

The background of the slide features a stylized, dark teal and purple leaf pattern. The leaves are large and have prominent veins, creating a textured, organic feel. The overall color palette is muted and earthy.

Shoreline Restoration

Before/After Photos, Restoration
Designs, Discussion of Standards



Topics

- Standards for Planting – BioTech Note 1
NRCS Standards

- Density of plant plugs, seeding rates, shrubs, trees
- Reference WI Native plant lists

- Before and after photos

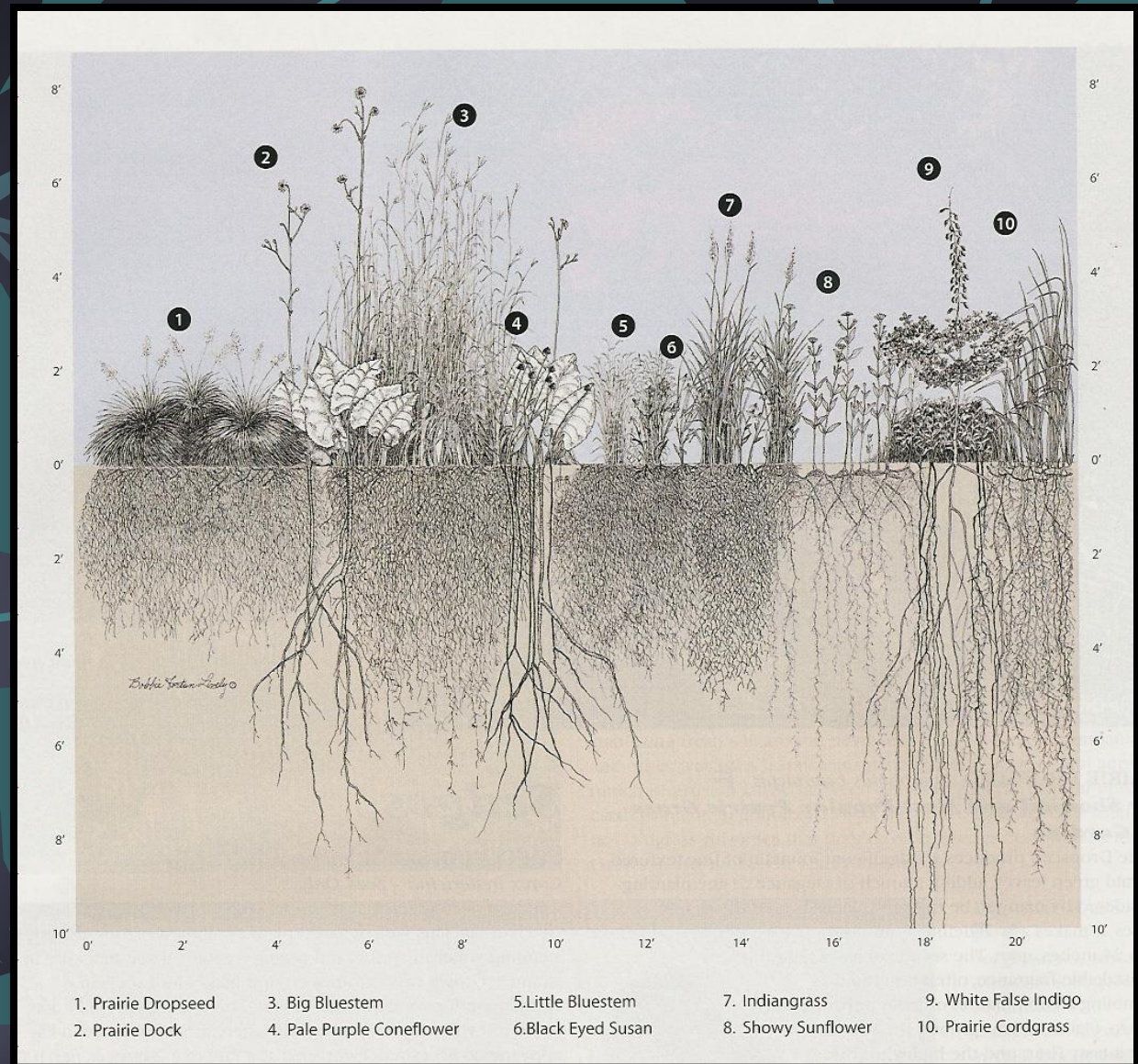
- A large variety of sites

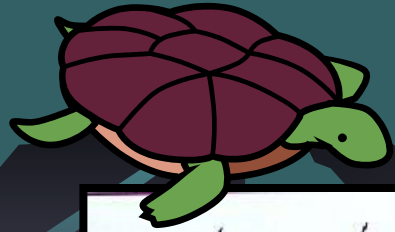
- Recommendations

- Training landscapers
- Some flexibility in design

Rooting Depths of Native Plants

■ Why native plants???





