

MEETING MINUTES

Riley-Purgatory-Bluff Creek Watershed District

December 9, 2013, Board of Managers Special Meeting and Shallow Lakes Workshop

PRESENT:

Managers: Mary Bisek, Vice President

Jill Crafton, Treasurer

Perry Forster, President

Ken Wencil, Secretary

Leslie Yetka

Administrator: Claire Bleser

Staff: Scott Sobiech, Engineer (Barr Engineering Company)

Louis Smith, Attorney (Smith Partners)

Recorder: Amy Herbert

Other attendees: Lindsey Albright, RPBCWD

Eric Lindberg, FORRL

Jeff Anderson, RPBCWD

Tom Lindquist, CAC

Joe Bischoff, Wenck Associates

Kathy Nelson, Eden Prairie City Council

Rich Brasch, Three Rivers Park District

Barb Peichel, MPCA

Ron Case, Eden Prairie City Council

Bill Satterness, CAC

Jay Deems, Friends of Red Rock Lake
(FORRL)

Cindy Satterness, FORRL

Robert Ellis, Eden Prairie Public Works
Director

Frank Spahn, MLA

Rick Getschow, Eden Prairie City Manager

Laurie Susla, CAC

Jim Hehl, Mitchell Lake Association
(MLA)

1. Call to Order

President Forster called the RPBCWD Board of Managers Monday, December 9, 2013, Special Meeting / Shallow Lakes Workshop to order at 4:08 p.m. in the Heritage Room at Eden Prairie City Center, 8080 Mitchell Road, Eden Prairie, MN 55344.

2. Approval of the Agenda

Manager Wencil moved to approve the agenda. Manager Crafton seconded the motion. Upon a vote, the motion carried 5-0.

3. Shallow Lakes Workshop

President Forster described the workshop format and the procedure for the presentations and questions and answers.

a. **MPCA – Listing and Delisting Shallow Lakes: Barbara Peichel**

Barb Peichel of the Minnesota Pollution Control Agency (MPCA) introduced herself and described the role of the MPCA. She said that today she would briefly talk about the state requirements for listing and delisting waters of the state.

Ms. Peichel summarized the Clean Water Act (CWA) established in 1972 and explained that it requires each state to develop water quality standards, assess the state waters, determine if the waters meet the state water quality standards, list the waters on the impaired waters list called the 303d list, and for waters on the 303d list complete a Total Maximum Daily Load (TMDL) study, which is basically a clean-up plan for each of those waters and analysis on how much pollution would have to be reduced for that water to meet the state water quality standards. She noted that the MPCA is now also looking at waters that aren't impaired and is wrapping those into the planning efforts.

She announced that the MPCA recently released its draft 2014 303d list and noted that a water body could be impaired for more than one thing, meaning it would be on the list for each of its impairments. Ms. Peichel mentioned the number of water impairments on the draft 2014 list and the number of plans in place for cleaning up those impairments. She said that there are water bodies in the state that still need monitoring and there are water bodies that have been cleaned up.

Ms. Peichel moved on to describe lake standards and explained that there are different standards for shallow lakes compared to deep lakes and there are different standards based on different Minnesota eco-regions. She talked about the MPCA's Guidance Manual that provides the basis for determining impairments and said that the Manual is posted on the MPCA's website. She described the state standards for shallow lakes in the District's eco-region and said that the state looks at ten years of data and compares that data to the standard. Ms. Peichel said that the state standards for shallow and deep lakes are listed in Minnesota Rules Chapter 7050.

