7 June 2018

TO: Shamineau LID Board

FROM: Crookneck LID Board

SUBJ: Shamineau High Water Project Questions

Below is a summary compilation of questions received from Crookneck Lake property owners following Cindy and Rick's presentation at the 26 May 2018 LCIA meeting.

Answers to your questions from the Lake Shamineau Lake Improvement District (LSLID) are in black below. As you read our answers below you may want to also review our Lake Shamineau Lake Improvement District website: https://minnesotawaters.org/lakeshamineau/.

On the website, you will find additional project information and the feasibility report for our high water project.

1. Your slide comparing water levels over the years of Crookneck and Shamineau clearly validates what locals have historically stated saying that the two lakes share a common ground water source yet your slide at end states the water level on Crookneck **may** decrease … are you sticking with this statement or do you agree that there is a very high degree of certainty the level on Crookneck will also decrease a similar amount (for example if you drop a total of 24 inches Crookneck can anticipate a 24 inch drop also)?

A: **The Engineer's findings included in the feasibility report (located on the Lake Shamineau website) suggest it is likely that the water level of Crookneck may decrease but it is not likely to decrease at the same rate as Lake Shamineau. In addition, Crookneck Lake will continue to have inflow from the watershed and the Lake Shamineau High Water project does not include a plan to alter that inflow. Additionally, rain fall has been the major contributor to the high water and it continues at a historical higher than average rate.**

2. Your water level comparisons focus on last 10 years, what does the data show over the last 50 or 100 years?

A: **We do not have a graphic that depicts water levels for either lake for 50 or 100 years ago. However, we have pictures from residents that show substantially lower water levels 50+ years ago on Shamineau. Regardless of those past years, we have learned from our engineering study that there is data that shows we are currently in a wet hydronic cycle with higher precipitation levels, causing inflows from runoff and groundwater and causing the lake level to continue to substantially rise. The Ordinary High Water Level (OHWL) is determined by looking at data going back over 50 years, and Lake Shamineau is nearly two feet above the OHWL. In addition, there is DNR data that goes back 50 years that shows a steady rise in water levels. There are always going to be correction years, but the "mean" line continues to go up. It has increased 3 feet in the last 9 years.**

3. At your meeting you mentioned modifying the inflow from Cty Rd 203 to Crookneck:

a. Who approved this?
b. Did Crookneck LID Board request this?
c. Long term impact on Crookneck?
d. Where is all of the water going to go which now flows thru this ditch?
e. Impact on low lying properties north of 203 (alphabet named roads)?

A: **The LSLID has no approved plan to modify inflow from County Road 203. Our engineer had noted in their feasibility study, "Altered hydrologic patterns immediately south of Shamineau and Crookneck Lakes were identified which appear to conflict with understood drainage area boundaries. The unnatural runoff contribution to these lakes inflows has an impact on lake levels and should be addressed. The altered hydrology appears to be ditching, road/ trail grades without culverts; existing culverts set at high grades, and blocked drainage ways due to historic standing water with limited flows. It is understood that addressing these altered hydrology issues will reduce the total volume of water required to be discharged from Shamineau Lake."**

Prior to making modifications, discussions and approvals with property owners, Morrison County, Scandia Valley, and other interested parties (including the Crookneck LID) would have to occur. Again, there is no current plan to make modifications.

4. At your public meeting the TODD Cty rep mentioned a "viewing" would have to be scheduled and they would determine who would benefit both up and down stream. (see next question)

a. What is the purpose of this "viewing"?
b. You state in multiple references that the funding for this project is solely Shamineau plus any federal/state grants you may be able to receive. If this "viewing" results in a determination that other entities either downstream or upstream would benefit, could they then be assessed (specifically Crookneck)?
c. Who gives Todd Cty authority to cross into Morrison Cty to perform a study or would this require the equivalent Morrison Cty office?

A: **The viewing mentioned by Todd County may be required to determine a lump sum assessment that will need to be paid to downstream property owners in Todd County (e.g. for water flowing through ditches on private property). These assessments will be paid entirely by the Shamineau project and have been included in the project estimates. No other entities will be assessed. Todd County does not "view" in Morrison County. The viewing is done in Todd County based on data from engineers and possibly other state and county agencies.**

5. At your presentation at the LCIA meeting you stated that your lawyer has advised that you will not require a "viewing" but rather pay a one-time fee for use of the Todd Cty ditch. Do you have this in writing and if so can you provide a copy?

