Alternative Options for Financing and Incentivizing Practice Implementation

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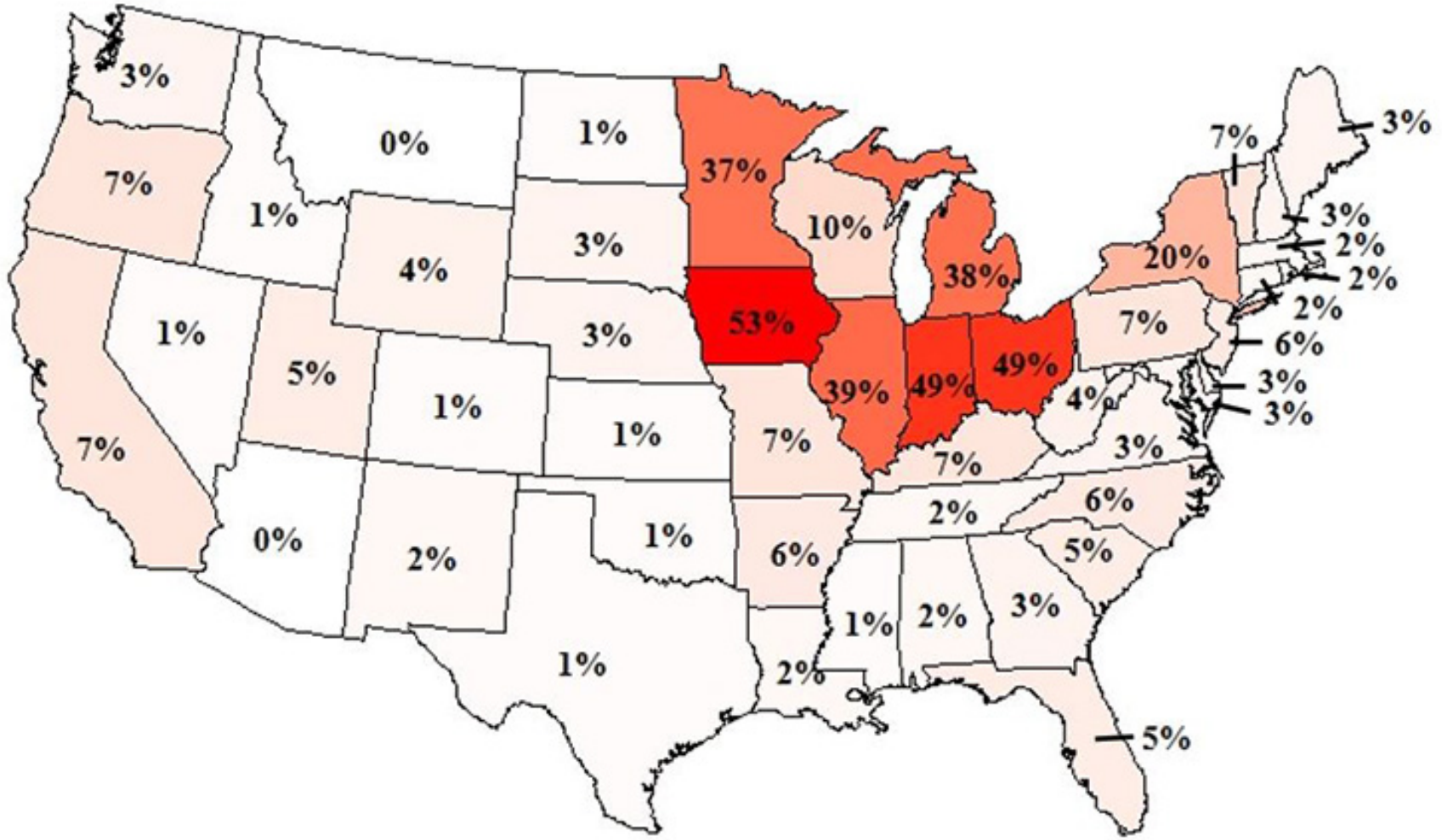
Megan Baskerville, TNC

Figure 1. Acres Tiled as a Share of Cropland Acres, U.S., 2017
(Rounded to Nearest Percent)



Data Source: Author Calculation from USDA Censuses of Agriculture

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Nationwide Stats:

2017:
56 million acres of cropland are tiled

2012:
49 million acres tiled

Increase in frequency of large rain events/replacing old tile

Drainage Districts 101

- Drainage Districts are small units of local government created by petition or referendum and court approval
- Approximately 1,700 Drainage Districts have been organized in Illinois.
- Three Commissioners, who serve staggered 3-year terms, govern each Drainage District.

