



2018 Long Term Lake & Watershed Management Plan - Summary Report

LLPOA Lake Committee - 2023

Complete Report: https://lochlomondlake.com/wp-content/uploads/2019/07/LLPOA_Management_Plan_2018-09-24.pdf

Project Purpose

The 2015 Loch Lomond Water Quality Report Summary, prepared by the Lake County Health Department, identified the need to prepare a long-term (10 year) management plan for Loch Lomond, which this document addresses. This long-term management plan not only focuses on the lake itself, but also highlights the fundamental influence of the contributing watershed, located primarily in the Village of Mundelein, Lake County, Illinois.

The primary purpose of this plan is to identify watershed goals and action items that can address point and nonpoint source pollution affecting Loch Lomond. This plan provides principles and guidelines for addressing current and future watershed and water quality issues. **The following items were identified as priorities for long-term management of the lake.**

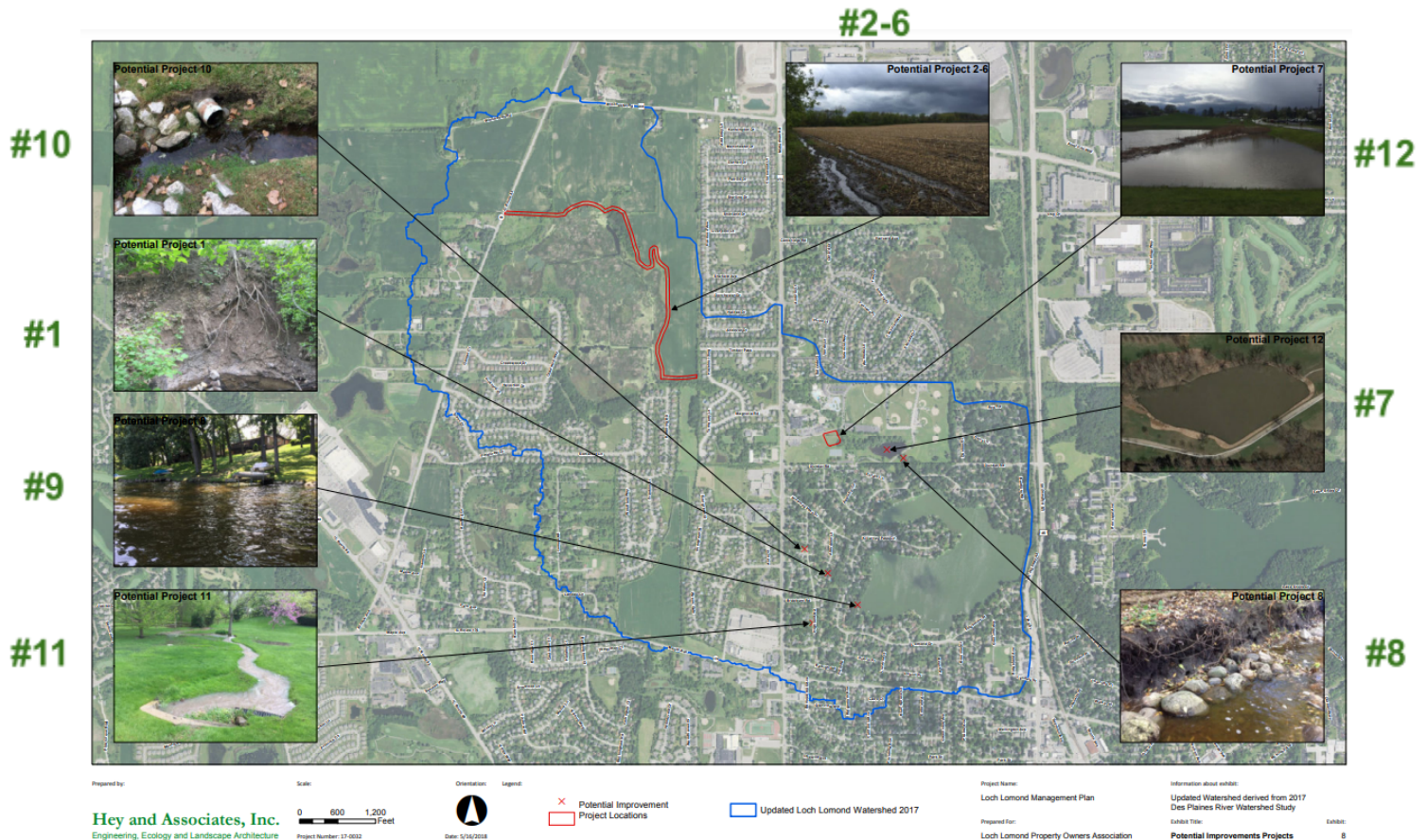
- **Improve water quality**
- **Improve water clarity**
- **Manage excessive aquatic plants**
- **Prevent algal blooms (floating and planktonic)**
- **Combat invasive aquatic plants**
- **Prevent erosion and sedimentation**
- **Improve habitat and sustain the fishery**
- **Maintain recreational uses**
- **Sustain property values**

This plan has been prepared by Hey and Associates, Inc. for the Loch Lomond Property Owners Association (LLPOA).

