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THINK YOU'RE DONE? HARDLY.
A Primer on Environmental Concerns Applicable During the Construction and Operations Phase of a Wind Project

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THINK YOU'RE DONE? HARDLY. A Primer on Environmental Concerns Applicable During the Construction and Operations Phase of a Wind Project.

There is no question that various environmental statutes and regulations are applicable in the pre-construction or permitting stages of a wind project. However, additional care must be exercised and further actions may be required during the construction and operation phases. While this paper is intended to present a primer on the applicable law as well as the known and possible considerations for the effect of environmental policies on these phases of a project, it becomes readily apparent with any reasonable investigation that uncertainty surrounds which laws and policies are actually enforced and what steps are necessary to be taken. This in no way intimates that wind developers should roll the dice and take their chances that no one will enforce these policies, first because it demonstrates a lack of prudence, but furthermore because despite the relatively lax regulatory scheme found in Texas, the winds of change are blowing. This paper will assess some of the various environmental rules and policies that do, and in some instances could, affect the construction and operation of a wind project.

I. Birds and Bats

Perhaps the most widely acknowledged and hotly contested issue faced by wind development currently is the affect of turbines on our winged friends. According to the Texas Parks and Wildlife Department, of the 615 species of birds identified in Texas, over half of them are migratory birds.[1] Texas, in particular the state's coastal areas, lies at the heart of the Central Migratory Flyway of North America.[2] Consequently, surveys and assessment of a project's potential affect on birds and bats is necessary.

Bird and bat evaluations are presently done by most developers in the pre-construction or permitting phase of project development, which specifically analyze the current and expected bird habitats and routes at the proposed site. The results of such evaluations are taken into consideration when siting turbines. However, project developers must also be cognizant of bird and bat issues during the operations phase and, to a lesser degree, the construction phase of development. The need for evaluation arises from the relevant protective statutory provisions, in particular the Migratory Bird Act, the Bald and Golden Eagle Protection Act, and the Endangered Species Act.

A. Applicable Law

1. The Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act

Enacted in 1918, the Migratory Bird Treaty Act (MBTA) creates a strict liability standard for the taking of any migratory birds.[3] Specifically, the Act makes it illegal to hunt, capture, kill, pursue, shoot, wound, trap, capture, or collect any migratory bird, and proof of intent is not a

[1] Texas Parks and Wildlife Department, *Bird Migration: Frequently Asked Questions*, http://www.tpwd.state.tx.us/huntwild/wild/birding/migration/faq (last visited February 4, 2008).
[2] *Id*., *Migratory Flyways of North America*, http://www.tpwd.state.tx.us/huntwild/wild/birding/migration/flyways/central/ (last visited February 4, 2008).
[3] 16 U.S.C. §§ 703-712.

requirement for conviction pursuant to the law.[4] In 1972, the MBTA was amended to include bald eagles and other birds of prey as migratory birds subject to the Act.[5]

Similarly, the Bald and Golden Eagle Protection Act (BGEPA) prohibits any taking of the protected eagles, including disturbing them, which is defined as agitating or bothering to a degree that causes, or is likely to cause, injury to the bird, decrease in productivity, or nest abandonment.[6] It should be kept in mind that golden eagles are found in various areas in Texas, from the Panhandle to the coast, and therefore wind development here must take this law into consideration.

The penalties resulting from violations of either of these statutes are significant, and involve criminal as well as civil liability. Penalties for violations of the MBTA consist of fines to individuals of up to $5,000 and/or six months imprisonment for a misdemeanor, and up to $250,000 and two years imprisonment for a felony conviction.[7] For organizations violating the MBTA, the fines are doubled.[8] Pursuant to the BGEPA, golden and bald eagles are further protected, and penalties pursuant to the Act are up to $250,000 and/or two years imprisonment, with fines doubled for an organization.[9]

Despite the gloomy picture this analysis paints to wind developers for the prospect of avoiding liability under the protections afforded in these laws, enforcement in practice is much different. In its Interim Guidance document addressing avoiding and minimizing wildlife impacts from wind facilities, the United States Fish and Wildlife Service ("USFWS") stated:

> The FWS Office of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but also through fostering relationships with individuals, companies, and industries who seek to eliminate their impacts on migratory birds. Unless the activity is authorized, it is not possible to absolve individuals, companies or agencies from liability even if they implement avian mortality avoidance or similar conservation measures. However, the Office of Law Enforcement focuses on those individuals, 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.[10]

Additionally, from the cover letter of the 2003 Interim Guidance:

> While it is not possible under the Act to absolve individuals, companies, or agencies from liability if they follow these recommended guidelines, the Office of Law Enforcement and Department of Justice have used enforcement and

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[4] *Id*.
[5] U.S. Department of Interior, Fish and Wildlife Service, *Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines*, p. 35 (May 13, 2003).
[6] 16 U.S.C. § 668a.
[7] 16 U.S.C. § 668a-b.
[8] U.S.F.W.S., *Service Interim Guidance*, p. 35.
[9] *Id*.
[10] *Id*.

