LPT71821 INTERIM REPORT December 2023

Deer Lake Conservancy

Best Management Practice Installation and Inspections

Homeowner projects installed on 3 Deer Lake properties in 2023 included 4 Healthy Lakes native plantings and 5 rock infiltration areas with a rock diversion connecting them. Cheryl Clemens, Executive Director, completed designs and supervised construction for these projects. The rock diversion and infiltration project has an operation and maintenance agreement of 20 years registered on the property deed. Additional permits were not needed because this was an active construction site with a current land use permit.

The Executive Director completed technical assistance visits to 12 properties in 2023. Six of these were visited in previous years. Three resulted in the projects described above. Designs or preliminary designs were completed for an additional three properties. Others were interested in general advice for maintaining their shoreland, were investigating potential best management practices, needed guidance for maintenance, or were hoping to qualify for a natural shorelines heron (described below). Some of these owners (and others in 2021 and 2022) expressed reluctance to cost share projects which required a 20-year maintenance agreement.

Two basins were installed to capture runoff from a farm field prior to entering the Watershed 1 North Pond in 2022. This pond is directly connected to Deer Lake by an intermittent stream. Polk County Land and Water Resources Department Engineering Technician Karsten Petersen completed project designs and supervised construction. Installation costs and photos were included in the 2022 grant report, and engineering charges were billed and reported in this cycle.

Inspections of large-scale BMPs on Deer Lake Conservancy and private property continued in 2023. We used our operations and maintenance manual to guide BMP inspections. Maintenance costs are not included in the reimbursement request.

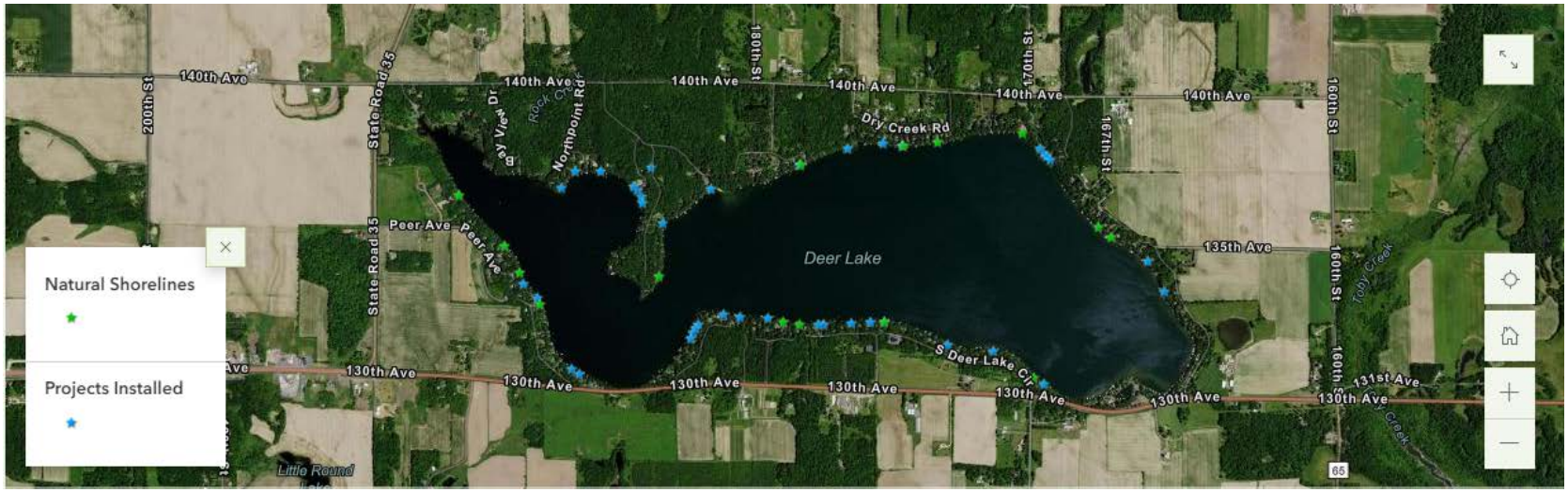
Outreach and Project Promotion

The Deer Lake Conservancy held Float and Learn events on the lake in 2022. Lake Scientist, Steve Schieffer, shared information about water quality monitoring, invasive species, and aquatic habitat with a total of 19 participants at 2 events in July and August.

