

**The Georgia Model  
Wind Ordinance Guide  
for Local Governments:**  
Land Based Wind Installations

*Fall 2010*



*Wind Ordinance Developed By:*  
**The Georgia Wind Working Group**



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## **Acknowledgements:**

The publication “The Georgia Model Wind Ordinance Guide for Local Governments: Land Based Wind Installations” was produced by the University of Georgia Land Use Clinic (LUC) on request by the Georgia Wind Working Group. It was prepared by Andrew Pinson. LUC Managing Attorney Jamie Baker Roskie provided guidance and editing. Guide contributors and reviewers included Teresa Eldredge of TJ Schell, Mary Hallisey Hunt of Georgia Tech’s Strategic Energy Institute, and Mary Carr Bendeck, Rita Kilpatrick, Anna Cayce and Glenn Mauney of Southern Alliance for Clean Energy.

Graphic images courtesy of the National Renewable Energy Laboratory and Anna Cayce of Southern Alliance for Clean Energy.

The Georgia Model Wind Ordinance was crafted by the Georgia Wind Working Group to both encourage the responsible development of wind energy and protect local communities from potential improper siting or installation of wind energy. The process for developing a Model Wind Ordinance for Georgia included research and review of successful model wind ordinances from other U.S. states and Canadian provinces, including other southeastern states. The Georgia Wind Working Group gives special acknowledgment to the following individuals for their extensive work on the model wind ordinance: Teresa Eldredge, Mary Hallisey Hunt, Mary Carr Bendeck, Rita Kilpatrick, Wayne Hildreth, Glenn Mauney, Paul Wolff, Chrissy Marlowe and Lydia Doyle.

These and other related activities of the Georgia Wind Working Group were made possible by funds from the U.S. Department of Energy’s Wind Powering America Initiative and the Georgia Environmental Finance Authority.

## I. Introduction

The Georgia Wind Working Group, formed in 2005, has over 60 active members representing utility companies, wind developers, government agencies, universities, and other stakeholders.<sup>1</sup> Its aim is to educate Georgia's citizens and communities about the benefits and impacts of wind as a contributor to the satisfaction of Georgia's energy needs. To further this goal, the Georgia Wind Working Group has drafted a Model Wind Ordinance, a document intended to aid Georgia's local governments in adopting their own ordinances to promote responsible development of wind energy installed by individuals<sup>2</sup>, government agencies, and businesses in their communities.<sup>3</sup>

The purpose of this guidebook is to provide local governments a starting place and the information necessary to craft an effective wind ordinance for their municipality.<sup>4</sup> Recognizing that each municipality in Georgia is unique, this guidebook explains the provisions of the Model Wind Ordinance and then suggests ways to tailor those provisions to a particular municipality's needs and desires. Using the Model Wind Ordinance and the Georgia Wind Working Group's Guidebook to Wind Development,<sup>5</sup> local officials will have the tools to craft an effective wind ordinance. This will allow for responsible development of wind energy and the economic and environmental benefits that come with it.

### Wind Energy in Georgia

Wind is harnessed as an energy source through wind turbines that produce electricity.<sup>6</sup> Wind

energy can provide a host of significant benefits to a community. Some of these include:

- Addition of a clean, quiet, renewable, and locally available resource to the local energy supply,<sup>7</sup> which reduces pressure on local energy grid, increases local energy independence, and diversifies the energy supply.<sup>8</sup>
- An economic boost in the form of local jobs and increased tax revenue, especially for rural areas in need of new industry.<sup>9</sup>
- Eligibility for federal grants and state tax incentives for clean energy property.<sup>10</sup>
- Individual advantages such as personal energy independence and increased property values.<sup>11</sup>

Georgia's wind potential varies greatly, with stronger winds found along mountain ridges, and in coastal regions.<sup>12</sup> Even areas of lower wind potential, however, may support residential scale wind power generators.<sup>13</sup> Determining a municipality's wind potential is important for deciding how comprehensive its wind ordinance needs to be. Wind maps are a good starting place for determining an area's wind potential.<sup>14</sup> Small residential wind turbine installations generally present fewer regulatory issues than larger utility-scale wind projects although siting in an area that is more densely populated may require more interaction and communication with neighbors (both residential and business) to ensure goodwill.<sup>15</sup>

### Why Enact a Wind Ordinance?

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<sup>1</sup> Georgia Wind Working Group, *A Guidebook to Wind Development in Georgia* (2009), available at [http://gawwg.org/images/Updated\\_Guidebook\\_November\\_2009.pdf](http://gawwg.org/images/Updated_Guidebook_November_2009.pdf) [hereinafter *GWWG Wind Development Guidebook*].

<sup>2</sup> See *infra* notes 22-29 and accompanying text.

<sup>3</sup> Wind Working Group, *Model Wind Ordinance* (2009), available at [http://gawwg.org/images/Final-GA\\_Model\\_Wind\\_Ordinance\\_9-22-09.pdf](http://gawwg.org/images/Final-GA_Model_Wind_Ordinance_9-22-09.pdf) [hereinafter *Model Wind Ordinance*].

<sup>4</sup> Although "municipality" usually connotes towns and cities, this guidebook uses the term to mean any political subdivision in the state of Georgia with the authority to draft a wind ordinance, including cities, towns, and counties.

<sup>5</sup> *GWWG Wind Development Guidebook*, *supra* note 1.

<sup>6</sup> Wind Working Group, *Wind Energy in Georgia* (2009), available at [http://gawwg.org/images/GAWWG\\_Final\\_Fact\\_Sheet\\_11-6-06.pdf](http://gawwg.org/images/GAWWG_Final_Fact_Sheet_11-6-06.pdf).

<sup>7</sup> *Id.*; see also *GWWG Wind Development Guidebook*, *supra* note 1.

<sup>8</sup> American Wind Energy Association, *In the Public Interest: How and Why to Permit for Small Wind Systems* 4-5 (2008) available at <http://www.awea.org/smallwind/pdf/InThePublicInterest.pdf> [hereinafter *AWEA Guidebook*].

<sup>9</sup> See *GWWG Wind Development Guidebook*, *supra* note 1.

<sup>10</sup> *Id.*

<sup>11</sup> See *AWEA Guidebook*, *supra* note 8, at 5.

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*

<sup>14</sup> See, e.g., AWS TrueWind, Georgia Wind Resource Map, <http://gawwg.org/resources/georgiawindresourcemap.html>; Nat'l Renewable Energy Lab., *Georgia Wind Map and Resource Potential*, [http://www.windpoweringamerica.gov/wind\\_resource\\_maps.asp?state=ga](http://www.windpoweringamerica.gov/wind_resource_maps.asp?state=ga).

<sup>15</sup> Discussion with Mary H. Hunt, Director, Special Projects, Strategic Energy Institute, Georgia Institute of Technology, February 10, 2010.

Wind installations are rare in Georgia today. While this may seem to indicate that regulation of wind facilities is not a pressing need, the lack of established facilities provides local governments with the opportunity to be proactive in regulating the development of wind energy. Besides avoiding issues that may arise from dealing with nonconforming uses (i.e., grandfathering already existing wind energy facilities that do not conform to a newly enacted regulation), a proactive approach to wind energy regulation benefits local communities in several ways.

*Maximizes Benefits.* Proactive regulation maximizes the potential benefits that wind energy can provide to a community. Established, well-written and reasonable regulation allows for the responsible development of wind energy and creates certainty for residents or developers deciding whether and where to invest in wind energy.<sup>16</sup> This certainty provides an incentive for potential investors to place wind facilities in a community that has a wind ordinance rather than one in which the potential for regulatory or bureaucratic hurdles is higher, or at least less clear.<sup>17</sup> Also, wind regulation can clarify a community's vision for wind energy in its area.<sup>18</sup>

Having wind regulation in place also allows residents and developers to take advantage of federal and state incentives available to investors in clean energy property like wind energy facilities.<sup>19</sup>

*Minimizes Costs.* Proactive wind regulation also minimizes certain costs that could otherwise burden a community when investors choose a site in that community for a wind project.

Providing a streamlined permitting process with clear guidelines can save significant time and money that both the local government and wind investors might spend on case-by-case reviews

and hearings.<sup>20</sup> Review of potential wind projects without standards tailored to wind power could also lead to unfair or inconsistent permitting of those projects. These issues might discourage residents and developers from trying to install a wind facility in a community and thus deprive that community of the many benefits that wind energy provides.

Without the protections that regulation provides, developers may install wind facilities that do not comport with a community's desired standards for safety, environmental impact, or aesthetics. While existing environmental or zoning regulations may address these issues to some extent, many may contain loopholes that allow for undesirable practices because wind energy has not been specifically addressed. Fixing these loopholes after offending facilities have already been installed could entail costly and uncertain litigation.

