

# MUNICIPAL News

## HIGH SPEED RAIL IS COMING

*Are You Ready To Get On Board?*

**H**igh Speed Rail (HSR) passenger trains that travel over 100 mph may quickly become a reality in the Midwest. With proposed HSR routes from places like Milwaukee to Chicago and Chicago to St. Louis, HSR may soon be linked to or pass through our local communities.

President Obama's stimulus legislation included significant funding to move some of these links forward toward construction. There are 10 federally designated HSR corridors, with the Chicago Hub Network being one of the most significant. Since Chicago is designated as an HSR hub, many communities along the proposed routes are watching carefully as the agencies involved, railroads, and Amtrak collaborate on which routes to build/implement first.

### *What are the Benefits of HSR?*

HSR would spur economic development, save time and energy, reduce dependence on oil, and lessen traffic congestion on highways. High speed trains benefit the environment by generating five times fewer CO2 emissions than cars or aircraft with the same capacity.

### *How Can Your Community Prepare?*

Understanding the many issues involved in planning for and benefitting from new HSR service to and through our communities can be overwhelming.

**BECOME INFORMED:** HSR is a dynamic topic. Staying current on funding opportunities and pending legislation will keep your community in the loop. Visit [www.midwesthsr.org/index.html](http://www.midwesthsr.org/index.html) or [www.fra.dot.gov/](http://www.fra.dot.gov/) for up-to-date information.

**BE PROACTIVE:** Determine the land use and transportation system planning and improvements needed for your community to accommodate HSR or link to HSR. These improvements might include:

- modifications to Land Use Plan
- changes to your street/sidewalk/bike path network
- consolidating, closing or grade separating crossings;
- installing or upgrading crossing warning systems;
- improving track circuitry/signaling;
- improving crossing surfaces/visibility; and
- improving train control systems.

**SEEK FUNDING:** Once you've identified the necessary improvements, determine if funding is available for implementation. The Federal

Continued on page 3



## ARTICLES

in this issue:

- 1 High Speed Rail
- 2 Wind Farms
- 3 B&W Engineers Earn LEED AP
- 4 Energy Cost Saving Tips

**Baxter & Woodman**  
Consulting Engineers

Offices in:

Crystal Lake, Illinois  
Chicago, Illinois  
DeKalb, Illinois  
Grayslake, Illinois  
Itasca, Illinois  
Mokena, Illinois  
Plainfield, Illinois  
Burlington, Wisconsin  
Madison, Wisconsin

[info@baxterwoodman.com](mailto:info@baxterwoodman.com)

# WIND CONVERSION

## WIND CONVERSION SYSTEM IMPACTS

**W**ind energy is becoming an increasingly attractive option as a clean, renewable, alternative energy source. As wind conversion systems are being planned, your community should consider the potential for significant impacts on local infrastructure. Whatever your community's outlook on wind-based energy, one thing is certain - now is the time to prepare for potential effects from a small single wind turbine up through a large-scale wind farm. What to consider? Be Proactive! Develop your current zoning code to prepare for the impacts of wind turbines within/nearby your community. Zoning Code provisions should address the following issues:

### *Setback Requirements*

Setback specifications should be determined for the distance between the wind turbine and structures, property lines, roads, railroads, above-ground transmission lines, and areas of special environmental concern.

#### **ACTION PLAN**

A common way to define a setback distance is a multiple of the turbine height (for example 2 times the wind turbine height). Other options are to specify a fixed distance or a combination of a fixed distance and a multiple of the turbine height.

### *Transportation Impacts*

The greatest impact from a large-scale wind farm can be to the existing transportation system. When considering a large-scale wind farm, delivering the components of the turbine (tower segments, turbine blades, nacelles) to the tower sites requires oversize and overweight trucks. Because of the weight of the components and trucks (which can be over 200,000 pounds), the roads may require resurfacing or, in some cases, complete reconstruction. Structural capacity of bridges and culverts will need to be evaluated where the construction traffic will cross drainage structures.

#### **ACTION PLAN**

A pre-project condition survey should be completed to establish baseline conditions of the roads and drainage structures. Potential impacts to the roads, bridges, and drainage structures should be identified and assessed, and any necessary improvements should be determined. A traffic control plan should be developed for roadway closures.

### *Audible and Visual Impacts*

To protect those in the vicinity of single or multiple wind turbines, consideration should be given to the noise and visual impacts created by the spinning turbine blades.

#### **ACTION PLAN**

A flicker analysis can be completed to assess how shadows from spinning turbine blades will appear on adjacent properties, and an acoustic study can be done to evaluate noise generation from the turbine(s). In some instances, a wind farm developer may negotiate agreements directly with the neighboring property owners to mitigate these potential impacts.

### *Long-term Impacts and Decommissioning*

Consideration should be given to defects that may not show up immediately after the construction period. Impacts such as drainage changes and soil erosion can also occur. In addition, the potential decommissioning of the wind farm structures will necessitate the removal of equipment, which may have many of the same impacts as construction of the wind farm.

