

Can Drain Commissioners Use Assessments to Incentivize Conservation Practices?

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An Innovative Pilot Project

Premise: Should be cheaper, and result in less environmental impacts, to prevent sediment from entering the drain.

Innovative idea: Develop a new assessment methodology that rewards landowners for implementing conservation practices



MICHIGAN STATE
UNIVERSITY

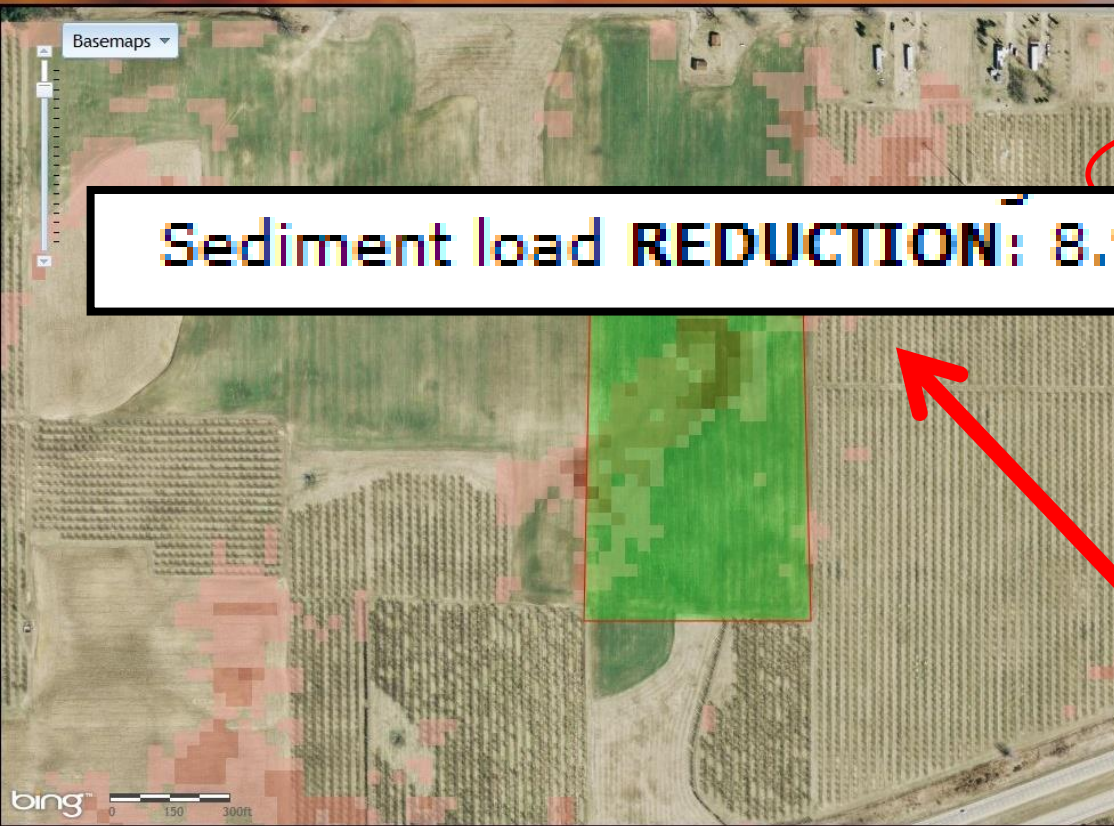


Great Lakes
Protection Fund



Sediment Calculator makes it easy!

Sediment Calculator for the Paw Paw River Watershed



Sediment load REDUCTION: 8.9 tons/yr

Calculate baseline change

Draw an area of land-cover change or a best-management practice (BMP) to see how erosion and/or sediment loading may change when compared to a best estimate of the current condition.

Digitizer: Acres: 13.4

Land cover / BMP:

RUSLE K-Factor:

RUSLE LS-Factor:

RUSLE R-Factor:

Surface roughness (Manning's n):

Delivery ratio:





