

SHEBOYGAN COUNTY LAND AND WATER RESOURCE MANAGEMENT PLAN 2016-2025

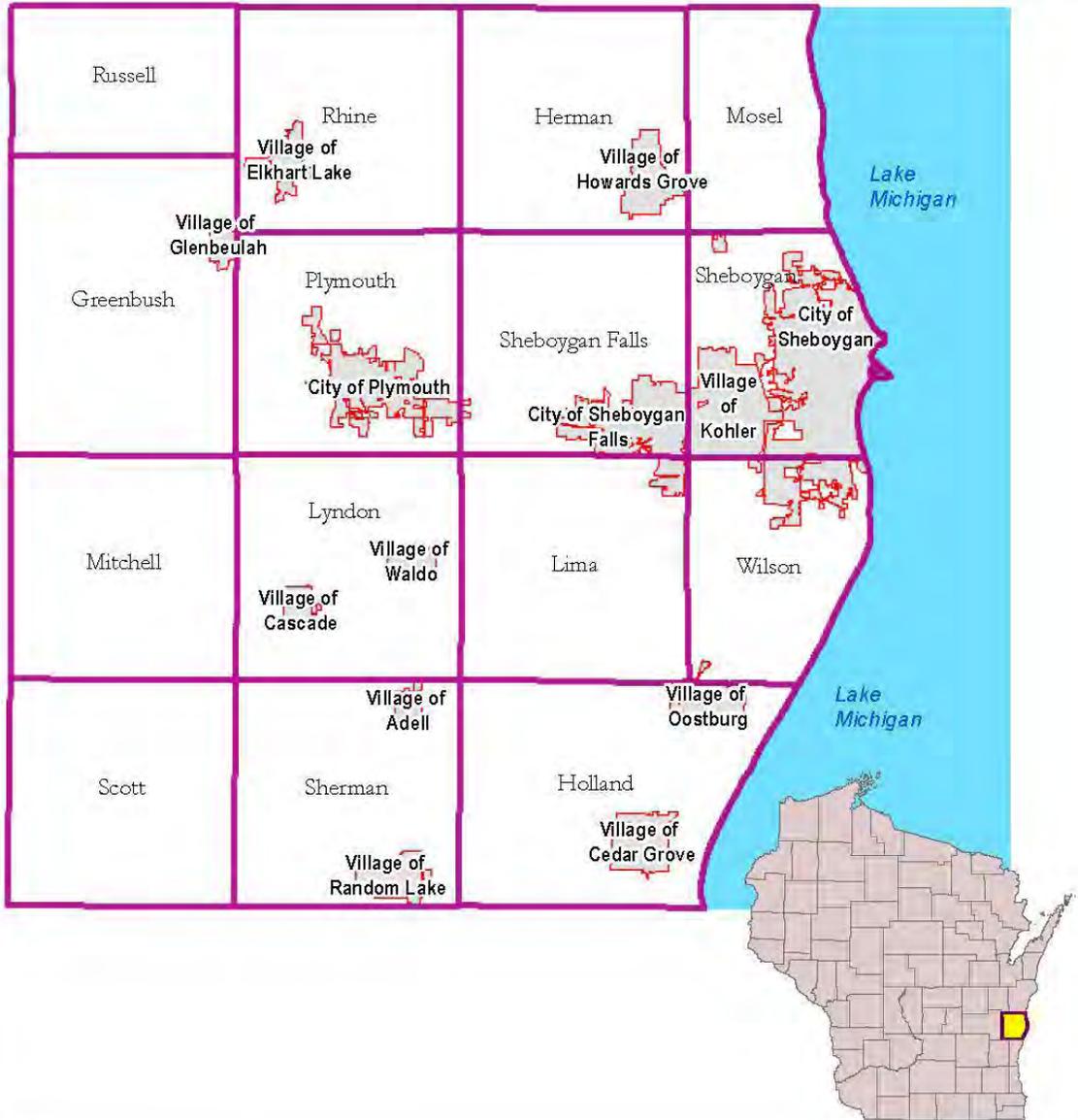


**SHEBOYGAN COUNTY
PLANNING & CONSERVATION DEPARTMENT
OCTOBER, 2015**

Sheboygan County Location

Sheboygan County, Wisconsin

Figure 1



Legend

- Township Boundary
- City & Village Limits



**Sheboygan
County,
Wisconsin**

Source: Sheboygan County
Planning & Conservation, 2015

LAKE MICHIGAN



Broughton Sheboygan Marsh Park and Campground



Northern Unit Kettle Moraine State Forest



AGRICULTURAL OVERVIEW



There are a total of 515 square miles in the county, which means there are about 51 cows per square mile, the 10th heaviest concentration in Wisconsin



