

Chippewa County Groundwater Study Project
Stakeholders Group Meeting
October 10, 2012

The meeting was called to order by the D. Masterpole (LCFM), at approximately 1:00 p.m. Stakeholders present were as follows:

Industry

P. Ayres, Taylor Creek Transit
J. Clements, Superior Silica Sands
S. Courter, EOG Resources
B. Kelly, Taylor Creek Transit
L. Klein, Fred Weber
D. Melkowski, Fred Weber
G. O'Bryan, Fred Weber
P. Robinson, Fred Weber
S. Schimmel, Chippewa Sand Co.
B. Servais, Mathy Constr.
E. Strang, Chippewa Sand Co.
F.J. Wesner, Preferred Sands

Agriculture

M. Dietsche
S. Hilger

Non-Profit

R. Diesch, T.U.
J. Hastings, T.U.
B. Swanson, T.U.

Citizen

R. Koshoshek

State and Federal agency members present were M. Hazuga and T. Woletz (DNR), M. Gotkowitz and M. Parsen (WGNHS), M. Fienen and P. Juckem (USGS)

County agency staff present at times throughout the meeting were F. Pascarella (Co. Administrator), D. Clary (Planning & Zoning), B. Brown, S. Ebel, J.T. Jensen, D. Masterpole, and D. Nashold (LCFM).

LCFM Committee members present were C. Cronquest, R. Kressin, L. McIlquham, and C. Wachsmuth.

Others present were L. Baugee and K. Schmitt.

Item #1 – Introductions.

D. Masterpole welcomed the group. He provided a brief overview that summarized:

1. The general purpose of the project study.
2. The history of the project and general commitments made by the stakeholders to instrument sites and collect data during the development phase.

Those present introduced themselves and their role and interest in the project.

Item #2 – Role and Responsibilities of the Stakeholders Group.

D. Masterpole (LCFM) distributed and the group reviewed a handout titled: Project Stakeholders Group Charge, (mailed 10/3/12 – copy on file). The handout outlines the purpose of the group and their duties and responsibilities as follows:

Duties and Responsibilities

The Project Stakeholders Group will:

1. Assure structured communication between the public agencies, who are conducting the study, and stakeholder interests who are participating in the study.
2. Serve as representatives and express the interests of their respective public and private sector organizations.
3. Actively participate in project meetings and pursue opportunities to collaborate on project tasks related to the technical investigation and outreach components of the modeling study.
4. Systematically review project status and provide feedback to support the successful completion of project tasks related to the technical investigation and outreach components of the modeling study.

Specific duties and assigned tasks are as follows:

1. Participate in annual project review and planning meetings conducted by the County to track progress, solicit feedback, and seek input on planned project tasks.
2. Assist in the dissemination of information generated through the project.
3. Provide input to and confirm the validity of data used in the technical investigation and modeling efforts (SWB and MODFLOW).
4. Provide input regarding the conditions (i.e. landscape and pumping) representing the current and two future scenarios (i.e. approximately 2030 and 2050) to be evaluated through model runs.
5. Review and provide comments on periodic status reports prepared by Chippewa County LCFM.
6. Review and provide comments on working draft(s) of the interim project report (2014-2015), and final project report (2016-2017).

Item #3 – Overview of Project Proposal.

M. Parsen (WGNHS) introduced a Power Point report titled: Chippewa County Groundwater Study – 1st Stakeholders Group Meeting, (10/10/12 – copy on file). He explained that the Power Point report had been structured to coincide with the meeting agenda, and would be used by WGNHS and USGS staff to present information prepared for the meeting.