Estimated time to calculate: 11

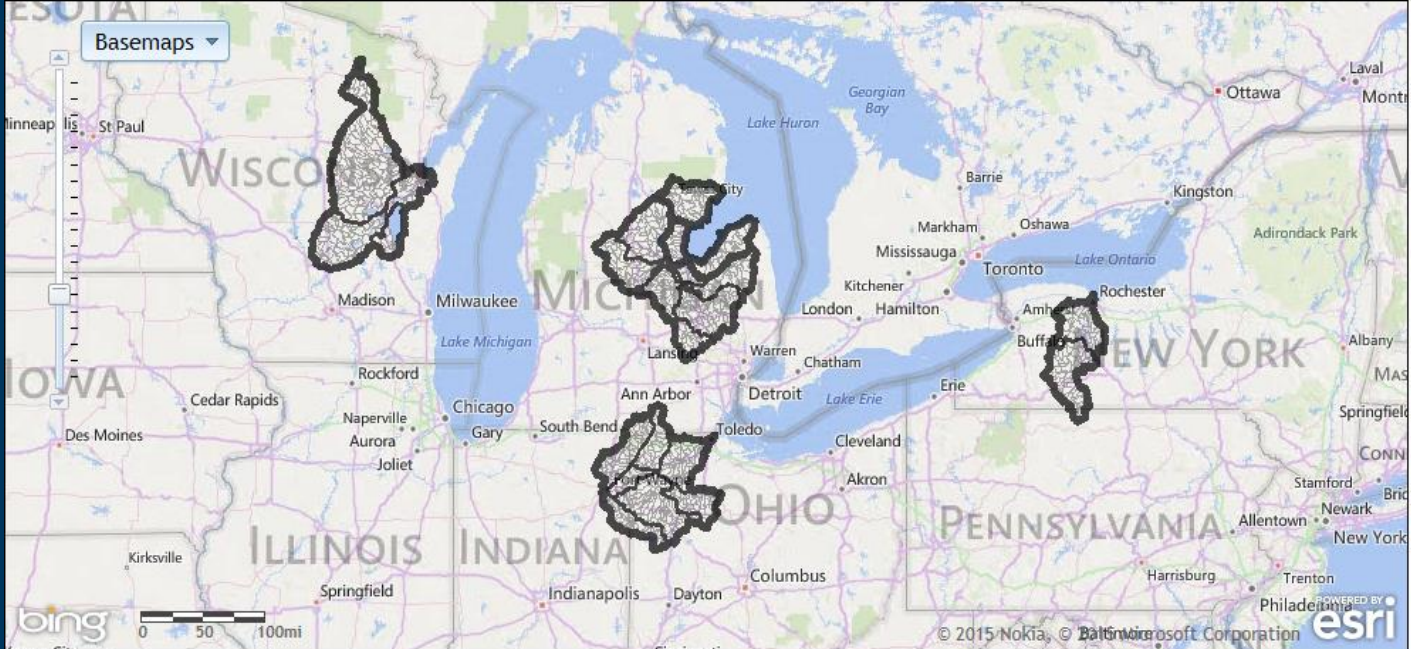
Results:
Seconds elapsed: 11
Calculation complete:

Initial erosion in affected areas: 66.5 tons/yr
Calculated erosion: 22.2 tons/yr
Erosion **REDUCTION**: 44.3 tons/yr
Initial sediment loading in affected areas: 11.1 tons/yr
Calculated sediment loading: 2.3 tons/yr
Sediment load **REDUCTION**: 8.9 tons/yr

Calculation took 8 seconds

Great Lakes Watershed Management System
login/logout



Introduction

The Great Lakes Watershed Management System (GLWMS) is an on-line tool that allows users to evaluate non-point source (NPS) pollution model estimates at watershed and field scales. The system links two water quality models, [High Impact Targeting \(HIT\)](#) from the [Institute of Water Research at Michigan State University](#), and the [Long Term Hydrologic Impact Assessment \(L-THIA\)](#) from [Purdue University's Department of Agricultural and Biological Engineering](#). HIT estimates sediment loading from agricultural lands to nearby streams; L-THIA estimates run-off volumes and pollutant loads.