Of the 1.1 million mink pelts produced in Wisconsin in 2013 over 400,000 (35%) were produced in Sheboygan County

2010-2015 CONSERVATION PRACTICE ACCOMPLISHMENTS

| <u>Practice</u> | <u>Number Installed</u> |
|-------------------------------------|-------------------------|
| Diversions | 3 |
| Grade Stabilization | 2 |
| Grassed buffers | 30 buffers/58 acres |
| Grassed waterways | 15 |
| Intensive Rotational Grazing System | 1 |
| Livestock Crossings | 3 |
| Manure Storage | 22 |
| Manure Storage Closure | 3 |
| Nutrient Management | 83 plans/50,000 acres |
| Roof Runoff Control System | 3 |
| Waste Transfer System | 25 |
| Well Decommissioning | 46 |
| Wetland Restoration | 9 |

MORE 2010-2015 HIGHLIGHTS

- Continued administration of the Farmland Preservation Program-90 Certificate of Compliance; 75-Schedules of Compliance and 59 Notices of Non-Compliance
- Erosion Control/ Stormwater Permits Issued-24
- Agricultural Waste Storage Permits Issued-22
- Developed a County-Wide Emerald Ashborer Management Plan
- Continued administration of the Nonmetallic Mining Program-15 sites
- **Continued the County's Annual Tree and Shrub sale**
- **Partnered with NRCS, UWEX,& TNC on cover crop research & demonstration plots**
- **Continued the County's Grassed Buffer Program**
- **Partnered with TNC and the Kohler Trust for Preservation to implement the Sheboygan River Agricultural Project**
- **Installed the first Denitrifying Bioreactor in the state of Wisconsin**
- **Partnered with Glacial Lakes Conservancy to purchase the Amsterdam Dunes property**
- **EPA Superfund Lower Sheboygan River PCB and PAH dredging was completed**

