Lake Owen Association Lake Manager Activities Report
Board Update August 16, 2020

Lake Protection Grant

With $33,156 in eligible expenses since the beginning of 2020, the grant payment will be $24,867. **The grant balance remaining is $85,884.** This may change slightly with decon site September payroll.

A grant extension request through 12/31/2021 (or 2022) is recommended.

Related Planned Activities

- ✓ Board review/update strategic plan implementation tables – new tactics for 2021 (October 21 board mtg.)
- ✓ Grant Steering Committee Meeting (late October)
- ✓ Lake Manager evaluation/review Zoom meeting (early November)
- ✓ Request Lake Protection Grant extension (early-mid November)

North Landing, Decontamination Station

Signs were installed and North Landing decontamination station is operational. It is now open daily.

Discuss board scheduling preference for closing out the season

Infiltration Technical Assistance and Cost Sharing - Seeking board recommendation/approval, October meeting ok

Continue discussion regarding technical assistance and potential cost sharing for infiltration projects to reduce runoff of nutrients and sediment to Lake Owen. Follow-up comments from Steve (provided after the August board meeting):

Infiltration projects- While we don't have the watershed analysis completed, I can tell you this, the direct watershed (where water will actually make it to the lake) is less than 3:1 watershed to the lake area. This small watershed helps explain the water clarity on Owen and means that the watershed will have a small contribution to the water and nutrient load in the lake. Add to the fact that most of the land is forested, and I would say most of the houses have a pretty good buffer between the structures and the lake. However, this means that any developed areas will have a higher impact on the watershed. It also makes identifying key areas to focus upon very easy. The condo area in the southwest bay area is a slam dunk. We don't need an analysis to logic that this is the best area to focus on right now. It has, by far, the largest concentration of impervious surfaces and open space for water to runoff. I would also agree to focusing on a few key areas in Otter Bay.
Regarding runoff quality from impervious surfaces: there is no such thing as "clean runoff." Without even testing we can guarantee that the P in the runoff from developed property is higher than in the

lake. Also, these properties are likely not a problem now, but since most P is retained in the system, it will accumulate, so any mitigation is going to be helpful. You may not enjoy it, your kids may not, but your great grandchildren may thank them. However, the condo area is MUCH more of an issue than any other single property on that lake and I think you should focus on that as soon as you can.

Water quality/watershed analysis

We continued to collect data to model the lake water quality. This includes nutrient (phosphorus) profiles, temperature/DO/specific conductance profiles, and water budget data of precipitation at the lake and outflow at the outlet. This year it appears we are getting slightly lower nutrient values and lower chlorophyll values than in 2019.

Jake Macholl, the GIS specialist/hydrologist, recently submitted the watershed analysis of land use. The initial data is entered into the water quality model, and we will complete this model once all of the 2020 data is collected. We will have a large dataset to calibrate the model. Once the model is complete, we will do an analysis to predict the impact of building out undeveloped land. We also hope to identify key areas of runoff contributions.

Groundwater study

Jake collected base-map data from the county level (generalized water-table elevation, depth to bedrock, infiltration rates, precipitation) and state level (land surface elevation, geology, private well locations) from various sources, primarily the USGS (U.S. Geological Survey) and WGNHS (Wisconsin Geological & Natural History Survey) and the WDNR. State private well location records are imprecise, and we may be requesting additional information from homeowners regarding well locations.

In addition, groundwater sampling is in progress. Samples will be analyzed for phosphorus to verify it is low. Also, they will be tested for chloride to verify that septic effluent water is not in the water samples. Chloride is naturally low in lakes, especially in late summer. Chloride levels can be elevated in septic effluent, and because chloride doesn't bind to sediment, it will travel with the water.

AIS

The aquatic invasive species meander survey took place on August 20. No other locations of phragmites were found, but concern about this prohibited invasive plant remains high because there is a patch growing on Lake Owen. Seed heads were removed from the large clump of yellow iris on private land during the AIS survey. As described in the August report, manual and chemical removal of yellow iris is planned for 2021.

The zebra mussel sample plates were checked and no mussels were present. We use this simple method to monitor partly because the susceptibility of zebra mussel establishment in Lake Owen is relatively low.

Side note: We located two previously unidentified species of plant species this summer: water lobelia and water horsetail. Water lobelia is a sensitive plant with the highest conservatism value of 10.