Navigation

- Map Layers
- Legend
- Analysis
- About the Models
- About the Tool

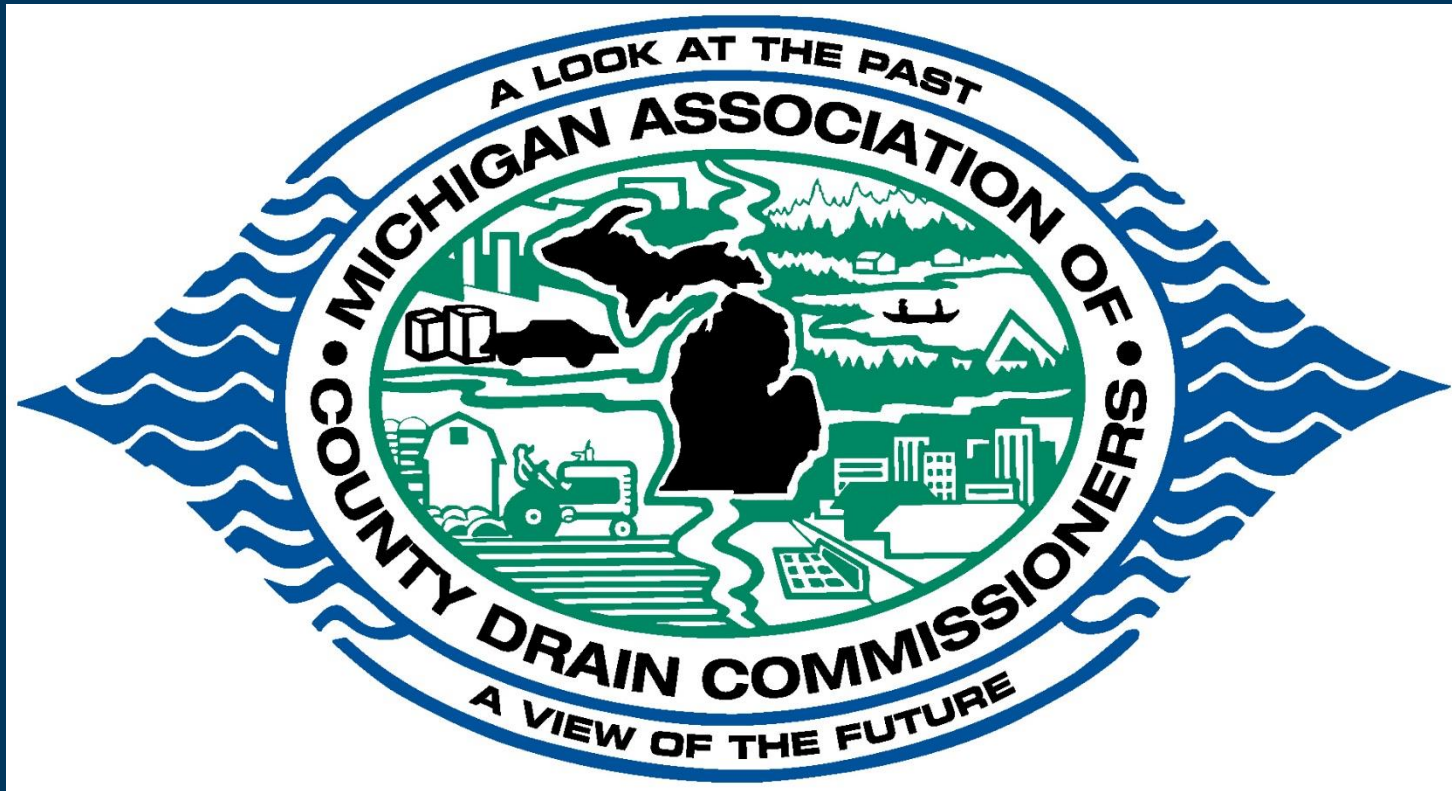
Active Map Tool: **Identify features on-click**

-78.28794326, 42.8398102

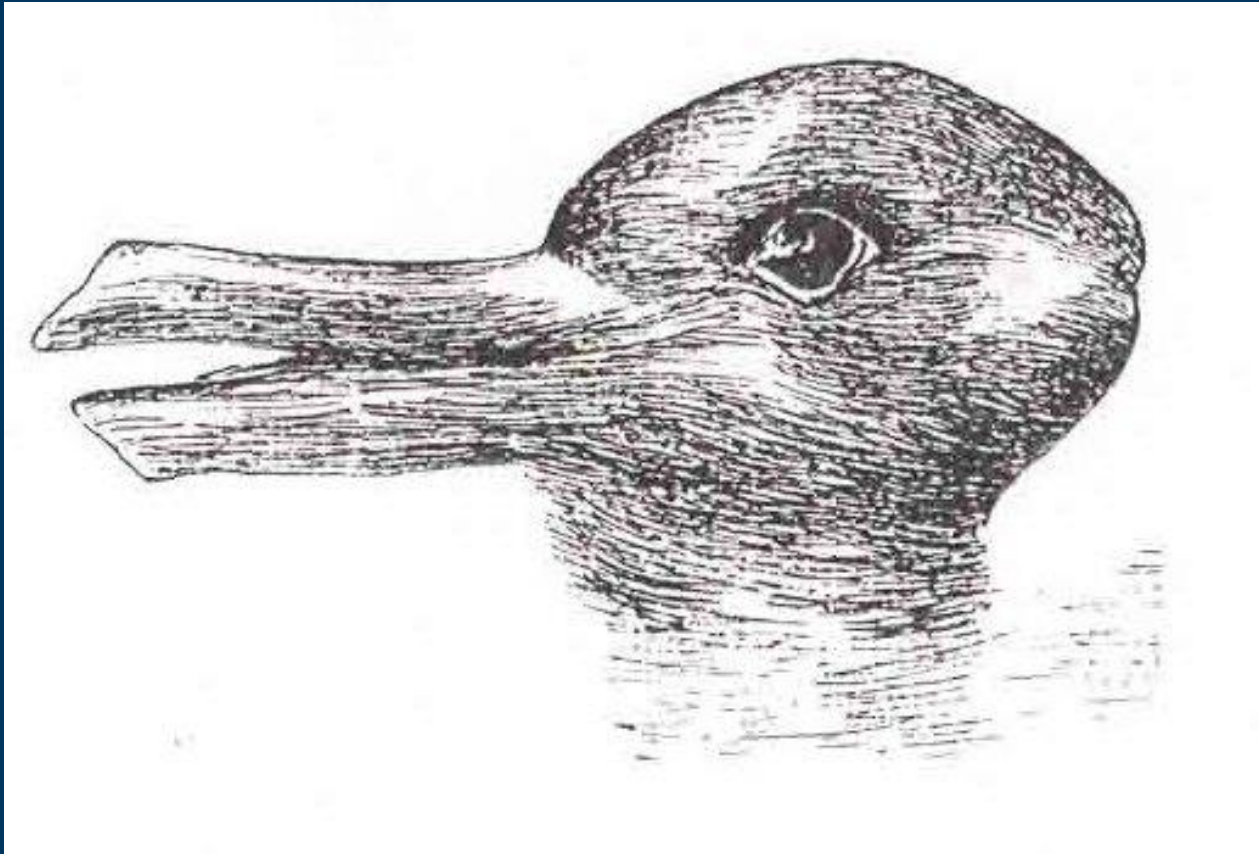
Banner photograph credit: [Andrea L. Jaeger Miehlis](#)

