Land Use and Resource
Management Department

Walworth County
Land Conservation Committee Meeting and
Public Hearing
Monday, June 18, 2012 at 2:00 p.m.

Walworth County Government Center
County Board Room 114
Elkhorn, WI 53121
Dan Kilkenny– Chair, Nancy Russell - Vice Chair
Tim Schiefelbein- Supervisor
Sue Bellman – USDA/FSA Representative, Rosemary Badame – Citizen Member

(Posted in Compliance with Sec. 19.84 Wis. Stats.)

It is possible that a quorum of the County Board or a committee of the County Board could be in attendance.

AGENDA

1. Call to order

2. Second Public Hearing Pursuant to Ch. 91.10 (3) under ss. 66.1001(4) of the Wisconsin Statutes Walworth County Farmland Preservation– LURM Staff

3. Roll call

4. Approval of the Agenda

5. Approval of Minutes from May 14, 2012 LCC Meeting

6. Public Comment

7. Discussion/Possible Action – Walworth County Farmland Preservation Plan Update – LURM Staff

8. Discussion/Possible Action – Walworth County Farmland Preservation Ch. 26 Ordinance Amendments – Louise Olson (enclosures, pages 1-2)

9. Discussion/Possible Action – Groundwater and Geneva Lake Summary – Louise Olson (enclosure, pages 3-9)

10. Discussion/Possible Action – ACE and Farmland Protection Commission Meeting Invitation - Louise Olson (enclosure, pages 10-16)

11. Discussion/Possible Action – Lake Management Planning Project Grant Application – Louise Olson/Fay Amerson (enclosures, pages 17-20)

12. Next meeting date: Monday, July 16, 2012, 2:00 p.m.

13. Adjournment

Submitted by: Michael P. Cotter, Director, Land Use and Resource Management Department, Louise Olson, Deputy Director, Land Conservation Committee Designee

Posted: June 13, 2012

Walworth County Land Conservation Committee
MINUTES
Monday, May 14, 2012 at 2:00 p.m.

Walworth County Board Room 114
Elkhorn, WI 53121

The meeting was called to order by LURM Director Michael Cotter at 2:04 p.m.

Roll call - Committee members present included: Supervisors, Kilkenny, Russell, and Schiefelbein. Sue Bellman was absent, excused. A quorum was declared.

County staff present – Michael Cotter, Director of Land Use & Resource Management (LURM); Louise Olson, Deputy Director, LURM; Fay Amerson, Urban Manager, LURM; Neal Frauenfelder, Sr. Planner LURM; and Joeann Douglas, Recording Secretary.

Also in attendance – Marilee Holst, Geneva Lake Conservancy, Rosemary Badame

Approval of the Agenda – **Vice-Chair Russell and Citizen Member Schiefelbein moved and seconded approval of the agenda. Motion carried 3-0.**

Approval of the Minutes – **Vice-Chair Russell and Citizen Member Schiefelbein moved and seconded approval of the April 23, 2012 LCC meeting minutes as presented. Motion carried 3-0.**

Public Comment – none

LCC representative to the SE Area Land and Water Conservation Association Louise Olson said the seven county reorganization SE Area Meeting will be held on June 13, 2012 – **Vice-Chair Russell and Citizen Member Schiefelbein moved and seconded to, if approved by the County Board on June 12, appoint Rosemary Badame as the LCC Representative to the Southeastern Area Land and Water Conservation Association. Motion carried 3-0.**

Walworth County Lake Districts 2012 Appointments - Louise Olson provided a list of everyone interested in lake district appointments including LCC, Walworth County supervisors, and citizens. **Supervisors Russell and Schiefelbein moved and seconded that the LCC make a recommendation that those on the list be sent to the County Board for approval. Motion carried 3 -0.** LCC Vice-Chair Russell also said she was very pleased to see that four county board supervisors have taken on lake district responsibilities.

Walworth County Farmland Preservation Update – Louise Olson said that Deb Grube, Neal Frauenfelder and she spoke with DATCP representatives in Madison on May 2. DATCP agreed to accept the Comprehensive Land Use Plan map and the A-1 soils listed on it (and classification of soils, I, II, and III) with multi-zoning jurisdictions per tax parcel. This was the sticking point of their acceptance of our Farmland Preservation Plan. She was told that the plan did not have to be re-certified by corporation council. There are a few minor points to be included that still need to be addressed. Ms. Olson has worked with the GIS Division of the IT Department and they now have all our maps in compliance with state requirements. Ms. Olson forwarded the maps to the DATCP representative who received acceptance. We will be scheduling a Public Hearing/LCC Meeting on June 18, 2012 to enable us to go forward with the Farmland Preservation Plan.

Decision for Nonmetallic Mining in Walworth County Farmland Preservation Area – Louise Olson said one of the criteria was to address the nonmetallic mining lands that were initially A-1 and being converted to nonmetallic mining designation. At that time there was a conversion fee. The state has removed the conversion fee for A-1 land converted into another zoning designation. This negates the need for another zoning district of A-1M. Neal Frauenfelder said the original A-1M designation was to assure the land would be rezoned back to A-1. That has been fixed with conditions on a conditional use permit for mineral extraction and having applicants prepay the rezone application fee for mineral extraction, which the towns prefer. **Vice-Chair Russell and Citizen Member Schiefelbein moved and seconded leaving our current system in place whereby it takes a rezone to put in a nonmetallic mining operation and the petition for rezone back to agricultural be a part of that, as stated by Neal Frauenfelder and removal of the A-1M zoning category. Motion carried 3-0**

Next Meeting Date – Monday, June 18, 2012 at 2:00 p.m.

Adjournment – **On motion and second by Vice-Chair Russell and Citizen Member Schiefelbein Chair Kilkenny adjourned the meeting at 2:25p.m. Motion carried 3-0.**

Submitted by Joeann Douglas, Recording Secretary. Minutes are not considered final until approved by the committee at the next regularly scheduled meeting.

ARTICLE IV. - CONSERVATION

DIVISION 1. - GENERALLY
DIVISION 2. - SOIL AND WATER CONSERVATION STANDARDS FOR THE FARMLAND PRESERVATION PROGRAM

Land conservation committee (LCC) means a committee of the county board of supervisors comprised of members per Wis. Stats. ch. 92.

Nutrient management plan means any of the following:

(a) A plan required under s. ATCP 50.04(3) or 50.62(5)(f) rules.

(b) A farm nutrient plan prepared or approved, for a landowner, by a qualified nutrient management planner.

Nutrients means plant nutrients derived from commercial fertilizers, manure, organic wastes, soil reserves, legumes or other sources.

Participant means a landowner who owns land that is included on a valid zoning certificate.

RUSLE II (Revised Universal Soil Loss Equation- revision 2) means the mathematical formula for estimating or predicting average annual soil erosion rates due to sheet and rill erosion caused by rainstorms on specified land areas, as described in section I of the technical guide.

(a) Except as provided in par.(b), the release that was in effect on November 14, 2006.

(b) For purposes of a compliance determination under ch.NR151 or this chapter made prior to November 14, 2006, the release that was in effect on the date of the compliance determination.

Sec. 26-212. - Authority, purpose and applicability.

This policy is established by the committee pursuant to Wis. Stats. § ~~92.104, 92.105~~,92.07(1), 92.10(5), 92.10(6) and ATCP 50.16, Wis. Adm. Code and related guidelines adopted by the State Land and Water Conservation Board under Wis. Stats. § ~~92.105(2)~~ 92.10(6). It provides for soil and water conservation standards to be met and procedures to be followed by participants in the Wisconsin Farmland Preservation Program. Conformance with these standards and procedures will be necessary for landowners to establish and maintain eligibility for farmland preservation tax credits under Subchapter IX of Chapter 71, and Wis. Stats. §§ ~~92.104~~ 91 Subchapter V 91.80, 91.82 and ~~92.105~~,Subchapter VI, 91.84, 91.85 shall apply to landowners who claim a farmland preservation tax credit for which they are eligible because their land is located in the exclusive agricultural zoning district (A-1 prime agricultural land district) These standards are effective when approved by the Wisconsin Land and Water Conservation Board and the Walworth County Board of Supervisors.