A volunteer committee continued to guide the shoreland educational strategy. A highlight of the strategy is recognizing owners who have installed BMPs, and those who have natural shorelines, with a shoreline marker in the shape of a heron. We continued distribution of the markers for new project installations in 2023. Follow-up inspections were completed prior to awarding the marker for projects installed prior to 2017. These inspections will continue in 2024. The 2021 shoreland inventory provided a starting point in identifying eligible natural shorelines. Natural shoreline sites were re-evaluated with a follow-up lake tour in 2023. As a result, we were able to offer heron markers for a few additional properties.

An ArcGIS storymap of the heron marker sites shows where owners have installed best management practices and where natural shorelines exist on Deer Lake. The WI shoreland buffer standards (Wi Biology Technical Note 1) are used to identify natural shorelines. We emailed the map link out to lake residents and also linked the map on the Deer Lake website. When viewing the map via cell phone on the lake, it is possible to bring up your location on the lake relative to the markers.

https://www.dlcwi.org/projects/deer-lake-herons/



The website also includes examples of various types of projects installed and directions on how to obtain technical and financial assistance.

https://www.dlcwi.org/conservation/home-owner-projects/

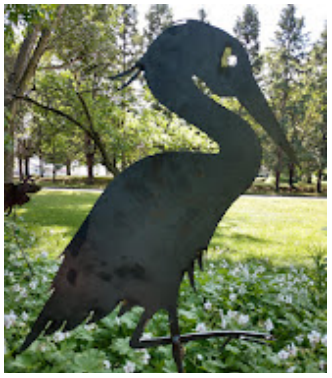


Table 1. Best Management Practices Installation Summary

Owner	BMP	Date Installed	Cost
Johnson	Native Plantings (3)	September 2023	$1,859
Lagus	Native Planting (1)	September 2023	Not submitted
Mortenson	Rock Infiltration (5) and Rock Diversion (1)	July 2023	$8,050

We are waiting for results of UW-Stevens Point (Dr. Paul McGinley), *A Model for Estimating the Phosphorus in Runoff from Shoreland Development,* and will include nutrient and sediment reduction estimates in the final report.

Johnson - Native Planting (3, 350ft^2 plantings - 1300 ft2, 45.5 ft of shoreline, prairie)

Johnson

Before: August 2023

Johnson

After: September 2023

Lagus Native Planting (1, 375ft^2 planting, 36.5 ft shoreline,woodland planting)