*Retains Local Autonomy.* Some states have already enacted statewide wind regulation.<sup>21</sup> While statewide regulation may provide uniformity within a state, it may not cater to the unique geography and community values of individual municipalities in the way that local regulation can. Municipalities that enact their own wind energy regulation will retain control over aspects of wind energy that uniquely impact the locality.

### **How to Use This Guidebook**

This guidebook should be a helpful tool for navigating the Ordinance. Part II of this guidebook discusses the scope of the Model Wind Ordinance and suggests general areas in which tailoring the Ordinance to a specific municipality is especially important. Part III "unpacks" the Model Wind Ordinance, breaking it down section by section. Each section of Part III explains its corresponding section in the Ordinance, along with that section's purpose. Part III also provides more specific ideas about tailoring the Model Wind Ordinance to a particular municipality. Finally, Part IV

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<sup>16</sup> AWEA *Guidebook*, *supra* note 8.

<sup>17</sup> *Id.* at 5 (Manufacturers ask: "In which state should I base my operations?" The answer is: "States with the best policies.")

<sup>18</sup> *Id.*

<sup>19</sup> For examples of federal and state incentives for wind energy development, see *GWVG Wind Development Guidebook*, *supra* note 1, at § VI.

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<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

addresses additional considerations such as state preemption and interconnection with local power grids. These considerations are included primarily for informative purposes, but some municipalities may need to look at them more closely.

*Seeking Out Legal Counsel.* While this guidebook provides information for local governments to start thinking about wind regulation, neither this guidebook nor the Model Wind Ordinance should be considered a substitute for quality legal counsel. A model ordinance and guidebook cannot replace the individualized aid and specialized knowledge of an attorney who can draft an ordinance using language that effectuates intent and is consistent with state and local law.

## II. About the Model Wind Ordinance

The Model Wind Ordinance applies to all sizes of wind installations. Generally the size of wind turbine installations are determined by the on-site wind resource, the availability of land to site turbines, financial resources, and aesthetics. “Small wind” primarily includes wind turbines that residents, farmers, or business owners install as individual or accessory energy sources.<sup>22</sup> “Community wind” describes projects that are locally owned developments arranged to optimize local benefits and whose owners can include an individual, a group of farmers, a cooperative, a municipal utility, a Native American tribe, a school, or a town or city.<sup>23</sup> “Utility-scale” or “commercial-scale wind” refers to wind energy projects greater than 100 kW, and typically the electricity generated is sold rather than used on-site. This category can include large arrays of turbines owned by large corporations or a single locally-owned wind turbine greater than 100 kW in size. Typically, commercial-scale wind energy developments use the large

turbines that can each power hundreds of homes.<sup>24</sup>

The Model Wind Ordinance was designed for multiple types of wind turbine applications. Wind turbine installations in Georgia are expected to have stand-alone turbines in areas that lack the wind potential for utility-scale installations. However, municipalities in some of the mountainous and coastal areas of Georgia may find that their wind potential is high enough to support utility-scale wind projects.<sup>25</sup>

Additional planning may be necessary to ensure effective regulation of larger facilities. These utility-scale installations present their own set of challenges because such facilities may be subject to additional federal regulations and guidelines.<sup>26</sup> Therefore, the current Model Ordinance may not comprehensively address all associated issues. If larger scale wind facilities are considered, research will be necessary to ensure that local wind regulations comply and comport with these federal laws.

### Tailoring the Model Wind Ordinance

The Model Wind Ordinance is the product of many hours of research and drafting, and is an excellent example of an effective ordinance as is.<sup>27</sup> However, the intent is for local officials to ensure the ordinance meets the desires of their respective community. To enact effective wind regulation, each locality should ensure that its wind ordinance is both consistent with existing state and local law and adapted to that municipality’s particular needs and qualities.

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<sup>24</sup> Windustry, *Wind Basics: Know Your Options* (2006) available at <http://www.windustry.com/wind-basics/learn-about-wind-energy/wind-basics-know-your-options/know-your-options>

<sup>25</sup> Discussion with Mary H. Hunt, Director, Special Projects, Strategic Energy Institute, Georgia Institute of Technology, Mary Carr, SACE, and Teresa Eldredge, Registered Landscape Architect, President, TJ Schell, February 10, 2010; see also AWS True Wind, *supra* note 15; Nat’l Renewable Energy Lab., *supra* note 15.

<sup>26</sup> *Id.* Some of these additional federal regulations may include the Endangered Species Act, the Migratory Bird Treaty Act, and the National Environmental Policy Act, as well as those promulgated by the Federal Aviation Administration and the U.S. Fish and Wildlife Service.

<sup>27</sup> The Model Wind Ordinance was designed by specialists including a registered landscape architect, a local government official, academic and legal specialists, renewable energy and wind consultants, NGO representatives, and various business representatives.

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<sup>22</sup> AWEA *Guidebook*, *supra* note 8, at 2

<sup>23</sup> Windustry, *Wind Basics: Know Your Options* (2006) available at <http://www.windustry.com/wind-basics/learn-about-wind-energy/wind-basics-know-your-options/know-your-options>

While Part III of this guide will discuss tailoring the particular provisions of the Model Wind Ordinance, certain general considerations are best addressed when considering the Ordinance as a whole:

*Consistency with Georgia Law.* When adopting any local ordinance, it is important to make sure that state law does not preempt the proposed local regulation. Simply put, Georgia law preempts local regulations whenever the legislature has passed a general law regulating the same subject matter.<sup>28</sup> Georgia has not adopted any general laws regulating wind energy generally or the siting and installation of individual turbines and /or wind energy facilities. The only state laws dealing with wind energy at all have to do with interconnection of wind energy facilities to electric service providers<sup>29</sup> and tax credits for construction of wind energy facilities.<sup>30</sup> Neither of these laws could be considered “general laws” regulating wind energy in that they only mention wind energy as one type of energy eligible for interconnection and tax credits. Thus, as long as a local government limits its wind ordinance to wind energy (as opposed to also attempting to regulate areas like water or air quality), state law will almost certainly not preempt a newly adopted wind ordinance.

While preemption by state law should not be an issue, Georgia law imposes an important procedural requirement to keep in mind. The Georgia Zoning Procedures Law (ZPL) imposes notice and hearing requirements on all actions leading to a “zoning decision,”<sup>31</sup> which includes issuance of special use permits.<sup>32</sup> The Model Wind Ordinance suggests requiring a special use

permit for wind energy facilities seeking placement in certain zoning districts. It will be important to follow the procedures for notices and hearings required by the ZPL when issuing special use permits for the installation of individual turbines and/or wind energy facilities.<sup>33</sup> These procedures include providing for a hearing on the proposed action and publication of notice for the hearing between fifteen and forty-five days prior to the hearing date.<sup>34</sup> This notice and hearing requirement need not be repeated in the ordinance, but some local governments may wish to include the requirement as a reminder.

*General Consistency with Local Charter or Code.* New ordinances should be consistent with existing local law. Before drafting any part of a wind ordinance, look to the local charter and code of ordinances for guidance. These documents generally provide procedures for enacting and amending local ordinances,<sup>35</sup> including structure and format requirements.<sup>36</sup>

Municipalities should also consider where to place the wind ordinance within the existing code. Municipal codes vary widely in scope, complexity, and organization, so there is no one-size-fits-all answer to the question of where to include a wind ordinance. This wind ordinance essentially provides requirements for installing and maintaining wind energy facilities. Code chapters that a person might check for such information might include “Environment,” “Land Use,” or “Zoning.” If the wind ordinance does not naturally fit in a similar category in a given code, consider giving it its own chapter.

If a municipality does have a zoning ordinance or “Zoning” chapter, the Wind Working Group recommends placing the wind ordinance near or

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<sup>28</sup> Franklin County v. Fieldale Farms Corp., 270 Ga. 272, 275 (1998) (“The [uniformity clause in the Georgia Constitution] . . . preclud[es] local or special laws when general laws exist on the same subject”). This “field preemption” is subject to an exception that allows local governments to regulate in the otherwise preempted subject area “when general law authorizes the local government to act and the local ordinance does not conflict with general law.” *Id.*

<sup>29</sup> O.C.G.A. § 46-3-56 (2010).

<sup>30</sup> O.C.G.A. § 48-7-29.14 (2010).

<sup>31</sup> O.C.G.A. § 36-66-4 (2010).

<sup>32</sup> O.C.G.A. § 36-66-3(4)(E) (2010) (stating that a zoning decision includes “[t]he grant of a permit relating to a special use of property”).

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<sup>33</sup> O.C.G.A. § 36-66-4 (2010).

<sup>34</sup> O.C.G.A. § 36-66-4(a) (2010).

<sup>35</sup> Steve Lobertini, University of Tennessee Municipal Technical Advisory Service, *Ordinance Drafting and Enactment: Issues and Recommendations 2* (2007), [http://www.tmaa.us/pdfs/mtas\\_ord\\_drafting.pdf](http://www.tmaa.us/pdfs/mtas_ord_drafting.pdf).

