
ENVIRONMENTAL LAW, ALTERNATIVE ENERGY AND SITING GUIDELINES

MICHIGAN ASSOCIATION OF PLANNING SPRING INSTITUTE

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TOPICS

- WIND TURBINE SITING ISSUES
- ZONING ISSUES
- MICHIGAN SITING GUIDELINES
- QUALIFIED FOREST PROPERTY EXEMPTION
- MICHIGAN FOREST CARBON OFFSET CREDITS
- MICHIGAN ALTERNATIVE ENERGY LAW UPDATE
- FEDERAL ALTERNATIVE ENERGY LAW UPDATE

WIND TURBINE SITING ISSUES

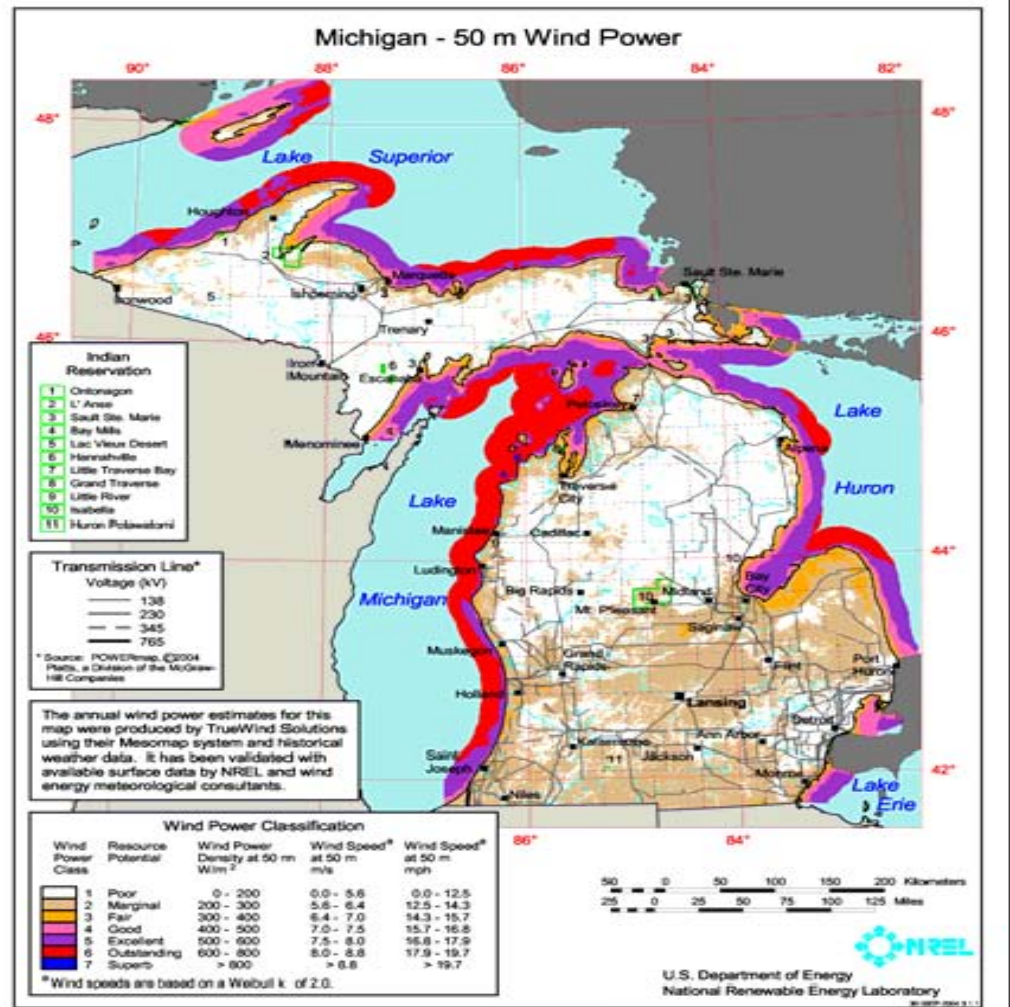
WHERE SHOULD THESE GIANTS BE LOCATED?

