

Jessie Lake Total Maximum Daily Load Study
Public Meeting Minutes
November 22, 2010



J L W T A C

Bowstring Town Hall, Bowstring MN

A public meeting to present the Draft Jessie Lake Total Maximum Daily Load Study and Implementation Plan was held on Monday, November 22nd, 2010 at the Bowstring Town Hall in Bowstring Minnesota. Presenters included Noel Griese (Itasca County Soil and Water Conservation District), Nolan Baratono (Minnesota Pollution Control Agency), and Rebecca Kluckhohn (Wenck and Associates). Rebecca was unable to make the meeting due to inclement weather but was able to present the project via phone conference.

1. Draft TMDL Presentation: Rebecca presented the Draft TMDL and detailed the lake modeling process. Jessie Lake's primary nutrient sources from 1998-07 in descending order were internal loading (44%), watershed load from streams and runoff (31%), groundwater (17%), atmospheric deposition (6%), and septics (2%).
 - 1.1. Background (pre European settlement) Total Phosphorus (TP) range estimated to be 25-30 ug/l. Current TP based on historical data: Range 19-48 ug/l and average 35ug/l.
2. Implementation Plan: Rebecca presented the Implementation Plan and discussed internal and external load reduction strategies.
 - 2.1. Internal load reduction strategies include: Hypolimnetic Withdrawal (rexygenate anoxic water below thermocline by pumping water to surface), Hypolimnetic Aeration (aerators used to rexygenate anoxic water below thermocline), and Alum Dosing (aluminum sulfate applied to deeper area of lake). Alum dosing was determined to be the most cost effective of the 3 strategies.
 - 2.2. External load reduction strategies include: Septic System Inspection and Upgrade, No net P increase ordinance, Lakeshore buffers, Upstream Lake Improvements, Forestry BMPs, and riparian stream restorations.
 - 2.2.1. Current Contributions: Watershed (1,579 lb/yr), Groundwater (1,064 lb/yr), Atmospheric (310 lb/yr), Failing Septics (103 lb/yr).
 - 2.2.2. Required Load Reduction: Watershed (10%), Failing Septics (100% - State law prohibits any discharge into public waters), Atmospheric (No reduction), Groundwater (No reduction).
3. Final TMDL Process: Nolan summarized the final steps to getting an approved TMDL. After the public comment period ends on December 8th, Wenck, MPCA, and ISWCD will respond/address comments where necessary and finalize the document. From there the draft TMDL will go to MPCA for review and signature and then finally sent to EPA for final approval. Once the TMDL is approved, there will be additional funding opportunities to begin implementing the plan and strategies to protect Jessie Lake.
4. Public Comments/Questions:
 - 4.1. How does alum treatment work: Liquid alum is injected just below lake surface by boat. Alum strips phosphorus from the water column as it settles to the bottom and forms a sediment seal/barrier that binds any phosphorus released from the sediment, essentially eliminating internal phosphorus loading from that portion of the lake.
 - 4.2. How much alum will be required to treat Jessie Lake? Rebecca stated on the magnitude of 300k-400k gallons.

- 4.3. Will Alum treatments affect living organisms in the lake and on the lake bottom? Rebecca responded that alum treatment is a fairly old and safe technology, but you do have to be careful to get dosing correct because alum can alter pH which will affect organisms. Nolan and Rebecca agreed that if done correctly it should have a minimal affect on organisms but further research/information can be provided upon request.
- 4.4. JLWA requested alum treatment references. Rebecca agreed to provide references of groups/agencies that have done lake alum treatments.
- 4.5. Why should external loading sources to Jessie Lake be mitigated for if they are minimal in comparison to internal loading and they will have little impact on improving Jessie Lake's water quality? Noel responded that we need to reduce all anthropogenic (human) sources. Even if the sources are minor, their cumulative reduction will help improve or maintain Jessie's future water quality.
5. Recommendations: Based on historical data and modeling Rebecca stated that Jessie Lake is likely close to background levels and recommends future management be focused on protection via external load reductions. i.e. shoreland bmps, septic upgrades, no net P increase, etc.

Attendance: 16 individuals attended the meeting of which 10 were from the Jessie Lake Watershed Association.