FDL Long Lake Preservation Association
Lake Management Grant
Final Report AEPP-432-14

The Long Lake Preservation Association obtained the above grant on April 16, 2014. This final report covers the entire grant period of April 1, 2014 through June 30, 2016. There were no interim requests for reimbursement nor any advances.

The grant deliverables below encompass invasive species education and prevention strategies that include hiring of specialized consultants and treatment vendors as well as obtaining member volunteers to complete the lake and boat landing inspections and to be the eyes and ears on the lake for the consultant in Green Bay. With this partnership, the deliverables were met to the best of our ability.

In the following report, mention is made of the Long Lake Comprehensive Management Plan. The entire plan was finalized in March 2015 and can be found on the Association's website at http://www.longlakepreservation.org/Long-Lake-Management-Plan.php.

Project Goals

1. Provide for stakeholder participation and education by holding meetings and soliciting input via surveys.
2. Conducting at least 200 hours of water craft inspections at boat landings following the WI DNR CBCW program
3. Volunteer AIS surveillance monitoring with data entered in SWIMS
4. Shoreline condition and coarse woody habitat assessment.
5. Watershed definition and phosphorus load modeling
6. Water quality monitoring to assess lake condition.
7. Assess the aquatic plan community utilizing early-season and point-intercept surveys and aquatic plan community mapping.
8. Fisheries data integration into the final report.
9. Completion of a comprehensive lake management plan including a harvesting plan for Long Lake.

The results of our efforts are described below:

1. Goal #1 - Provide for stakeholder participation and education by holding meetings and soliciting input via surveys.

   To ensure input from stakeholders on the lake, various meetings were held to pull interested parties together for input and comment. On April 19, 2014 a general AIS Informational meeting was held with 50+ attending. The speaker was Eddy Heath an aquatic ecologist from Onterra. On June 7, 2014 a project kick-off meeting was held to introduce the project to the general public. Approximately 20 attendees observed a presentation given by Tim Hoyman, Aquatic Ecologist and Managing member of Onterra. In October 2014 a seven page, 30 question survey was made available "on line" or as an alternate paper version. Notifications were mailed to 292 riparian property owners in the Long Lake watershed. 69 stakeholders responded to the survey either in electronic or paper form. The return rate was 24%. The full survey and results can be found in Appendix B of the Long Lake Comprehensive Management Plan. Discussion of those results are integrated within various sections of the management plan.

Additional details and a full report can be found in the Long Lake Comprehensive Management Plan section 2.0 on pages 6-8 and Exhibit B.

2) Goal #2 - Conducting at least 200 hours of water craft inspections at boat landings following the CBCW program.

Each summer greater than 200 hours was spent on Long and Tittle Lake conducting boat inspections and educating the public on the health of Long Lake and the preventing the spread of invasive species. All hours were entered into the Citizen Based Monitoring System Data Base (SWIMS) by our CBCW chairperson.

2011	216 hours	
2012	220 hours	
2013	211 hours	
2014	222 hours	Claimed in June 2015 Submission Grant ACE-087-11.
2015	219 hours	Claimed in this Management Grant.
2016	85.25 hours	Claimed in this Management Grant (May and June 2016).

Prior to obtaining this grant we had an Early Detection, Rapid Response and Established Infestation Grant which also required monitoring of the boat landings. For this grant we enrolled 10 members of our Board of Directors in the Clean Boats Clean Waters workshop. As a result of that training, an internal training manual and check lists were created to keep our members up to date on the procedures required at our boat landing. Since it is very hard to get members to step up to volunteer time at the landing, let alone a day of formal training up state, in 2011 we asked the DNR if we could use an in-house trainer to train at the local level. This was approved and Tom Hinchliffe, a retired corporate trainer for Blue Cross Blue Shield conducted the training on an as needed basis as we obtained new recruits.

3) Goal #3 -Volunteer AIS surveillance monitoring with data entered in SWIMS

Unfortunately this one slipped past us. We needed some direction from Onterra but failed to follow through. In June we recognized we missed it but was too late to implement. We have since set goals to ensure this gets done in 2017 and beyond.

4) Goal #4 - Shoreline condition and coarse woody habitat assessment.

In the fall of 2014, Onterra mapped and surveyed the entire shoreland using a GPS unit to map the shoreland watershed as well as coarse woody habitat surrounding the lake.

The entire detailed discussion of the shoreland can be found in the Long Lake Comprehensive Management Plan section 3.3 on pages 32-41.

5) Goal #5 - Watershed definition and phosphorus load modeling

The watershed for Long Lake encompasses approximately 12,829 acres across Fond du lac and Sheboygan counties. It was found that the watershed area relative to the surface area of Long Lake yields a watershed to lake area ratio of 27:1. This means there are 27 acres of land draining to every acre on Long Lake. Based on Long Lake's watershed, it is estimated it takes 321 days for the water on Long Lake to completely replace itself.