ANNUAL TREE AND SHRUB SALE



Approximately 50,000 sold every year



COVER CROP RESEARCH AND DEMONSTRATION PLOTS

TILLAGE RADISH AND TILLAGE RADISH WITH OATS RESEARCH PLOTS



CRIMSON AND RED CLOVER DEMONSTRATION PLOT



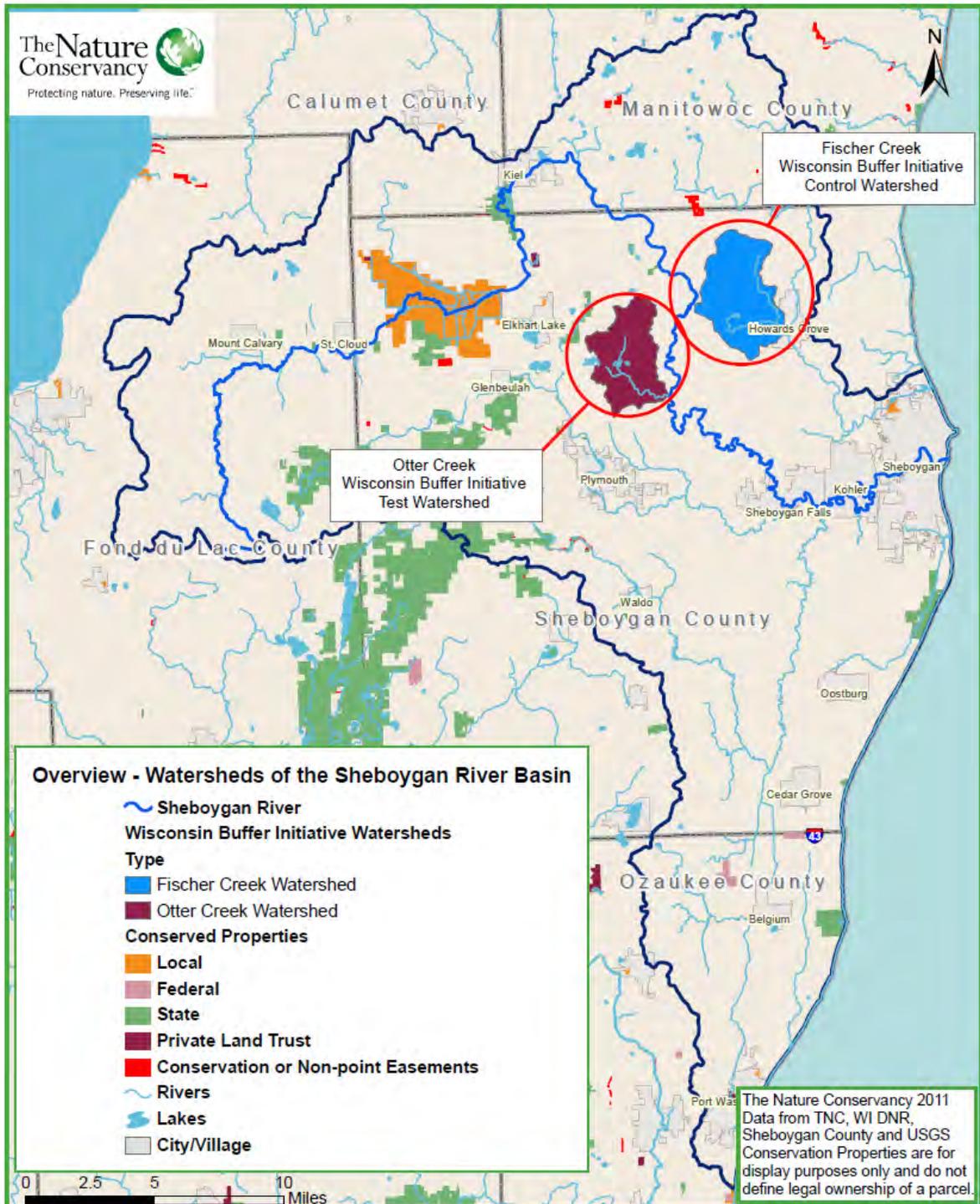
GRASSED BUFFER PROGRAM

- Started in 1993
- Currently 70 contracts
- 33 miles of buffer



SHEBOYGAN RIVER AGRICULTURAL PROJECT

- Paired watershed study to determine the possibility of achieving in-stream phosphorus(P) reductions by targeting high PI crop fields
- In-stream monitoring stations were installed in Otter(Installation watershed) and Fischer Creeks (Control watershed) to establish baseline P and sediment loads
- Croplands, pastures, and farmsteads were inventoried for existing P sources and levels. Cropland PI's were determined utilizing SNAP+ nutrient management planning software
- High PI fields were targeted first for P control



