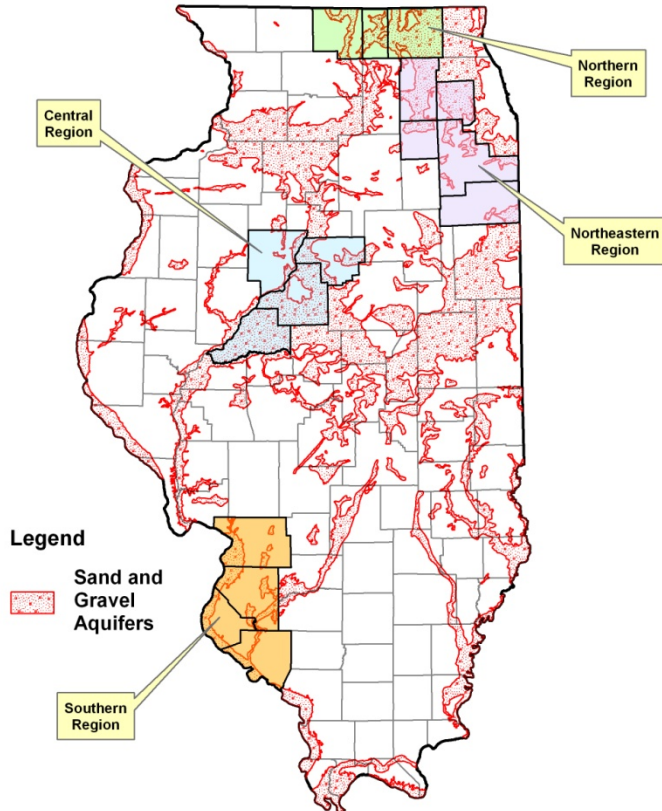


2008 Groundwater Protection Policy Forum

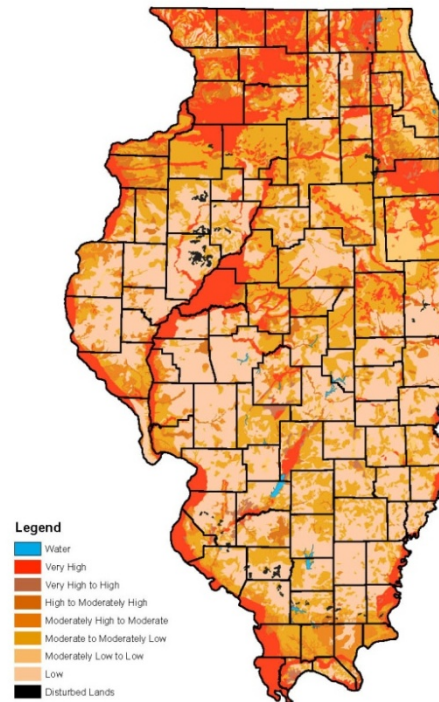
Groundwater Degradation and Sustainability

Père Marquette, Peoria, IL, September 24th, 2008

Regional Groundwater Protection Committees



Potential for Aquifer Recharge in Illinois



Sponsored by: **Interagency Coordinating Committee on Groundwater, Groundwater Advisory Council, and the Regional Groundwater Protection Planning Committees**

Published by: **Illinois Environmental Protection Agency, Division of Public Water Supplies**

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**Illinois Environmental Protection Agency
Bureau of Water
Groundwater Section
Springfield, Illinois**

<http://www.epa.state.il.us/water/groundwater/index.html>

April 2009

Sponsors

Groundwater Advisory Council

The Groundwater Advisory Council (GAC), established in 1988, is comprised of nine members who represent public, industrial, agricultural, environmental, and local governmental interests. The GAC is responsible for:

- Reviewing, evaluating, and making recommendations regarding state laws, regulations, and procedures that relate to groundwater protection;
- Reviewing, evaluating, and making recommendations regarding the state's efforts to implement the Illinois Groundwater Protection Act (IGPA) and protect groundwater;
- Making recommendations relating to the state's needs for groundwater research; and
- Reviewing, evaluating, and making recommendations regarding groundwater data collection and analysis.

The IGPA mandates that the GAC members be appointed by the Governor to serve three-year terms. Following is a list of the members of the GAC.