Breakdown of a Buffer

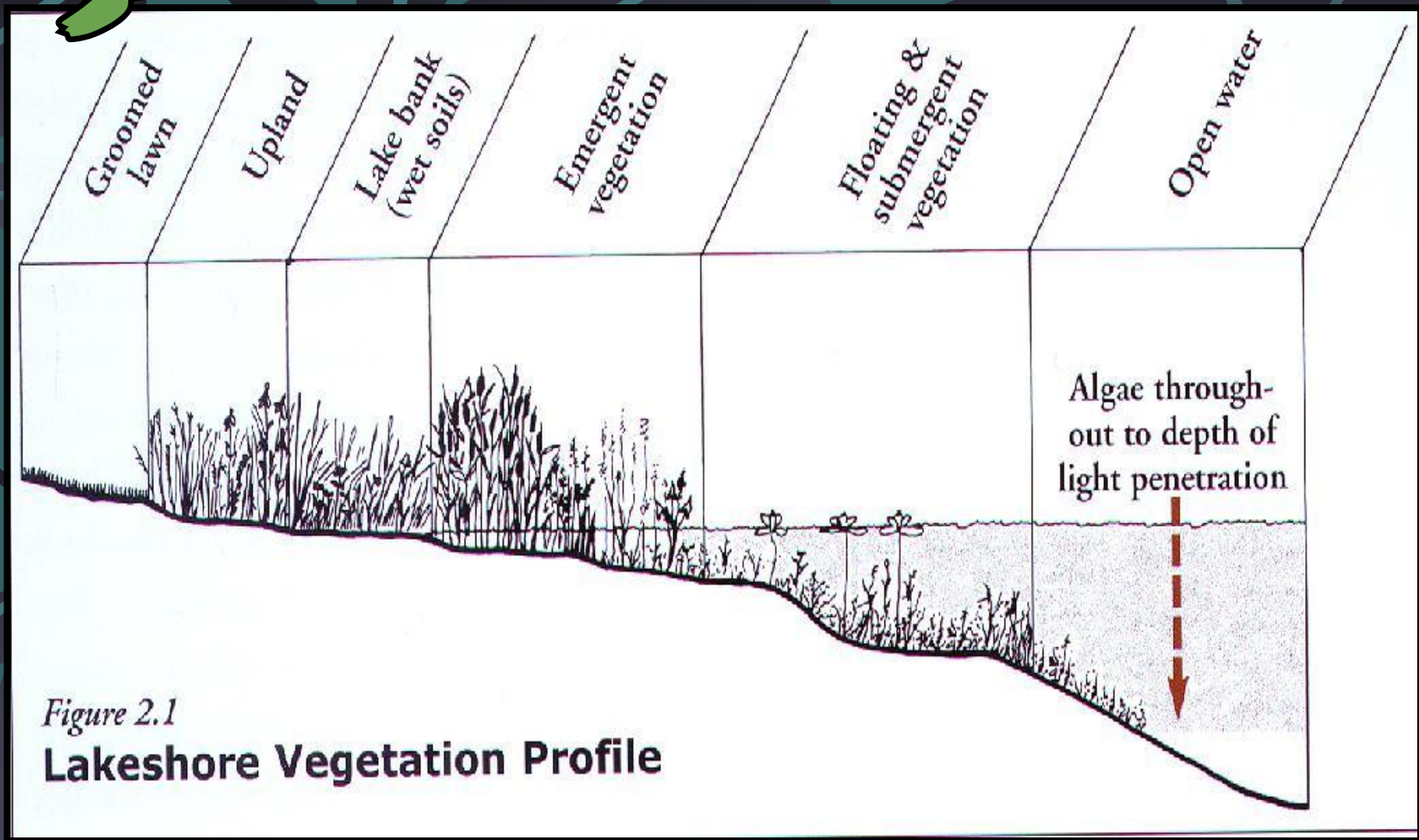


Figure 2.1
Lakeshore Vegetation Profile

Each part of a buffer zone has a function.

Functions of a buffer

- Reduce pollutants entering lakes and rivers
- Provided much needed habitat for wildlife
- Provide screening from the lake
- Provide erosion control for sensitive shoreline areas

What is an effective buffer?

- Dense vegetation
- Vegetation that consists of multiple species
(Diversity helps meets various habitat needs)
- Vegetation consisting of multiple canopies



Restoration Strategies

- Protection
- Natural Recovery
- Accelerated Recovery



Wisconsin Biology Technical

Note 1 : Shoreland Habitat

Table 1. Shoreland Habitat Planting Densities

	Woodland		Wetland or Barrens/Dry Prairie/Wet Prairie	
Layer	Minimum Number of Species ¹	Density	Minimum Number of Species ¹	Density
Trees ²	2	0.5 – 5 per 100 sq. ft.	0	0 - 0.2 per 100 sq. ft.
Shrubs	3	1 - 4 per 100 sq. ft. <i>If clumped, maintain min. 2 foot spacing</i>	2	0.2 - 0.5 per 100 sq. ft. <i>If clumped, maintain min. 2 foot spacing</i>
Herbaceous Cover ³				
- Plant plugs	3	25 –75 plants per 100 sq. ft. <i>Soil must be mulched</i>	5	50 – 100 plants per 100 sq. ft. <i>Soil must be mulched</i>
- Seeding	3	Grass/Sedges: 4-8 oz. per 1000 sq. ft. Forbs: 2-4 oz per 1000 sq. ft.	5 ⁴	Grass/Sedges: 4-8 oz per 1000 sq. ft. Forbs: 2-4 oz. per 1000 sq. ft.