Commissioners have the power to:

- Do all necessary work for construction, altering, enlarging, protecting, repairing and maintaining any drain, levee or other work of the district
- Go upon land within or outside the district for examining the work of the district and for surveys.
- Use funds of the district for any lawful purpose and employ engineers, attorneys, and other employees

Drainage Districts 101

Need court approval to:

- Construct additional drains, levees, or other work necessary for protections of the lands of the district.
- Alter, enlarge, extend, any drain
- Change method of construction, route, or size of any proposed drain
- Purchase equipment, construct roads
- acquire land thru eminent domain
- Levy assessments only against benefited land.

Since 1976, under the Illinois Drainage Code, drainage commissioners have had a legal obligation to protect environmental values in any activities in which they engage. Specifically, Section 4-15.1 states:

In performing any of the duties and in exercising any of the powers provided in this Code, the commissioners shall use all practicable means and measures, including consideration of alternative methods of providing the necessary drainage, to protect such environmental values as trees and fish and wildlife habitat, and to avoid erosion and pollution of the land, water or air. (70 ILCS 605/4-15.1)10

Drain Infrastructure Transactions for Clean H2O (D.I.T.C.H.)

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FAHEY SCHULTZ BURZYCH RHODES PLC

Spicer group
Engineers • Surveyors • Planners

MICHIGAN FARM BUREAU®

County of Saginaw Seal — Founded 1835

County of Monroe Michigan — 1817

Washtenaw County Michigan — 1826

The Cook Family Foundation

D.I.T.C.H. Goals

- Incentivize the Adoption of Agricultural Conservation/Best Management Practices (BMPs)
- Develop a Methodology to Allow Drain Offices to Consider BMP Benefits When Levying Drain Assessments
- Increase the Number of BMPs in Drainage Districts to Reduce Sediment in Drains, Thereby Reducing Future Drain Maintenance
- Increase Conservation Practices, Thereby Improving Water Quality Benefits

