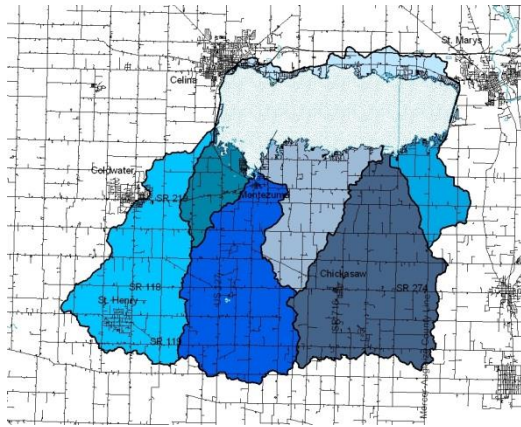




ENGINEERS | PLANNERS | SCIENTISTS | CONSTRUCTION MANAGERS

Ecosystem Restoration with Guerilla Tactics

Grand Lake St. Marys



*July 30, 2013
NCER – Chicago
Presented by,
Joseph Pfeiffer, PWS*



We are at War.....

We understand the enemy.....

We have the commitment.....

We have the weapons.....

But.....we are an insurgency

Guerilla Tactics – *The application of unconventional approaches by small groups of individuals against a larger more formidable opponent that seeks to utilize the strengths of the opponent against itself.*

Grand Lake St. Marys – Mercer County, OH

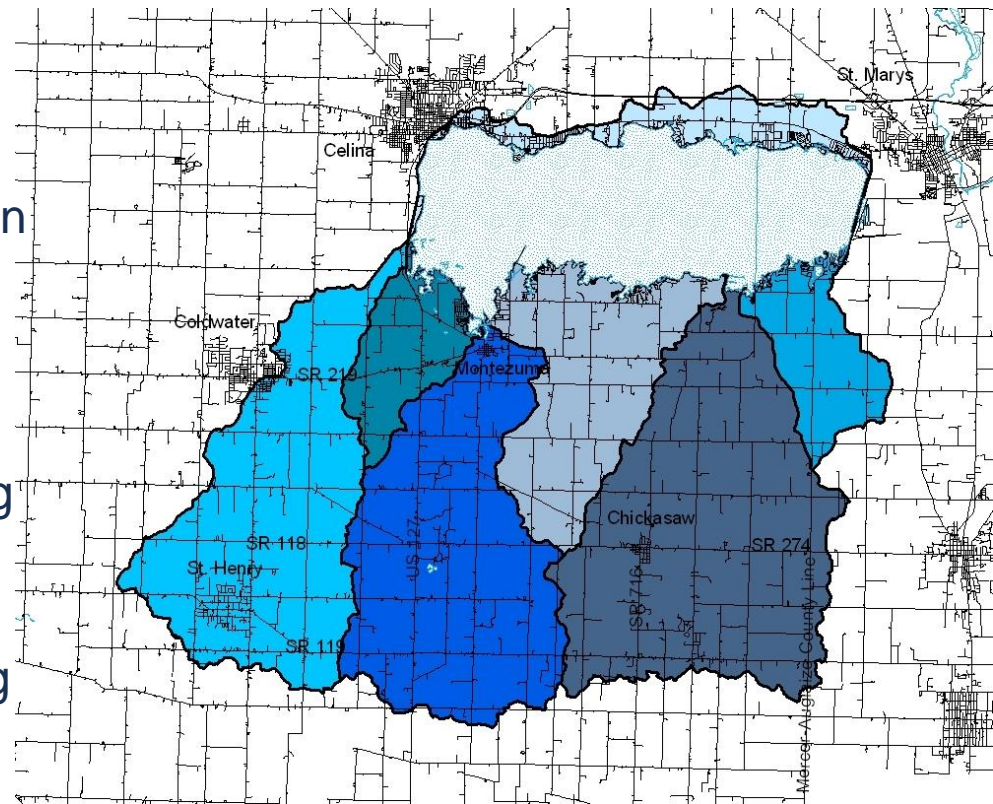


► Grand Lake St. Marys

- 21 square mile man made lake in West Ohio
- 52 square mile watershed
- 425 million in agricultural production
- 125 million in tourism

► Key issues

- Excessive nutrient loading resulting in Hypo-trophic condition in lake and watershed
- Blue Green algal blooms producing microcystin toxins



Grand Lake St. Marys – Mercer County, OH



► Impacts

- Algal blooms shut down all use of the lake in 2009/10
- Estimated loss of \$77 million to local economy
- Loss in housing value of 25 million
- No Freddie Mac/Fannie Mae funding for homes in proximity to lake
- Identified public health threat



