A decorative graphic consisting of three overlapping circles of varying sizes and two intersecting lines. The largest circle is at the bottom right, a medium one is at the top center, and a smaller one is in the middle. Two lines cross each other: one from the top left to the bottom right, and another from the top right to the bottom left.

Developing Community- based Lake Management Plans for 30 Lakes in Portage County, Wisconsin

Report to Portage County and the Wisconsin
Department of Natural Resources

J. McNelly, N. Turyk
9/1/2011

Executive Summary

In 2008 Portage County, the UWSP Center for Watershed Science and Education, and the Center for Land Use Education began a three year process to work with local citizens to develop lake management plans for 30 lakes in Portage County. The lake management plans were created guide sustainable management and protection efforts intended to ensure that the lakes in Portage County are healthy ecosystems that can be enjoyed by citizens and visitors to the area for generations to come. The process of developing the lake management plans was integral in developing widespread lake stewardship in the county that wouldn't have occurred without a countywide effort. This solid base helped to develop relationships and partnerships between citizens, municipalities, county and state staff. The lake planning process was fully supported by the County Board of Supervisors and Portage County Executive.

This report highlights the step-by-step process that was used in developing a better understanding about our lakes which lead to the development of the lake management plans. We have included the background information and supporting documents that were developed to help support the educational lake management planning process including citizens surveys, communication strategies, lake management menu, etc. The report also highlights recommendations and lessons learned during this process.

Table of Contents

Executive Summary	1
Table of Contents	2
Background	3
Project area description.....	3
Project goals and objectives.....	6
Lake Management Plan Development	7
Lake Management Planning Tools	7
Lake Management Menu	7
Build-Out Scenarios.....	8
E-mail list serv	10
Website	10
The Lake Planning Process.....	10
Efficiency in Planning.....	10
Preparing to Plan	11
Planning!	14
Nuts and Bolts – The Lake Management Plan.....	16

Background

Between 2002 and 2005 Portage County and UW-Stevens Point researchers conducted studies of 29 lakes with the county. The study provided information about water quality, algae, aquatic macrophytes, shoreland vegetation, critical amphibian habitat, current and historic land use and groundwater within the watersheds. For a subset of ten lakes, the researchers also summarized information about the fishery and avian communities. Data collected during the Portage County Lake Study have been used by municipalities, the University, and County Departments.

It was determined that lake management plans would significantly enhance the use of the valuable lake-related data from the study. This data was combined with social data collected in surveys and during the planning process. During the Portage County lake management planning project, lake plans were completed through the collaboration of local professionals and interested citizens for the 30 lakes over a three year period. The lake management plans that were created as part of the project are the beginning steps in guiding sustainable management and protection efforts to ensure that the lakes in Portage County are healthy ecosystems that are enjoyable for users. Each plan provides basic background information about the lake and was formatted for users to quickly identify the lake management goals, objectives, and actions that are meant to guide lake management decisions. This countywide lake planning process has already resulted in many beneficial outcomes. Educational opportunities increased, there have been changes in land management practices and hence, residents are making better/informed land use management decisions in the future, including increased participation in water related programs and organizations in the county.

The Portage County Land Conservation Department staff have been using the plans to address needs on the landscape that help achieve water quality and near shore habitat goals. The Portage County Parks Department manager is using the plans to identify critical areas near lakes that are in need of protection, potential parcels for acquisition, and areas on park land where land use management practices can be changed or habitat added. Portage County Zoning staff and members of the Board of Adjustment review the plans to help with decisions on zoning and permitting requests.

Project area description

Portage County is located in central Wisconsin. The total land area is 806 square miles with a population of about 67,200. The major population concentration is in the Stevens Point urban area. Cropland comprises approximately 42% of land use in the County with woodland and grassland around 47%. There are 265 dairy herds with approximately 14,500 cows located in the County.

Two distinct river basins exist in the county, the Wisconsin River Basin and the Wolf River Basin. Most of the lakes are located in the eastern half of the County where the hilly topography, internally drained kettle lakes and sandy soils are a result of glacial drift depositions. The lakes and streams in this area are primarily groundwater fed with surface runoff inputs, often originating less than 0.25 mile from surface water.

Because some of the lakes in this project are impoundments, the surface and groundwater watersheds comprise a large amount of the county (Figure 1). The lake types included in this planning process were comprised of six groundwater drainage lakes, four drainage lakes, fourteen seepage lakes, and six impoundments. Eight of the lakes have County Parks located on them. The parks provide beaches, lake access for fishing and boating, shelter houses, playgrounds, and three have overnight camping and associated facilities. Most of the other lakes have access points with ownership by Towns, Villages, or Cities. Like many lakes around Wisconsin, some of the Portage County lakes are experiencing loss

of habitat due to development and land use practices, reduced water quality, and the spread of invasive species (Table 1).

