Resources Guide to Coordinated Environmental Approval Processes*.[76]

According to the *Draft Ministry of Natural Resources Guideline to Review Near Shore or Offshore Projects*, Phase I of review required by the Ontario Ministry of Natural

[74] The GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS: POTENTIAL IMPACTS TO BIRDS AND BIRD HABITATS (DRAFT OCTOBER 2006) *See* EBR Registry Number PB0756036 *available at* http://www.ebr.gov.on.ca

[75] GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS IN OR NEAR WATER: POTENTIAL IMPACTS TO FISHERIES (DRAFT OCTOBER 2006)

[76] Id. at 3 *see also* DRAFT GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS: POTENTIAL IMPACTS TO BIRDS AND BIRD HABITATS (DRAFT OCTOBER 2006)

Resources would require an application to test potential wind development sites.[77] During this phase of the proposal, the MNR would initiate a coordinated review with the Federal Department of Fisheries and Oceans by forwarding the application and all available fish and fish habitat information to the DFO.[78] The MNR then coordinates a meeting with the MNR, DFO and the project proponent.[79] Ultimately, the Ministry of Natural Resources reviews the plans for wind power testing to assess the potential impacts of the testing facilities on fisheries management objectives and recreational, commercial, and bait fisheries, and to ensure these impacts have been addressed.[80]

Phase II, is commenced upon the approval and subsequent testing permitted in phase I. The MNR reviews the proposal for the construction and operation of a wind development project. The MNR generally will not lease Crown land until the fisheries impacts have been resolved to the agency's satisfaction. Furthermore, if a Canadian Environmental Assessment Agency review has been triggered the MNR will not dispose of a right to Crown land until the DFO or Responsible Authority provides written assurance that the at risk species or habitat have been protected or that HADD's (harmful alterations, disruption or destruction of fish habitat) *subsection 35(1) of the Fisheries Act* were authorized.[81]

The Department of Fisheries and Ocean's is responsible for ensuring that potential fish habitat impacts are identified and mitigated during the construction, operation and decommissioning phases of wind power facilities; this responsibility is

[77] Id. at 3
[78] Id. at_
[79] Id. at
[80] Id. at 4.
[81] *See generally* Id. at 5.

applicable during both testing and operational stages of a project.[82] The DFO's role in this regard is not implicated in the overall environmental review process until Phase II when a CEAA review may be triggered.[83] During Phase I, the DFO is merely notified by the MNR and given the option to participate in prescreening meeting with the project proponent and the MNR; should the DFO not participate, the MNR encourages the proponent to seek advice on fish and fish habitat from the DFO.[84]

The MNR concedes that limited information is available regarding the effects of large-scale commercial offshore development in the Great Lakes environment.[85] The Ontario Ministry of Natural Resources' *Draft Guideline to Assist MNR Staff in the Review of Wind Power Proposals In or Near Water: Potential Impacts to Fisheries* has in no way been finalized and in fact is likely to change considerably upon the conclusion of the moratorium. In 2005, Glenn Forward of the MNR completed a literature review on "The Potential Effects of Offshore Wind Power Facilities on Fish and Fish Habitat".[86] Forward concluded that little is known about the effects of wind development in fresh water systems because up to this point, offshore wind development had been concentrated in marine/ocean environments. For this reason the report focuses on a review of the effects of wind development in freshwater lake settings and acknowledges that the findings are somewhat transferable to freshwater systems like the Great Lakes.[87]

---

[82] Id. at p.5
[83] Id. at 6
[84] GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS IN OR NEAR WATER: POTENTIAL IMPACTS TO FISHERIES (DRAFT OCTOBER 2006) at p.5
[85] Telephone interview of Ministry of Natural Resources: Renewable Energy Policy Advisor, Sharon Brickman, March 16, 2007
[86] Glenn Forward, THE POTENTIAL EFFECTS OF OFFSHORE WIND-POWER FACILITIES ON FISH AND FISH HABITAT, February 2005
[87] *See generally* Glenn Forward, February 2005

The MNR appears to have created the Draft Guideline based on this very presumption. Yet the moratorium will likely affect the Final Guideline.

c. Ministry of Natural Resources Shared Responsibility for Birds and Bird Habitats with Environment Canada-Canadian Wildlife Service

The impact of wind energy projects on birds and bird habitats has been researched around the world; however, relatively few studies have been conducted in Canada and Eastern United States.[88] Specifically information regarding bird migration, turbine lighting and the potential impacts of offshore development are incomplete.[89]