Grand Lake St. Marys – Mercer County, OH



► Primary Responses

- State of Ohio TMDL
- Emergency watershed regulations put into place
- NRCS funding of conservation practices
- Local formation of the Grand Lake St. Marys Restoration Commission



Grand Lake St. Marys Strategic Plan

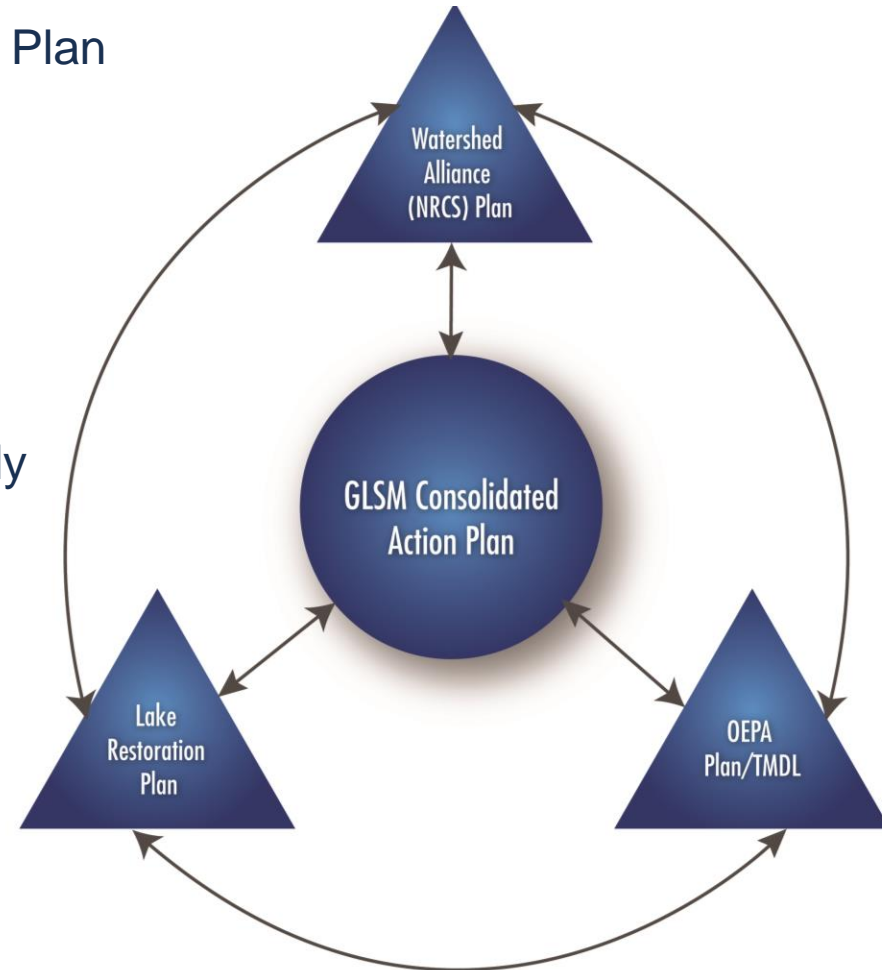


▶ Grand Lake St. Marys Strategic Restoration Plan

- Re-vitalization focus
- Integration of existing efforts
 - NRCS
 - OEPA
 - Lake Improvement Association
- Self perpetuating approach (economically sustainable)

▶ Cornerstone Elements

- Simultaneous and coordinated attack
 - Historic residual problems
 - Existing processes
 - Future Direction



Grand Lake St. Marys Strategic Plan



- Developed 8 Critical Response Actions to address
 - Chemical Treatments
 - Dredge Accumulated Sediments
 - Beneficial Use of Organic Waste
 - Watershed Best Management Practices
 - Rough Fish Removal
 - Lake Manager
 - Natural Resources Capital Improvement Program
 - Water Pollution Control Loan Fund
 - Economic Infrastructure