A: **Our engineer has advised that that their experience with past projects have not required a viewing and the engineer has discussed and confirmed this issue with the Todd County attorney. The Todd County attorney also discussed this at one of the public hearings in which he attended with Morrison county and the LSLID. For this project, we will follow any process required by either Todd or Morrison counties.**

6. A number of our owners have searched for other projects performed by Houston Engineering. The one that pops up is "Little Devils Lake". Provide a list of lakes in MN which are undergoing a similar engineering solution to high water. If you can provide a brief summary of how long the water was elevated and how much above the OHW, and the permitted lowering level this would be beneficial for review and discussion.

A: **Our website includes the following information:**

- **A list of fourteen similar lake outlet projects with both gravity and mechanical outlets, including:**
    - **Turtle Lake in Becker County**
    - **East/West LaBelle Lake, Boyer Lake, Felker/Canary Lake in Becker County**
    - **Devils Lake near Perham in Otter Tail County**
    - **DLD/MKP (Moore) near Perham in Otter Tail County**
    - **Sand Lake in Otter Tail County**
    - **Sewell Lake in Otter Tail County**
    - **Lake Iverson Lake near Parkdale in Otter Tail County**
    - **Big cormorant Lake Chain in Becker County**
    - **Grove Lake in Pope County**
    - **Union Lake/Sarah Lake (WSN) in Polk County**
    - **Lake Olaf, East/West Olaf Drawdown in Otter Tail county**
    - **Lake Christina in Douglas County**
    - **Crooked Lake in Otter Tail County**
    - **Clitheral Lake in Otter Tail County**

- **Fact sheets on these similar lake outlet projects**

- **Fact sheets on several urban flood control projects with a variety of pump station sizes; not related to Shamineau but shows engineering experience in a variety of large and similar sized pump stations for flood protection**

7. You want to lower Shamineau to 1 ft below the OWL and you state you are now 1 ½ ft above, so that would be a 2 ½ ft drop. This would result in Crookneck also lowering by 2 ½ ft from where it is now. How many Crookneck property owners do you perceive will benefit from this? How many do you perceive will not benefit? How many Shamineau owners will benefit and not benefit?

A: **The feasibility study and data suggest that Crookneck would not go down the same amount as Lake Shamineau. In addition, Crookneck Lake will continue to have inflow from the watershed and the Lake Shamineau High Water project does not include a plan to alter that inflow. Additionally, rain fall which has been the major contributor to the high water and it continues at a historical higher than average rate.**

We do not have exact numbers on how many on Crookneck will benefit from lowering the lake level. Determining that number may be something that the Crookneck LID Board will want to determine. Our board did take a tour of the lake and spoke with several residents who believe the water is too high. We noted that there were several homes (perhaps up to 20) that are in eminent danger, but we saw much more damage than that. There was even one resident on higher ground that thought the water was too high and was damaging his shoreline but was hoping it would go down on its own. Hydrologic data shows that the trend is for more rising water, not a decrease.

We believe that all of the Shamineau residents will benefit from this, obviously some will benefit more than others.

8. What are the **perceived positive** effects associated with lowering the water level on Crookneck Lake for:

   a. Water quality
   b. Fishery
   c. Wildlife habitat (particularly the east bay brush area)
   d. Native aquatic plants
   e. Exotic species (aquatic plant) management program
   f. Shoreline conservation
   g. Recreation usage of entire lake

A: **The positive (or negative) effects on Crookneck are best determined by the Crookneck Lake residents. Looking at your lake, we would think that all of these things would be benefits from the Lake Shamineau High Water Project. Although we have not analyzed the effect of exotic species, we believe the water level would have little to no effect on those plants on Shamineau. We have noticed that some of our native species (Cabbage and Northern Milfoil) are stunted due to the high water which may reduce the amount of habitat for the fishery.**

For Shamineau, reducing the water level will reduce: shoreline erosion, loss of trees, wildlife habitat destruction, loss and/or changes of aquatic vegetation, flooding of properties, and reduce property damage and loss. In addition, it will improve water clarity and water quality. In addition, it will improve water recreation usage since we currently have a no-wake zone for 300 feet around the lake due to the high water, which reduces the recreational area nearly in half. In addition it will reduce shoreline damage caused from ice jacking which has a significant impact to the lakeshore has caused by the high water during winter conditions.