<sup>36</sup> Jamie Baker Roskie *et. al.*, Land Use Clinic, University of Georgia, *Drafting Local Ordinances for Natural Resource Protection 4* (2008); *see, e.g.*, Gainesville, Georgia Code of Ordinances, Ch. 2, Art. 4 (2007).

in that ordinance or chapter.<sup>37</sup> This is because the permitting system the Model Ordinance utilizes is grounded in zoning. If a municipality lacks traditional zoning the wind ordinance will need to be located in a different section.

Beyond choosing a commonsense place for the wind ordinance within the context of existing zoning codes, it is important to make sure that the words and phrases in the ordinance comport with any existing definitions or uses of particular language in the code or chapter in which the ordinance is placed.<sup>38</sup> Inconsistency in definitions in a local code can lead to confusion at best and inadvertent invalidation of existing law at worst.<sup>39</sup> If the wind ordinance becomes confusing because it is placed within a chapter that provides conflicting definitions or provisions, it is probably best to either place the ordinance in a different section or carefully go through the ordinance and chapter to ensure consistency. Keep in mind that the latter route may entail amendment of existing law, the procedure for which will also be governed by the existing code or charter.<sup>40</sup>

*Consistency with Construction Codes.* Because a wind energy facility requires construction and installation, it will need to conform to local building ordinances. The Model Wind Ordinance expressly requires code compliance. A local wind ordinance itself, however, must also be consistent with existing local building ordinances. Local building ordinances contain both standard and local components. Local building ordinances in the state of Georgia generally incorporate eight mandatory and two permissive standard construction codes.<sup>41</sup> Beyond these standard codes, however, local codes may also include both local amendments

to the state minimum standard codes as well as provisions unique to a particular municipality. While the Model Wind Ordinance should not conflict with the standard building codes, local governments should make sure that (1) the Model Wind Ordinance as written complies with any local additions to the standard codes and (2) any changes the local government chooses to make to the Model Wind Ordinance when enacting its own wind ordinance also comply with the local building ordinance as a whole. Some potential conflict areas might include height restrictions, setbacks (if not found in a municipality's zoning code), interconnection to the power grid, and aesthetic considerations.

*Consistency with Zoning Ordinance.* To limit confusion and ensure the effectiveness of a local wind ordinance, it should be consistent with the existing zoning code. Much of the Model Wind Ordinance is couched in terms and concepts also commonly used in zoning, including accessory uses, special use permits, and setbacks. The Model Wind Ordinance also uses differences in zoning to determine which permits a particular wind energy project will require.<sup>42</sup> The Ordinance basis in zoning makes it easier to integrate into existing land use law in a municipality.

Some of these terms and concepts may be defined or used differently in local zoning ordinances. For example, the Wind Working Group suggests considering wind energy facilities as an accessory use in certain zoning districts. Different zoning ordinances may define an accessory use in different ways, some of which may not comport with considering a wind energy facility as an accessory use without amendment.<sup>43</sup>

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<sup>37</sup> E-mail from Teresa Eldredge, Registered Landscape Architect, President, TJ Schell, to Andrew Pinson, Land Use Clinic, University of Georgia (Mar. 11, 2010, 08:51:33 EST) (on file with author).

<sup>38</sup> W. Eskridge, Jr. & P. Frickey, *Our Theory of Statutory Drafting: Cases and Materials on Legislation* 831 (1988).

<sup>39</sup> Baker Roskie, *supra* note 39, at 3.

<sup>40</sup> *Id.* at 4.

<sup>41</sup> O.C.G.A. § 8-2-20(9)(B) (2010) (identifying ten “state minimum standard codes”). The state minimum standard codes potentially applicable to wind energy facilities include the Georgia State Minimum Standard (GSMS) Building Code, the GSMS Fire Code, the GSMS Mechanical Code, and the GSMS Electrical Code.

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<sup>42</sup> Wind Working Group of Georgia, Model Wind Ordinance, § 7 (2009).

<sup>43</sup> *See, e.g.*, Whitfield County, Ga., Code of Ordinances, app. A, art. II, §2-2 (2010) (“*Accessory use.* A use of land or of a structure, or portion thereof, customarily incidental to and subordinate to the principal use of the land or structure and located or utilized upon the same lot or parcel as the principal use.”). This example definition of accessory use from Whitfield County may not be interpreted as allowing wind energy facilities as an accessory use to any principal use—wind energy facilities, it could be argued, are not “customarily incidental” to any use of land given that they are a relatively new and uncommon land use. Moreover, common

Generally, inserting a new type of land use into an existing zoning ordinance will require amendment of the zoning ordinance to ensure consistency and effectiveness. For example, the Model Wind Ordinance requires granting a special use permit to install wind energy facilities in certain zoning districts,<sup>44</sup> but allows wind facilities as a permitted or accessory use in other zoning districts. In order to effectuate this scheme, local governments need to amend many provisions of an existing zoning ordinance to include wind energy facilities as permitted, accessory, or special uses in particular districts.

Finally, existing zoning ordinances may contain substantive provisions that would restrict the otherwise available options for constructing wind energy facilities under the Model Wind Ordinance. For example, many zoning ordinances include special regulations for structures like communications towers and radio antennae.<sup>45</sup> These regulations govern height, setbacks, aesthetics, decommissioning, and other areas that may conflict with similar provisions in the Model Wind Ordinance.<sup>46</sup> It will be important to consider such existing provisions and decide whether and how to amend them to comport with a new local wind ordinance.

*Desired Degree of Delegation.* Local governments should consider their preferences for delegating the decision making power over permit applications for proposed wind energy facilities. While Part III discusses the specifics of the Model Wind Ordinance's proposed permitting process for wind energy facility installation, a short explanation is necessary at this point. In the Model Wind Ordinance, the permit application required for installation of wind energy facilities is tied to the required permits applicable to construction of a wind

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perception of wind energy often includes wind farms in fields, not single wind turbines helping to power a house in a neighborhood.

<sup>44</sup> Georgia Wind Working Group, Model Wind Ordinance, § 7 (2009).

<sup>45</sup> See, e.g., Whitfield County, Ga., Code of Ordinances, app. A, art. VI (2010).

<sup>46</sup> See generally Whitfield County, Ga., Code of Ordinances, app. A, art. VI (2010).

energy facility in a given municipality.<sup>47</sup> Thus, which governmental body makes the final decision on an application for installation of a wind energy facility depends on which permit or permits are required for the installation. Requiring a special use permit, for example, would subject approval of a wind facility installation to the body in a municipality that reviews applications for special use permits (typically the general legislative body).<sup>48</sup> Requiring only a building permit (and the associated construction permits), would subject the application to the administrative approval generally required for such permits.<sup>49</sup> These approval processes may differ in their standards of review, procedures, and appeals processes.<sup>50</sup> Each of these differences should inform the decision to require particular permits for wind facilities.

Note that the decision to provide for staff versus legislative approval of wind facilities involves a tradeoff between control and efficiency. Keeping control of such decisions with the general legislative body will likely lead to the higher costs of dealing with each application individually (as well as the additional notice and hearing required by the Georgia Zoning and Procedures Law).<sup>51</sup> Delegating permit

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<sup>47</sup> These permits primarily include building permits, required under local building codes, and special use permits, which may be required in some or all zones in which wind energy facilities are to be allowed, depending on the desires of a particular municipality.

<sup>48</sup> In many municipalities, the general legislative body is charged with granting special use permits. See, e.g., Atlanta, Ga., Code of Ordinances, Land Dev. Code, § 16-25.003 (2010) (requiring City Council to grant special use permits); Athens-Clarke County, Ga., Code of Ordinances, § 9-20-1 (2010) (requiring Mayor and Commission to grant special use permits); Whitfield County, Ga., Code of Ordinances, app. A, art. V, §1 (2010) (requiring Board of Commissioners to approve special use permits).

<sup>49</sup> See, e.g., Athens-Clarke County, Ga., Code of Ordinances, § 7-1-6 (2010) (building official reviews and grants building permit issued after application review by building official); Whitfield County, Ga., Code of Ordinances, § ch. 5, art. I, § 12 (2010) (building permit issued after application review by building inspector).

<sup>50</sup> Compare Athens-Clarke County, Ga., Code of Ordinances, § 7-1-6(f)(1) (2010) (stating that chief building official shall issue building permit upon satisfaction of conformance with building code and other pertinent laws or ordinances and that appeals of decision are to be handled by construction board of appeals), with Athens-Clarke County, Ga., Code of Ordinances, §§ 9-20-5, 9-4-8 (2010) (stating that special use permit shall be granted if proposed use conforms to wide variety of approval conditions and that appeal of decision is subject to judicial review).

