Mitigation

Regulatory Project Managers

Corps Detroit District Regulatory Office

EGLE Bay City District Office

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US Army Corps of Engineers
BUILDING STRONG®

Michigan Department of Environment, Great Lakes, and Energy

Outline

- Mitigation overview
- Function replacement, and “watershed approach”
- Compensatory Mitigation plans and monitoring
- Differences between EGLE and Corps
- Coordination between EGLE and Corps

Mitigation is a “Sequence”

1. Avoidance - no direct impact
2. Minimization
3. Compensation, especially for Special aquatic sites including wetlands; other sites i.e. fish spawning reef

Mitigation Rule Requirements

- Type of Compensatory Mitigation plan to provide with application
  - ►Conceptual plan with General Permit application
  - ►Complete plan with Standard Permit application; final plan before permit decision
- Corps Mitigation Guidance document:

http://www.lre.usace.army.mil/Portals/69/docs/regulatory/PDFs/MitigationGuidelines_16_May_2016.pdf

General Permits and Mitigation

- Nationwide Permits:
  - ►Activities do not qualify unless impacts have been avoided and minimized to the maximum extent practicable
  - ►May require compensatory mitigation
    - Wetland impacts > 0.10 acre
    - Determined on case-by-case basis

2008 Mitigation Rule – Established Mitigation Hierarchy

1. Mitigation Bank Credits
2. In-Lieu Fee Program Credits (not available in MI)
3. Permittee Responsible – Watershed Approach
4. Permittee Responsible – On-Site & In-Kind
5. Permittee Responsible – Off-Site and/or Out-of-Kind
6. Preservation and/or Enhancement

Goal: Replace functions

Identify functions lost due to project

Prefer sites where functions can be restored

Consider setting - coastal, riverine, palustrine (marshes, swamps)

Find sites with hydric soils and appropriate hydrologic regime

Components needed in mitigation plan

- Objectives
- Site Selection
- Site Protection instrument
- Baseline Information
- Determination of Credits
- Mitigation Work Plan
- Maintenance Plan
- Performance Standards
- Monitoring Requirements
- Long-term Management plan
- Adaptive management plan
- Financial Assurances
- "Other" such as liens or easements on mitigation property

Mitigation plan consists of 12 main parts, but…like a baker's dozen, the Corps can ask for "other" information