The Ontario Ministry of Natural Resources shares the responsibility for birds and bird habitats with Environment Canada-Canadian Wildlife Service (EC-CWS).[90] Environment Canada is the federal agency responsible for the protection of migratory birds and species at risk (SAR).[91] This agency has responsibilities pursuant to the federal *Species at Risk Act* and administers the *Migratory Birds Convention Act (MBCA).*[92] A federal environmental assessment under the CEAA would be triggered where migratory birds and federal species at risk may be affected by a wind development project.[93] The MNR is specifically responsible for any avian species not covered by the MBCA; this includes species scheduled as game birds, specially protected birds (raptors) and specially

[88] Id. at p.3
[89] Id.
[90] GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS: POTENTIAL IMPACTS TO BIRDS AND BIRD HABITATS (DRAFT OCTOBER 2006) at p.3
[91] Id. at 4
[92] Id.
[93] Id.

protected birds other than raptors pursuant to the *Fish and Wildlife Conservation Act (FWCA).*[94]

Similar to the draft guideline released by the MNR in October 2006 focusing on the potential impacts of offshore wind development on fisheries and fish habitat, the agency also released a draft guideline pertaining to birds and bird habitats, the *Draft Guideline to Assist MNR Staff in the Review of Wind Power Proposals: Potential Impacts to Birds and Bird Habitats* (The Avian Guideline). [95] However, the Avian Guideline is not specific to offshore wind projects.[96]

The Ministry of Natural Resources has adopted a detailed summary of the current knowledge of potential impacts of wind energy projects on birds from Environment Canada-Canadian Wildlife Service entitled *Wind Turbines and Birds: a background review for environmental assessment (EC-CWS 2005).*[97] On January 9, 2007 the Draft Avian Guideline was posted by the MNR for a 90 day comment period.[98] Comments regarding the draft Avian Guideline were to be received by the MNR no later than April 9, 2007.[99] Relevant stakeholders and agencies have also been asked to comment.[100] At the time of the writing of this paper a final Avian Guideline had not been released.

The draft guidelines issued by the MNR in October 2006 have numerous similarities being that both emphasize a dual agency (provincial and federal) two phase

---

[94] Id at p.5 *see* schedules 3, 7, and 8 of the FWCA.
[95] *See generally* GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS: POTENTIAL IMPACTS TO BIRDS AND BIRD HABITATS (DRAFT OCTOBER 2006)
[96] Id.
[97] Id.
[98] *See* EBR Registry Number PB0756036 *available at* http://www.ebr.gov.on.ca
[99] Id.
[100] Id.

environmental review process.[101] However, a comparison of the Fisheries Guideline and the Avian Guideline demonstrate that the Avian Guideline contains more detail than the companion Fisheries Guideline.[102]

There is limited information pertaining to the Ontario Ministry of Natural Resources objectives for the moratorium. Presumably, the MNR is using the moratorium to review and revise the Draft Guidelines referred to here. Based on conversations with Ontario Ministry of Natural Resources representatives and Canadian Environmental Assessment Agency representatives it is unclear what the true purpose of the moratorium is. Presumably the time is being utilized to further the development of Ontario's programmatic review for large-scale commercial, offshore wind developments in Lake Erie and Lake Ontario.[103] Furthermore, the representatives concurred there is no formal consideration of a joint bi-national review or consideration pertaining to large-scale commercial, offshore wind development proposals for the Great Lakes.

VI. BI-NATIONAL CONSIDERATIONS

The Great Lakes are an invaluable natural resource that the surrounding communities have gone to great lengths to protect. Over the decades, numerous agreements and commissions have been created to govern and protect the water quality of the Great Lakes. Article X § I of the United States Constitution prohibits individual states from entering into treaties with foreign nations.[104] This limitation prevents the

[101] *See generally* GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS IN OR NEAR WATER: POTENTIAL IMPACTS TO FISHERIES (DRAFT OCTOBER 2006) *and also* GUIDELINE TO ASSIST MNR STAFF IN THE REVIEW OF WIND POWER PROPOSALS: POTENTIAL IMPACTS TO BIRDS AND BIRD HABITATS (DRAFT OCTOBER 2006)
[102] Id.
[103] Referred to in the Draft Guideline documents as the Wind and Water Power Projects in Ontario: The Ministry of Natural Resources' Guide to Coordinated Environmental Approval Processes'
[104] U.S. Const. art. X, § 1

Great Lakes states from entering into any legally binding agreement with their Canadian counterparts. The Great Lakes Commission (hereinafter the "Commission") is the only organization that has been granted a statutory mandate by Congress.[105] The Commission is comprised of the eight Great Lakes States and two associate members, Ontario and Quebec.[106] Through collective legislative action the state members were granted congressional consent through Public Law 90-419.[107]