Bill Compton, (Chair) Public Water Supply Interest (Caterpillar, Inc., Retired;
Board Chair - Groveland Township Water District)

Jack Norman, Environmental Interest (Sierra Club)

George Czapar, Agricultural Interest (University of Illinois - Extension)

Paul McNamara, Local Government Interest (Southwestern Illinois Planning
Commission)

Vacant, Business Interest (two positions)

Vacant, Regional Planning Interest

John Liberg, Water Well Drilling Interest (Illinois Association of Groundwater
Professionals)

Robert Kohlhase, Environmental Interest (Farnsworth Group)

Interagency Coordinating Committee on Groundwater

The IGPA required the creation of the Interagency Coordinating Committee on Groundwater (ICCG). The ICCG is required to report biennially to the Governor and General Assembly on groundwater quality and quantity and the state's enforcement efforts. In summary, the ICCG is responsible for:

- Reviewing and coordinating the state's policy on groundwater protection;
- Reviewing and evaluating state laws, regulations, and procedures that relate to groundwater protection;

- Reviewing and evaluating the status of the state’s efforts to improve the quality of the groundwater, the state enforcement efforts for protection of the groundwater, and make recommendations in improving the state’s efforts to protect the groundwater;
- Recommending procedures for better coordination among state groundwater programs and local programs related to groundwater protection;
- Reviewing and recommending procedures to coordinate the state’s response to specific incidents of groundwater pollution and coordinate dissemination of information between agencies responsible for the state’s response;
- Making recommendations for and prioritizing the state’s groundwater research needs; and
- Reviewing, coordinating, and evaluating groundwater data collection and analysis.

The ICCG is chaired by the Director of Illinois Environmental Protection Agency (Illinois EPA) and is comprised of members from ten state agencies/departments that have some jurisdiction over groundwater (Table 1.) The ICCG continues to review and update an Implementation Plan and Regulatory Agenda pursuant to the IGPA. Detailed minutes are taken at every meeting and are available from Illinois EPA.

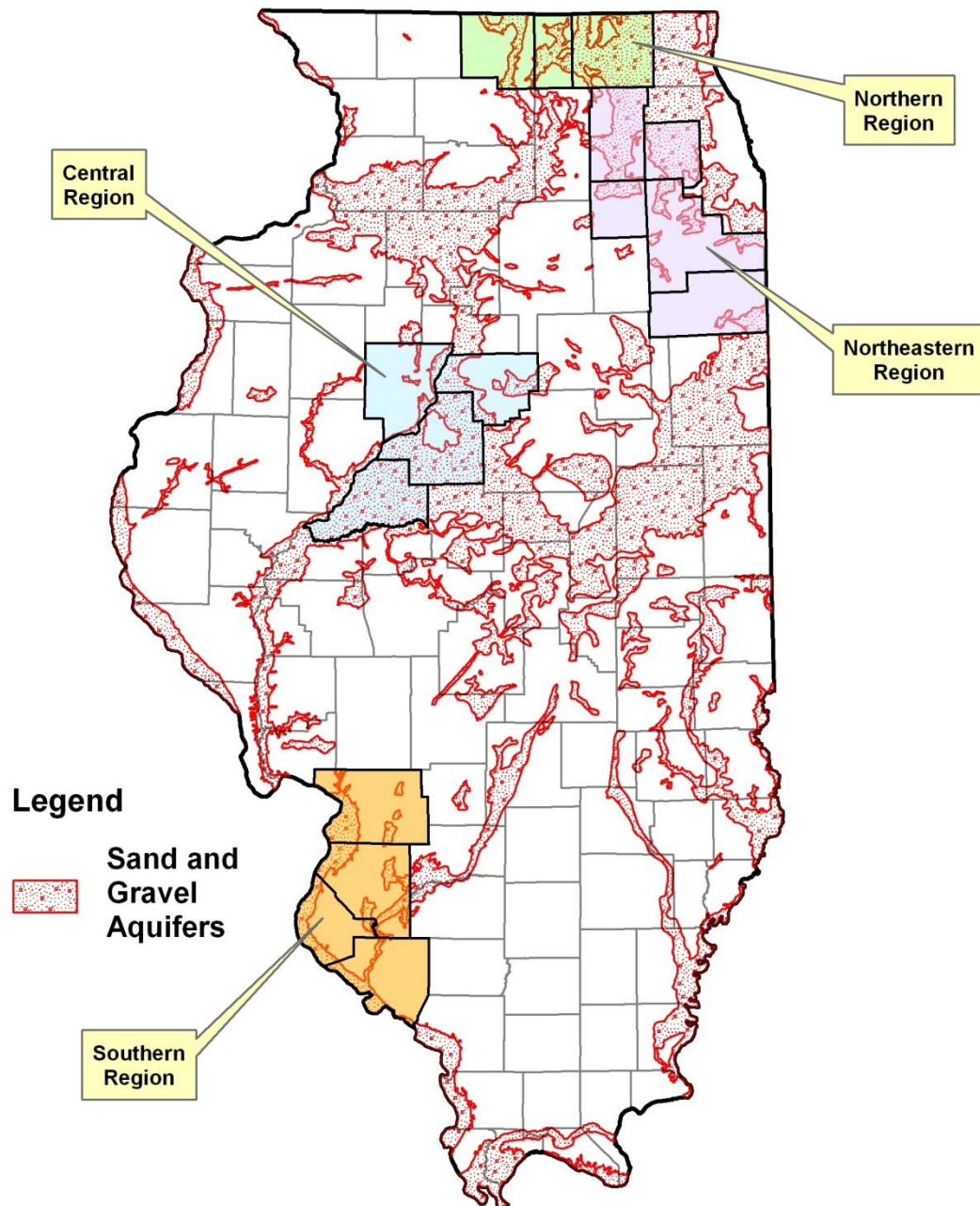
Table 1. Members of the Interagency Coordinating Committee on Groundwater

