Final Report On Tychsen Rain Garden
Healthy Lakes Grant LPT 56217.1
Little Arbor Vitae lake
Vilas County

The Little Arbor Vitae Lake District received a grant in April 2017 for the construction of 3 Rain Gardens for a total of $3000 ($1000 each) as part of the Healthy Lakes grant Program

Three property owners at Blue Island Resort and Condominiums each sponsored a Rain Garden project adjacent to their home. Each Owner owns their home site and a 1/10 interest in the common property with the other 10 owners.

Blue Island Resort and Condominiums was a resort converted to condominiums. It dated from the 1930s The terrain is rolling and rises from the shore line upward toward Blue Island Road. Some road drainage and a majority of the lawn area slopes to the lake. From years of removing leaves by blowers and little effort to rejuvenate the lawn it had lost most of it's top soil and became a sandy type lawn subject to erosion.

The owners had created a plan to revitalize the common ground with the owners self assessing themselves to annually do improvement projects. The Healthy Lakes Grant project allowed them to get some assistance. It provided a basis for a much larger project both up slope and down slope from the actual Rain Garden.

Two of the projects were completed in mid year 2017. The 3rd project needed to be relocated due to fencing requirements.This report covers the relocated project which was approved by the DNR in early 2018. The 1 year grant was extended to 2 years

The calculations said it would take a Rain Garden of 125 square feet to handle the water coming down slope to the Garden location. The top of the slope contains large boulders and large pine trees with numerous large exposed roots. The rain garden built contains 200+/- square feet. The larger garden would capture more of the water coming across the slope. It will also recive some water from the rain garden built in 2017 during heavy rains.

The rain garden was planted with plants from the list of deer resistant plants on the native plant list. In 2017 only 3 inch plants from Agrecol Nursery were used. This garden was planted with 32 3 inch plants of 4 varieties from Agrecol and 5 and 6 inch plants sourced from local nurseries. The larger plants will flower this year and will help the garden fill in faster than all 3 inch starter plants.

The garden was complreted on June 12. On June 15,16 and 17 the garden received 6 6 inches of rain coming in a series of heavy down pours each day. The garden remained intact during the Friday storms but the lower berm was breached Saturday morning. A quick trip to Walmart and 8 bags of river pebbles the breached area was turned into a stone spillway that allowed the garden to fill with water but not over flow the fresh berm.

In using the soil removed from the garden area as the lower berm it needs to be compacted, even so it can become saturated during a longer rain event and weaken its resistance to washing out. Our 2017 gardens handled the 6.6 inches of rain with out failure. The berms had the benefit of being in place over winter and became solid and can handle over flowing.

The excavation was done by hand due to the numerous roots and stones . Two large roots cross through the garden as they are important anchor roots. There are several photos of the construction in the appendix A.

About 4 cubic yards of topsoil was used in the bowl of the garden and 10 more cubic yards were used on the up slope side. The upslope was seeded with a local seed mix for this area and the entire slope was covered with straw erosion mat stapled down. There was no failure of the straw matting from the heavy rain and seed remained in place. This has proven successful on other resort projects. Cedar mulch was used around the lower berm of the Rain Garden. This particular bulk mulch is used by local landscapers as it has high resistance to washing away.

Plants were chosen from Agrecol's list of native plants that are deer resistant. Both 3 inch starter plants were purchased as were larger potted plants from local venders. The larger plants will take root this year while the smaller plants develop root systems and will fill out next year. Some local favorites of deer resistant plants were also used. The east end of the garden was planted with grasses both using starter plants and seed. This will provide a strong root base where the rock spillway comes into the garden.

Watering commenced the day the plants were put in place. The grass was up in 5 days. Having enough annual rye will provide cover while the other slower growing grasses develop.

Some rock drainage ways were added on the up hill side to better direct the water to the garden. The heavy rain showed what would be needed to better the performance.