> prosecutorial discretion in the past regarding individuals, companies, or agencies who have made good faith efforts to avoid the take of migratory birds.[11]

Overall, the USFWS is more interested in working with wind developers subject to these laws than it is in prosecuting them under the acts. Further evidence of this is found in a report by the Government Accountability Office which states:

> Although significant wildlife mortality events have occurred at wind power facilities, the federal government has not prosecuted any cases against wind power companies under these wildlife laws, preferring instead to encourage companies to take mitigation steps to avoid future harm.[12]

Summarily, while bird kills are subject to the strict liability standards of the MBTA and GBEPA and carry hefty penalties, a developer's best tack is to consult with the local USFWS office early on in the site assessment process. It most likely will avoid serious prosecution under the statutes.

2. Endangered Species Act

The Endangered Species Act was enacted in 1973 and contains the stated purpose of providing "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth" in the statute.[13] In general, the statute prohibits any person, including private and public entities, from taking, possessing, selling, delivering, receiving, carrying, transporting or shipping any of the species of fish and wildlife listed pursuant to section 1533 of the statute.[14] The Act further provides for the protection of the habitats required for the survival and recovery of an endangered species.[15]

Currently, there are approximately 106 federally-listed species found in Texas, including birds, bats, fish, and plants.[16] Texas Parks and Wildlife Department has listed approximately 116 species of threatened or endangered species in the state.[17]

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[11] U.S. Dept. of Interior, Fish and Wildlife Service, *Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines*, p. 2 of cover (May 13, 2003).
[12] U.S. Government Accountability Office, *Impacts on Wildlife and Government Responsibilities for Regulating Development and Protecting Wildlife*, GAO-05-906 (September 2005).
[13] 16 U.S.C. § 1531(b) (2007).
[14] *Id*., § 1538(a).
[15] 50 C.F.R. § 17.3.
[16] C. Lee Sherrod; *Threatened and Endangered Species*, presented at Wind Energy continuing legal education seminar, January 29, 2008, Austin, Texas, p. L-5. It should be noted that the ESA does not protect federally-listed plant life on private lands. Without a nexus providing federal jurisdiction over the private lands, any plant species thereon are unprotected by the Act. *Id*.
[17] Linda Campbell, *Endangered and Threatened Animals of Texas: Their Life History and Management*, p. 127-129 (2003); http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_w7000_0013.pdf (last visited February 4, 2008).

B. Post-Construction/Operations

Based on the previously-discussed applicable statutory provisions to protect birds and bats (along with other species), it becomes clear that the majority of the work necessary relating to these species, including evaluations and monitoring, must be completed during the pre-construction stage. However, despite no formal or binding rules or regulations requiring such activities, a wind developer should conduct post-construction monitoring of avian and bat deaths.

The push for post-construction monitoring has become a relatively recent phenomenon, but has gathered steam. For instance, in the USFWS Interim Guidance document previously discussed here, USFWS recommends that post-construction monitoring of wind facilities should be designed to detect "major impacts" of the operation of the wind project, but is not expected to exceed three years in duration.[18] In the April 26, 2004 follow up, the Service states that "this does not mean that three years of monitoring should be recommended at all sites," since one year of monitoring may indicate whether further monitoring is necessary.[19] The Service recognizes that the post-construction monitoring effort depends upon the pre-development assessment of wildlife use and mortality studies.[20]

"Post-development mortality studies should be a part of any site development plan in order to determine if or to what extent mortality occurs. As with pre-development studies, ranking may suggest the extent and duration of study needed. Studies should be designed in coordination with Federal and other agency biologists."[21] The specifics of the recommended procedures for pre-construction (and consequently post-construction) assessments, including the selection of recommended personnel for undertaking the tasks, are outside the scope of this paper, but do affect the type and quality of the post-construction monitoring envisioned by the Service. For more detailed information on the procedures, review the May 13, 2003 Interim Guidance document.