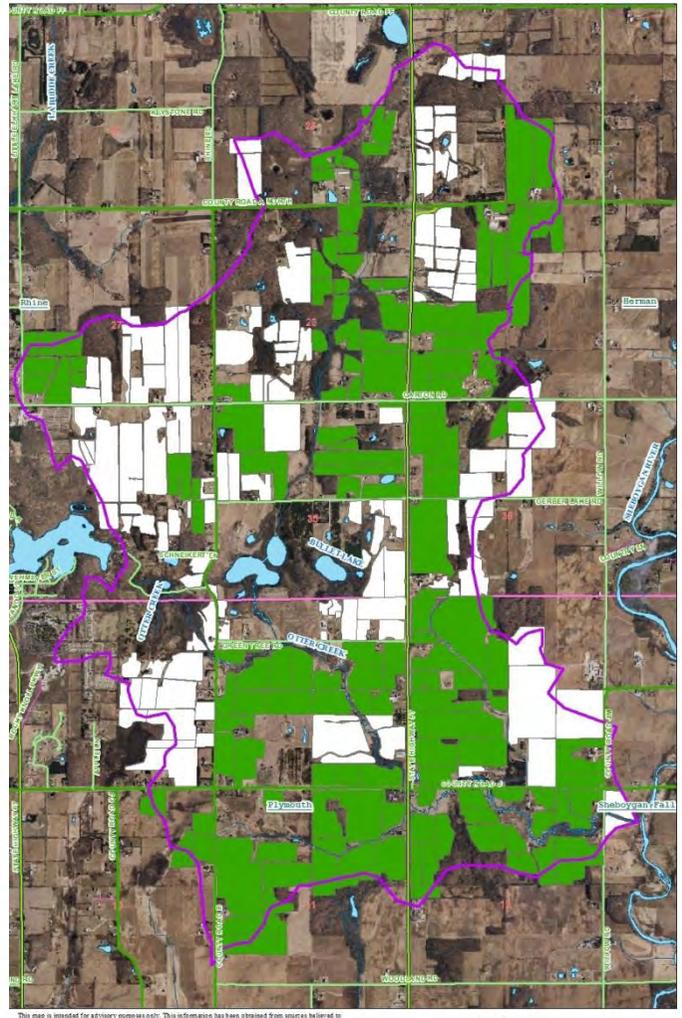
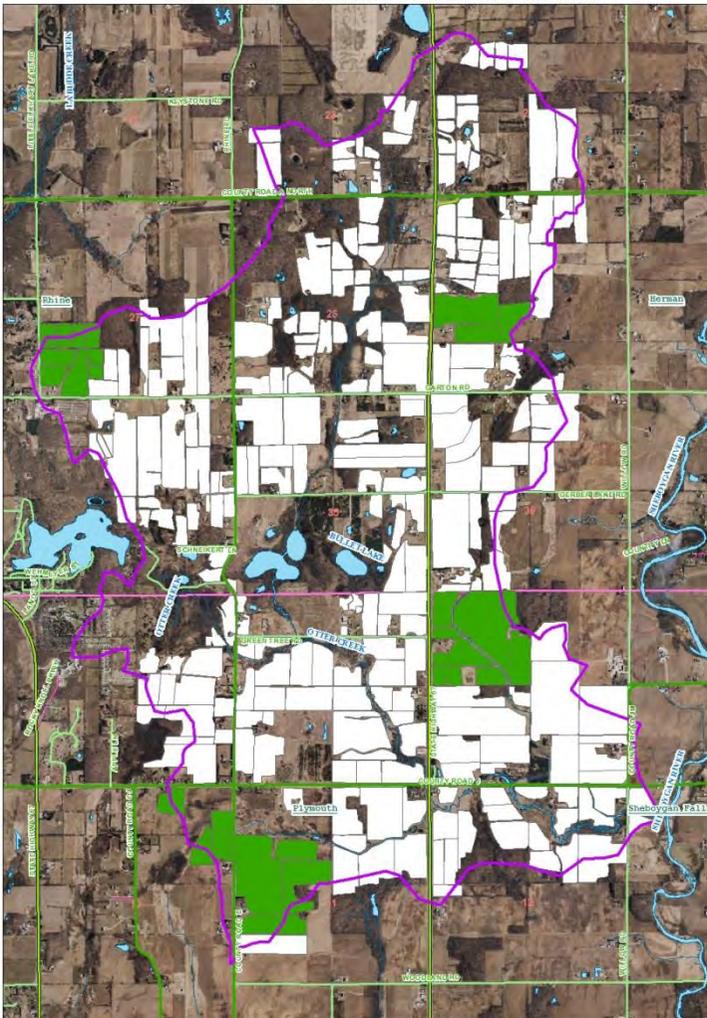
SHEBOYGAN RIVER AGRICULTURAL PROJECT (cont.)

A 13 % reduction in modeled phosphorus has been achieved through the implementation of the practices listed below:

- 1,400 ACRES OF NUTRIENT MANAGEMENT PLANS
- 56 ACRES OF CONSERVATION TILLAGE
- 19 ACRES OF COVER CROPS
- 3-GRASS WATERWAYS OF 3,380 LINEAR FEET
- 5-GRASS BUFFERS TOTALING 4.4 ACRES
- 6,000 FEET OF PERMANENT PASTURE & LANE FENCE
- 6,900 FEET OF CATTLE WATER PIPELINE
- 1,380 LINEAR FEET OF CATTLE LANE
- 1-PERMANENT CATTLE WATERER
- 1-19 FOOT X 55 FOOT DENITRIFYING BIOREACTOR

OTTER CREEK NUTRIENT MANAGEMENT PLAN DURING INVENTORY

OTTER CREEK NUTRIENT MANAGEMENT PLANNING AS OF 5/12/15



This map is intended for advisory purposes only. This information has been obtained from sources believed to be reliable based on plans, surveys, and deeds. In areas where discrepancies occur between equivalent legal records, the discrepancy is allowed to remain until such time as it is addressed. Sheboygan County disclaims all data on an "as is" basis; no warranties are implied.