(Res. No. 30-10/93, § I; Amd. of 9-9-04)

Sec. 26-213. - Administration.

(a) This policy ...

(3) *Notice of noncompliance*....Wis. Stats. §§ ~~92.104(4) or 92.105(5)~~ 91.82.

Discussion on June 18, 2012

Public Hearing July 16, 2012

Additions are noted with underlines and deletions are noted with cross-hatches.

Amendments are proposed to address Wisconsin Administrative Code and Statutes numeral changes and additions to the State Farmland Preservation Program including nutrient management requirements. (Wis.Stat.§. Chapter 91, Chapter 92 and Administrative Code ATCP 50.

Geneva Lake Environmental Agency

Village of Fontana • City of Lake Geneva
Town of Linn • Town of Walworth
Village of Williams Bay

P.O. Box 914, 350 Constance Bld., Williams Bay, WI 53191 • Telephone: 262-245-4532 • Fax: 262-245-4533

May 15, 2012

Dear Groundwater Stakeholder,

Over the last several years, with your help, the Geneva Lake Environmental Agency and its groundwater partners have conducted several studies to better understand the role of groundwater in the Geneva Lake area. Several separate informative reports have been prepared discussing the findings of those studies.

In an attempt to put all the information gathered from those studies into one simple report, the GLEA has prepared a Summary Information Sheet on *Groundwater and Geneva Lake*. Summary Information Sheets are designed for the layperson to help understand more complicated issues.

Enclosed for your review and files is a copy of our most recent summary information sheet, SIS #8, *Groundwater and Geneva Lake*.

If you need extra copies feel free to visit the GLEA website at www.genevaonline.com/~glea/ and down load a pdf version of the report or call the GLEA 262-245-4532 and we would be happy to email you the pdf version or mail you extra copies.

Thank you.

GROUNDWATER AND GENEVA LAKE

INTRODUCTION

For years it was assumed that *groundwater* was a significant source of water to Geneva Lake. Local folklore once contended that the water in Geneva Lake came all the way from Lake Superior in underground streams. Initial studies on the *hydrogeology* of the area indicated that was no more than "old-time stories."

Previous *lake modeling* indicated that groundwater was responsible for a net contribution of 6-10 percent of the annual water coming into Geneva Lake. Although little groundwater *quantitative monitoring* actually was conducted, these values seemed reasonable from *a mass balance* perspective. Knowing the basic components of Geneva Lake's hydrologic budget (Figure 1) and compensating for changes in lake level, the difference in the sum of known inputs and the sum of known losses was from groundwater.

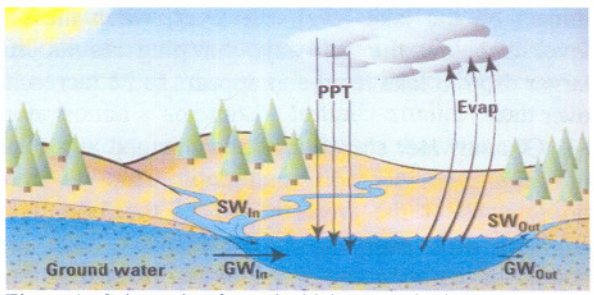

Figure 1. Schematic of a typical lake water budget.
Source: USGS

Beginning in 2005 with the assistance of the Wisconsin Geological and Natural History Survey (WGNHS), UW-Extension, and Geneva Lake communities, the Geneva Lake Environmental Agency coordinated several comprehensive groundwater studies in the Geneva Lake area. The goal of these studies was to understand more accurately the importance of groundwater, not only to Geneva Lake but as the major source of drinking water to the Geneva Lake populace.

GROUNDWATER STUDIES

In 2006, working with WGNHS, an extensive inventory of existing groundwater information and data from the Geneva Lake area was compiled and analyzed. This study identified and mapped the water table elevation, bedrock thickness and depth, *cones of depression* for major wells, bedrock geology, and sensitive areas relative to groundwater quality.

In 2008, with the financial help of more than 13 area groundwater stakeholders, WGNHS was contracted to conduct modeling of Geneva Lake's area groundwater under different conditions. Produced from the modeling were impacts on the groundwater from present pumping rates, future pumping rates, and no pumping (to simulate predevelopment conditions). *Lake budgets, ground watersheds,* and groundwater movement were identified for all three scenarios. Areas and relative rates of *infiltration* also were identified.

In 2011, the GLEA and the Linn Sanitary District conducted an Education and Information Program that included mailing several groundwater information flyers. In late summer, a well-testing program for arsenic, nitrate, bacteria, and chloride was offered to area residents owning private wells.

2006-07 INVENTORY

Over the years much information on the *hydrogeology* of Geneva Lake has been collected. Much of this data is on a regional basis, with little specific information about the immediate Geneva Lake area. The first step to understanding the groundwater is to bring together and review existing groundwater information and data. This inventory resulted in the creation of several geologic and *hydrogeology* maps.

The second step in this phase was to assess the suitability of using an existing groundwater flow model to simulate surface water and groundwater interaction in the Geneva Lake area. Based upon what was found in the first step, the

Italicized and blue-colored words are defined in the glossary on this Summary Information Sheet's last page.

This Summary Information Sheet is a compilation of several reports prepared by UW-Extension, Wisconsin Geological and Natural History Survey, and Geneva Lake Environmental Agency.

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Geneva Lake area had a rich set of existing information that made modeling groundwater a viable tool for managing and understanding the area's groundwater.

The groundwater flow model simulates a real-world hydrologic system, in this case groundwater in the Geneva Lake region. The model can produce groundwater elevations and movement relative to different levels of pumping. This allowed for the creation of groundwater conditions under predevelopment, existing, and future development scenarios.

FINDINGS

There are two major *aquifers* in the Geneva Lake area: a shallow sand and gravel *aquifer* about 200 feet thick that overlays a deep bedrock *aquifer* of sandstone and limestone (Figure 2). Except for the far western portion of Geneva Lake, these *aquifers* are separated by an *impervious* Maquoketa shale *aquitard.* As such, these two *aquifers* act independently of each other. Geneva Lake interacts primarily with the shallow sand and gravel *aquifer.* Groundwater in the shallow aquifer moves toward the lake on all sides, except the northeast end where the lake *recharges* groundwater. Precipitation *recharges* the shallow groundwater relatively fast. The deep *aquifer recharges* much more slowly due to the *impervious* layer that limits the downward movement of water.

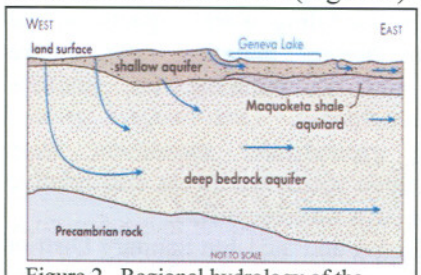

Figure 2. Regional hydrology of the Geneva Lake area.
Source: UW-Extension/WGNHS

As a result of high *infiltration* in the sand and gravel, the shallow water table is very vulnerable to surface pollution. Those pollutants can move extremely quickly to groundwater discharge areas such as springs, seepages, surface waters, and wells.

As wells pump water from the aquifer they form a *cone of depression* in the water table (Figure 3). A cone of depression is a conical-shaped depression in the water table radiating away from a well, with the widest part at the surface and the narrowest part at the well head.