On a state level, post-construction monitoring has also been suggested. Texas Parks and Wildlife Department is negotiating and compiling wind energy siting guidance documents for distribution. As it currently stands, one year of post-construction surveys is the standard, with the understanding that certain areas may require additional post- (and pre-) construction monitoring, dependent upon location and the fish and wildlife resources in that area, and especially in instances where little information exists related to the effect of wind energy development on species or in general.[22]

C. The Bottom Line

Why the push for post-construction monitoring? Will the discovery, following the installation and operation of a wind facility for anywhere from one to three years, of

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[18] May 13, 2003 *Service Interim* Guidance, p. 10.
[19] U.S. Dept. of Interior, Fish and Wildlife Service; *Implementation of Service Voluntary Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines*, p. 2 (April 26, 2004).
[20] May 13, 2003 *Service Interim* Guidance, pp. 10-11.
[21] *Id*. at p. 3.
[22] January 18, 2008 electronic mail message from Kathy Boydston to Greg Friend.

"unacceptable" amounts of bird and/or bat kills require specific action? As previously noted, the MBTA is a strict liability statute, but one that the USFWS has ultimately stated it will not heavily enforce unless developers fail to attempt to resolve the defined problems. In this context, post-construction monitoring serves dual purposes: First, the study validates (or negates) any conclusions and recommendations made during the risk assessment and pre-construction monitoring process.[23] Next, it can provide data allowing "mid-course correction," or resolving problems discovered through "subsequent use of deterrents, mitigation, or alternative actions."[24] In short, post-construction monitoring can serve not only as a data set upon which to tweak already existing wind projects, but to provide a blueprint for further development in the area. For mid-course corrections, the current thought is to seek agreement from project operators to engage in adaptive management, which is addressed in more detail later in this paper.

While no consistent, scientifically valid protocols are yet available and agreed upon for intensity, duration, and extent of pre- or post-construction studies,[25] it appears the USFWS is heading towards turning its Guidance Document into a regulation, which would carry the force of law and no longer contain "recommended" actions. This, in tandem with the guidance document to be released by TPWD, should make clear what each developer is mandated to perform before and after development.

Wind developers are guided, and possibly soon will be required, to conduct post-construction monitoring, and may also be asked to change dates and times of operation, alter cut-in speeds, or other management amendments as a result of the data compiled during that survey. USFWS has not actively utilized its considerable powers under the relevant laws, and in return has sought education and an exchange of information from wind developers. It appears to be the most prudent manner in which to proceed, and the best idea in the long run.

II. Wetlands

Along with wildlife impacts, the other major environmental "concern" for wind project developers involves wetlands. The complexity and uncertainty currently surrounding the regulatory structure can provide some confusion. While the effects of wetlands regulations during the construction and/or operations period are relatively straight-forward, the triggers to respond and abide by those rules is presently difficult.

The Rivers and Harbors Act of 1899 created a statutory scheme to protect the navigable waters of the United States.[26] Section 10 of the Act requires a permit to build structures (including wharfs, piers, jetties, etc.), or excavate, fill, or otherwise make modifications to navigable waters of the United States, or any work which would affect the course, location, condition, or capacity of the navigable waters of the United States.[27]

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[23] Albert M. Manville, II, Ph.D., *Special Considerations*, presented at Wind Energy continuing legal education seminar, January 29, 2008, Austin, Texas, p. J-5,6.
[24] *Id*.
[25] Manville, II, PhD; *Special Considerations*; p. J-3.
[26] 33 U.S.C. §401-403.
[27] 33 U.S.C. §403.

Section 404 of the Clean Water Act (enacted in 1972 and later amended) provides that any discharge of fill material into waters of the United States requires the issuance of a permit from the United States Corps of Engineers ("USACE"). Section 404 jurisdiction includes Section 10 navigable waters, plus their tributaries and adjacent wetlands, playa lakes, prairie potholes, and others, where the use, degradation or destruction of such waters could affect interstate or foreign commerce.[28] Several types of permits are available, but most wind development is able to meet the Section 404 requirements under one of the two nationwide permits described below:

1. Nationwide Permit 12 ("NW 12") permits activities required for construction, maintenance, repair or removal of utility lines and associated facilities provided it does not result in the loss of greater than ½ acre of waters of the U.S.[29] Nationwide Permit 12 provides authority to install and maintain transmission lines, O&M buildings, and the like.