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0 900 1,800' **390 NM plan acres during Otter Cr inventory**

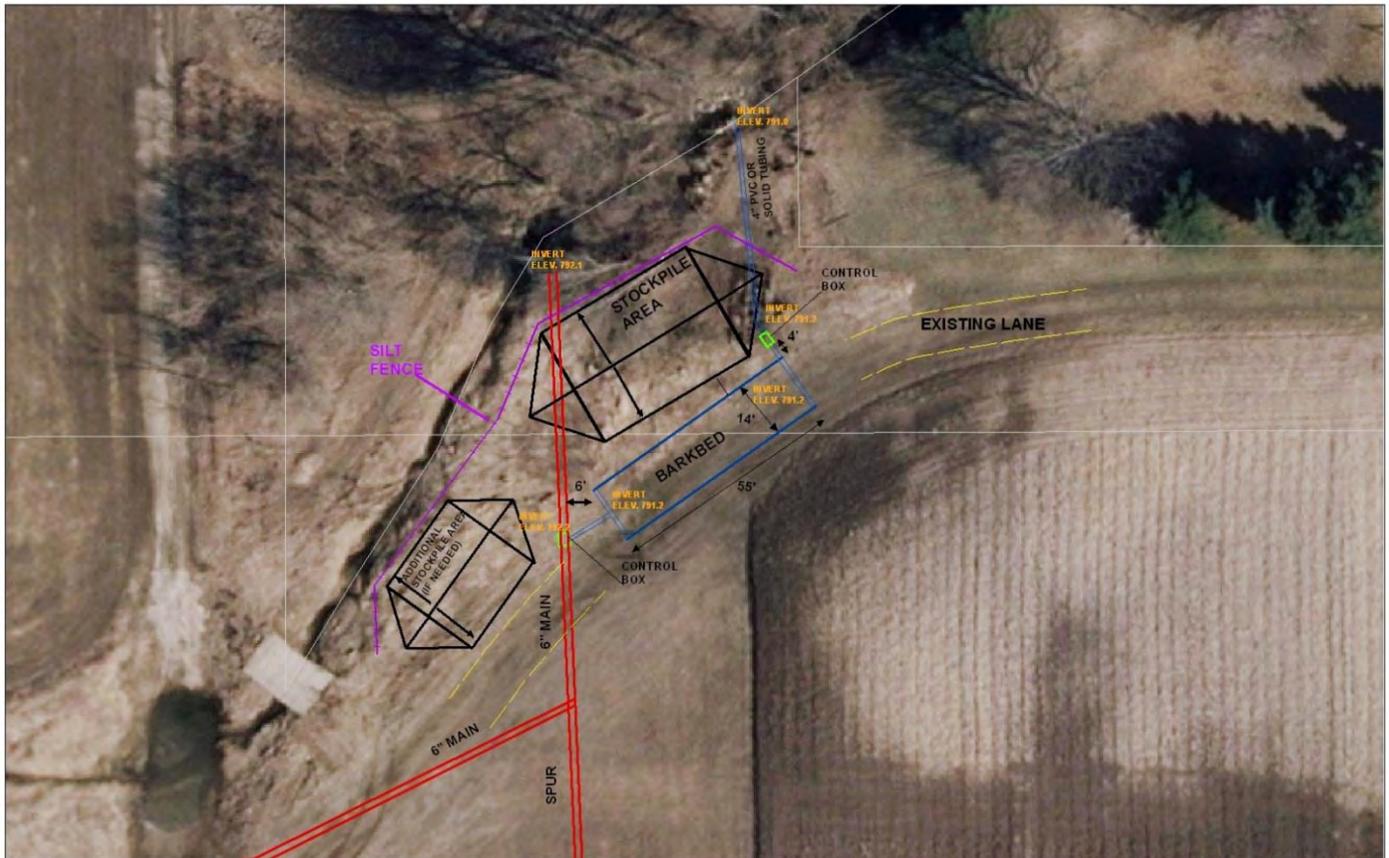
Legend
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 NM PLAN 

0 900 1,800' **1,790 current NM plan acres vs. 390 NM plan acres during the inventory**