The lakes in Portage County are a mix of moderately developed lakes to completely undeveloped. All of the lakes are relatively small with only three lakes over 50 acres. Because of their smaller size and the nature of development these lakes are not heavily tied to tourism in the county and are primarily used by local residents. Although the lakes are used by many citizens there has not been a large focus on lake management nor is there much of a “lake culture” within the county. Only seven of these lakes had Lake Associations or Districts. Despite the fact that the lakes are not large, they are routinely enjoyed by local residents and tourists from further destinations. This is especially true for some of the larger lakes and those with campgrounds.

Due to the topographic and social features, as well as the size of the lakes, the lake management process that was created and used in Portage County needed to be designed with these factors in mind. While the general process that is described in this report was similar for every lake or group of lakes, aspects of the process were tailored to address specific issues. As often as possible, this report will note where those adjustments were made.

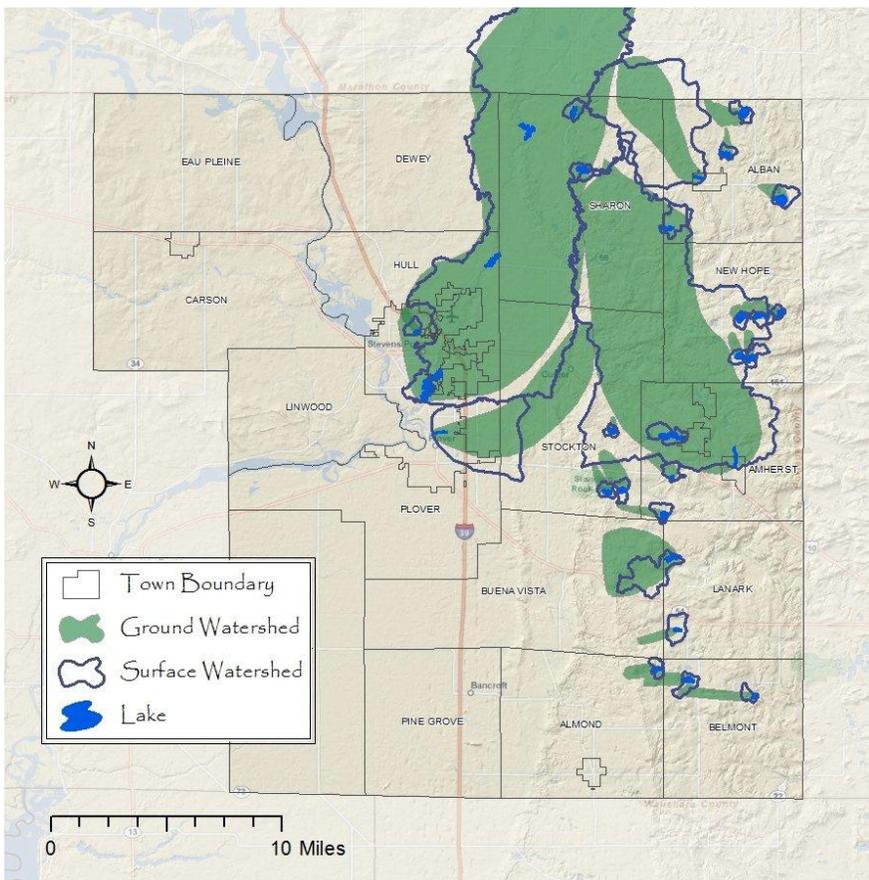


Figure 1. Location of Portage County study lakes, surface, and groundwater watersheds.

Table 1. List of lakes in the Portage County lake study, primary municipality, lake type, and proposed meeting type.

