THE IMPROVEMENT ASSOCIATION

Lake News

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Delavan Lake Improvement Association Holds Annual Meeting

The DLIA annual meeting was held at Delavan's Town Hall on Saturday, October 12, 2013. The first part of the meeting was a question and answer session with James DeLuca, DLSD Administrator, Audrey Greene, Walworth County AIS Specialist, and Kim O'Keefe, citizen member of the Town's Lake Committee.

The panel fielded questions about watershed projects, weed cutting, phosphorus levels, and the proposed research buoy, as well as others. Many of the questions require further research and will be reported in later editions of the DLIA newsletter.

Is the Town doing any watershed projects that would make the maintenance projects last longer? Kim said, they know they need to work in the watershed and are currently looking at possible ponds upstream from Brown's Channel. The Mound Road ponds have been effective, so effective that they need to be dredged and the Town is making plans for that.

Can weed-harvesting hours be extended? James answered that the DLSD is looking into that as well as into getting a smaller harvester that could be used in shallower areas. Why isn't the cutting level deeper? It is regulated by the DNR.

Regarding phosphorus levels, James answered that the main influx of phosphorus happens in the spring from snow melting and rainstorms. Rain picks up any soil containing phosphorus that drains into the lake, from farm fields and lawns. That's why shoreline buffers are good, in that they soak up the drainage. Audrey said that one invasive species in our lake, Curly Leaf Pondweed, actually starts growing under the ice and when it dies off in early July, it provides phosphorus fuel for algae blooms.

Would the Town revisit obtaining a free research buoy to monitor phosphorus and algae? Kim said he would try again next year.

In other business, Mary Pat O'Connor was elected to the DLIA Board. Mary is an environmental scientist, a Realtor, and a resident of Assembly Park. Reelected to the board were Renae Dunbar, Fran Flucke and Susan Vogus. Susan Alness did not run again and we thank her for her years of service.

Assembly Park Takes Bold Environmental Initiative

Construction began in early November on an extensive road reconstruction project in Assembly Park. During the August Board Meeting, the leaseholders of the Park voted to install permeable pavers on all 2.5 miles of roadway replacing the current deteriorating pavement. The project involves the removal of all existing asphalt along with some concrete curbs throughout the Park. The pavers are designed to greatly improve storm water management thus eliminating runoff into Lake Delavan. The goal of the project is to allow for infiltration of the storm water eliminating runoff which carries debris and contaminants into the lake.

The process involves digging up and removing all existing pavement, excavating approximately 12 inches deep, then layering a gravel and sand compacted base, with the pavers laid over the base. Since the pavers are installed on a sand/gravel bed they can expand and contract with the temperature

without cracking. The design of the permeable paver system mimics nature by allowing water drainage to seep down into the soil rather than running toward the Lake. The infiltration of storm water also helps replenish existing aquifers.

In conjunction with the current Lake Management Plan, prepared by the Southeast Wisconsin Planning Commission, to reduce runoff and control pollutants in area lakes, the Wisconsin Department of Natural Resources has budgeted certain grant dollars for implementation of this plan. Assembly Park proactively researched this possibility and

found the installation of permeable pavers was in fact grant eligible. With the help of the Delavan Lake Sanitary District, the DNR representatives, the DLIA and many other hardworking individuals, Assembly Park was awarded a grant of $200,000 for this project.

The roads are expected to be completed before the summer season of 2014. Assembly Park leaseholders are excited about the prospect of having the opportunity to protect our precious resource, Lake Delavan, in addition to acting as catalytic leaders in watershed management.

Written by: Mary Pat O'Connor, Board Member DLIA, Assembly Park Resident

Farm Conservation: Results of MRBI Grant Published

In August, the U.S. Department of Agriculture's Natural Resources Conservation Service published its report on the results of a significant grant for farm conservation practices in the Delavan Lake Watershed. The grant was awarded to Kettle Moraine Land Trust and the Delavan Lake Watershed Initiative Network project in the amount of $211,000 over a three-year period and the results are in.

Nine projects in the Delavan Lake Watershed were implemented over a total of 1807 acres of farmland. Projects include grassed waterways, mulching, cover crops, fencing and mulching… all projects that help keep soil and water on the fields instead of in Jackson Creek and then into Delavan Lake.

Farmers such as Charles Pearce of Delavan understand the need for conservation practices. It doesn't help their bottom line when fertilizer runs off fields, but some conservation practices take acreage out of crop production so NRCS is there to help minimize farmers' losses. In Charles' case, he plants hilly fields in hay, which holds the soil during spring melts and rains. When the hay is mowed, soybeans or corn can be planted without tilling. The hay roots continue to hold onto the soil until the new plants take over.