Institute of Water Research at Michigan State University, all rights reserved 2015

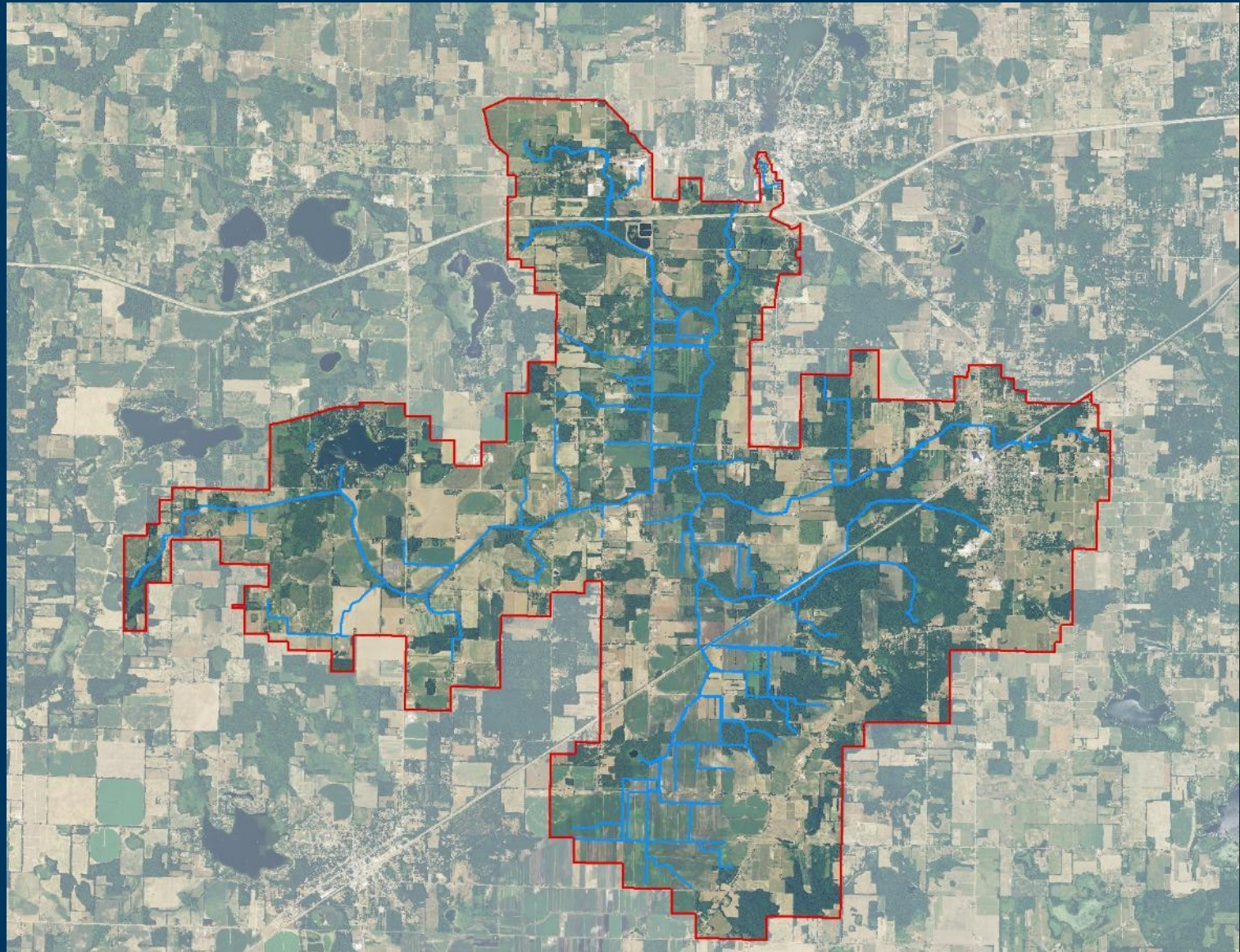
Michigan Drain Law



Benefits Derived



Pilot Project Area



Pilot Project Background



BMP CERTIFICATION AGREEMENT

Tracking Number: 9B

Please complete a separate agreement form for each parcel you wish to certify in this program

