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Minutes – October 18, 2006
Duplain Township Hall
Elsie Michigan

Present:

Ed Mikula, Vice President

Kristine Foight, Secretary FMR; Clinton
Conservation District

Joe Smolka, Treasurer

Kam Washburn, Duplain Twp. Supervisor

Phil Hanses, Clinton County Drain
Commissioner

Jack Nutter

Richard Abbott

Jim Ellickson

Jeff Wadell

Steve Law, NRCS/Timberland RC&D

Don Martemucci

Gary Boersen

Guest Speakers: Glenn O’Neil, IWR and

John Esch

CALL TO ORDER: Ed Mikula called the meeting to order at 7:05 p.m.

WELCOME AND INTRODUCTIONS: Ed Mikula introduced Glenn O’Neil with the Institute of Water Research and John Esch.

Kam Washburn, Duplain Township Supervisor, welcomed everyone to the meeting. He said they have a real interest in the Maple River because it runs through the township and because of the Elsie Dam. Washburn said that Jack Nutter represents the Township with the Friends of the Maple River. He added that they are forming a five-member committee to look at what they would like to do with the dam and what the options are. Washburn passed around a clipping that he received from his grandmother. He said the clipping was from the seventies, but the photos were from the turn of the century when they were dredging the river.

SPECIAL PRESENTATION, JOHN ESCH – THE RELATIONSHIP BETWEEN SURFACE WATER AND GROUNDWATER IN THE WATERSHED: John Esch emphasized that his presentation was on his own time as a private citizen, not as a DEQ employee. Esch is a geologist/hydro-geologist/geophysicist. Esch said that he looks at things below the surface. He explained his personal bias, that everything around us is due to the underlying geology – where we live, what we eat, etc.

Esch started out with some history. He said that, 1.1 billion years ago, in the pre-Cambrian time, there was a mid-continent rift angling length-wise through the lower peninsula of Michigan. Then 580 to 270 million years ago, (Paleozoic-Cambrian-Pennsylvania) the Michigan Basin formed in central Michigan, centered over the rift and where the Maple River watershed is now.

Esch said that the Maple River watershed is a very unique watershed in Michigan. He explained that the headwaters are off to the sides of the watershed. He said the watershed is the likely discharge area for the deeper flow components of shallow drift and deep bedrock aquifers.

Esch showed a series of pictures showing de-glaciation and why the channel of the Maple River is so wide. Esch said that end moraines generally form the boundaries for Michigan watersheds.

He explained that for the Maple River, end-moraines only formed the north and south borders, which are the high points.

Esch said that the Maple River valley has lower groundwater elevations. He explained that groundwater flow is different from surface water flow and doesn't follow the same divides. He said that the ground water flow into the Maple River watershed is much larger than the (surface) watershed.

Esch said that there is a deep regional flow component discharge that contains older water. He explained that because of the longer contact time in the aquifer, this water is generally more mineralized. He added that the old Michigan Basin has deep saline water.

Esch explained can either receive water from, or lose water to groundwater aquifers. Lakes can be receiving, losing or flow-through. That is, lakes can receive groundwater, lose water into the aquifer, or water can just flow through the lake from the aquifer and back into it.

Esch explained that there are local, intermediate and regional groundwater flow systems. Different depths follow different paths. 60-80% of flow into the Maple River comes from groundwater.

Esch said that part of the Maple River watershed is Jurassic Red Bed. Groundwater in these areas is very salty. He said that Jurassic Red Bed is even more concentrated in the area north of the Maple River Watershed.

Esch showed a map with concentrations of endangered species that showed high concentrations along parts of the Maple River. He said this map was available on the MSU website.

Esch told about the Clinton Saltworks in Lyons Township. He said it was a mineral company formed to find salt. He said many people thought it was just a boondoggle to get investment money, and they never found salt, just saline water. Ed Mikula added that the Indians in the area fought over salt rights. Esch went on to say that mammoths and mastodons went to the area for salt.

Esch said that there are areas in the Maple River Watershed where streams used to flow in one direction and now flow another way, especially in the Stony Creek area. He showed on a map some of the old and new stream channels. He said these changes occurred after the glaciers were gone; probably within the last 10,000 years.

Esch commented that there are three USGS gauging station in the Maple River. He said it is easy to measure water levels over time and that flow or velocity can also be easily measured. Esch said that baseline data should be collected at low flows. He said that temperature, conductivity/TDS, ORP, dissolved oxygen (DO), alkalinity, hardness and turbidity can all be done in the field.

In response to a question, Esch said that there are a handful of flowing wells in the watershed.

Ed Mikula thanked Esch for his presentation.

PROPOSED AGENDA REVIEW, REVISION AND ADOPTION: Phil Hanses moved to accept the agenda as presented. Joe Smolka seconded the motion. Motion carried.

PREVIOUS MEETING MINUTES REVIEW, REVISION AND APPROVAL: Foight moved to approve the minutes of the September 20, 2006 General Membership Meeting, the September 28, 2006 Board of Directors Meeting and the September 28, 2006 Monitoring Committee Meeting. Joe Smolka seconded the motion. Motion carried.

PRESENTATION: Glenn O'Neil, Institute of Water Research (IWR). O'Neil said that the IWR has a grant from the US Department of Agriculture's Natural Resources Conservation Service, through the Michigan Department of Agriculture to fund positions in three watersheds, the Maple, Raisin and Saginaw. The program is called High Impact Targeting (HIT). O'Neil said that he would also talk about the Digital Watershed.