Environmental Protection Agency (Chair)	Marcia Willhite, designee
Department of Natural Resources Office of Water Resources Office of Mines and Minerals	Todd Rettig, designee Gary Clark, designee Scott Fowler, designee
Department of Public Health	Jerry Dalsin, designee
Office of the State Fire Marshal	Shelly Bradley, designee
Department of Agriculture	Dennis McKenna, designee
Emergency Management Agency, Division of Nuclear Safety	Gary McCandless, designee
Department of Commerce and Economic Opportunity	John Knittle, designee
<i>Also attending the ICCG meetings are: Steve Gobelman, Illinois Department of Transportation’s Division of Highways; Allen Wehrmann, Illinois State Water Survey; David Larson, Illinois State Geological Survey; and George Groschen, United States Geological Survey.</i>	

Regional Groundwater Protection Planning Committees

Section 17.2 of the IGPA requires Illinois Environmental Protection Agency (Illinois EPA) to establish a regional groundwater protection planning program. The Illinois EPA utilized recharge area mapping (completed in 1990 by the Illinois Department of Natural Resources (IDNR)), groundwater pumpage data, population affected, water supply characteristics, solid waste planning efforts, and other factors to select the four existing priority groundwater protection planning regions (Figure 1.)

Figure 1. Priority Groundwater Protection Planning Regions



A committee is appointed for each region by the Illinois EPA's Director and includes representatives from interested parties throughout the region, including county and municipal officials, owners or operators of public water supplies which use groundwater, at least three members of the general public who have an interest in groundwater protection, the Illinois EPA, and other state agencies, as appropriate.

The Northern and Central Groundwater Protection Planning Committees were first established in 1991, followed shortly thereafter by the Southern Groundwater Protection Committee in 1992. The Northeastern Groundwater Protection Planning Committee was initially appointed in 1995 and later amended to include DuPage County in 2001.

Illinois EPA continues to work very closely with the regional priority groundwater protection planning committees to implement groundwater protection programs at the local level. Each regional committee has adopted specific mission goals and objective statements to advocate groundwater protection practices and procedures to municipal, county, state and other local units of government throughout their respective regions. These goals and objectives are useful in the prioritization and development of local groundwater protection programs. Although each regional committee has specific priorities and areas of concern, their general mission statements all have common goals and objectives, as described below:

GOALS:

1. Provide education materials and programs regarding general groundwater protection.
2. Promote the use of groundwater protection tools to county and other local units of government that implement groundwater protection programs throughout the region.
3. Assist the state jurisdictions in accomplishing specific regional groundwater protection programs.
4. Provide a forum for the development of recommendations that address committee recognized regional protection needs.

OBJECTIVES:

1. Maintain an ongoing general education subcommittee to work with citizen groups, schools, governing agencies, and other interested parties on the importance of groundwater protection.
2. Promote the use of voluntary best management and pollution prevention programs for businesses and residences located within groundwater recharge areas.
3. Work with county, municipal, and other special units of local government to implement groundwater protection tools such as local zoning, maximum setback zones, technology control regulations, and defining recharge areas.

