Memorandum

To: Brian Christianson, Steve Russell, Pam Biersach

From: Rob Montgomery

Date: July 18, 2010, revised February 18, 2011

cc: Jon Lefers, Steve Hjort, Wendy Frohlich

Re: Workshop 2

Lake Koshkonong project
Record of second public workshop
Held at Newville, Wisconsin on July 18, 2010

Attendees

The second workshop was held in the outdoor event tent at the Anchor Inn, located on the Rock River at Newville.

Workshop presentation team:

U.S. Army Corps of Engineers: Steve Russell, Wendy Frohlich
Wisconsin Department of Natural Resources: Pam Biersach
Rock Koshkonong Lake District: Brian Christianson, chair, several other members of the Lake District Board of Directors, and consultants to the District Rob Montgomery and Jon Lefers of Montgomery Associates, and Steve Hjort of Eco-Resource Consulting

Approximately 200 members of the public attended the workshop, the great majority of whom resided within the Lake District.

Presentation

Handouts available at the presentation (attached) include:

- The workshop agenda;
- A summary of questions and issues raised at the first workshop, with answers and explanations; and
- Copies of the poster boards used in the project and issue description in the workshop.

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The workshop was opened at 11 AM by Brian Christianson, Chair of the Rock Koshkonong Lake District, who welcomed the attendees and described this second workshop as a continuation of the process of developing a multi-project plan for Lake Koshkonong.

Steve Russell of the U.S. Army Corps of Engineers then introduced members of the Lake Koshkonong analysis team from the Wisconsin DNR and consultants to RKLD. Steve introduced some of the "big picture" issues that the analysis team had developed for presentation in this workshop: Dredging was a major focus of several of the project types that have been considered, and was expensive. The team will develop multiple options for navigation, environmental improvement, and island construction and would prepare a multi-project project report that would facilitate permitting of specific projects. He briefly described the first workshop on May 13, 2010, and described this workshop as "informational" where the public would receive information on a range of projects and issues that the Lake Koshkonong analysis team was evaluating. Steve said that a third workshop would be held in several months, and that the planning project would be complete by the end of 2010.

Jon Lefers of Montgomery Associates, consulting engineer to the Rock Koshkonong Lake District presented the projects and issues that the design team was considering using a series of poster boards. Topics covered included:

Improving navigation access

- Water levels during the summer season over the last five years have been near operating order target elevation more than one half of the time, even with the significant flooding that occurred in 2008.
- Most of the residential shoreline of the Lake has extremely shallow water extending several hundred feet offshore, recently confirmed by the bathymetric survey conducted by the U.S. Army Corps of Engineers.
- Dredging the entire Lake would be extremely costly -- for example dredging the entire Lake to be 2 feet deeper than current conditions would probably cost in excess of $200 million. This cost is not reasonable for consideration.
- Navigation could be improved by dredging areas within several hundred feet of the shoreline to a depth of 2 to 3 feet. The costs of these navigation improvement projects would vary substantially based on the layout of the dredging -- refer to presentation handout for details.
- Dredge spoils could be placed to form islands, or disposed of in "upland" areas, probably agricultural land some distance from the Lake.
- Navigation access could also be improved by the creation of several harbor areas having multiple slips and maintain dredged channels leading into the Lake, but would require that District residents travel some distance to reach the harbor areas.

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Reducing wave heights

- Wave heights on Lake Koshkonong can be significant due to the size of the Lake, which allows for up to 7 miles of open water for the wind to build up waves on the Lake. However, the Lake is so shallow that wave heights become limited by the depth of water. This situation means that providing a wave barrier such as an island or breakwater in the central portion of the Lake will not provide a substantial reduction in wave height at either the eastern or western shore. Breakwaters or islands closer to the shoreline (perhaps 2000 to 5000 feet offshore) would provide a substantial reduction in wave height.
- Reduction of wave height and therefore the energy available to transport sediment could result in sediment accumulation behind breakwaters or islands, especially if they are relatively near the shoreline. This needs to be considered carefully.
- Islands or breakwaters could produce navigation hazards, both during normal target water levels and especially during flood conditions, when the islands or breakwaters could be flooded with very shallow water.