- MICHIGAN WIND
- WHAT ARE THE ISSUES?
- LOCAL ZONING
- SITING GUIDELINES
- LITIGATION
- TAX INCENTIVES

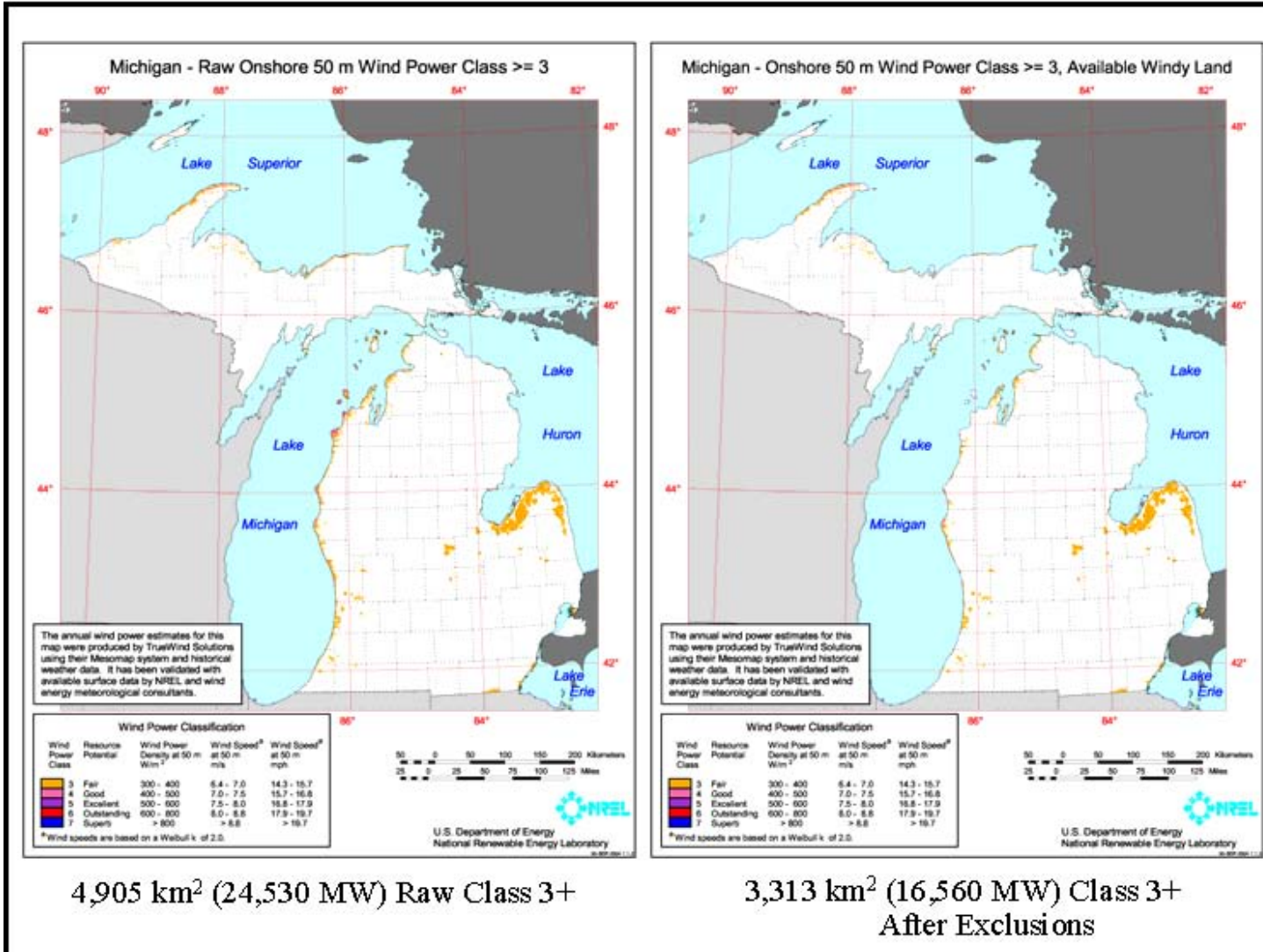
MICHIGAN WIND MAP

2004 Michigan Wind Power Map

- Preliminary map produced by AWS Truewind
- Preliminary maps of annual average 50-m wind power and wind speed validated by NREL and wind energy consultants
- Final maps produced by AWS Truewind with approval by NREL



CLASS 3 AREAS



ONSHORE AND THUMB AREA BEST ONLAND POTENTIAL



Summary of Michigan Wind Potential

- Good and excellent onshore wind resource areas concentrated in a few exposed coastal areas and islands
 - 166 sq. km of Class 4 and higher of available windy land
 - 830 MW of installed capacity
- If Class 3 areas included, the wind resource is significantly greater
 - 3313 sq. km of Class 3 and higher of available windy land
 - 16,560 MW of installed capacity
 - Class 3 area potentially suitable for advanced low wind speed turbine technology

Number of Wind Turbines, Footprint Needed For Proposed RPS for Michigan

- **Michigan State University**
- www.landpolicy.msu.edu
-
- The Land Policy Institute has released a new fact sheet on wind energy and a Renewable Portfolio Standard (RPS) in Michigan. The study projects the number of wind turbines needed, the land footprint they would require, and the likely location of wind turbines in order to meet the requirements of the RPS, proposed by Governor Jennifer Granholm in the *Michigan's 21st Century Electric Energy Plan*.
- The study found that to meet the proposed 10 percent RPS by 2015:
 - 1,250 wind turbines will need to be installed.
 - 313 acres of wind tower land footprints will occur.
 - 50,279 acres of wind farm area will be involved, of which 49,966 acres would continue to be usable for farming, grazing, forestry, or related alternative uses of the land.
 - With a total of 37,361,780 acres of land area in Michigan, the proposed 2015 RPS goal would require use of 0.14 percent of it.
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- The study, titled “Wind Turbines Required to Meet Michigan’s 2015 Goals for Renewable Portfolio Standards (RPS) and Projected Land Footprints” is available at [Wind Turbines & RPS for MI Fact Sheet](#). Also available for download in this series is the [Projected Impacts of RPS on Wind Industry Development in Michigan White Paper](#).