The structure of the WGNHS/USGS Power Point report is as follows:

- *Overview of project proposal (WGNHS)*
- *Review of hydrology (WGNHS)*
- *The value of a groundwater flow model (USGS)*
- *Review of data needs (WGNHS/USGS)*
- *Future scenarios discussion (WGNHS/USGS)*

M. Parsen (WGNHS) and M. Fienen (USGS) systematically presented information and supporting graphics contained in the Power Point. An outline of subject matter and core content is as follows:

Overview of Project Proposal (WGNHS)

Study Purpose/Objectives

1. Develop and calibrate soil water balance and groundwater flow models to evaluate the impacts of current and future water use and topography on the hydrologic system.
2. Disseminate the study results to project stakeholders and the general public.
3. Transfer the study results to similar geologic/hydrologic settings as appropriate.

Major Project Tasks and Overview of the Phased Technical Investigation and Modeling Component

1. Conduct initial data collection to characterize hydrologic setting and gather model inputs.
2. Build recharge model using Soil Water Balance model (SWB).
3. Build groundwater flow model using MODFLOW model (3-D; steady state).
 - Used to incorporate significant features of hydrologic cycle.
 - Will calibrate to steady state conditions.
 - Will represent water use and landscape conditions prior to frac sand mining.
4. Conduct scenario testing.
 - Use calibrated MODFLOW/SWB model to evaluate impacts for two scenarios.
 - Scenario 1 – Peak sand mine operations (~2030).
 - Scenario 2 – Post-mine reclamation (~2050).
 - Scenarios are designed to be illustrative of anticipated impacts not predictive.
5. Provide for transferability.
 - Apply models to evaluate general system responses to expected changes in groundwater pumping and recharge associated with frac sand mining and irrigation operations in areas with similar hydrologic settings.

Tasks and Overview of the Public Outreach Component

1. Conduct Public Outreach.
 - Public outreach and reporting activities will be scheduled to coincide with completion of technical investigation tasks.
 - Complete initial Fact Sheet to explain project (anticipated Q1, 2013).
 - Conduct annual public outreach and stakeholders meetings to release/gather information.
 - Complete interim and final reporting – 2014 and 2017.
2. Overview of workflow and activities schedule (major milestones).
 - Technical service contracts signed 8/8/12.
 - Fact sheet – Q1, 2013.
 - 1st public outreach meeting – Q1, 2013, w/annual updates to coincide w/stakeholders meetings.
 - Next stakeholders group meeting – Q1, 2013, w/annual updates.
 - Interim report – Q4, 2014 (data collection and SWB results).
 - Final report – Q3 2017 (final model, scenario and transferability results).

Subject Content of Science Refresher; Review of Hydrology (WGNHS/USGS)

1. Graphic explanation and overview of the hydrologic cycle.
2. Explanation of hydrogeologic settings; definition of aquifers and aquitards.
3. Graphic explanation and overview of groundwater recharge and flow systems.
4. Graphic explanation and overview of groundwater/surface water connectivity and flow interactions.
5. Graphic explanation and overview of how wells impact groundwater flow.

Subject Content of Science Refresher; The Value of a Groundwater Flow Model (USGS)

1. Explanation of models. Models are used to describe “a system or process”.
2. Explanation of the physical and scientific basis for groundwater models. Models provide:
 - A framework to consolidate and interpret data.
 - A platform to test scenarios and evaluate responses.
 - A feedback mechanism to revise assumptions/guide work.
3. Explanation of the different types and applications of groundwater models (simple to complex).
4. Explanation of groundwater model inputs and parameters.
5. Explanation of the methods used to calibrate models and to define uncertainty.

At the end of the presentation, there was general discussion. Discussion focused on:

1. The location and physical characteristics of the study area.
2. The technical aspects of model development and calibration.
3. The type and extent of geologic and hydrologic data available to build and calibrate the models.
4. The public outreach component of the project.

Item #4 – Discussion of Existing and Planned Water Use and Land Modifications.

D. Masterpole and S. Ebel (LCFM) presented a Power Point report prepared by the Chippewa County LCFM and the Chippewa Co. Extension Office titled: Irrigation in Chippewa County (LCFM/UWEX 10/10/12 – copy on file).