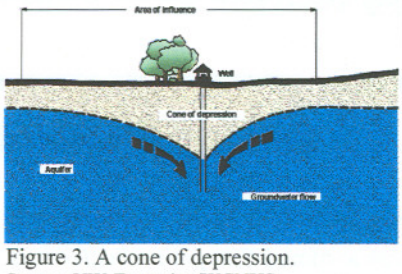

Figure 3. A cone of depression.
Source: UW-Extension/WGNHS

Some of the high capacity wells on the western end of the lake form cones of depression that drop the water table as much as five feet as far away as 2½ miles. *High-capacity wells* on the eastern end of the lake have relatively small *cones of depression* because of the rapid *recharge* by the lake and groundwater.

The many springs and seepages located predominately on the west and south sides of Geneva Lake receive most of their water from the shallow sand and gravel *aquifer*. Pumping from the shallow sand and gravel *aquifer* can reduce flows in the shallow springs and seepages that deliver water to the lake.

Annually, *high-capacity wells* remove as much as a half billion gallons of water from the *aquifer* or one-half of one percent of lake volume or about three inches of water. In the spring when the lake water level is above the spillway, this pumping has no impact on the lake level. However, when the lake level is below the spillway, pumping results in a larger drop in lake level and appears to be increasing over time.

Groundwater elevations have changed as a result of *high-capacity well* pumping. This is most pronounced at the western end of the lake. *High capacity well* pumping in the Geneva Lake area results in lowering the water table on the Big Foot Prairie and an extension of Geneva Lake's *ground watershed* to the west.

2008-09 GROUNDWATER MODELING

With the local groundwater information gained from the first phase of the groundwater study and an understanding that groundwater follows basic principles of physics and mathematical equations, modeling can tell a lot about what is happening with groundwater even though it is under the ground and out of sight. Adapting a groundwater model that was developed by the United States Geological Survey (USGS) and Southeastern Wisconsin Regional Planning Commission (SEWRPC) for regional groundwater studies, a fined-tuned version of the

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model was used to specifically investigate the groundwater/surface relationships in the Geneva Lake area.

The model simulates three aspects of that relationship: groundwater recharge, flow through aquifers, and discharge to wells and surface water. The model can simulate the *water table* and estimates of groundwater flow rates under different pumping rates. By adjusting pumping rates, past, present, and future groundwater flow rates can be simulated. By adjusting the model's calibration, the impacts of wet, dry, and normal precipitation also can be simulated.

FINDINGS

A close relationship exists between Geneva Lake and the *shallow groundwater*. The *ground watershed* of Geneva Lake is larger than its *surface watershed*, extending farther to the west and south than the surface watershed (Figure 4). Not only is the *ground watershed* significantly different than the surface watershed, the predevelopment and post-development watersheds also differ (Figure 4).

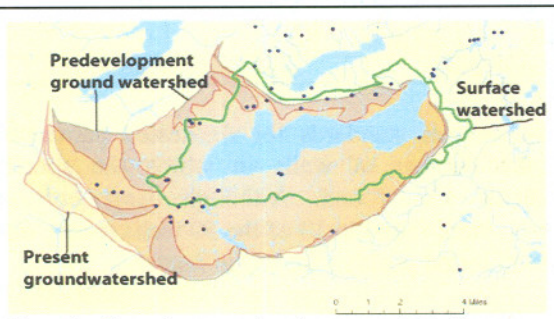

Figure 4. Groundwater and surface watersheds, Geneva Lake. Source: WGNHS,UW-Extension, GLEA

This model also simulated a lake *water budget* by identifying the annual water sources to and losses from Geneva Lake (Table 1.) The water budgets from this modeling identify a larger portion of the lake's annual water inflow from groundwater than the 6-11 percent previously thought. Older values did not involve the actual measuring of groundwater flow as this newer model does.

Under present conditions, the model identified the contribution of precipitation as the largest single annual source of water to the lake at 38 percent. Groundwater accounted for 36 percent, runoff 19 percent, and *stream base flow* seven percent. The major loss of water at 64 percent is flow over the spillway and into the White River. Evaporation accounts for 35 percent of the annual loss, and flow into the groundwater represents about one percent of the total loss.

Present-day pumping reduces the amount of groundwater that flows through the lake system by about four percent as compared to predevelopment conditions (no pumping.) This is a relatively insignificant amount and does not impact the lake level because of the spillway. The pumping does not significantly change the sources, losses, and percentages of water to and from the lake.

It was estimated that by 2035 predicted growth in the area will result in a 30-percent increase in pumping. The model shows this will result in a 4.5 percent decrease in the water flowing through the lake.

Adjusting the model's precipitation to simulate wet and dry years does change the lake's water budget significantly (Table 1). Wet years increase the total amount of water that flows through the lake but actually decrease the percentages of groundwater and atmosphere as sources. The percentages of water from runoff and *stream base flow* (springs and seepages) that enter the lake during a wet year increase to about 35 percent.

Table 1: Geneva Lake Water Budgets Under Different Precipitation Rates

	Precipitation Amounts		
Inflow	Present 32"	Wet year 50"	Dry year 21"
Groundwater	36%	33%	73%
Precipitation	38%	31%	7%
Surface runoff	19%	25%	8%
Stream base flow	7%	11%	12%
Outflow			
White River	64%	75%	15%
Evaporation	34%	25%	85%
Groundwater	1%	<1%	<1%

Source: UW-Extension, WGNHS, GLEA

During a dry year, the model showed the groundwater can contribute as much as 73 percent of the water annually entering the lake. As might be expected, precipitation and runoff drop significantly to seven and eight percent, respectively. *Stream base flow* increases to 12 percent.

The White River is the major loss of water from Geneva Lake during normal and wet years. Evaporation is the major loss (85 percent) of water during a dry year. As might be expected during a dry year, the lake level drops below the spillway sooner and less water is lost to the White River.

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Groundwater accounts for less than one percent during both wet and dry years.

The model showed that pumping from high-capacity wells on the western end of the lake not only dropped the water table but in doing so reduced the volume of water in springs, seepages, and streams. These groundwater discharge sites are directly dependent upon the shallow aquifer for their water. In turn, this reduces the amount of water supplied to the lake by not only groundwater but *stream base flow.*

Although the model did not address *wastewater* and its ultimate fate, by knowing the present wastewater treatment options in the lake area some idea of *wastewater* quantitative impact can be ascertained. On the eastern end of the lake, wastewater is discharged to *infiltration ponds* down flow from the lake and has little if any impact on the lake.

Wastewater on the western end of the lake is discharged to surface waters that drain away from the lake. This results in the annual interception of about 340 million gallons of water that normally would be a part of the local hydrologic system.

The remaining portion of the watershed uses *private on-site wastewater treatment systems* (POWTS) or *septic systems and holding tanks.* Systems with *holding tanks* are pumped out periodically, and the waste is discharged into a nearby *wastewater treatment plant*. Functioning septic systems discharge their treated wastewater on-site, where it is treated by the soil and recharges the water table.

Although this model does nothing with water quality, it would be shortsighted not to consider water quality along with water quantity when managing groundwater.

2011 GROUNDWATER INFORMATION: EDUCATION AND TESTING

In early 2011, the Geneva Lake Environmental Agency and the Linn Sanitary District entered into an agreement to conduct a groundwater education and well-testing program. The goal of the program was to share the information gained from the recently conducted groundwater studies with the residents of the Geneva Lake area and to instruct them on how to test their private residential wells. An opportunity was given to area residents to have their wells tested for *bacteria, arsenic, nitrate, and chloride.*

Over the year, five educational flyers were sent out to Linn Sanitary District residents with private residential wells. The educational flyers were titled "Hydrogeology of the Geneva Lake Area," "Groundwater in the Geneva Lake Area," "Why Groundwater Is Important in the Geneva Lake Area," "Testing Your Drinking Water Well," and "Protecting Groundwater."