Applicant Name	Gary Wojack	Telephone	269-507-6532	Date	8/29/14
Check all that apply:		Parcel #			
<input checked="" type="checkbox"/> Producer <input checked="" type="checkbox"/> Landowner		80-08-007-009-00			
Mailing Address		Email			
77941 41st St. Decatur, MI 49045					
Twp., Sec., Range		Drainage District(s)			
04S14W09		Gates			
Is this Parcel/Field adjacent to or does it contain a drain, creek, river or lake? (<input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No)					
If Yes, please provide the name of the water body (if known):					
How did you hear about the certification program? Colleen Forestieri					
Why do you use the practices indicated below? Time, money, build soil quality and improve infiltration					

To be completed by VBDC:

Indicate the BMP(s) that have been applied to this parcel using the table below. Each agreement form may contain multiple BMPs for a single parcel. [Attach map with BMP locations.]

✓	Best Management Practices	Linear Feet	BMP Acres	Sediment Reduction	How long has it been utilized?
Cover Crops					
<input checked="" type="checkbox"/>	Type: Annual Ryegrass - Aerial Application		98	5.1	1 month
<input type="checkbox"/>	Type:				
<input type="checkbox"/>	Type:				
Grass Waterways					
<input type="checkbox"/>	Width:				
Filter Strips					
<input type="checkbox"/>	Width:				
<input type="checkbox"/>	Width:				
Tillage					
<input type="checkbox"/>	Mulch-Till				
<input checked="" type="checkbox"/>	No-Till		98	17.2	3 years
			Total	22.3	