Ms. Peichel described the delisting process. She said that the MPCA receives information from delisting candidates from all around the state requesting that water bodies be removed from the 303d list. She said that for example Red Rock Lake was submitted as a delisting candidate. Ms. Peichel says that the MPCA takes the last ten years of data unless there have been recent actions or permanent implementations that are making trends, then the MPCA may look at just the last four or two years of data. She said that the total phosphorous and either chlorophyll a or secchi needs to meet standards for it to be removed from the impaired waters list or chlorophyll a and secchi need to meet the standards and total phosphorous needs to show a trend of improvement. She said that there is an internal process and an external process for delisting decisions, just like for the listing decisions. Ms. Peichel said that the Federal Environmental Protection Agency needs to review and approve anything that gets put on or taken off the impaired waters list. Ms. Peichel explained that the MPCA only lists and delists every other year of the even numbered years, so the 2016 303d list would reflect the Red Rock Lake delisting if it were to be delisted.

Ms. Peichel responded to questions. She explained that yes, lakes that are delisted could get relisted if they don't meet state standards and said that the MPCA is conservative when it is reviewing delisting candidate

data because the state does not want water bodies coming on and off the list a lot. Manager Bisek commented that a water body cannot be ignored once it is delisted because the water body needs to continue to meet standards to stay off the list. Ms. Peichel said absolutely, the water body needs to stay protected. She also noted that the MPCA public notices the draft 303d lists, meaning that there is time even at that point in the process for public comment on the listings or delistings.

Mr. Satterness commented that it seemed to him that the MPCA's reliance on the three standards of total phosphorus, chlorophyll a, and secchi are not sufficient anymore because one doesn't want to understand the quality of the water in a bucket but want to understand the health of the water body. He said that he doesn't think it is appropriate to say that the health of Red Rock Lake is any better than it was three, four, or five years ago. Ms. Peichel said that other speakers at today's workshop will address plants and shallow lakes and said that when water clarity improves there will be more plant populations in the shallow lakes so maybe management of plants would need to be done based on types of use of the lakes, but that would be a different discussion.

Ms. Peichel explained that as part of the public record of the delisting process, there is record documented of why each water body was removed. Administrator Bleser clarified that total phosphorous includes more than dissolved phosphorous but also includes particulate.

b. Three Rivers Park District – Shallow Lakes: Rich Brasch, Senior Manager of Water Resources

Mr. Brasch introduced himself and explained that he would briefly present on how shallow lakes function, how the Three Rivers Park District (TRPD) manages them, what the differences are between deep lakes and shallow lakes, and expectations of shallow lakes in terms of how they are used and what they look like.

He said that the Pollution Control Agency defines a shallow lake as a lake that does not stay stratified throughout the summer season, and the MPCA in terms of application of the Minnesota state water quality standards defines a shallow lake as having 80% or more of the lake area less than 15 feet deep. Mr. Brasch said that one of the key points to get across about shallow lakes is that biology drives how the system functions. He said that by biology he means the fish and the aquatic plants in the lake and that type of thing.

Mr. Brasch explained that there is a theory that has been around for a few decades and states that shallow lakes exist in one of two states: a turbid state or the alternative, a clear-water state. He described both of the states. He described stratification and said that one of the key differences between a shallow lake and a deep lake is stratification, which is the difference between the temperature at the top and the temperature at the bottom, and how that affects the circulation of the lake particularly in the summer and how prone that stratification is to breaking down in response to wind events and that sort of thing. Mr. Brasch said that the reason stratification is important is because deep lakes more or less stratify during the summer months at the height of the growing season when dissolved nutrients get taken up in the system by something, most likely algae. He said that the deep lakes can absorb more amounts of nutrient loading from the watershed and not show as significant of a response or degradation of water quality because the deep lakes have the capacity to store more of those nutrients in the deep water section of the lake and prevent them from leaking up into the photic zone. Mr. Brasch said that if the nutrients get up into the photic zone, there is enough sunlight up there for algae to grow and that algae takes up the nutrients and the result is a population increase. Mr. Brasch also described internal loading and how algae can take more advantage of the nutrients released from internal loading.

Mr. Brasch provided more information about shallow lakes, including information on light penetration, food webs in lakes, and state water quality standards for shallow lakes in this eco-region. He commented that very little of the phosphorous in a lake from June through September is dissolved because as soon as it is dissolved it is taken up immediately by algae, which is why total phosphorous is looked at.