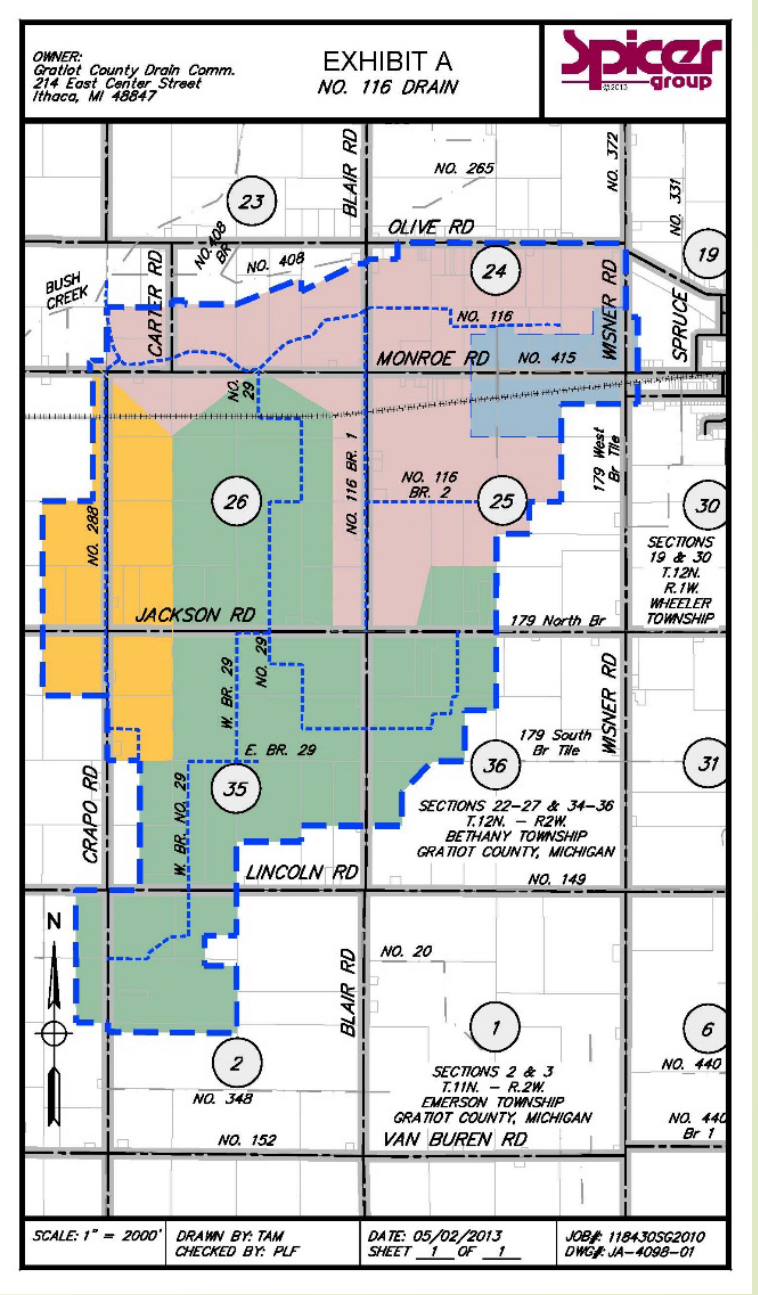
Background on Michigan Drain Management

- **Section 404 Program**
- **Drain Code of 1956**
- **Drain Commissioners**
  - Elected at county level
- **Drainage Districts**
  - Separate legal entities
- **Special Assessments**
  - Pay for maintenance and improvement projects
- **Intercounty Drainage Boards**
  - Manage larger drainage systems/watersheds

Photo by Randy Schaetzl, Michigan State University

Michigan

- **Drainage Districts**
  - Separate governmental entity
  - Includes properties that contribute runoff into the drain
  - Projects paid for by special assessments
    - *Petitioned projects*
    - *Non-petitioned maintenance*



Michigan Drain Assessment Methodology

- Typical Factors for Calculating Benefit for Parcels in Drainage District
  - Acreage
  - Land Use Type
    - *Agricultural*
    - *Residential*
    - *Commercial*
    - *Industrial*
  - Proximity to Work Performed

D.I.T.C.H. -Drain Assessment Factor for Approved BMPs on Ag Lands

- Reduce the Agricultural Land Use Factor for Properties with an Approved BMP
  - *Lowers Assessment Percentage*
- Considerations for Reduced Land Use Factor
  - *BMP Type*
  - *BMP Acreage*
  - *Acreage of Parcel Served by BMP*
  - *Location of BMP (directly on drain vs. other location in drainage district)*

Assumed Sediment Yield

- Acres without filter strips: 6 cft/ac/yr
- Acres with >10’ filter strips: 3 cft/ac/yr

MATH!!

Table 12: Historical drain cleanout data in Kawkawlin River Watershed.

Drain Name	Year Cleaned	Prior Cleanout	Time Between (yrs)	Drainage Area (ac)	Length Cleaned (mi)	Approx. Sed. Removed (cyd)	Rate (cft/ac/yr)
Crump	1993	1963	30	3,400	8.4	20,600	5.5
Hembling	1993	1970	23	4,500	10.6	13,500	3.5
Popp	1998	1970	28	1,310	5.2	9,500	7.0
Bradford	1989	1952	37	2,760	8.3	23,800	6.3
Hildebrandt-Anderson	1998	1972	26	2,240	6.2	7,800	3.6
Goss (Bedell)	1998	1955	43	422	1.8	2,600	3.9
AVERAGES			**31.2**	**2,440**	**6.8**	**13,000**	**4.6**