Northern Regional Groundwater Protection Planning Committee Profile

Established in 1991, the Northern Regional Groundwater Protection Planning Committee (NRGC) includes Winnebago, Boone, and McHenry Counties. Over their nearly 18 year history, the NRGC has initiated and assisted in the development of several programmatic elements of the IGPA, a few of which are summarized below:

The NRGC, with assistance from the City of Loves Park Public Water District (PWD), collaborated on a well sealing program for residents in the five-year capture zone for Loves Park PWD well #1. Over 330 homes were visited, with 91 abandoned driven-point wells identified. A private well contractor and the Winnebago County Health Department sealed these 91 driven-point wells using materials available from the reduced-cost bentonite program developed through the NRGC. Over 215 abandoned wells have been properly sealed since the program began in 2002.

McHenry County Groundwater Resources Management - The geology of McHenry County is made up of many sand and gravel, limestone, and sandstone formations. These aquifers serve as the source of all of McHenry County's drinking water. A combination of factors made it essential for McHenry County to develop a Groundwater Resources Management Plan that addresses the complete cycle of source, use, disposal, and reuse. The plan was developed with the input of county and municipal officials, environmental groups, interested businesses, citizens, and members of the NRGC in active discussions of the issues to ensure wide support. The final plan was completed November 2006 and may be found at: www.mchenryh2o.com

Members of the NRGC continue to participate in the Northeast Regional Water Supply Planning Group (NE-RWSPG) to consider the future water supply needs of Northeastern Illinois. The Chicago Metropolitan Agency for Planning (CMAP) was charged with creating a regional water supply planning group for northeastern Illinois to develop water demand scenarios to the year 2050. The goal is to evaluate management options, including developing plans and programs, to guide future water use by addressing different scenarios regarding the growing state population and increasing demand for water through 2050.

The NRGC has developed a well sealing program to promote and accelerate the proper abandonment of inactive water supply wells. Well abandonment guidelines and brochures have been created to facilitate the implementation of this program. Assistance has been provided to seal several hundred inactive water supply wells since the inception of the program

The NRGC co-sponsored the Illinois Society of Professional Engineers Workshop, which was held on January 16, 2007. The workshop agenda included an Illinois EPA regulatory update from Director Douglas P. Scott and presentations from: Aqua-Aerobics Systems on wastewater processes and equipment; Illinois Department of Transportation (IDOT) on erosion control standards, groundwater, and surface water ordinances; and an overview of the Natural Resources Conservation Service's Illinois Urban manual

Members of the NRGC continue to coordinate with a number of state and local associations to sponsor a Youth Groundwater Festival. The 14th annual Youth Groundwater Festival was held March 12, 2008, at Rock Valley College and partially funded by the NRGC. Nearly 600 fourth and fifth grade students from 21 schools within the greater Rockford area attended. Approximately 135 Volunteers from the NRGC and other area groups and agencies helped to make this annual event possible.

The members of the NRGC are:

Chair: Robyn Doescher, Baxter & Woodman Consulting Engineers

Tim Holdeman, Water Superintendent, City of Rockford

Nathan Bruck, City Planner, City of Loves Park

Sarah Berg, McHenry County Health Department

Bill Hatfield, Director of Environmental Health, Boone County Department of Health

Richard Mohaupt, Public Works Superintendent, Winnebago County

Mike Foutch, Resource Conservationist, Boone County Soil and Water Conservation District

Jessica Vandeboom, Winnebago County Soil and Water Conservation District

Dan Kane, Executive Director, Boone County Conservation District

Erich Redschlag, Groundwater Coordinator, Winnebago County Health Department

Edward Weskerna, District Manager, McHenry County Soil and Water Conservation District

Justin Krohn, P.E., Krohn Consulting

Lorence Brown, Citizen

Gordon Geddes, Citizen

Chuck Martin, Chuck Martin Consulting

Bob Mickey, President, Central Grain Company

John Berry, Citizen

Edward Rice, North Park Public Water District

Will Smith, Water Treatment Superintendent, City of Woodstock

Clay Simonson, Division of Environmental Health, Illinois Department of Public Health

