



Public Drain Fee Reduction Program to Support Biological Watershed Outcomes

December 8, 2014

Public Drains



Theory of Change

Hypothesis: Likely cheaper, and with less environmental impacts locally and downstream, to prevent sediment from getting into the drain, rather than removing it after its already in the drain.

Innovative conservation delivery and funding mechanism: Possible to reduce Farm Drainage Assessments by an amount equivalent to the ecosystem improvement produced by the landowner implementing a Best Management Practice (pay for performance).

Testing the Waters

Statewide Assessment

- How much do drain commissioners spend on maintenance collectively?
- How much of that is related to sediment removal?

Van Buren County Pilot Project

- Drain Commissioner and Landowner acceptance

Public Drain Governance

- Michigan Drain Code 1956
- County Drain Commissioners are elected officials, 82 in Michigan
- Drainage Districts
 - Dozens to hundreds per county
 - Township Districts, each with own taxing and governance structure.
 - Can levy fees with public involvement and approval
- Intercounty drains (1,100 in MI), board governed
- Benefits Derived- Apportionment

Extent of Public Drains in Michigan

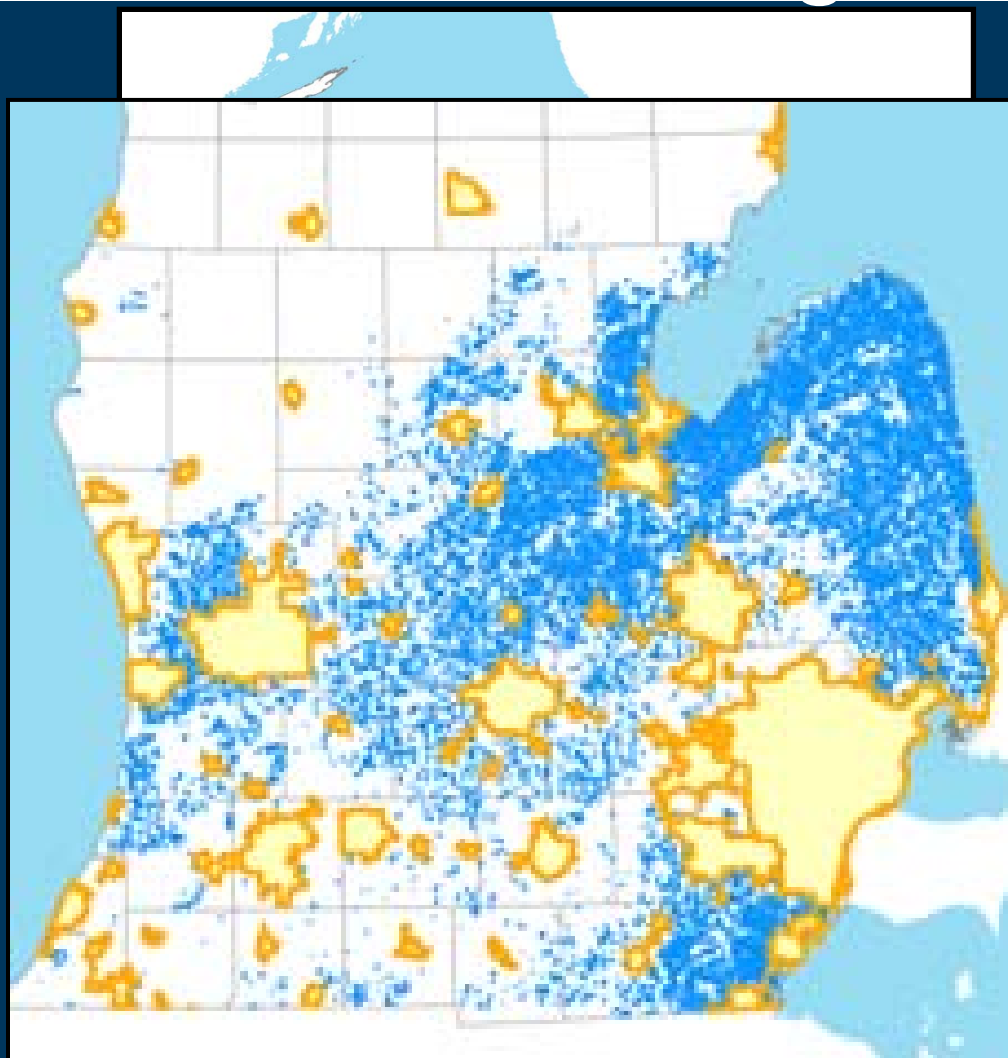
Feb 2014 Phone Survey of Drain Commissioners

- Total miles of drain in their county, annual budget on drain management
- Low response: information not readily available or not inclined to share

Expert Interviews

- Candid Drain Commissioner and Engineering Company
- Findings:
 - Ingham County inventory of drains: thought had 1,179, actually 487, took several years to complete
 - MI Association of County Drain Commissioners developing a project to assess what it would take to do a statewide

Extent of Agricultural Drains in Michigan



■ Census Urban Areas

0 50 100 Mi.