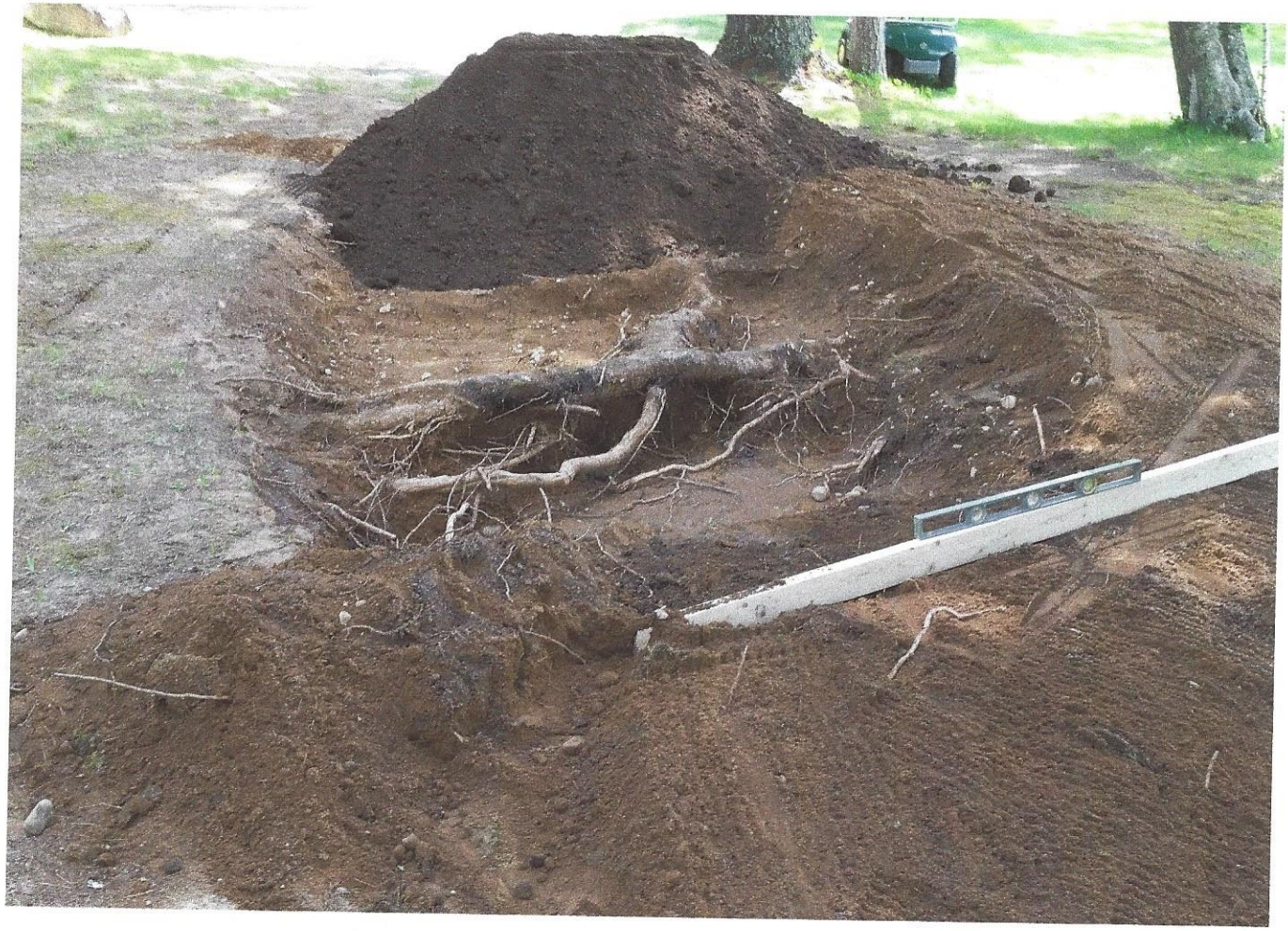
Project was touched up and totally completed on June 24th 2018.

Completed pictures are in Appendix A

Cost break down is in Appendix B

Appendix A

Site # 3 Before



Ran into a few roots
slow digging during the Hot week in
May

First test - early morning June 15, 2018

Appendix B

Project Cost Rain Garden 3
Grant LPT 56217.1

Topsoil	Trap Brothers	$461.30	
Topsoil spreading	Trap Brothers	NC	
Straw mulch	Ace hardware	$113,19	
Grass seed	Ace Hardware	$ 42.87	
River Pebbles	Walmart	$ 21.90	
Plants	Walmart	$124.60	
Plants	Agrecol	$113.94	
Cedar Mulch	JJ's Green House	$ 47.46	
Cedar Mulch	JJ's Green House	$ 47.48	
Cedar Mulch	JJ's Green House	$ 47.48	
Contract labor	John Debor	$190.00	$1210.00
Volunteer Hours	28 @ $12.00/ Hour	$336.00	$1546.00