Lagus

Before: June 2023

Lagus

After: September

Lagus

Before: June 2023

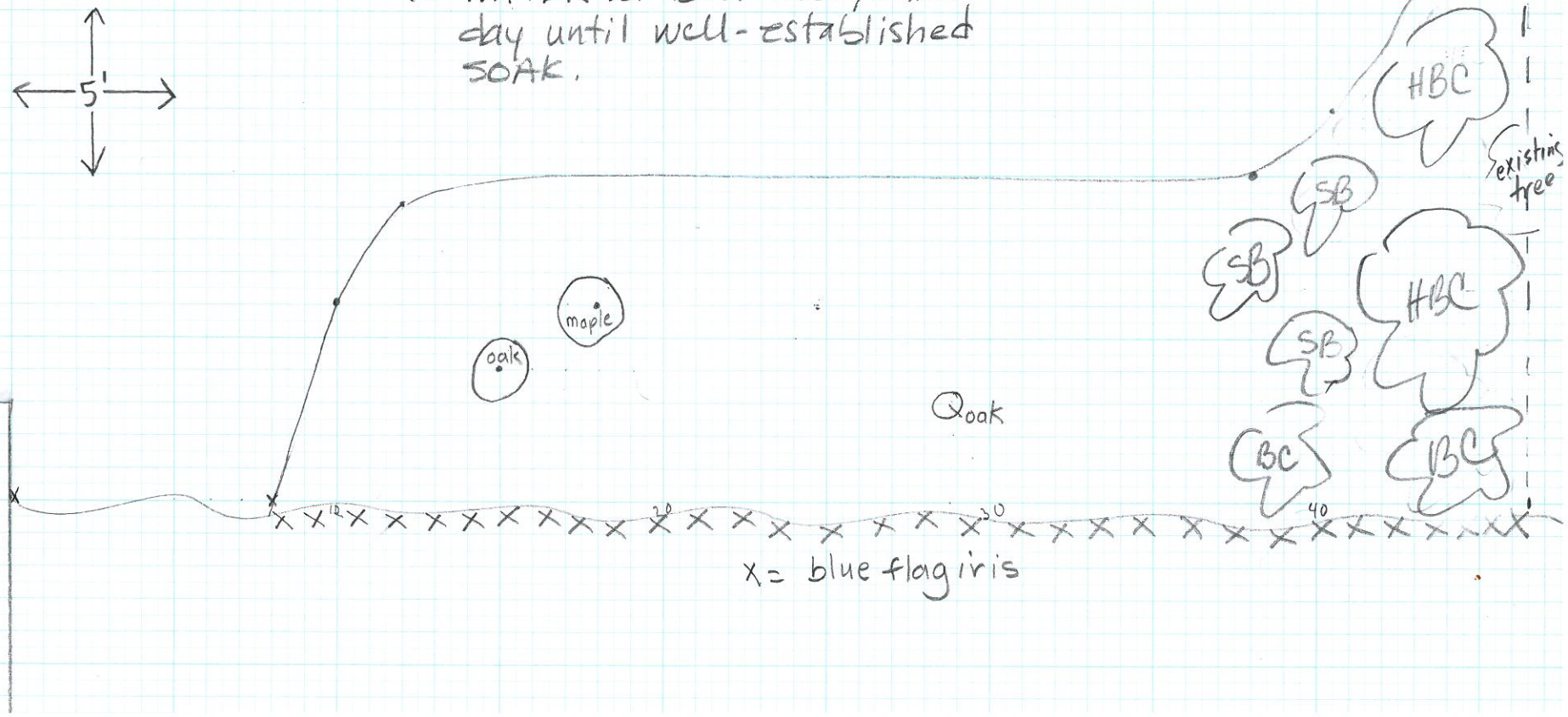
Lagus

After: September 2023

Arne and Miriam Lagus
1354 Hungeford Pt Rd
Native Planting (2)

1- Spot Spray lawn grass, reed canary grass, poison ivy (avoid PN Sedge)
2- Remove thick areas of dried lake weeds - spread out for mulch.
3- Plant shrubs at lot line -
4- Plant mix of blue flag iris / sweet flag close to shoreline (or all blue flag.
5. Plant shady/dry mix of plants throughout remainder. Use Pennsylvania Sedge as a base.
6. WATER at least every other day until well-established SOAK.

HBC = High Bush Cranberry
SB = Snowberry
BC = Black Chokeberry



Mortenson Runoff Reduction Project

Before:

June 2023


After:
July 2023


After:
July 2023

Roger and Elizabeth Mortenson
1300 186th Street
Deer Lake

Runoff Reduction Plan

The runoff reduction plan includes a rock diversion channel between and to four rock infiltration pits. The bottom pit will overflow into an existing rock infiltration area.

Silt fence must be installed below any areas of excavation or where excavated or construction materials are placed.

All areas disturbed during construction to be seeded with a lawn grass mix suitable for shade.

Rock diversion

Grade the area to direct flow to the rock infiltration areas in a channel which is sloped to a flat 1 foot center. Cover with filter fabric and 4-6 inch rock. Seed disturbed areas with lawn grass. The rock diversions will direct water to the rock infiltration areas.

Rock pits

1. Dig a pit of the specified size. The rock infiltration pits will be 4 feet deep. Top dimensions are indicated on the site plan. The bottoms will be level, so the excavation will be deeper than 4 feet on the uphill sides. The augured holes will be 28 inches deep.

2. Line the sides of the pit with 8 ounce filter fabric.

3. Fill the pit with clean, ¾ to 2 (AKA 1 ½") inch washed rock. Maintain a slight depression in the center to encourage water to soak into the infiltration area. Cover top with filter fabric and top with 4-6" rock on the surface.

Rock trench

To create a flat bottom the rock trench will be about 2 feet deep on the uphill side. A berm of the same height will be created on the downhill side (below the 28" deep augured hole) and stabilized with rock boulders. Follow with steps 2 and 3 above.