Northeastern Regional Groundwater Protection Planning Committee Profile

The Northeastern Regional Groundwater Protection Planning Committee (NERGC) was first appointed in October 1995, and later amended to include DuPage County in 2001. The NERGC represents the Counties of Kane, Will, Kankakee, DuPage, and Kendall. Over their nearly 14 year history, the NERGC has initiated and assisted in the development of several programmatic elements of the IGPA, a few of which are summarized below:

A field day was hosted by the NERGC for Kendall County. Entitled “Groundwater Management in Kendall County,” the field day was held on May 24, 2007, at the Kendall County Health Department. Presentations included: “*An Update on Regional Groundwater Resource Investigations in Northeastern Illinois*” by Allen Wehrmann, Illinois State Water Survey (ISWS); “*Illinois Department of Public Health (IDPH) Water Well Program Updates*” by Bob Cowles, IDPH; “*Water Well Systems and Components*” by Steve Liberg, Prairie State Water Systems; and Sue Boherstengel, Executive Director of the Illinois Association of Groundwater Professionals.

In September 2006, the NERGC awarded its first student research grant to Heidi Kelly of Northern Illinois University. Ms. Kelly’s research involved an evaluation of the biodegradation of atrazine in groundwater in Kane County. As a requirement of the student research grant, a presentation of her findings was provided to the NERGC in May 2007, by her advisor, Dr. Melissa Lenczewski. Additional grants to students whose research area or residence is within the five-county priority groundwater region will be provided by the NERGC as a continuing contribution to the region and the state.

The NERGC participated in the Kane County Water Resources Study beginning in 2002, with assistance from ISWS, and Illinois State Geological Survey (ISGS) services and expertise. The planned five-year study consists of the development of: (1) a conceptual model of the geology and hydrology of Kane County; (2) the compilation of a comprehensive database of digital geologic and hydrogeologic information for the county; (3) the design of a three-dimensional numerical model of the aquifers below the county; and (4) the creation of detailed geologic maps and cross-sections of the subsurface geology of the county.

A similar project, the Kendall County Groundwater Study, also involving ISGS and ISWS, is studying the geology and groundwater resources of Kendall County. The purpose of this study is to provide technical information and support for sustainable management and protection of the county’s groundwater.

The NERGC has developed a well sealing program to promote and accelerate the proper abandonment of inactive water supply wells. Well abandonment guidelines and a tracking spreadsheet have been created to facilitate the implementation of this program.

Executive Order #1-2006, called for the development of a comprehensive, statewide water supply planning and management strategy by July 2009. In response, a strategy development process was initiated for two priority planning areas in Illinois, one in

northeastern Illinois and another in east-central Illinois. Members of the NERGC continue to participate in the Northeast Regional Water Supply Planning Group to consider the future water supply needs of Northeastern Illinois. The goal is to develop plans and programs to guide future water use by addressing different scenarios regarding the growing state population and increasing demand for water through 2050.

Finally, a NERGC member, Ann Muniz of Downers Grove, was honored with the Governor's PATH (People Are Today's Heroes) Award for her outstanding work to increase awareness of threats to groundwater supplies. Mrs. Muniz was a community advocate in responding to widespread contamination of private wells in parts of DuPage County and assisted Illinois EPA in implementing the Right to Know Law.

The members of the NERGC are:

Chair: Dan Horvath, Resource Consulting, Inc.
Kyla Jacobsen, Water System Superintendent, City of Elgin Water Department
John McGinnis, Director, City of Plano Public Works
Dennis Duffield, Rogina & Associates, LTD
Fred Carlson, Citizen
Ann Hastert, Caterpillar, Inc.
Greg Buffington, P.E., Layne Western Company
Ann Muniz, Downers Grove Citizens Advisory Group
Julie Wiegel, Environmental Health, Kane County Health Department
Crystal Monsess, Kendall County Soil and Water Conservation District
Brian Scanlon, Environmental Geologist, Will County Health Department
John Church, University of Illinois Extension Services Regional Center
Rick Daugherty, DuPage County Health Department, Environmental Health Services
Jason Peppmuller, Will County Land Use Department
Robert Sasman, Consulting Hydrologist
Keith Wojnowski, L.E.H.P, Kankakee County Health Department
Todd Drefcinski, Kendall County Health Department
Tracey Waite, Kane-DuPage SWCD
Kevin Culver, Regional Environmental Compliance Manager, Illinois American Water Corporation, Kankakee Division
Dean Gorter, Water Supply Superintendent
John Dillon, Superintendent, Batavia Water and Sewer Department
Chris Lemke, Village of Sugar Grove

