



January 16, 2018

James Kettler  
Lakeshore Natural Resources Partnership  
PO Box 358  
Clerveland, WI 53015

Subject: Carstens Lake Management Plan Approval

Dear Jim:

Congratulations! The Department has approved recommendations within the Carstens Lake Manitowoc County, Wisconsin Comprehensive Management Plan, (2018) for potential grant funding. Approved management recommendations are considered eligible for funding under Chapter NR 191, NR 190 or NR 198 subject to the application requirements of those programs. *Please note that this approval is contingent on securing landowner permission, water regulation permits, and in some instances additional design, site, or other technical information.* Should a lake protection grant be applied for, these aspects would need to be resolved before a grant could be awarded.

The specific management recommendation eligible for potential funding is as follows:

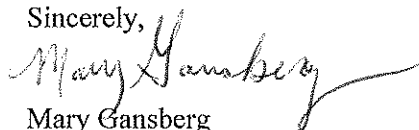
1. Design and construct engineered infrastructure to trap, settle or filter pollutants in concentrated runoff. Off-line structures shall be used adjacent to Pine Creek (Section 6.0, Grant-Funded Recommendations in draft plan).

DNR staff comments on the draft plan and supplemental documentation include:

1. While the plan recommendation as stated above is approved, more specific design details are needed to understand what hydrologic flow conditions the engineered infrastructure would likely work. For example, will the sediment basin be an effective management tool in all flow regimes?
2. The total suspended solids (TSS) loading estimate from the STEPL model is probably an overestimate of actual delivery to the lake because STEPL does not account for retention between "edge-of-field" and in-stream locations. If TSS load estimates are used for management planning, this issue should be addressed.
3. To estimate a more accurate in-lake response to phosphorus loading reductions, we need more defined WiLMS model calibration and evaluation to be conducted.
4. A contract with an operation and maintenance plan describing how the practice will be monitored and managed to ensure future performance will be necessary. The standard contract period is 25 years, although the DNR may identify an alternative timeframe if necessary.
5. While it is understood that additional best management practices are planned to be installed to improve Carstens Lake, the management plan should include a timeline of what the next steps are with implementation.

Please append this cover letter to your grant application. Feel free to contact me at (920) 662-5489 if you have any questions. Thank you for taking a lead on improving and protecting Carstens Lake.

Sincerely,

A handwritten signature in cursive script that reads "Mary Gansberg". The signature is written in black ink and includes a long, sweeping horizontal stroke at the end.

Mary Gansberg  
Water Resources Management Specialist

Email cc: Melissa Curran, Stantec  
Steve Hogler, WDNR Fisheries