2. Activities required for construction, expansion, modification, or improvement of linear transportation projects (e.g., roads) in waters of the United States are permitted pursuant to Nationwide Permit 14, so long as the construction does not affect more than ½ acre in non-tidal waters.[30] In tidal waters of the United States, the loss cannot be greater than ⅓ acre.[31]

In the event that development of property requires effects to wetlands outside of the parameters of the nationwide permits discussed above, a developer may be required to file for an individual permit pursuant to section 404(b)(1). This process can be time-consuming and complex.

Following the issuance of a permit, a developer is ultimately responsible for satisfying its conditions. Where the permit's requirements are not met, enforcement powers are shared by the EPA and the USACE, depending on the nature of the violation. For a violation of the terms and conditions of a permit, USACE has the authority to order and assess administrative penalties.[32] Where a person discharges dredged or fill materials into wetlands without a permit, the administrative authority to order and penalize lies with the EPA.[33] Persons willfully or negligently violating the terms of a permit are subject to civil penalties no less than $2,500 or more than $25,000 per day, and/or imprisonment for not more than one year.[34] Recidivists are susceptible to a fine of not greater than $50,000 per day, and/or up to two years imprisonment.[35] It should be noted, however, that the payment of the fine does not waive the necessity for a permit. In other words, violators must still go through the permitting process in order to continue operations.

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[28] 33 C.F.R. § 328.3.
[29] 72 Fed. Reg. 11182-11183 (2007).
[30] *Id*. at 11183-11184.
[31] *Id*.
[32] 33 C.F.R. § 326.3(c).
[33] 33 U.S.C. § 1319(a).
[34] *Id*., § 1344(s)(4)(A).
[35] *Id*.

Further resolutions of permit violations or unpermitted discharges exist. For instance, a developer may choose to restore the wetland to its original state, file an "after-the-fact permit" pursuant to 33 C.F.R. 326.3(e), or enter into a settlement agreement pursuant to Nationwide Permit 32. For particularly uncooperative parties or egregious violations, USACE may refer the case to EPA to open and prosecute an enforcement action, which could result in litigation to resolve the problems.[36] In any event, the obvious prudent route is to satisfy the requirements of the CWA as it relates to wetlands, thereby rendering the ramifications of failing to do so moot.

Wind project developers in Texas must also consider the provisions located in Chapter 86 of the Texas Parks and Wildlife Code. Chapter 86 requires a permit for the disturbance or taking of "marl, sand, gravel, shell, or mudshell under the management and protection of the" TPWD.[37] The TPWD has jurisdictional authority over state-owned lands, including creeks, rivers, and 10.36 nautical miles from the Texas coast out into the Gulf of Mexico. A permit by rule is also available under this chapter.[38] The failure to comply with its terms operates as an immediate termination of the permit.[39] Persons violating section 86.002 (including those with a revoked permit) commit a Class C Parks and Wildlife Code misdemeanor, and are subject to a civil penalty of not less than $100 or more than $10,000 for each act and for each day.[40]

III. Historic Preservation

The National Historic Preservation Act, first enacted in 1966 and amended several times thereafter, focuses on preserving historic resources of the United States, in part by creating the National Register of Historic Places.[41] The Act requires that federal agencies determine the presence of and take into account the effects of proposed developments built, funded, licensed or permitted by a federal agency on objects listed on the National Register.[42]

If a wind project is receiving federal support, for example in the form of loans, or is subject to federal permits, an evaluation of the historical or cultural resources present on the land would be required.[43] Additionally, some of the lands to be included in a wind project may themselves receive some sort of federal assistance, including the Conservation Resource Program (CRP), Conservation Security Program (SCP), Environmental Quality Incentives Program (EQIP), and others. This, too, may trigger federal jurisdiction over the project, meaning the development is subject to section 106 of the National Historic Preservation Act, requiring all federal agencies to take into account the effects of their actions on historic properties.