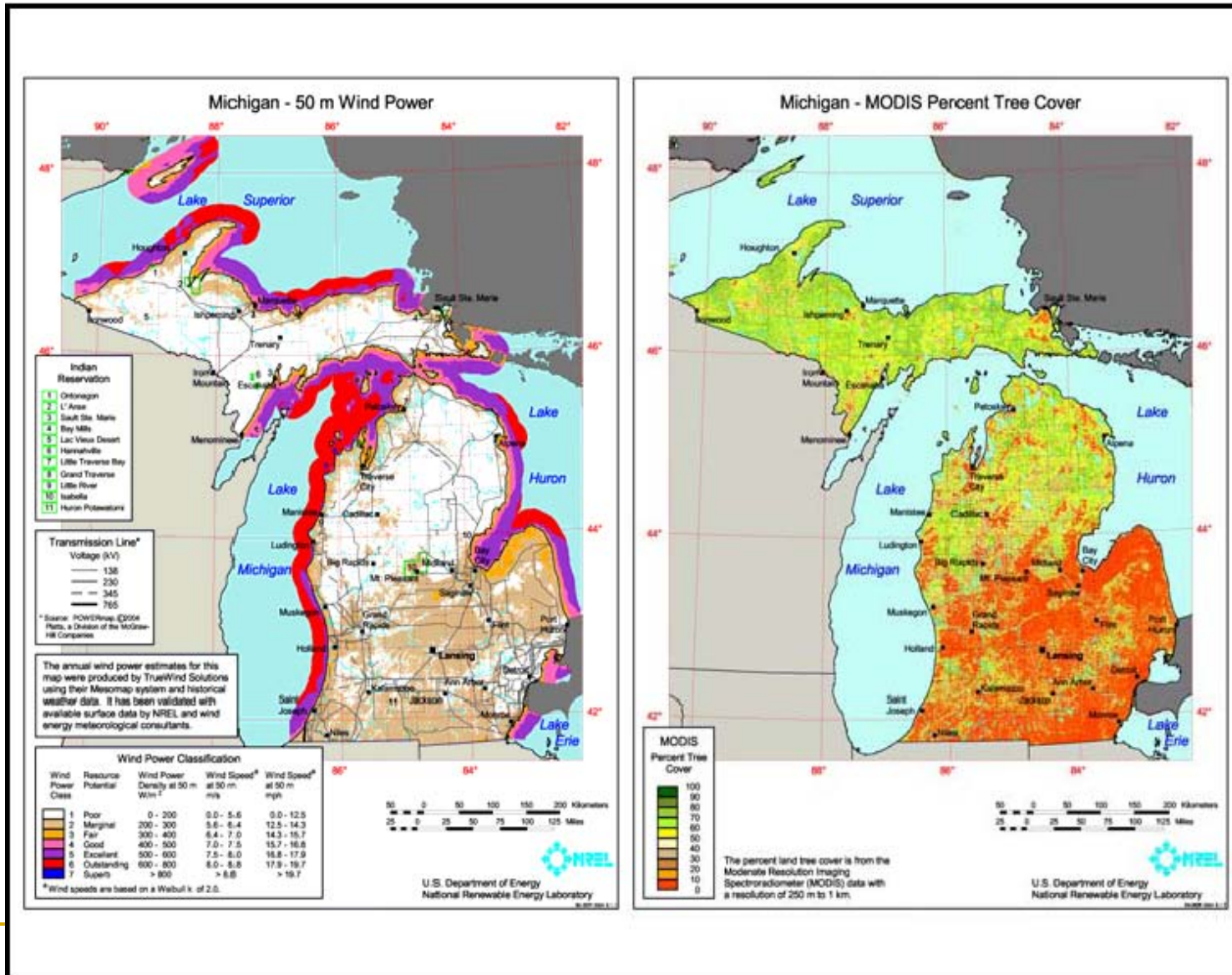
LAND USE EXCLUSIONS



Land-Use Exclusions

- 100% Exclusions
 - Urban areas and airports
 - Wetlands
 - Water bodies
- 50% Exclusions
 - Non ridge crest forest
- 0% Exclusions
 - Ridge crest forest
 - Agriculture lands

TREE COVER



MSU LAND POLICY INSTITUTE

STUDY OBJECTIVES

- Key Questions:
- This fact sheet aims to inform on the following key questions:
- *1) How many wind turbines are needed to meet the Renewable*
- *Portfolio Standard?*
- *2) How much land area would the necessary number of wind*
- *turbines occupy?*
- *3) Where are the likely locations for siting the wind turbines?*

MSU LAND EXCLUSIONS

- Biologically Unique areas, including Great Lakes dunes and other sensitive landscapes based on the Michigan Natural Features Inventory.
- Wetlands over five acres.
- Steep (greater than 20 percent) slopes (from USGS Digital Elevation Models).
- Lakes.
- Roads.
- Conservation and Recreation Lands, such as state and national parkland, wildlife preserves, and similar places.
 - Forested Areas???

PROJECTIONS FOR 2015

Table 1. Michigan Areas with Highest Suitability for Wind Farms, Wind Farm Area, and Number of Towers to Meet 10% RPS by 2015

Region of Michigan	Total Area WPT Identified as Highly Suitable for Wind Farms	Wind Farm Acres Needed to Meet 10% RPS by 2015		Tower Footprint Area	Towers
		Acres *	Acres **	% of Suitable Area	Acres ***
Western UP	82,649	7,940	9.6%	56	223
North Central UP	49,056	2,420	4.9%	17	69
North Western LP	185,284	9,256	5.0%	78	311
North Eastern LP	7,949	422	5.3%	4	15
Thumb Area	281,178	30,241	10.8%	158	632
Totals	606,116	50,279	8.3%	313	1,250

Notes:

* Wind Prospecting Tool (WPT) highly suitable areas based on wind strength, area of contiguous farm or forest land, land values, development pressure, zoning and other factors.

** Based on aerial photo interpretation, 450 meter tower spacing grid and exclusion of Great Lakes dunes, public lands, populated areas, roads, lakes, sensitive lands, etc.

*** Footprint area = 1/4 acre per tower.

Area sizes calculated from GIS shapefiles.

Source: Land Policy Institute, Hannah Professor Research Program

PROBLEM: WIND TURBINES ARE AN INDUSTRIAL USE

- COMMERCIAL WTG ARE AN INDUSTRIAL USE: THESE ARE NOT YOUR GRANDMOTHERS WINDMILLS
- PUTTING INDUSTRIAL USES IN RURAL, RESIDENTIAL, AND TOURISM BASED AREAS CAN CREATE CONFLICTS

ISSUES WITH LARGE TURBINES

- SETBACKS & TOWER HEIGHT
 - LOW FREQUENCY NOISE
 - SHADOW FLICKER
 - VISUAL IMPACTS
 - AVIAN IMPACTS
 - ROAD & POWER LINE ACCESS
 - SURROUNDING LAND USE
 - COMMUNITY ACCEPTANCE
 - MAINTENANCE AND DECOMMISSIONING
-

SETBACKS

- SETBACKS FROM PROPERTY LINES CAN HELP MINIMIZE ISSUES CAUSED BY NOISE, ICE THROW AND SHADOW FLICKER
- SETBACKS BASED SOLEY ON TOWER HEIGHT MAY NOT BE ENOUGH

NOISE

- Noise levels sufficient to prevent or interrupt sleep, even with windows closed, are reported in dwellings close to wind power installations in all surveys.
- Low frequency sound, defined as 10-200 Hz, travels farther and comes through walls and around obstacles because of its long wavelength; sounds in the range of 25- 150 Hz have wavelengths similar to room dimensions, and can reverberate in rooms.
- Low frequency sound is especially bothersome, according to the World Health Organization: "Low frequency noise, for example from ventilation systems, can disturb rest and sleep even at low sound levels."

THE RHEDE STUDY

- Study By a sound engineer near a more recent 30 MW, 17 turbine installation on the Dutch-German border
 - Residents living 1640 ft, or 0.31 mile and more from the turbines were reacting strongly to the noise
 - Residents up to 1.2 miles away expressed annoyance
 - The engineer found that measured sound levels were higher than predicted by standard models because of differences in daytime and nighttime wind patterns
 - Annoyance was increased by the impulsive nature or rhythmic thumping of the sound, (“helicopter sound“) a pattern found at a distance from the turbines (documented at 1500 m, or 0.9 mile) but not immediately under or among the turbines.

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- The World Health Organization recommends that threshold standards for noise in communities be set lower than 30dB (as measured with the standard "A" filter) for low pitch noise such as from wind turbines.
 - Low-pitched noise is more disturbing and has a greater impact on health at low levels than higher-pitched noise.
 - When measuring such noise, a "C" filter will give a more accurate reading of loudness by including more of the low-frequency sounds.

FLICKER

- When turning with the sun behind them, turbine blades cast moving shadows across the landscape and houses.
- “Strobe effect” within houses, which can be difficult to block out.
- Causes nausea and loss of balance.
- As with car or sea sickness, this is because the three organs of position perception (the inner ear, eyes, and stretch receptors in muscles and joints) are not agreeing with each other
- People with a history of migraine, or migraine-associated phenomena such as car sickness or vertigo, are more susceptible to these effects.
- The strobe effect can also provoke seizures in people with epilepsy.

