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**PLANNING & ZONING FOR WIND POWER IN
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PLANNING & ZONING FOR WIND POWER IN NEW YORK

Patricia E. Salkin and Michael Donohue*

Green energy may be taking on a new appreciation given the rapid rise in energy costs following Hurricane Katrina in August 2005. Utilizing wind power as a renewable energy source has become a popular and, at times, a controversial topic, as the nation looks towards supplementing its oil consumption with alternative sources of energy. This nationwide interest has resulted in a boon for the wind power industry resulting in over six billion dollars invested and a 500% increase in the amount of generating capacity from 1997-2003.¹ As interest in wind power grows, the technology supporting this energy option has evolved to the point where a modern 1.5 megawatt (MW) turbine can supply over 400 homes with power for a year, and newer 2-3 MW turbines are becoming available with 5 MW models currently in testing.² Many municipalities across the country have adopted wind energy ordinances to specifically allow for wind farms, subject to various types of local land use controls.³

In April 2004, the American Planning Association (APA) adopted a Policy Guide on Energy, noting that to create sustainable communities, the country must not only increase energy conservation but must also increase renewable energy production.⁴ The APA urges planners to “work with utility providers to plan for the land-use and infrastructure requirements of renewable energy production such that they only minimally impact the environment.”⁵

The New York Public Service Commission (PSC) has recently developed a renewable portfolio standard that requires 25% of the State’s

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energy to generate from renewable sources, setting the stage for substantial wind farm development.⁶ A study commissioned by the PSC notes that the region from Jefferson County to Clinton County has the potential for close to 1,000 MW of wind power.⁷ In addition to the public policy supporting the development and use of renewable energy sources, municipalities that develop wind power may enjoy added tax benefits.⁸ The State's first wind farm went on-line in Madison County in September 2000, with turbines located near the Town of Hamilton.⁹ Wind development continued and by December of 2001, ten wind turbines were installed in the Town of Westfield, Wyoming County, and twenty turbines had been installed in the Town of Fenner, Madison County.¹⁰ In Lewis County, construction began in May 2005 on the Maple Ridge Wind Farm which includes the Towns of Harrisburg, Martinsburg, Lowville and Watson.¹¹ One developer has indicated interest in developing wind farms in Franklin County (Towns of Burke and Chateaugay), in St. Lawrence County (Town of Hopkinton), and in Herkimer County (Town of Fairfield),¹² and Cornell University is studying the feasibility of using wind farms to generate power in the Town of Dryden.¹³ These are just a few examples of the growing interest in the siting of wind projects in the State.

With a significant and fairly recent high level of interest in wind farms, this article is intended to review the planning, zoning, and other land use related issues that arise in siting process. It discusses, among other things, ways to incorporate wind power into the local comprehensive planning process, identification of areas and/or zoning districts where wind development is an allowable use either as-of-right or by special permit review and coordination with state and federal environmental and agricultural reviews. Concerns related to noise, soil disturbance, and general aesthetic issues are also discussed.

Is Your Municipality Suitable for Wind Energy?

Wind is created when radiation from the sun heats the earth's surface at different rates. The warm air produced from faster-heating zones rises, allowing cooler air to flow in and replace it, thereby creating wind.¹⁴ The difference in terrain types and heating rates translates into some locations being better suited for wind development than others. Areas with consistent wind at high speeds are the most attractive areas for developers as modern wind turbines require average gusts of 15 mph.¹⁵ To help identify areas that have a strong potential for wind development cartographers have developed maps of New York State that provide a general idea of wind speeds for a particular area.¹⁶

In addition to requiring geography where wind speed is suitable for creating energy, wind energy projects require a significant amount of land to best obtain good

wind exposure while minimizing inefficiencies.¹⁷ For example, "required acreage for a wind farm can vary from 15 to 30 acres per MW of installed capacity, depending upon many factors such as topography, existing land use and vegetation cover."¹⁸ Yet the total footprint of the turbines may only occupy 3 to 5 percent of the acreage.¹⁹

A municipality located in a region with sufficient wind speed and consistency should consider "adopt[ing] special zoning provisions . . . to protect both wind access for the [industry] and the safety and other interests of neighbors."²⁰ Or, conversely, a community should not assume that because their zoning code does not allow for wind farms that "wind development is prohibited within the community."²¹

The Comprehensive Plan

The comprehensive plan is a guide used by municipalities to help plan for future development.²² Defined in state statute, once adopted, future zoning decisions must be consistent with the plan.²³

When developing a comprehensive plan in accordance with a New York state statute, the law provides a thirteen item list of elements that may be addressed in the comprehensive plan.²⁴ Many of the items suggested by the statute are relevant to wind power development.²⁵ For example, "the location and types of transportation facilities"²⁶ is relevant because the roads leading up to a proposed site must be strong enough to support the heavy machinery used in construction, and the failure of a support road during turbine construction has led to litigation in another state.²⁷ Taking into account the existing and proposed public utilities and infrastructure²⁸ is also relevant because the cost of installing high voltage power lines can run into the thousands of dollars per mile and may make a site less attractive to developers.²⁹ Perhaps the most important consideration is the "proposed location and intensity of land uses"³⁰ since the turbines require access to unobstructed wind it is impracticable to allow them near high rise buildings or in areas with low wind speeds.³¹ Comprehensive plans may also address agricultural uses (wind turbines may be complementary, see below), natural resources (e.g., wind power), economic development (e.g., potential jobs and tax revenue) and other governmental plans and regional needs (e.g., often times the land mass needed for wind farms crosses municipal boundaries).