9. What are the **known positive** effects (based on other lakes which have been lowered) associated with lowering the water level on Crookneck Lake for:

a. Water quality
b. Fishery
c. Wildlife habitat (particularly the east bay brush area)
d. Native aquatic plants
e. Exotic species (aquatic plant) management program
f. Shoreline conservation
g. Recreation usage of entire lake

A: The positive (or negative) effects on Crookneck are best determined by the Crookneck Lake residents. The above positive effects have been noted by other lakes that have water reduction projects. In question number 6, we listed many projects and we provide more information on those projects on our website. Feel free to contact those residents to confirm the effect of managing the water level.

10. What are the **perceived negative** effects associated with lowering the water level on Crookneck Lake for:

a. Water quality
b. Fishery
c. Wildlife habitat (particularly the east bay brush area)
d. Native aquatic plants
e. Exotic species (aquatic plant) management program
f. Shoreline conservation
g. Recreation usage of entire lake

A: The positive (or negative) effects on Crookneck are best determined by the Crookneck Lake residents.

However, we believe the affects will be positive. A feared negative effect that we have heard by some on Crookneck is that they want the water in "the bay" to remain high for personal reasons. We also have heard that the high water may stunt some of the vegetation in this same bay, which may be true, but could be the weather cycle we are in as well. We don't believe that five feet of water compared to three feet is much of a difference in sun penetration. The effects of the plants on Shamineau we have seen are in the deeper water around 17 feet.

11. What are the **known negative** effects (based on other lakes which have been lowered) associated with lowering the water level on Crookneck Lake for:

a. Water quality
b. Fishery

c. Wildlife habitat (particularly the east bay brush area)
d. Native aquatic plants
e. Exotic species (aquatic plant) management program
f. Shoreline conservation
g. Recreation usage of entire lake

A: The positive (or negative) effects on Crookneck are best determined by the Crookneck Lake residents. We have not heard of any negative effects from other lakes. Everything we have heard from other lake projects has been positive. In question number 6, we listed many projects and we provide more information on those projects on our website. Feel free to contact those residents to confirm the effect of managing the water level.

12. What happens if we go into several years of drought? Do you have a plan for reversing the outflow? How do you know you are not getting into another White Bear Lake scenario where the lake goes dry and everyone points the finger at each other?

A: **The advantage of pumping water is that we would operate the pump to an optimum water level. Once that water level is met, the pump would be turned off and not used unless the lake rises again to a high level. There is no plan for reversing the outflow. However, with the higher precipitation and wet hydrology causing high groundwater, there is no indication that the lake levels will be decreasing substantially. As previously mentioned, the lake has been going up gradually for over 50 years and exponentially for the last 9.**

13. What expenses can I (Crookneck owners) anticipate if the lake is lowered by 2 ½ ft?

a. Dock cost (extend it)?
b. Sand point wells?
c. Drinking water quality
d. Property value

A: **As mentioned in a previous question, data suggest that Crookneck will not go down the same as Lake Shamineau. The expense of the high-water project will entirely be borne by the Lake Shamineau residents. Crookneck Lake owners will not be charged. With respect to other costs that you listed it would be difficult for us to know what the expense would be. However, knowing that Crookneck had lower lake levels in previous years, you may be able to use your previous experience as an indication. In regard to property value, we strongly believe property values will go up. In fact, Morrison County is in the process of lowering some of the property values on Lake Shamineau due to the high water.**

14. Many owners on Crookneck and Shamineau have installed rip rap. If the water level falls outside the rip rap will this result in increased shoreline erosion as the waves undercut the rocks? If there is a gap between rip rap and waterline will this be an eyesore or cause more erosion and require additional rip rap be installed?

A: **If the rip rap is installed according to DNR guidelines, there should be no erosion. If the water recedes past the rip rap, sand will be exposed, allowing for a sand beach area. In many lake areas, there is stone rip rap at the back side of a beach area without the water causing any erosion. Most of the properties that have added rip-rap in recent years have actually had to add more rip rap and then more on top of that. It is not user friendly to have to remove docks and walk over piles of rocks. It is our belief that if the water goes down, residents may find another use for the rocks and allow their beach to breath.**

15. Will an environmental impact study be performed to determine the impact on the quality of the ground water associated with lowering Shamineau by pumping? Will the study include the impact on flow and quality of ground water from the west of Crookneck (Scandia Valley Transfer Station) towards Crookneck Lake as the dynamics associated with lowering Shamineau occur? Will Lena Lake impact the dynamic flow?