AESTHETIC CONSIDERATIONS

- Visual concerns
- What is a “view shed?”
 - the entire area an individual can see from a given point
- Some people love the look of wind turbines, other don't.
- Night time sky disruption in rural areas

AESTHETIC CONSIDERATIONS

- Minimize Visual Impacts
 - ❑ Properly locate towers
 - ❑ Minimal tower lighting per FAA regs
 - ❑ Paint gray or off white to blend with skyline
 - ❑ Prohibit commercial advertising
 - ❑ Generous set-back requirements from existing buildings, roads, other rights- of ways.
 - ❑ Improved turbine designs to minimize visual impacts

IMPACT ON PROPERTY VALUES

- Conflicting reports on effect on property values
 - Some studies indicate zero decrease
 - Some studies indicate 30% and more decrease
- Studies have been criticized as flawed
- Recent study done by Hoen, Lawrence Berkeley National Laboratory

PROPERTY VALUE STUDIES

Very Few Quality Wind & Property Studies A List Of The Most Publicized

<u>Author (Year)</u>	<u>Location</u>	<u>Method</u>	<u>Test</u>	<u>Result</u>
Jordal-Jorgensen (1996)	Denmark	Hedonic	Area Stigma	↓ \$
Sterzinger et. al. (2003)	10 US sites	Simple	Area Stigma	↑ \$
Poletti (2005)	Wisconsin	Simple	Area Stigma	nc
Delacy (2005)	Washington	Paired Sales	Area Stigma	nc
Sims & Dent (2006)	UK	Hedonic	Area Stigma	↓ \$
Hoen (2006)	New York	Hedonic	Area Stigma/ Scenic Vista Stigma	nc nc

Overview

- Most tested for area stigma
- None of the studies, except Hoen (2006), visited homes
- None have been peer reviewed & published

FORESTED & NATURAL AREAS

- Impacts to wooded areas (erosion, bats)
- Public Lands adjacent to project area necessitating facility review:
 - State
 - USFS,
 - Natl. Wildlife Refuges
 - National Parks
 - Scenic Rivers,
 - Historical Sites: (Federal, State , Local)

OTHER CONSIDERATIONS

- Existing airports, flight paths
- Proposed airport expansions
- Existing stationary towers
 - Cell phones
 - Microwave
 - Secure systems
 - FAA concerns
 - Michigan Tall Structures Act

SURROUNDING LAND USE IN PROJECT AREA

- Is the wind facility compatible?
 - ❑ Neighboring property
 - ❑ “foot print” of turbines acceptable
 - ❑ Wiring between towers: buried or above
 - ❑ Crop dusting, aerial seeding
 - ❑ Grid availability
 - ❑ Road system suitable for heavy trucks

AVIAN IMPACTS

- Assess project area for habitat features
 - Known migration pathways, shoreline, mountain passes, wooded mountains
 - bat hibernacula
 - breeding, loafing feeding habitat
 - IBAs (important Bird Areas)

- Review existing wind facilities in similar habitats in Michigan: or other Great Lake states.

- Design and conduct appropriate survey for species that may occur in the project area.

IMPROPER SITING CAN CAUSE NEGATIVE IMPACTS

- Altamont Pass, California:
 - 5400 small, obsolete first-generation turbines, 20+ years old.
 - Known since the 1980s that they killed substantial numbers of raptors, but the first comprehensive study, released in 2004, showed 880 to 1300 eagle, hawk, and owl deaths per year, including 75 to 116 Golden Eagles.
 - This is 17,000 to 25,000 raptors killed since the project began.

- Mountaineer Project, West Virginia:
 - Newer project of 44 large turbines, now found to be killing 1500 to 4000 bats per year.

ALTAMONT PASS – NEVER AGAIN

- 20 Years Of Inaction
 - ❑ No environmental analysis before turbines installed
 - ❑ Fragmented regulatory scheme let agencies avoid responsibility for solving problem once it became known
 - ❑ Industry avoided taking responsibility and did not address problem proactively

FEDERAL PROTECTION?

- Most bird species are protected under the federal Migratory Bird Treaty Act. Statute is strict liability; fine of up to \$15,000 and six months imprisonment.
- Golden Eagles also protected under the federal Bald and Golden Eagle Protection Act. Fines of up to \$500,000 per eagle and imprisonment up to 2 years.
- Endangered Species Act and state wildlife protection laws may also apply.
- But will these laws be enforced against wind turbines?

MUST BE PROACTIVE

- Easier to avoid impacts than to try to mitigate them later.
- Preconstruction studies are crucial to assessing impacts.
- U.S. Fish and Wildlife Service encourages environmental analysis with its interim guidelines.
- Bureau of Land Management Draft EIS for projects on federal lands encourages proactive measures.
- NO OFFSHORE GUIDELINES YET –Expect impact to large seabirds and waterfowl

ZONING

MICHIGAN ZONING LAW

- MICHIGAN TWP ZONING ACT, MCL 125.271 et seq
- “to protect the natural environment and conserve natural resources and energy, to **insure compatibility with adjacent uses of land, and to promote the use of land in a socially and economically desirable manner. Conditions imposed shall meet all of the following requirements:**
- (a) Be designed to protect natural resources, **the health, safety, and welfare and the social and economic well being** of those who will use the land use or activity under consideration, **residents and landowners immediately adjacent to the proposed land use or activity, and the community as a whole. . .**” (Sec 16d)

THE PURPOSE OF ZONING ORDINANCES

- For the purpose of **promoting and protecting the public health, safety, peace, morals, comfort, convenience, and general welfare of the inhabitants of the County, by protecting and conserving the character, and social and economic stability of the residential, commercial, industrial and other use areas; by securing the most appropriate use of land;** by providing for the protection of land and water resources; preventing overcrowding of the land and undue congestion all in accordance with a Comprehensive Plan.

