MINNESOTA DEPARTMENT OF NATURAL RESOURCES
Division of Ecological and Water Resources
21371 Highway 15 South
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MNDNR

September 7, 2016

Brett Behnke
Shell Rock River Watershed District (SRRWD)
214 West Main Street
Albert Lea, MN 56007

Subject: Fountain Lake Restoration Project
Environmental Assessment Worksheet
Freeborn County, MN

Dear Mr. Behnke:

The Minnesota Department of Natural Resources (DNR) appreciates the opportunity to provide comments on the Fountain Lake Restoration Project Environmental Assessment Worksheet (EAW). This is a large scale project that relies on extensive dredging of Fountain Lake with numerous environmental effects to be considered. The DNR is providing comments on the EAW and comments related to the required DNR public waters work permit. Early coordination may have helped to guide the project design and purpose.

One of the listed goals of the Project is to "increase water depth to provide wintering holes and summer refuge areas for fish." MN Rules aim to limit alterations to the biological character of the waters and the surrounding shores to the minimal degree possible as well as preserving the natural character of the waters, particularly the ecosystem of the lake. Wholesale excavation of a large percentage of the lakebed may not be consistent with these goals.

The project is intended to provide water quality improvements to Fountain Lake. The EAW indicates a substantial number of upstream management practices have been implemented and the SRRWD plans to further improve lake water quality by removing phosphorous-laden sediment through dredging. Benefits associated with dredging will be short-lived if a significant amount of phosphorous and sediment continues to enter Fountain Lake. External sources from the watershed will continue to contribute significant phosphorous that may mask any water quality improvements from this extensive proposed dredging project. In fact, the high watershed to lake ratio is a fundamental factor in external contributions of water and nutrients. Will this project provide a water quality solution or does the watershed guarantee recurrent sedimentation and nutrient inputs that negate the benefits of the project?

The DNR has concerns at what cost anticipated lake improvements will come. How will success be measured? Beyond water chemistry or chlorophyll, will the benthos be monitored pre and post project? What impact will the project have on the fish community that can play a key element in water quality? Has the impact to lake water levels been calculated given the scale of the proposed project?

The DNR has concerns about justifying excavation to increase water depths to improve water quality. Unintended consequences could include development of depleted oxygen zones that could negatively affect the fish community. Implementation of a water level management plan could help manage vegetation, improve water quality/clarity, and water temperature. There are many examples of improving lake water quality on lakes throughout the state by managing water levels.

The EAW does not address potential water quality issues related to the Confined Disposal Facility (CDF). Comments from our July 8th letter regarding the CDF will be reiterated since no response was given. The main purpose of the project is to remove phosphorous by dredging sediment out of Fountain Lake. However, outflow from the CDF will be returned to an unnamed ditch that enters Bancroft Creek and ultimately Fountain Lake. The CDF contains drained wetland basins. The potential exists for the nutrient rich dredge spoils to enter the shallow groundwater and be discharged to the drainage ditch that enters Bancroft Creek and ultimately Fountain Lake. The EAW does not indicate if the project team has taken into account the interaction among the shallow groundwater, dredge spoil, outlet flows, and the transport of nutrients back into Fountain Lake? What specific steps will be taken to treat the water if the phosphorous levels are high?

The EAW discusses the proposed integrated pest management strategy to control carp based on five objectives. DNR fisheries staff should be involved in the development of the carp control plan as we are responsible for managing fish in Minnesota. Please contact Craig Soupir, DNR Area Fisheries Supervisor, at 507-362-4223, to coordinate the proposed integrated pest management strategy for carp control.

The Draft Preliminary Engineers Report, Section 2.4.3.2, states a dredge elutriate test (DRET) that was completed suggested that at the point of dredging, "chronic surface water standards may be exceeded for un-ionized ammonia, aluminum (total), phosphorus (total) and mercury (total)." Further details on this potential condition are requested, including any relationships to water temperature, pH, spatial conditions across the lake bottom, dredge prisms, and other relevant parameters. This information is requested to help make potential predictions about when, where, and how such water quality standards violations might occur in the lake, because of a dredging operation.

Page 7 of the EAW indicates three sediment samples were between Tier 1 and Tier 2 concentrations for Arsenic or Copper. The proposer should consult with the Minnesota Pollution Control Agency to determine the extent of contamination and if there are areas that should not be dredged. Avoidance of dredging contaminated sediments has been used on other projects to reduce potential negative impacts from the project.

The EAW includes locations of gas lines, tele-comm, and electrical lines in Figure 2-4 (111/173). Has the project team identified all underwater infrastructure, including the lake aeration system, and developed strategies for avoidance or relocation?