Lake Name	Municipality	Lake Type	County Park	Assn or District	Plan
ADAMS	Stockton	G.W. Drainage			Group 2
AMHERST MILLPOND	V. Amherst	Impoundment			Alone
BEAR	Stockton	Seepage	Yes		Group 2
BECKER	Sharon	Seepage			Group 6
BENTLY POND	Sharon	Impoundment			Group 5
BOELTER	Lanark	G.W. Drainage		Assoc	Alone
COLLINS	Alban/Sharon	Drainage	Yes		Alone
EBERT	Amherst	G.W. Drainage			Group 4
EMILY	Amherst	Seepage	Yes	Assoc	Alone
FOUNTAIN	Belmont	Drainage			Group 1
HELEN	Alban	G.W. Drainage	Yes	District	Alone
JACQUELINE	Sharon	Seepage		District	Alone
JOANIS	C. Stevens Point	Seepage			Alone
JORDAN POND	Hull	Impoundment	Yes		Group 5
LIME	Amherst	Seepage			Group 4
LIONS	Alban	G.W. Drainage			Alone
MC DILL POND	C. Stevens Point	Impoundment		District	Group 5
ONLAND	New Hope	Seepage			Group 3
PICKEREL	Belmont	Seepage			Group 1
RINEHART	New Hope	G.W. Drainage		Assoc	Group 3
ROSHOLT MILLPOND	V. Rosholt	Impoundment			Alone
SEVERSON	New Hope	Seepage			Group 3
SKUNK	New Hope	Seepage			Alone
SOUTH TWIN	Sharon	Seepage			Group 6
SPRING	Lanark	Drainage			Alone
SPRINGVILLE	V. Plover	Impoundment		Assoc	Alone
SUNSET	New Hope	Seepage	Yes		Group 3
THOMAS	Stockton	Seepage			Group 2
TREE	Alban	Drainage	Yes	Assoc	Alone
WOLF	Almond	Seepage	Yes		Group 1

Project goals and objectives

The goals and objectives for the Portage County Lake Management Planning Project were as follows:

1. Enhance the ability of Portage County agencies to protect and improve the condition of Portage County lakes for natural ecosystem functions and human uses.
2. Gather and analyze information about perceptions and values from lake property owners, community residents, and lake users by developing, distributing, and evaluating a survey of lake property owners, community residents, and lake users prior to the start of the first planning meeting for each lake.
3. Work with citizens and organizations to identify goals and objectives for their lake
4. Develop, evaluate, publish, and distribute recommendations and courses of action in a lake management plan.
5. Improve access to existing Portage County lake study results to enhance informed participation in lake management decisions and the planning process by converting the existing lake status reports into easily navigated web-based reports.
6. Facilitate selection of management strategies most likely to be effective in meeting scientifically selected and publicly desired goals for lakes in Portage County (and potentially statewide) by developing a “management menu,” a list of recommendations for lake management activities and strategies by specific lake type, location, demographics, etc.
7. Develop build-out scenarios to fully understand the potential for residential development in the groundwater/surface watershed by developing models from existing land use conditions and applying existing zoning, subdivision and other applicable regulations.
8. Establish a baseline land use inventory for each ground and surface watershed targeted in this project that measures existing developed and undeveloped land uses and environmental constraints.
9. Understand the existing regulatory framework that guides development and protection decisions in the groundwater and surface watersheds.
10. Apply the regulatory framework to the baseline land use inventory to calculate a build-out assessment that measures the number of units and acres that can be developed into the future.
11. Use the build-out analysis as a measurement indicator to predict phosphorus loading to lakes with changes in land use.
12. Create opportunities to learn about Portage County Lakes and make informed decisions for citizens, municipalities, and County Departments.
13. The public will be invited to planning meetings, especially informational sessions.
14. Media will be routinely contacted about the planning process.
15. Develop a guide to help Zoning Board of Adjustment and Municipal Plan Commission members effectively use the lake plans when making decisions about variances and conditional uses.

These goals and objectives were met through a variety of methods and activities. These included lake management plan development, public information and lake management plan development meetings, web-based reports, lake management menu, build-out assessment and predictive models, and citizen/user surveys. Each of these methods and activities is described in detail in the following pages.

Lake Management Plan Development

Developing lake management plans for the Portage County lakes utilized the physical data that had been collected on the lakes through studies at UWSP, DNR research, and citizen monitoring. To initiate the planning process, the team of UWSP Center for Watershed Science (CWSE) and Education, UWSP Center for Land Use Education (CLUE), Portage County collected social data and the developed models and tools that would help in the planning process. In addition, throughout the process municipalities, County staff, and Board of Supervisors were informed about the progress of the lake management planning effort. Citizens were kept abreast of the survey and lake planning process through newspaper releases, the email listserv, and direct mailings. Modes of communication that were developed at the start of the planning process included an email listserv and webpage containing information about each lake.

Lake Management Planning Tools

Prior to the start of the county-wide lake management process several tools were developed to provide citizens with guidance for some of the more complex topics. These tools included a simplified summary of lake management options for various natural and culturally altered situations and a build-out scenario based on local zoning used in conjunction with a model that was developed to predict lake response. This water quality model was developed specifically for the Portage County Lakes.

Lake Management Menu

A lake management menu was developed as a tool to facilitate the selection of management strategies most likely to be effective to address a specific topic in meeting scientifically selected and publicly desired lake related goals. The lake management menu seeks to provide clear options for management options that exist for specific water quality conditions or in certain lake settings. Contents of the management menu include a list of management practices that are appropriate for every lake. It also introduces differences in management options based on physical characteristics such as lake morphometry, water level fluctuation, position in landscape, and water chemistry. Additional guidance is provided for lake and watershed management, lake protection, phosphorus management, and runoff management.