**Estimate 15,102
miles of drains**

Sediment Removal Costs

- **\$5,000 to \$35,000 per mile to maintain.**
Approx \$5,000 per mile every 20 years (1/2 sediment removal, 1/2 vegetation removal), or \$125/mile/year (undiscounted)
- 1 cubic yard sediment per 3ft drain length, 10.5 cubic feet per foot. One yard sediment = 1.5 tons(dry), 2600 tons per mile. **Ton of sediment costs approx. \$1 to remove.**

Statewide Drain Management Costs

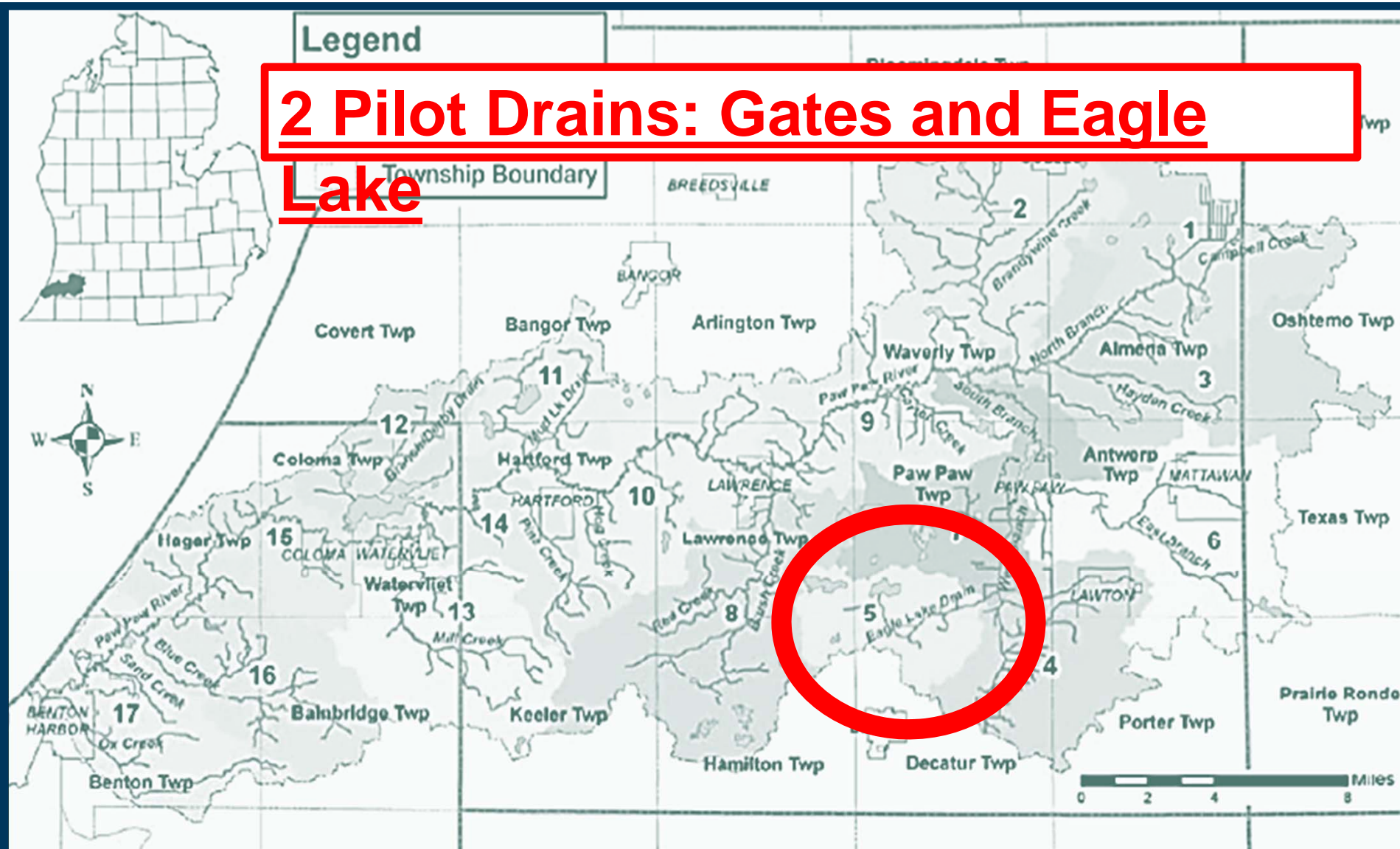
Statewide total annual cost of **\$1,887,750** to **\$4,375,000** (15,102 to 35,000 miles of drains)

Many county drain commission offices have annual budgets exceeding **\$2M** (also include construction, development and maintenance of urban drains, and maintenance of drains older than 20 years)

Conclude: Not a strong financial incentive for drain commissioners to manage for sediment reduction.