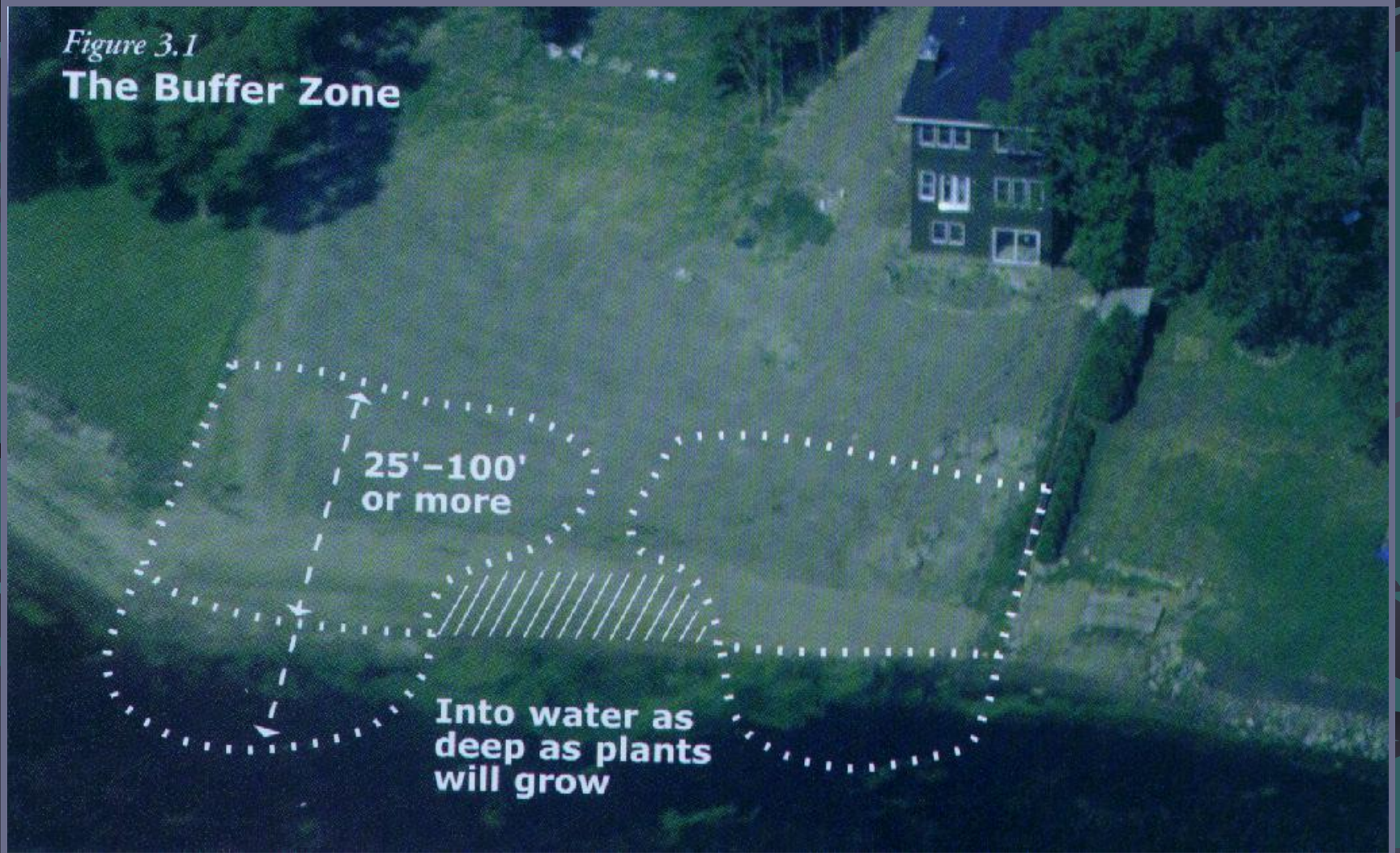
Individual County Restoration Requirements

- Mitigation for
 - Impervious surface
 - Structure within the setback
 - Removal of exotic species
 - Etc.
- Restoration sizes vary
 - 37 ½' or 35' or 15' deep

Possible Planting Areas

Figure 3.1

The Buffer Zone



After Rip Rap



Big, big trees – 310 of them



Late October



Lake Sinissippi, Dodge Co.



Landowner
wants to add a
Gazebo



- Detailed sketch
- Structures
- Setbacks
- Existing vegetation

SITE PLAN			
OFFICE USE ONLY			
Please note permits are issued based on findings of the Department on-site inspection (See Attached) and NOT the information provided by the applicant. NOTES			ZONING DISTRICT BOA ACTIVITY # BOA APPEAL DATE BOA P/H DATE BOA DECISION DATE
APPROVED <input type="checkbox"/>	DENIED <input type="checkbox"/>	Land Use Administrator _____ Date _____	<input type="checkbox"/> APPROVE <input type="checkbox"/> CONDITIONS <input type="checkbox"/> DENIED

Wet site – wetland vegetation



Wolf River by Fremont, Waupaca Co.



