State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
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Marcel Dion
Buffalo Lake Protection & Rehabilitation District
PO Box 82
Montello, WI 53949

IP-NE-2022-39-00230

Dear Mr. Dion:

Thank you for continuing to work with the Department of Natural Resources (DNR) on your proposed project. This letter contains important information regarding your petition for a change to the existing water level order on Buffalo Lake, Marquette County.

We have reviewed your petition and are writing to notify you that **we need additional information to complete the review of your petition** and determine the impact of your proposed project. It is important that we receive clear detailed information about your project, so the petition adequately explains your project, its impacts on the resources, public interest and allows the DNR to issue a decision that is supported by the file information.

Impact to private property owners:
Increasing water levels may have an effect on upstream and downstream properties. Define the properties that will be impacted by the water level changes and determine the impact that the changes will have on the properties and land use. This includes, but is not limited to, upstream and downstream impacts to agricultural lands, as well as impacts to wells and septic systems. When impacted properties are identified, provide flowage easements for all properties impacted by the increased water levels or identify the flowage rights at the proposed elevation.

Fisheries:
More information is needed on how the requested change will impact downstream water levels and flow. Downstream marshes are used for spawning and nursery habitat for a variety of species including northern pike and walleye. Information on impacts to the timing of water sources to the marshes needs to be provided to understand how the requested change in water elevations and flows may impact these spawning marsh habitats during the critical spring spawning periods.

The attempt to maintain these newly proposed elevations will likely lead to a decrease in wetted perimeter downstream, reducing available habitat for aquatic organisms including fish, macroinverbrates, and mussels. A study is needed on the degree to impacts on downstream water depths, wetted perimeter, and habitat.

Additional information is needed on the velocities in the fishway under current and the requested elevation changes. The current capacity for the fishway to pass fish is not well known and a Department study is currently underway to ascertain walleye passage.

Wildlife:
Since no formal survey has been completed in recent years, a survey of the wildlife species using Buffalo Lake would need to be completed at various times throughout the year to determine what species are currently using the lake and surrounding area for breeding/nesting/foraging, etc. Similarly, a vegetation survey would need to be completed to assess the species present and how a change in those resources could further impact wildlife. Once these surveys have been completed, more information would be needed to understand how that would further impact the wildlife species using Buffalo Lake.
One example of a potential impact is that an increase in the water level, and the proposed earlier date of increase to April 1 (from May 20), may prevent some beneficial aquatic plants from growing and providing forage to waterfowl and other wildlife.

Lakes and Water Quality:
Increasing the water level earlier may decrease the ability for aquatic plants to germinate in the Spring due to decreased sunlight penetration. This can have a negative impact on available habitat for fish, herps and other aquatic life. The lake may lose emergent vegetation and wetlands with raised water levels. Water quantity and timing are critical for aquatic plant establishment. There likely will be losses to riparian wetlands as they will be converted to deeper water habitats (E.G., meadow converted to deep marsh or lacustrine habitat). Many high value native plant species could be lost along with the

ability of the wetland to sequester nutrients especially phosphorus, resulting in a negative impact to lake water quality from the loss of riparian wetlands. A study is needed to fully understand impacts to wild rice, bulrush, and other desirable emergent plant species and aquatic life present in Buffalo Lake and the Fox River.

Increasing the surface area of the lake during the summer will lead to higher water temperatures, which may promote algae blooms within the lake and reduce oxygen levels within the river downstream. The water quality of the Fox River downstream is directly tied to the water quality of Buffalo Lake. If water quality is decreased within Buffalo Lake, water quality in the Fox River would likely decrease as well. A study is needed to determine the effects on the lake and river water quality.

Decreasing the flood storage capacity of Buffalo Lake and its surrounding wetlands will result in more water with higher velocities during and after storm events passing through downstream into the Fox River. This could lead to greater bank erosion in the lake and below increasing sedimentation, loss of habitat and nutrient enrichment. Wetland areas on the south/west end of the lake might suffer due to increased water levels. Increased surface water elevations can lead to wetland impacts and alterations affecting the functional values of existing wetlands. Impacts to the functional values of wetlands may have direct impacts to water quality. A study is needed to address the impacts to these nearshore areas.

Increases to groundwater elevations and surface water elevations within agricultural ditches and land use have a high likelihood to impact nutrient cycling, specifically Nitrogen. Increased Nitrogen contributions can further impact the eutrophication of Buffalo Lake and the Fox River. A study is needed to address the changes to the nutrient cycling due to higher water levels.

Property Values:
Property values may be affected by an increase in water levels. From upstream property owners not being able to farm to lakeshore property owners who do not have high enough riprap to protect their shoreline to an increased ability to navigate and recreate during the summer months due to increased water depths. Please study and document the economic impact the changes in water levels may have on all properties that will be affected.

Alternatives:
Currently the Lake Association has practicable alternatives identified within their Lake Management Plan that would help address the complaints received in the request regarding water depths and nuisance aquatic plant growth. The use of drawdowns is a highly effective tool at increasing water depths by consolidating sediment and controlling aquatic plant growth. The use of dredging can also be an action to obtain deeper water levels throughout the lake to aid in navigational issues. Document the reason why these activities are or are not an alternative to the petition.

Please submit the requested information to me as soon as possible so we can fully assess the petition and continue to the next step in the process. This is also an opportunity for you to explain how your project will avoid or minimize impacts to wetlands, the public interests, and public rights.

Please note that once your petition is determined to be complete, the Department will review and issue a decision. At any time during the review process, you have the right to send us a letter or email requesting your petition be withdrawn.

If we do not receive the requested information or hear from you in response to this letter within 90 calendar days from the date of this letter, we may dismiss your petition.

If you have any questions, please contact your local Water Management Specialist, Jeff Schure at (608) 228-8107 or email Jeff.Schure@wisconsin.gov.

Sincerely,

Jeff J Schure

Water Management Specialist
Copy to:
Jeff Schure
WDNR Staff
USACE Project Manager