Required for all compensatory mitigation sites

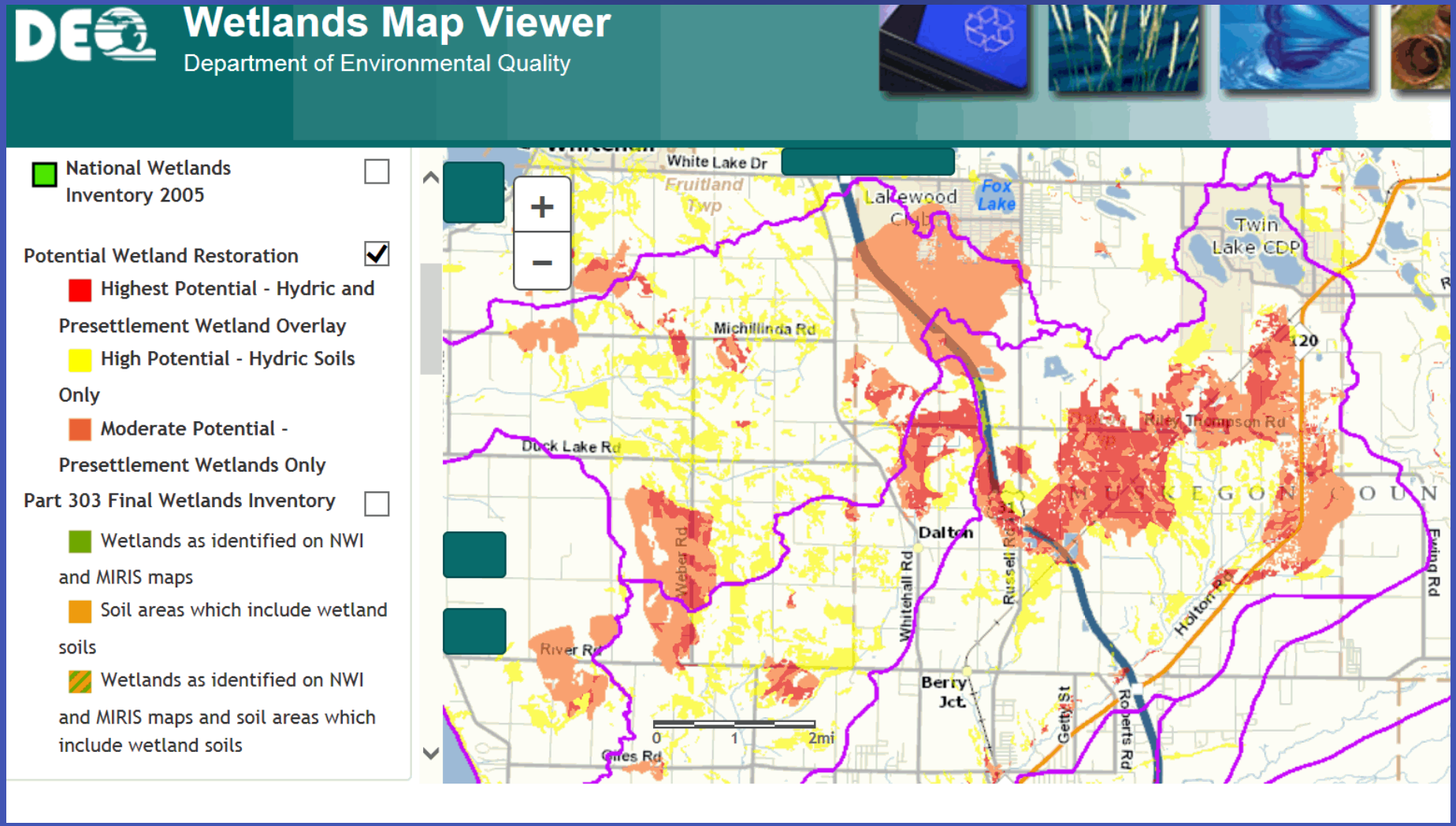
1. Objectives

- Resource types and amounts to be provided
- Method of compensation
- How functions will address watershed needs

2. Site selection

- Factors considered in selecting site
- Off-site vs. on-site alternatives
- Show site suitable to be self sustaining
- Include current and future land use
- ELGE wetland viewer: http://www.mcgi.state.mi.us/wetlands/mcgiMap.html

Site selection - restoration potential



3. Site protection instrument

- Legal arrangements and instrument to protect site
- Site ownership
- Responsible parties
  - http://www.michigan.gov/deq/0,4561,7-135-3313_3687-86447--,00.html

4. Baseline information

- Describe both the impact and mitigation sites
- Present and historic plants, hydrology and soils
- Include a delineation of existing aquatic resources
- Note any existing invasive species

5. Determination of credits

- Describe how number of credits generated was determined
- Describe how mitigation will compensate for impacts
- List functions at both impact and mitigation sites

6. Work Plan

- Construction Drawing Set
  - Topographic base map
  - Proposed and existing elevations and cross-sections
  - Planned vegetation zones; with plant lists and methods to establish plant community
- Describe work sequence, timing, water source, grading, erosion control
- Describe planned hydrology, soils, buffers
- List functions mitigation site will provide

6. Work Plan - avoid common problems

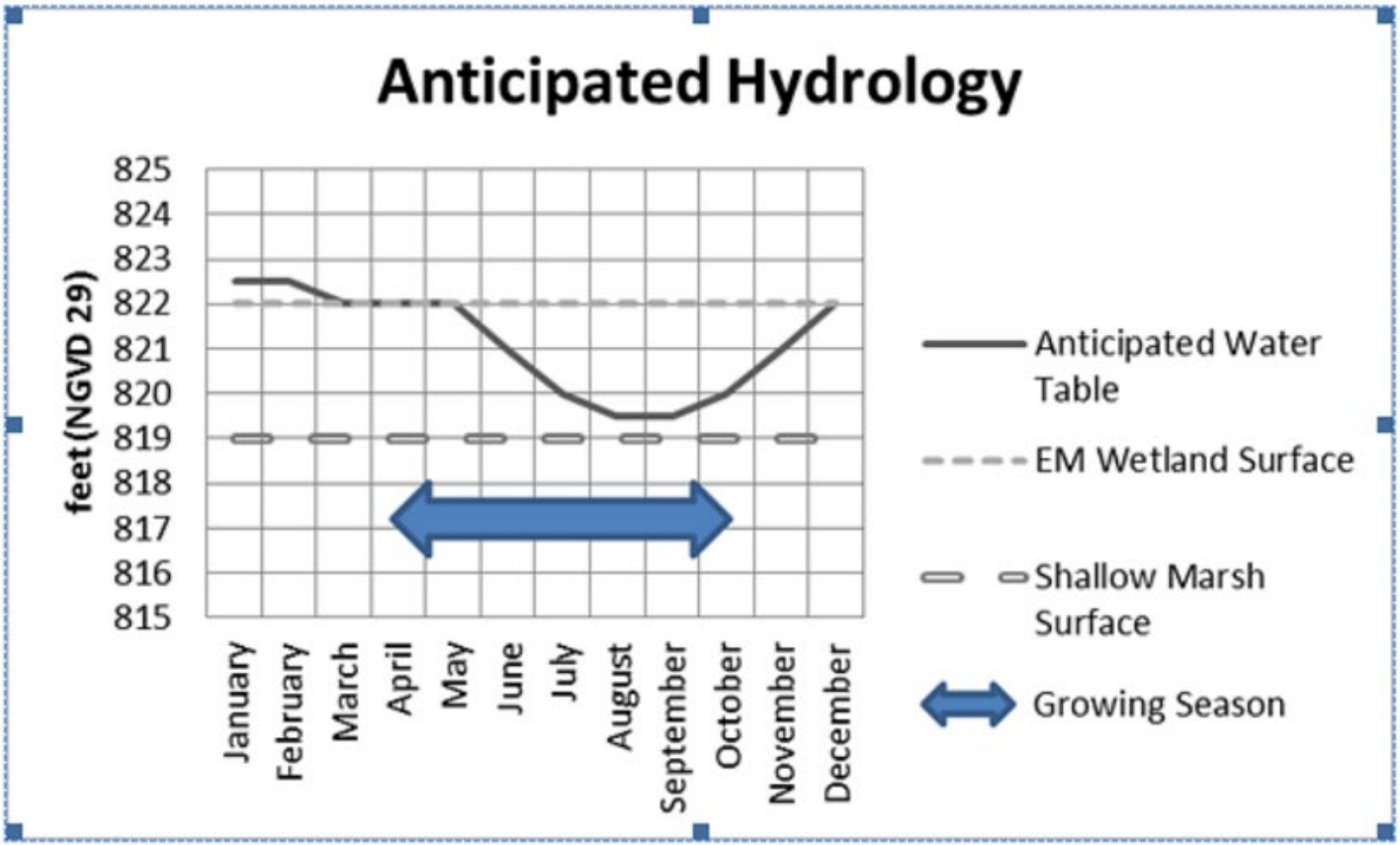
- Too much water
- Too little water
- Wrong soils
- Failure to establish plant community
- Siting in areas with invasive species