LOCAL ZONING

- SOME COMMUNITIES PASSED WIND TURBINE ORDINANCES TO BE PROACTIVE AND ADDRESS THE ISSUES
 - MORATORIUMS ON SPECIAL USE PERMITS WERE PASSED UNTIL ORDINANCES WERE ADOPTED
 - OTSEGO COUNTY PLANNING COMMISSION
 - Wrote a White Paper on WTG that became the basis for the Otsego County WT Zoning Ordinance.
www.otsegocountymi.gov/planningzoning/windturbine.htm
 - The Otsego County Zoning Ordinance has been used as a model by other communities and is one of the most comprehensive wind turbine ordinances

OTSEGO ORDINANCE

- Distinguishes between private turbines and commercial turbines.
 - Private is 100 feet or less in height
- Commercial turbines require a special use permit; private turbines do not

APPLICATION REQUIREMENTS

- Study by Professional Engineer that site has sufficient wind resources
- Avian impact study according to U.S. Fish and Wildlife Service Guidelines
- Noise analysis conforming to International Electromechanical Commission Standard 61400-11
 - Must include low frequency noise

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- Survey of ambient background noise including night time
 - Prediction of WTG noise at property border
 - Computer generated noise model projecting sound reaching beyond property lines
 - Projection of shadow flicker on any existing structure

STANDARDS FOR APPROVAL

- Sufficient documented wind resources
- Noise levels cannot exceed 10 decibels more than ambient study
- Potential ice throw cannot cross property line
- Setback of at least 1250 feet from property line for commercial turbine and 180 feet for private turbine
- Maximum height is 300 feet or, with special conditions, 400 feet.

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- Underground wiring
 - Cannot interfere with television, radio, cell phone or microwave reception
 - Must be designed to prevent shadow flicker on structures off the property
 - Post bond in an amount equal to the estimated cost of removal of the WTG and restoration of the area

PENDING LEGISLATION

PENDING LEGISLATION

- There are several House Bills pending in Michigan wind turbine siting.
- The Bills are meeting strong opposition from the Michigan Townships Association.
- Raises the issue of whether the imposition of mandatory siting regulations such as those being proposed are constitutional.

EFFECTS OF HB 4648 & 4649

- Takes away authority of Townships and Counties to regulate wind turbine siting.
- Eliminates the requirement to provide for the health, safety and general welfare of residents.
- Exempts turbine owners from damages for nuisance.

MICHIGAN SITING GUIDELINES FOR WIND ENERGY SYSTEMS

Developed by the Michigan Department
of Labor and Economic Growth in 2007

DLEG SITING GUIDELINES

- The Michigan Wind Working Group
 - Formed under the Michigan Renewable Energy Program
 - Developed Michigan Siting Guidelines for Wind Energy Systems
 - Recommended language for local governments to use that do not already have a wind turbine zoning ordinance in place

DLEG SITING GUIDELINES

On Site Use Systems

- Different Guidelines for on-site/private use systems versus Utility/commercial use systems
- On Site Use Systems Guidelines
 - Considered a Special Land Use if tower higher than 20 meters
 - Setback from property line is at least 1 ½ times the total height of the WT (to tip of blade)
 - Sound shall not exceed 55 decibels at the property line
 - Comply with Federal Aviation Administration, Airport Zoning Act, Tall Structures Act, and local airport zoning
 - Must have automatic braking or feathering system to prevent uncontrolled rotation
 - Considered Permitted Use if towers less than 20 meters

DLEG SITING GUIDELINES

Utility Grid Systems

- Considered Special Land Use
- Wind Site Assessment necessary to determine wind speed and feasibility
- Property line setback is at least the height of the WT (to top of blade)
- Sound pressure level not exceed 55 decibels at the property line for more than 3 minutes in any hour of the day
 - Applicant shall provide modeling and analysis conforming to IEC 61400 and ISO 9613 demonstrating that WT will not exceed permitted levels
 - Acknowledge that in some areas, lower limits may be necessary
 - Note: Quiet house interior or rural evening noise is 20 decibels
- If ambient sound levels exceed 55 dB, then standard is ambient plus 5 decibels.

DLEG SITING GUIDELINES

Utility Grid Systems, Continued

- ❑ Comply with state and local codes, Federal Aviation Administration, Airport Zoning Act, Tall Structures Act, and local airport zoning.
- ❑ Lighting required by FAA shall be shielded to reduce visibility from the ground and tower shaft should not be light unless required by FAA
- ❑ Tubular towers with matte finish, devoid of advertizing
- ❑ Avoid construction in state or federal scenic areas or visual resources listed in the local governing comprehensive plan
- ❑ Environmental Impact Statement prepared by third party professional to identify impacts on environment. Will be site specific.
- ❑ Applicant responsible for making repairs to public roads damaged during construction of the system.

DLEG SITING GUIDELINES

Utility Grid Systems, Continued

- Applicant to submit an avian and wildlife impact analysis prepared by third party professional.
 - Wildlife refuges, areas where birds are concentrated, bat hibernacula, wooded ridge tops, and sites frequented by federal or state endangered species, bird migration pathways, and areas attractive to raptors require special scrutiny.
 - At a minimum, analysis must include review of existing information regarding species and potential habitats in the project vicinity
 - Post construction wildlife mortality study may be required
 - Power lines buried underground when possible to avoid avian impacts.

DLEG SITING GUIDELINES

Utility Grid Systems, Continued

- If system is installed in a location that causes electromagnetic interference with existing TV, radio, or wireless phones, the Applicant must provide replacement signal of equal quality.
- Applicant must conduct shadow flicker analysis on occupied structures and describe measures to eliminate or mitigate.
- Decommissioning plan required.
- Applicant to develop complaint resolution process to resolve complaints from neighbors.

MICHIGAN LAND USE SITING GUIDELINES

Published by the Michigan State
University Land Policy Institute in 2007

Michigan Land Use Siting Guidelines

- Published by Michigan State University Extension and the Land Policy Institute
- Revised October 2007
- Provides discussion on the DLEG Siting Guidelines, the science behind them, and gives additional references.

WIND ENERGY GUIDE FOR COUNTY COMMISSIONERS

Published by the U.S. Department of
Energy

Available online at www.osti.gov/bridge

LITIGATION

Johnecheck v Bay Township
United States District Court
Western District of Michigan
Sept. 24, 2003.

BAY TOWNSHIP CASE

- Bay Township zoning ordinance did not have a section for WTG's
- Township refused to amend the ordinance to provide for WTG's.
- Application for commercial WTG was denied.
- Township found WTG's would be contrary to their Land Use Plan.
- Township wanted to preserve rural character and views.
- Township did not exclude WTG, just applied restrictions already in their zoning ordinance that limited the height of structures to 30 feet.

COURT'S OPINION

- U.S. DISTRICT COURT FOUND THAT
 - “AESTHETICS” IS A VALID PART OF THE GENERAL WELFARE OF THE COMMUNITY TO BE PROTECTED BY THE ZONING ORDINANCE UNDER MICHIGAN LAW.
 - COURT HELD THAT LIMITING WTG HEIGHT TO 30 FEET THROUGH THE ORDINANCE WAS A LEGITIMATE PRESERVATION OF SCENIC VIEWS AND RURAL CHARACTERISTICS OF THE COMMUNITY.