Spicer group

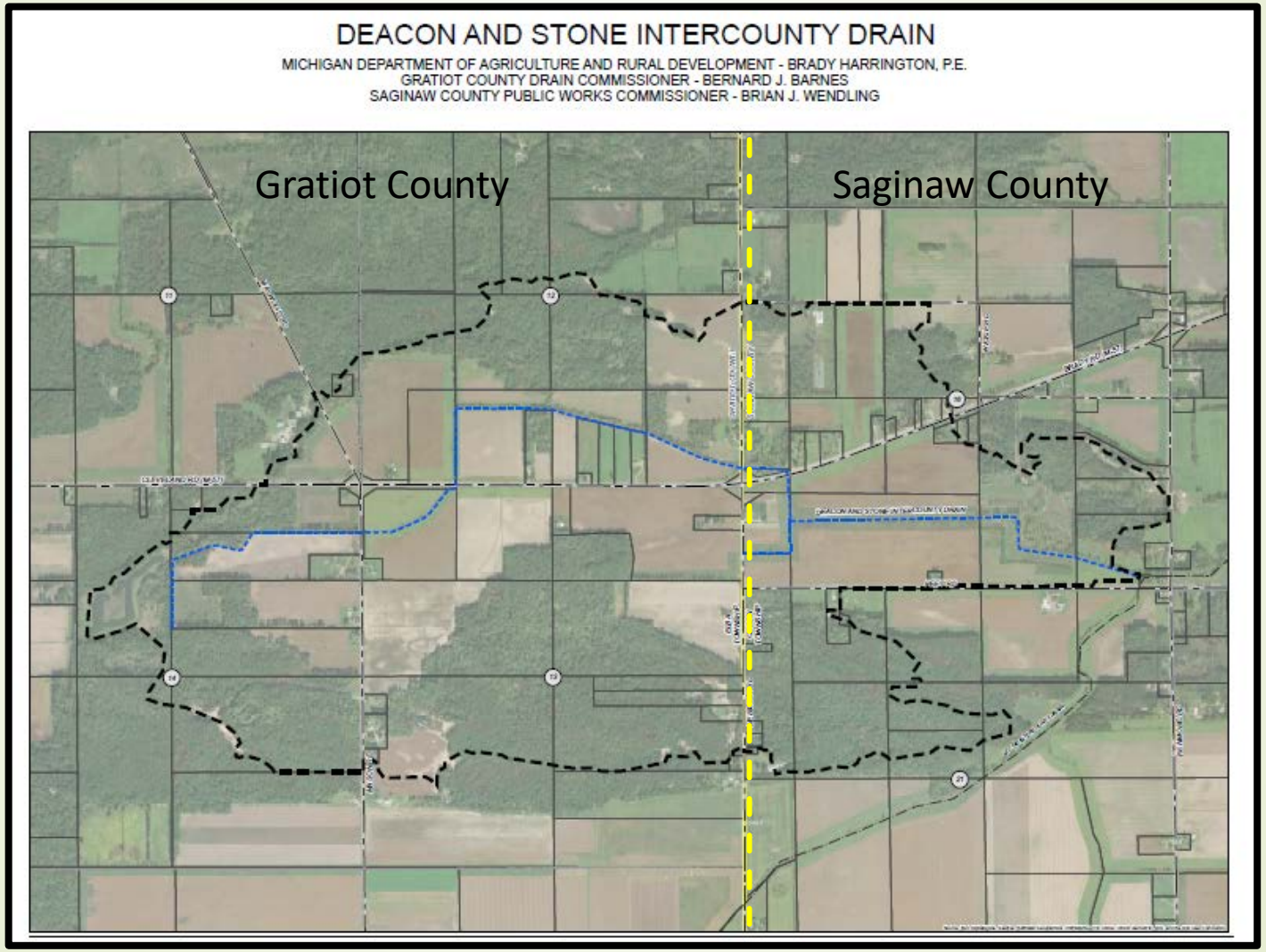
Parcel Case Study

Landowner Information	
Parcel Owner:	Jane Doe
Address:	100 Stuart Road
Parcel ID:	24-10-3-22-4004-000
Municipality:	St. Charles Township
Parcel Acreage:	19.02
District Acreage:	19.02
Total Drainage District (Ac.):	7,013.74

Case 1: Assessment Synopsis		
	Landuse Coefficient	**Amount**
Original	0.2500	$3,206.07
Reduced	0.1851	$2,663.32
Total Savings		**$542.75**
Savings per BMP Acre		**$1,876.36**

- BMP: Filter Strip
  - 10-ft. wide, 630-ft. long
  - Both Sides of Drain
  - Size: 0.29 Acres

D.I.T.C.H. Deacon-Stone Pilot



D.I.T.C.H. Pilot Results

	Parcel Size (Acres)	Original Assessment	Reduced Assessment	Savings	Percent Savings	BMP Size (Acres)	Savings per BMP Acre
Gratiot	51.75	$10,981.99	$8,314.52	$2,667.47	24.30%	1.76	$1,515.61
	40.00	$8,581.49	$6,543.27	$2,038.22	23.80%	0.57	$3,575.83
Saginaw	18.26	$2,798.66	$2,330.39	$468.27	16.73%	0.23	$2,077.16
	78.28	$9,357.48	$7,342.65	$2,014.83	21.53%	1.36	$1,483.03
	14.53	$2,390.71	$2,013.43	$377.27	15.78%	0.47	$798.54
	7.39	$1,610.76	$1,418.52	$192.24	11.93%	0.25	$778.27
Total	**210.21**	**$35,721.09**	**$27,962.78**	**$7,758.30**	-	**4.64**	-
Averages	-	-	-	-	**19.01%**		**$1,704.74**