The regulations related to the federal government's implementation of the NHPA also provide some guidance regarding the discovery of historic properties following the completion of the 106 review. 36 C.F.R. § 800.13 initially provides that the reviewing agency's official may

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[36] This referral is based upon the *Memorandum of Agreement between the Department of Army and EPA Concerning Federal Enforcement for the Section 404 Program of the Clean Water Act*, January 19, 1989.
[37] Tex. Parks & Wildlife Code Ann. § 86.002 (Vernon 2002).
[38] *Id*., §86.007.
[39] *Id*., §86.009.
[40] *Id*., §§ 86.022, 86.024.
[41] 16 U.S.C.A. § 470-1.
[42] *Id*., § 470f.
[43] Farmer's Legal Action Group, *Farmer's Guide to Wind Energy*, p. 4-42 (2007).

develop a "programmatic agreement" to deal with unanticipated historical discoveries following commencement of the relevant operations.[44] In the event the official believes that historic properties are "likely to be discovered," and a programmatic agreement has not been installed previously, the representative should make some provision in his or her findings of a process to resolve any "adverse effects."[45] Finally, if discoveries of historic properties are made without the planning discussed previously, the official shall make reasonable efforts to avoid or mitigate adverse effects to the property and (1) if construction has not commenced, resolve the potential adverse effects in a manner consistent with the regulations (36 C.F.R. § 800.6), or (2) if construction has commenced, determine actions that the official can take "to resolve any adverse effects" and notify the state, territorial, or Indian tribe representatives within 48 hours of the discovery.[46]

What this ultimately means to the developer is that in a situation during construction where a historic or cultural resource is discovered without prior review by the federal official, there exists the potential that the work could be stopped while a solution is designed. As in most instances, it is of great benefit to the developer to ensure that the federal official has provided for any contingencies prior to the commencement of construction in order to avoid costly and time-consuming instances like that described.

Another route to the enforcement of the NHPA occurs where the U.S. Corps of Engineers, in the course of its review of an area subject to a section 404 wetlands permit, either discovers or is informed of the fact that the wind project site could impact a historic property. Upon such a finding, if the District Engineer reasonably expects the area to be affected by the project, the developers will be asked to "voluntarily" avoid the area during construction until a recommendation is presented by the National Park Service.[47] After gathering the data and the recommendation, the District Engineer may modify, suspend, or revoke a permit.[48]

Closer to home, the Antiquities Code of Texas is the equivalent state statute enacted to "protect and preserve" objects and locations "of historical, archeological, educational, and scientific interest. . . ." found on the land or within the jurisdiction of the State of Texas.[49] Any plans to conduct projects or activities to be conducted on state or local public land must be submitted to the Texas Historical Commission ("THC") for a determination of whether the area is historically significant, whether a survey is necessary, and if so, whether the activities could disturb historic or archaeological sites on public land.[50] Should a project be already underway, the activity must be abated upon the discovery of an archaeological site and the THC must be notified.[51] Sites on private lands designated pursuant to section 191.094 as "landmarks" may not be altered or damaged without a permit from the THC.[52]

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[44] 36 C.F.R. § 800.13(a)(1).
[45] 36 C.F.R. § 800.13(a)(2).
[46] 36 C.F.R. § 800.13(b).
[47] 33 C.F.R. § 325, Appendix C.
[48] *Id*.
[49] Tex. Nat. Res. Code Ann. § 191.002 (Vernon 2001).
[50] *Id*., § 191.0525(a).
[51] *Id*., § 191.0525(g).
[52] *Id*., § 191.095.

Violation of the provisions of the Antiquities Code is punishable by a fine no less than $50 and no more than $1,000 and/or no more than 30 days imprisonment.[53] Each day of continued violation constitutes a separate offense.[54] In addition, the Texas Attorney General may bring suit for injunctive relief and other equitable remedies.[55]

A survey of the land pursuant to these historical and cultural protection statutes may reveal no items of historical significance and the project may continue forward. However, during the construction phase of a project, it is possible that contractors could discover that the area could potentially be an eligible historic property. At this stage, the wind developer should contact the proper agency (depending on whether it is federal or state) to determine what procedures should be undertaken next.

Consequently, a relatively extensive assessment of the property in the pre-construction phase is warranted. While it is possible that an area subject to this historic property classification will not be discovered until ground is broken, it is often better safe than sorry, and likely puts the developer in a better position, not only with the authorities, but from a historical and cultural perspective as well.