Protecting residential shorelines using islands or breakwaters relatively near the shoreline

- Eroding shoreline areas could be protected by islands or breakwaters relatively near the shore. Costs are dependent on the size and layout of the structures -- refer to the presentation slides.
- Breakwaters would be cheaper than island construction, if the only objective was to provide a reduction and shoreline erosion due to wave action.
- A "hybrid" structure that was a combination of an island for dredge spoil disposal and a breakwater for wave protection may be most efficient.

Navigational hazards

- Marking navigation hazards would be inexpensive, but continuing maintenance and monitoring of the markers would be required.
- Removing navigation hazards could be accomplished relatively cost-effectively, but ongoing maintenance would be required.

Improving Fisheries

- Controlling rough fish such as carp would be a prime objective of improving the fishery of Lake Koshkonong. The project team is considering various options for increasing the harvest of rough fish from the Lake.
- Spawning areas for game and pan fish could be enhanced at several locations, especially at Mud Lake.
- Restarting DNR fish hatchery upstream on the Rock River will support increased game fish.

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Protecting and enhancing wetlands and natural areas around Lake Koshkonong

- Many areas of natural or wetland shoreline on Lake Koshkonong are subject to erosion and damage.
- These areas could be protected by breakwaters located relatively near the shoreline, or breakwaters located further offshore which would provide an opportunity for additional wetland and natural area creation through deposition of dredging spoils or by natural sediment accumulation during flood time.

Jon emphasized that the layout and cost data presented was preliminary at this time, and only represented examples of what could be included in the project report. The project team is continuing to analyze additional options and to refine costs and performance information for presentation and discussion at the third project workshop.

Questions and Answers

The list below summarizes the attendee questions and issues discussed during the open mike session following the presentation on potential projects:

1. The cost of the planning study and the potential projects was a significant concern. Who would pay for these projects? Perhaps more municipalities or other sources should be tapped for funding. *Response: funding would be pursued as aggressively as possible and no projects would be initiated by the District without specific authorization from district members.*

2. The plan project should consider the water quality impact of failing septic systems and perhaps include elimination of septic systems in the report recommendations. *Response: septic system performance and code compliance is the responsibility of the Wisconsin Department of Commerce, not the Lake District, the DNR, or the Corps of Engineers. However, the water quality issues associated with failing septic systems would be considered in the project report. Later, Frank Micale (RKLD Board member) reiterated that the main nutrient source to the Lake is the upstream Rock River watershed, not local septic systems.*

3. When could dredging start? *Response: it depends primarily on authorization of funding for the work. Substantial dredging on Lake Koshkonong could be completed in one construction season. The permit authorizing dredging will include a 10 year maintenance authorization, so initial dredging could be conducted over one or two years, if needed.*

4. Where would the money come from for these projects -- Lake District members only? *Response: to the extent possible, projects will be assembled to provide multiple benefits, such as wildlife enhancement, which could facilitate outside agency or organization funding. Obtaining funding for dredging-only projects from outside agencies is difficult.*

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5. When could project work start? *Response: the project team is working on several options for experimental projects that could be installed on the Lake as early as the fall of 2010.*

6. Is the sediment in areas that are being considered for dredging contaminated? *Response: sediment samples were obtained several weeks ago and are now at an analytical laboratory. Although results are not yet available, we do not expect contamination to be a significant issue in the planning of Lake dredging.*

7. Would there be downstream impacts from sediment release during dredging? *Response: the conditions of permits issued for dredging would require various techniques to control release of sediment outside the dredge area -- this is a significant part of the dredge permit review process.*

8. What kind of vegetation would be on islands if they were built? How high would it be? We are concerned that our Lake view would be blocked by islands or vegetation on islands. *Response: visual impact is an issue that will be considered in the public interest review for the projects that are considered.*

9. Who will patrol the islands if they are built? Who will pay for patrolling them? *Response: access to the islands will depend upon determination of whether they are in "flowage" areas or in areas that were initially determined to be within a Lake. In either event, the public would have some sort of right to access the islands. This issue, as well as how the islands will be policed and maintained, will be considered.*