One method that can be used to assist in the development of an appropriate energy vision for the municipality is the appointment of an Energy Advisory Committee. This citizen committee can help to identify issues and opportunities, draft, review and recommend goals, objectives and implementation strategies for local renewable energy initiatives such as wind power.³² Goals may include protection of high-priority wind energy sites for wind

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energy development, and/or revising the zoning ordinance or law to permit wind energy facilities.³³

Any municipality that wants to develop or update the comprehensive plan must ensure that the plan complies with the Agricultural and Markets law article 25-AA and New York's State Environmental Quality Review Act (SEQEA).³⁴

Coordinating Review of Wind Farms with Agricultural Uses

Recognizing that "many of the agricultural lands in New York state are in jeopardy of being lost" the Legislature enacted Article 25-AA of the Agriculture and Markets Law³⁵ to "provide a locally-initiated mechanism for the protection and enhancement of New York state's agricultural land."³⁶ It establishes a procedure for creating agricultural districts and prohibits local governments from "unreasonably restrict[ing] or regulat[ing] farm operation within agricultural districts . . . unless it can be shown that the public health or safety is threatened."³⁷ Thus, when a municipal zoning ordinance conflicts with the policy objectives of article 25-AA, the agricultural district law supersedes the zoning ordinance.³⁸ The agricultural district law was recently amended to allow for the conversion of land for wind exploration and development while not subjecting farmers to payments in the amount they saved in taxes through the agricultural district classification.³⁹ Developing wind power on farms is particularly attractive for several reasons including: the small amount of land required for the turbine base allows farming to continue around the structure; and leasing agreements with energy developers allow farmers to supplement their income essentially turning wind into a modern cash crop.⁴⁰

Coordination with the State Environmental Quality Review Act (SEQRA)

SEQRA was designed to "incorporate the consideration of environmental factors into the existing planning, review and decisionmaking processes of state, regional and local government agencies at the earliest possible time."⁴¹ Consistent with this purpose the development or revision of a comprehensive plan and/or zoning ordinance triggers SEQRA and requires an environmental analysis.⁴² The permitting and installation of wind farms also trigger SEQRA review. Municipalities with wind energy resources should consider adopting a generic environmental impact statement (GEIS) for wind energy when adopting or amending a comprehensive land use plan. Such action will then trigger only site specific reviews when an application is received for a wind energy project. In addition, the GEIS should include appropriate mitigating measures that could be addressed through subsequent zoning (amendments) such as noise issues and setback requirements.⁴³

Zoning Provisions—Uses as of Right, By Special Permit and Accessory Uses

When identifying where wind energy projects may most appropriately be sited, municipalities with zoning may decide to list the use in one or more zoning districts "as of right," or they may prefer to allow the use subject to

special permit review,⁴⁴ providing an opportunity to ensure that the proposed development meets additional review criteria to ensure compatibility with the surrounding area. Both the American Wind Energy Association⁴⁵ and the New York State Energy Research Development Authority⁴⁶ have developed model zoning ordinance language/options for municipalities to consider. It is important, however, that local laws address the specific needs and concerns of the individual municipality.

In addition to being listed as a specifically permitted use, wind energy may be considered as an accessory use, particularly to an agricultural use. The clearest way to ensure this is to list wind farms/turbines as an appropriate accessory use to other agribusiness activities, especially given the recent amendment to the Agriculture & Markets Law in support of wind farms.

Buffering to Address Noise Concerns

Opponents of wind projects have raised concerns regarding the noise generated by wind turbines. Apart from the noise associated with constructing a wind turbine, the facility's operation will produce two types of sound: noise from the mechanical equipment, such as the generator or cooling fans; and the sound of the blades while they rotate, or aerodynamic noise.⁴⁷ These noise levels are "considerably different in level and nature than that generated by most power plants, which are typically large industrial facilities."⁴⁸ For example, a 300 kilowatt turbine typically produces less noise at 400 feet than does light traffic 100 feet away.⁴⁹ A large portion of this noise will be covered by the "ambient or background noise of the wind itself" and increases in technology, such as more efficient airfoils, has reduced noise in newer model turbines.⁵⁰ However, even with all the advancements in technology wind turbines will still produce a certain amount of noise.⁵¹

Zoning provisions may also address maximum allowable decibel sounds. A typical turbine operating between 75-100 decibels will provide a reading between 45-65 decibels 100 feet away.⁵² Establishing a buffer zone will allow the sound to diminish before it can reach a receiver. The suggested distance for a commercial turbine is between 1,000 feet and half a mile with an exception provided for the turbine owner.⁵³ In Palm Springs, California, for example, no wind turbine may be located closer than 1,200 feet from any residence, hotel, hospital, school, library or convalescent home, except where topography would permit an exemption to be made.⁵⁴