Central Regional Groundwater Protection Planning Committee Profile

Established in April 1991 as the first of the committees, the Central Regional Groundwater Protection Planning Committee (CRGC) includes Peoria, Woodford, Tazewell, and Mason Counties. Over their nearly 18 year history, the CRGC has initiated and assisted in the development of several programmatic elements of the IGPA, a few of which are summarized below:

The CRGC co-sponsors the annual Clean Water Celebration (CWC) held in Peoria, Illinois. The CWC incorporates a variety of programs for students, teachers, and the public, ranging from riverbank erosion and stabilization to natural resource conservation and management. In addition to sponsoring the CWC, the CRGC also assists in staffing a booth on behalf of the Tazewell County Health Department. Members of the CRGC volunteer to staff the booth and provide information to children on how citizens can help safeguard water resources and the environmental impacts of litter and pollution.

The CRGC is actively involved in one of the Regional Water Supply Planning Group's established as a result of requirements of Executive Order #1-2006. The East Central Illinois Regional Water Supply Planning Group (EC-RWSPG) is engaged in the collection and evaluation of the hydrologic data needed to draft a regional water supply plan for the Mahomet Aquifer. A primary goal of the EC-RWSPG is to address different scenarios regarding the growing state population and increasing demand for water from the Mahomet Aquifer through 2050. The chair of the CRGC also serves on the EC-RWSPG and provides regular updates on their progress are presented at the CRGC meetings.

The CRGC, along with the services of pollution prevention (P2) interns, offered assistance and training towards adopting the state's first regulated recharge area. Effective September 1, 2001, the Pleasant Valley PWD regulated recharge area is located in an unincorporated portion of Peoria County. The CRGC also assisted in the proposal and accepted motion by the Illinois Pollution Control Board of maximum setback zone protection for the Marquette Heights community water supply's wells.

The CRGC developed groundwater protection program videos and a teacher's curriculum, eventually packaged onto a DVD, in an effort to promote groundwater protection, education, and awareness in area school districts. The CRGC also sponsors "Test Your Well Days," which invites private well owners to collect and bring samples of their well water to be tested for the presence of nitrate and bacteria. In conjunction with Test Your Well Days, the Committee provides a pesticide screening program which screens for the occurrence of pesticides for a nominal fee.

As a result of his extensive involvement in CRGC programs, Bill Compton, long-time chair of the CRGC was honored in 2007 by Illinois EPA Director, Douglas P. Scott, as being the first recipient of the newly-created Illinois EPA's "Bill Compton Corporate Environmental Stewardship Award."

The members of the CRGC are:

Chair: Evelyn Neavear, Environmental Health, Tazewell County Health Department

Robert Roth, Peoria Heights Public Works Supervisor

Dennis Gould, Alderman, City of Chillicothe

Dennis Kief, City Manager, City of Pekin

Melissa Eaton, Tri-County Planning Commission

Paul Wilkins, Environmental Health, Woodford County Health Department

Eric Lane, Environmental Health, Woodford County Health Department

Richard Showalter, Mason County Farm Bureau

Don Cavi, Director of Environmental Health, Peoria City/County Health Department

Amy Ishmael, Administrative Coordinator, Mason County Soil and Water Conservation District

John Foster, General Manager, Peine Incorporated

Mel Pleines, Citizen

Bill Ebert, Citizen

Joe Loftus, General Manager, Pleasant Valley Public Water District

Brad Bode, Water Superintendent, Village of Goodfield, Water Department

Randy West, Illinois American Water Company, Pekin

Bill Compton, Chairman, Groveland Township Water District

Pat Ludwig, Environmental Affairs, Caterpillar Inc.

Southern Regional Groundwater Protection Planning Committee Profile

The Southern Regional Groundwater Protection Planning Committee (SRGC) was established in October 1992, and consists of Madison, St. Clair, Monroe, and Randolph Counties. Over their nearly 17 year history, the SRGC has initiated and assisted in the development of several programmatic elements of the IGPA, a few of which are summarized below:

The SRGC continues to implement the Well Sealing Campaign, in conjunction with the Water Well Abandonment Program, launched by the Illinois Department of Agriculture (IDOA) and the Madison County Soil and Water Conservation District. The SRGC purchases bulk quantities of bentonite clay pellets for the sealing of private water wells. There is an emphasis placed on the abandoned wells within the immediate proximity of CWS wells. Furthermore, the use of the bentonite is available for sinkhole stabilization projects, which in turn benefit both surface and groundwater quality within portions of the karst-terrain area of southwestern Illinois.