RESULTS

Arrangements were made with the Wisconsin State Laboratory of Hygiene to conduct the water analysis. A total of 59 residents took advantage of the opportunity and collected samples from private residential wells for testing. Table 2 shows the drinking water standards for the tested parameters and the number of wells in which the specific parameter was found. Although *total coliform bacteria* were found in 13 of the 59 wells tested, only one well tested positive for *E-coli bacteria*.

Table 2 Drinking Water Standards and Test Results

Parameter Tested	Drinking Water Standards	Tested Wells with Parameter	Tested wells that exceeded the Standard
Total Coliform	0	13	13
E-coli	0	1	1
Arsenic	10 ppb	18	7
Chloride	250 ppm	59	0
Nitrate	10 ppb	5	0

ppb = part per billion Source : GLEA and WSLH

Coliform bacteria can be widely distributed in the natural environment. *E-coli bacteria* is a type of *fecal coliform bacteria* found in the intestines of warm-blooded animals. If found in drinking water, it should be assumed that the water has been contaminated and should not be consumed.

Arsenic in water can be from manmade and natural sources. In the case of *arsenic* in Geneva Lake area well water, it is more often from a reaction that takes place in the deep aquifer. Wells that had *arsenic* were deep wells that withdrew their water from the deep aquifer below the sand and gravel at more than 200 feet.

Chloride was found in all wells, but none of the tested wells exceeded the drinking water standard of 250 parts per million (ppm.) The standard is more of a taste standard than a health standard.

Nitrate is a common form of nitrogen. Nitrogen is an essential nutrient for life and is widely distributed in the environment. All living cells have

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nitrogen in some form. 78 percent of the atmosphere is nitrogen, which must combine with oxygen to form *nitrate*. *Nitrate* is found in fertilizers and animal wastes. The drinking water standard for *nitrate* is 10 ppm. Drinking water in excess of 10 ppm can lead to problems with oxygen delivery in the blood. Although five wells had some level of *nitrate,* no well exceeded the drinking water standard.

MANAGEMENT IMPLICATIONS

Geneva Lake receives a major portion of water from the groundwater that is *recharged* by rainfall entering the ground to the south and west of Geneva Lake. Care should be taken with activities in these recharge areas (Figure 5).

Care also should be taken as to how the shallow sand and gravel aquifer is used to supply water. Future groundwater removal within the Geneva Lake ground watershed may not have a significant impact on Geneva Lake but will change the ground watershed. Because springs and seepages receive their water from this shallow *aquifer*, high withdrawal of this water will impact the many springs and seepages found around the lake.

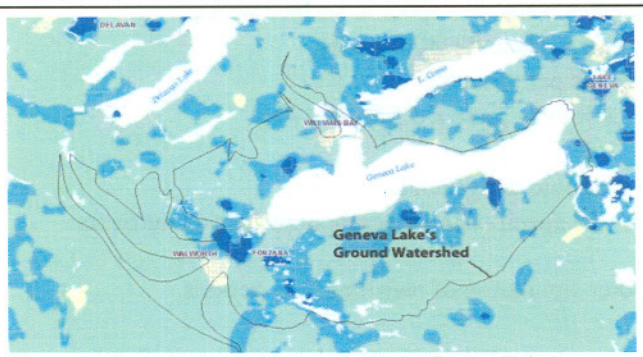


Figure 5. Groundwater recharge areas in the Geneva Lake area. Areas where water soaks into the ground (infiltration). The darker the area the higher the infiltration rates. Source: WGNH, UW-Ex, GLEA

The groundwater model has been refined and calibrated and is ready and available for future use. It would be wise to use the model to assess the impacts of new high-capacity wells upon the groundwater in the study area.

SUMMARY

Groundwater moves toward Geneva Lake from all directions except for a small area located at the eastern end of the lake. Here the lake actually feeds or *recharges* the groundwater. The raising of the lake surface by the creation of a spillway and dam has slightly altered the groundwater flow on the northeast shore of the lake where a reduced amount of groundwater flows toward the lake.

During a normal year Geneva Lake receives 36 percent of its annual water input from groundwater. A shallow sand and gravel aquifer underlies all of the lake and is about 200 feet thick. This aquifer allows for rapid *recharge* and offers a good supply of high-quality water to the lake.

Many area *high-capacity wells* that draw from the aquifer intercept water that would flow toward and into the lake. This interception does not have a significant impact on the lake. Modeling has shown that to compensate for this loss, the lake's *ground watershed* has expanded to the west. Depending on the amount of groundwater pumping, it could significantly reduce flow in many area springs and seepages.

The atmosphere and groundwater are major sources of Geneva Lake's inflow, accounting for almost three-quarters of the annual inflow. Surface runoff and *stream base flows* (springs and seepages) make up the remaining water sources. During wet years the runoff and base flow increase slightly, yet groundwater and precipitation remain the largest contributors. During a dry year, the contribution of precipitation drops significantly, and groundwater contribution increases to compensate. Groundwater is a significant source of water to the lake during normal, wet, and dry precipitation years.

The volume of water loss from Geneva Lake varies between normal, wet, and dry years, yet the percentages change little. Water flowing over the spillway into the White River accounts for the largest lost in normal and wet years. Evaporation accounts for the largest lost during a dry year. Loss to groundwater in any of the three scenarios never exceeds one percent

In an attempt to understand groundwater quality, a private well-testing program was conducted. Few wells had issues with drinking water standards.

The groundwater model gives insight into the groundwater-and-lake relationship. The identification of Geneva Lake's *ground watershed* and *recharge* areas is important to protecting the groundwater that ultimately feeds the lake. Knowing the impact of new wells on the groundwater-and- lake relationship is a valuable tool that can be used as future demands for water increase.

Italicized and blue-colored words are defined in the glossary on this Summary Information Sheet's last page.

GLOSSARY

Aquatard – A layer or formation of soil or rock that prohibits the passage of water.

Aquifer – The area in the ground where all open spaces between the soil and rock particle are filled with water.

Arsenic – A highly toxic metallic element that can restrict the use of water. In the Geneva Lake area, the presence of arsenic usually is associated with deep wells (>200 feet) in the deep aquifer below sand and gravel. Arsenic appears there as a result of a natural chemical process.

Chloride – A form of chlorine that is considered an important and widely distributed salt. Chloride tends to accumulate in the environment and can add a salty taste to water in high concentrations.

Cone of depression – A conical-shaped depression in the water table defining the area of influence of the well, with the widest part being at the surface and the narrowest at the well head.

E-coli – *Escherichia coli* bacteria, a specific type of fecal coliform bacteria that live in the intestines of warm-blooded animals.

Fecal coliform – A group of coliform bacteria usually found in association with animal feces.

Ground watershed – That portion of an aquifer that supplies water to a specific surface water.

Groundwater – Water found in the spaces or void between rocks and soil particles.

High-capacity well – A well capable of pumping 70 gallons per minute.

Holding tank – A tank that collects wastewater and holds it to be removed from the site.

Impervious – Not able to pass water.

Infiltration ponds – Ponds designed to allow water to soak into the ground.

Lake budgets– The quantification of sources and losses of a specific lake's component such as nutrients or water.

Lake modeling – A planning tool that allows for computer simulation of real-time lake actions.

Mass balance – Equalizing both sides of an equation.

Nitrate – NO_3, a form of nitrogen in fertilizers and used by plants. When found in water, nitrate often is considered a pollutant.

POWTS – Private on-site wastewater treatment system. Commonly referred to as a septic system.

Ppm – Parts per million, an expression of concentration.