The International Joint Commission (hereinafter "IJC") is the bi-national organization that monitors transboundary agreements made pursuant to the 1909 Boundary Waters Treaty. The IJC pursues the common good of both the United States and Canada by acting as an independent and objective advisor to the two governments.[108] The IJC rules on project applications affecting boundary or transboundary waters and may regulate the operation of such projects.[109] It assists the two governments in protecting the transboundary environment through the implementation of the Great Lakes Water Quality Agreement, and alerts governments to emerging issues along the boundary that may give rise to bilateral disputes.[110] The IJC is specifically concerned with the water quality and flow of water within the Great Lakes and Article 10 of the 1909 Boundary Waters Treaty provides that any questions or matters of difference arising between the two governments involving the rights, obligations, or interests of either the U.S. or Canada may be referred for decision to the IJC upon the consent of each party.[111]

---

[105] THE GREAT LAKES BASIN COMPACT, *available at* http://www.glc.org/about/glbc.html
[106] Id.
[107] PUBLIC LAW 90-419 THE GREAT LAKES BASIN COMPACT *available at* www.glc.org/about/glbc.html
[108] International Joint Commission mission statement *available at* http://www.ijc.org
[109] Id.
[110] Id.
[111] Boundary Waters Treaty of 1909, Act Jan. 11, 1909, 36 Stat. 2448 *available at*

The IJC has not been petitioned by the U.S. or Canada to become involved in the development of offshore wind energy in the Great Lakes. Therefore, the proposed offshore developments in Ontario are only subject to regulation of the Canadian and Ontario governments. Similarly, offshore wind development projects proposed in U.S. jurisdictions are not required by any Great Lakes entity or organization to submit to a review at this time. However, if further Canadian or American research as to the effects of offshore wind development on the Great Lakes demonstrates that such development will have an effect on the water quality and flow of those waters the IJC could become involved pursuant to Article 10 of the Boundary Waters Treaty.

The proposed projects are physically located on the Canadian side of the Great Lakes international U.S. – Canada border. However, the Trillium Wind I project proposed to be 15 km off the shores of Prince Edward County in Lake Ontario is just a short from the U.S. border.[112] It is not clear whether there would be any visibility impacts in the U.S. regarding this project. Even if there is an impact, the current doctrine governing the Great Lakes addresses issues of water quality and water flow and not cross border visibility. While there is potential for a coordinated review of cross-border projects where the laws of both countries are implicated, in an area where the laws of only one country are implicated there does not appear to be any authority conveying cross-border or bi-national standing to a party outside of the development site jurisdiction.

[112] *Refer to* inserted map p.10 - The Trillium Wind I Project; *see also* Tyler Hamilton, *Ontario takes wind out of turbine*, Toronto Star, November 24, 2006

VII. CONCLUSION

Given the limited information pertaining to the moratorium itself one cannot conclude for certain, what the Ontario Ministry of Natural Resources expects to accomplish with the imposition of this moratorium. Based on conversations with Ministry staff and the limited information publicly available regarding the Ontario Ministry of Natural Resources moratorium, it appears that the agency intends to organize and eventually release an environmental review process specifically focused on the development of large-scale commercial, offshore wind projects in the Great Lakes with the ultimate goal of establishing a province wide coordinated review. However, issues regarding the imposition of any limitations of future projects, the consideration of engaging any of the bi-national groups specifically concerned with the Great Lakes and whether any consideration of the States that share Lake Ontario and Lake Erie with the province of Ontario remain unresolved. At this juncture Ontario does not have an environmental review process for offshore wind development in place. In fact all offshore wind development is at a complete standstill until the Ministry of Natural Resources lifts the moratorium. Furthermore, it does not appear that the Ministry of Natural Resources is making a formal effort to engage any bi-national groups or even consider the cross border implications of a large-scale commercial, offshore development in Lake Ontario and Erie.

Appendix 1 - Approval Bodies for Wind Farms in Ontario

This appendix provides a list of all the reviews and approvals potentially required by a wind farm being built and operated in Ontario. Not every review on this list will be required for every wind farm. The third column identifies the specific situations that will trigger each review body to become involved.

In addition, during both construction and operation, a wind farm is subject to the same strict health and safety requirements as any other electrical generating station in the province, under the Ontario Health and Safety Act and the Electrical Safety Association codes.

