Gile Flowage Watershed Project Phase I – Environmental Information Inventory

White Water Associates, Inc.

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Purpose of Presentation:

- Introduce White Water Associates
- Discuss Gile Flowage Watershed Project
- Present Phase I Environmental Information Review
- Gather Input

Who is White Water Associates?

- Environmental Laboratory and Ecological Consulting Services
- Established 1985
- Located in Western Upper Peninsula of Michigan

Gile Flowage Watershed Project

- Big picture: Watershed Scale Adaptive Management Plan
- First step: Phase I environmental information review

Our objectives for the study

- Gather and Review Existing Information
- Identify Gaps in Information
- List Important Ecosystem Features
- Cite Possible Threats to the Ecosystem
- List Priority Actions for Future Phases
- Prepare Project Report

Methods

- Assembling existing information (written and verbal)
- Reviewing information
- Visiting the Flowage
- Preparing the report

Existing Information

- Information from reconnaissance visit to flowage
- Personal communication - WDNR wildlife biologist
- Personal communication - WDNR water quality biologist
- Land use planning information - Carey and Pence
- Personal communication – Xcel Energy (Olson)
- Meeting notes – Xcel Energy meeting with citizens
- 2004 Gile Flowage Report (Spiny Water Fleas)

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Existing Information

Continued…

- Various fisheries survey data
- Lake Survey Summary / Fisheries Management Plan 1996
- Existing maps
- Fish consumption advisory
- Montreal River Watershed Report (WDNR)
- Documentation of the spiny waterflea
- Documentation of the 303d degraded lake status
- View From the Flowage (UWEX survey of stakeholders)

Gaps in Information

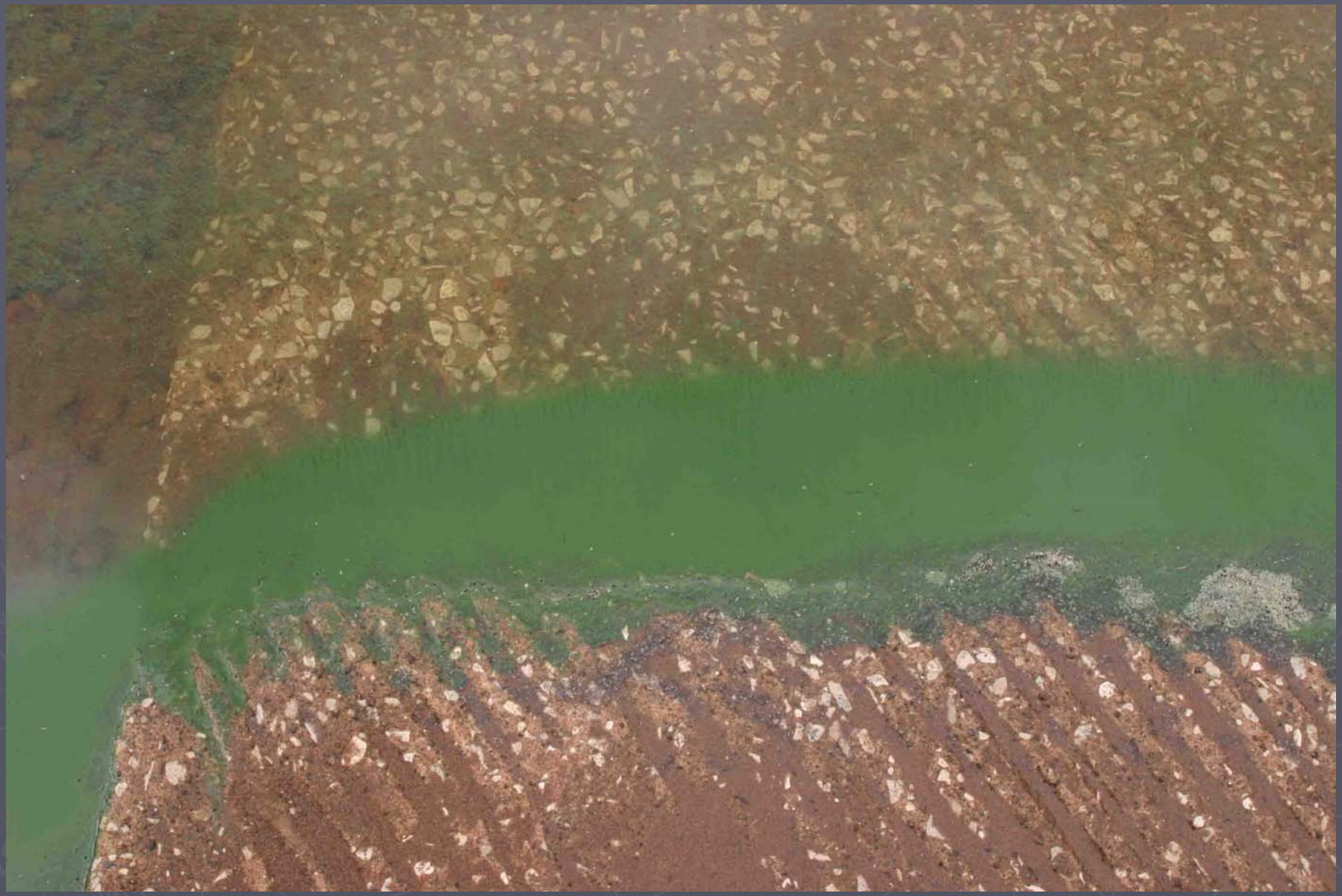
- Water and sediment chemistry data
- Biological information–invertebrates and aquatic plants
- Physical information about the Flowage – pH, DO, volume, residence time
- Water quality information on the tributaries (chemistry, biological, physical)
- No FERC studies

1994 Aquatic Plant Survey

- 15% of littoral zone is vegetated
- 50% is considered “desireable”
- 24 species identified
- Low diversity
- 11 of 24 considered “fisheries valuable”
- Maximum depth of plant growth is 0.4 m

Existing Water Quality Data

- 1994, 1995, 1997, and 2000 from WDNR
- Mesotrophic
- Moderate nutrient availability
- Moderate algae production
- Some phosphorous and nitrogen data
- Summer Secchi depth averages 5.2 ft
- Soft water (21.5 mg/L Hardness)
- pH about 7.0
- No apparent stratification



Important Ecosystem Features

- Apparently good water quality
- Islands on the Flowage
- Bald eagle nesting and use
- Common loon nesting and use
- High quality riparian area around Flowage
- Engaged & interested program participants
- Stakeholders consider the quality of Flowage a priority

Possible Threats to the Ecosystem

- Least restrictive lake classification status
- Increasing development
- Increasing recreational use
- Uncertainties over future reservoir management by Xcel
- Sale of public property on reservoir
- Water level fluctuation
- FERC jurisdiction uncertainties

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Possible Threats to the Ecosystem

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- Exotic / aggressive species (spiny water flea, Chinese mystery snail)
- Bluegreen algae blooms
- Mercury in the system
- Low diversity and density of aquatic plants
- Non-point source pollution
- Too many plans

Actions for Future Phases

- Water chemistry and physical measures – spring, summer, fall
- Aquatic vegetation survey – why few beds - substrate or water fluctuation?
- Habitat Monitoring – especially aquatic vegetation in selected areas
- Establishment of additional aquatic vegetation beds
- Feasibility of acquiring more shorelands around the Flowage

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Actions for Future Phases

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- Research necessary reduction of winter drawdowns to benefit walleye survival
- Exotic species education
- Sediment metals – especially mercury
- Monitor bluegreen algae
- Inventory areas of erosion
- Develop a management plan