

Sub-Committee B's "Working List" of Recommendations by Category and Priority

As discussed at August 6 Sub-Committee B meeting in Rantoul.

I. HTEM

A. Properties- need to know what we have and how it is behaving. Then look at interactions.

1. Research: map geologic materials encountered at the land's surface and in the subsurface above bedrock along transects crossing Mahomet Bedrock Valley and adjacent area to define the variability in the geology and hydrogeology. Mapping will be based on geologic coring, surface and borehole geophysical and geochemical analysis of groundwater. The five proposed areas are: Village of Kenny to the city of Clinton; Central Champaign County; Northern and Central Champaign County; Allerton Park to the Village of Mansfield; and Village of Burton.

2. Study the variable distribution, spatial extent, and properties of the aquifer.
3. Conduct and airborne Time Domain EM (TEM) to characterized the aquifer to aid in identifying locations that might be more likely to have interactions between the surface water and ____?
4. Research: Identify water interactions with other aquifers.
5. Research: Assess groundwater quality, and warn potential problems before they reach the well.

II. Research

A. Wells: Use existing resources. Increase use of these resources. Provide additional resources.

1. Collect more chemical and isotopic data to better understand the interactions of the Mahomet Aquifer with the land surface, overlying aquifers, and underlying bedrock units.

a. Collect and analyze groundwater samples from the 40 groundwater monitoring wells installed in McLean, Piatt, Champaign, Ford, Vermillion Counties to assist in determining flow patterns in these areas.

2. New observation wells and streamflow sites need to be developed where there may be significant groundwater/surface water interactions to quantify impacts by groundwater pumpage on streamflow.

3. Continue downhole logging in boreholes in east-central Illinois to provide additional information on the character of the aquifer materials composing the Mahomet Aquifer.

B. Properties: Need to know what we have and how it is behaving.

Then look at interactions.

1. Map geological materials encountered at the land surface and in the subsurface above bedrock along transects crossing the Mahomet Bedrock Valley and adjacent area to define the variability in the geology and hydrogeology. Mapping will be based on geologic coring, surface and borehole geophysical and geochemical analysis of groundwater. The five proposed areas are: Village of Kenny to the City of Clinton; Central Champaign County; Northern and Central Champaign County; Allerton Park to the Village of Mansfield.

2 and 2a

Study the variable distribution, spatial extent, and properties of the aquifer. Conduct an airborne Time Domain EM (TEM) to characterize the aquifer to aid in identifying locations that might be more likely to have interactions between surface water and _____?

3. Identify water interactions with other aquifers.

4. Assess groundwater quality, and warn of potential problems before they reach the well

C. Cooperation: Bring other organizations into the study of the aquifer.

1. Plan cooperative research and data collection, analysis, management and exchange by academic institutions, appropriate units of government, the private sector, and others.

D. Record Water Usage/Management/to better manage aquifer.

1. Address recharge in terms of managing withdrawal, (domestic, agricultural, seasonal, meteorology, etc.
2. Management/ Research: Coordinate the identification of technical objectives and requirements for major data collections, analysis, and distribution efforts and continue to receive technical assistance in water supply planning and management.

E. Groundwater Surface Water Interaction.

Study current interactions and use this to better manage Mahomet Aquifer.

1. Characterize groundwater and surface water interactions along select stream reaches by installing nest of groundwater monitoring wells and stream gages, and conducting electrical earth resistivity surveys along portions of each stream reach. The four proposed stream reaches are: the Sangamon River between Fisher and Mahomet; the Sangamon River from Monticello to Friends Creek; the Middle Fork of the Vermillion River in Northeast Champaign and eastern Ford Counties.

2. Conduct a study to establish very accurate baseline elevation data of the land surface in Champaign County so that earth subsidence due to drawdown of groundwater in the Mahomet Aquifer can be accurately measured.

3. Evaluate alternative geophysical methods for characterizing groundwater-surface water interactions. Alternative methods include groundwater temperature earth self potential and _____?

III. Communication

A. Stakeholder Management:

1. Encourage all water supply managers and other stakeholders in the region to review a regional plan, suggest modifications, and become partners in regional water supply planning and management.
2. Use planning and zoning maps to inform citizens and developers of locations of well setback areas and potentially contaminating land issues.

B. Future Roles: Increase role of MAC. Utilize the U of I as a resource.

1. Communication/ Management/ Education:

Retool the Mahomet Aquifer Consortium to provide leadership, administrative structure and process to fulfill and expand role for regional supply planning and management in West-Central Illinois. Make the MAC an agency.

2. Communication/ Management/ Education:

Encourage the University of Illinois at Urbana Champaign to use a small amount of core state resources to keep the groundwater flow model operational and to conduct and report an assessment of the impacts new capacity wells, in coordination with Soil and Water Conservation Districts, if additional state funds are not available. This would implement for the region the increasingly important, but unfunded 1983 Water Use Act mandate to conduct and report on impact.

3. Establish pollution prevention programs to help businesses reduce the hazardous material threats by changing processes within their operation.

C. Public Awareness

1. Communication: improve education and outreach so that local decision makers and the public are better informed about regional water supply.

D. Water Planning: Use what we have first.

1. Communication: Continue to work with all current partners while fostering new relationships in water planning efforts.

2. Communication: Coordinate voluntary participation in regional water supply planning and management and integrate diverse opinions.
3. Legislative/Government/Management/ Communication:
Develop local water supply management plans to be in compliance with guidelines contained in regional plan, and that the local plans be reviewed independently.