The management menu was developed by a team of experts from the Wisconsin Department of Natural Resources (WDNR) and University of Wisconsin-Stevens Point. Reviewers included experts from Wisconsin Lakes; WDNR; and planning, zoning, and land conservation staff from Portage County. The menu was developed and tested on Wolf, Fountain and Pickerel lakes before becoming part of the routine materials given to lake groups during the planning process.

Each member of a lake management planning committee received a copy of the menu at the start of the planning process. A pdf of the management menu was also placed online for anyone who was interested (Appendix A).

Our experience and recommendations

During the actual lake management planning process, the menu was used in different ways depending upon the familiarity of lake stewardship and management. We found it to be most useful for groups that needed some suggestions regarding lake management options; participants were encouraged to go through the menu and answer the questions regarding their lake and return to the next meeting with ideas for the group. For other groups the menu was used as a tool to check suggested management goals and actions in the draft of their lake management plan to evaluate if all of the actions had been addressed.

The lake management menu was useful during the times that we used it in the planning processes. However, we felt that in some cases the management menu was underutilized by some of the groups. Several adjustments could be made to increase the use of the menu by more committee members.

1. Direct reference could be made to the menu during discussions and/or presentations on a specific process.
2. Develop the menu into a computerized tool. The later would allow users to input the specific details about their lake into the model resulting in a list of options that is most suitable to their conditions rather than listing all options and having the user sort through them.

Build-Out Scenarios

When planning for the management of lakes, zoning regulations and potential development near them is often overlooked. Instead of a well thought out proactive plan to minimize impacts from near shore or watershed development, reactive responses to development are more typical. We opted to incorporate build-out scenarios into the Portage County lake management planning project to provide a visual display of potential development in the groundwater and surface watersheds of the lakes. This helps citizens and decision-makers relate the differences in zoning ordinances to the potential for development that can result from a given category of zoning. The output also allowed us to estimate the amount of disturbance related to development and utilize this information as input in a water quality model that was developed by P. McGinley, UWSP for the Portage County lakes. The model estimated in-lake responses in terms of phosphorus and chlorophyll *a* estimates using various scenarios. The build-out analysis was conducted by the CLUE and the lake response model was generated by the CWSE prior to the lake management planning meetings held for each lake.

The development of the build-out scenarios comprised three steps:

1. Establishment of the baseline land use inventory,
2. Review of the existing regulatory framework, and
3. Calculating the build-out assessment.

1. Establish a Baseline Land Use Inventory

Land use and environmental resource data was collected and compiled using Geographical Information Systems (GIS) to establish a baseline condition of information. The “current” baseline condition was represented using tax parcels, land use, and orthophotography compiled for a date from the recent past and from valid sources such as County records. The baseline inventory measured the acreages and

percent of developed and undeveloped land uses and environmental constraints within each lake's groundwater and surface watersheds. Data was compiled for the entire county, and when possible, from adjacent counties where the surface and groundwater watersheds extended. A GIS "Clip" function was applied to extract information and compile statistics for each individual groundwater and surface watershed. In total, information and statistics was compiled for 60 individual geographic areas (i.e. 30 ground and 30 surface watersheds, and included Helen and Tree Lakes).

2. Review the Existing Regulatory Framework

Regulations for each county, town, city, and village that intersected with or contained the project's surface and groundwater watersheds was systematically reviewed. In particular, zoning and subdivision regulations and comprehensive plans were examined. Information such as, development densities, minimum lot sizes, maximum lot sizes, and other limitations on development were documented.

3. Calculate a Build-out Assessment

Starting from the baseline land use condition and using tax parcel data, the build-out assessment determined the number of urban development units that are possible under the existing regulatory framework. Activity 1, the baseline inventory established the number of acres that are still open to development. Activity 2, the regulatory framework dictated the preferred development scenario, using characteristics such as density (e.g. five units per acre). Extending the development scenario from the baseline condition established the number of development units that are possible for future development.

Predictive Lake Models

A prescribed management condition, such as phosphorus loading from development (including agriculture), was evaluated using the build-out assessment as an indicator. The build out assessment established the full potential for development in the lake's watershed. The primary scenarios that were included in the water quality model included 1. undeveloped, 2. current development, and 3. "potential reality" based on the build-out output. The build out scenario was run at three levels of connectivity; disconnected, partially connected, and fully connected. This analysis was conducted for each surface watershed with the exception of the impoundments.