Quantitative monitoring – Monitoring the amount of something. In this case, water.

Recharge – The movement of water into the ground to replenish groundwater.

Septic system – A series of wastewater treatment processes that includes, at the least, a septic tank and a soil-absorption system.

Shallow groundwater – In the Geneva Lake area, groundwater in the shallow sand-and-gravel aquifer that runs in depth from the surface to about 200 feet.

Stream base flow – The amount of stream flow contributed by groundwater and not runoff.

Surface watershed – The area of land that drains into a specific surface.

Total coliform – Includes all forms of coliform bacteria.

Wastewater – Sewage

Water budget – The quantification of water loss and input into a surface water feature.

Water table – The top of the zone of water saturation in the ground.

ACKNOWLEDGEMENTS

This Summary Information Sheet is made financially possible by the generosity of the Lake Geneva Garden Club. We thank area stakeholders that made a significant portion of this work possible: Linn Sanitary District, Village of Williams Bay, Village of Fontana, Village of Walworth, Town of Geneva, Town of Linn, Town of Walworth, City of Lake Geneva, Geneva Lake Association, Geneva Lake Conservancy, Kikkoman Foods, Lake Geneva Garden Club, Wisconsin Geological and Natural History Survey, UW-Extension, and Geneva Lake Environmental Agency. Copyediting and proofreading were donated by Fred Noer. Digital or hard copies are available by contacting the Geneva Lake Environmental Agency, P.O. Box 914, 350 Constance Blvd., Williams Bay, WI 53191, calling 262-245-4532, or e-mailing glea@genevaonline.com. This Summary Information Sheet is the eighth in a series of information flyers about Geneva Lake and its management. They are educational publications that summarize larger, more detailed studies or reports on Geneva Lake. These summaries are prepared by the Geneva Lake Environmental Agency with the assistance of the original authors.

Fw: Joint Commission Meeting
Louise A Olson to: Joeann Douglas 06/05/2012 04:24 PM
Cc: Michael P Cotter

Please add to the LCC Agenda, invite to attend ACE and Farmland Protection Commission meeting. Discussion/ Possible Action also be included to text.

Louise Olson, Deputy Director/ LURM Dept.
100 W. Walworth Street
PO Box 1001
Elkhorn, WI 53121

Telephone # 262/741-7912
Fax # 262/741-4973
----- Forwarded by Louise A Olson/WALCO on 06/05/2012 04:21 PM -----

From: Kimberly Kolner <KSKolner@co.mchenry.il.us>
To: "mcotter@co.walworth.wi.us" <mcotter@co.walworth.wi.us>
Date: 05/23/2012 10:05 AM
Subject: Joint Commission Meeting

ACE

Agricultural Conservation Easement and Farmland Protection Commission

Dear Mr. Cotter,

The McHenry County Agricultural Conservation Easement and Farmland Protection (ACE) Commission invites you and the farmland protection commission of Walworth County to a joint commission meeting. The meeting will be held at the McHenry County Administration Building located at 667 Ware Road, Woodstock, IL on July 18, 2012 at 7:00PM.

We are asking that each commission prepare a brief presentation of what they have been working on. If you would like this to be within a power point format we will have the equipment available for you. We ask that these presentations stay at around 5 minutes long. Also if the County has any printed handouts or brochures please bring between 50-100 copies to the meeting for distribution. Thank you.

I have attached an invitation that you can print and distribute to your commission members. Please have everyone RSVP individually to me by July 10th.

Thank you.

Kimberly S. Kolner
Associate Planner
McHenry County Planning and Development
2200 N. Seminary Ave.
Woodstock, IL 60098
Tel: 815.334.4555
Fax: 815.337.3720
kskolner@co.mchenry.il.us

"I like to see a man proud of the place in which he lives. I like to see a man live so that his place will be proud of him" -Abraham Lincoln.

Invitation.pdf

Please join us for an evening focused on farmland protection and agricultural education.

The event will be full of opportunities to share ideas and network with area Farmland Protection Commission members.

JOINT COMMISSION MEETING

hosted by the McHenry County

Agricultural Conservation Easement &

Farmland Protection Commission

July 18, 2012

7:00 –9:30 p.m.

McHenry Country Administration Building

Conference Room A/B

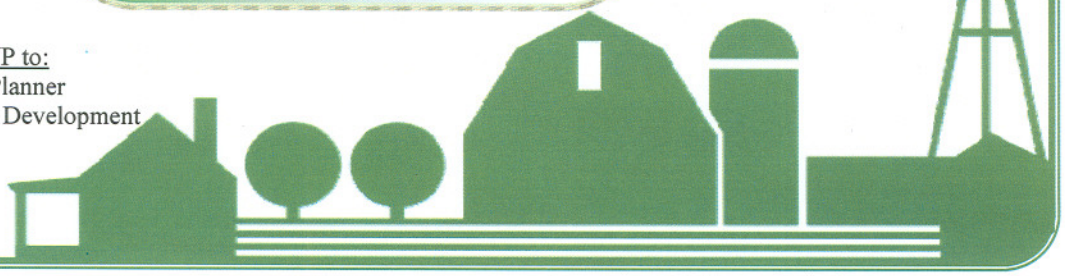
667 Ware Road

Woodstock, IL 60098

PLEASE RSVP BY JULY 10, 2012

FARM FRESH IDEAS

We ask that each commission or county representative present a brief explanation of any efforts their county is doing towards farmland preservation.



For More Information & RSVP to:
Kimberly Kolner, Associate Planner
McHenry County Planning & Development
kskolner@co.mchenry.il.us
815.334.4555
PLEASE RSVP
BY JULY 10, 2012

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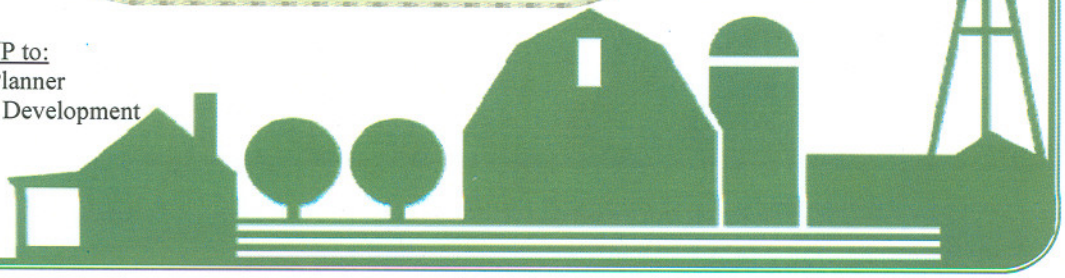

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Kimberly Kolner, Associate Planner
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815.334.4555
PLEASE RSVP
BY JULY 10, 2012

United States Environmental Protection Agency

EPA 841-N-12-004

The Economic Benefits of Protecting Healthy Watersheds

April 2012

Did You Know?

Maintaining the integrity of natural biological and physical systems provides economic benefits through ecosystem service provision.

Degradation of riparian ecosystems can cause negative economic impacts far from the altered site.

Protecting healthy watersheds reduces capital costs to supply clean drinking water and to treat waste water.

Healthy Watersheds support healthy economies!

Protecting Healthy Watersheds...

