Meeting NOTE: Advisory Team Meeting, GLPF-MSU project, Feb 13, 2006 at the Kellogg Center, MSU Campus, East Lansing

Attendance: 31 (11 Advisory Team members; 15 Project Team members; 4 guests; 1 GLPF Staff)

Morning:

Introduction, project components, project progress, and meeting’s goals,

By Jon Bartholic and Sandra Batie, Co-Principal Investigators

◊ Dr. Bartholic highlighted the overall project goals and specific objectives. The goal of the project is to explore the necessary conditions for a science-based decision support system that will assist policy decision makers involved with ground water management in Great Lakes Basin restoration. The specific objective is to provide science-based information to assist in making better decisions with respect to ground water withdrawal management in critical watersheds of Michigan to protect trout habitats. The team selected the Augusta Creek in the Kalamazoo watershed, Michigan as a demonstration site. The project is making a good progress and the team has appreciated input from the Advisory Team members for the past year.

◊ Dr. Sandra Batie emphasized the three major project components (Modeling Component or Water Balance Analysis System; Market-based Alternatives; and User Assistance Interface) and introduced the meeting’s goals which emphasized project progress and water policy issues, discussion of the Assessment Tool for assisting in the groundwater permitting process and how our project components fit within this tool, and to demonstrate the impacts of management scenarios on base flow in the Augusta Creek using the ground water model.

Growing Water, By David Rankin, Program Director, the Great Lakes Protection Fund

◊ David talked about projects under “Growing Water” funding. Our project is one of six projects funded under this grant. The fund is interested in creating a system that helps develop a market for water transactions between interested parties (i.e., private-private) based on the increased value of water for an improvement to the Great Lakes Ecosystem. The fund would like to see how the model of conservation credit exchanges/transactions and how success would be perceived. Projects funded by the GLPF under “Growing Water” can be found at http://www.glpf.org/program/rgroup.html?group=GWRFP

Ground Water Resource Management in MI, By Bill Rustem

◊ Bill talked about the five current State of Michigan senate water bills which just passed House vote on Feb 9 and are now waiting for the governor to sign (expected in two weeks). Bill mentioned that our project outcomes are very relevant to these bills. There will be a need to define the language of these laws and input from scientists is important. The highlights of the bills, relevant to the project, are summarized below:
  - Required permitting for certain new or increased withdrawal (2 mgd from groundwater or 5 mgd from surface water)
Regulated large quantity withdrawal to make sure it doesn’t create an Adverse Resource Impact (decreasing the flow of a stream or decreasing the level of a body of surface water such that its ability to support characteristic fish populations is functionally impaired)

- The Groundwater Conservation Advisory Council will create a Water Withdrawal Assessment Tool to determine if a withdrawal is causing an Adverse Resource Impact
- Each permit holder is encouraged to form a “Water Users Committee” to evaluate water use. If a permit holder causes an Adverse Resource Impact, the DEQ will work with its Committee to create a solution.

**Assessment Tools: Water Balance Analysis System and Water Conservation Offset Trading Process, By Project Team Members**

◊ The project team showed a diagram of the Assessment Tool for Ground Water Permitting Process (ATGWPP) and showed how the project components (Water Balance Analysis, Water Conservation Offset, and User Assistant Interface) fit in the framework. Jeremiah Asher put together an interface for demonstration of ATWPP and the project team members discussed each component with the Advisory Team. Several issues were discussed (i.e., watershed vulnerability; model results and decision-making information; model boundaries; levels of uncertainty; site specifications still needed; cumulative withdrawal impacts from existing and new water users on ground water level, streams, and lakes; assessment tools and models as a screening tool; stream classification and criteria SMS (Save Minimum Standard) for protecting trout; and effectiveness of mitigation offsets and measurement)

**Afternoon**

**Demonstration of Model Simulation, Ground Water Modeling Team presented by Hassan Abbas**

◊ The work done by the Groundwater Modeling Team was presented for Augusta Creek groundwater model. First, the baseline conditions were discussed for the model setting that included general hydrogeology, subsurface geology and static water level of the area. Based on these baseline conditions, a conceptual groundwater model for Augusta Creek was discussed; second, a 2-layer model for Augusta Creek was explained showing the interaction of various surface and groundwater components; and third, a calibrated version of the model was presented and discussed for various management options. The model calibration was explained which was based on the stream flow measurements taken during August and October of 2005 at various locations in the creek.

◊ A sub-model within Augusta Creek was presented to evaluate the impact of various management options. First, the options included land-use changes that would affect the recharge rates, and second, installation of high capacity extraction wells within the sub-model area. The impact of various options was presented in terms of changes in mass balance leading to a change in baseflow in the stream are within the sub-model area.

**Next Step/Next meeting:** We will look at the mitigation offsets & initial credits trading rules/modules; Next meeting will be in **October 2006**