Mr. Brasch said that the state standards support managing for the clear-water condition with an abundant native plant community. Mr. Brasch talked about what is reasonable to expect for the condition of a shallow lake and provided PowerPoint slides showing different examples of shallow lakes meeting and not meeting the different standards. He described the main objectives of lake management and said that the key is the growth of a healthy rooted plant community dominated by native species, and he described the benefits to the lake of such a plant community. Mr. Brasch emphasized that there is no such thing as a shallow lake without abundant aquatic vegetation and the only question is will it be algae, which will result in a turbid water condition, or will it be rooted aquatic plants, which would provide a chance for the lake to maintain a clear water condition.

Mr. Brasch addressed the things that can foil efforts to manage shallow lakes. He said one thing is watershed loading, or things flushed into the lake from the surrounding watershed. Another thing he mentioned is the wrong kind of rooted plant such as curlyleaf pondweed, an exotic plant which is the TRPD's biggest challenge against maintaining a clear-water condition in shallow lakes because of the plant's life cycle. Mr. Brasch stated that the wrong kinds of fish communities are a challenge, such as a community with a high population of bullheads and/ or carp. He also talked about how enriched lake sediments are a challenge to the clear-water state. He said that a lot of stuff that comes into lakes basically stays in the lakes because they are basically settling basins and the accumulated phosphorus can start leaking into the lake.

Mr. Brasch addressed questions about what is the maximum depth at which plants can grow in this area and the impact that residence time has on the dynamics of a lake that has an inflow and an outflow. President Forster asked if residence time is something easily measured and if it is, then should the District be looking at it in terms of a criterion as District looks at its lakes over the long term. Mr. Brasch said yes and that he thinks so.

Ms. Nelson asked if shallow lakes could be expected to be used for recreation. Mr. Brasch said that it depends on how she is defining recreation. He said that there is a hierarchy of recreational uses that shallow lakes are suitable for. Mr. Brasch said that shallow lakes are suited for wildlife observations, and he noted that from TRPD survey results it is clear that most lake owners are interested in wildlife observations. He said that canoes and paddle boats could be used for most of the season, although there may be some times where the plants are too thick to use them. Mr. Brasch said that most of the conflict occurs over the use of motor boats in shallow lakes. He said that over the past 20 to 30 years people have wanted to put bigger and bigger boats on the same lakes, which is difficult to do. He said it can even be tough to use a 12-foot fishing boat with a 10-horse motor on a shallow lake in July or August, unless there is success with a lake vegetation management plan that selectively manages to keep the aquatic plants down in certain areas of the lake without risking flipping the system from an aquatic-plant dominated, clear-water state to a turbid water state that will get the lake back on the impaired waters list.

There was a discussion of DNR allowances for plant harvesting, discussion about coontail and harvesting coontail, how easy or difficult it is for a lake to move between the clear-water state and the turbid state, and if the surface area of shallow lakes will be wall to wall aquatic plants. Mr. Brasch commented that it would not

be hard to make an estimate of the amount of open water possible for a lake, and he asked if a vegetation survey had been done for Red Rock Lake. He said that it would be information worth looking for.

c. Wenck Associates – Aquatic Plants in Shallow Lakes: Joe Bischoff

Mr. Bischoff introduced himself as an aquatic ecologist at Wenck Associates. He talked about competing equilibria in shallow lakes and explained that shallow lakes could exist in either the clear-water state or the turbid state but the amount of energy to keep it in either one changes. He said if the lake has high nutrients and high turbidity, the lake will want to stay in the turbid state, no matter how much effort is made to move it into the clear-water state and even if it moves into the clear-water state, it will come right back to the turbid state because the conditions are not there to support it in the clear-water state. On the opposite side of the scale, Mr. Bischoff said, if a shallow lake has low nutrients and low turbidity, it is stable and will stay there and it will be hard to move it to the other state of turbidity. He explained that the state focuses on nutrients because with low nutrients it is easier to push a lake into a clear-water state. He said that he is often asked as a lake manager to manage a shallow lake so that it reaches a clear-water state for recreation, meaning without vegetation, and he said it is very difficult to do if not impossible to manage. He went on to talk about how it is important to keep in mind the competing equilibria while establishing goals for shallow lakes as well as people's recreational expectations.