Predicting the amount of noise that will be produced before construction is a difficult task owing to the wide variety of factors that go into the transfer of sound, and measurements taken from one site "might not be representative of noise emissions by the same turbine at another site."⁵⁵ This is not to say that noise predictions are impossible, in fact, permitting agencies may require "a noise analysis to estimate: whether the facility can be constructed and operated in compliance with any and all applicable guidelines or local ordinances; whether any potentially significant noise impacts may result from the construction and operation

of the facility; and if so” the extent that mitigation measures can be used to reduce noise from the construction and operation of the facility.⁵⁶

These provisions should be carefully drafted to avoid a void-for-vagueness challenge,⁵⁷ and should include a set decibel level and identify a location to take sounds measurements from, such as a nearby dwelling or property line.⁵⁸ The most common noise level throughout the country is 50 decibels, which can be measured from a property line, residence, school, hospital, or library depending on the nature and characteristics of the community.⁵⁹ The ordinance need not necessarily set an inflexible decibel level, and it may provide levels that may be adjusted for nighttime with exceptions for windstorms.⁶⁰

Setback requirements have other benefits as well. “[W]inter weather can lead to ice buildup on turbine rotors. As the ice thaws or rotors move, large pieces of ice can fall from the turbines. The areas directly beneath the turbines can therefore be dangerous during parts of the winter.”⁶¹ Establishing a setback requirement will help protect the public from the ice.

To date there have been only two cases involving noise complaints from wind turbines,⁶² and both involved personal wind turbines; which are smaller and louder than their commercial counterparts.⁶³

Zoning and Site Plan Review to Address Aesthetic Concerns

The visual impacts of wind turbines may be the focus of community concern. For a wind turbine to be effective, it must be placed above trees, buildings, and other obstacles that will disturb wind flow, these requirements often restrict wind development to rural or remote areas.⁶⁴ This may trigger placement concerns over preserving the area’s natural beauty.⁶⁵ “There are several variables that affect the impact of a project on visual resources. Lighting, coloring and signage are obvious ones, but spacing can be a factor, as well as placement of the turbines within the project setting.”⁶⁶ The size of the turbines is also important as smaller turbines can be placed closer together and have blades that spin faster, while large turbines have slower rotors and must be placed further apart, but are visible from a longer distance.⁶⁷ The distance between turbines is determined based upon the distance needed for the wind to replenish.⁶⁸ “Fewer and wider-spaced turbines present a more pleasing appearance than tightly-packed arrays.”⁶⁹ Having turbines with uniform towers, blades, and direction is key to reducing visual impact.⁷⁰ While turbines may need to be constructed at certain heights, zoning ordinances can provide maximum allowable height limitations to ensure that the turbines are not any higher than necessary.

Besides the uniform towers, direction, and speed mentioned above there are several other methods of reducing visible impact before and after the project begins. Once a municipality locates a wind resource area within its borders it can utilize computer simulation can help to evaluate the potential visual impacts before construction begins.⁷¹ Access roads can be prohibited from ridge lines, and turbines can be painted a uniform, color with no signage to reduce their profile.⁷²

Through a local site plan review law, municipalities can effectively examine the proposed lay-out of the wind project including spacing, how the wind turbine array is set against the landscape, buffering, and other visual impacts.

Co-Location with Cellular Towers

There has been discussion within the industry about the opportunities for the co-location of cell towers on wind turbines since many turbines are of sufficient height to accommodate the wireless transmission needs.⁷³ The notion of combining these two facilities to avoid visual clutter has received positive recommendations from landscape architects and planners.⁷⁴ However, before mandating such an approach, consideration must be given to the strength of the wind turbine tower to handle the additional weight, the potential for interference by wind with the radio frequency on the cell tower and general aesthetic issues.⁷⁵

Decommissioning of Wind Turbines

Wind turbines often enjoy a long life and “it is not unusual for wind projects to have agreements in place for twenty years of operation of more.”⁷⁶ However once a turbine ceases to operate it should be decommissioned to protect the safety of nearby residents.⁷⁷ Apart from safety, decommissioning will return the land to its original state allowing the land to be used for other purposes.⁷⁸ The length of time and the depth of the removal will depend on the local planning board. One model ordinance requires that turbines that are not operational for one full year be removed to a depth of four feet below the ground.⁷⁹ This one year requirement would necessitate that the local government remain informed about each individual turbine’s output⁸⁰ and it may be necessary to require developers to post a bond, “letter of credit, or otherwise place money in escrow at the beginning of the project to ensure that funds will be available to pay for the decommissioning.”⁸¹

Addressing Wind Power’s Effect on the Environment

Unlike traditional energy generating facilities, wind power is “virtually emissions free. It does not produce greenhouse gasses and [sic] pollutants that lead to acid rain and [sic] smog.”⁸² However, concerns still exist over the effect wind power facilities will have on the environment.⁸³ The environmental concerns can arise in a number of different ways, such as bird collisions with the turbine’s rotors, disrupting the native habitat during construction, or invasion of non-native plants to the disturbed soil after construction.⁸⁴ Of these considerations, collisions between birds and wind energy facilities have been the most controversial, but through proper planning, all of these concerns can be mitigated.⁸⁵