½ Rip Rap Out – Native Restoration In

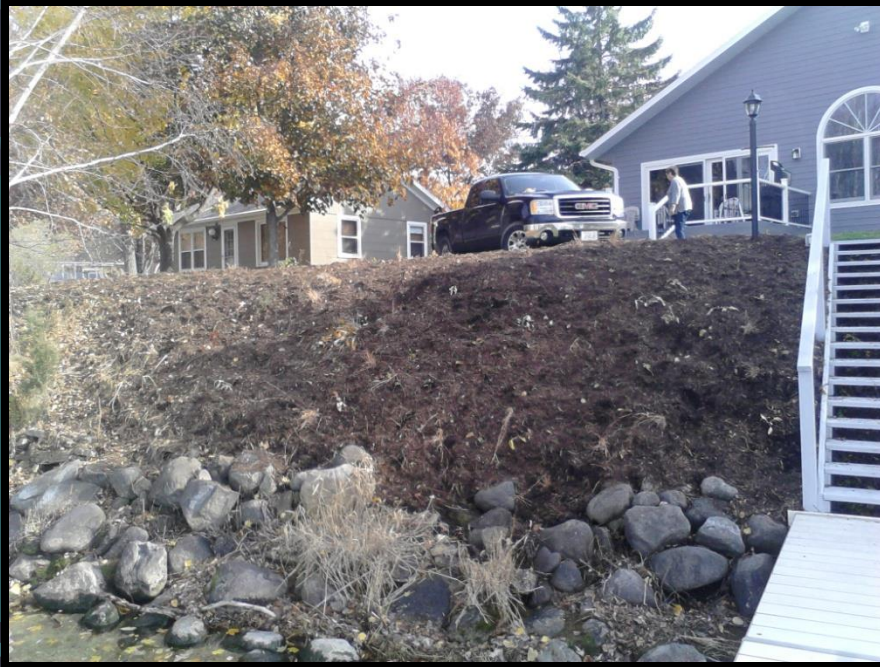


Restoration 2 Years After Planting





Green Lake Mitigation

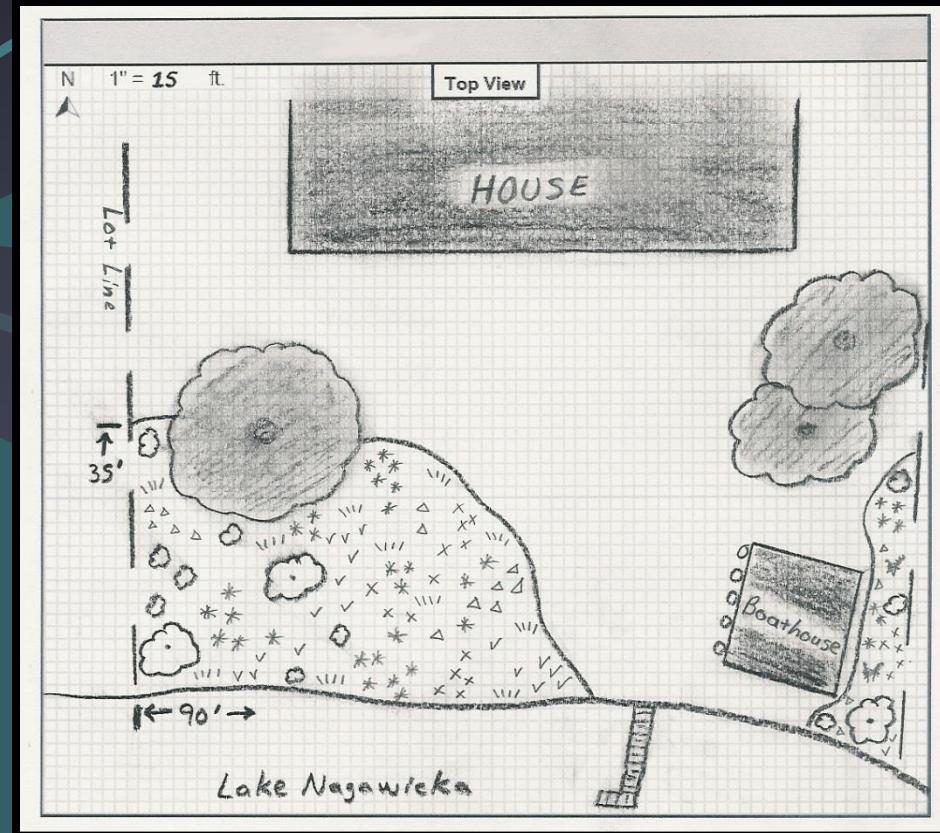
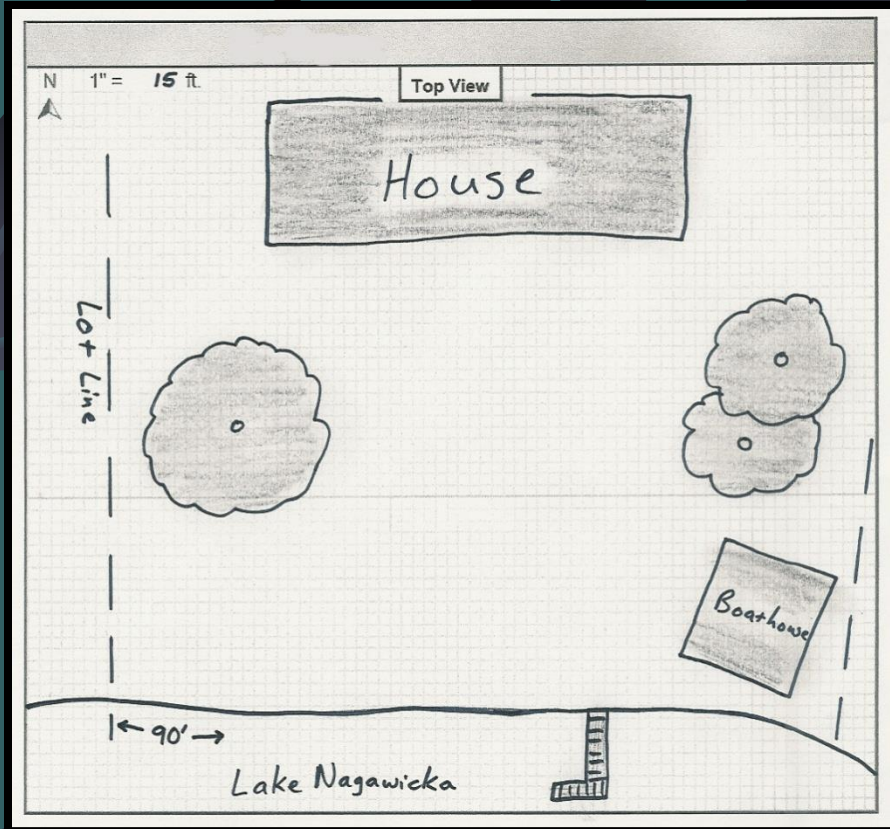


Steep bank – landowner gave up all viewing/access corridor except stairway.

Jackowski Restoration Sketch



Lake Nagawicka, Waukesha Co.