Critical Work Plan Challenge

- Developing appropriate hydrology
  - ▶ Plan carefully for desired habitat(s)
  - ▶ Calculate a water budget and hydrograph for each planned wetland zone

Seasonal Hydrograph

Figure 1. Anticipated post-construction water levels for typical annual cycle.



7. Maintenance Plan

- Parties and their responsibilities
- Maintenance plan and schedule
- Describe how plan ensures continued viability of aquatic resource
- Methods to control invasive species

8. Performance standards

- Interim standards and final success criteria
- Standards for hydrology
  - Meet minimum standards and match desired regime
  - Includes a primary indicator – water level or saturation
- Standards for vegetation
- Limits to unvegetated areas and invasive species

9. Monitoring Plan Requirements

- Monitoring schedule
- All responsible parties and their responsibilities
- Data to be collected, assessment tools used, methodologies
- 5-year monitoring period; generally 10 for forested habitats

10. Long Term Management Plan

- Management after plan meets standards
- Task list, schedule, and costs
  - Calculate the annualized cost for plan ($/Year)
- Long-term financing mechanism
  - Show how $ available will cover annualized cost
- Long-term manager and responsible party

11. Adaptive Management Plan

- All responsible parties and their responsibilities
- Remedial measures to address unforeseen changes in site conditions

12. Financial Assurances

- All parties who are responsible for assurances
- Type of assurance, content, dollar amount, schedule
- Describe how assurance will ensure project will be completed and meet compliance standards
- ELGE accepts Letter of Credit or Surety Bond. Corps prefers Surety Bond but will accept other forms of assurance

13. “Other Information”

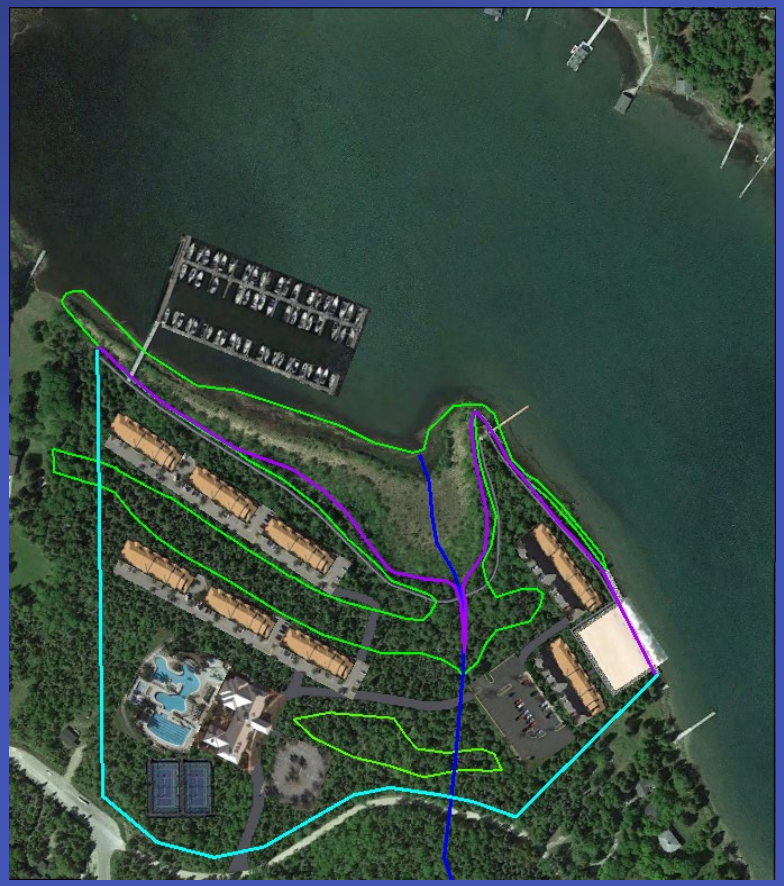
- Existing Deed Restrictions /Liens
- Assess rights of restriction holders and how their activities may affect planned habitats