10. Will we be able use our boats during the time of dredging? *Response: apart from the area immediately around the dredge equipment or the disposal area, navigation throughout the rest of the Lake would continue.*

11. What will be the health of Lake Koshkonong be if we do nothing -- if we don't implement any of the projects being described? *Response: dredging projects will not substantially affect (positively or negatively) the ecological health of the Lake. Environmental enhancement projects should enhance the Lake environment. The health of the lake is dependent upon the health of the entire Rock River watershed upstream.*

12. What are the effects of the Rock River discharge current on Lake Koshkonong? *Response: because the lake is so large, the current velocity of the Rock River is very low within Lake Koshkonong. Wind-driven waves and water circulation are much more important in driving erosion and sediment movement within the Lake than the flow of the Rock River.*

13. What will be the effects of ice on the proposed islands or breakwaters? *Response: if designed properly, structures protected by stone riprap can successfully withstand ice pressures and ice ride-up during winter.*

14. If wave action is reduced, could it result in mats of algae in areas behind breakwaters that are now usually broken up by wave action? *Response: this could occur if the area protected by*

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the breakwater does not have enough circulation or wave energy. This issue will be evaluated further in project planning.

15. Why can't we vote on Lake District business or the authorization of projects by mail or some way other than coming to the Lake District annual meeting? *Response: the District is bound by state law on these issues, which requires authorization at an annual meeting.* Follow-up question: could a referendum be held? *Response: options for holding a referendum will be investigated.*

16. This report needs to provide a detailed description of funding sources for proposed projects. If it doesn't, it will likely end up sitting on a shelf. *Response: good question, funding sources will be described in the project report. Understanding the criteria of various funding programs is extremely important, and understanding how to identify project benefits in several ways -- navigation, ecological improvement, etc. will be very important in obtaining outside funding.*

17. Have any projects similar to what is being proposed on Lake Koshkonong been implemented? Is Lake Koshkonong a guinea pig? *Response: many dredging and island creation projects have been implemented in the upper Midwest. However, Lake Koshkonong is relatively unusual in that it is relatively large, very shallow, is dominated by silty or organic sediment, and has a very large upstream watershed. These conditions present a significant design challenge.*

18. Will the dredge spoil have economic value? Could we sell it? *Response: some of the dredge spoil soils probably would have value as an agricultural soil amendment or for some sort of landscape use. However, experience from other projects indicates that it is unlikely that dredge spoil could be sold to significantly recoup project costs, due to the high cost of hauling the material to an off-site location.*

19. Vegetation on islands will probably go wild and reach heights not originally planned for if it is not maintained carefully. Will this be done? *Response: this is an important consideration and will be included in the analysis of long-term island maintenance costs.*

20. Could the islands be designated as a state park? *Response: good question, we will look into it.*

Close of Workshop

At the conclusion of the open mike question-and-answer session the workshop was closed at approximately 12:30 PM.

Additional questions discussed in one-on-one discussions after the workshop closed

1. Are the commercial rough fish harvesters required to clear up dead fish or protect aquatic vegetation? *Response: there are some conditions in the license that the commercial harvesters operate under, but the standards do not require extreme efforts to clear up dead fish or protect aquatic vegetation. The harvester selection is a bid process. NOTE- we need to confirm this point.*

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2. Why is the "tail" on the preliminary island layout for Gilberts Bay so long? The length of the island might make it more susceptible to siltation behind the island. *Response: these are preliminary layouts; one of the issues was to protect the outlet of the Rock River in the wetland to the South from continuing erosion. This will be evaluated in more detail later in the project.*

3. What does the floating muck that comes in and out of the bay, sometimes moving in and out within hours, consist of? *Response: we don't have samples of this material, but we believe that it is very fine grained sediment that has very high water content, and is composed almost entirely of organic material. This material has very little resistance to be moved about by wind-driven currents and wave action, which is why it can migrate in and out of the area so quickly.*

Attachments: Second Workshop Agenda
First Workshop Questions and Answers
Copies of Boards Used in Second Workshop Presentation

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