--Lowers drinking water treatment costs

--Avoids expensive restoration activities

--Sustains revenue-generating recreational and tourism opportunities

--Minimizes vulnerability and damage from natural disasters

--Provides critical ecosystem services at a fraction of the cost for engineered services

--Increases property value premiums

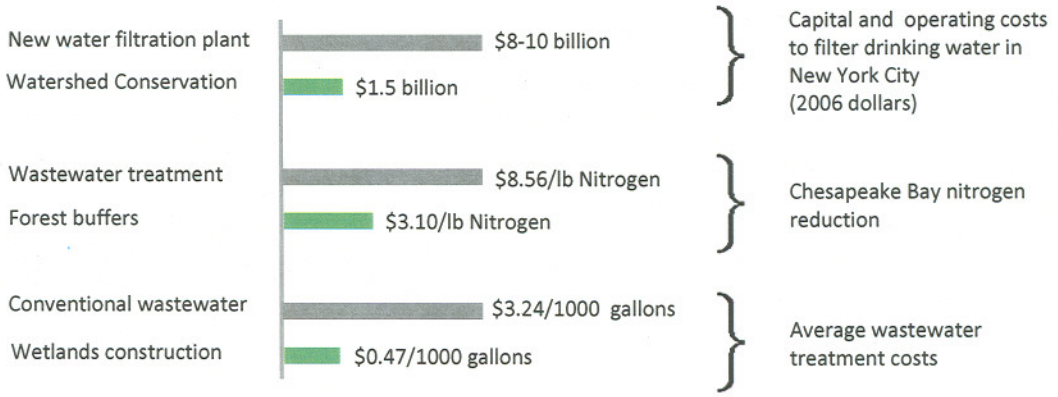
--Supports millions of jobs nationwide

--Ensures we leave a foundation for a vibrant economy for generations to come

Protecting our nation's healthy watersheds makes economic sense

Healthy intact watersheds provide many ecosystem services that are necessary for our social and economic well-being. These services include water filtration and storage, air filtration, carbon storage, nutrient cycling, soil formation, recreation, food and timber. Many of these services have not been monetized and therefore the economic contributions of healthy intact ecosystems are often under-valued when making land use decisions. Ecosystem services provided by healthy watersheds are difficult to replace and most often very expensive to engineer (see chart). An engineered ecosystem service replacement may only provide a fraction of the services provided by highly functioning natural systems.

Preventing impairments in healthy watersheds protects valuable ecosystem services that provide economic benefits to society and prevent expensive replacement and restoration costs. Maintaining riparian connectivity and natural processes in the landscape provide a supporting network for ecological integrity, ensuring the sustainable and cost effective provision of clean water over time.



Watershed protection is less expensive than building new "grey" infrastructure
Hanson, Craig et al. 2011. Forests for water: exploring payments for watershed services in the US south." World Resources Institute Issue Brief, Issue 2, Pp15.

How is monetary value assigned to an ecosystem service?

Environmentalists and economists frequently suggest that there would be a greater incentive for environmental stewardship if ecosystem services were valued in a manner that reflects the large contribution they have to our economy and society. Assigning a monetary value to a particular service can be very complicated due to issues of scale and the complexity of ecological interactions that make isolating the economic effects of one service difficult. Although challenging, valuation is seen as essential for encouraging conservation. Economists have developed innovative methods that attempt to quantify ecosystem services and the economic benefits of conservation.

Instead of developing values for individual landscape features, such as a wetland, a healthy stream reach or headwaters, many economists have found that holistic valuation techniques that monetize a range of services provided by a landscape to be a more effective communication tool. At times, value is measured indirectly through payment for ecosystem services (PES) programs that compensate landowners for conserving land so that others may benefit from the multitude of ecosystem services the land supplies. Value can also be estimated by citizen's willingness to pay (WTP) to use or protect a land area or ecosystem service.

Another common indirect valuation method is the estimation of avoided costs to society due to protection activities. Cost avoidance scenarios are used to communicate the costs associated with losing ecosystem services and replacing them. These scenarios are commonly used to show costs saved from the prevention of flood damage or impairments that would occur if a floodplain was not intact.

Protecting healthy watersheds avoids future costs and benefits communities

Investing in the maintenance of healthy watersheds can significantly lower costs associated with water treatment and flooding. In a study of 27 US water suppliers, researchers found that protecting forested watersheds used for drinking water sources can reduce capital, operational and maintenance costs for drinking water treatment. They found that watersheds with greater percentages of protected forest correlate to fewer water treatment expenditures (see table).

Floods cause an average of $8 billion in damage every year in the United States

Retaining high quality natural green infrastructure minimizes property damage and clean-up costs from flood damage and storm surges. Forested cover prevents runoff from moving rapidly across the landscape and allows it to slowly infiltrate into the soil, reducing erosion and high flows. Intact wetlands store and capture excess water. For example, wetlands surrounding the Boston area have been estimated to prevent $42,111 of flood damage per acre of intact wetland. A healthy watershed will reduce the area and impact of a flood, minimize the economic burden on public infrastructure, reduce erosion and water treatment costs and can restore natural groundwater recharge.

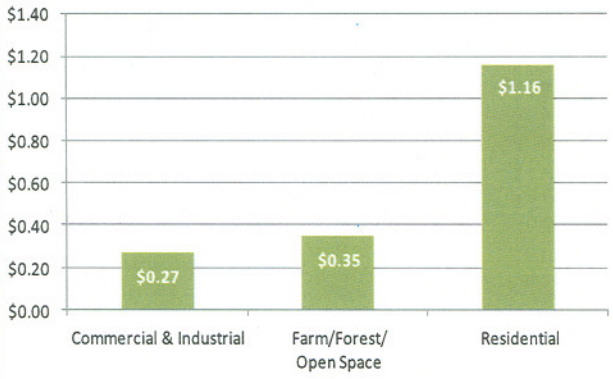
Healthy watersheds that maintain protected riparian corridors are expected to be more resilient to the anticipated effects of climate change. Expenses associated with recovery from extreme weather impacts increased by a factor of six between 1997 and 2007. This rising trend is expected to continue. Floods now cause an average of $8 billion in damage every year in the U.S. The most efficient way to avoid excessive future costs is to increase the flexibility of ecosystems now so that they may function and retain resiliency under a wider range of climatic conditions. Riparian areas that are hydrologically connected to their landscape can maintain their functionality, are more adaptable to change, and better equipped to handle large storm events.

Share of forested watershed	Treatment costs per 3,000 m^3	Average annual treatment costs	Cost increase over 60% forest cover
60%	$29	$297,110	
50%	$36	$369,380	24%
40%	$46	$465,740	57%
30%	$58	$586,190	97%
20%	$74	$746,790	151%
10%	$91	$923,450	211%

Percent forest cover and predicted water treatment costs based on 27 US water supply system, based on treatment of 22 million gallons per day, the average daily production of water suppliers surveyed.
For more information, see *Postel, Sandra L. and Barton H. Thompson. 2005. Watershed protection: capturing the benefits of nature's water supply services. Natural Resources Forum.* Issue 29, Pp 98-108.

Future costs associated with the loss of natural intact systems and the services they provide may include constructing new infrastructure to manage and treat more stormwater and drinking water and greater clean-up costs from natural disasters. Comparing future adaptation costs to current short-term profits from land conversion can accurately reflect the ecological and economic consequences of land use decisions.

Economic and ecological benefits of conservation development

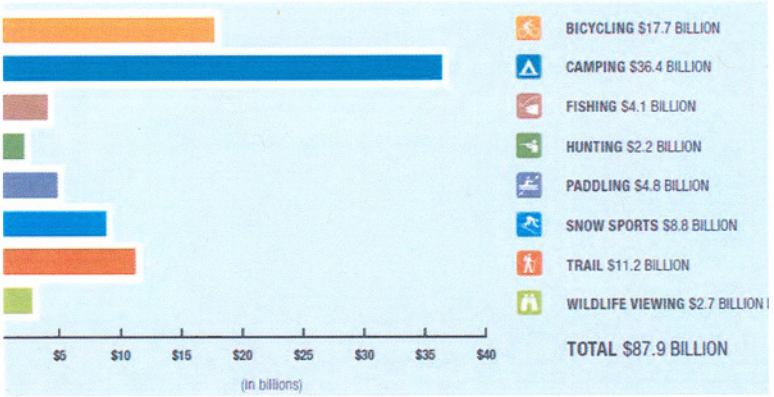


Conservation development preserves open space and maintains landscape connectivity, while clustering development to the least environmentally sensitive areas. Traditional development requires intensive and costly additions of grey infrastructure to connect new neighborhoods to road and utility networks. In a review of 98 communities across 21 states, researchers found that for every dollar received from residential development revenues, an average of $1.16 was spent on providing services to the new community by the local government (see figure). Conservation development provides economic benefits to communities because it consumes less land, needs fewer roads, resources and utility infrastructure. Additionally, many studies have shown that people are willing to pay a premium to live in conservation developments; these premiums provide greater revenues to local communities.