Our experience and recommendations

The results of the build-out scenarios and predictive water quality modeling assisted citizens in choosing management strategies that would help either maintain current conditions on a lake or would help to improve the conditions. None of the committees selected a decline in water quality as their goal. A number of villages and towns within the county requested that the build-out data be shared with local planning commissions to help guide planning and zoning decisions. The concepts associated with the build outs and associated response are quite complex. Because of the amount of material covered during the planning process, the information resulting from the build-out was not fully utilized. Follow-up sessions that are designed specifically for this topic would be beneficial. The follow-up sessions should include real time development of different scenarios that may be requested by citizens, plan commissioners, and elected officials.

E-mail listserv

The e-mail list serve was initiated during the Portage County lake study and continued to be built upon throughout the planning process with people that expressed interest in receiving information about Portage County Lakes. Contact information was solicited when the surveys were sent to landowners in the watersheds, at each planning meeting, and in newspaper releases. The listserv is organized by lake or group of lakes. During the planning process emails were sent to committee members to remind them of upcoming meetings, distribute information prior to a meeting, share drafts of the plans, etc. Emails to the full listserv were sent out monthly listing upcoming planning sessions and topics that had a broad base of interest. The list serv continues to be updated with people who wish to be added or removed.

Our experience and recommendations

The email list serv proved to be a very useful way to communicate with people interested in Portage County lakes, although care must be taken to send some information through the mail to keep citizens without the internet informed about the planning effort. It allowed us to quickly and easily communicate with a large group of people or specifically tailor information to smaller groups. As more and more people become comfortable with electronic communication it will become easier and less expensive to share information.

Website

The website for the Portage County lakes is hosted on the Portage County website. It was created as a central location for lake related information in Portage County. Some of the property owners that weren't able to attend the meetings followed the planning process by using materials on the website. The website is structured with a link for each lake. All reports from the Portage County lake study conducted in 2002-03 were placed on the website for easy access. In addition, for each lake the resident/lake user survey, survey results, lake planning meeting minutes, drafts of the lake management plan, the final lake management plan, and other relevant lake-related information are on the website. The website is located at <http://www.co.portage.wi.us/planningzoning/PCL/Main%20Page/Main%20Page.shtm>

Our experience and recommendations

Many people are comfortable using a webpage, therefore; this proved to be a useful mode of communication, particularly for people that could not attend the meetings but wanted to follow the planning process for a given lake. Because of the structure of the Portage County website, there were lapses in the timeliness of the material that was posted. In many cases, this is not a large issue; but during the planning process at times the lag was problematic because of the dated materials.

The Lake Planning Process

Efficiency in Planning

Whenever possible, we grouped lakes together during the planning process. This was done for several reasons; greater capacity for lakes with fewer participants, develop a sense of community, stimulate the interest of the municipality, frugality of resources including professional staff and the duration of the planning process. When possible, lakes were grouped by municipality, but on occasion they were grouped by proximity to one another, lake type, and/or similar lake-related challenges. In some instances lakes that were grouped together but had some aspects that were quite different, the

committee members were together for the information and presentation portions of the meetings but then broke into sub-groups to discuss lake specific management goals and actions.

Lake management planning sessions were conducted for individual lakes when a lake had very different characteristics than surrounding lakes. Typically these lakes were quite developed and already had their own governance or organization.

Our experience and recommendations

While undergoing the planning processes, there didn't seem to be any discernible difference between those lakes that were grouped and those that were not. By grouping lakes together it allowed for committee members to meet one another and begin discussing ways that they could work together. Some of these grouped lake committees chose to form a town lake group to continue to meet and work together as a larger group. During planning sessions, these groups were able to discuss the formation of goals and actions, as well as any concerns, which made for good discussions about the lakes similarities and differences.

During the planning meetings with grouped lakes the meetings tended to last a little longer because information about multiple lakes was being presented. Because of the extensive information it was difficult for groups to get to setting goals and actions in the same night. The planning meetings for grouped lakes that split up to set goals and actions required additional facilitation so that at least one facilitator could support each group through this process.

Preparing to Plan

Surveys

Each lake management process began with a citizen survey of the property owners with the surface and groundwater watersheds and lake users. The results of the surveys provided the planning committee with a larger view of perceptions and values for a given lake. The results were provided to the committee at the start of each planning process and relevant questions were reviewed at the meeting when the respective topic was being discussed. This helped to provide guidance on context to their decisions.

Multiple modes of communication were essential to ensure the best participation in the survey and the planning process. We sought to encourage lake users, elected officials, and residents within the lake's watersheds to participate in the survey. Surveys were mailed by the county to property owners in the surface and groundwater watershed of the lake of interest. In some cases where watersheds were extensive (impoundments) the survey mailing list was limited to properties within a specific distance from the lake and/or those within a lake district.