The report:

1. Introduced the location and current extent of irrigated agriculture in the study area.
2. Introduced the location and current extent of industrial sand mining and processing in the study area.
3. Outlined the management principles used by operators to manage water for irrigation and for industrial sand process.

S. Hilger (Ag. producer rep) explained how irrigation systems are used and managed in the study area. He also projected that there would be more acres of irrigated agriculture in the future, in response to global demand for agricultural commodities.

D. Markowski (Mine industry rep) explained the industrial processes used to wash and process sand at mines in the study area. He also highlighted water conservation practices being used to limit consumptive use.

At the end of the presentations, there was general discussion. Discussion focused on:

1. The estimated volumes of water use (seasonal and annual) associated with a typical mine or irrigation operation.
2. The cost of wash plant processes and irrigation.
3. The management techniques used to limit consumptive water use.

Item #5 – Review of Data Needs.

D. Masterpole (LCFM) distributed and the group reviewed a table titled: Tentative Commitments Toward Data Sharing to Characterize Resource Conditions and Develop a Predictive Groundwater Model to Evaluate the Effects of Water Withdraws Associated with the Wonewoc, Eau Claire, and Mt. Simon Sandstone Formations, (LCFM 9/24/12 – copy on file). The table shows the type and extent of hydrogeologic data now being collected in the study area by the public agencies and project stakeholders.

M. Parsen and M. Gotkowitz (WGNHS), and P. Juckem (USGS) provided an overview of the available data sources, that will be used to characterize the hydrologic setting and to build the MODFLOW/SWB model.

1. Subsurface Geology and Hydrostratigraphy.
 - Well construction reports (WCRs).
 - Geophysical logs (new wells of opportunity).
 - Pumping test data.
2. Surface water features.
 - DNR/USGS historic stream related data sets.
 - LiDAR derived topography and stream features.
 - New stream gaging to measure current flow rates.
3. Water use.
 - Pumping rates at sand mines and irrigated farms.
 - Pumping rates at municipal wells, other high-capacity wells.
 - Waste water treatment plant (WWTP) discharges.
4. Soil Water Balance (SWB) modeling.
 - Based upon soil type, land use, and surface topography.
 - Conducted for current conditions (pre-mine) and future scenarios.
5. Calibration targets used in model development/testing to replicate existing (measured) conditions.
 - Groundwater levels (hydraulic heads) as measured in wells.
 - Surface water levels and flows, as measured at gaging stations and select stream reaches.
6. Scenario testing to evaluate the affects of changes in recharge and pumping rates.
 - Data dependent on decision of future scenarios.
 - Need estimates of future pumping rates.
 - Need to develop future SWB recharge scenarios.

At the end of the presentation, there was general discussion. Discussion focused on:

1. The commitments that have been made by the project stakeholders to collect and share hydrogeologic data.
2. Opportunities for additional data collection at mines and irrigated sites.

Item #6 – Future Scenario Selection.

M. Parsen and M. Gotkowitz (WGNHS), M. Fienen and P. Juckem (USGS) introduced the need for the group to define several core land use scenarios that will be considered in both model design, and in the development of “model runs” that will be used to evaluate impacts of land use changes.

1. Two (2) scenarios will be developed to estimate hydrogeological response to changes in pumping and recharge.
2. Comparisons will be made between the calibrated model representing current conditions and the two (2) scenarios.
3. Example scenarios included in proposal:
 - Scenario 1 – peak build-out sand mine operations (~2030).
 - Scenario 2 – post-mine reclamation (~2050).

Item #6 - Public Wishing to be Heard.

R. Kressin addressed the stakeholders group. He thanked the group for their interest and participation in the study.

Several meeting participants suggested that a stakeholder contact list be developed and distributed to encourage direct communication among participating agencies and project stakeholders.

The next meeting will be held in February or March of 2013. A notice of meeting date will be forwarded in December to allow for scheduling.

The meeting was adjourned at approximately 4:15 p.m.