Potential Projects And Priorities

Following field reconnaissance and examination of available data, **12 potential projects** for the Loch Lomond watershed have been identified. The primary goal of these proposed projects is to **combat transport of excess sediment and nutrients by targeting watershed runoff and erosion prior to discharge into the lake.** Repairing existing channels and exploring Best Management Practices (BMPs) in key locations could help stabilize conditions and improve long-term water quality on both Loch Lomond and water bodies downstream.

Potential Projects to Improve Water Quality of Loch Lomond



Project 1: Stabilize bank erosion on a specific residential property in the South Bay.

There is severe erosion on the channel side slope. Proposed improvements: grading banks to a natural slope, stone toe protection, erosion control blanket, and planting native vegetation to stabilize banks.

Projects #2-6 relate to the same 121 acres agricultural land south of Winchester Road and east of Route 83.

Project 2: Enhance farmland adjacent to the large upstream wetland by planting a 50- foot buffer.

(A 50-foot wide (NRCS recommended width) vegetated buffer strip.) This riparian buffer is designed to span the length of the wetlands complex, as it is adjacent to the upstream agricultural field located to the north and east. This buffer is calculated to be approximately 7 acres in size and would capture sediment and nutrients from field runoff prior to them entering the wetland.

Project 3: Enhance farmland adjacent to the large upstream wetland by planting a 100- foot buffer.

The vegetated buffer strip could be created to span the perimeter of the wetlands complex, as it is adjacent to the upstream agricultural field. This buffer is calculated to be approximately 14 acres in size and would capture sediment and nutrients from field runoff prior to them entering the wetland.

Project 4: Convert 121-acre agricultural land to hay/perennial crop.

Row crops generally facilitate conditions that contribute to sedimentation and nutrient transport.

Project 5: Convert agricultural land to prairie.

The 121-acre agricultural field could be converted from row crop to prairie. This practice would significantly reduce seasonal runoff of nutrients and eliminate new inputs.

Project 6: Create and adopt a Nutrient Management Plan (NMP) and implement no-till practices.

Nutrient Management Plans are conservation plans that document strategies and best management practices (BMPs) focused on reducing nutrient-laden runoff from fields. The purpose of no-till practices are to limit soil disturbance. Soil disturbance increases the erosion potential because soil particles become loose and more susceptible for transport.

Project 7: Modify the detention basin on the MPRD property. *COMPLETED!*

An outline of the current 1-acre dry detention basin with a 25-foot buffer. Potential improvements include transitioning to a wetland bottom basin and planting a native prairie buffer around the basin. These basin enhancements would help to treat park runoff prior to it entering the creek.

Project 8: Channel stabilization downstream from the pond on the MPRD property. *COMPLETED?*

The banks directly downstream from the Keith Mione Community Park Pond, are bare and vertical. Sediment from the banks can be eroded and easily transported downstream, directly into Loch Lomond. Bank stabilization maintenance, including stone toe protection, bank regrading, and native plantings, in this location could minimize future erosion and decrease sediment entering the lake.

Project 9: Stabilize shoreline erosion on a specific residential property. *(on Lomond)*

During the shoreline erosion field reconnaissance, it was noted that there was active erosion. Adjacent properties to the north, extending to the inlet to the north, were also noted as potential shoreline erosion sites. Rip-rap shoreline stabilization and native plantings offer a natural approach to decrease erosion potential. Typically, native shoreline buffer plantings provide erosion protection, water quality treatment, and wildlife, invertebrate, and fisheries habitat.

Project 10: Stone armor channel portion flowing on a residential property. *(on Highland)*

Smaller headwater channels meander through residential properties in this area. Using stone and small boulders, these channel sections could be armored to slow water movement, encourage infiltration along the flow path, limit erosion, and limit downstream sedimentation.

Project 11: Stone armor channel portion flowing on a residential property. *(on Highland)*

Some portions of this channel remain bare and could be contributing sediment and nutrients to the lake. Stone armoring would provide stabilization for these portions of the channel.

Project 12: Treat the pond on the MPRD property with alum or Phoslock®.