The median cost to provide public services to different land uses per dollar of revenue raised (n=98 communities)
Reprinted with permission from Crompton, John L. 2007. "The impact of parks and open spaces on property taxes." The Economic Benefits of Land Conservation. Ed. Constance T.F.de Brun. The Trust for Public Land. Pp1-12.

Recreation and tourism

Recreation and tourism are billion-dollar industries in the United States. According to the American Sportfishing Association, there are over 30 million anglers in the U.S., generating over one million jobs and over $45 billion in retail sales annually. Healthy intact ecosystems are essential to the viability of both commercial and recreational fishing. More people in the U.S. fish (30 million) than play golf (24.2 million) or play tennis (10.2 million).



Federal and state tax revenues generated by recreational activity
Outdoor Industry Foundation 2003

In a 2003 study, the Outdoor Industry Foundation found that the outdoor recreation economy contributed $730 billion annually to the economy, supported 6.5 million jobs and generated $88 billion in state and federal tax revenues. Wildlife watchers in The Chesapeake Bay region spend about $3 billion annually on trip-related expenses and equipment; this estimate does not include job creation and multiplier effects from these activities. Rural areas near forest land and other types of open space often depend on tourist spending to help support their local economies. Outdoor recreation and eco-tourism are large economic forces whose foundation rely on the maintenance of healthy watersheds and the protection of open space.

More people in the United States fish (30 million) than play golf (24.2 million) or play tennis (10.2 million)

Property value premiums

People value living near healthy clean water. Studies from Maine and Minnesota show that home values declined by tens of thousands of dollars with declines in water quality. The aggregate effect of an increase in property values attributed to good water quality on a single lake equates to millions of dollars per lake in these areas. Further, recent studies around the country (e.g., in Colorado, Pennsylvania, Oregon, Maryland, Ohio and Virginia) have shown increased property values and tax revenues from properties near open space, green space, walking/biking trails, or riparian areas. Even in tight economic times, a relatively higher premium is placed on properties with access to nature. For example, a current study of five counties in southeastern Pennsylvania shows that open space is attributed with adding $16.3 billion to the regional housing stock value. Clean and healthy waterfronts boost property values and revenues for adjacent retail and commercial businesses, too. Waterfront business properties are attractive to customers and have greater property value premiums when they are near clean waters. Preserving healthy watersheds and protecting open space while providing access to people has the potential to boost local revenues while providing attractive amenities.

Quality of life and health benefits

The EPA and other public health organizations have long acknowledged the link between water and air quality to human health. When people think of human health and the environment, they often think of the negative health effects from an impacted environment, rather than the positive impacts that a healthy environment can have on human well-being.

There are social and health benefits related to the proximity of people to nature, parks, walking trails and biking trails—both in the form of physical exercise and mental stress relief. Forests outside of urban areas significantly contribute to human health in urban areas. These health benefits have the potential to provide significant cost savings in health expenditures. People who exercise regularly and seek stress relief are generally healthier, have fewer insurance claims and spend less time in hospitals, thus their societal health care costs are lower.

Forests outside of urban areas significantly contribute to human health in urban areas... reducing health expenditures

About Healthy Watersheds

EPA's Healthy Watersheds Initiative (HWI) was developed to protect the nation's remaining healthy watersheds, prevent them from becoming impaired, and accelerate our restoration successes.

The HWI complements existing EPA program efforts by focusing on protection of high quality watersheds. These healthy areas are identified through holistic aquatic ecosystem assessments. Protection and restoration priorities are developed through these assessments to strategically implement protective actions that are both economically and ecologically beneficial.

We can't afford not to protect our nation's remaining healthy watersheds!

If you would like to receive a copy of a white paper on the economic benefits of protecting healthy watersheds or learn more about Healthy Watersheds at EPA,
Contact Laura Gabanski:
Gabanski.Laura@epa.gov
or
Visit our website
www.epa.gov/healthywatersheds

People support protecting our nation's environment—it's good for the economy

Citizens across the United States have overwhelmingly voiced their support of environmental protection: between 1994 and 2004 over 75% of conservation referenda on ballots were passed and a 2011 Gallup poll shows that nearly 80% of people worry about pollution of lakes, rivers, streams and drinking water.

The United States has spent on average $1 billion per year on stream restoration since1990. These numbers are expected to rise as communities work to mitigate environmental problems. Restoration efforts are less successful without a supporting ecological network of healthy watersheds. Protecting highly functioning aquatic ecosystems is a cost-effective way to sustainably provide the multitude of services required to meet society's needs. Studies show that the total economic value of intact systems exceeds that of lands converted for intensive economic uses over time.

Understanding the contribution that healthy watersheds provide to local economies is an important tool for land stewardship. Strengthening protection of high quality waters or diverting new development from these sensitive areas can have a positive economic and social impact and maintain these benefits for generations to come.

Selected Publications and Resources

Ecosystem services provided by conserving forest land

Forests, water and people: Drinking water supply and forest lands in the Northeast and Midwest United States
http://na.fs.fed.us/watershed/fwp_preview.shtm
This analysis by the US Forest Service highlights the connection between forests and the protection of surface drinking water quality.

Investing in protecting healthy watersheds avoids future costs

Forests for water: Exploring payments for watershed services in the U.S. South
http://www.wri.org/publication/forests-for-water
This World Resources Institute study from 2011 explores the use of landowner compensation to protect natural resources and for avoided costs.

Green infrastructure: Smart conservation for the 21st century
Mark A. Benedict and Edward T. McMahon
http://www.greeninfrastructure.net/sites/greeninfrastructure.net/files/GI_RR.pdf
This 2002 publication lays out the natural green infrastructure concept of protecting ecological hubs and corridors and discusses how protecting these areas avoids future costs.

Revenues generated in recreation and tourism sectors from healthy watersheds

American Sportfishing Association
http://www.asafishing.org/
This organization provides links to several studies that explore the economic impact of the hunting and fishing industries, which rely on healthy fish and wildlife habitats.

Outdoor Industry Association
http://www.outdoorindustry.org/national-economic-impact-reports.php
This website provides links to comprehensive economic reports on the impact that outdoor recreational activity has on the economy.

Valuing ecosystem services

The World Conservation Union (IUCN) ***Value: Counting ecosystem services as infrastructure***
http://www.iucn.org/what/tpas/greeneconomy/resources/documents/?1136/Value-counting-ecosystems-as-water-infrastructure
This 2004 IUCN publication is a comprehensive look a how ecosystems provide valuable services and the critical need for investment in protecting natural systems.

The *Economic Benefits of Protecting Healthy Watersheds Fact Sheet* is produced by the U.S. Environmental Protection Agency. Mention of commercial products, publications, or web sites in this fact sheet does not constitute endorsement or recommendation for use by EPA or its contractors, and shall not be used for advertising or product endorsement purposes. The discussion in this document is intended solely as guidance. Thus, it does not impose legally binding requirements on EPA, States, or the regulated community. This guidance does not confer legal rights or impose legal obligations upon any member of the public. This is a living document and may be revised periodically without public notice. EPA welcomes public input on this document at any time.