According to the NRCS report, it is estimated that the nine projects will keep 1,220 pounds per year of nitrogen, 440 pounds per year of Phosphorus, and 193 tons per year of sediment out of Jackson Creek and Delavan Lake. When you think about the ponds on Mound Road that the Town of Delavan created to filter out soil and nutrients, these reductions will really help the ponds and the lake. It is estimated that one pound of phosphorus can grow 500 pounds of algae.

The NRCS administered the grants under the Mississippi River Basin Healthy Watersheds Initiative, an EPA program designed to help reduce nutrients coming into the Mississippi River. The Mississippi is not only the largest river in North America but the second largest watershed in the world. It is also the site of

considerable pollution and "dead zones" which are areas of low oxygen caused by excessive pollution.

The DLIA is also proud to work with farmers and we currently have four conservation projects underway. We do not have the resources for the large projects covered by the grant, but we do help local farmers with cover crops and grassed waterways.

Please see the complete MRBI report on our website, www.delavan-lake.org.

What Makes a Lake?

Wisconsin -- the word is thought to refer to a running river, which makes sense because lakes and rivers make up a large part of Wisconsin's natural resources. Wisconsin has:

- the third largest concentration of fresh water glacial lakes on the planet
- more than 84,000 miles of rivers and streams
- more than 15,000 inland lakes
- about 1,751 square miles of Great Lakes estuaries and bays, along 1,017 miles of Great Lakes shoreline
- approximately 5.3 million acres of wetlands

Wisconsin's lakes and waterways are important, not only for business, but also recreation. From the shores of Lakes Michigan and Superior to the Mississippi River, Wisconsin has an incredible wealth and variety of water resources: trout streams and floodplain forests; streams and creeks of northern forests; and inland lakes and wetlands created by ice-age glaciers. Maintaining the quality of these waters and the beauty of the shorelands is important for both people and wildlife.

What makes a lake? A lake is a body of standing water (not moving that is). This can include natural lakes (formed by glaciers, oxbows in rivers, or other natural processes) and impoundments, or human made lakes, such as reservoirs and farm ponds. Lakes are a critical part of the environment, serving as the collection point for all of the water that falls in the area that travels down through what's called the watershed. The watershed is made up of all the streams and rivers that flow into a particular lake.

Lakes and their nearby wetlands are important to people and ecosystems because they:

- Provide critical habitat for fish, wildlife, and tiny water critters
- Provide a place for sediments to settle and spread out
- Control floods
- Recharge the groundwater
- Provide a recreational area
- Serve as a place of beauty and inspiration for residents and visitors

Lakes get old naturally over time, filling in with sediments, nutrients, plants, and algae. They also become shallower. This aging process usually takes hundreds to thousands of years. With human influence, lakes can fill in faster--sometimes in only decades.

Inside the lake environment there are physical, chemical, and biological processes that determine the type and number of plants, animals, and tiny organisms that are able to live there. One such process is called "stratification." During summer, the lake becomes layered with warm water at the surface and cooler water sinking to the bottom. You might notice this when you're treading water and your feet are hanging lower in the lake. Stratification can change the oxygen content, light penetration, and photosynthesis in a lake, all of which affect the entire lake ecosystem. In the fall, the top layer cools and the lake is all one temperature. Winds mix the water and the lake "turns," so that winter waters are warmer near the bottom where fish spend the winter, and colder water is near the surface where the lake freezes. In the spring, the lake "turns" again and it begins all over.

When looking out at a lake, you might not think that much is going on underneath the surface, but a lot is happening with lake chemistry, stratification, wind mixing, and the aquatic organisms that live there. By learning more about lakes, you can help protect them and better understand the processes in and around the lake. Get involved in protecting the lake nearest you. You'll be helping wildlife and your community.

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Delavan Lake Sanitary District Parkland Plans

The DLSD has announced a project to create a large "buffer zone" around Delavan Lake by acquiring property north of the Inlet and around Brown's Channel. As reported in The Delavan Enterprise on Dec. 26, 2013, DLSD Administrator James DeLuca and Delavan Town Chair Ryan Simons are working on a plan that would help stretch lake project maintenance dollars farther by enabling more wetlands to filter sediment and phosphorus before it enters Delavan Lake.

As far back as 1986, scientists who studied the lake recommended watershed projects of this type. The UW-Madison Water Science department, who prepared several plans for the lake rehabilitation project, said the next steps after the project was completed (sanitary sewers, lake level drawdown to help remove rough fish, and alum treatment to bind phosphorus) would be a watershed project to filter upstream waters.

DeLuca and Simons envision a project with many potential partners including the cities of Delavan and Elkhorn, Walworth County, the State, the DLIA and Kettle Moraine Land Trust. They are currently looking at grant possibilities and have met with many of these entities already.

The DLIA is excited about the plans and the opportunity to partner with the DLSD and Town on watershed projects. Our 2,000-acre lake has a 26,000-acre watershed, and from those numbers one can understand how large the need is for protection and how extensive the projects will be.

We will post updates on our website, www.delavan-lake.org so check for further news.

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