The goal of these suggested pond treatments is to sequester phosphorus upstream of the lake at Keith Mione Community Park. Phoslock®, or similar alum treatments, bind to free reactive phosphorus in the water column and permanently deactivates it. <http://www.sepro.com/phoslock/>. Alum (aluminum sulfate) is used to control the internal recycling of phosphorus in a waterbody.

Additional Information

Loch Lomond Sampling Sites 2016-2017

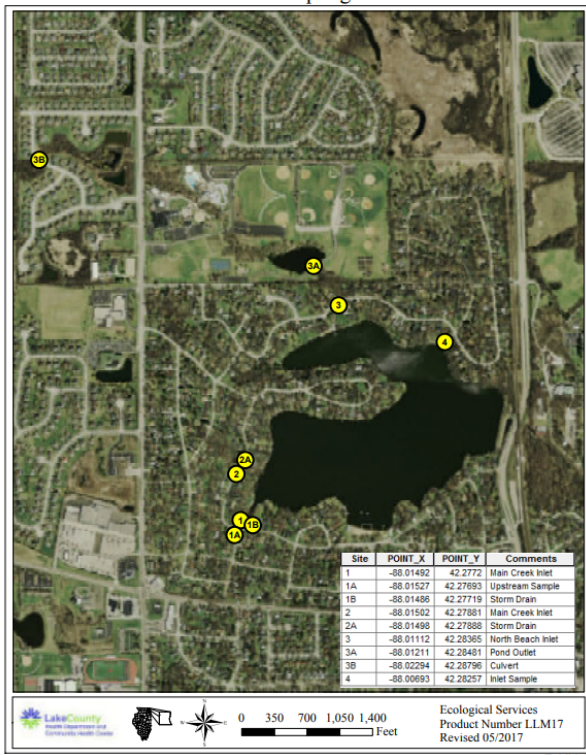


Figure 1. Lake County Health Department 2017 Phosphorus Sampling Results. Note: US EPA Phosphorus goal is 0.05 mg/L.

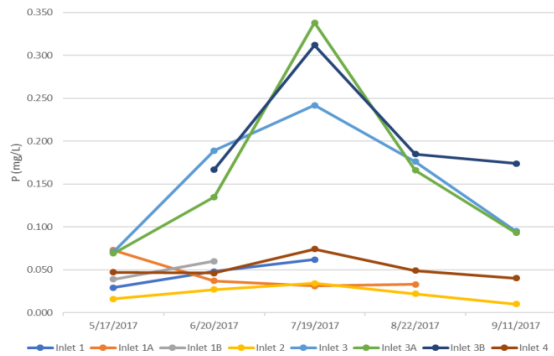


Figure 3. Lake County Health Department 2017 Chloride (Road Salt) Sampling Results.

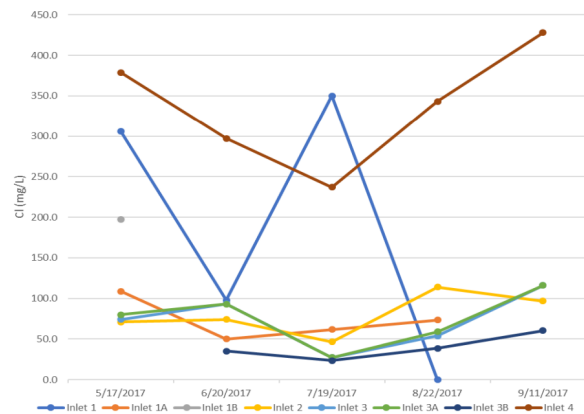
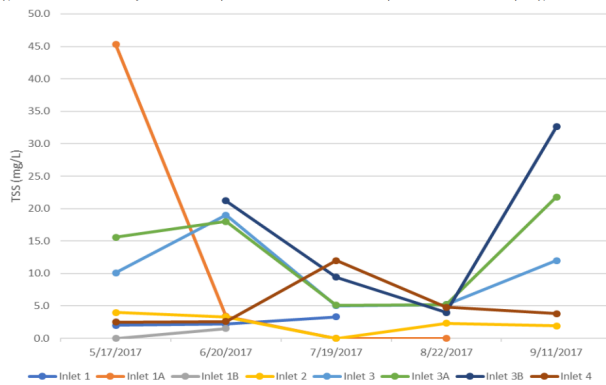


Figure 2. Lake County Health Department 2017 Total Suspended Solids Sampling Results.



Observations:

- **High Chloride (i.e., road salt)** - entering 1. Firth Canal and 2. Dairy & Banbury
- **High Phosphorus (i.e., fertilizer)** - entering 1. North Beach inlet Nov. 2016 & July 2017
- **High TSS - Total Suspended Solids (i.e., fertilizer)** - entering 1. Community Park Nov. 2016 & September 2017; and 2. Firth Canal 1A (not 1B) May 2017

Information & Other Resources

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