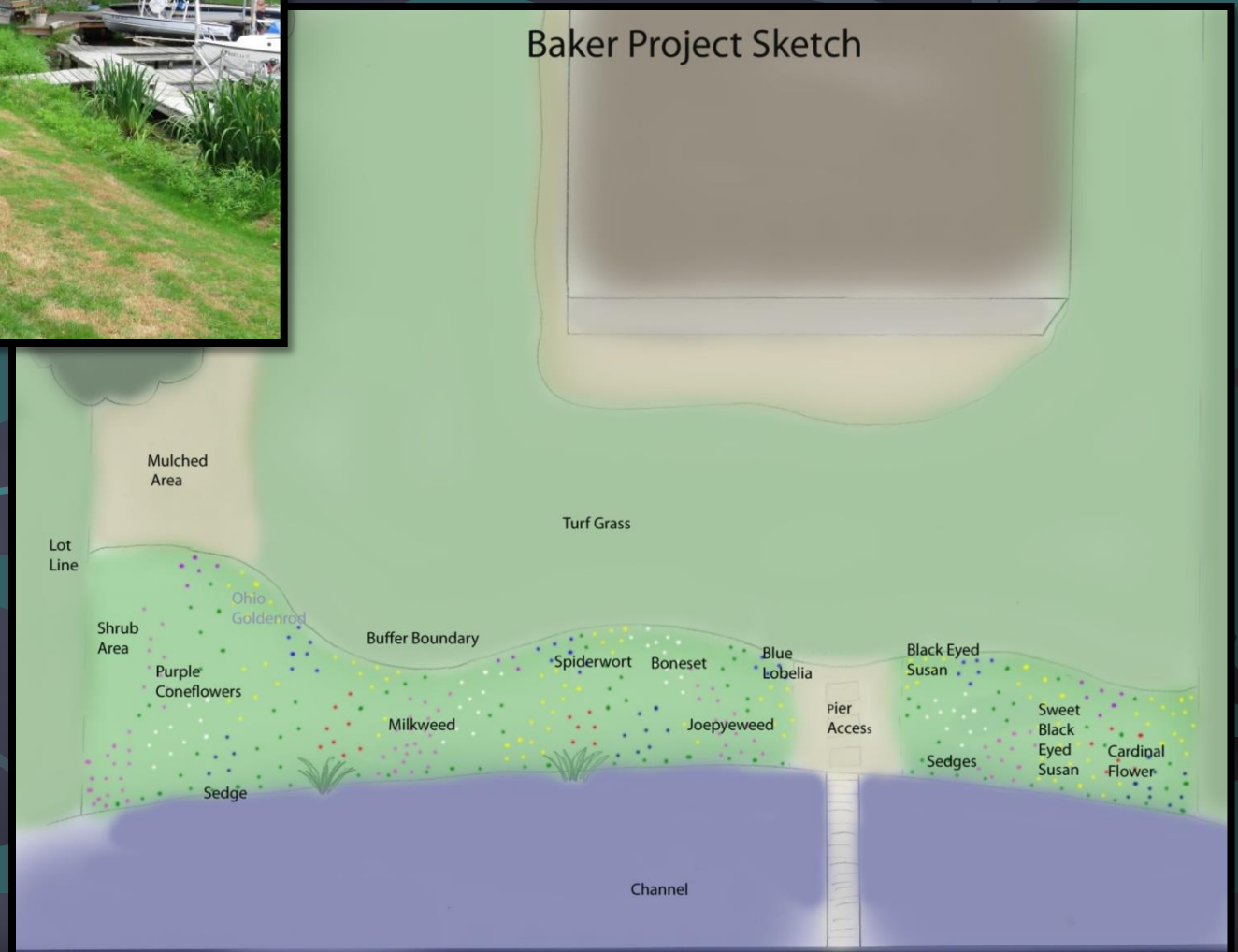
Basic Boathouse Mitigation Design



LacLaBelle, Waukesha County



Baker Project Sketch



Voluntary restoration.

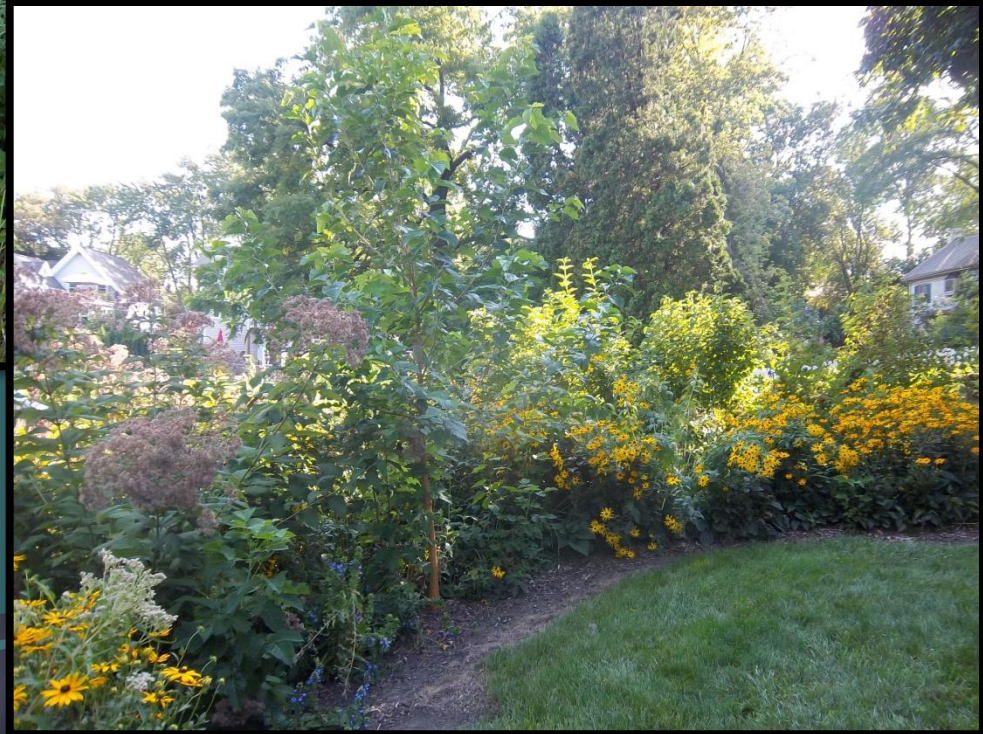
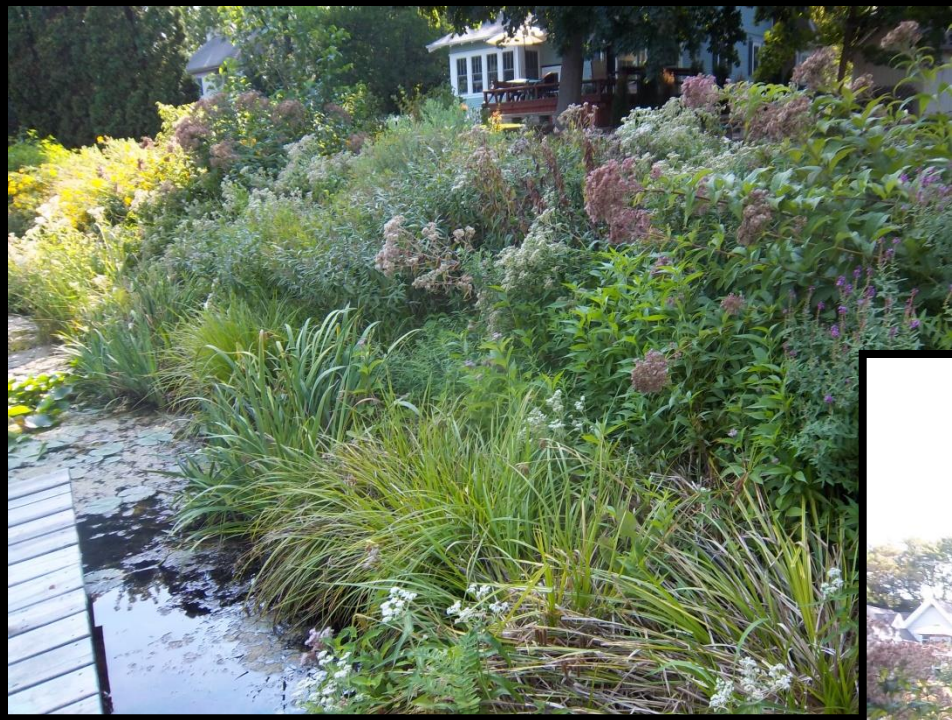
Lac La Belle
Management District
cost shared planting.