Sanitary Sewer Easement	City of Gary	Miscellaneous Record 183, page 511
Deed of Dedication (Clay Street)	Lake County	Deed Record 457, page 591
Electrical Easement	Gary Heat, Light & Water	Miscellaneous Record 311, page 54
Drainage Easement	unknown (probably Lake County)	Miscellaneous Record 582, page 257
Right-of-Way Easement	State of Indiana	Deed Record 972, page 251
Telephone Easement	Indiana Bell Telephone Company	Instrument No. 94002980
Utility Easement	City of East Gary	Instrument No. 87395

EGLE mitigation ratios

Emergent	1.5:1
Scrub-Shrub	1.5 :1
Forested	2:1
Rare/imperiled	5:1
Preservation	10:1

Example project

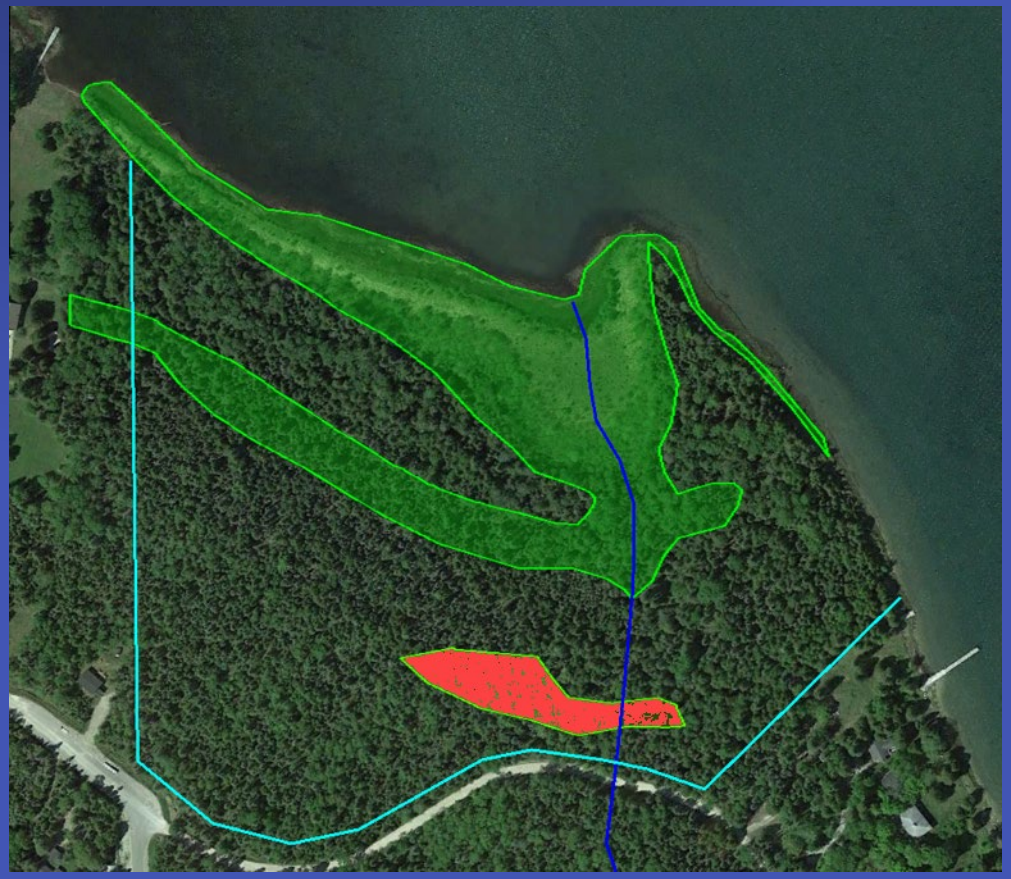


Coordination State and Federal

- Corps wetland impacts
  - 1.33 acres impact
  - 2:1 mitigation ratio
  - 2.66 acres mitigation

Coordination State and Federal

- ELGE wetland impacts
- Additional 0.25 acres of impact
  - 1.58 acres of impact
  - 2:1 mitigation ratio
  - 3.16 acres of mitigation