#### **ACTION PLAN**

These impacts can be approached similarly to subdivision development, with typical requirements for financial security (e.g., letter of credit) during



# SYSTEM IMPACTS

Baxter & Woodman has provided quality consulting engineering services with a personal touch since 1946.

construction and for maintenance over the service life of the equipment. Review of drainage impacts and a stormwater pollution prevention plan prior to construction should also be considered. Inspection of the work by knowledgeable municipal staff or consultants will help ensure compliance with local requirements.

These impacts are just some of the things to consider when reviewing your zoning code for protections regarding a wind energy conversion system being constructed in or near your community. Proactively updating your zoning ordinances and preparing to actively negotiate with wind farm developers can be key to protecting your community's valuable infrastructure. Contact Steve Amann at [samann@baxterwoodman.com](mailto:samann@baxterwoodman.com) or 708.478.2090 for more information.

Article by Steve Amann, PE, CFM



## *B&W Engineers Earn LEED AP Certification*

Steve Zehner, PE, LEED AP and Jonathan Flowers, LEED AP have earned the certification of LEED (Leadership in Energy and Environmental Design) Accredited Professional. LEED is fast becoming the industry standard for what is green.

Developed by the U.S. Green Building Council, LEED provides building owners and operators a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions. By becoming certified, Steve and Jon have demonstrated a thorough understanding of green building techniques, the LEED Green Building Rating System, and the certification process.

There is an increasing need to incorporate green design elements into local ordinances due to mandates and pressure from constituents. Steve and Jon are ready to advise how to “green up” your community, review developer plans for green elements, recommend green designs that will qualify for green funding, and guide buildings through the LEED certification process.

Contact Steve or Jon to discuss how their LEED knowledge and skills can support your public agency's sustainability/environmental stewardship goals at [szehner@baxterwoodman.com](mailto:szehner@baxterwoodman.com) or [jflowers@baxterwoodman.com](mailto:jflowers@baxterwoodman.com) or call at 815.459.1260.

## *High Speed Rail... continued from page 1*

Rail Administration (FRA) allocates a portion of its annual budget to help communities plan for and prepare to accommodate HSR via improvements along the designated corridors. Visit [www.fra.dot.gov/us/content/2157](http://www.fra.dot.gov/us/content/2157) for FRA Grant and Loan funding information.

Baxter & Woodman is tracking state and federal legislation that will affect municipalities along the HSR routes. Whether it's a grade crossing analysis, a grade separation design, or review of a community budget to incorporate land use/station planning, we are ready to help with the planning and improvements needed to accommodate HSR! Contact Lou Haussmann for additional information at [lhaussmann@baxterwoodman.com](mailto:lhaussmann@baxterwoodman.com) or 708.478.2090.

Article by John Mick, II, PE, F-NSPE, F-ITE



**Baxter & Woodman, Inc.**  
*Consulting Engineers*  
 8678 Ridgfield Road  
 Crystal Lake, Illinois 60012

Prst Std  
 U.S. Postage  
 PAID  
 Crystal Lake, Illinois  
 Permit No. 345



To receive *Municipal News* electronically,  
 send your email address to:  
[editor@baxterwoodman.com](mailto:editor@baxterwoodman.com)

**MUNICIPAL NEWS**  
**BAXTER & WOODMAN, INC.**

*Consulting Engineers*  
 8678 Ridgfield Road, Crystal Lake, IL 60012

**HOW TO REACH US**

**Local Offices/Phone**

<i>Crystal Lake, Illinois</i>	815.459.1260
<i>Chicago, Illinois</i>	312.578.0050
<i>Mokena, Illinois</i>	708.478.2090
<i>DeKalb, Illinois</i>	815.787.3111
<i>Itasca, Illinois</i>	630.773.1870
<i>Grayslake, Illinois</i>	847.223.5088
<i>Plainfield, Illinois</i>	815.609.7425
<i>Burlington, Wisconsin</i>	262.763.7834
<i>Madison, Wisconsin</i>	608.241.5481

**E-mail**

*Letters to the editor*  
[lschendl@baxterwoodman.com](mailto:lschendl@baxterwoodman.com)

**Web**

[www.baxterwoodman.com](http://www.baxterwoodman.com)

© 2009 Baxter & Woodman, Inc.



Printed on 100% PCW. Please keep, share, or recycle.

# ENERGY COST SAVINGS

**L**ooking to save money in the slow economy? Try these quick and easy tips for saving energy and reducing electrical costs at your water or wastewater facilities. Most can be included in basic operations, maintenance, and housekeeping procedures.

**OPERATIONS TIPS**

- Run equipment at night, if possible, when electrical rates are lower.
- Maintain proper lubrication on pumps to reduce friction.
- Maintain air inlet/exhaust filters to provide proper air flow for blowers/ventilation systems.
- Repair leaky check valves so water is not “double pumped.”
- Routinely repair air leaks on piping, flanges, etc.

**BUILDING/MAINTENANCE TIPS**

- Utilize automatic timers for lighting and/or ventilation and utilize set-back or programmable thermostats.
- Install shades or tinting on windows to reduce summertime cooling loads.
- Install automatic closers on doors to air conditioned spaces.

Visit [www.baxterwoodman.com/operations\\_resources.html](http://www.baxterwoodman.com/operations_resources.html) for more tips.

Article by Robyn Doescher

