Shell Lake Riparian Buffer
Restoration Project – Final Report

Washburn County Planning, Land & Resource Management Department

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Background

Shell Lake is a 2,600-acre lake lying within the corporate limits of the City of Shell Lake, WI. It is the largest seepage lake in Wisconsin and has no natural outlet. Water levels began rising in 2000 and continued to rise until a record level of 1,224.92 ft was reached in May of 2003. This resulted in flooding of over 180 homes while causing millions of dollars in property damage. Some homes became uninhabitable and were torn down. During the period of high water levels, much of the lakes' 10 miles of shoreline was inundated for an extended period of time causing considerable environmental damage.

In an effort to alleviate the flooding problem, the City of Shell Lake installed a 4.5-mile outlet pipeline that carried water northwest to the Yellow River. The pipeline lowered the water level and was shut down on July 18, 2005 when the lake elevation reached 1220.62 ft. As the flood waters receded, damaged and eroding shorelines were exposed. In some areas the little topsoil that was present had been washed away. Most of the shoreland buffer area contained dead trees, shrubs, forbs and grasses. In addition, sand from extensive sandbagging activities covered up natural seedbeds.

The purpose of the Shell Lake Riparian Buffer Restoration Project was to provide technical assistance to property owners as they attempted to reestablish vegetation on their damaged shorelines. The DNR Lake Protection Grant provided the funding necessary to hire a limited term employee (LTE) within the Washburn County Land & Water Conservation Department to work with Shell Lake's 400 property owners. The City of Shell Lake was a partner in this project. The project activities were coordinated between the Washburn County Conservationist and the City of Shell Lake.

Educational Activities

The process of educating property owners about this project and shoreland restoration in general actually began in 2004, before the grant had even been awarded. A shoreland restoration workshop was held by the Washburn County LWCD at a demonstration site next to the Shell Lake pavilion. The demonstration site was developed for the purpose of educating shoreland property owners. This workshop created some interest for cost-sharing. Once Washburn County hired an LTE for the project in 2005, several articles appeared in the local papers announcing the beginning of the effort.

In 2006, the City of Shell Lake sent a brochure about restoration to all the shoreland property owners. Several more articles appeared in the local newspapers. One article in particular made an inaccurate comment about "free cost sharing" available to the public. Both of these events generated a flood of interest. Finally, in the spring of 2007 a second shoreland restoration workshop was help in the Shell Lake pavilion. While these types of events are excellent tools for generating interest, the most important educational tool is still working one-on-one with an individual landowner. The project

was fortunate to have 2 LTEs that had excellent skills in working with a wide variety property owners. Generally the Shell Lake property owners was a challenging group of people to work with.

Summary of Project Activities

The LTE for this project was initially hired by the Washburn County Land and Water Conservation Department in May of 2005 and immediately began coordinating activities with the City of Shell Lake. Generally the process involved meeting with interested landowners on site and determining what was needed to regenerate shoreline vegetation. The recommendations varied from simply allowing natural regeneration to a full blown and cost-shared shoreline restoration plan. The underlying goal was to accomplish the shoreline restoration with minimal short-term or long-term impacts to the lake.

It was immediately clear that there was a wide-range of ideas about the concept of "restoration". Many landowners viewed restoration as expanding the boundaries of their turf grass lawn to extend closer to the lake. They immediately wanted to bring in large amounts of topsoil and either place sod or seed the area with new grass. It was a challenge throughout this project to convince landowners that this was potentially harmful to the lake and not consistent with the overall goal.

When conducting an on-site, the LTE would meet with the landowner and listen to their ideas and concerns. The site was evaluated and a brief restoration plan was developed. The restoration plan would describe the recommended course of action. If there was an erosion problem on the site or the soils were inadequate to grow a variety of native plants, limited amounts of fill may be brought in. The plan would list the estimated depth and volume of fill needed for the site. If this activity was to occur below the Ordinary High Water Mark (OHWM) of Shell Lake, a permit was needed from the City of Shell Lake. This procedure was agreed upon by Washburn County, the City, and DNR in 2004. By far this was the most difficult and contentious issue involved in this project. Many landowners were upset that our recommendations did not include any fill or that the fill allowed was too limited.

Project Participation

In the project application, it was stated that the goal was to restore at least 50% of the impaired shoreline to native vegetation. To accomplish this goal a minimum of 90 lots would need to be restored be restored to native vegetation. The only source of funding available for cost-sharing was through Washburn County's Land and Water Resource Management Plan (LWRMP) allocation. The yearly LWRMP allocation was used for various conservation projects throughout the rest of the county as well. The yearly allocation varied from $35,000 to $55,000 over the years of the Shell Lake project. The goal usually was to reserve 50% of the allocation for shoreland restoration on Shell Lake. The limited amount of cost sharing available was a limiting factor in this project.