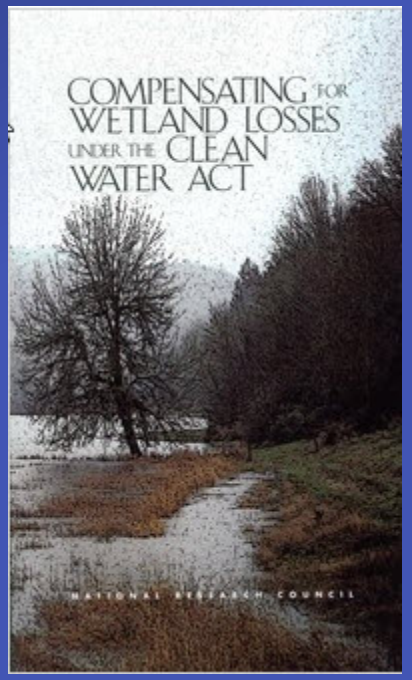
Wetland Banking

What is Wetland Banking

- Establishment of new wetlands in advance of anticipated losses
- Provides “credits” on a per acre basis which can be used by the bank sponsor or sold
- Credits service watersheds/ecoregions
- Preferred method of mitigation

Why Wetland Banking?

- 2001 National Research Council Study
- 2008 Federal Mitigation Rule
- 2009 Amendments to Part 303



Benefits of Wetland Banking

- Benefits to State of Michigan
  - Increase in wetland resources
  - Larger better functioning units
  - Watershed planning approach
- Benefits to Applicants
  - Reduction in permit processing times
  - Ensures success and availability of mitigation

Watershed Approach

- Identify watershed needs
- Identify desired outcomes
- Identify potential sites
- Assess potential of sites to sustainably meet watershed needs
- Prioritize sites, areas and desired outcomes

Requirements for Wetland Banks

- Minimum of 10 acres of new wetland
- Signed banking agreement prior to construction
- Credits approved as site meets standards
- Long term management plan and non-wasting endowment

Wetland Bank Service Area (Watersheds)

Wetland Bank Service Area (Ecoregions)