<sup>51</sup> AWEA Guidebook, *supra* note 8, at 5 ("Case-by-case application reviews and hearings cost time and money. Proactively planning

application review to staff or other officials will be more efficient,<sup>52</sup> but the general legislative body will have less discretion to scrutinize projects that do not conform to their vision for the community.

Finally, a simpler, streamlined approval process will encourage installation of wind facilities, while a drawn out process requiring hearings and a decision by a city council or county commission will probably discourage development of wind energy.

*Adaptation to Local Geography.* A municipality's local geography affects the development of a wind ordinance in several ways. First, different areas of Georgia differ significantly in their wind potential—that is, their capacity for generating wind power.<sup>53</sup> Municipalities with greater wind potential will need to consider more closely whether they want to include additional provisions that better regulate utility-scale and large commercial-scale wind facilities that may be feasible in areas of greater wind potential.

Second, municipalities located in areas with certain types of geography may need to make accommodations to protect features with particular aesthetic or community value. For example, municipalities in the more mountainous areas of Georgia will need to take special care to ensure that wind energy develops in accordance with their uses of and desires for those areas. Mountainous areas can have relatively high wind potential, which may make them good sites for wind energy facilities.<sup>54</sup> Therefore, it is important for municipalities adopting a wind ordinance in these areas to consider both the specific community benefits and potential opposition when tailoring their

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for small wind installations can be a rewarding investment.”).

<sup>52</sup> *Id.*

<sup>53</sup> *GWWG Wind Development Guidebook*, *supra* note 1, at § I; *see also* AWS True Wind, *supra* note 15; Nat'l Renewable Energy Lab., *supra* note 15.

<sup>54</sup> *GWWG Wind Development Guidebook*, *supra* note 1, at § I (“Strong, frequent winds are ideal for generating electricity.”). *But see* Windustry, Know Your Land, <http://www.windustry.com/wind-basics/learn-about-wind-energy/wind-basics-know-your-land/know-your-land> (last visited April 7, 2010) (“Just because a site is windy does not necessarily mean it is suitable for wind turbines.”).

wind ordinance for local use to ensure a viable approval process for siting wind energy structures and facilities.

Municipalities in coastal areas also may have special concerns when drafting a wind ordinance.<sup>55</sup> Similar to mountainous regions in Georgia, coastal areas have the potential for small, community-based and utility-scale wind installations because of good and consistent wind resources. Aesthetics and viewsheds may be a concern to be considered in a wind ordinance adopted for a coastal municipality.

*Fit with Current and Desired Land Use.* While wind energy provides many benefits to communities, like any proposed land use, it must be situated within a municipality's broader vision for the community. When deciding in what zones or areas of a community to allow certain classes of wind energy facilities, reviewers should consider this question alongside both a zoning map and the municipality's comprehensive plan. While wind turbines are relatively unobtrusive in the right settings, foresight is required to ensure that turbines built in the future will fit in with their surroundings. For example, if a town has a current or proposed historic district, wind turbines may not comport with the goal of preserving the district's historic character, or, if a future land use map envisions residential development in an area that is currently agricultural, it may be prudent to either limit the classes of wind energy facilities that can be installed in that area to prevent problems down the road or to incorporate wind facilities within the earliest stages of the proposed community's layout and design.

The subjects discussed above are a few of the general considerations to keep in mind when planning to adopt a local wind ordinance. The next Part focuses on the details of the Model Wind Ordinance to provide guidance and suggestions for how to use it to draft a local ordinance.

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<sup>55</sup> Discussion with Mary H. Hunt, Director, Special Projects, Strategic Energy Institute, Georgia Institute of Technology, February 10, 2010. For a wind map detailing wind potential in Georgia, *see* AWS TrueWind, *supra* note 12.

### III. Unpacking the Model Wind Ordinance

The previous Parts of this guidebook discussed some of the general considerations for a local government and community when determining what sort of wind ordinance to adopt and how to address the community's unique characteristics and laws. This Part focuses on the Model Wind Ordinance, which the Georgia Wind Working Group crafted to give municipalities a starting point for adopting their own ordinances. This Part proceeds section by section through the Model Wind Ordinance and provides an explanation of each provision, the policy justifications behind the provisions, and suggestions for tailoring specific provisions to a particular municipality.

#### Preamble (Resolution)

The Model Wind Ordinance begins with a preamble in the form of a resolution. This resolution, like most preambles, declares the findings, reasons, and purposes behind the Model Wind Ordinance.<sup>56</sup> Essentially, this resolution states that (1) the local government acknowledges that producing electricity efficiently without negative externalities is in the public interest, (2) wind power is one such method of producing electricity, (3) the municipality has wind resources, and (4) the municipality is committed to encouraging wind power.

*Rationale.* By making official statements of purpose and intent, the resolution demonstrates that the local government has put thought into the new ordinance and has sound reasons for adopting it.<sup>57</sup> During litigation, courts may look to such resolutions to determine the governing authority's intent as an aid to interpreting the ordinance.<sup>58</sup> Having a clear statement of the

local governing body's findings of fact and intent may go a long way towards preventing litigation as well as defending any lawsuits that may arise with respect to the ordinance.<sup>59</sup>

*Tailoring.* When adapting this resolution to a specific locality, it is important to ensure compliance with local rules and customs for adopting ordinances.<sup>60</sup> In particular, documents like city charters may contain required procedures for adopting resolutions.<sup>61</sup> Beyond procedural requirements, it may be beneficial to include community-specific findings, including findings about wind potential and specific benefits to the local community. Disclosing such findings (or even citing commissioned reports that include these findings) will bolster a local wind ordinance's legitimacy.

Note that some municipalities and counties require an *enacting clause* that gives an ordinance full force and effect.<sup>62</sup> If required, the operative language for the clause will generally be given by the provision requiring it.<sup>63</sup> Such a clause should be included if required.

#### Title and Purpose

Many local codes require ordinances to include both a title and a purpose.<sup>64</sup> These codes also limit the substance of an ordinance to the subject matter contained in the title.<sup>65</sup> The Model Wind Ordinance's title, "Wind Energy Facility Ordinance for [county or municipality]" should

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prohibiting adult entertainment in places where alcoholic beverages were served).

<sup>59</sup> Baker Roskie, *supra* note 39, at 7. This is particularly true with respect to claims of substantive due process violations. Providing evidence in the preamble that the governing authority had a rational basis for adopting an ordinance is greatly beneficial for ensuring compliance with substantive due process. *Id.*

<sup>60</sup> Baker Roskie, *supra* note 39, at 4.

<sup>61</sup> Discussion with Jamie Baker Roskie, Director, Land Use Clinic, University of Georgia, February 10, 2010.

<sup>62</sup> Baker Roskie, *supra* note 39, at 4; *see, e.g.*, Suwanee, Ga., Code of Ordinances, ch. 2, art. 2, § 2-114 (2010); Snellville, Ga., Code of Ordinances, ch. 2, art. 2, § 2-114 (2010).

<sup>63</sup> *See, e.g.*, Suwanee, Ga., Code of Ordinances, ch. 2, art. 2, § 2-114 (2010); Snellville, Ga., Code of Ordinances, ch. 2, art. 2, § 2-114 (2010).

<sup>64</sup> *See, e.g.*, Suwanee, Ga., Code of Ordinances, ch. 2, art. 2, § 2-114 (2010); Snellville, Ga., Code of Ordinances, ch. 2, art. 2, § 2-114 (2010).

<sup>65</sup> *See, e.g.*, Gainesville, Ga., Charter, ch. 2, art. 4, § 2.40 (2010).

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<sup>56</sup> Lobertini, *supra* note 38, at 5.

<sup>57</sup> Discussion with Teresa Eldredge, Registered Landscape Architect, President, TJ Schell, February 10, 2010.

<sup>58</sup> Lobertini, *supra* note 28, at 5; *see, e.g.*, Oasis Goodtime Emporium I, Inc. v. DeKalb County, 272 Ga. 887 (2000) (looking to preamble of DeKalb County ordinance to discern findings of fact upon which Board of Commissioners relied to enact statute

suffice unless the local governing authority decides to include in the wind ordinance provisions that regulate subject areas beyond wind energy facilities.

The Purpose in the Model Wind Ordinance is straightforward and contains two parts. First, it states the obvious intent of the ordinance, which is “to provide guidance for the regulation of the construction and operation of Wind Energy Facilities.” Second, it states that the regulation subjects construction and operation of the wind facilities “to reasonable conditions that will protect the environment, public health, safety, and welfare.” This latter clause invokes the police power of the county or municipality, which gives the local government the authority to enact laws like the wind ordinance.<sup>66</sup>

## Definitions

While the definitions provided in the Model Wind Ordinance are straightforward, the Definitions section is quite important to an effective wind ordinance. In general, definitions make an ordinance less ambiguous and easier to read and understand.<sup>67</sup> The definitions found in the Model Wind Ordinance use the defined words within the ordinance in a way that is both consistent and logical. Before making any changes to these definitions, drafters should consider the impact that such changes would have for each instance in which the defined word is used in the ordinance.