1,000 sq. ft.
Planting

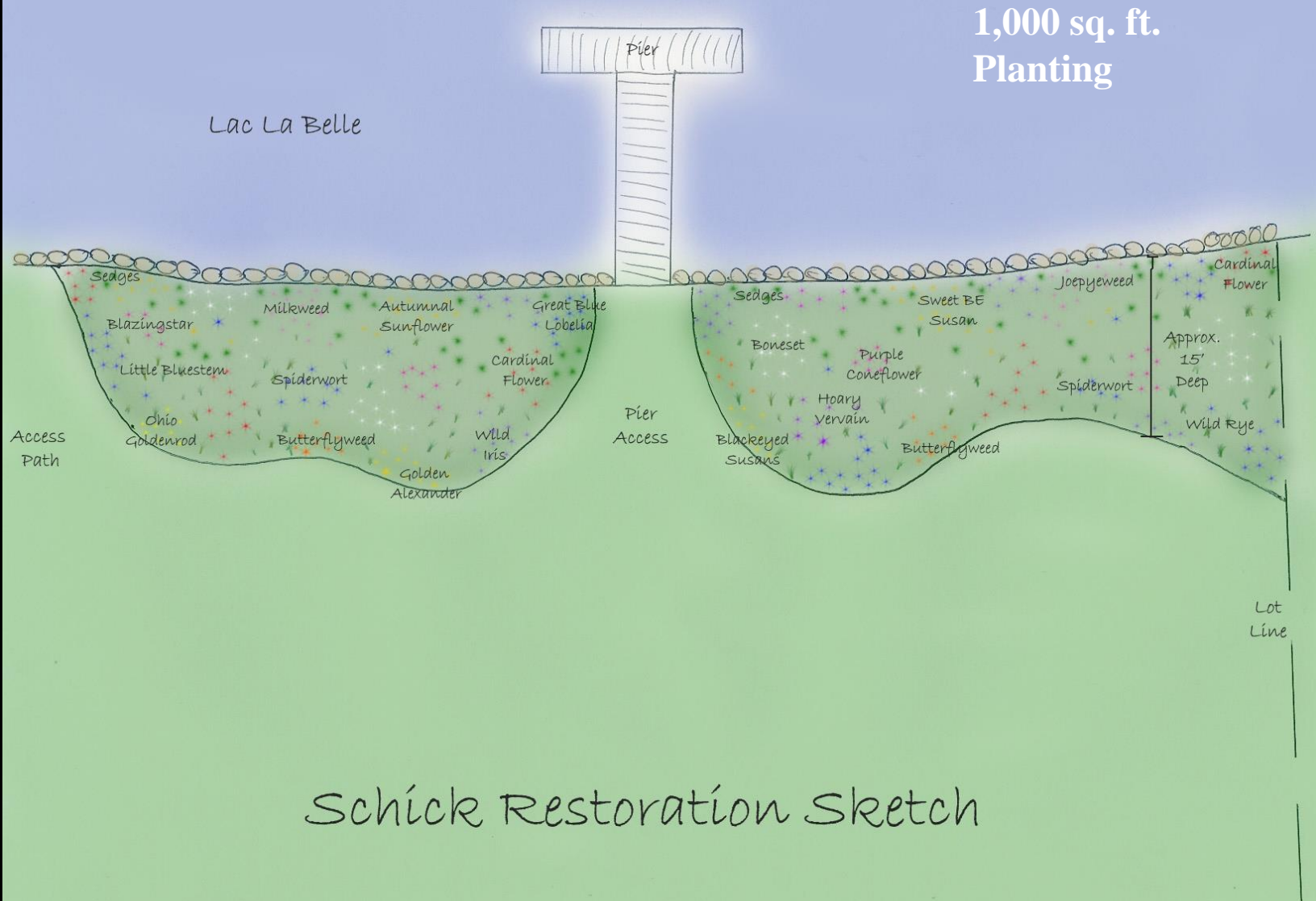
Landowner Planted



No Height Limits



LacLaBelle, Waukesha County



Landowner and Association Planted



1 Year Later



Lake Ripley, Jefferson County



Association Members Planted



9 Months Later



Shawano Lake – Yes, It's True

Whispering Pines Shoreline Restoration Option #2



8,000+ sq. ft. Planted



One Year Later – August of 2015



Association Board Member

Shawano Lake, Shawano Co.