Approval Requirement	**Departments or Agencies Involved**	**Trigger for review**
FEDERAL		
1. Screening in accordance with the requirements of the *Canadian Environmental Assessment Act*	Canadian Environmental Assessment Agency Natural Resources Canada (Responsible Authority (RA)) Fisheries and Oceans Canada as RA to be confirmed Environment Canada Transport Canada	Construction on Federal land Application for federal Wind Power Production Incentive Possible effect on Navigable waterways
2. *Fisheries Act* subsection 35(2) authorization	Fisheries and Oceans Canada	Possible effect on fished waters
3. Blasting Permit near fisheries	Environment Canada	Possible effect on fished waters
4. *Navigable Waters Protection Act* permit	Transport Canada	Possible effect on Navigable waterways
5. Lighting scheme	Transport Canada	Any structure of taller than 90m above ground level (AGL) but below 150 m AGL
6. Aeronautical safety	NAV Canada	Any structure of taller than 90m AGL but below 150 m AGL

Approval Requirement	Departments or Agencies Involved	Trigger for review
PROVINCIAL		
1. Environmental screening in accordance with the requirements of Ontario Regulation 116/01 and Guide to Environmental Assessment Requirements for Electricity Projects ** Wind turbine installations ≥ 2 MW – Category B – Environmental Screening Process	Ministry of the Environment (MOE)	Wind farm combined capacity of greater than 2MW
2. Phase 1 & 2 archaeological survey	Ministry of Culture	Wind farm capacity of greater than 2MW
3. Class environmental assessment in accordance with Class Environmental • Assessment for Minor Transmission Facilities • Certificate of Approval for noise evaluation on a per turbine basis per MOE S232 • > 50kV transmission line > 2 km	Ministry of the Environment (MOE)	Transmission lines between 115kV & 500kV and longer than 50km Transmission lines greater than 500kV and longer than 2km.
4. Land Lease Option Agreement with Crown (Crown Land Disposition)	MNR (Ministry of Natural Resources)	Siting on Ontario MNR land
5. Disposition of Crown lands – wind • Class EA in accordance with the MNR *Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects for wind resource assessment* • Class EA in accordance with the MNR *Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects for wind farm construction* • Aboriginal consultation process	Ministry of Natural Resources (MNR)	Siting on Ontario MNR land
6. Public consultation for disposition of wind rights in Conservation Authority lands	Regional Conservation Authority	Siting within Conservation area

130 rue Slater Street, Suite 750, Ottawa, Ontario, K1P 6E2
Phone: 1-800-922-6932 or (613) 598-4658
Fax: 613-594-8705
www.canwea.ca info@canwea.ca

Approval Requirement	Departments or Agencies Involved	Trigger for review
7. Entrance construction permit	Ministry of Transportation (MTO)	Entrance/egress onto a provincial highway
8. Section 92 *Ontario Energy Board Act* "Leave to Construct"	Ontario Energy Board	Transmission facility over 50kV
9. Generator's License	OEB (Ontario Energy Board)	All generation facilities greater than 500 kw
10. Finalized System Impact Assessment & connection agreement	IMO (Independent Market Operator)	Combined capacity of greater than 10MW
11. Customer Impact Assessment (CIA) to determine the impact of new generation connection on existing transmission customers	Grid Operator	Combined capacity of greater than 10MW
12. Construction Cost Recovery Agreement, (CCRA), to recover costs to grid operator of changes to allow connection.	Grid Operator/OEB	Any generation facility connecting to the existing distribution or transmission grid.
13. ESA site approval	Electrical Safety Association	Any generation facility requires site approval for the design of generation (wind turbine) and site installation.

Appendix 2 - Possible Municipal Approvals Required

This appendix provides an overview of stages at which municipal review and approval may be required. The list should not be taken to imply that every stage listed below is required in all counties or municipalities. In reality, the specific requirements in each case will be determined by the municipality involved in accordance with its overall strategy.

Document	Aspects for approval	Typical information
1. County/Regional Official Plan Amendment	Allow wind farms and their ancillary structures as an accepted use of land within the county	This is non-wind farm specific, allowing wind turbines to be considered an acceptable land use.
2. County/Regional planning act consent	Leases of over 21 years duration on property with wind turbines or ancillary structures (switching station or transformer station)	Wind farms typically have a life of 30+ years, so planning act consent may be sought.
3. Municipal Zoning Amendment Bylaw	Overall effect of wind farm on the land and surroundings	Specific to the wind farm. This review the overall effect of the project. Much of the information will be within the provincial environmental review report
4. Municipal Site Plan Agreement	Number, height and location of turbines. Access roads and lighting, municipal services, if required	The information required is defined by the municipality
5. Municipal Building permits	Foundation detail for turbines and any buildings	The information required is defined by the municipality
6. Municipal approval for temporary met tower	Height and location (lighting will proscribed by Transport Canada)	The information required is defined by the municipality
7. Roads and Right of Way use agreement (County or municipal)	Routing, pole height and span of distribution/transmission lines	Depending on the voltage and capacity of the lines, the pole height and spacing and setback from roads will vary.