As with all language in a new ordinance, it is important to make sure that the definitions found in the wind ordinance do not conflict with those found in other code sections. A simple way to prevent conflict with definitions or language in other code sections might be to include language at the beginning of the Definitions section such as “for the purposes of the provisions of the

[insert municipality] wind ordinance, certain terms shall be defined as follows.”<sup>68</sup>

*Facility Classifications.* The Model Wind Ordinance breaks down Wind Energy Facilities into four classifications based on the rated energy capacity of a facility’s turbine(s). Class I Systems are single-turbine systems rated at less than 20 kilowatts (kW). This classification encompasses the vast majority of small wind systems.<sup>69</sup> Class II Systems are also single-turbine systems, but those rated at 20-100 kW. 100 kW systems are generally considered the upper limit of “small wind” systems.<sup>70</sup> Class III and IV Systems are single or multiple turbine systems rated from 100kW to over 2 MW. These latter two Classes are meant to encompass utility-scale and large commercial-scale wind facilities.

These classifications separate wind turbines based on generator size, which is a good proxy for the scale of *use* for which a particular generator is meant.<sup>71</sup> A turbine with a smaller generator (Class I or Class II) will more likely be used for non-utility applications such as providing power for a home or retail store, while turbines with much larger generators will likely be used for utility-scale or large commercial-scale wind generation.<sup>72</sup> These classifications, however, do not necessarily separate wind turbines based on height.<sup>73</sup> This is important to note because these classifications are used in the

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<sup>66</sup> Regulation of wind energy facilities is clearly a justified exercise of this police power given that the Georgia Supreme Court stated that even aesthetic purposes could justify exercise of the police power. *City of Smyrna v. Parks*, 242 S.E. 2d. 73 (1978).

<sup>67</sup> *Baker Roskie*, *supra* note 39, at 4.

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<sup>68</sup> *See, e.g.*, Ashburn, Ga., Code of Ordinances, appx. A, § 2 (“For the purposes of these regulations, certain terms or words used herein shall be defined as follows.”).

<sup>69</sup> American Wind Energy Association, Small Wind Factsheet, [http://www.awea.org/smallwind/toolbox2/factsheet\\_what\\_is\\_small\\_wind.html](http://www.awea.org/smallwind/toolbox2/factsheet_what_is_small_wind.html) (last visited April 25, 2010) (noting that the size of turbine required to power a home can range from 2 kW to 10 kW).

<sup>70</sup> American Wind Energy Association, Small Wind, <http://www.awea.org/smallwind/> (last visited April 26, 2010) (“[S]mall wind turbines . . . are defined as having rated capacities of 100 kilowatts and less. . .”).

<sup>71</sup> E-mail from Mary H. Hunt, Director, Special Projects, Strategic Energy Institute, Georgia Institute of Technology, to Andrew Pinson, student, Land Use Clinic, University of Georgia School of Law, (Apr. 26, 10:50 AM EDT).

<sup>72</sup> Windustry, *Wind Basics: Know Your Options* (2006) available at <http://www.windustry.com/wind-basics/learn-about-wind-energy/wind-basics-know-your-options/know-your-options>

<sup>73</sup> American Wind Energy Association, Small Wind Factsheet, [http://www.awea.org/smallwind/toolbox2/factsheet\\_what\\_is\\_small\\_wind.html](http://www.awea.org/smallwind/toolbox2/factsheet_what_is_small_wind.html) (last visited April 25, 2010) (noting that the size of turbine required to power a home can range from 2 kW to 10 kW). (“Generator size and tower height are not generally related.”).

wind ordinance to determine both the setbacks required for wind turbines (Section 5A of the Model Wind Ordinance) and whether the installation of particular turbines will require special use permits (Section 7). Thus, when deciding how to calibrate the setback and permit requirements based on these classifications, local governments should realize, for example, that Class I Systems could still reach heights of 140 feet, even if only powering a home.<sup>74</sup>

## Installation and Design

The Installation and Design section of the Model Wind Ordinance governs the installation of wind energy facilities as well as their electrical and mechanical components and their visual appearance.

Section 4A requires installation and design of the Wind Energy Facility to conform to “applicable industry standards.” For small wind installations, the primary standards are those of the American National Standards Institute (ANSI).<sup>75</sup> The American Wind Energy Association (AWEA) also recently promulgated a standard specific to small wind turbines that will be submitted to ANSI for adoption as an American National Standard.<sup>76</sup> Another resource for small wind turbines is the Small Wind Certification Council which is an independent certification body that ensures that small wind turbines meet or exceed the AWEA Small Wind Turbine Performance and Safety Standard. Larger-scale commercial wind farms would also need to conform to occupational standards like

those of the Occupational Safety and Health Administration.<sup>77</sup>

Section 4B requires conformance with relevant local, state and national codes. Because local codes are required to incorporate the applicable state and international codes, this effectively requires conformance with the applicable local construction codes.<sup>78</sup> Applicable codes may include general building codes as well as electrical codes, fire codes, and mechanical codes. If a municipality has specific codes that it considers particularly relevant or applicable to installation of wind turbines, it should mention these codes under this section, especially if these codes are not well known or are unique to the municipality. This will notify potential investors in wind energy that a municipality has special codes with which wind facilities must comply.

Section 4C standardizes the visual appearance of wind energy facilities. Specifically it provides standards for finish, color, lighting, and displays of advertising. These requirements are meant to reduce the aesthetic impact of wind energy facilities.<sup>79</sup> Galvanization inhibits rust. Colors like white and gray blend well into the surrounding environment.<sup>80</sup> The prohibition against most advertising, including flags and streamers, is also intended to help wind turbines blend into their surroundings.<sup>81</sup>

Because these visual appearance requirements stem from aesthetic concerns, they are necessarily subjective assessments of visual appeal. Some communities may wish to adjust or augment these requirements.<sup>82</sup> Such changes, however, might discourage installation of wind

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<sup>74</sup> See, e.g., *AWEA Guidebook*, *supra* note 8, at 2 (showing small wind towers ranging from 30 to 140 feet tall).

<sup>75</sup> American Wind Energy Association, Small Wind, U.S. Industry Consensus Standards Development Activities, <http://www.awea.org/smallwind/standards.html> (last visited April 16, 2010).

<sup>76</sup> AWEA Small Wind Turbine Performance and Safety Standard. This standard was created to “provide a common North American standard for reporting turbine energy and sound performance, and help small wind technology gain mainstream acceptance.” American Wind Energy Association, Small Wind, U.S. Industry Consensus Standards Development Activities, <http://www.awea.org/smallwind/standards.html>. The standard is going to be submitted to ANSI as an American National Standard, but is not yet a binding standard. *Id.*

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<sup>77</sup> Discussion with Mary H. Hunt, Director, Special Projects, Strategic Energy Institute, Georgia Institute of Technology, February 10, 2010.

<sup>78</sup> See *supra* note 44 and accompanying text (discussing local, state, and international building codes).

<sup>79</sup> Email from Mary H. Hunt, Director, Special Projects, Strategic Energy Institute, Georgia Institute of Technology, to Andrew Pinson, Land Use Clinic, University of Georgia (April 7, 2010, 04:06:39 PM EDT).

<sup>80</sup> Cf. *AWEA Guidebook*, *supra* note 8, at 10 (“Studies show that turbines best blend into the sky when painted the factory-default color.”) Requiring owners to paint turbines colors like green or blue to match other parts of the environment “would actually make it stand out more and should be avoided.” *Id.*

<sup>81</sup> *Id.*

<sup>82</sup> *AWEA Guidebook*, *supra* note 8, at 10.

energy facilities. For example, “monopole” turbine towers are generally sleeker and less noticeable than lattice-style towers.<sup>83</sup> Although monopole towers can cost significantly more than other types of towers; they have lower rates of failure due to fatigue; and they do not provide areas that can be used by nesting birds as lattice towers. This additional cost might cause potential investors in wind energy to place their turbines in an area that does not require this additional cost.<sup>84</sup> Therefore, local governments should think carefully about the potential consequences of adopting burdensome aesthetic restrictions to the extent that they want to maximize wind development in their communities.

The height of wind turbines may also be a concern to some community members because height allows turbines to be seen from greater distances. However, “a tall tower is the single most important factor in the economic viability of a small wind system.”<sup>85</sup> Taller towers can exponentially increase a turbine’s efficiency, creating more and cheaper energy.<sup>86</sup> Thus, setting height restrictions on wind turbines could seriously discourage wind development in a community.<sup>87</sup> AWEA recommends that “height restrictions, if any, should only reflect sound and safety concerns.”<sup>88</sup> Thus, the Model Wind Ordinance does not contain explicit height restrictions—height is only limited indirectly through setbacks, discussed in the next section.