Advertising for the surveys was done through newspaper articles, notices sent to local governments and local organizations, and by emails to our listserv. The surveys were available on the Portage County website where interested citizens could print off a survey and return it. If an individual did not have computer access they were able to call the CWSE and a survey would be sent to them via mail. On some of the more popular lakes, surveys were located at campground offices for interested lake users.

Prior to the distribution of the survey, a draft copy of the survey was submitted to Lake Districts and Associations to solicit comments and additional questions. Officials for the municipalities in the lake's watershed were notified by letter that the survey was going to be conducted and encouraged them to

participate in the planning process. A UWSP representative of the lake planning team also appeared before the municipal board to brief them about the surveys and the lake management planning process that would be taking place. During this meeting they were also asked for representation from the governing body on the planning committee. If a lake existed in more than one municipality both municipalities were visited and invited. Municipalities within the watersheds received notification about the planning process by letter, as did the County Board member for that area.

One of the first forms of communication that we had with residents within a lake's watershed was through the cover letter of the citizen survey. The cover letter explained the purpose for the citizen survey and how it would be used as part of the lake management planning process. A brief description of the planning process and why they, the resident, should become involved was included in the letter. The cover letter indicated the first meeting date and location of the lake management planning meeting. This provided an important opportunity to begin informing landowners about the lake management planning process.

In addition to the cover letter and survey, an additional postcard was included in the mailing. The postcard asked the landowner if they were interested in additional information or personal assistance from the County Land Conservation Department, or additional information about Portage County lakes. The postcards allowed us to collect names and information from interested citizens which was then used to build the email listserv and establish a contact list of landowners for use by the County Land Conservation Department without compromising the anonymity of the survey.

A master list of survey questions was created by CWSE and approved by a survey specialist in the Wisconsin Department of Natural Resources. For each lake, a subset of questions were selected; the selection varied based on the topics most relevant to the lake such as amount of development, whether or not it had a public park, if aquatic invasive species were present, if the lake had water quality problems, etc. The surveys were developed using a variety of question types. The majority of the questions were close-ended multiple choice questions with an option for a write in answer. Other types of questions were open ended, and multiple choice scaled questions (Appendix B).

Each survey was comprised of topic-specific sections. Common sections were demographics, recreation, wildlife, fishing, aquatic plants, water quality, watershed land management, shoreland management, water levels, motivation for changing management practices, values, and concerns. The sections and questions within each section were altered depending on the relevance to a specific lake.

Respondents were given one month to return the surveys that were sent to the landowners. Survey deadlines were advertised on the cover letter. Survey data were entered into Excel. Graphing and any analysis of the survey results were accomplished using Excel and Minitab. Most of the results were converted into bar graphs to visually represent the survey responses. Some of the planning committees requested additional analysis, which typically involved evaluating the data by demographics. The results of the open-ended questions were simply listed in the survey results. The results of the surveys were published on the Portage County Lakes website, shared with the planning committee for the lake, and were given to any one that requested them.

Our experience and recommendations

The citizen surveys were critical to the lake management planning process. The surveys provided valuable insight into the perceptions and values of a larger audience than those present at the planning meetings. Often respondents are more likely to be open about their responses in a survey than in a group setting. On occasion, the survey results also provided a contrasting perspective or emphasized a point that professionals were trying to make. The citizen survey results were often referenced in the actual management plan.

A total of 4,135 surveys were sent out for 25 of the lakes in Portage County during the planning process. Three lakes were excluded from citizen surveys because they were lakes that were surrounded by land owned by one person, family, or organization and two other lakes completed surveys on their own before the planning process. Nine hundred eighty-four surveys were returned. The highest response rate for surveys was 60%, the lowest was 13%, with an average response rate of 35%. These percentages could have been increased with follow-up reminders; however, budget and time restrictions prevented us from pursuing the reminders.

While most of the survey response rates were good, some lakes lacked a critical number of responses needed to effectively interpret the results. There were a few questions in some of the surveys that were poorly worded; they were either difficult to understand or respondents had varying interpretations of the question. Measures to improve survey response would be to offer an on line interactive survey in addition to the mail in survey and budget permitting, to send out a set of follow up post card reminders .

Background information about the lake(s) were compiled for the upcoming planning process. The background information included the results of the lakes study, prior studies, and other relevant historical information that should be considered in the plan. The planning team identified and researched issues that they felt were important or had been identified through the surveys. Although the planning team was capable of presenting the background information, we wanted the committee members to become familiar with the professionals they may need to contact for information and/or assistance after the planning process concluded so professionals were contacted and invited to speak about their area of expertise as it related to the given lake or groups of lakes. The professionals were asked to provide background information as well as recommendations for the committee.