Reducing the Impact on Birds

Concerns over the impact on avian wildlife were brought to the forefront due to large number of deaths from a wind farm located in a large raptor habitat, known as Altamont Pass.⁸⁶ The large squirrel population at this wind farm

provides raptors with a source of food and suggests that collisions could have been predicted and avoided after a careful study. For example, a “biological reconnaissance” study performed in the “Buffalo Ridge Wind Resource Area in Southwestern Minnesota indicated that serious conflicts between birds and wind projects were unlikely” and tests taken after construction have confirmed those findings.⁸⁷

Care should be taken during the environmental review process to identify any significant bird habitats, or “migration pathways” within the area.⁸⁸ Requiring a bird friendly design (such as a monopole support structure instead of a latticework design in order to reduce the number of resting places near the turbine’s rotors) can be used to mitigate potential negative impacts,⁸⁹ as well as requiring turbines that operate with a reduced rotor speed so the blades are more visible.⁹⁰ An Interim Guidance document from the U.S. Department of the Interior’s Fish and Wildlife Service suggests using underground electric lines and white strobe lights at night, as opposed to “solid red or pulsating red incandescent lights” since the red light tends to attract night-migrating birds more frequently than white strobe lights.⁹¹

Displacement and Soil Disruption/Erosion

Displacement and soil disruption/erosion related to the construction and operation of wind turbine farms have also been raised as environmental concerns. Any construction damage to the local habitat can be reduced by having work performed “in a manner that disturbs only a small amount of surface area,”⁹² and damage to protected or sensitive plant species can be avoided altogether if their location is charted beforehand.⁹³ For example, access roads can be designed to minimize their width and number, and habitat loss can be minimized by requiring the planting of native vegetation after construction.⁹⁴ Soil erosion can be effectively avoided with careful attention to appropriate design measures, including following natural terrain contours to the maximum extent possible and quickly restoring land disturbed by construction activities.⁹⁵

Applicability of Other Laws

Once it has been determined that a municipality has sufficient winds to support development, and amendments to the comprehensive plan or town zoning have been proposed, there are a number of different federal statutes that exist outside the typical local planning and zoning process that must be considered.

Migratory Bird Treaty Act

Even after taking available precautions to reduce bird fatalities the possibility of a collision still exists. The Migratory Bird Treaty Act (“MBTA”) establishes a Federal prohibition to pursue, hunt, take, capture, kill, or transport any migratory bird, unless permitted by regulations.⁹⁶ As a strict liability statute the MBTA does not require the intent to violate any of its provisions—the death of a single migratory bird is sufficient to constitute a violation of the Act.⁹⁷ Despite this, the MBTA is unlikely to have much effect on wind power development. The United States Fish and Wildlife Service (USFWS), the agency

charged with enforcing the MBTA, has recognized that even with the best avian protection methods in place it is still possible to violate the statute, but it states that the Service’s Office of Law Enforcement focuses on “companies or agencies that take migratory birds with disregard for their actions and the law, especially when conservation measures have been developed but are not properly implemented.”⁹⁸ The USFWS has stated that the Office of Law Enforcement protects migratory birds through investigation and enforcement, but also fosters relationships with companies, industries, or individuals “who seek to eliminate their impacts on migratory birds.”⁹⁹

To date there has been only one case involving a wind farm and the MBTA (in the State of Kansas) and it was dismissed over procedural grounds.¹⁰⁰ The court noted that there is no precedent that would allow a plaintiff to bring a cause of action against a private party since the MBTA is “largely viewed as a criminal statute.”¹⁰¹

Endangered Species Act

The Endangered Species Act (ESA) is “designed to save from extinction species that the Secretary of the Interior designates as endangered or threatened.”¹⁰² The ESA “makes it unlawful for any person to ‘take’ any endangered or threatened species.”¹⁰³ The definition of “take” is similar to the prohibitions listed under the MBTA except that the ESA prohibits habitat modification that will kill or injure wildlife.¹⁰⁴ Federal agencies are required “to ensure that none of their activities, including the granting of licenses and permits, will jeopardize the continued existence of endangered species ‘or result in the destruction or adverse modification of [the critical] habitat of such species.’”¹⁰⁵ However, “[t]he Secretary is authorized to permit any non-federal party to undertake any taking otherwise prohibited . . . if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.”¹⁰⁶

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) prohibits the taking, possession, sale or purchase of bald or golden eagles or parts thereof, except as permitted by the Secretary of the Interior.¹⁰⁷ Since the BGEPA has similar language and legislative intent to the MBTA, it is likely to have the same affect on wind power development.

The FAA and Aesthetic Considerations

The combined height of a commercial wind turbine and its rotors requires a no-hazard determination from the Federal Aviation Administration.¹⁰⁸ Complying with the FAA’s requirements will also require warning lights that would supersede any attempts from the local planning and zoning bodies to alleviate aesthetic issues.

Conclusion

Wind power represents an attractive, but not yet fully accepted form of alternative energy. Because it is relatively new in New York, there is not a wealth of municipal experience in planning for the environmental, aesthetic, and quality of life

aspects that need to be addressed prior to the municipal review of applications for the siting of wind energy developments. However, through proper planning and zoning and with cooperation between the developer, landowner and local governments, wind farm projects can be a win-win for communities and residents across the State.