160 sq. ft.
Planting

Legend Lake, Shawano County

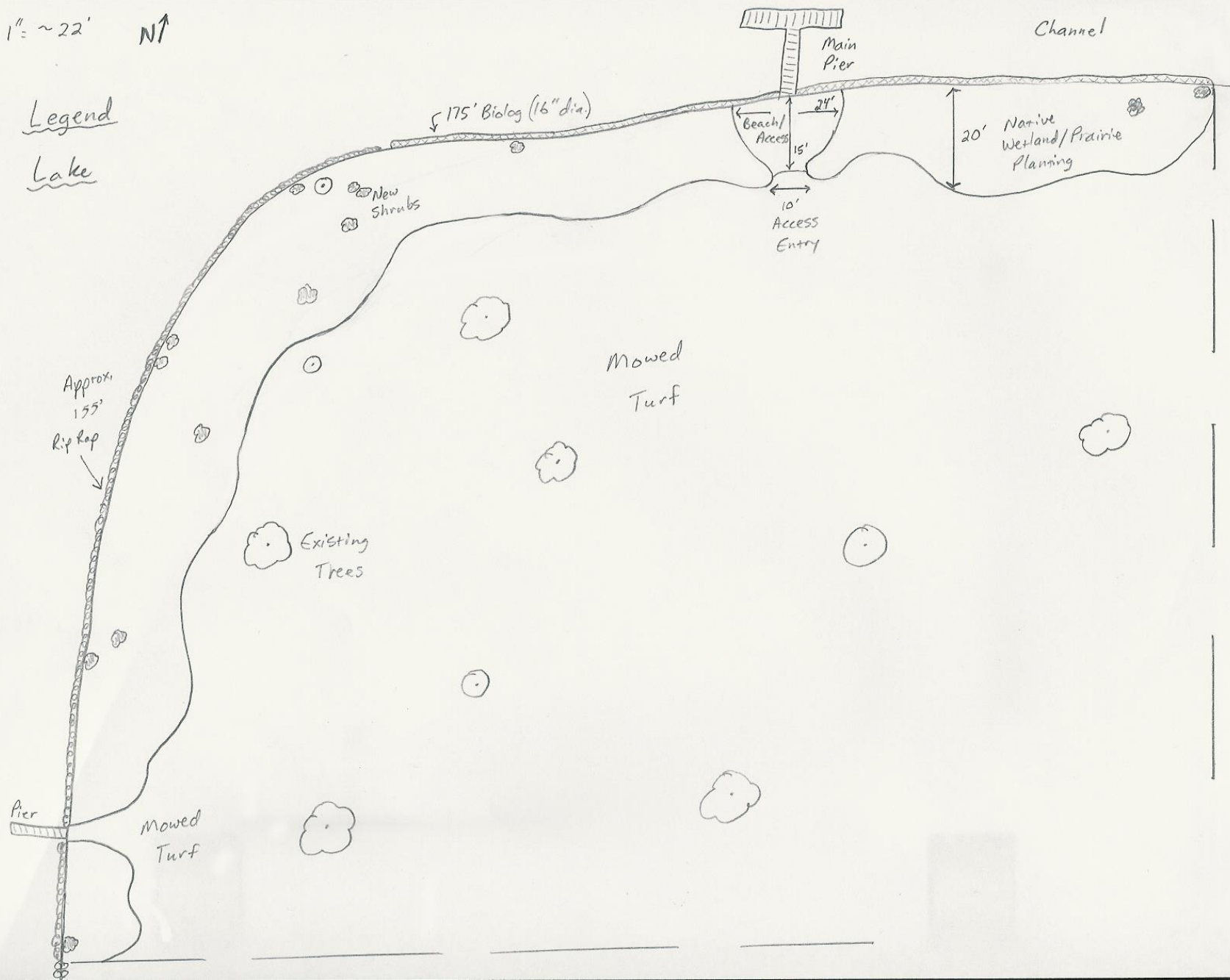


1" = ~22'

N↑

Legend

Lake





Day of planting, 2008

2 Years After Planting



Lake Winnebago North Shore, Calumet Co.



6,000 sq. ft. planting



Mitchell Planting Plan

1" = 20'

N

Main Points

~Planting area #1 = 4' wide band along existing tree/shrub planting

*Any seedlings will be transplanted into mulched areas

*Turf grass is to be cut, herbicided, mulched and planted with native grasses & flowers

~Planting area #2 = grassy area from mulched edge of existing tree/shrub planting to exposed beach

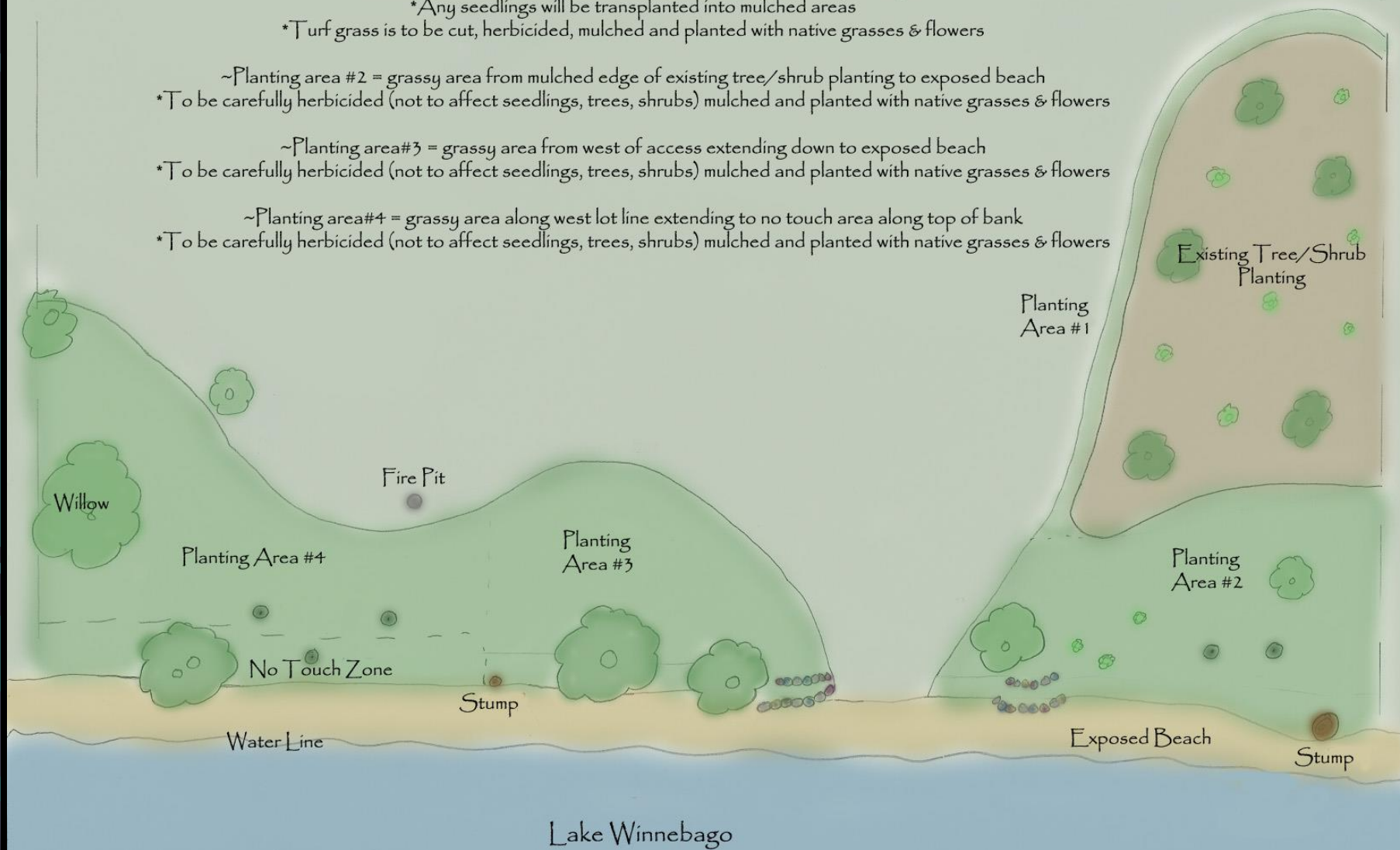
*To be carefully herbicided (not to affect seedlings, trees, shrubs) mulched and planted with native grasses & flowers