## Setbacks

Section 5 of the Model Wind Ordinance provides setback requirements for Wind Energy Facilities. The setbacks (minimum distances between a Wind Energy Facility and certain property lines and buildings) required for a

particular wind turbine correspond to the Wind Turbine Height, which is “the distance measured from the grade at the center of the tower to the highest point of the turbine rotor or tip of the turbine blade when it reaches its highest elevation.”<sup>89</sup> These setbacks range from 0 to 1.5 times the Wind Turbine Height depending on the Wind Energy Facility Class (I, II, III, or IV) as well as from which category of property (e.g., Occupied Buildings on Participating Landowner Property, Public Roads, etc.) the setback is measured. For example, according to the setback chart provided in the Model Wind Ordinance, a Class I Wind Energy Facility with a Wind Turbine Height of 40 feet would need to be positioned at least 44 feet from a Non-Participating Landowner’s property line and at least 60 feet from any Occupied Buildings on that Non-Participating Landowner’s property.

*Calculation and Purpose.* These setbacks are minimum requirements set primarily for insurance and safety purposes.<sup>90</sup> In other words, the setbacks are calculated to protect adjacent property—that of both Participating and Non-Participating Landowners—from problems that may arise from potential damage caused by the wind turbine and/or wind facilities.

Because these setbacks are minimum requirements, some municipalities may want to increase the setbacks to mitigate the aesthetic impact of turbines and reduce the possibility of noise and shadow flicker issues. On the other hand, significant increases in setback requirements might discourage use of wind turbines, particularly in residential and commercial areas. Again, the turbine height is of critical importance for efficient energy generation.<sup>91</sup> This fact, combined with the relatively smaller sizes of residential and commercial lots (as opposed to agricultural tracts), may effectively prohibit installation of wind turbines on many residential and commercial properties. Of course, if a municipality would prefer to limit wind turbine

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<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

<sup>85</sup> *Id.* at 6.

<sup>86</sup> *Id.*

<sup>87</sup> *Id.* at 6-7 (“Hiding” a turbine from neighbors using a shorter tower almost always means hiding it from the wind, too.”). Also note that the setback restrictions contained in the Model Wind Ordinance should effectively limit the height of towers, particularly on smaller residential lots. See *infra* note 97 and accompanying text (noting that setbacks correspond to tower height).

<sup>88</sup> AWEA *Guidebook*, *supra* note 8, at 7.

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<sup>89</sup> Wind Working Group of Georgia, Model Wind Ordinance, § 3 (2009).

<sup>90</sup> Discussion with Teresa Eldredge, Registered Landscape Architect, President, T.J. Schell, February 10, 2010.

<sup>91</sup> See *supra* notes 92-93 and accompanying text.

installation in this manner, it can, but consequences of discouraging wind energy should be noted when considering the decision to increase the setback requirements.

*Consistency with Existing Setback Requirements.* Many municipalities will already have setback requirements as part of their zoning or other land use ordinances.<sup>92</sup> Given the height of most wind turbines, the setback requirements found in the Model Wind Ordinance may not conflict with existing setback requirements.

### Noise and Shadow Flicker

Section 6 of the Model Wind Ordinance limits noise and shadow flicker of wind energy facilities.

*Noise.* Section 6A limits audible sound from Wind Energy Facilities to fifty-five (55) dBA, as measured at the property line of a Non-Participating Landowner.<sup>93</sup> The 55 dBA limit represents a mid-range average taken from several wind ordinances from other jurisdictions.<sup>94</sup> Modern wind turbines, particularly those used for small wind facilities, are very efficient and should have no problem operating well below this threshold,<sup>95</sup> particularly given the height of most turbines and the setback requirements found in the Model Wind Ordinance.<sup>96</sup> In fact, many noise issues that may arise with small wind turbines might be caused by improper installation, lack of regular

maintenance of the turbines<sup>97</sup> or utility blackouts.<sup>98</sup>

When adopting this noise provision, local governments should ensure that it is consistent with other noise ordinances found in the local code. A municipality's noise ordinance may not address noise produced by machinery like wind turbines,<sup>99</sup> but if it does, it may conflict with the noise provision found in the Model Wind Ordinance and one of the provisions would need to be amended for consistency.

*Shadow Flicker.* Shadow flicker occurs when low level sunlight passes through the moving rotor of wind turbines, causing visible intermittent shadows on the ground or structures.<sup>100</sup> This effect is rare even with utility-scale wind turbines, which spin more slowly, and almost nonexistent with small wind turbines, which probably will not spin slowly enough to cause significant shadow flicker.<sup>101</sup> The Model Wind Ordinance's setback requirements should also mitigate this concern.<sup>102</sup>

Still, for the rare case that shadow flicker may become an issue, Section 6B of the Model Wind Ordinance limits shadow flicker cast on an Occupied Building on a Non-Participating Landowner's property to thirty (30) hours per year. Shadow calculators and professional wind software can help estimate potential shadow flicker, but these can be expensive and require technical training for accurate results. For most residential and some community wind projects, their use is probably unnecessary. While not likely to be a problem, a shadow flicker study should be a requirement for any wind farm or

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<sup>92</sup> See, e.g., Catoosa County, Ga., Official Code, appx. B, art. VIII, § 8-1 (2010) (establishing "area, yard, and height requirements" according to zoning districts).

<sup>93</sup> 55 dBA equates to approximately the sound level of normal speech at a distance of three feet indoors, or the sound level of a quiet urban daytime or commercial area outdoors. Jacques Whitford, *Model Wind Turbine By-laws and Best Practices for Nova Scotia Municipalities* 19 (2008).

<sup>94</sup> E-mail from Paul Quinlan, North Carolina Sustainable Energy Association, to Andrew Pinson, University of Georgia Land Use Clinic (April 13, 2010, 12:22:27 PM EDT) (on file with author).

<sup>95</sup> *GWWG Wind Development Guidebook*, supra note 1 ("As wind turbines have become more efficient, more of the wind is converted into rotational torque and less into acoustic noise."); see also *AWEA Guidebook*, supra note 8, at 11.

<sup>96</sup> *Id.* ("Sound decreases significantly with distance from the source (including height – another good reason to allow tall towers). Note that diluting noise is another effect of not placing burdensome height restrictions on wind turbines. *Id.* at 6.

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<sup>97</sup> Interview with Mary H. Hunt, Director, Special Projects, Strategic Energy Institute, Georgia Institute of Technology, February 10, 2010.

<sup>98</sup> *AWEA Guidebook*, supra note 8, at 11.

<sup>99</sup> See, e.g., Athens-Clarke County, Ga., Code of Ordinances, § 3-5-24 (2010) (restricting only noise from mechanical sound-making devices, human-produced sound, commercial advertising, and party noise).

<sup>100</sup> *AWEA Guidebook*, supra note 8, at 17.

<sup>101</sup> *Id.*

<sup>102</sup> *Id.*

when a single turbine is to be installed within 1000 feet of an occupied building.<sup>103</sup>

### Permit Requirement - Generally

The Model Wind Ordinance primarily regulates installation of wind facilities through its permit requirement. Section 7A notes that “[p]ermits are required for building, special use, and other “action” based activity tied to this ordinance” and requires the Facility Owner or Operator to have been issued a permit to construct a Wind Energy Facility. This raises an important point: to regulate wind energy, the Model Wind ordinance uses permits that a locality already requires. These permits include building permits—required by local governments to enforce both local building laws and Georgia’s state minimum standard codes<sup>104</sup>—and special use permits required under a locality’s zoning ordinance. This section will first describe how this permitting process works. It will then point out things to consider with respect to a locality’s existing building permit (building code) and special use permit (zoning) systems.

*The Permit System.* The Model Wind Ordinance provides for a permit system that requires one or more permits. First, all Wind Energy Facilities require a local building permit. To obtain a building permit, the Facility Owner or Operator will need to file the permit application required by Section 7D of the wind ordinance (discussed below) and the application will undergo the review process prescribed by the municipality’s building code (just like any other building permit). This review process would likely be an administrative, staff-driven approval process.<sup>105</sup>

Second, Wind Energy Facilities may also require a special use permit depending on (1) the

classification of the Wind Energy Facility and (2) the zoning district in which a proposed Wind Energy Facility is to be sited. Unlike building permits, special use permits generally require approval by the local legislative body (i.e., the city council or county commission).<sup>106</sup> The permit system is designed in this fashion to allow local governments to calibrate the degree of oversight and control they have over the installation of wind facilities. For example, if a local government foresees no issues with installation of a Class I System to power a farmhouse seated on land wholly within an agricultural zoning district, it can choose to require only a building permit. For additional oversight and control over installation of wind facilities that potentially present additional complexity or fit less ideally with their surroundings, (e.g. a Class III System to be installed in a commercial zoning district), the local government can additionally require a special use permit.