NOTES

1. Timothy Clark, et al., *Wind Power Comes of Age*, Wind Turbine Condition Monitoring, 21 at <http://www.bently.com/articles/articlepdf/2Q04WindPower.pdf> (site visited August 2005); AWEA, *Wind Industry Statistics*, available at http://www.awea.org/faq/tutorial/wwt_statistics.html (site visited August 2005).
2. Clark, et al., *Wind Power Comes of Age*, Wind Turbine Condition Monitoring, 21 at <http://www.bently.com/articles/articlepdf/2Q04WindPower.pdf> (site visited August 2005).
3. See American Planning Association, "Ask the Author: March 2003," available at <http://www.planning.org/zoningpractice/askauthor/03/askauthor0303.htm> (site visited August 2005). The author lists the following communities that have adopted wind energy ordinances: Emmet County, Michigan; Eveline Township, Michigan; Elmwood Township, Michigan; Sioux Falls, South Dakota; Monterey, California; Buffalo, Minnesota; Scott County, Minnesota; Borough of Litz, Pennsylvania; Lincoln, Nebraska; Boulder, Colorado; Maple Grove, Minnesota; Marin County, California; and New Pattonsburg, Missouri.
4. American Planning Association, Policy Guide on Energy (April 25, 2004). Available at <http://www.planning.org/policyguides/energy.htm> (site visited September 2005).
5. *Id.*
6. New York State Public Service Commission, *Retail Renewable Portfolio Standard*, available at <http://www.dps.state.ny.us/03e0188.htm> (site visited September 2005).
7. www.pulpny.org/htm/more_wind_farms_environed_for.html (site visited September 2005).
8. "Every 100 MW of wind development generates about \$500,000 in local property tax revenue" AWEA, New York Energy Legislation, available at http://www.awea.org/wpny/ny_legis.html (site visited September 2005).
9. See AWEA News Release, *PG&E Corp Dedicates Largest Wind Power Plant in Eastern U.S.*, available at <http://www.awea.org/news/news000915pge.html> (site visited September 2005). This is a 11.5 MW facility consisting of seven, 1.65MW turbines.
10. AWEA, New York State Wind Energy Projects, available at <http://www.awea.org/projects/newyork.html> (site visited September 2005).
11. See Maple Ridge Wind Farm: Tug Hill NY, available at www.mapleridgewind.com (site visited September 2005); and www.pulpny.org/htm/more_wind_farms_environed_for.html (site visited September 2005).
12. Steve Virkler, *More Wind Farms Envisioned for Northern New York*, Watertown Daily Times, Nov. 22, 2004, available at www.pulpny.org/html/more_wind_farms_environed_for.html (site visited September 2005).
13. Vanessa Hoffman, "Cornell Studies Pros, Cons to Wind Power," The Cornell Daily Sun Mar. 17, 2005, available at www.cornellsun.com/news/display.v/ART/2005/03/17/42392989c2d33?in_archive=1 (site visited September 2005).
14. See generally Shane Thin Elk, *The Answer is Blowing in the Wind: Why North Dakota Should do More to Promote Wind Energy*, 6 Great Plains Nat. Resources J. 110, 111-12 (2001).
15. Christopher J. Dorociak, et al., *Wind Energy Development in New York State: Issues for Landowners*, Cornell University, May 2005, available at <http://text.powernaturally.org/About/Library.asp> (site visited September 2005).
16. See AWS Truewind, *Wind Maps*, available at <http://www.awstruewind.com/inner/windmaps/windmaps.htm> (site visited September 2005). Since the existence of obstructions—both natural and artificial—can alter wind velocity, measurements must be taken from each potential sight over a period of time before construction. A number of other factors, while not necessarily determinative, can add to the desirability of a location, such as: the proximity to high voltage power lines; accessibility of the property; and the total acreage available. AWEA, *Wind Energy Fact Sheet: 10 Steps in Building a Wind Farm*, available at http://www.awea.org/pubs/factsheets/10stwf_fs.PDF (site visited September 2005). To reduce turbulence turbines need to be spread as far apart as possible. Christopher J. Dorociak, et al., *Wind Energy Development in New York State: Issues for Landowners*, Cornell University, Jan. 2005, available at <http://text.powernaturally.org/About/Library.asp> (site visited September, 2005).
17. Katherine Daniels, "Wind Energy Development and the Comprehensive Plan," NYSEDA Wind Energy Too Kit (July 2005) available at: <http://www.powernaturally.org/Programs/Wind/toolkit/comprehensiveplan.pdf> (site visited September 2005).
18. *Id.*
19. *Id.*
20. See, e.g., Kim R. York & Richard Settle, *Potential Legal Facilitation or Impediment of Wind Energy Conversion System Siting*, 58 Wash. L. Rev. 387 (1983).
21. Christopher J. Dorociak, et al., *Wind Energy Development in New York State: Issues for Landowners*, Cornell University, May 2005, available at <http://text.powernaturally.org/About/Library.asp> (site visited September 2005).
22. N.Y. Town Law § 272-a (McKinney 1995); N.Y. Village Law § 7-722; N.Y. Gen. City Law § 28-a.
23. N.Y. Town Law § 263; N.Y. Village Law § 7-704; N.Y. Gen. City Law § 20(25).
24. The law provides 13 items that may be considered with a catch all provision and a statement of goals. N.Y. Town Law § 272-a(3)(a-o) (1998); N.Y. Village Law § 7-704 (McKinney 1998); N.Y. Gen. City Law § 20(25) (McKinney 2001). It should be noted that while these enabling acts address the content and process for adoption of the plan, local governments may develop and adopt a comprehensive plan in a different manner pursuant to prior caselaw. For more information see Salkin, *New York Zoning Law & Practice*, 4th ed., §§ 4:03-4:09, and New York State Department of State, *Zoning and the Comprehensive Plan* (December 1999).
25. N.Y. Town Law § 272-a(3)(a-o) (1995).
26. N.Y. Town Law § 272-a(3)(f) (McKinney's 1998).
27. See generally *Randall Transit Mix Co. v. Boerneke Const., Inc.*, 2005 WL 1432336 (Minn. Ct. App. 2005).
28. Town Law § 272-a(3)(g) (McKinney's 1998); Village Law § 272-a(3)(g) (McKinney's 1998).
29. AWEA, *Wind Energy Fact Sheet: 10 Steps in Building a Wind Farm*, available at http://www.awea.org/pubs/factsheets/10stwf_fs.PDF (site visited August, 2005).
30. N.Y. Town Law § 272-a(3)(c) (McKinney 1998).
31. See, e.g., National Wind Coordinating Committee, *Permitting of Wind Energy Facilities: A Handbook*, (August 2002), available at <http://www.nationalwind.org/publications/permit/nwccch4.pdf> [hereinafter *Permitting Handbook*].