Figure 6. Regional Landscape Ecosystems of Michigan's Upper Peninsula

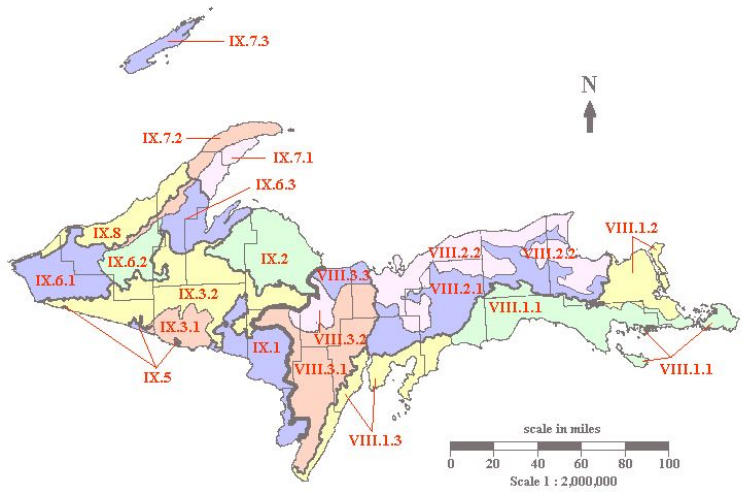
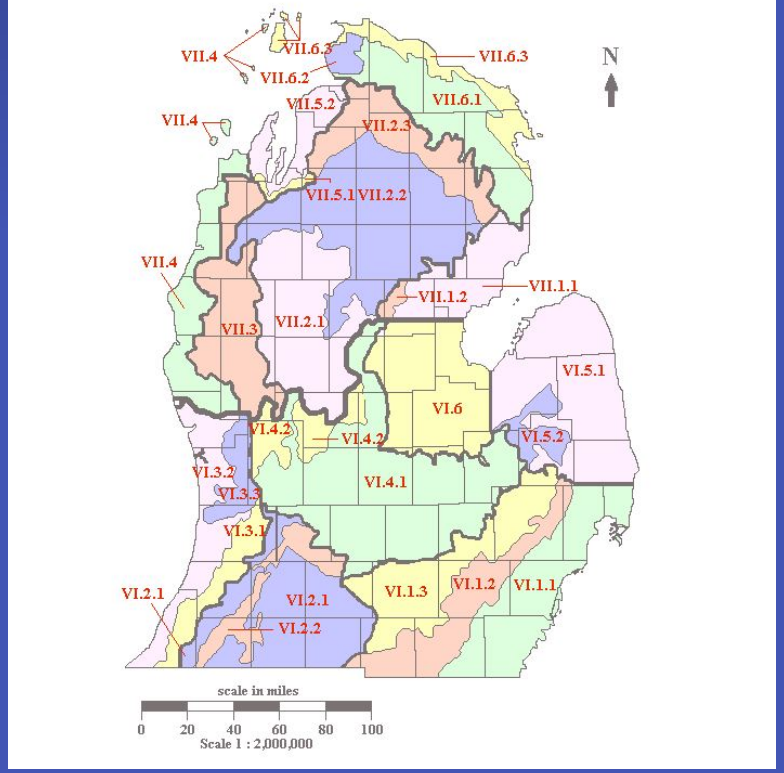
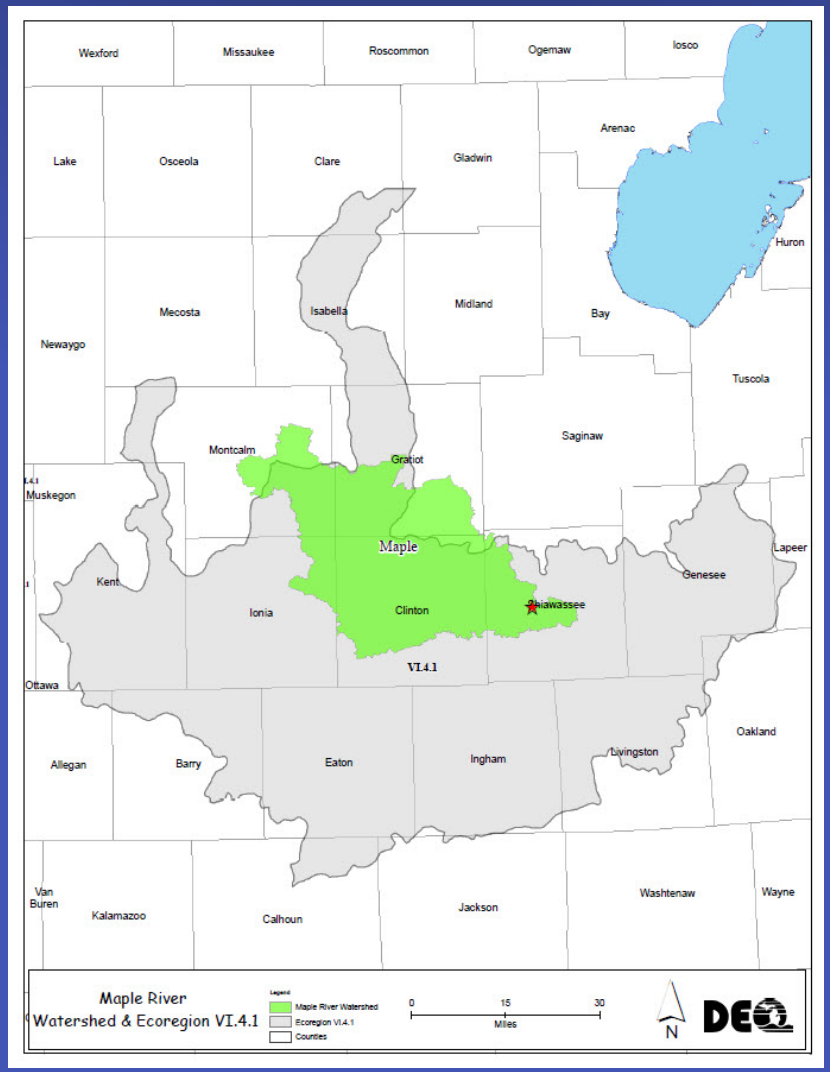