COURT'S OPINION CONT.

- ❑ Communities frequently regulate height limitations, such as for advertising billboards, to preserve aesthetics and protect the communities general welfare.
- ❑ The Court noted that 30 feet WTG will supply power to individual homes and referenced Department of Energy “Wind Power Today” publication dated May 2002.

COURT'S OPINION CONT.

- ❑ Court stated Michigan law recognizes aesthetic concerns as a reasonable governmental interest.
- ❑ “Communities should be beautiful as well as healthy.”
- ❑ Court also found the Township desired to preserve and protect tourism and property values, which are legitimate matters of governmental regulation.

OFFSHORE WIND DEVELOPMENT ISSUES

- The validated wind studies by the NREL demonstrate that in the Great Lakes Area, wind potential is best in shoreline or off shore areas.
- CAN THE NEGATIVE IMPACTS OF WTG BE AVOIDED BY OFFSHORE PLACEMENT?

OFFSHORE ISSUES

WHO OWNS THE SUBMERGED LANDS?

- United States v. California, 332 U.S. 19 (1947) the U.S. Supreme Court confirmed the federal government's ownership of the submerged lands and associated natural resources from the tidelands to three miles from shore.
- In 1953, under the Eisenhower Administration, Congress effectively reversed United States v. California. In passing the Submerged Lands Act, 43 U.S.C. §§ 1301-1315 (1953). Congress gave the states exclusive rights to resources of the "marginal sea"--the band of water up to three nautical miles from shore.
 - The U.S. nevertheless retained the right to regulate, among other things, commerce and navigation in these waters.

NANTUCKET SOUND

- Alliance to Protect Nantucket Sound v. United States Dep't of the Army, 288 F. Supp. 2d 64 (D. Mass. 2003).
- 130-turbine, twenty-four square mile wind farm
- Decision to allow a data tower based on the Corps' authority to permit "all artificial islands, installations, and other devices located on the seabed ... regardless of whether they are erected for the purpose of extracting resources." ... "a permit from the Corps is required for the installation of any structure in the navigable waters of the United States."

PROBLEMS WITH CORPS ACTIONS IN CAPE WIND

- the Corps accepted Cape Wind's application despite openly admitting its lack of expertise on energy projects and its awareness that the applicant cannot obtain property, or use and occupancy rights to Nantucket Sound under existing law
- Corps has taken the position that it cannot even consider the applicant's inability to obtain property rights in its public interest review
- Should the Corps consider “public interest” during Rivers and Harbor Act permit application review?
 - Supreme Court said yes in [United States v. Alaska, 503 U.S. 569, 590 \(1992\)](#).

CORPS ACTION TRIGGERED MORE APPLICATIONS

- As a result of Cape Wind, the East Coast, from Massachusetts to Virginia, is blanketed with sites that have been targeted for possible wind energy project development.
 - The Long Island Power Authority has developed plans for a 100-megawatt facility located off the southern coast of Long Island.
 - Winergy LLC, identified more than twenty potential wind factory sites from the tip of Cape Cod to Virginia.
 - Another project is under consideration for Block Island Sound in Rhode Island.

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- No advance planning has occurred.
 - No programmatic environmental review is underway.
 - Offshore wind farm proposals are being considered independently.
 - No federal agency has intervened to take charge.
 - Are not these lands and waters part of the public trust?
 - Can they be taken over for private development merely on the basis of navigability?

-
- ❑ Does the review of offshore wind proposals under Section 10 RHA threaten the goal of uniform ocean conservation principles?
 - Should Section 10 be the vehicle for granting permission to use and occupy the OCS?
 - ❑ Under the Property Clause of the Constitution, only Congress may authorize a federal agency to dispose of U.S. property. No federal agency has been authorized to do so for wind energy development. Therefore, under current law, how can a private party obtain property rights from the United States to occupy Outer Continental Shelf (OCS) lands for offshore wind energy activities?

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- If private developers can use Section 10 to build large-scale wind plants on the OCS, would not the oceans be opened up for other private development such as petroleum platforms, floating oil storage vessels, centralized sea floor disposal sites for production wastes, and other offshore oil and gas support facilities?

UNANSWERED QUESTIONS

- Does the USACE have the authority to permit a wind farm in Nantucket Sound?
- What kind of property rights are or should be required to construct a wind farm in federal waters?
- Is the current regime of environmental review under National Environmental Policy Act (NEPA) and USACE regulations sufficient to supervise a project such as Cape Wind and any future wind farms?

OFFSHORE STATE PERMIT ISSUES

- In addition to federal permits, state permits would be needed under:
 - the state's coastal zone management plan
 - wetlands
 - building code
 - zoning ordinances
 - sub aqueous permits
 - state National Pollutant Discharge Elimination System (NPDES) permits for designated states under the CWA
 - Any other applicable state regulations

NEW STUDY IN PROCESS FOR GREAT LAKES

- **The Tall Towers Wind Monitoring Project**
 - In October, 2005, the Dept. of Energy gave a small grant to the Wisconsin State Energy Office, the Michigan Energy Office, and other Midwestern offices to monitor wind speeds in or near the Great Lakes.
 - The grant is for equipment to be installed on 3 existing towers that are 100 meters high and within ½ mile of the shore.

Glass v. Goeckel 473 Mich. 667, 703
N.W.2d 58 (Mich.2005).

- Recent Michigan case concerning whether or not the public trust doctrine allowed beachgoers the right to walk between the waters edge and the ordinary high water mark.
- Case includes a historic analysis of the public trust doctrine and its application to the Great Lakes.