32. See Rebecca Roberts, "The Role of Energy in Comprehensive Planning," The Land Use Tracker (Winter 2004) available at: <http://www.uwsp.edu/cnr/landcenter/tracker/Winter2004/roleofenergy.html> (site visited September 2005).
33. Katherine Daniels, "Wind Energy Development and the Comprehensive Plan," NYSERDA Wind Energy Too Kit (July 2005) available at: <http://www.powernaturally.org/Programs/Wind/toolkit/comprehensiveplan.pdf> (site visited September 2005).
34. N.Y. Town Law § 272-a(8)-(9) (McKinney 1995).
35. N.Y. Agric. & Mkts. Law § 300 (McKinney 1987).
36. N.Y. Agric. & Mkts. Law § 300 (McKinney 1987).
37. N.Y. Agric. & Mkts. Law § 305-a(1)(a) (McKinney 1997).
38. *Inter-Lakes Health Inc., v. Ticonderoga Town Board*, 13 A.D.3d 846, 847, 786 N.Y.S.2d 643 (3d Dept. 2004).
39. See N.Y. Agric. & Mkts. Law § 305(1)(d) (McKinney 2003).
40. See Shane Thin Elk, *The Answer is Blowing in the Wind: Why North Dakota Should do More to Promote Wind Energy*, 6 Great Plains Nat. Resources J. 110, 114 (2001). "The development of 2,000 [megawatts] in New York would mean annual payments of approximately \$4 million to farmers and other landowners—more than \$2,000/year in lease or royalty payments for each installed turbine. AWEA, New York Energy Legislation, available at http://www.awea.org/wpny/ny_legis.html (site visited September, 2005).
41. N.Y. Comp. Codes R. & Regs. Evtl. Conserv. NYCRR § 617.1
42. N.Y. Comp. Codes R. & Regs. Evtl. Conserv. NYCRR § 617.4
43. Katherine Daniels, "Wind Energy Development and the Comprehensive Plan," NYSERDA Wind Energy Too Kit (July 2005) available at: <http://www.powernaturally.org/Programs/Wind/toolkit/comprehensiveplan.pdf> (site visited September 2005).
44. N.Y. Town Law § 274-b (McKinney 1998); N.Y. Village Law § 7-725-b(3) (McKinney 1998).
45. AWEA, *Model Zoning Ordinance*, available at <http://www.awea.org/smallwind/documents/modelzo.html> (site visited Sept. 2005).
46. NYSERDA, *Wind Energy Model Ordinance Options*, available at <http://www.powernaturally.org/Programs/Wind/toolkit/windEnergyOrdinanceOptions.pdf> (site visited Sept. 2005).
47. Permitting Handbook, *supra* note 31; American Wind Energy Association, *Permitting Small Wind Turbines: A Handbook Learning from the California Experience*, available at <http://www.awea.org/smallwind/documents/permitting.pdf> (site visited Sept. 2003). The level of noise produced from a turbine depends on a number of factors such as: wind speed; wind direction; turbulence levels; site topography; vegetation; and atmospheric conditions such as boundary layers, temperature gradients, and air absorption.
48. Permitting Handbook, *supra* note 31.
49. National Wind Coordinating Committee, "Wind Energy Environmental Issues," (Jan. 1997), available at <http://www.nationalwind.org/publications/wes/wes02.htm> (site visited Sept. 2005).
50. Permitting Handbook, *supra* note 31.
51. The mechanical components, such as the breaking equipment and electronics "can create noise even in a well-designed turbine." Permitting Handbook, *supra* note 31.
52. American Wind Energy Association, *Permitting Small Wind Turbines: A Handbook Learning from the California Experience*, available at <http://www.awea.org/smallwind/documents/permitting.pdf> (Sept. 2003).