Legend
 NO PLAN 
 NM PLAN 

DENITRIFYING BIOREACTOR

- IN COOPERATION WITH THE SHEBOYGAN COUNTY PLANNING AND CONSERVATION DEPARTMENT, THE NATURE CONSERVANCY AND THE WISCONSIN DEPARTMENT OF AGRICULTURE , TRADE & CONSUMER PROTECTION
- GULF OF MEXICO AND CLOSER TO HOME THE GREEN BAY HYPOXIA ZONES; SHOWN TO REDUCE NITRATES IN DRAINAGE TILE WATER; INNOVATION IS AN UNDERLYING PRINCIPAL FOR THE SHEBOYGAN RIVER AGRICULTURAL PROJECT
- DRAINAGE TILE WATER IS DIVERTED THRU A BIOREACTOR FILLED WITH WOODY MATERIAL WHERE THE PROCESS OF DENITRIFICATION OCCURS

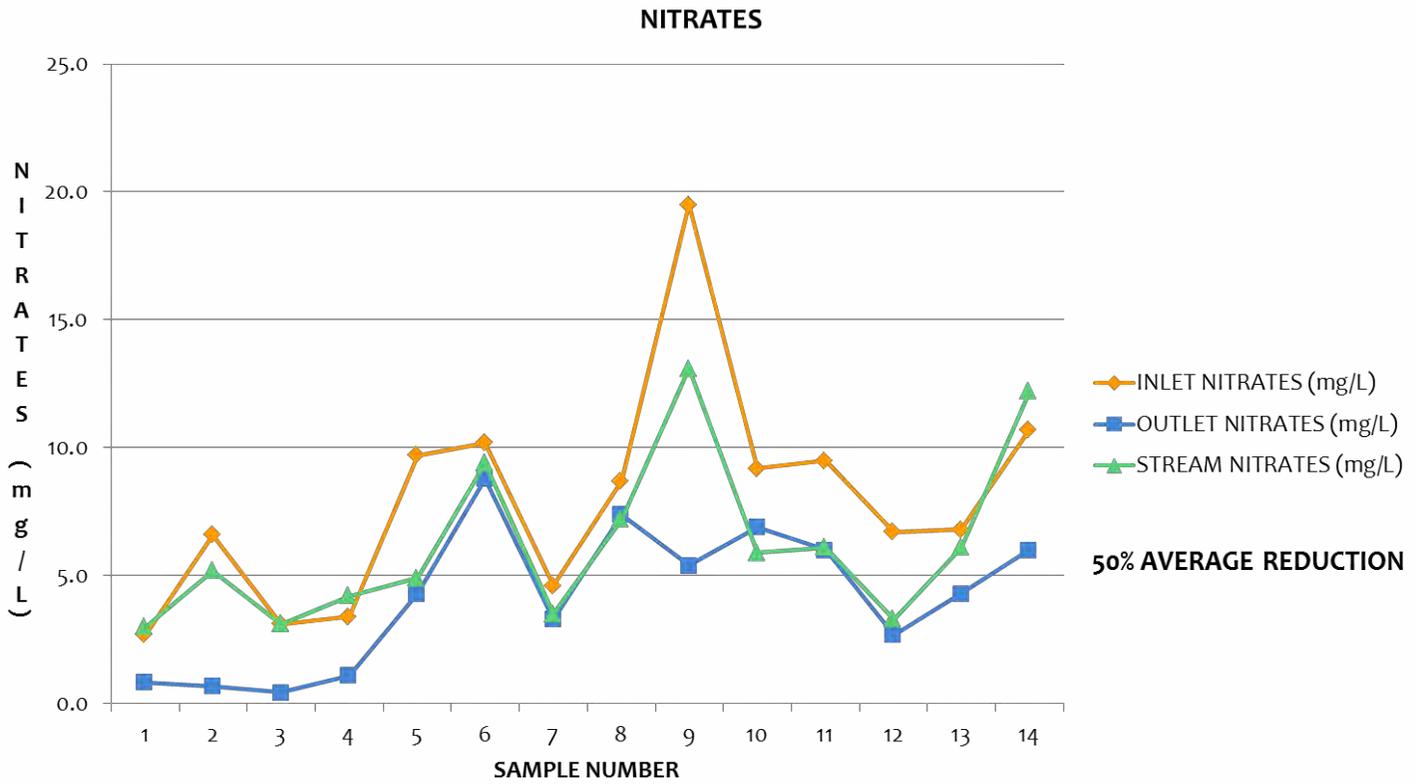


BEECK PLANNED BIOREACTOR

DENITRIFYING BIOREACTOR CONSTRUCTION



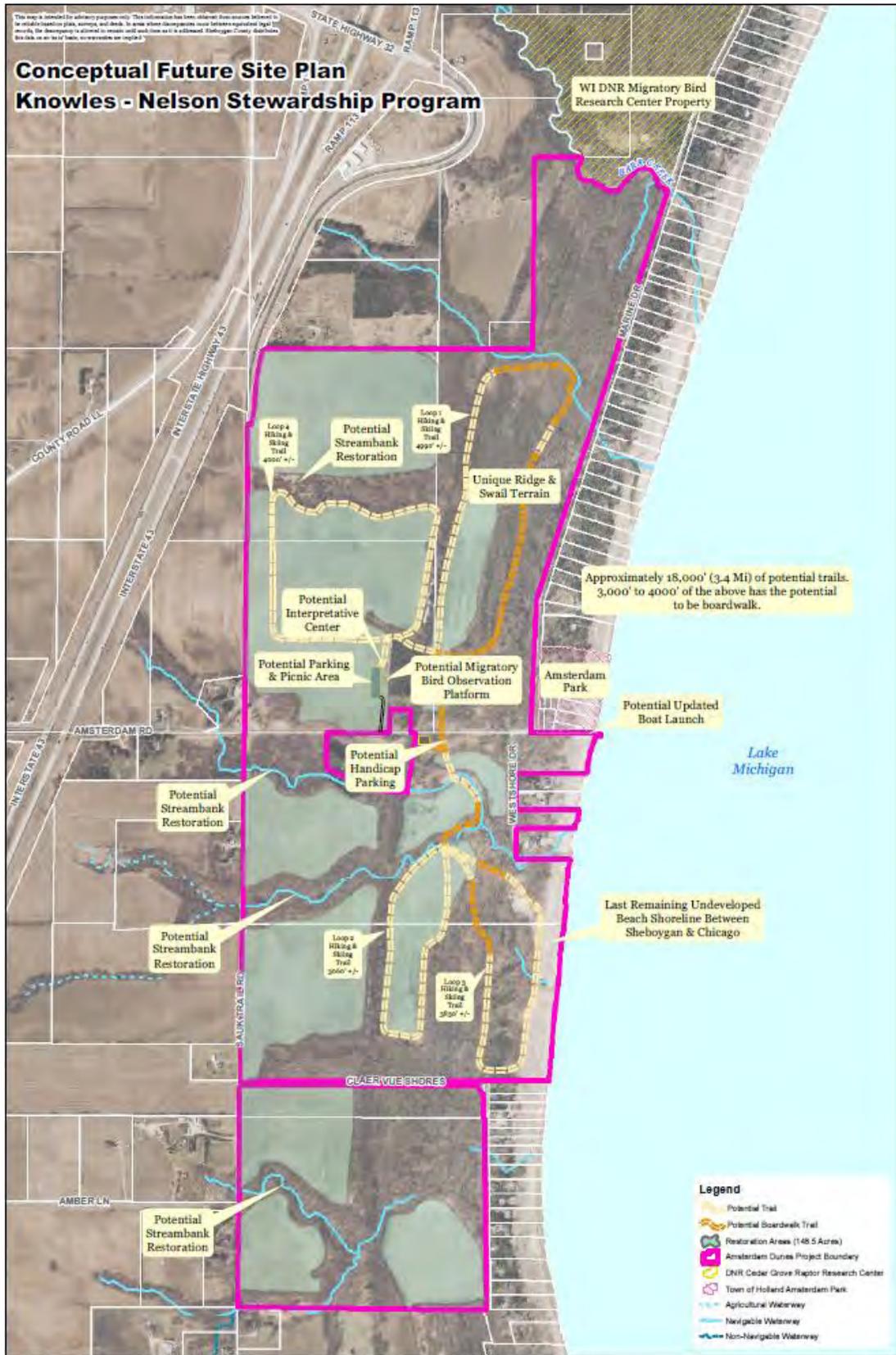
DENITRIFYING BIOREACTOR (cont.)