IV. Discharges/TPDES.

In 1972, amendments to the Federal Water Pollution Control Act (now called the Clean Water Act) were enacted to assist in the restoration and maintenance of the chemical, physical, and biological integrity of the United States' waters.[56] Among the processes created to meet this purpose was the National Pollutant Discharge Elimination System (NPDES), which regulates the discharge of pollutants to navigable waters of the United States from point sources.[57]

In September 1998, TNRCC/TCEQ received authority to administer the state version of this permitting structure, the Texas Pollutant Discharge Elimination System (TPDES) program.[58] One aspect of TCEQ's regulatory authority pursuant to this program is the regulation of storm water associated with construction activities due to their potential impact on the water quality of affected bodies of water. This area is governed by the TCEQ's General Permit to Discharge Waste ("Construction General Permit" or "CGP"), identified as TPDES General Permit No. TXR150000.

The CGP authorizes discharges from construction activities which runoff into or are adjacent to any surface water of the state.[59] Discharges resulting from the routine washing of vehicles, the external portion of structures, and pavement[60] for the purpose of removing mud,

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[53] *Id*., § 191.171(a).
[54] *Id*., § 191.171(b).
[55] *Id*., § 191.172.
[56] CWA § 101(a); 33 U.S.C. § 1251(a).
[57] CWA § 402(a); 33 U.S.C. § 1342(a).
[58] 63 Fed. Reg. 51,164 (1998).
[59] TPDES General Permit No. TXR150000 (March 5, 2003).
[60] So long as the pavement is a location where soaps are not used and where spills or leaks of hazardous materials have not occurred, unless removed according to federal, state, or local standards.

dirt, or dust, as wells as water used to control dust are also authorized under the CGP.[61] The permit further authorizes discharges from industrial activities at construction sites, including, *inter alia*, batch plants, equipment staging areas, and storage yards, that are located within one-mile of the boundary of the permitted construction site, directly supports the activity, and does not operate beyond the completion date of the activity.[62]

Construction activities under the CGP are separated into "large" and "small" categories, and defined by the amount of acreage affected. Activities that disturb from one to five acres total are considered "small," while those disturbing greater than five acres considered "large."[63] It should be noted that a disturbance of less than five acres of total land that is part of a larger common plan of development that will ultimately disturb greater than five acres is still considered a large project.[64] The categories determine the additional requirements to be satisfied in order to be eligible for the permit. While most commercial wind facilities will reside in the large construction category, the occasional project may be considered "small." Some important differences regarding the requirements distinguishing the two categories include deadlines for obtaining discharge authorization and a requirement to submit a Notice of Intent ("NOI"). One shared significant aspect of the process is the creation and implementation of a Storm Water Pollution Prevention Plan ("SWP3") for the proposed construction site. Various requirements and mandates are involved in the SWP3, but that discussion is ultimately outside the scope of this paper.

Upon receipt of authorization to conduct construction activities pursuant to the CGP, several ongoing requirements are of particular importance. First, the erosion and sediment control measures listed in the SWP3 must be inspected and maintained.[65] A finding that the control measures are not functioning properly or have been rendered ineffective requires correction or replacement.[66] The permit also specifies the instances and procedure for regular inspection. Inspections must be performed at least once every 14 days (or sooner if desired and laid out in the SWP3) and within 24 hours following a storm event of ½ an inch of rain or greater.[67] The inspection should include any disturbed areas and areas where vehicles enter or exit.[68] The findings of these inspections must be reported and retained with the SWP3, and should include documenting where an inspection uncovers a "major observation," (*e.g.* locations of discharges or other pollutants; locations where the installed best management practices are in need of maintenance, have failed, or additional ones are needed) or incidents of noncompliance.[69] Any actions taken as a result of the findings must also be reported.[70]

As with any other permit, the terms and conditions delineated in the CGP must be followed by its holder. The failure to satisfy or follow the conditions is considered a violation of

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[61] General Permit No. TXR150000, Part II, Section A.3.
[62] *Id*., Part II, Section A.2.
[63] *Id*., Part I.
[64] *Id*.
[65] *Id*., Part III, Section F.7.
[66] *Id*.
[67] *Id*., Part III, Section F.8(a).
[68] *Id*.
[69] *Id*., Part III, Section F.8(b)-(d).
[70] *Id*.

the permit and the statutes upon which it is based.[71] A violation is grounds for an enforcement action, termination of coverage under the CGP, or requiring a discharger to apply for and obtain an individual TPDES permit.[72] Moreover, permit authorization may be suspended or revoked for cause.[73]

