

**LAKE REDSTONE PROTECTION DISTRICT PARTNERS MEETING**  
**Wednesday, November 17, 2021 @ 10:00 am**  
**Room 213 West Square Building, 505 Broadway, Baraboo, WI**

**Minutes**

**1. Call meeting to order, verify compliance with the Open Meeting Law**

The meeting was called to order at 10 am by vice-chair Brad Horner. He verified that the meeting complied with open meeting laws.

**2. Approval of agenda**

Horner asked whether there were any changes to the agenda. Hearing none, he said that we would follow the posted agenda.

**3. Introductions**

Horner asked everyone to introduce themselves. Those in attendance in the room were: Brad Horner (LRPD), Ken Keegstra (LRPD), Paul Burke (LRPD), Serge Koenig (Sauk County), Melissa Schlupp (Sauk County), Mike Sorge (WDNR), Arthur Watkinson (WDNR), Pat Sullivan (LRPD), Dustin Ladd (Juneau County), Jon Field (Juneau County), Chuck Ecklund (Lake Redstone), Tom Walters (Lake Redstone), Mitch McCarthy (Sauk County). He then asked those joining virtually via MS Teams to introduce themselves. They were: Mike Mittelstadt (LRPD), Keegan Johnson (USGS), Dale Roberston (USGS), Pat Oldenburg (WDNR), Andrew Craig (WDNR), Sara Hatleli (Aquatic Plant & Habitat Services), Dave Blumer (Lake Education & Planning Services).

**4. Discussion with representatives from WDNR, USGS, Juneau Co., and Sauk Co. regarding the following issues (but not limited to them):**

**A. Review of district activities since the last meeting (25 minutes)**

Sullivan used a powerpoint slide presentation to review major activities that the district pursued during the past year. The first topic was to provide an update on the dredging project. Although dredging was completed in 2019, the final payments and other issues extended through 2020 and were not completed until 2021. He also reported on the repairs that were performed to replace the berm at Meronek Meadows that was damaged in the 2018 flood. He mentioned that FEMA funding was secured to partially reimburse the district for the cost of installing the system of rock gabions.

The second topic was a brief review of the lake management activities performed in the past year. This included making repairs on two sediment control structures where the district has maintenance responsibility dating back to the 1980s. Repairs were made in cooperation with the Town of La Valle. Sullivan also provided a brief report on recent activities of the producer-led cooperative called *Producers of the Lake Redstone Watershed*. He also gave a brief report on a project that is being pursued in the farm fields above the south arm of Chickadee Bay; Serge Koenig is assisting with this project. He then summarized efforts the district pursued to help waterfront property owners improve their shorelines to minimize sediment and nutrient entry into the lake. Mitch McCarthy from Sauk County participated in the workshop that was held during the summer of 2021.

The final topic was a brief review of the projects supported by lake management grants from Sauk County. One was to repair a weir at the end of Swallow Bay that was damaged in the 2018 flood. Bids have been accepted and the work will be completed in the coming months. A second project is to design repairs for a weir in the valley above Martin-Meadowlark Bay that

was also damaged in the 2018 flood. The design work is now complete but future funding will be needed to implement the repairs. Finally, Sullivan noted that the Sauk County grant is providing support for a stream monitoring program that is being performed by the US Geological Service (USGS). He then introduced Keegan Johnson, who provided a summary of the work that was done during the first year of sampling the inlet and outlet streams and the results that were obtained.

Johnson reported that flow monitoring stations were installed at both major inlet streams, the east and west branches of Big Creek as well as the outlet stream. In addition, auto samplers were installed at both inlet streams so that multiple water samples can be collected during storm events. The water samples are retrieved from the autosamplers by LRPD volunteers and shipped to a laboratory for analysis of total suspended solids and total phosphorus. Sampling at the two major inlet streams provides information about sediment and nutrients entering the lake from 64% of the watershed with the remaining 36% of the watershed being made up of gullies and land close to the lake. He noted that water year 21 (WY21-from October 1, 2020 thru September 30, 2021) was a dry period with total rainfall being about 13% below average. He also noted that the flow through outlet stream was greater than the flow through the two major inlet streams combined. He suggested that the extra water came in through minor streams and springs in the 36% of the watershed that he called the ungaged area. By knowing the volume of water and the concentration of phosphorus and sediment in the water, it was possible to calculate the total amount of phosphorus and sediment that entered Lake Redstone from the two major inlet streams during WY21.

Based on these calculations, the preliminary analysis showed that during WY21 approximately 2000 lbs of phosphorus entered the lake from the west branch of Big Creek and about 1500 lbs of phosphorus entered the lake from the east branch of Big Creek, while 2250 lbs of phosphorus left the lake via the outlet stream. Using reasonable assumptions, Johnson estimated that another 2000 lbs of phosphorus entered the lake from the ungaged area during WY21. Thus, the net entry of phosphorus into Lake Redstone during WY21 was between 3,500 and 4,000 lbs.