The Delft 3D modeling software was used to simulate the complex hydrodynamic and biological processes that occur within the Fountain Lake system. Has this model been peer reviewed or the result collaborated by another model due to the complexity of the Fountain Lake system, project scope and scale, and to weigh the costs and benefits? We recommend that rough fish be included in the modeling since they play a key role regarding water quality.

The EAW indicates the CDF has a storage capacity of approximately 1,275,000 cubic yards. However, page 5 of the EAW indicates 1.7 million cubic yards of lake sediment will be pumped to the CDF. The EAW also states: "additional disposal areas will be secured in the future", but no details are provided. Under Minnesota Rules, part 4410.1000, subp. 4, connected actions and phased actions must be considered in total when determining the need for an EAW, preparing an EAW, and determining the need for an EIS. The EAW did not address the connected action of additional disposal areas needed for the excess 425,000 cubic yards of lake sediment. The EAW is incomplete because the proposed 1.7 million cubic yards of lake sediment to be removed is beyond the capacity of the CDF.

The RGU decision should be postponed until all suitable CDF locations are included or until the project is downsized to 1,275,000 cubic yards of dredged material removed. How do we evaluate the impact of disposal areas when it is unclear what the total size and locations are of the cells. How were water quality impacts calculated without this information?

The sponsor will need to obtain a DNR prohibited and regulated invasive species permit for this project. The invasive species permit will address restrictions on the transport of material from the CDF due to the presence of curly-leaf pondweed seed and turions in the dredged material. Additional invasive species prevention techniques will also need to be addressed. The invasive species permit must be obtained prior to the public waters work permit decision.

A 25-foot wide buffer zone will be maintained between CDF construction and the existing drainage ditch. A wider buffer zone should be used to ensure runoff water is treated and sediment does not enter the drainage ditch.

MN Statute Chapter 103G.245, Subd. 7 (a) states: A public waters work permit may be issued only if the project will involve a minimum encroachment, change, or damage to the environment, particularly the ecology of the waterway. The following information will be specifically needed for permitting.

Detailed bathymetric maps showing proposed pre and post-project lake contours are needed to look at volumes of materials, stability of finished slopes, as well as ecological impacts. Defending the need for the depth of excavation based on the purpose for water quality improvements will be needed. This map should include the cells/locations that show the phasing of dredging. An "as built" bathymetric map will be required as part of the public waters work permit.

The EAW indicates that dredging will not occur within 30 feet of the shoreline. Near shore vegetation is key to lake habitats, limiting impact of wave and ice action. A 30 foot setback from shore does not reflect the importance of this area to the lakes ecology. Consideration should be given to protect the shallow (<5 feet) gravel or hardened substrate for spawning bluegill and bass, avoid known locations of water lilies with a 50-foot buffer, and protect habitat used by the state-listed threatened Blanding's turtle for over-wintering and foraging. Dredging in emergent stands of vegetation is not allowed. The extent of dredging also needs to be evaluated in order to balance the amount of dredge material with the capacity of the proposed CDF.

Fountain Lake currently has a great recreational fishery and we hope to sustain the bluegill, perch, and northern pike populations in the future. Dredging activities can result in direct impacts to nests and sediment being deposited over eggs which can negatively impact spawning success. Impacts may change the balance of the lakes fishery and impact water quality for years to come. Any dredging should be designed to protect fish nests and eggs. Dredging each season should start away from shore in deeper locations to avoid areas of spawning fish. Containing suspended solids resulting from dredging will be needed.

Dredging should be designed and conducted in a manner that has varying elevations to provide higher quality habitat to avoid unsafe drop-offs near shorelines.

The DNR Dam Safety Permit will be required for the construction of the CDF. This permit will be needed prior to the public waters work permit decision.

The potential for Blanding's turtles to exist in the project area. Dredging can negatively impact turtles due to direct fatalities and habitat degradation. Please be advised that the public waters work permit may contain protective measures for the turtles as outlined in the August 26, 2016 Natural Heritage Inventory System review letter and Blanding's Turtle Fact Sheet.

Summary

Overall the EAW lacks important information that is needed by the Responsible Government Unit (SRRWD) to make a determination on the need for an Environmental Impact Statement. Under Minnesota Rules, part 4410.1700, subp. 2a, subitem B. the RGU can "…postpone the decision on the need for an EIS, for not more than 30 days or such other period of time as agreed upon by the RGU and proposer, in order to obtain the lacking information." The RGU decision should be postponed for the following reasons:

1. The proposed volume of dredged material is beyond the capacity of the CDF.
2. Resolution needs to be achieved for issues concerning the water quality being discharged from the CDF.
3. Additional modeling needs to be conducted to simulate the complex hydrodynamic and biological processes that occur within the Fountain Lake system.
4. The dredge extent map needs to be revised.

Without the above referenced information, the DNR believes the RGU does not have the necessary information to determine the potential for significant environmental effects for this project.

Sincerely,

Jim Sehl

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