Cost-share Process

Landowners who were interested in receiving cost-sharing were required to follow the LWRMP procedure as outlined in Administrative Rule ATCP 50. The LTE would develop a rough cost estimate based on the square footage to be restored. The cost share agreement would be developed prior to purchasing any plants or any activity on the site. Once the cost share agreement was officially signed the work could begin. Since most of the projects were relatively inexpensive, formal bidding was not required. Landowners could choose any contractor to do the work or they could do the work themselves. After the work was completed, typically the landowner would pay the entire bill. The accounting procedures required that a Payment Verification Sheet be signed by the contractor as proof of payment. Once the Land and Water Conservation Department received the Payment Verification Sheet, the landowner could be reimbursed for 70% of the total cost of the project.

There were some limitations placed on the eligible costs. There was a price cap placed on large trees and generally only the first 35 above the OHWM could be cost shared. In some cases landowners would choose to restore more than the first 35 feet and those areas were not cost shared. Once the project was completed and certified, the ATCP 50 rules do not require the project to be recorded by the Register of Deeds if it is less than $12,000. A county can choose to register these smaller projects and there are some advantages for doing that. It would ensure that the project would need to be maintained by a new property owner if it is sold before the 10-year Operation and Maintenance period expires. However, many landowners see it as an obstacle if they need to sell the property. The LWCD philosophy is that the project will likely be maintained for the entire 10 years. In 2009, many of the projects will receive status reviews to determine if they are in compliance with the Operation and Maintenance agreement.

There were several occasions where landowners did not meet the procedures and were denied cost sharing. In one case a landowner allowed the contractor to expand the scope of the project beyond what was shown on the restoration plan or budgeted for in the cost share agreement. The additional work could not be approved for cost-sharing. In another case the landowner was so excited about completing a restoration project that he finished it before having a signed cost share agreement. Unfortunately the rules were very clear, and this project could not be cost shared.

The chart below shows the yearly participation and the costs associated with the restoration projects. The limitations in the LWRMP funding in 2005 and 2006 prevented the type of growth that could have happened. Fairly early in 2005 the funding was completely allocated and project participants had to be placed on a waiting list. Landowners can lose interest and enthusiasm when they are placed on a waiting list for cost sharing. The $21,492 of LWRMP cost sharing spent on 12 projects in 2005 was about half of the total yearly allocation for the LWCD. In addition, there were 4 projects completed in 2005 that were installed without cost sharing.

YEAR	Restoration Projects Cost-Shared	LWRMP Cost-Sharing	Landowner Costs	Total Costs
2005	12	$21,492	$9,211	$30,703
2006	14	$18,004	$7,716	$25,720
2007	7	$5,226	$2,240	$7,466
TOTAL	33	$44,722	$19,167	$63,889

In 2006, many of the projects scheduled for the year were carried over from 2005. This placed a further limitation on the number of new projects that could be completed, and meant that some projects would need to be placed on a waiting list. When a project has limited time, these types of delays are detrimental. By 2007, there was still are long list of landowners who had expressed an interest in developing a shoreland restoration plan. However, many of them simply didn't take any further action as their interest had waned.

Progress Tracking

A tracking spreadsheet was maintained throughout length of the project. The LTE tracked the details of each property owner who contacted the Land and Water Conservation Department. Of the 400 Shell Lake property owners, about 150 of them contacted our office for some type of assistance or information. As projects were completed, those properties were tagged by the Washburn County GIS staff.

(See the attached map of Shell Lake for location of shoreland restoration projects.)

Conclusion

This project was in response to a natural fluctuation in the water levels of Shell Lake. Historically water levels have varied greatly on Shell Lake, but never to the extent that occurred in 2003 and resulted in the flooding of 180 homes. The long-term shoreline inundation killed shoreline vegetation and in some cases resulted in moderate shoreline erosion. While the installation of the outlet pipe provided the drainage to draw the lake down, it left drastically altered shoreline behind. The primary objective of the project was to provide technical and financial assistance to property owners interested in restoring their shoreline with native vegetation.

This project created an opportunity to focus shoreland restoration efforts on a single, large body of water. Through the local media, direct mailings, workshops, and one-on-one contacts with property owners, literally hundreds of people were exposed to the concept of restoring shorelines using native plants.