The Sample Permitted Use Table found in Section 7 of the Model Wind Ordinance illustrates this two-tiered system. For example, according to the sample table, Class I Wind Energy Facilities to be sited in an Agricultural zoning district would only require a building permit. Class III facilities to be sited in a Residential district, on the other hand, would also require a special use permit.

One of the most important steps a local government must take in adapting the Model Wind Ordinance is to tailor this permitted use table (and the associated building code and zoning ordinance) to their local codes. First, each municipality’s own zoning districts should be substituted for the example districts. Then, the municipality should consider each of its zoning districts and decide which class(es) of wind turbines will conform to those zoning districts. In making this decision, the local government should first consider its land use goals. It should review the current permitted uses for each zoning district and the municipality’s long-term land use plans and then

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<sup>103</sup> For background on shadow flicker relevancy for distances less than 1000 feet from a building, see *Wind Energy Engineering*, Pramod Jain, 2010, at 258.

<sup>104</sup> See O.C.G.A. § 8-2-25(a) (2010) (authorizing governing authority of any municipality or county to enforce state minimum standard codes).

<sup>105</sup> See, e.g., Athens-Clarke County, Ga., Code of Ordinances, § 7-1-6 (2010) (building official reviews and grants building permit issued after application review by building official); Whitfield, County, Ga., Code of Ordinances, § ch. 5, art. I, § 12 (2010) (building permit issued after application review by building inspector).

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<sup>106</sup> See *supra* note 51 and accompanying text.

decide how well a particular class of wind turbine would fit in each zoning district.

In creating their permitted use table, local governments should also consider the extent of their commitment to encouraging wind energy development and the degree of control they desire over the process. Investors will be more likely to promote wind energy if the approval process is painless and not too risky. The administrative approval typically required for a building permit will likely be quicker and more certain than the legislative approval needed for a special use permit. Thus, listing a particular class of wind turbine as a permitted use in a zoning district may encourage installation in that zoning district. Requiring a special use permit may provide the local government with more control over each particular wind energy installation, but it makes the approval process a little riskier and less streamlined for potential investors.

The Sample Permitted Use Table provides the Wind Working Group's suggestions on how to balance these competing desires to encourage wind development while retaining control over proposed installations. The sample table allows Class I Systems—which includes most small wind systems—as a permitted use (that is, construction requires a building permit, but not a special use permit) in all zoning districts. Class I Systems are smaller, include only one turbine, and will usually be used to power the property on which they rest. These systems may fit well in any zoning district with sufficient setbacks. Class II Systems, with their larger generators, are permitted uses in Agricultural zones but require a special use permit in all other zones. Class III and IV Systems, which can have multiple turbines, require special use permits due to their added complexity and greater potential impact on surrounding land use. The sample table provides a useful starting point.

To implement this two-tiered permit system, municipalities must review their existing building code and zoning ordinance and will need to amend at least the zoning ordinance, if not both. The next subsections discuss what changes might be necessary in these existing

ordinances to implement an effective permit system.

*Building Code.* To use building permits as one of the regulatory mechanisms for wind energy, as the Model Wind Ordinance does, localities should confirm that their building or construction codes contemplate wind energy facilities and require building permits for such facilities. Most localities likely require building permits for all “buildings” and “structures,”<sup>107</sup> and a wind turbine would probably be considered a “structure” under the plain meaning of the word. However, a municipality can more clearly signal that a building permit is required for wind turbines by inserting language into the building codes expressly requiring a building permit for “Wind Energy Facilities” as defined in the wind ordinance.

*Zoning Ordinance.* If a municipality wishes to require a special use permit for any classes of wind facilities, it will need to amend its zoning ordinance to reflect this requirement. Some zoning ordinances provide a permitted use table that lists every permitted land use, the zones in which that land use is permitted, and whether a land use requires a special use permit for any of those zones.<sup>108</sup> For municipalities with these type of ordinances, the primary modification would be to add each class of Wind Energy Facility to this table and to note the permitted zones and special use requirements for each class. Other zoning ordinances specify which uses require special use permits within the provision that defines a particular zoning district (also usually with a permitted use table).<sup>109</sup> Municipalities with this ordinance structure would need to add Wind Energy Facilities of each class to the permitted use section of each zoning district in which they wished to allow

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<sup>107</sup> See, e.g., Athens-Clarke County, Ga., Code of Ordinances, tit. 7, § 7-1-6 (2010) (“[N]o building, structure, or building service equipment regulated by this code . . . shall be . . . constructed . . . unless a separate, appropriate building permit . . . has first been obtained from the building official.”)

<sup>108</sup> See, e.g., Murray County, Ga., Code of Ordinances, appx. B, ch. 2, § 6.3 (2010); Whitfield County, Ga., Code of Ordinances, appx. A, art. XIA (2010).

<sup>109</sup> See, e.g., Athens-Clarke County, Ga., Code of Ordinances, tit. 9, art. I, § 9-10-2 (permitted use table for commercial districts).

wind facilities, and further specify which classes will need a special use permit in each district.

*Localities with No Zoning.* Some municipalities in Georgia have chosen not to implement traditional zoning of any sort. A municipality without zoning can still use the permit requirement of the Model Wind Ordinance. If such a municipality will allow any class of wind facility with only a building permit, it can remove the permitted use table altogether and just note that the permit application is for a building permit. If a municipality without zoning wants the additional oversight of a special use permit requirement (particularly for Class III and IV given their larger scale), it will need to draft additional provisions for its wind ordinance that outline the process required for approval of a special use permit application. This process would likely need to include notice, a hearing, and a vote by the municipality's general legislative body (if the local government wants to mirror the oversight provided by a zoning special use permit).<sup>110</sup>

### **Permit Requirement – Application**

The Model Wind Ordinance requires Facility Owners or Operators to submit a specific permit application to receive the necessary permit or permits to install a wind facility. Section 7D lists the permit application requirements. These requirements provide the local government with upfront assurance that the Facility Owner and Operator will abide by the wind ordinance in the installation and operation of the Wind Energy Facility. For the most part, the required disclosures describe the proposed project to aid in classification and to demonstrate how the wind turbine and/or facility will comply with the standards set by the wind ordinance for aesthetics, setbacks, noise, shadow flicker, maintenance, and decommissioning. The required narratives and descriptions will also help determine whether the facility will comply with local building codes.

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<sup>110</sup> See *supra* notes 35-37 and accompanying text (discussing Georgia's Zoning Procedure Law, including requirement for notice and hearing before issuing special use permits).

*Certification of Compliance with Regulations.* Facility Owners may be required to include in their permit application certification of "compliance with applicable local, state and federal regulations," such as Endangered Species Act (ESA), United States Corps of Engineers (USCOE), Federal Aviation Administration (FAA) and Federal Communications Commission (FCC) regulations."<sup>111</sup> The following paragraphs briefly introduce these regulations and their potential effect on wind turbine siting.

The Endangered Species Act protects species of fish or wildlife listed in accordance with the Act by placing significant restrictions on actions that affect those species and their habitats.<sup>112</sup> With respect to wind facilities, the primary consideration will be whether constructing the wind facility constitutes a "take" of an endangered species.<sup>113</sup> Courts construe "take" as broadly as possible,<sup>114</sup> and eliminating or modifying an endangered species' habitat can be a "taking" under the ESA.<sup>115</sup> The ESA does provide for incidental take permits that allow what would otherwise be a taking to proceed if certain conditions are met.<sup>116</sup> Thus, to meet the requirements of Section 7D of the wind ordinance, a permit application will need to disclose the existence of endangered species, if any, in the proposed project area and provide evidence of compliance with the ESA with respect to that endangered species, including the procurement of an incidental take permit if required.

The United States Corps of Engineers, among other things, regulates navigable waters of the United States. Section 10 of the Rivers and

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<sup>111</sup> *Model Wind Ordinance, supra* note 3, at § 7Dvii.

<sup>112</sup> See 16 U.S.C. § 1538 (2006) (listing acts prohibited with respect to endangered species).

<sup>113</sup> 16 U.S.C. § 1532(19) (2006) ("The term 'take' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.")

<sup>114</sup> See *U.S. v. Town of Plymouth*, 6 F. Supp. 2d 81 (D. Mass. 1998) ("A 'take' is construed in the broadest possible manner to include every conceivable way in which a person can 'take' or attempt to 'take' any fish or wildlife." (internal quotation marks omitted)).

<sup>115</sup> *Env'tl. Protection Info. Center v. Simpson Timber Co.*, 255 F.3d 1073 (9th Cir. 2001) (citing *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 703-04 (1995)).

<sup>116</sup> 16 U.S.C. § 1539(a) (2006).

Harbors Act of 1899 requires a USCOE permit for construction of any structure in or affecting navigable waters of the United States.<sup>117</sup> Navigable waters include “those waters that are subject to the ebb and flow of the tide” as well as those used in interstate or foreign commerce, including oceanic waters.<sup>118</sup> Note that the model wind ordinance does not apply to wind structures placed in navigable waters. However, if a proposed on-shore wind project is to be sited where it affects these navigable waters, a permit application will need to include evidence of a USCOE permit to build a structure in those areas.