GREAT LAKES BOTTOMLAND

- American law has long recognized that large bodies of navigable water, such as the oceans, are natural resources and thoroughfares that belong to the public.
- In our common-law tradition, the state, as sovereign, acts as trustee of public rights in these natural resources.
- This "public trust doctrine," as the United States Supreme Court stated in *Illinois Central R. Co. v. Illinois*, 146 U.S. 387, 435, 13 S.Ct. 110, 36 L.Ed. 1018 (1892) (*Illinois Central I*), applies not only to the oceans, but also to the Great Lakes.
Nedtweg v. Wallace, 237 Mich. 14, 16-23, 208 N.W. 51 (1926)

[Glass v. Goeckel]

ENGLISH COMMON LAW APPLIES TO THE GREAT LAKES

- The rule-that the sovereign must guard the public's interest in the seas for navigation and fishing-passed from English courts to the American colonies, to the Northwest Territory, and, ultimately, to Michigan. See *Nedtweg* at 17, 208 N.W. 51
- Michigan's courts recognized that the principles that guaranteed public rights in the seas apply with equal force to the Great Lakes and that the common law of the sea applies to the Great Lakes. See *Hilt v. Weber*, 252 Mich. 198, 213, 217, 233 N.W. 159 (1930); *People v. Silberwood*, 110 Mich. 103, 108, 67 N.W. 1087 (1896).
- In particular, the public trust doctrine from the common law of the sea applies to the Great Lakes. *Nedtweg* at 16-23, 208

[Glass v. Goeckel]

SUBJECT TO THE FEDERAL NATIONAL SERVITUDE

- under longstanding principles of Michigan's common law, the state, as sovereign, has an obligation to protect and preserve the waters of the Great Lakes and the lands beneath them for the public.
- The state serves, in effect, as the trustee of public rights in the Great Lakes for fishing, hunting, and boating for commerce or pleasure. *Nedtweg* at 16, 208 N.W. 51.
- The Great Lakes and the lands beneath them remain subject to the federal navigational servitude. This servitude preserves for the federal government control of all navigable waters "for the purpose of regulating and improving navigation"
Gibson v. United States, 166 U.S. 269, 271-272, 17 S.Ct. 578, 41 L.Ed. 996 (1897).

[Glass v. Goeckel]

NOW WHAT?

- Does it all come down to the analysis and application of the public trust doctrine?
- What other private enterprise will be allowed on the Great Lakes?
- Who owns the wind over the water?

TAX INCENTIVES

ENERGY POLICY ACT OF 2005

- Extends production tax credit for wind facilities put into operation by December 2007
 - Summary of the Act and articles on the effects of Renewable Portfolio Standards can be found at the ABA website at <http://www.abanet.org/environ/committees/renewableenergy/>

PA 633

- PA 633 General Property Tax Act--provides that wind energy system is considered personal property for purposes of taxation for taxes levied after December 31, 2005 (SB 803; eff. 1/4/07)

QUALIFIED FOREST PROPERTY EXEMPTIONS

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- Exempts qualified forest property from taxes levied by local school districts
 - Requires amount exempted each year under these amendments to be paid to the School Aid Fund from the General Fund
 - Exempts transfer of qualified forest property, under certain conditions, from a provision requiring taxable value of property to be adjusted on transfer

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- Minimum size of the parcel is 20 contiguous acres
 - Cannot have any buildings or structures
 - Maximum acreage is 320 acres within a township or city
 - At least 80% of the property must be productive forest
 - Capable of growing at least 20 cubic feet per acre per year or one cord of timber per acre per year.

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- Forest land must be stocked with forest products, meaning that the forestland must have a sufficient number of trees per acre to produce a forest product.
 - Must have a forest management plan approved by the MDNR or a plan approved by a third party certifying organization.
 - Forest Stewardship Council and Sustainable Forest Initiative.

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- Forest Management Plan must include :
 - ❑ Map of the property
 - ❑ Description of practices that will be undertaken
 - ❑ Estimate of time before each practice is completed
 - ❑ Soil Conservation practices that may be necessary
 - ❑ Activities for the management of forest resources other than trees.

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- Plan must be updated every 20 years
 - Owner must attest to manage property according to plan
 - Owner must report the amount of timber produced on the enrolled lands each year to the DNR.
 - Must file Treasury Form 4449 with DNR by November 1 to be enrolled for the following tax year
 - Submit DNR approved plan and affidavit must be submitted to local assessor by December 31st

MICHIGAN FOREST CARBON OFFSET CREDITS

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- Program allows landowners to earn revenue through the sale of green house gas emissions credits from carbon sequestered on forested lands that are managed working forests.
 - Program developed by the MDNR and Delta P2/E2 Center

DELTA P2E2 AND CCX

- ❑ Delta Center was formed by the Delta Institute
- ❑ Non-profit organization to provide assistance for energy efficient measures and pollution prevention
- ❑ Delta Center is a member of the Chicago Climate Exchange (CCX) and is an approved offset aggregator
- ❑ Aggregators such as Delta have the authority to sell verified carbon credits on the trading platform

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- CCX is a voluntary buy legally binding carbon trading exchange whereby members are obligated to reduce their carbon emissions each year.

HOW IT WORKS

- Delta Center assists Michigan forest owners access carbon trading markets through the CCX.
- Once a baseline is established for the carbon stocks for the enrolled forest, a growth and yield model is used to calculate annual carbon sequestration factors that are applied per acre of forest.
- Annual carbon credits are then assigned for the enrolled forest.
- Credits are sold on the CCX by Delta on behalf of the forest owner.

STEPS OF THE PROCESS

- Enroll the property with the Delta Center
 - Fill out application
 - Must have Forest Stewardship plan in place or arranged to be completed
- Establish the carbon baseline.
 - Forest is “cruised” to inventory species, age and density.
 - Data from the cruise is used to run a CCX approved model to determine baseline and establish carbon sequestration factor

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- Update data base annually with information on changes in the forest such as:
 - Harvest
 - Reforestation
 - Catastrophic loss
 - Change in ownership provided

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- Third Party verifier, approved by the CCX, verifies the carbon value set for the enrolled property
 - Credits are sold on the CCX trading platform.
 - Sold annually beginning one year after the baseline is established.
 - Funds distributed to the landowner after sale
 - Minus fee of \$.14 per ton trading fee by CCX
 - Minus fee of 10% aggregation applied to the gross carbon revenue charged by the Delta Center
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ELIGIBLE PROJECTS

- Small non industrial working forests
 - Forests actively managed for tree harvesting, habitat or conservation
 - Forests that participate in some stewardship certification program
 - Sustainable Forestry Initiative
 - Forest Stewardship Program
 - Certified Tree Farm Group Members
 - Michigan Forest Stewardship Plan
 - Forest Land Enhancement Program
 - Forests that are under conservation easements
 - Forests under the Qualified Forestland Act

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- Requirements for Small Forest Participation Include:
 - A Forest Stewardship Plan must be in place
 - An inventory that establishes the baseline of carbon stock determined through field work that meets the specified criteria
 - Annual provision of data on changes in carbon stock
 - Annual verification
 - A letter indicating commitment to maintain carbon stocks in forestry through a forest management plan

- **Afforestation/Reforestation Projects**

- Afforestation or reforestation projects initiated after 1989
- Land in the Forest Land Enhancement Program
- Land in the Conservation Reserve program or Conservation Reserve Enhancement Program
- Land under long-term protection, such as
 - Conservation Easement
 - Long term commitment to maintain carbon stocks in forestry
 - Land listed under the Qualified Forest Property Act (PA 378)