53. Permitting Handbook, *supra* note 31; Steven Ferrey, Dimensional Control, Law of Independent Power, 1 L. of Indep. Power § 6:109 (2004); Ari Reeves & Fredreck Beck, Wind Energy for Electric Power, available at <http://www.Repp.org/wind/index.html> (site visited Aug. 12, 2005).
54. National Wind Coordinating Committee, "Wind Energy Environmental Issues," (Jan. 1997). Available at <http://www.nationalwind.org/publications/wes/wes02.htm> (site visited Sept. 2005).
55. Permitting Handbook, *supra* note 31.
56. *Id.*
57. See *People v. New York Trap Rock Corp.*, 57 N.Y.2d 371, 456 N.Y.S.2d 711, 442 N.E.2d 1222 (1982).
58. See AWS Scientific, AWS Model Zoning Ordinance: Permitted Use Regulations for Small Wind Turbines, available at http://www.powernaturally.org/publications/AWS_Small_Wind_Zoning.pdf (site visited Aug. 2005); see generally *Duffy v. City of Mobile*, 709 So. 2d 77 (Ala. Crim. App. 1977).
59. Draft Model Wind Ordinance Reference Guide, available at http://www.doa.state.wi.us/docs_view2.asp?docid=2870 (site visited Sept. 2005).
60. See AWS Scientific, AWS Model Zoning Ordinance: Permitted Use Regulations for Small Wind Turbines, available at http://www.powernaturally.org/publications/AWS_Small_Wind_Zoning.pdf (last visited Aug. 27, 2005).
61. Christopher J. Dorociak, *et al.*, Wind Energy Development in New York State: Issues for Landowners, Cornell University, May 2005.
62. *Fassier v. Houim*, 488 N.W.2d 635 (N.D. 1992); *Rose v. Chaikin*, 187 N.J. Super. 210, 453 A.2d 1378, 36 A.L.R.4th 1148 (Ch. Div. 1982).
63. American Wind Energy Association, *Facts about Wind Energy and Noise*, available at http://www.awea.org/pubs/factsheets/WE_Noise.pdf (last visited Aug. 2, 2005). Smaller turbines generate more noise because the speed the blades rotate at is higher and smaller turbines are not as well developed, since the majority of research and funding has been spent on larger turbines.
64. See Permitting Handbook, *supra* note 31, at 43.
65. See, e.g., Joseph Spector, *Golisano Fighting Wind Farms*, Rochester Democrat & Chronicle, May 29, 2005 at B1.
66. Draft Model Wind Ordinance Reference Guide, available at http://www.doa.state.wi.us/docs_view2.asp?docid=2870 (site visited September, 2005).
67. *Id.*
68. Permitting Handbook, *supra* note 31 at 43.
69. *Id.*
70. Draft Model Wind Ordinance Reference Guide, available at http://www.doa.state.wi.us/docs_view2.asp?docid=2870 (site visited September, 2005); Permitting Handbook, *supra* note 31 at 43.
71. American Wind Energy Association, *Wind Web Tutorial: Wind Energy and the Environment*, at http://www.awea.org/faq/tutorial/wwt_environment.html (last visited July 26, 2005).
72. See Permitting Handbook, *supra* note 31, at 43.
73. See American Planning Association, "Ask the Author: March 2003," available at <http://www.planning.org/zoningpractice/askauthor/03/askauthor0303.htm> (site visited August 2005).
74. See, e.g., Jean Vissering, "Wind Energy and Vermont's Scenic Landscape," available at http://publicservice.vermont.gov/energy-efficiency/ee_files/wind/vissering_report.pdf (site visited September 2005).