Base Allocation

Apportionment Factors

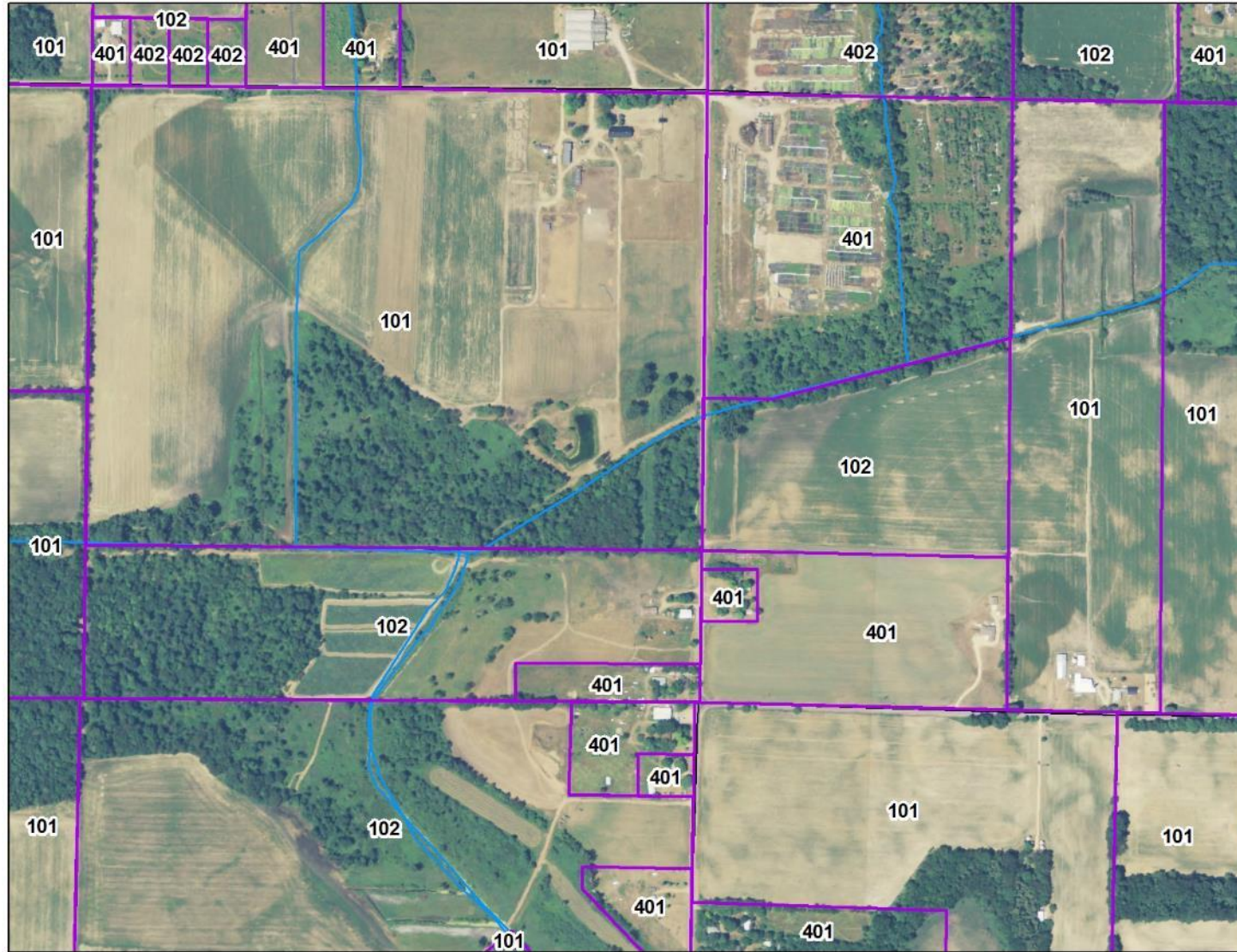


Need

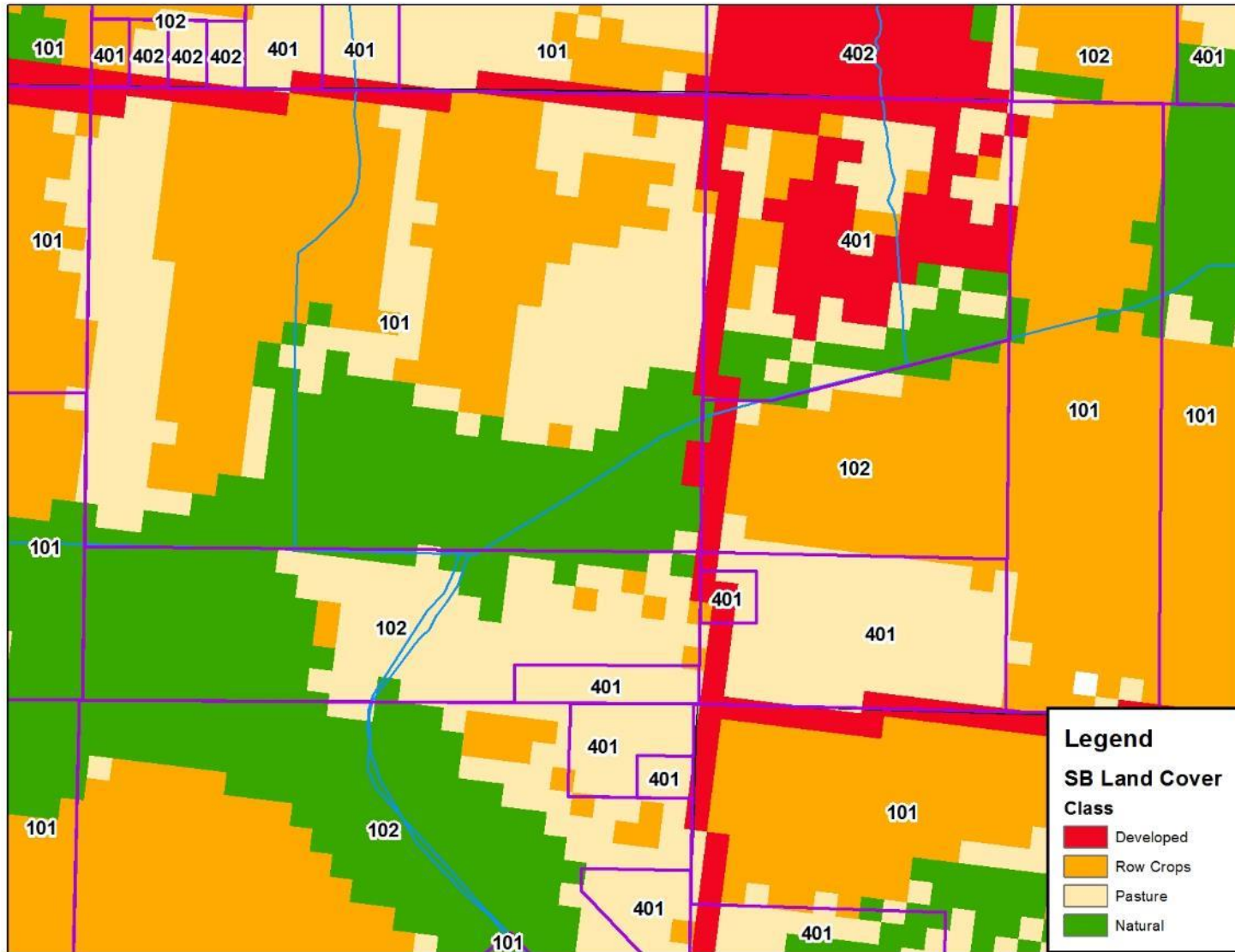


Management

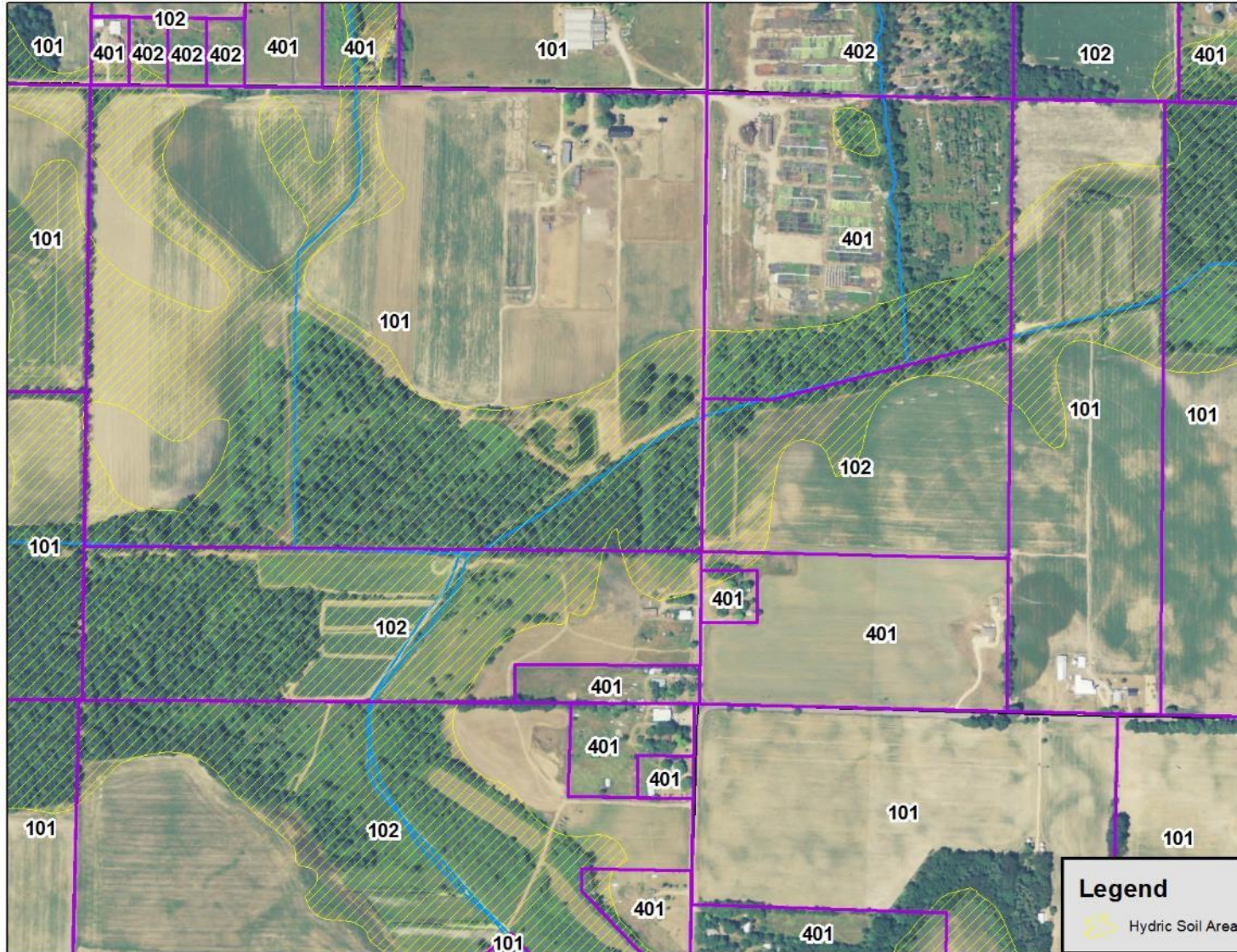