Once the planning team had identified some of the key topics and issues that would be addressed during the development of a plan, they chose pertinent materials for informational binders. The Informational materials in the binders included bathymetric maps, the results of the lake study, the citizen survey results, lake management menu, general lake information, a summary of general zoning and the shoreland zoning ordinances for Portage County, and contact information for specialists that could help committee members with lake related questions.

Postcards for announcements and reminders

Postcards were sent out to all riparian landowners on a lake to announce planning meetings or to serve as meeting reminders. During the first few planning process meetings postcards were not used. The postcards were a suggestion from a member of a planning committee. By using the postcards as reminders we saw greater return attendees at each meeting. It was a simple way to contact landowners and postcards were a simple reminder that could be kept. Each postcard invited the

riparian landowner to attend the meeting. Postcards also listed where and when the meeting was taking place, what information would be shared at the meeting, and where individuals could find more information.

Media relations

Articles regarding the citizen surveys and lake management planning were sent out regularly to local newspapers. Information was also sent out to local organizations, such as local sporting organizations, groups related to sustainability, etc. Some of the lake management planning meetings were covered by a newspaper journalist at the meetings.

One of the biggest challenges was keeping the planning processes new and exciting for the public. We wanted to make sure that the public was still aware of what was happening, while still having the press and media cover and publish stories about the planning process. Electronic media, other than e-mail was not largely used during the planning processes. E-tools such as facebook, twitter, myspace and others could be tools to consider. However, it became apparent in Portage County that these means of communication may not be as effective as in other areas, as some committee members did not even have or routinely use e-mail.

Planning!

Lake management plans were developed through a series of planning meetings. Often a management plan could be completed in a series of five meetings, with some groups needing more or fewer. The number of meetings fluctuated based on what topics the lake would like to address during the planning process. Citizens were invited to attend the lake management planning meetings by media articles, survey cover letter, e-mail invitation, and postcard invitation.

Each lake or group of lakes had a planning committee comprised of stakeholders that included riparian landowners, lake enthusiasts, representatives from municipalities in the lake's watershed, sporting groups, associations, and others who have had an interest in the lake. County staff from land conservation department, parks department, planning and zoning, staff from WDNR, and staff from UWSP all provided professional expertise. Anyone who was not on the committee was able to stay informed about the planning process through media announcements and articles as well as using materials posted on the Portage County website. Citizens who attended the meetings were given a binder containing information materials and meeting participants could keep additional materials that they were given throughout the planning process

Introduction Meeting 1

The first meeting was designed to provide an overview of the planning process, encourage the committee members to begin communicating, and to think about the lake from both scientific and social perspectives. The results of the Portage County Lakes Study were presented for the lake(s) and a brief introduction of the planning process was given. Participants began to work on an overall vision for the lake(s) and discussed logistics such as how they would make decisions if the group had differing perspectives about a topic or issue. Most groups opted to show both opinions in the plan rather than implementing a majority rule.

Information and Planning Meetings 2-5

These meetings were all designed to address specific topics. Typically more than one topic was covered during a meeting so when possible, common topics were covered (e.g. aquatic plants and fisheries, build-outs and phosphorus). Specialists were invited to present information about their area of expertise and participate in discussions about the related goals, objectives, and actions for the plan. The management menu was used as a reference and relevant survey results were reviewed to provide an overview of both the scientific and social aspects that were associated with a given topic. Common meeting topics included land use and shoreland management, water quality, in-lake and critical habitat, aquatic plant communities/invasive species, fisheries, recreation, communication, and capacity building. Specialized topics that were covered at some of the meetings by request included water levels, endangered species, and advocacy group options. The final meeting in the series involved a review and refinement of the plan and preparation for the public meeting.

Public Presentation Meeting 6

Meeting 6 was conducted to present the content of the proposed lake management plan(s) and initiate discussion and receive feedback from municipal representatives and other members of the community. This also provided an ideal opportunity to deliver some basic information related to the decisions that municipalities make and the potential impacts on lakes and other water resources. We found that this meeting was best held as part of the town, village, or city board or plan commission meeting. This enabled the board to hear a summary of the lake management plan while the committee members and other citizens were present. During these meetings, the board was asked to formally adopt the lake management plan.

After the final meeting, adjustments to the goals and actions were completed. The plans were provided to staff from Portage County and the WDNR for their approval. The final plan was provided to the members of the lakes committees and posted on the Portage County website.

Our experience and recommendations

Meetings were held in a public meeting space located near the lake(s). Facilities that were used included local park shelters, community centers, town/village halls, and schools. When possible, meeting participants were seated in a U-shape or circle, so that all participants could face each other and the space facilitated discussions. We observed that richer discussions occurred in this configuration than when participants were seated theater style.