As mentioned, the USCOE requires Nationwide Permits (NWP) for a variety of activities affecting wetlands, including a few that may come into play during the installation of wind facilities. NWPs may be required if the construction of the wind facility requires activities like disturbing wetlands in coastal areas, building access roads to the wind facility site that disturb wetlands, or even building access roads to the site that require multiple stream crossings.<sup>119</sup> Given the complexity of the USCOE requirements for NWPs, including whether a NWP is required for a particular project, applicants interested in constructing wind energy facilities would be well advised to hire an environmental consultant to help with the NWP application process.<sup>120</sup>

The Federal Aviation Administration oversees anything that could impact navigable airspace, communications and navigation technology of aviation, or Department of Defense operations.<sup>121</sup> In particular, the FAA requires

filing of a Notice of Proposed Construction for objects that would extend more than 200 feet above ground level and objects close to certain airports.<sup>122</sup> This filing is required so that the FAA can undertake an aeronautical study to determine any potential impacts on air operations.<sup>123</sup> While most wind turbines to be constructed in Georgia will be under 200 feet<sup>124</sup> and building near airports will probably be uncommon, these requirements should be noted and kept in mind. If a proposed project did include a 200+ foot turbine or construction near an airport, the permit application would need to include evidence of FAA approval of the wind turbine’s construction.

The Federal Communications Commission primarily regulates interstate and international communications “by radio, television, wire, satellite, and cable.”<sup>125</sup> While wind turbines do not currently fall under the FCC’s regulations, the FCC has proposed rules that may limit construction of towers near AM radio antennae.<sup>126</sup> Thus, applications for proposed wind projects to be sited near radio towers may require additional review, particularly if the FCC does begin regulation of non-radio towers including wind turbines.

Construction of wind energy facilities, particularly small wind facilities, may not trigger any of these federal regulations. Still, it will be important for the staff reviewing the permit applications to be familiar with these regulations to know when they may come into play.

*Mountain Protection Ordinance and Coastal Ordinance Narrative.* As part of the permit application, Facility Owners or Operators must submit a “narrative describing how the proposed project will address compliance with any Mountain Protection Ordinance or any

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<sup>117</sup> 33 U.S.C. 403 (2006).

<sup>118</sup> 33 C.F.R. § 329 (2010).

<sup>119</sup> E-mail from Teresa Eldredge, Registered Landscape Architect, President, TJ Schell, to Andrew Pinson, student, Land Use Clinic (May 4, 2010, 09:18 AM EDT); see 72 Fed. Reg. 11092, 11180-98 (Mar. 12, 2007), available at [http://www.usace.army.mil/CECW/Documents/cecwo/reg/nwp/nw\\_p\\_2007\\_final.pdf](http://www.usace.army.mil/CECW/Documents/cecwo/reg/nwp/nw_p_2007_final.pdf) (listing and describing each NWP).

<sup>120</sup> E-mail from Mary Carr Bendeck, Renewable Energy Coordinator, Southern Alliance for Clean Energy, to Andrew Pinson, student, Land Use Clinic, University of Georgia School of Law (May 5, 2010, 10:31 AM EDT).

<sup>121</sup> Ma. Tech. Collaborative, *Airspace Issues in Wind Turbine Siting*, available at [http://www.masstech.org/renewableenergy/MTC\\_FAA.pdf](http://www.masstech.org/renewableenergy/MTC_FAA.pdf) (last visited May 3, 2010). This document provides an abundance of

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useful information about the FAA’s guidelines and how they may affect wind turbine siting.

<sup>122</sup> *Id.*

<sup>123</sup> *Id.*

<sup>124</sup> See *supra* note 81 and accompanying text.

<sup>125</sup> FCC, About the Federal Communications Commission, <http://www.fcc.gov/aboutus.html> (last visited May 3, 2010).

<sup>126</sup> Federal Communications Commission, An Inquiry Into the Commission’s Policies and Rules Regarding AM Radio Service Directional Antenna Performance Verification, MM Docket No. 93-177, at appx. E (2008).

equivalent coastal ordinance that has been adopted.”<sup>127</sup> Georgia law requires local governments in mountainous areas to promulgate mountain protection ordinances.<sup>128</sup> These ordinances may include provisions that limit the height of structures, require landscaping plans, and limit land disturbances in protected areas.<sup>129</sup> The required narrative ensures that Facility Owners will abide by any applicable Mountain Protection Ordinances when installing a wind facility.

Georgia law also protects coastal waters, beaches and sand dunes. Separate permits are required to construct any structure on Georgia’s shoreline, which includes the submerged shoreline out to the edge of Georgia’s jurisdiction.<sup>130</sup> Moreover, coastal municipalities may have their own shoreline protection programs.<sup>131</sup> The wind ordinance permit application requires Facility Owners or Operators to include a narrative describing how the proposed project will comply with any such shoreline protection ordinances. It will be important to ensure compliance with such ordinances if a potential wind investor wants to take advantage of the good, consistent wind on the lands adjacent to Georgia’s coast.<sup>132</sup>

### **Decommissioning**

Section 8 of the Model Wind Ordinance requires wind facilities to be decommissioned if not used for electricity generation for a continuous period of twelve months. Decommissioning is required both for aesthetic and safety purposes.<sup>133</sup> A nonfunctioning wind turbine could eventually

rust or fall apart and become an eyesore.<sup>134</sup> More important, it may become a safety hazard if left in disrepair.<sup>135</sup> Section 8A gives those associated with the wind facility three months from the end of the 12-month period of inactivity to complete decommissioning. Three months should be sufficient to allow for removal of the turbine as well as associated buildings and mechanical components.

### **Sanctions**

Section 9 provides for criminal sanctions in the form of fines and imprisonment for violation of the provisions of the wind ordinance. Sanctions provide the regulatory “teeth” to ensure that owners and operators comply with the wind ordinance. Without explicit sanctions, owners and operators are far more likely to attempt to cut corners or entirely disregard parts of the wind ordinance that may entail additional costs or complications. Section 9A makes violation of any provision of the ordinance a misdemeanor punishable by a fine of up to \$1000 or imprisonment of up to a year in jail. It also requires enjoinder of the activity that violates the ordinance. Also, each day that the violation occurs is a separate offense, which makes violation of the ordinance over time more costly than compliance.

### **Severability**

Finally, section 10 of the Model Wind Ordinance declares that each section, paragraph, sentence, clause, and phrase of the ordinance is “severable.” This essentially tells a court that decides it needs to strike down any part of the ordinance that the local government intended the rest of the ordinance to remain intact. While courts are not required to uphold severability provisions, they may take them into account to prevent a municipality from being left without a wind ordinance. It is unlikely that a court will strike down a wind ordinance modeled closely after the Model Wind Ordinance, but the severability provision at least provides an added precaution in such a case.

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<sup>127</sup> *Id.* at § 7Dvi.

<sup>128</sup> O.C.G.A. § 12-2-8(a), (h) (2010).

<sup>129</sup> *See, e.g.*, Fannin County, Ga., Code of Ordinances, § 42-412 (2010).

<sup>130</sup> O.C.G.A. § 12-5-320 (2010).

<sup>131</sup> *See* O.C.G.A. § 12-5-241(a), -243 (2010) (allowing local governments to adopt shore protection programs and ordinances)

<sup>132</sup> *See, e.g.*, AWS TrueWind, Georgia Wind Resource Map, <http://gawwg.org/resources/georgiawindresourcemap.html>; Nat’l Renewable Energy Lab., *Georgia Wind Map and Resource Potential*,

[http://www.windpoweringamerica.gov/wind\\_resource\\_maps.asp?stateab=ga](http://www.windpoweringamerica.gov/wind_resource_maps.asp?stateab=ga).

<sup>133</sup> Discussion with Mary H. Hunt, Director, Special Projects, Strategic Energy Institute, Georgia Institute of Technology, Mary Carr, SACE, and Teresa Eldredge, Registered Landscape Architect, President, TJ Schell, February 10, 2010.

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<sup>134</sup> *Id.*

<sup>135</sup> *Id.*

#### **IV. Conclusion**

Wind energy is a rapidly growing industry that can provide significant economic and environmental benefits to communities in Georgia. Providing an effective wind ordinance is one of the best ways to encourage responsible development of wind energy facilities in a community. While drafting a new ordinance can be complicated, this guide should be invaluable for helping local governments become aware of the many considerations that go into drafting wind ordinances and how to best tailor the Model Wind Ordinance to a specific municipality. For further guidance and information to aid in adopting a wind ordinance, please contact the Georgia Wind Working Group at [www.gawwg.org](http://www.gawwg.org) or email [wind@gawwg.org](mailto:wind@gawwg.org).