■ Requirements for Participation

- ❑ Inventory of cover type and age based on afforestation/forestation plans, or a “cruise”
- ❑ Sequestration factors will be determined based on CCX or other approved look-up tables.
- ❑ A letter indicating commitment to maintain carbon stocks in forestry through a forest management plan

MICHIGAN LAW SUMMARIES

PA 446 – GENERAL PROPERTY TAX ACT

- Revises definition of “transfer of ownership” to exclude a transfer of land, but not buildings or structures located on the land, if the land is subject to a conservation easement under the Natural Resources and Environmental Protection Act or if a transfer of ownership of the land or a transfer of interest in the land is eligible for a deduction as a qualified conservation contribution under the Internal Revenue Code (SB 1004; eff. 12/08/06)\

PA 381- PART 512 NREPA

- Sustainable Forestry Conservation Easement Tax Incentives.
- Establishes an annual specific tax for commercial forestland subject to a sustainable forest conservation easement, which would be 15 cents per acre less than the specific tax under Part 511 (Commercial Forests);
- requires an applicant for the reduced tax rate to pay a nonrefundable application fee of \$2 per acre, subject to a minimum of \$200 and a maximum of \$1,000;
- requires owner to pay a penalty if forestland subject to an easement were used in violation of Part 512 or the easement;
- provides that specific tax and penalty are payable to township treasurer;
- allows owner of commercial forestland subject to an easement to remove forest products in compliance with Part 511 and the easement (SB 917; eff. 9/27/06)

PA 382, 383 Natural Resources and Environmental Protection Act

- Modify Commercial Forest Act to, among other things, set penalty rate for owners of commercial forestland who withdraw their property;
- Require that the public have access to the forestland for hunting and fishing;
- and modify eligibility criteria to designate commercial forestland (HB 5454, 5455; eff. 9/27/06)

PA 379 Qualified Forest Property Recapture Tax Act

- Enacted effective January 1, 2007, to provide for the recapture of taxes owed on qualified forest property that was converted by a change in use after December 31, 2006, and no longer qualifies for a tax exemption;
- Recapture tax is doubled if no harvests of forest products have been conducted on the land consistent with the approved forest management plan;
- State Treasurer must collect the tax and deposit the proceeds in the General Fund (SB 913; eff. 9/27/06)

PA 378 General Property Tax Act

- Exempts qualified forest property from taxes levied by local school districts, with some exceptions;
- Requires amount exempted each year under these amendments to be paid to the School Aid Fund from the General Fund;
- Exempts transfer of qualified forest property, under certain conditions, from a provision requiring taxable value of property to be adjusted on transfer;
- Repeals Part 513 (Private Forestry) of the Natural Resources and Environmental Protection Act, which provides a tax exemption for private forest reservations, on September 1, 2007 (SB 912; eff. 9/27/06)

PA 37 Safe Drinking Water ACT

- Requires Department of Environmental Quality (DEQ) to evaluate impact of proposed waterworks system for community supply that would either:
 - (1) provide new total designed withdrawal capacity of more than 2 million gallons of water per day from source of water other than Great Lakes and connecting waterways, or more than 5 million gallons per day from Great Lakes and connecting waterways, or
 - (2) provide an increased total designed withdrawal capacity of more than 2 million gallons per day from source other than Great Lakes and connecting waterways, or more than 5 million gallons per day from Great Lakes and their connecting waterways, beyond the system's total designed withdrawal capacity;

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- DEQ must reject plans and specifications for proposed system if it determines that system would not meet certain standards under Natural Resources and Environmental Protection Act unless both of the following conditions are met:
 - (1) DEQ determines that there was no feasible and prudent alternative location for the withdrawal, and
 - (2) DEQ includes in approval conditions related to depth, pumping capacity, rate of flow, and ultimate use that ensure that environmental impact of withdrawal would be balanced by its public benefit related to public health, safety, and welfare (SB 857; eff. 2/28/06)

PA 36 Natural Resources Protection Act-

- Encourage all persons within watershed to establish committee to evaluate status of water resources and uses, and to assist in long-term planning of water resources within the watershed;
- if Department of Environmental Quality determines that adverse resource impact is occurring, or is likely to occur, DOQ would notify committee or convene meeting with registrants and permit holders within watershed to prevent future adverse resource impacts from occurring;
- DEQ could issue order restricting water withdrawal if it determines by clear and convincing scientific evidence that there is a substantial and imminent threat causing adverse resource impact;
- person subject to the order could request a contested case hearing under Administrative Procedures Act (SB 854; eff. 2/28/06)

PA 35 Natural Resources Protection Act

- Requires all owners of real property with capacity to make large quantity withdrawal from state waters to register with Department of Environmental Quality prior to making a withdrawal;
- registration would not be required for:
 - (1) a person who previously registered, unless the person develops new or increased withdrawal capacity of an additional 100,000 gallons per day;
 - (2) a community supply that holds permit under Safe Water Drinking Act;
 - (3) a person holding a permit under Section 32723; and (4) an owner of noncommercial well on residential property (SB 852; eff. 2/28/06)

PA 33 Natural Resources and Environmental Protection Act (NREPA)

- Amends Part 327 (Great Lakes Preservation) to regulate withdrawal of large quantities of water from state waters and further provides that such withdrawals are not regulated under Part 301 (Inland Lakes and Streams) of the NREPA (SB 850; eff. 2/28/06)

PA 648 Revised School Code

- Permits school board that has levied additional mills beyond maximum number of mills otherwise permitted under Code for school operating purposes to exempt residential property and qualified agricultural and forest property from all or a portion of those additional mills (HB 4125; eff. 1/5/07)

PA 576 Real Property

- Amends General Property Tax Act to exempt from taxes under real property owned by qualified conservation organization that is held for conservation purposes and that is open to all residents of the State for educational and recreational use (HB 6036; eff. 1/4/05)

SYNOPSIS OF PENDING RENEWABLE ENERGY LEGISLATION

- At least 23 Bills introduced in 2007
- Summarized on “Synopsis of Michigan Renewable Energy Legislation” handout

FEDERAL LAW UPDATE

- ENERGY FACILITIES SITING 2006 REPORT HANDOUT
- Section 388 of EP Act 2005 gave DOI authority over leases in OCS for renewable energy projects including wind, wave, solar and underwater current

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- National Department of Defense Authorization Act 2006 requires the DOD to study and report on the effects of wind projects on military readiness
 - Determined that wind turbines were creating interference with military radar