Information was presented using Powerpoint presentations and visual aids as often as possible. A computer, projector, and screen were used at every meeting to show presentation and share information with the audience. When a screen or white wall was not available, large sheets of white paper were attached to the wall to serve as a screen.

When we started the planning process we encouraged people to participate in all of the meetings if they wanted to be a part of the planning committee; however, it became clear that this reduced the potential for people to show up, learn, and participate in discussions if they could only attend some of the meetings. Although it would be ideal for participants to attend all of the meetings, we changed our approach and considered anyone that participated in one or more of the meetings to be a part of the lake planning committee. This helped to acknowledge the time commitment made by everyone who attended at least some of the meetings, the knowledge that they gained, and the contributions that they made. The down side was that as new members came, we would have to update those attendees on what had happened previously, so there was some backtracking during the planning process.

Approximately 333 citizens attended the planning meetings for a total of 2,064 volunteer hours. An average meeting had approximately 11 attendees. Lakes that were less populated tended to have more citizens serving on the planning committees. Lakes that were more developed tended to have less citizen participation. Many of the committee members felt that the planning meetings were helpful in developing the plans. Committee members appreciated the binders of lake-related information and they also felt that the speakers were helpful, especially if the speakers were able to provide suggestions or recommendations for management.

County staff participated in nearly all of the meetings. Local elected officials participated in one or more meetings for 17 of the lakes. One state elected official participated in one meeting. The partnership between citizens and government appeared to be appreciated by all that were involved. All of the plans were formally adopted by the municipality that hosted the lake and some were adopted by watershed municipalities. We believe this level of involvement helped elevate the status of lake management in the county, the recognition of the importance of lakes to our communities, and should help with implementation of the plans and lake stewardship in the county for years to come.

Nuts and Bolts – The Lake Management Plan

Lake management plans were created throughout the planning process. A rough template of a lake management plan was provided to the committee members (APPENDIX C). The template had a section heading, an area for goals, objectives, and actions and within the actions a timeline and resources. During the planning meetings, presenters were asked to suggest management recommendations or options. After an informational presentation the committee worked on identifying outcomes, visions, and creating a few actions and possibly a management goal or objective. Often

guidance was needed to identify appropriate actions needed to achieve a goal or vision. Occasionally, speakers and discussion took up much of the evening leaving little to no time to set goals or actions. This was an issue, because a month later at the next meeting the committee members forgot some of the details that lead to good action items.

Each management plan began with a background section that summarized the results of the lakes study, the most pertinent results of the citizen survey, and additional information that arose during the planning process. Following the background information, each plan contained sections on water quality, shorelands and land use management, aquatic plants and aquatic invasive species, fisheries and recreation, and communication. Some plans had additional sections for specific issues that their lake was dealing with such as water quantity.

Each section of the plan had an introductory paragraph that included technical, survey results, and vision; and at least one management goal, followed by objectives and actions. Many sections contained more than one goal. When possible, the management goals were measurable. Each action identified a lead person or group, a timeline, and any additional resources that may help to accomplish the goal.

A glossary of terms used in the plan, an aquatic invasive species rapid response plan, and appendices of maps or other information were inserted at the end of the plan (APPENDIX D, E).

The aquatic invasive species rapid response plan was created to provide guidance about the steps and local contacts if a new aquatic invasive species was thought to be found in the lake (APPENDIX E). The rapid response plan provides basic steps on how to collect a specimen if there is a suspected invasive species and who to contact for positive identification of the specimen. If the specimen is confirmed as an invasive species the rapid response plan identifies who should be contacted including local town officials, the WDNR, University professionals, lake residents, media, etc. These rapid response plans have made it easy to create a chain of contacts, where previously there was none.

The lake management plans have been useful for local residents. They are easy to read, reference, and use when making decisions. However, one of the greatest challenges facing the lake management plans is making sure that they are being used when decisions affecting a lake are being made including at the town and county levels. We would like to see the lake management plan incorporated into both the town and county management plans to ensure that the management actions are being followed. In order to do this we are helping to create a countywide lake management plan that would work to incorporate management actions into one larger document that would be easier for towns and the county to reference.

The plans contain a lot of information and action items. They can be overwhelming to an individual or group so there needs to be encouragement, networking with other groups that are working on the same task, support from agencies and professionals. It is important that the groups know to select only a few items each year so that they aren't overwhelmed. The groups that have conducted annual updates often leave with a sense of accomplishment when they see their list of achievements. They also leave with a plan for the next year's activities and those that are supporting the group know what kind of support (funding, staff, logistical assistance, etc.) is needed to help the group's success.