Some larger wind projects may utilize a concrete batch plant to support construction activities. In the event that the batch plant is on or in close proximity to the permitted construction site, directly supports the activity, and does not operate beyond the completion date of the primary permittee, it is covered by the same CGP issued to the main construction activity.[74] Therefore, a batch plant not meeting these specifications must secure its own authorized discharges under the CGP or an individual permit. Batch plants have their own monitoring requirements, and must be monitored at a frequency and within effluent limitations listed in the CGP.[75] The monitoring results must be recorded on a discharge monitoring form and kept at the facility or made available to TCEQ personnel upon request.[76]

In addition to these monitoring and reporting requirements, a permittee must submit a Notice of Termination ("NOT") to the TCEQ within 30 days following the completion of the construction.[77] The construction is considered complete when final stabilization has been achieved on all portions of the site that are the responsibility of the permittee.[78] This is an important point because following the submittal of the NOT, and ultimately following the final stabilization of the construction site and supporting activities, storm water discharges are no longer eligible for coverage under the permit.[79] Furthermore, in the event an operator transfers the project to another operator, a NOT is required to be filed by the transferor,[80] and a new Notice of Intent must be filed by the transferee.[81] This could apply in an instance where a wind project developer decides to flip the project for one reason or another.

Note: The TDPES General Permit described above expires on March 5, 2008.[82] An updated renewal permit is currently making its way through the proposal process. If approved, the renewed permit (1) revises the list of non-storm water discharges, (2) includes certain nearby construction activities in the calculation of the size of the common plan of development, and (3) replaces the effluent limits for discharges associated with concrete batch plants with benchmark sampling and specific best management practices for such activities, among other additions to

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[71] *Id*., Part VI, Section 1.
[72] *Id*.
[73] *Id*., Part VI, Section 2.
[74] *Id*., Part II, Section A.2.
[75] *Id*., Part IV, Section A.
[76] *Id*., Part IV, Section B.
[77] *Id*., Part II, Section E.1.
[78] *Id*.
[79] *Id*.
[80] *Id*.
[81] *Id*., Part II, Section D.3.
[82] *Id*. at cover page.

the CGP.[83] For further changes to the new permit, a developer should review the draft as well as the Executive Director's Preliminary Decision found on the TCEQ website.

V. Foundation blasting

An important part of the construction of a wind turbine involves digging or, in areas with harder soils, blasting to create a foundation. Depending on the size of the turbine, the foundation can be anywhere between 4 and 35 feet deep.[84] While in most instances excavating to 35 feet will not disturb natural resources, some shallow aquifers utilized by local communities may be harmed. For instance, a review of the aquifer levels in privately held wells as reported to the Texas Water Development Board ("TWDB") and published on its website demonstrates that some counties where wind development is prevalent have aquifers that occur less than 50 feet below the surface.[85] Furthermore, a wind project may also be sited upon lands where the aquifer outcrops (where the rock strata that contains and delineates the aquifer can be found on the surface of the earth), and therefore care must be taken in this position as well.

Specifically, blasting could disturb the subsurface rock formations in such a manner as to (1) deposit rock, silt, sand, and other natural constituents into the water located in that immediate area, increasing the turbidity of the water, and possibly making the water virtually unusable, or at least much more expensive to extract, treat, and deliver to the end user, or, (2) at worst, alter the local physical characteristics of the aquifer and thereby restrict or isolate groundwater from a well bore.

While most wind leases or easements contain provisions for the resolution of any harm or inconvenience to existing water wells on the lessee's property, including indemnification clauses, the effect on off-site leases is the issue at hand. The disturbance to an aquifer and the resulting turbidity in nearby water wells may have consequences in the form of a lawsuit for damages to the underground water. Wind project developers must keep this potential liability in mind when laying out plans for the project.

Moreover, certain federally-listed species are dependent upon a clean aquifer for their existence. Recall that the ESA protects not only the listed species, but their habitats as well. If blasting contributes to the declination of the water quality in an aquifer, or otherwise impacts the relevant habitat, liability under the ESA could arise. It is possible that the same post-construction monitoring that is recommended as applicable to birds and bats as described above would be useful, if not recommended, in an area where these species reside. Overall, wind development must be cognizant of these areas, take them into consideration when siting a wind project, and follow the proper procedure and recommendations to avoid liability.

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[83] TCEQ Fact Sheet and Executive Director's Preliminary Decision, September 14, 2007, http://www.tceq.state.tx.us/assets/public/permitting/waterquality/attachments/stormwater/txr15factdraft.pdf (last visited February 4, 2008).