Land Use and Resource

MEMO

Date: June 18, 2012

To: Walworth County Land Conservation Committee

From: Louise A. Olson, County Conservationist/Deputy Director, LURM

Re: **Request approval for WDNR Lake Management Planning Grant Application Submittal**

I am requesting approval to prepare and submit an application for a Wisconsin Department of Natural Resources Lake Management Planning Grant Application to assist the Walworth County Land Use and Resource Management Department prepare a Walworth County Water Conservation Plan. I have attached a Resolution authorizing submittal of this Grant Application.

Lake Management Planning Grants are awarded by the Wisconsin Department of Natural Resources and can be used to support the preparation of management plans to improve ecological integrity of Wisconsin Lakes. Grants up to $25,000, per project are available and are awarded on a competitive basis. The grant provide 67% of the total cost of a planning project. **If awarded, the Walworth County Land Use and Resource Management Department will assign staff to complete the planning project.**

Preparation of a Walworth County Water Conservation Plan is important to protecting the Walworth County Lakes.

Groundwater is a major source of water to most Walworth County Lakes. It has been documented that groundwater, springs and seeps contribute over 35 percent of Geneva Lake's inflow. *A Lake Management Plan for Delavan Lake,* (SEWRPC, 2002) indicates that 22 percent of the inflow to Delavan Lake is attributed to groundwater sources. Beulah Lake has a similar water budget, with 25 percent of the lake inflow from groundwater. Protecting these sources of groundwater, through water conservation, is important to maintaining Walworth County lake levels.

A *Regional Water Supply Plan for Southeastern Wisconsin,* (SEWRPC, 2010) and adopted by the Walworth County Board of Supervisors, recommends the implementation of comprehensive water conservation programs.

The preparation of a County Water Conservation Plan was specifically identified as an initiative in the *Walworth County Land and Water Resource Conservation Plan,* adopted by the County Board of Supervisors and the State of Wisconsin in 2010.

The Walworth County Land Use and Resource Management Department will seek the assistance of the Walworth County Water Utilities and the Walworth County Lake Management Districts to prepare the Water Conservation Plan. The Scope of Planning Tasks include:

- Recruiting a Walworth County Water Conservation Plan Development Workgroup.
- Preparing Plan Introduction, Purpose, Need., Water Conservation Goals and Objectives.
- Assessment of Current Water Conservation Measures.
- A Review of Water Conservation Policy.
- Selecting Long-term Water Conservation Best Management Practices for Water Users.
- An Overview of a Preferred list Conservation Measures for lake residents utility customers.
- Identifying Opportunities and Challenges for Water Conservation.
- Identifying effective Water Conservation Public Information, Education and Outreach Programs .
- Preparing implementation costs and schedule.

100 West Walworth Street
P. O. Box 1001
Elkhorn, WI 53121
Conservation Division
262-741-4972 tel
262-741-4973 fax

DRAFT

Resolution No.

Supporting the Lake Management Planning Project Grant Application

Moved/Sponsored by: Walworth County Land Conservation Committee

WHEREAS, Walworth County lakes are important natural resources in Walworth County and the State of Wisconsin and used by the public for recreation and the enjoyment of natural beauty; and

WHEREAS, Walworth County lakes receive a major portion of water from groundwater stored and discharged within shallow aquifers, during normal, low, and high levels of rainfall and snowmelt.

WHEREAS, *A Regional Water Supply Plan for Southeastern Wisconsin*, (SEWRPC, December 2010,) adopted by the Walworth County Board of Supervisors in 2011, recommends an increased reliance on the shallow aquifer as the source for public water supplies for the Towns of Delavan and East Troy, the Villages of Fontana, Williams Bay and Walworth and the City of Elkhorn.

WHEREAS, the Walworth County Land Use and Resource Management Department recognizes the need to advance a water conservation program to reduce the demand for water use on the shallow aquifer in order to protect this source of water for Walworth County lakes and the public water supply.

WHEREAS, *A Regional Water Supply Plan for Southeastern Wisconsin*, (SEWRPC, December 2010,) adopted by the Walworth County Board of Supervisors in 2011, recommends the implementation of a comprehensive water conservation program for residents and businesses.

WHEREAS, the *Walworth County Land and Water Resource Management Plan Update*, adopted by the Walworth County Board of Supervisors in 2010, recommends the preparation of a County-wide Water Conservation Plan, to develop educational outreach on water conservation, through newsletters, workshops, and other water conservation initiatives.

WHEREAS, the Walworth County Land Use and Resource Management Department Conservation Division personnel are qualified to carry out the responsibilities for this water conservation planning project.

NOW, THEREFORE, BE IT RESOLVED THAT Walworth County requests grant funding and assistance available from the Wisconsin Department of Natural Resources through the "Lake Management Planning Grant Program" and hereby authorizes Louise Olson, County Conservationist and Deputy Director of the Walworth County Land Use and Resource Management Department to act on behalf of the Walworth County Board of Supervisors to:

- Submit an application to the State of Wisconsin for financial aid for lake planning purposes;
- Sign grant documents;
- Take necessary action to undertake, direct and complete an approved lake planning grant; and

18

- Submit reimbursement claims along with necessary supporting documentation within six months of project completion date.

NOW THEREFORE BE IT RESOLVED, that the Walworth County Board of Supervisors, will meet the obligations of the planning project, including timely publication of the project plan and reports and meet the financial obligations under the lake planning grant agreement.

Nancy Russell County Board Chair	Kimberly S. Bushey County Clerk

Action Required: Majority ____ Two-thirds _____ Other _____

County Board Meeting Date:

Policy and Fiscal Note is attached.
Reviewed and approved pursuant to Section 2-91 of the Walworth County Code of Ordinances:

David A. Bretl Date County Administrator/Corporation Counsel	Nicole Andersen Date Deputy County Administrator - Finance

If unsigned, exceptions shall be so noted by the County Administrator.

Policy and Fiscal Note
Resolution No.

I. **Title**: Supporting the Lake Management Planning Grant Application.

II. **Purpose and Policy Impact Statement**:

Walworth County lakes attract visitors, seasonal and year-round residents and businesses. It is vital that Walworth County Lakes be protected. Groundwater sustains the water levels of Walworth County Lakes. For this reason, Walworth County recognizes the need to protect the County's groundwater.

The purpose of this resolution is to support the Walworth County Land Use and Resource Management Department application for financial assistance from the Wisconsin Department of Natural Resources to fund the preparation of a County Water Conservation Plan focused on protecting the shallow groundwater resources that are a major source of water for Walworth County lakes.

The preparation and advancement of a water conservation plan is an initiative recommended in the *Walworth County Land and Water Resource Conservation Plan Update,* adopted by the Walworth County Board of Supervisors in 2010, and *A Regional Water Supply Plan for Southeastern Wisconsin,* adopted by the Walworth County Board of Supervisors in 2011.

III. **Budget and Fiscal Impact**: Cost of the Lake Management Planning project is as follows, assuming a January 1, 2013 starting date:

	2013	2014
Total Program Cost	$25,000.00	$12,000.00
State Grant Revenue	$16,750.00	$ 8,040.00
County Costs *	$ 8,250.00	$ 3, 960.00

*Redirect existing staff

IV. **Referred to the following standing committees for consideration and date of referral**:

Committee: Land Conservation Committee Meeting Date:

Vote:

County Board Meeting Date:

Policy and fiscal note has been reviewed and approved as an accurate statement of the probable policy and fiscal impacts associated with passage of the attached resolution.

David A. Bretl Date
County Administrator/Corporation Counsel

Nicole Andersen Date
Deputy County Administrator - Finance