Figure 5. Regional Landscape Ecosystems of Michigan's Lower Peninsula

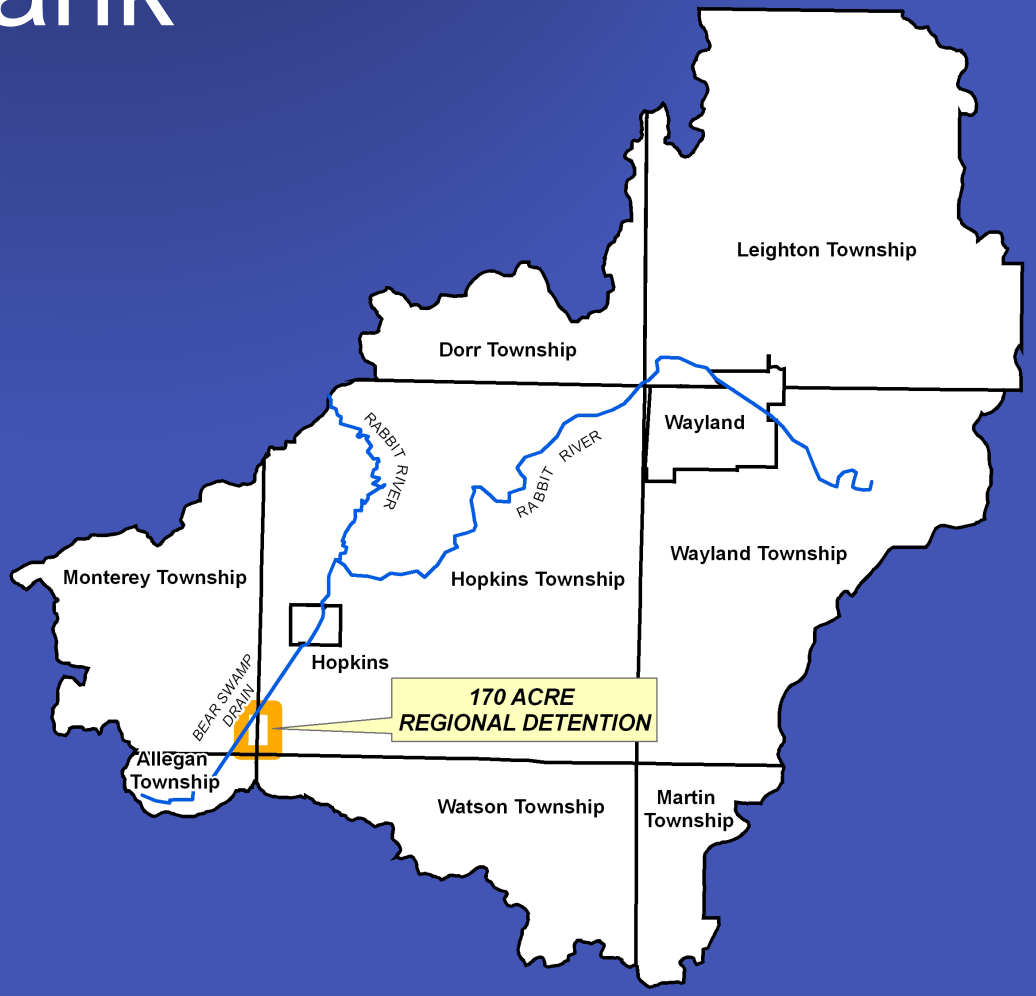


Example Bank Service Area

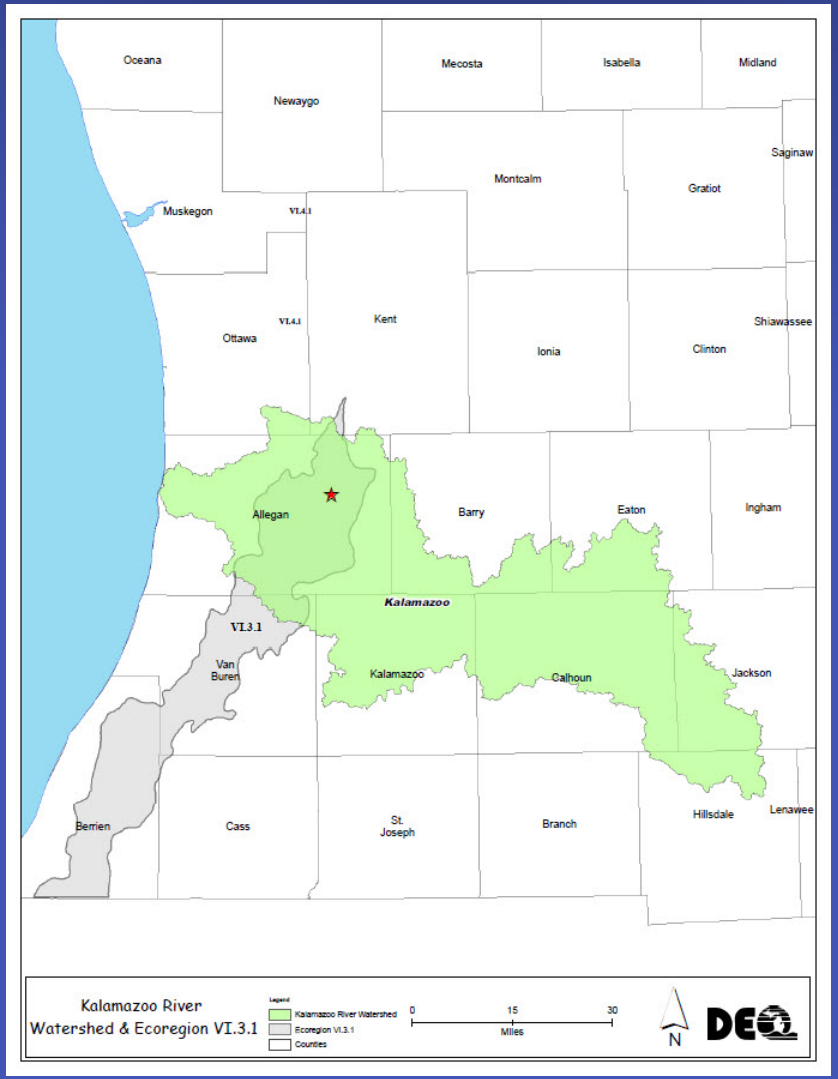


Current Bank Credit Availability

Bear Swamp Drain Wetland Bank



Service Area for Bear Swamp



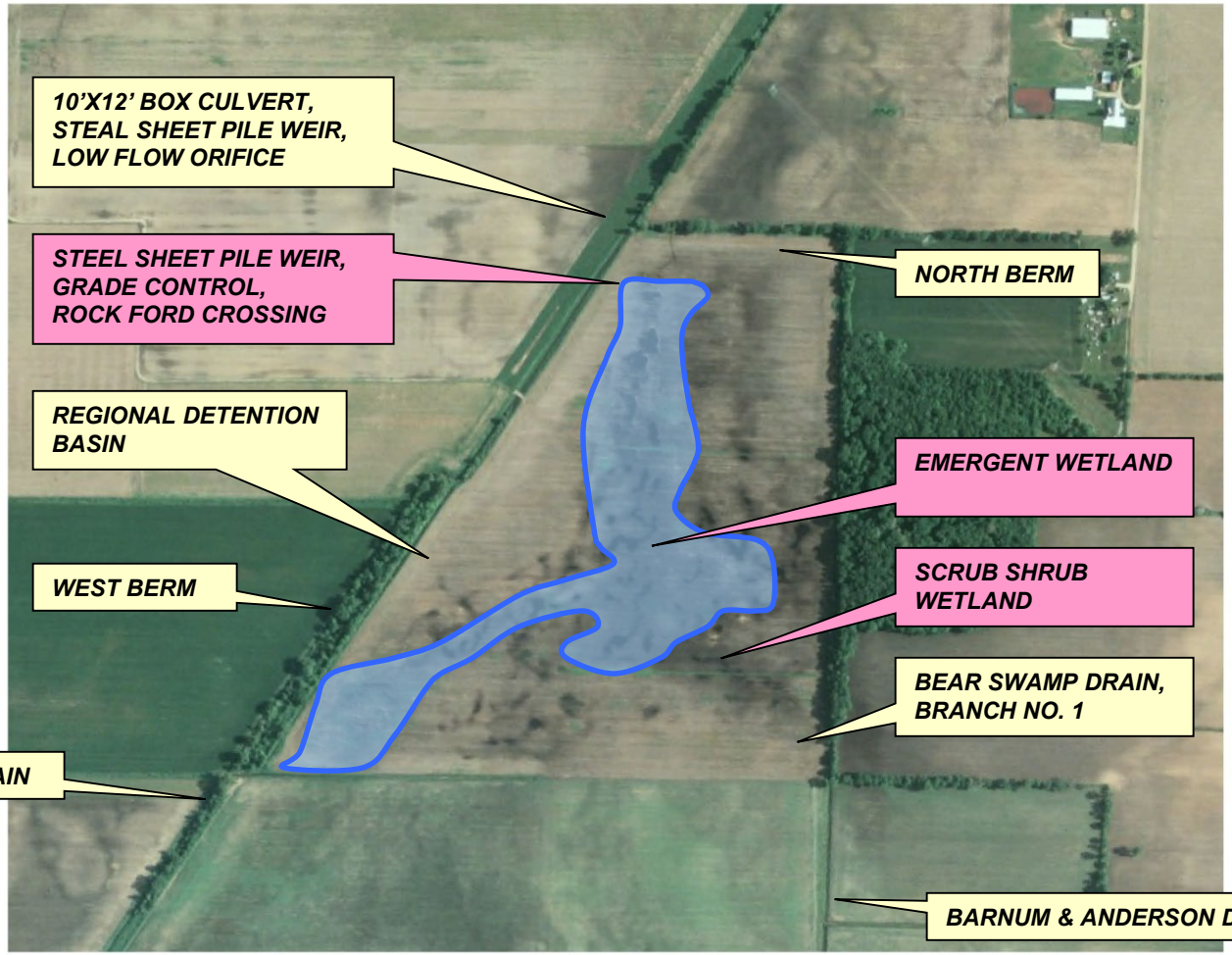
Goals of Bear Swamp Project

- Provide flood storage
- Improve water quality
- Provide wildlife habitat
- Provide future funding for similar projects in the watershed

Project Specifics

- 70 acre parcel
- History of agriculture
- Organic “Muck” soils
- Signed banking agreement in 2007
- Construction in 2007/2008

Conceptual Design



Pre-Construction

Construction—Fall 2007

- 64 acres native wetland seed (includes berm)
- 36 acres live staking
- 450 woody habitat structures
- 12 sand mounds

Post Construction—Fall 2008

Aerial Photo Comparison

Current Conditions

Final Results

- 5 years of monitoring
- Full approval of credits
  - 42.8 acres of emergent
  - 3.1 acres of scrub-shrub
- On-going credit sales
- Currently under Long Term Management

Coordination State and Federal

- EGLE Mitigation Tool Box
  - ► Michigan.gov/wetlands
    - Click on Wetland Mitigation
  - ► Contact Mike Pennington, 517-282-5768 penningtonm@michigan.gov
- Corps Mitigation Guidance and info:
  - ► Contact Bob Morningstar, 313-226-2015
    - Click on Regulatory Resources/ Mitigation

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Thank You – Questions?