A: While an official EIS is not typically required for these types of projects, an environment review of the following Social, Economic and Environmental Items has been completed as part of the Feasibility Study. Further study and analysis will be completed as the project progresses, but no red flags have been identified at this point. The High Water Project will be subject to whatever studies are required by the various permitting agencies and no work will be started until all the permits are approved. Following are some but not all of the things that will be reviewed.

- **Receiving and adjacent Waters**
- **Threatened endangered plants, animals, fisheries**
- **Historical and archaeological cultural Resources**
- **Highways, roadways, drainage systems**
- **Water quality review of potential receiving water bodies:**
    - **Fish Trap Creek, Long Prairie River and Crow Wing River**
    - **There is no data for Lena Lake**
    - **The water quality in Shamineau Lake is either better than the water quality in the downstream waterbodies or meets the water quality standards of the constituents analyzed**

16. Assuming the project is approved and constructed. Will there be a governing body which will be charged with monitoring the impact of lowering the water levels on both Shamineau and Crookneck, who will be on it, and what powers will it have to mediate negative impacts?

A: An operating plan will be developed which will include details of oversight. While the governing body has not yet been determined, the LSLID will continue to be involved and the Morrison County Board has oversight over the LSLID. We may also have a discussion with Scandia Valley Township, to see if this is something they may be interested in assisting with. Even after the project is completed, we still have to follow DNR and Morrison county regulations to ensure no significant negative impacts are created.

17. Who will monitor the pumping operation to insure accurate water levels and filtering of invasive aquatic species?

A: An operating plan will be developed which will include details of the pumping operation. There are options for monitoring including the LSLID, Scandia Valley and Morrison County.

18. I read about an alternative offer the County made to you that you then rejected. What was the proposal and why did you reject it? Could this offer also have been made available to Crookneck residents?

A: There has not been an alternative offer made by the County that we rejected. The County has considered easing restrictions to allow property owners to fill in their properties and raise their homes. While we are not opposed to easing of these restrictions and in fact we would be supportive, we also feel that this would not solve our high water problem but only would provide a short term Band-Aid to the problem. We have not heard whether the County is continuing to consider easing these restrictions.

19. I have heard you will seek a DNR permit to lower Shamineau to 1 ½ ft below the OHW level and I also hear you will lower it to 1 ft below the OHW level. What is the level you plan to lower Shamineau down to?

A: **While the exact amount of water reduction has not yet been determined, we will most probably ask in our permit request with the DNR to allow us to reduce the water level up to 1 ½ feet below the OWL. To determine the actual amount that we will pump, we will want to consider the effect on downstream property owners and on Crookneck Lake. For example, in our operations plan we may operate the pump to reduce the lake down to the OWL and then analyze the effects before pumping more.**

20. Who will be responsible to compensate property owners, Crookneck, Shamineau, down stream, etc., for any damages they may encounter or perceive to have encountered?

a. Shamineau riparian owners?
b. Shamineau LID?
c. Shamineau LID Board?
d. Morrison County?
e. ??

A: **With so little detail, it would be difficult to respond to this question. However, we are taking many precautions by working with downstream property owners and Crookneck and will take them into consideration in the operating plan. Permits will not be issued until all of the agencies are confident that there will be no damages.**

21. QUESTION NOT RECEIVED AS A RESULT OF YOUR LCIA PRESENTATION: At last Friday's board meeting you requested a "Letter of Support" from our LID Board. If we offer our support, does this open us up to future liability?

A: **We have checked with our attorney on this specific question and he has indicated that providing a letter of liability does not open you to future liability. The letter of support that we are seeking would simply state that you acknowledge that we are seeking a solution to manage our lake levels, that you understand that we will continue to communicate with you as our project progresses, and that we will take Crookneck into consideration in our operating plan. It is not a blanket acceptance of constructing the project, but it will make it easier for us to move into the permitting phase. The ability to move forward to construction will be decided by the permitting process.**