The entire detailed discussion of the watershed and phosphorus can be found in the Long Lake Comprehensive Management Plan section 3.2 on pages 28-31.

6) Goal #6 - Water quality monitoring to assess lake condition.

The quality of Long Lake's water was analyzed by Onterra using scientific data. This allowed for a good indication of current water conditions and whether trends over time. Long Lake was also compared to other lakes to determine the relative status of the lake. As part of this monitoring the LLPA collected water samples and sent them to the State Lab of Hygiene in Madison. The amount of phosphorus and Zebra Mussels in the lake greatly affects the quality of the water in Long Lake.

The entire detailed discussion of the water quality can be found in the Long Lake Comprehensive Management Plan section 3.1 on pages 11-27.

7) Goal #7 - Assess the aquatic plant community utilizing early-season and point-intercept surveys and aquatic plan community mapping.

Native aquatic plants have a vital benefit to lake users and the lake ecosystem and must be enhanced and protected. The goal of the LLPA is to control the invasive species and to protect and restore native plants. To control the invasive species a combination of chemical treatment and hand pulling of weeds has been approved. The LLPA volunteers access the weed locations and provide input to Onterra both prior to treatment and post treatment. All locations of invasive species are marked by GPS and compared to prior years for changes.

The entire detailed discussion of the aquatic plant life and can be found in the Long Lake Comprehensive Management Plan section 3.4 on pages 42-43.

8) Goal #8 - Fisheries data integration into the final report.

Fish management is an important aspect in the comprehensive management of the lake's ecosystem. Statistics have been collected on the game fish in Long Lake and the stocking that has taken place since 1983.

The entire detailed discussion of the fish in Long Lake can be found in the Long Lake Comprehensive Management Plan section 3.5 on pages 70-74

9) Goal #9 - Completion of a comprehensive lake management plan including a harvesting plan for Long Lake.

The vegetation surveys revealed that the aquatic plant life of Long Lake is of higher quality than the majority of lakes within the ecoregion and is in line with lakes throughout the state. However, aquatic invasive species in some areas have reached levels that can negatively impact the ecosystem as well as cause user recreational conflicts. In some areas aquatic plant growth has Impeded navigation on the lake. The LLPA applied for and received a WDNR AIS Established Population Control grant to aid in a multi-year AIS control program on Long Lake. The goal of this program is to continue to reduce the amount of curly-leaf pondweed and Eurasian water milfoil within the lake to manageable levels.

The following are the Deliverables requiring implementation for Long Lake.

1) Use education to promote lake protection and enjoyment with stakeholder education through continued issuing of three newsletters per year, ongoing email communications and other means as they present themselves.

2) Monitor water quality through WDNR Citizens Lake Monitoring Network (CLMN). This includes collecting water quality information on the lake.

3) Control existing and prevent further aquatic invasive species infestations on Long Lake by herbicide treatment as well as hand pulling. Action would be based on a yearly plan backed by Pre and Post season monitoring closely directed by Onterra. Without these actions over the last five-year period, the AIS threatened to overtake the native aquatic plants as well as disrupt the public's enjoyment of the lake by clogging the boat motors and reducing the fishing on the lake. The LLPA will continue to provide at least 200 hours of Clean Boat Clean Water monitoring at its public boat landing. Volunteers will attempt to reduce the occurrence of purple loosestrife and common reed (Pharagmites). In addition to treatment, through our newsletters, we have encouraged our members to manually control weeds by hand pulling and raking. The phone number of a member who pulls the weeds for a fee was included in our newsletters.

4) Improve fisher resource and fishing by protecting and restoring the shoreland condition of Long Lake. As part of this goal, the LLPA will investigate restoring and protecting highly developed shoreland areas around Long Lake. The LLPA will coordinate with WDNR, Boy Scout Camp, LLFC, and private landowners to expand coarse woody habitat in Long Lake.

5) Maintain navigability on Long Lake. The LLPA's actions will target nuisance levels of aquatic plants in order to benefit watercraft navigation patterns. To help with this effort, the LLPA obtained a harvesting permit from the DNR and a contract with a mechanical harvesting firm to harvest approximately 4 acres annually. Harvesting will follow a DNR detailed protocol.

   The entire detailed Implementation plan for Long Lake can be found in the Long Lake Comprehensive Management Plan section 5.0 on pages 76-95.

To summarize, actions taken by the LLPA and Onterra to access the lakes health and aquatic plant life in a management plan has allowed the LLPA to apply for DNR's Long Lake AIS Monitoring and Control Grant. On March 26, 2015 that grant was approved for April 15, 2015 through June 30, 2019. The grant amount awarded was $81,745.92. As a result of the approved grant, the LLPA will now be able to focus on implementing the deliverables 1-5 above.