Similar calculations were performed for sediment deposition in WY21. Just over 300 tons of sediment entered Lake Redstone from the west branch of Big Creek, while 440 tons of sediment entered Lake Redstone from the east branch of Big Creek. Most sediment remained in the lake with only 70 tons going out of the lake via the outlet stream. Using reasonable assumptions, Johnson estimated that about 480 tons of sediment entered Lake Redstone from the ungaged area during WY21.

It was pointed out that little sediment and phosphorus entered the lake during base flow conditions, but that most sediment and phosphorus entered the lake during storm events. Because WY21 was a dryer than average year with fewer and smaller storm events, it is important to continue the monitoring for at least one additional year.

#### **B. Discussion of whole lake management plan (~ 60 minutes)**

*The Lake Redstone Protection District is in the final stages of preparing a 10-year lake management plan via the 9-Key Element process for Lake Redstone and its watershed.*

##### **1. Overview of the plan (5 minutes)**

Keegstra led a discussion of the issues that the district will face as they implement the proposed lake management plan. He pointed out that a draft of the plan was submitted to the WDNR for

their review and approval on October 20, 2021. The plan will cover the next 10 years and divides activities to be pursued under the plan into 3 geographical areas: 1. The watershed consisting of land far away from the lake; 2. The riparian zone including both properties surrounding the lake and gullies draining land near the lake; 3. The lake itself.

2. *Monitoring and analytical activities during plan preparation (10 minutes)*

There was a brief review of the monitoring activities that occurred in each of the 3 geographical regions during development of the plan and that will continue as the plan is implemented. Monitoring of the sediment and nutrients entering the lake from the watershed via the inlet streams was covered in the report from Keegan Johnson. Keegstra explained the activities of the sediment control committee and their activities in the riparian area, including the shoreline improvement workshop that was held in the summer of 2021. Finally, he briefly reviewed the lake monitoring program that has gone on for more than 2 decades. Lake monitoring will continue during the duration of the lake management plan to determine whether water quality in Lake Redstone is improved by the efforts described in the plan.

3. *Questions about moving forward with implementation of the plan (45 minutes)*

Dustin Ladd briefly reviewed the activities of the farmers in the producer-led cooperative that operates in the Lake Redstone watershed. He described the grant from DATCAP that is used to encourage the use of cover crops. He summarized the recent field day that was held in September.

There was a brief discussion of which practices should be encouraged by farmers in the watershed. Conversion from row crops to grassland (grass-fed dairy and beef) was agreed to be the best for sediment and nutrient retention, followed by no-till practices, followed by the use of cover crops. The county staff stated that incentive programs were available to encourage the various sustainability practices and there was probably not much that the LRPD could do to supplement these programs. It was suggested that the district might be able to help by supporting participation of farmers in educational programs or by supporting educational workshops or field days when they are held.

There was also a discussion about reducing the entry into the lake of sediment and nutrients from the riparian areas. County staff encouraged the continuation of efforts like that above Chickadee south, where a combination of county staff, LRPD volunteers, and local property owners meet to discuss problems and consider possible solutions. Sullivan reported that the sediment control committee is planning to review the various gullies around the lake to identify problem areas that can be addressed in future years. Horner reported that he intends to organize shoreline improvement workshops in future years to encourage property owners to improve their shorelines and thereby reduce the entry of sediment and nutrients into the lake.

There was some discussion about actions that might reduce phosphorus level in the lake to improve the water quality more quickly than waiting for phosphorus levels to go slowly go down as phosphorus entry into the lake is reduced. There was a brief discussion of the proposal from EutroPHIX, the company that Horner has contacted. None of the partners knew much about this company. There was also a brief discussion of reinvestigating the possibility of using the bottom withdrawal system present in Lake Redstone to withdraw phosphorus-rich water during summer months when phosphorus levels are greatly increased near the bottom. The

district will initiate discussions with Sauk County and WDNR officials to see what needs to be done to explore this possibility.

Due to lack of time, there was no discussion of the plans of the district to update the aquatic plant management plan and to control of aquatic invasive species.

Following the meeting there was an email exchange initiated by Serge Koenig encouraging the district to continue the stream monitoring program. He thought the program was providing valuable information and encouraged the district to find some way to continue it to monitor progress of limiting nutrient and sediment entry from the watershed.

**5. Next LRPD board meeting: December 14, 2021, 6 pm at La Valle Town Hall**

**6. Adjourn**

The meeting was adjourned at 12 noon. Both Horner and Keegstra thanked all participants for their interest in Lake Redstone

KK 12/7/21