Mr. Bischoff provided information on shallow lake switches, or drivers that drive lakes from one state to another. He stated that it is important to know what drives the switches in order to know what could move a shallow lake from a turbid state to a clear-water state.

Mr. Bischoff talked about uses of land in the watershed, rough fish in the lakes, shallow lake stressors, strategies for restoring eutrophic lakes, competing desires for lakes, lake zones, typical littoral zone vegetation, aquatic plants, macroinvertebrates, birds and waterfowl, fish management for submerged aquatic vegetation, Department of Natural Resource (DNR) regulations, invasive species and invasive vegetation, experimental sediment iron treatments and iron filings, water level management for aquatic vegetation, water drawdowns, restoring lake vegetation, dredging, herbicide, and mechanical removal of vegetation.

Mr. Bischoff noted that for plant management there is no silver bullet and instead there are a lot of different tools that need to be considered based on sound science and data. Mr. Bischoff recommended management through focusing first on the easier targets such as invasive plants and carp and then moving on to the tougher targets.

He responded to questions about the effects of iron filings on curlyleaf pondweed growth and about goals that lake management plans strive for and who sets those goals. Mr. Bischoff explained that the Clean Water Act began the process regarding goals for clean water and then through studies, the state established standards on what is healthiest condition of shallow lakes. He said that then when he and his colleagues work with citizens about shallow lake management, it is considered how can the lake be made as recreationally usable as possible within the context established on what is a healthy shallow lake.

Mr. Ellis commented that he is hearing that Red Rock Lake has too much coontail and asked if there is a way to manage for it and to manage for it successfully. Mr. Bischoff said that no, he hasn't seen it managed successfully and it is an uphill battle but that attempts to manage for it will be about nutrient reduction, including nitrogen, to the system.

d. Board of Managers and City of Eden Prairie

Mr. Case said that today's presentation has been helpful and added that the question becomes what are the different goals that the different groups in the watershed bring to the table. He spoke about the Eden Prairie City Council's concerns regarding representing its residents and understanding the City of Eden Prairie's goals for the lakes in the city. He said that he feels like the Council hasn't really discussed its long-term objectives in terms of water clarity as well as recreational opportunities, and he thinks that the residents who live around the lakes have a role to play in answering the question about long-term objectives.

President Forster spoke about the process the District goes through regarding its planning process, the number of different organizations that is involved with in that process, the District's funding, and the work of the District. Manager Yetka commented that from a municipal perspective this would be a ripe opportunity for the City to step in, have conversations and identify some priorities specific to the lakes, and figure out how that information could lead to better management of those resources. Ms. Nelson commented that she hopes the issue can be looked at from the level of the interest of the lakeshore property owners and not just from the scientific view.

Manager Bisek added that the District is responsible for more than just lakes in the watershed including streams and ground water and emphasized that the District has a broad mission and it is not just lakes. Mr. Neal brought up the District's 10-year Plan and commented that some people may not be aware of the plan, approved in 2011, which does outline a plan and identify priorities. Mr. Case stated that it seems like there is an opportunity for the City to look at the issue in a larger context and perhaps through some workshops and by pulling in some residents to start answering the question of what does the City want for its lakes and then perhaps coming back to the District to lobby for how the City would like to see the District spending its budget.

4. Adjournment

Manager Crafton moved to adjourn the meeting. Manager Yetka seconded the motion. Upon a vote, the motion carried 5-0. The meeting adjourned at 6:08 p.m.

Respectfully submitted,

Ken Wencl, Secretary