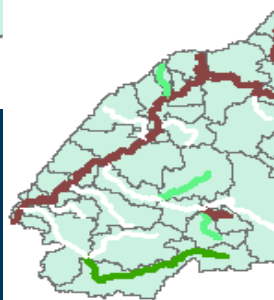
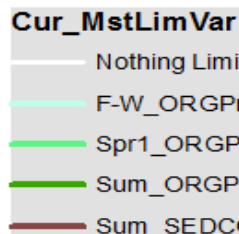
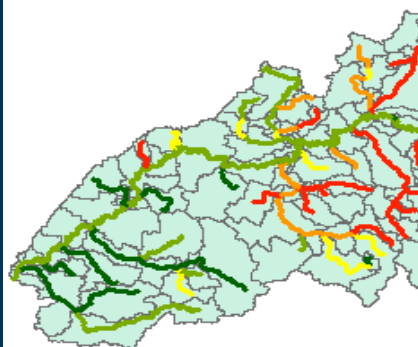
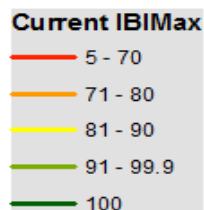
Van Buren County Pilot

2 Pilot Drains: Gates and Eagle Lake

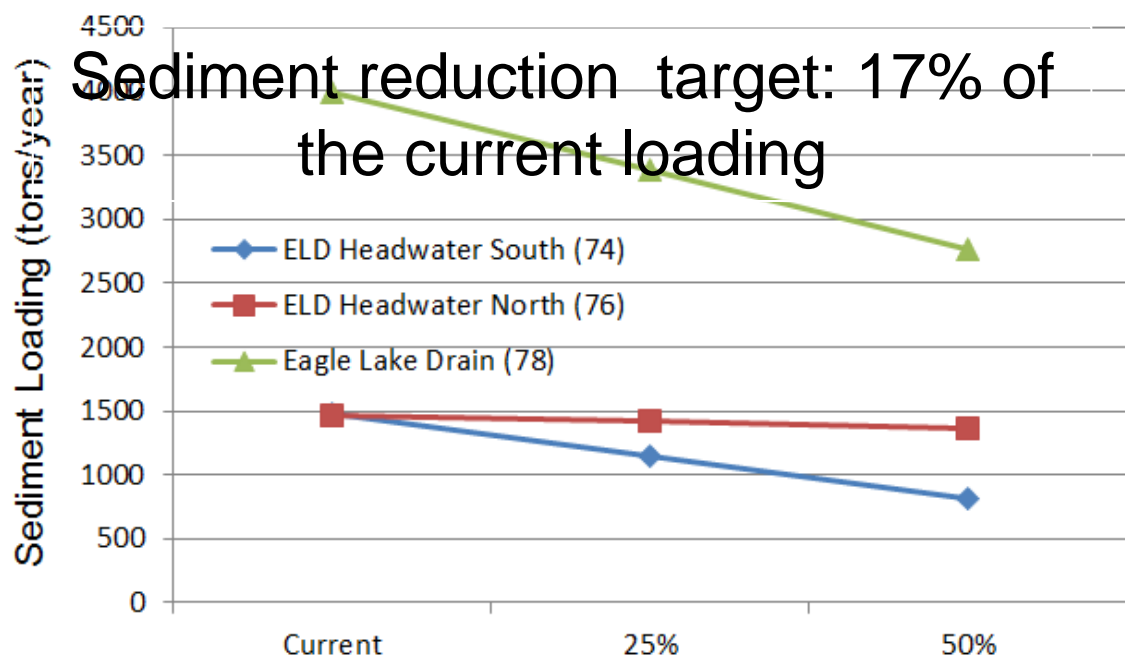


Sediment Reduction Targets

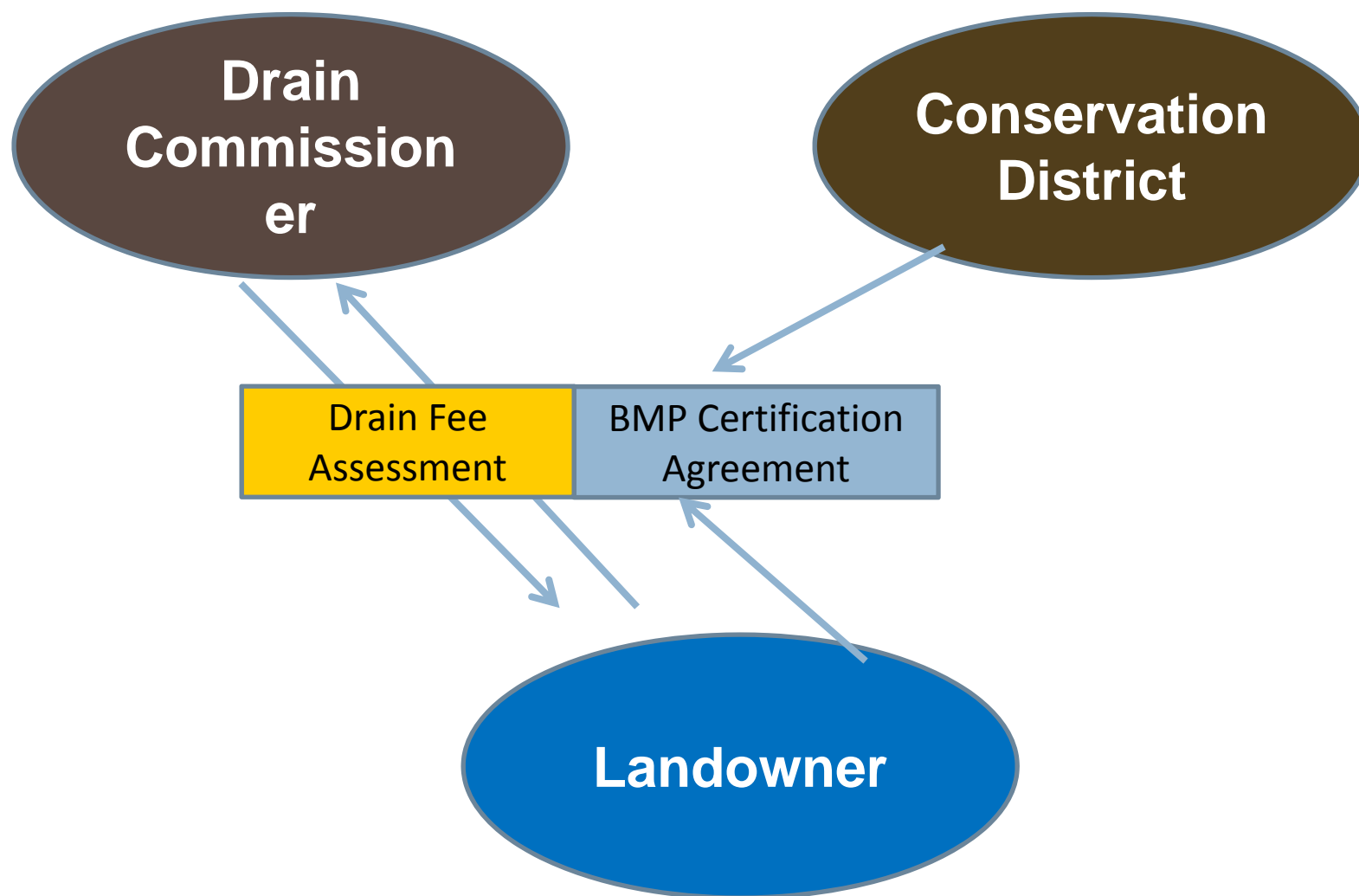
Current Fish Potential



Most Limiting Variable



Van Buren County Pilot



Use, Need and Management Based Drain Assessment

Base Assessment: 35% allocated evenly to each parcel

Benefit Factors Assessment: 65% based on

- **Use:** landcover (natural, developed, pasture/hay, rowcrop)
- **Need:** Hydric soils
- **Management: Ag BMPs**
 - Factor based on % sediment load reduction from practice.
 - Capped to ensure benefit score does not fall below that of a lower land use class (50% high intensity ag, 30% low intensity ag).

Van Buren County Pilot Status

Landowners generally supportive, even those likely to be adversely affected

40 landowners contacted, 15 landowners completed BMP certification agreements on 43 separate fields/practices.

The total monetary benefit to the landowners was \$303 dollars which averages out to about \$20 per landowner (**per acre?**)

Van Buren County Pilot Status

- 600 acres of No-Till
- 13 acres of Filter Strips
- 495 acres of Cover Crops
- Gates Drain: 192.4 tons/year sediment reduced (14.3% of reduction goal)
- Eagle Lake Drain: 94.6 tons/year sediment reduced (14.4% of reduction goal)

Lessons Learned

- Opportunity for better incentives for conservation practices by including land management as a factor in assessment.
- Drain Code will be a barrier, perceived or real, for innovation.
- Monetary incentives likely not significant to motivate change to Drain Code or drive significant adoption of additional BMPs.

Next Steps

- Present to Michigan Association of County Drain Commissioners' Annual Conference
 - Additional management information, verification of cost estimates
 - Political Feasibility to change Drain Code to an Ecosystem-based approach?
- Continue second year of Van Buren Pilot

Project Collaborators

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Questions?