~Planting area #3 = grassy area from west of access extending down to exposed beach

*To be carefully herbicided (not to affect seedlings, trees, shrubs) mulched and planted with native grasses & flowers

~Planting area #4 = grassy area along west lot line extending to no touch area along top of bank

*To be carefully herbicided (not to affect seedlings, trees, shrubs) mulched and planted with native grasses & flowers



1 Year Later





1 Year Later



City of Green Lake - Hattie Sherwood Park



Lots of Plants



Planted by Local School Children



2 Years after Planting



Late September



Polk County

Shady Site
July 2000





1 year later

Summer 2001





Planting density
=
1 plant per sq. ft.



Winneconne Project, Winnebago Co.





Ryf Project Late August

Lake Comus, Delavan Arboretum, Walworth Co., Feb. 2002



Lake Comus Shoreline – August 2002



Lake Comus Shoreline – August 2002



Lake Comus Shoreline – August 2003



1 year after
planting



Canal off Green Lake Millpond



800 sq. ft.
Planting

One year later....



Green Lake RSVP Planting

Late July 2000



Illinois Ave. Site

1 year later

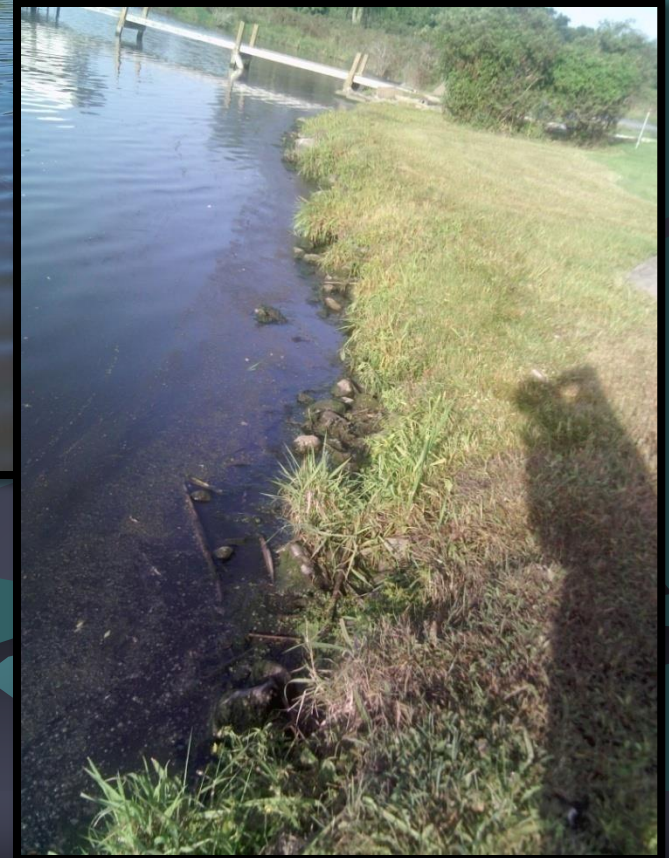
300 sq. ft. planting



Green Lake Annual Tour

2007





Ratos – County K Wetland

400'+ Biolog to Protect Soft, Organic Soils



4,000 sq. ft.
Plantings



RSVP & County Cost Shared



Colorful, Well Maintained



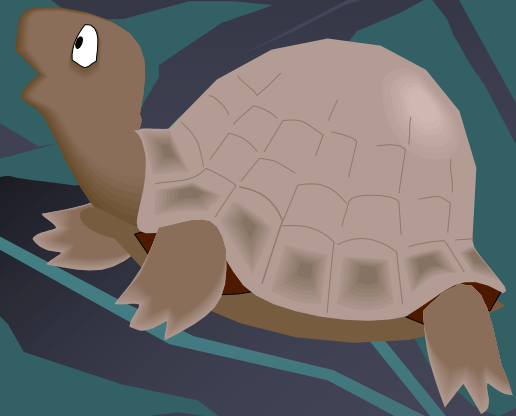
Suggestions

- Require a maintenance plan prior to issuing permit
- Landscaper training sessions
 - Statewide Landscaper Certification – Wis. Lakes Partnership
 - UW-Extension
 - Friendly restoration consultants
- Offering flexibility on design shape
 - Reducing ‘boxiness’ of restoration shape
 - i.e. – 35’ deep across 70%
 - Narrow at lake and wider toward house

That's It!



Questions?



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