AMSTERDAM DUNES PROPERTY

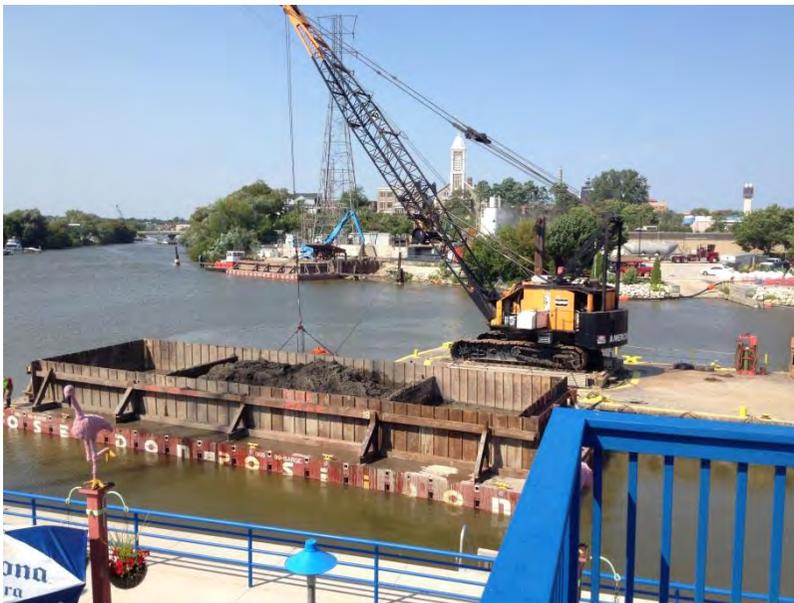
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Conceptual Future Site Plan Knowles - Nelson Stewardship Program



SUPERFUND DREDGING

- LOWER 14 MILES OF THE SHEBOYGAN RIVER FROM SHEBOYGAN FALLS DOWNSTREAM TO THE HARBOR ENTRANCE IN SHEBOYGAN
- REMOVAL OF SEDIMENTS CONTAMINATED WITH PCB'S AND PAH'S
- STARTED IN 2006; COMPLETED IN 2013; APPROXIMATELY 237,000 CUBIC YARDS OF SEDIMENT REMOVED



ADDITIONAL RESOURCE ISSUES/CONCERNS

- 1. Improved Soil Erosion Emphasis – Minimize Runoff Effects From Large Rain Events (15 points)
- 2. Post-construction Stormwater Management – County Vegetated Buffer Ordinance – Strengthen Ordinance without Jeopardizing Funding (5 points)
- 3. In-field Conservation Planning (5 points)
- 4. Acre /A.U. – Farm Planning for Economics & Environment (4 points)
- 5. Hire Conservation Agronomist (3 points)
- 6. Building Soil Health – Reduced Energy (tillage) (2 points)
- 7. Use of Transect Survey (2 points)

Goals and Objectives

Goal #1 – Reduce Soil Erosion and Associated Phosphorus Losses

Goal #2 – Reduce Animal Waste Runoff and Associated Phosphorus Losses

Goal #3 – Meet Nutrient Management Requirements

Goal #4 – Groundwater Protection

Goal #5 – Continue Enforcement of the County's Nonmetallic Mining Ordinance

Goal #6 – Reduce Sediment and Phosphorus Loadings from Existing Urban and Developing Areas to Surface Waters

Goal #7 – Continue Efforts on Additional Conservation Programming of Local Significance

ADEQUATE STAFFING IS ALWAYS A CHALLENGE!

YEARLY STAFFING HOURS, STAFFING COSTS, AND COST-SHARE SUMMARY

| GOAL | STAFF HOURS | STAFF COST | COST-SHARE |
|--|--------------------|-------------------|-------------------|
| Goal #1: Reduce Soil Erosion and Associated Phosphorus Losses | 4610 | \$184,400 | \$103,400 |
| Goal #2: Reduce Animal Waste Runoff and Associated Phosphorus Losses | 1560 | \$62,400 | \$72,000 |
| Goal #3: Nutrient Management Requirements | 2710 | \$108,400 | \$15,000 |
| Goal #4: Groundwater Protection | 210 | \$8,400 | \$7,500 |
| Goal #5: Continue Enforcement of the County's Nonmetallic Mining Ordinance | 265 | \$10,600 | \$0 |
| Goal #6: Reduce Sediment and Phosphorous Loadings from Existing Urban and Developing Areas to Surface Waters | 1260 | \$50,400 | \$0 |
| Goal #7: Continue Efforts on Additional Conservation Programming of Local Significance | 680 | \$27,200 | \$0 |
| TOTALS | 11,295 | \$451,800 | \$197,900 |

QUESTIONS????