**The Strategic Plan
for the Grand Lake St. Marys Restoration Commission**



Prepared By:
The Grand Lake St. Marys Restoration Commission

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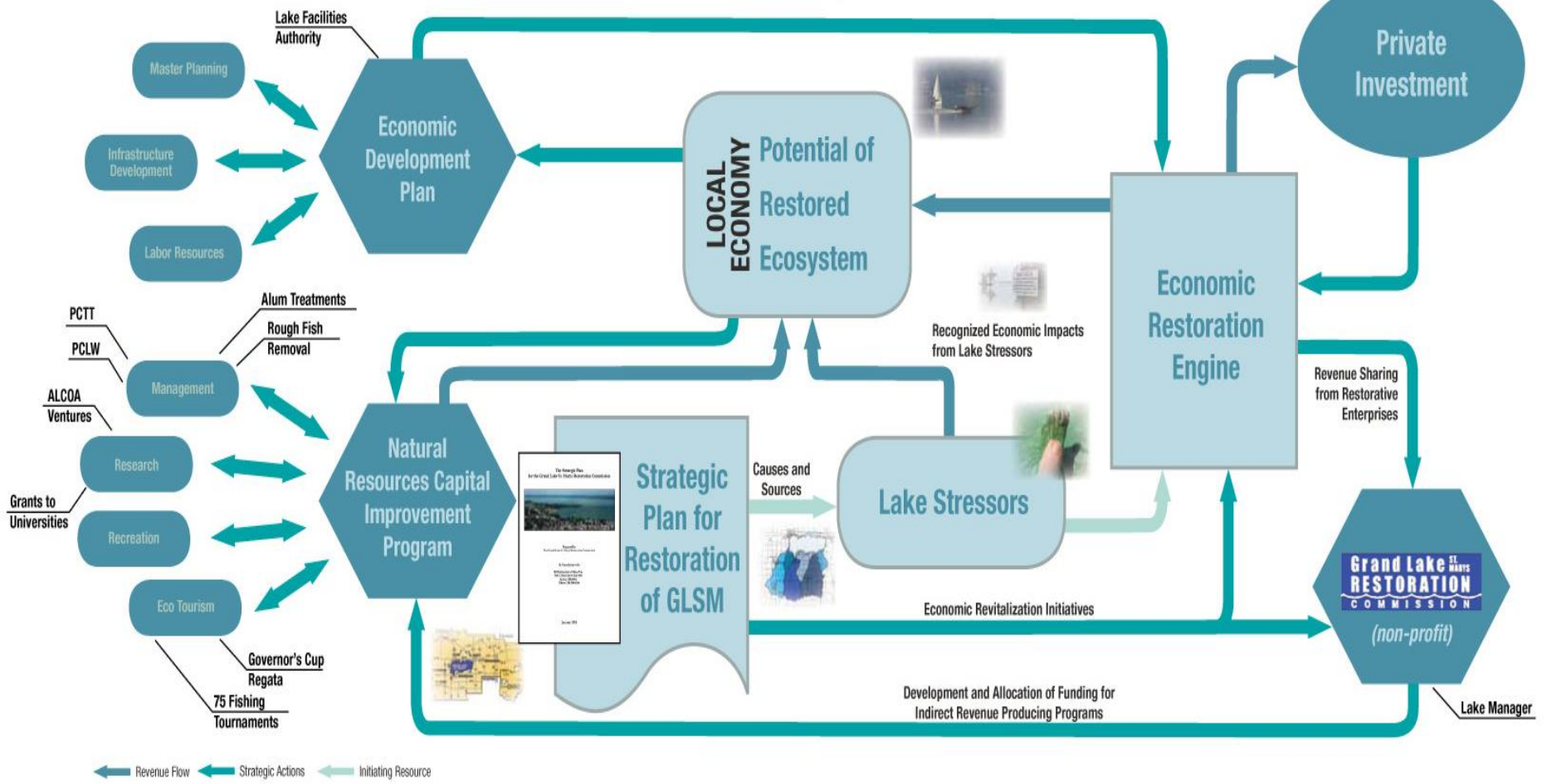
January 2011



Tactical Diagram



Grand Lake St. Marys



Results



Restoration Investment

- Investment of over 7 million in response efforts by project partners
 - In lake Alum treatment
 - Development of systems to treat nutrient loading
 - No major blooms since 2010

Economic Response

- Estimated Return on Investment of nearly 65 million to local economy
 - Initiation of multiple corporations using stressors as material
 - Lowest un-employment rate in Ohio (4.9%)
 - 20% increase in tax collections
 - 32% increase in real estate conveyances
 - Resurgence of recreational economy hotels, restaurants, facilities, events

- **Ecosystem restoration is a societal endeavor not just a rural initiative**
- **Solutions to mitigate the existing problem and resolve the future ones must integrate the concepts of sustainability and economics**
- **Collaboration between key stakeholder groups is imperative to generating and sustaining momentum to win the war**

QUESTIONS