E. Communication with Stakeholders.

1. Communication/Education: Continue discussion regarding ways to build stakeholder involvement throughout the region.

IV. Contamination:

A. Monitor Contaminants: Nitrates, Chloride, Arsenic, Industrial Solvents, Methane, Leachate and Landfill.

B. Contamination: Properly seal decommissioned or unused, or abandoned wells.

C. Use planning and zoning maps to inform citizens and developers of locations of well setbacks areas and potentially contaminating land uses.

V. Legislation

A. Legislation: Continue to plan and manage water supplies to meet demand in compliance with existing laws, regulations, and property rights, and with due consideration of acceptable and/or unacceptable impacts.

B. Legislative: Do not delay the implementation of the recommended standard to protect the confined Mahomet Aquifer until other standards are developed. **With increased punitive potential.**

C. Legislative: Authority given to government agencies to levy higher monetary fines on business/municipalities for neglect or abuse.

1. Legislative: Define the transition zone and develop appropriate standard(s) to protect the aquifer, surface water, and ecosystems, while allowing for groundwater development.
2. Regulate land uses beyond those covered by the state.
3. Prohibit certain land uses or materials that threaten groundwater.

VI. Management

A. Develop Committee and Plan:

1. Management: A critical early step for the Mahomet Aquifer Consortium to identify its resource needs and to take action to secure them. Stable and adequate funding from the state government through the Illinois Department of Natural Resources and local entities is essential to support efforts to implement a regional plan. Federal funds should also be pursued as a possible source of funding.
2. Management: Coordinate implementation of a regional plan-with monitoring and reporting of progress to established accountability.

B. Execution of Plan:

1. Management: Actively seek stable and adequate funding from local, state and federal government entities along with private sector to implement action items.

2. Management: Continue periodic reviews and full updates of proceeding reports: water withdrawals and water demand estimates in 2017; conduct a full update to the *Plan to Improve the Planning and Management of Water Supplies in East-Central Illinois on 2022*.

C. Future Management:

1. Management: Design water supply facilities for staged or incremental construction, where feasible, to permit maximum, flexibility to accommodate changes in population and economic growth, changes in technology for water supply management, new scientific understanding, and possible new or revised management standards.

2. Management/Education: Encourage per property water metering /tracking within municipalities and rural areas of region.

VII. Education:

A. Education: Encourage, facilitate and provide technical assistance to water supply operators in the preparation of local water supply and management plans that are consistent with the guidelines in a regional plan. Review of the plans will result in a collective regional plan.

B. Education: Promote conservation on all levels through education fact sheets and water audits.

C. Education: Notification to private water or gas owners on existing laws and potential sealing procedures.

VIII. Conservation:

A. Conservation: Identify and preserve and/or restore key aquifer recharge areas, key stream reaches and ecosystem-sensitive stream flows. Water supply planners also must understand the nature, extent, cause and trend of impacts (such as water withdrawals) on _____ ?

B. Conservation: Increase efficiencies of water withdrawal, treatment, distribution, and use, and use of water from alternative sources (such as reused water, detained storm water, and conjunctive use of surface water and groundwater).

Management Recommendations from PRI Appendix B

Rank by priority or eliminate.

A. Develop Committee and Plan

1. Groundwater protection can be achieved by applying pollution prevention practices to new and existing potential contamination sources. Pollution prevention involves reviewing the use of all hazardous and liquid chemicals in plant or company processes and when possible, adjusting the process to eliminate waste products or replace hazardous with non-hazardous materials.
2. Assemble information on locations of wells and potential contamination sources in the community.

3. Identify all wells, potential contamination sources, setbacks, and recharge areas in the local comprehensive plan. This would clarify, in one document. Potential threats to groundwater and areas of restriction on future land use.
4. Each community water supply that treats surface or groundwater as a primary or emergency supply of water must develop a source water protection plan that contains the following minimum element: a) a vision statement; b) a source water assessment; c) plan objective; and d) an action plan.
5. Coordinate with the IEPA to conduct a well site survey to provide an inventory of potential sources, routes and other activities within established minimum setback zones and determine if existing potential sources or routes pose threats or if additional protection is warranted.

6. Establish groundwater protection practices for operations by public works department and other local agencies, such as for de-icing operations, chemical storage, and stormwater management.
7. Prepare a groundwater needs assessment by every county or municipality which is served by a community water supply well.
8. Establish operating standards for potential contaminating land users.

B. Execution of Plan

1. Perform a Groundwater Protection Needs Assessment' or, in the case of a smaller community, request the IEPA to perform a Hazard Review.

2. The standards and requirements of 35 Ill. Adm. Code 615, 35 Ill. Adm. Code 616 Ill. Adm. Code 257, or 77 Ill. Code 830 apply to the following existing and new activities when those activities are located wholly or partially within 2,500 feet of the wellheads and are located or take place within regulated recharge area.

C. Future Management

1. Apply to the EPA to locally administer the minimum hazard certification program.

2. The Department of Public Health and Department of Natural Resources may develop an assistance program for abandoned and improperly plugged water supply wells.

3. The following new facilities, sites, units or potential routes must not be located within a delineated regulated recharge area: 1.) low level radioactive waste sites; 2.) Class V injection wells; 3.) municipal solid waste landfills; 4.) special or hazardous waste landfills.

4. Local water protection programs established in community well recharge area(s) as determined by a groundwater protection needs assessment, allows a community to focus its management efforts, avoid excessive management and regulations in areas that do not contribute groundwater to wells, and avoid spending time and funds on protecting non-critical areas where groundwater contamination is low.