Use Factor – Land Cover



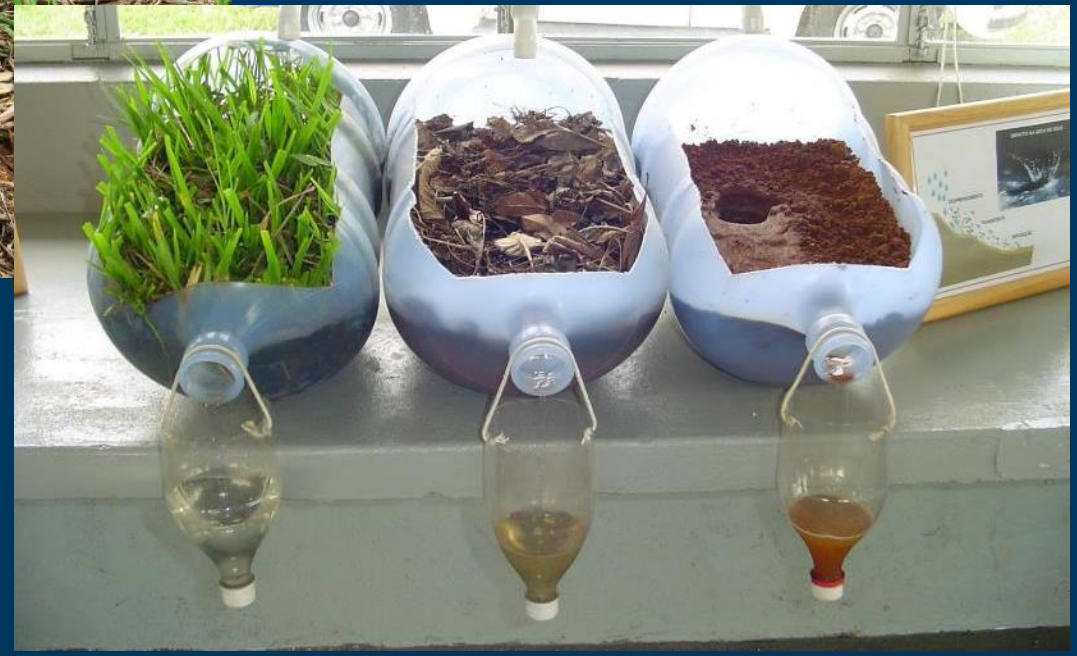
Use Factor – Land Cover



Need Factor – Hydric Soils



Management Factor – Runoff Reduction

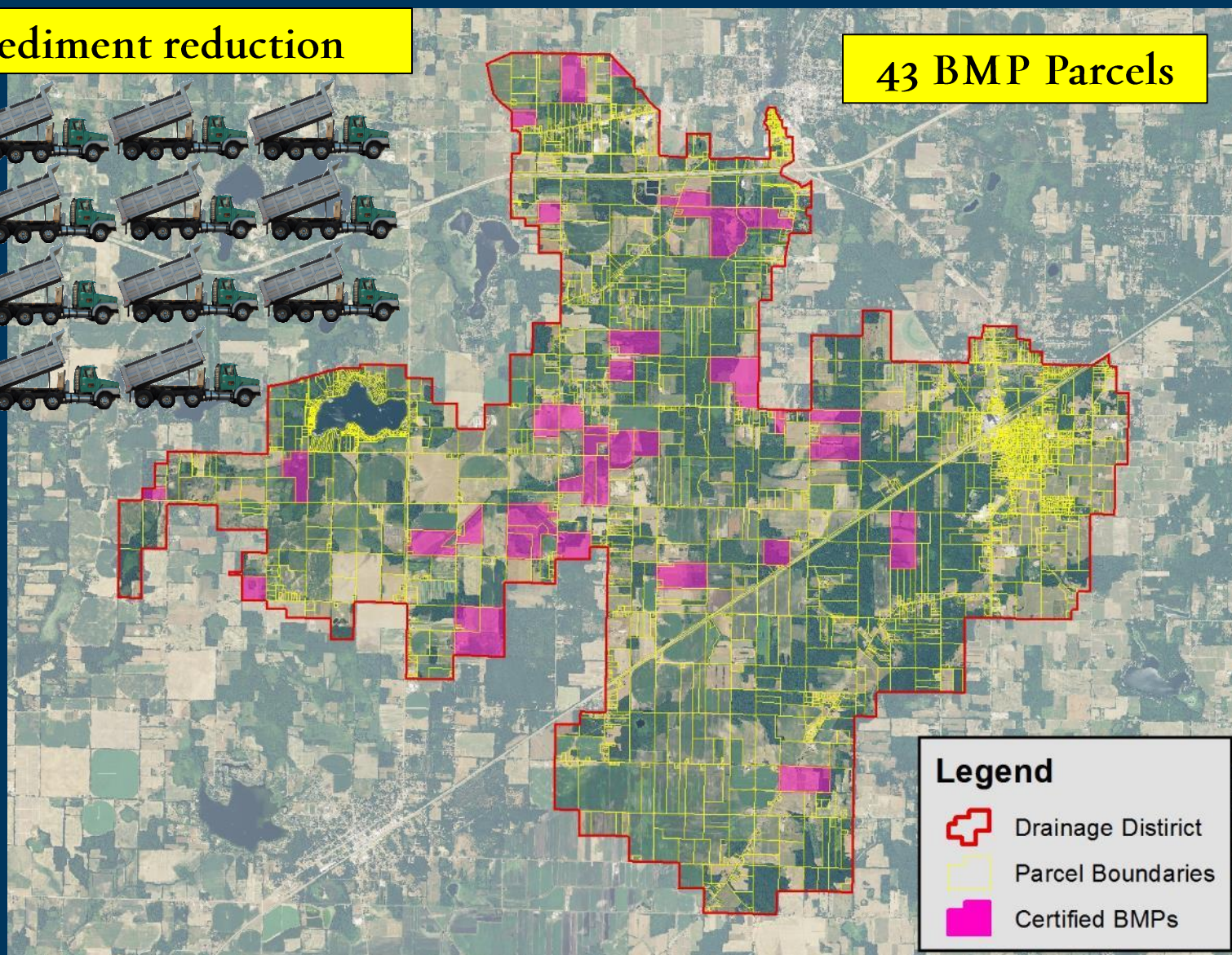


Pilot Project Outcomes

192 tons of sediment reduction



43 BMP Parcels



Legend

-  Drainage District
-  Parcel Boundaries
-  Certified BMPs

21% savings



Opportunities



Challenges