[84] National Wind Coordinating Committee, *Permitting of Wind Energy Facilities: A Handbook*, p. 7 (August 2002).

[85] This information can be found, and other information searched, by utilizing the WIID Water Well Data found on TWDB's website, http://www.twdb.state.tx.us/mapping/gisdata.asp.

VI. Repowering

Repowering is the event whereby a wind project operator decides to replace existing turbines with new and/or higher capacity turbines on an existing lease, likely in the same locations. Since the technology of wind turbines, and possibly substations, O&M buildings, and other materials or items will continue to rapidly change, the need to understand how it may affect the developer is important.

The TPDES Construction General Permit described in Section III is issued for a term not to exceed 5 years, so assuming the construction necessary to repower the lease will result in a discharge, a new permit will be required. Consequently, it is likely that a new CGP will be required for any repowering activities performed on the site.

Additionally, should the repowering event include an upgrade to larger turbines, the bird and wildlife studies originally conducted at the beginning of the project will likely need to be reassessed. This is due to the fact that a difference in windswept area and/or speed may have different (whether greater or lesser) effects on a project and the wildlife surrounding it. Furthermore, larger turbines and related equipment ultimately require larger roadways and create additional disturbance to the project area that has, presumably, been left to its usual operations since the initial construction and powering.

VII. What's In the Wind?

The foregoing discussion evidences the fact that a relative dearth of regulation, and consequently enforcement, exists in the wind industry in Texas. Discussions underway at various levels of state and federal government contemplate providing a firmer guidance or the initiation and enactment of regulations ending this trend.

First, the USFWS is believed to be leaning towards making their guidance documents full-blown regulations. This development is not likely to have a significant impact on the current processes and procedures already engaged in by wind developers in siting turbines. In other words, while the current discussion and recommendations are "voluntary," most developers probably already adhere to these guidance documents. The only potential problem would be in a situation where, in making the guidelines mandatory, more onerous terms are implemented. There is no indication at this point that this would occur, but planning for the unexpected never hurts.

Next, the concept of adaptive management is gaining steam throughout the industry as it relates to birds and bats in particular, but can be used in other arenas as well. An entire discussion of the foundation of the adaptive management movement is certainly outside the scope of this paper. However, suffice it to say, adaptive management is a concept by which those who discover or are informed of problems following the installation and operation of facilities engage in "on-the-fly" changes to those facilities or their operations. Consequently, the data collected and analyzed as a result of the suggestion from agencies to perform post-construction monitoring not only serves to provide scientists, consultants, agencies, and other stakeholders with valuable information that can be implemented into new siting guidance or

regulations, but also serves as the basis for an adaptive management plan. What that plan entails must be determined on a case by case basis, but ultimately could result in anything from blade feathering, to seasonal shut down of turbines during "peak" threat times or permanent shut down, to removal of certain turbines in an array.

It should be kept in mind, however, that adaptive management plans and practices are ultimately voluntary at this point, and do not carry the effect of the law. While enforcement provisions can be contracted or settled upon between parties, and enforcement may initiated on that basis, there are no statutes, rules, regulations, or even guidance documents applicable to the wind industry to implement this concept.

VIII. Conclusion

Most would agree that the regulatory environment in Texas is largely wind development-friendly, as many other states experiencing the growth of wind power within their jurisdictions have much more onerous and extensive requirements in the pre- and post-construction phases of a project. However, wind developers must not interpret this as a sign that the state is devoid of regulation. The regulations discussed here are by no means the exclusive list applicable to wind projects, and developers are indeed encouraged to ensure that all permitting requirements are met. In fact, it is a worthwhile endeavor, and one impressed upon the industry by regulators, to approach the various agencies from the initial phases of planning. Depending on the type of regulations a site is subject to, the process could take months or even years to complete.

To the extent that the laws are applicable to a project, the issuance of a permit to a developer does not end the responsibility of that company. Developments arising during the construction stage, as well as various post-construction monitoring and maintenance activities, require wind developers to "stay on their game" throughout the existence of their project. While some uncertainty is inherent in the current rules and regulations, the explosion of development in Texas and beyond may very well create a "need" for legislators and/or regulators to "rein in" the process. In the meantime, developers must recognize that their commitment and responsibilities to the environment at large continue far beyond the issuance of a permit, and that the consequences for failing to do so are not minimal.