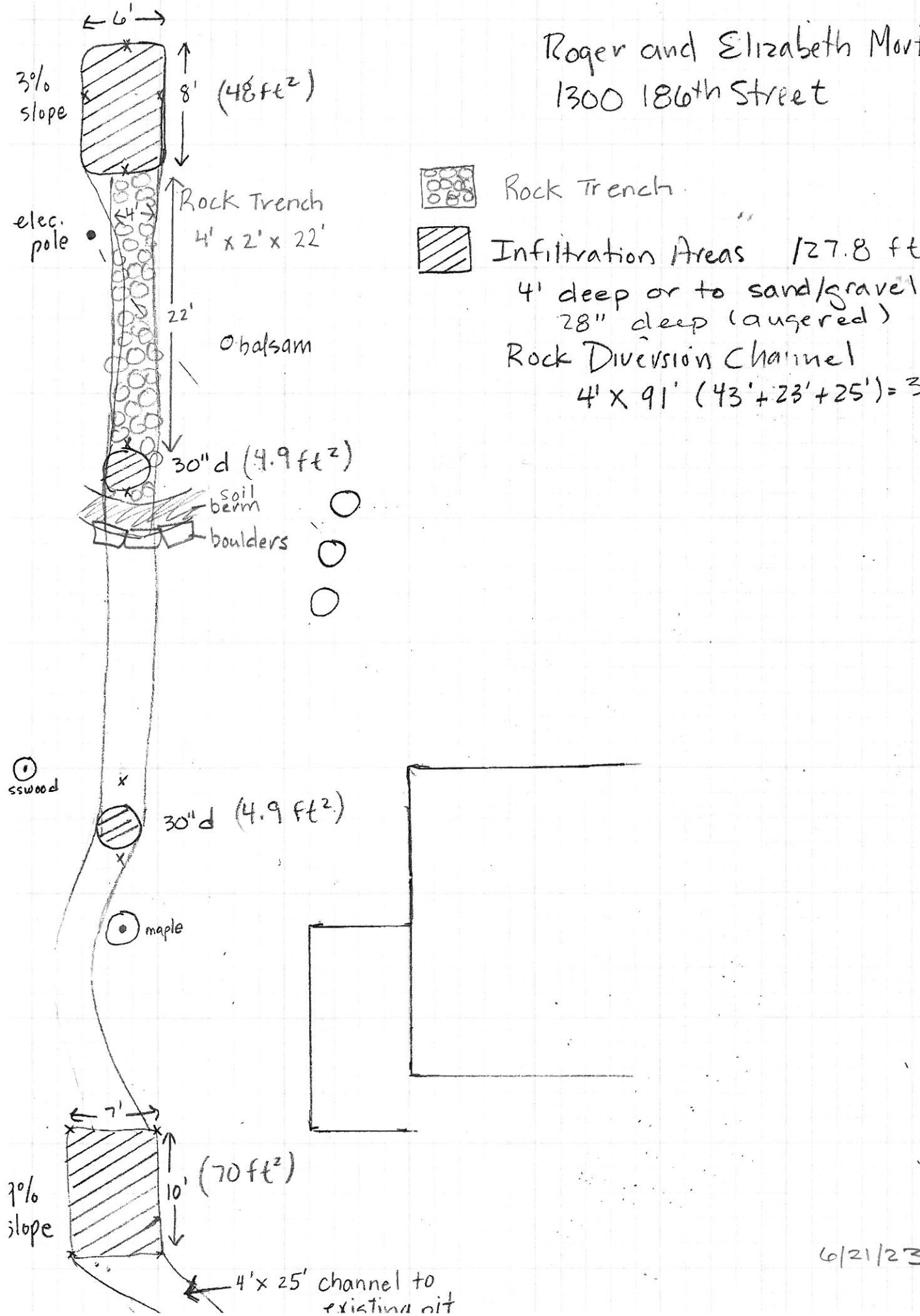
Operation and Maintenance

<u>Rock infiltration area, diversion, and overflow</u>

To prolong the life of your infiltration area, regularly remove pine needles, fallen leaves, and any other debris that collects on the surface. A leaf blower works well for this function.

During construction above the infiltration area:
Install silt fence to prevent sediment from entering the infiltration area and maintain until disturbed areas are stabilized.

Roger and Elizabeth Mortenson
1300 186th Street



Rock Trench

Infiltration Areas 127.8 ft²
4' deep or to sand/gravel (pits)
28" deep (augered)

Rock Diversion Channel
4' x 91' (43' + 23' + 25') = 364 ft²

6/21/23