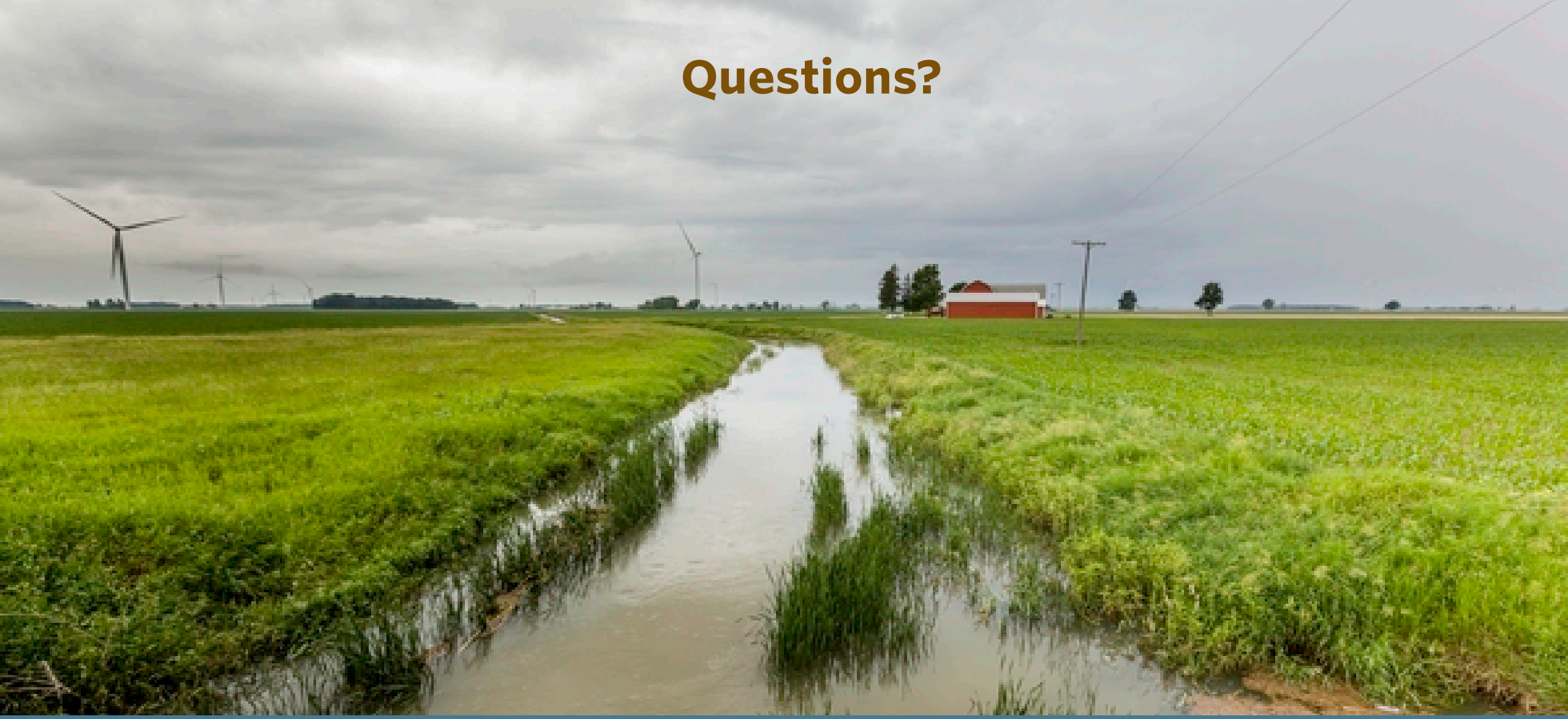
Deacon-Stone Pilot Timeline

- Board of Determination: August 2018
  - Present project to landowners, provide FAQs, answer questions
  - Project team (Drain Commissioners, Spicer Group, FSBR) meet with landowners, finalize contracts.
- Contracts executed, Day of Review February 2019
- Spring-Summer 2019: filter strips established

D.I.T.C.H. Next Steps

- Buffers
  - Simplify process, create “buffer calculator” for Drain Commissioners
  - Expand buffer program statewide
- Wetlands and Water Storage
  - Engineering Analysis
  - Test leasing model and Management Company
- Opportunities outside Michigan: MN, IL

Questions?



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