This is, officially, the third week of the HIT project in Michigan. O'Neill said that they have already done some work developing HIT using the Maumee Watershed in Ohio. HIT is a web-accessible system that allows users to identify and prioritize areas at high-risk for sediment loading. HIT uses data from the Spatially Explicit Delivery Model (SEDMOD) and the Revised Universal Soil Loss Equation (RUSLE). With HIT, they can look at data that shows potential for sedimentation in three formats: tabular, bar graph and spatial (maps). This can be done for 8-digit watersheds (like the Maple River) or for sub-watersheds within the 8-digit watershed. The system can also compare sub-watersheds. With HIT, a cost-benefit analysis can be run for two Best Management Practices (BMP's) at a time. Best Management Practices could include things like buffer strips along waterways or grassed waterways that help to keep soils out of the waterway. HIT is a tool for decision-making that targets areas where there is a potential for high erosion and high sedimentation levels. Because some of the data used is based on county-wide averages, it does not distinguish actual high erosion/sedimentation sites.

O'Neil explained that Digital Watershed is a separate application that is used by HIT. Digital Watershed is a nationwide web-based watershed tool based on 8-digit watersheds (HUC – Hydrologic Unit Codes.) Digital Watershed does not require any special software. O'Neil explained that a person can turn on and off various map layers, including soils, erosion, elevations, gauging stations, and more. He said that there are also meta-data links that provide additional information. Tools used to maneuver on the site are GIS tools. They include a Help button. Foight added that the Clinton Conservation District will be getting a new employee who will be working with the HIT system for the Maple River. She said that they will be looking for people interested in the system to provide feedback.

There is also a link to L-THIA, (Long-Term Hydrologic Impact Assessment). L-THIA is a web-based system developed by Purdue University for modeling watersheds. L-THIA can delineate the watershed area above any point on a map and provide land use information on that sub-watershed.

Digital Watershed can be used to zoom down to a sub-watershed. Aerial photographs are available as a map layer. Digital Watershed can also be connected to Google Earth and Google Maps and their aerial photographs. Google Maps is available as a free download. Digital Watershed may be accessed at www.iwr.msu.edu/dw.

O'Neil said that sediment loading is one of the difficult parts of modeling. Steve Law said that a study was done on the Stony Creek that might be helpful. O'Neil said that HIT is a pretty straight-forward model. He said that it does not pick up stream-bank erosion, just erosion off the land. He added that HIT is not meant as a precision tool, but to identify likely areas to look for concerns.

Ed Mikula thanked O'Neil for his presentation.

COMMITTEE REPORTS

WATERSHED IMPROVEMENT COMMITTEE - Jack Nutter, Chairperson. Nutter reported that the river clean-up project had been completed.

Phil Hanses said that he met with the Shiawassee Drain Commissioner. He said they would be walking part of the Maple River between Baldwin and Reuss Roads to look for areas needing bank repairs, log jams, etc.

Phil Hanses also announced that there will be a clean-up project for the Red Cedar River. Anyone interested should contact Hanses for more information.

Ed Mikula added that the Friends of the Looking Glass River just did a log-jam clean-up project on the Looking Glass River in DeWitt.

Steve Law reported that the water level in Muskrat Lake is down from where it used to be in the seventies. He said they are working to raise the level of the lake back to where it was when the boat launch ramp was built. This would double the surface area of the lake. Law said that they need to have a hydrologic study done before they can apply for a permit and that study is in progress. He added that they can't impede fish movement into the lake. Law explained that funding would come from the US Department of Agriculture's Natural Resources Conservation Service's Wetland Reserve Program, Ducks Unlimited, and Michigan Wildlife Conservancy. Law said that he would appreciate everyone's support of the project.

EDUCATION COMMITTEE – David Remenar, Chairperson. Ed Mikula reported that the Oral History Project needs a chairperson. He said he made a couple of contacts, but hasn't gotten any response back.

WATERSHED MONITORING COMMITTEE – Amy Noren Chairperson – It was announced that the committee would be meeting the next day at 9:00 a.m. at the Institute of Water Research. A representative from DEQ would also be at the meeting.

OLD BUSINESS

CURRENT SUPPORTED PROPOSALS AND PROJECTS:

MDEQ, RIVER CLEAN-UP GRANT – Phil Hanses reported that the report has been filed. He said 2,440 pounds of scrap metal and 1,215 pounds of waste were collected, plus thirty-six tire. He pointed out that this far exceeds the grant's goal of 500 pounds of materials.

GENERAL MOTORS GRANT – DENIED – Steve Law said that the letter gave a general overview of reasons for denial. He explained that the grant application had requested \$3,000 for education and outreach materials. Law said he would explore other options, such as the Community Foundation in Lansing. Richard Abbott added that there is also a Gratiot County community foundation.

MAPLE RIVER FLOODING, WATER DRAW DOWN – Ed Mikula said that the DNR is doing a draw down of the water as part of their management of the Sate Game Area.

NEW BUSINESS

Ed Mikula led a discussion on the next meeting. Hubbardston and Carson City were suggested as possible meeting locations. Joe Smolka moved to have a November/December meeting on December 6th, with Joe Latoff to determine the location. Don Martemucci seconded the motion. Motion carried.

ADJOURN –The meeting was adjourned at 8:45 pm.