75. See American Planning Association, "Ask the Author: March 2003," available at <http://www.planning.org/zoningpractice/askauthor/03/askauthor0303.htm> (site visited August 2005).
76. Draft Model Wind Ordinance Reference Guide, available at http://www.doa.state.wi.us/docs_view2.asp?docid=2870 (site visited September, 2005).
77. *Id.*
78. *Id.*
79. *Id.* Removing the bulk of the foundations along with the underground electric cable would be more disruptive than leaving them in place. NYSERDA, *Harvesting the Wind: A Legal Guidebook for Landowners*, 12, available at <http://www.powernaturally.org> (site visited September, 2005).
80. Draft Model Wind Ordinance Reference Guide, available at http://www.doa.state.wi.us/docs_view2.asp?docid=2870 (site visited September, 2005).
81. NYSERDA, *Harvesting the Wind: A Legal Guidebook for Landowners*, 12, available at <http://www.powernaturally.org> (site visited September, 2005).
82. Christopher J. Dorociak, et al., *Wind Energy Development in New York State: Issues for Landowners*, Cornell University, May 2005, available at <http://text.powernaturally.org/About/Library.asp> (site visited August, 2005).
83. Permitting Handbook, *supra* note 31.
84. *Id.* at 39.
85. See Victoria Sutton, Nicole Tomich, *Harnessing Wind is Not (by Nature) Environmentally Friendly*, 22 *Pace Env'tl. L. Rev.* 91 (2005).
86. See American Wind Energy Association, *Facts about Wind Energy and Birds*, at <http://www.awea.org/pubs/factsheets/avianfs.pdf> (last visited Aug. 30, 2005). Altamont Pass proves to be a mere aberration, several other large wind farms have been operating with only "minor impacts on birds and other flying vertebrates." While any bird fatalities are to be avoided if possible, "structures such as smokestacks and radio and television towers have been associated with far larger numbers of bird kills than have wind facilities" Permitting Handbook, *supra* note 31, at 37-38. Indeed, bird collisions with smokestacks, towers, and buildings are estimated at 1.25 million per year. A single coal fired power plant killed 3,000 birds during a single fall migration, and it is unknown how many may die from air pollution or acid rain. See American Wind Energy Association, *Facts about Wind Energy and Birds*, at <http://www.awea.org/pubs/factsheets/avianfs.pdf> (last visited Aug. 17, 2005). For statistics showing the relative low number of bird turbine collisions see Curry & Kerlinger, LLC, *Wind Power and Bird Studies*, available at <http://www.currykerlinger.com/studies.htm> (site visited August, 2005).
87. See Electric Power Research Institute, *Bat Interactions with Wind Turbines at the Buffalo Ridge Minnesota Wind Resource Area*, available at http://www.epri.com/OrderableItemDesc.asp?product_id=0000000001009178 (site visited September, 2005); see also Permitting Handbook, *supra* note 31 at 40.
88. Memorandum to Regional Directors, Regions 1-7, Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, FWS 1 (May 13, 2003), available at <http://www.fws.gov/habitatconservation/wind.pdf> (site visited August 2005).
89. See Victoria Sutton, Nicole Tomich, *Harnessing Wind is Not (by Nature) Environmentally Friendly*, 22 *Pace Env'tl. L. Rev.* 91 (2005); see also Defenders of Wildlife, *Habitat*, available at <http://www.defenders.org/habitat/renew/wind.html> (site visited August, 2005).
90. Statistics for rotor speed vary depending on the model, and have decreased with newer technology, General Electric's 1.5 MW model has 10-22 revolutions per minute while Vestas' 1.5 MW model operates at 14.4 RPM. See, GE, 1.5sl/1.5sl/1.5S/1.5se Wind Turbines, available at http://www.gepower.com/prod_serv/products/wind_turbines/en/downloads/ge_15_brochure.pdf (site visited August, 2005); Vestas, *V82 Creating More From Less*, available at http://www.vestas.com/uk/Products/v82/v82_UK.htm (site visited August, 2005).
91. Memorandum to Regional Directors, Regions 1-7, Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, FWS 1 (May 13, 2003), available at <http://www.fws.gov/habitatconservation/wind.pdf> (site visited August, 2005).
92. Permitting Handbook, *supra* note 31, at 42.
93. Permitting Handbook, *supra* note 31, at 42.
94. Permitting Handbook, *supra* note 31, at 42.
95. National Wind Coordinating Committee, "Wind Energy Environmental Issues," (January 1997), available at <http://www.nationalwind.org/publications/wes/wes02.htm> (site visited September, 2005).
96. 16 U.S.C. § 703 (2004). Other restrictions placed on migratory birds are outside the scope of this article.
97. See *U.S. v. Engler*, 806 F.2d 425, 21 Fed. R. Evid. Serv. 1398 (3d Cir. 1986), cert. denied, 107 S. Ct. 1900 (1987) (holding that neither the text nor the history of the MBTA showed any intention of a scienter requirement).
98. Memorandum to Regional Directors, Regions 1-7, Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, FWS 1 (May 13, 2003), available at <http://www.fws.gov/habitatconservation/wind.pdf> (site visited August, 2005). See *United States v. Moon Lake Elec. Ass'n, Inc.*, 45 F. Supp. 2d 1070 (D. Colo. 1999), where Moon Lake was charged with violating the MBTA after failing "to install inexpensive protective devices on 2,450 power poles." *Id.* at 1071.
99. Memorandum to Regional Directors, Regions 1-7, Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, at 35 (May 13, 2003), available at <http://www.fws.gov/habitatconservation/wind.pdf> (site visited August, 2005).
100. *Flint Hills Tallgrass Prairie Heritage Foundation v. Scottish Power, PLC*, 2005 WL 427503 (D. Kansas 2005).
101. *Id.* "Under limited circumstances the courts have permitted private causes of action against the government under the Administrative Procedures Act."
102. *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 690, 115 S. Ct. 2407, 132 L. Ed. 2d 597 (1995).
103. *Babbitt*, 515 at 690.
104. 16 U.S.C. § 1532(19); *Babbitt*, 515 U.S. at 690.
105. *Babbitt*, 515 U.S. at 692; 16 U.S.C. § 1536 (a)(2).
106. *National Association of Home Builders of the United States v. Babbitt*, 949 F. Supp. 1, 6-7 (D.D.C. 1996); 16 U.S.C. § 1539(a)(1)(b) (1988).
107. 16 U.S.C. § 668 (1972).
108. Permitting Handbook, *supra* note 31.