The SRGC has purchased immunoassay kits to test for the occurrence of pesticides in private well water. The program targets farmers and rural homeowners that live in areas that are predominately agricultural land. The screening program generally begins in the early spring when farmers are planting and fertilizing and will continue during the harvest season. Private well water samples are screened for triazines (of which atrazine is a common form) using immunoassay-testing methods. Atrazine is a widely used herbicide used in the control of grasses and broadleaf weeds in crops.

The SRGC co-sponsor's an annual Water Stewardship Festival at Lewis and Clark Community College in Godfrey, Illinois. The Festival is generally held during the month of April, and involves over 35 fifth-grade teachers and more than 1,000 fifth-grade students. The objectives of this annual event are to promote general knowledge about water ecology and environmental education awareness, and to inform students and educators about resources available at the state and regional level which can support clean water activities.

The SRGC provides a groundwater lending library for local stakeholders, with the intent being that they become more aware of, and active in, groundwater protection strategies throughout the southern region. Finally, the SRGC has developed a Southern Committee Networking Survey, used as a "who-to-call" directory. The survey is comprised of names, employers, and job titles for all the current members and advisors of the SRGC.

The members of the SRGC are:

Chair: John Wagner, Director of Environmental Health, Monroe-Randolph Bi-County Health Department

Mary Cooper, Environmental Health Services Manager, Madison County Health Department

Doug King, Assistant Administrative/Director of Environmental Health, East Side Health District

Rick Macho, Resource Conservationist, Madison County Soil and Water Conservation District

Courtney Rehmer, Resource Conservationist, Monroe County Soil and Water Conservation District

Cindy Zipfel, Resource Conservationist, Monroe County Soil and Water Conservation District

Jim Coyne, Resource Conservationist, St. Clair County Soil and Water Conservation District

Meghan Poston, Resource Conservationist Randolph County Soil and Water Conservation District

Kelly Brandt, Program Coordinator-Agriculture/Horticulture/Natural Resources, University of Illinois Extension-Monroe County

Paul McNamara, Director of Planning, Southwest Illinois Metro & Regional Planning Commission

Doug Booten, Superintendent Water/Wastewater, Village of East Alton

Sarah Boyd, Illinois American Water Company

Jack Norman, Sierra Club, Kaskaskia Group

Mike Hungerford, Citizen

Michael Fruth, Coordinator, Metro East Regional Stormwater Committee

Tony Shan, Ph D., Safety, Health & Environmental Unit, Tosco Wood River Refinery

Jerry Roosevelt, Gateway Farm Service Corporation

Richard Worthen, Citizen

Greg Wilburn, CEO, Kohlen Concrete Products, Inc.

Carl Cannon, U.S. Steel/ Granite City Works



Groundwater Degradation & Sustainability

September 24, 2008

Hotel Père Marquette - Peoria, Illinois

2008 Groundwater Protection Policy Forum

8:00 - 8:30 a.m.	Registration (Marquette South/Continental Breakfast Served)
8:30 - 8:45 a.m.	Welcoming Remarks and Forum Objectives <ul style="list-style-type: none">• Bill Compton, Groundwater Advisory Council Chair
8:45 - 10:15 a.m.	Emerging Contaminants Panel <ul style="list-style-type: none">• George Groschen, U.S. Geological Survey• Rick Cobb, Illinois Environmental Protection Agency• Walt Kelly, Illinois State Water Survey• Dennis McKenna, Illinois Department of Agriculture
10:15 - 10:30 a.m.	Break
10:30 - 11:00 a.m.	Water Quantity Planning Process - Project Update <ul style="list-style-type: none">• Deborah Stone, Illinois Department of Natural Resources
11:00 - 11:30 a.m.	Proposed Revisions to Groundwater Standards <ul style="list-style-type: none">• Rick Cobb, Illinois Environmental Protection Agency
11:30 - 12:00 p.m.	Instruction for Breakout Sessions
12:00 - 1:00 p.m.	Keynote Speaker (Cotillion Ballroom/Lunch Served) "McHenry County's Groundwater Protection Program" <ul style="list-style-type: none">• Cassandra McKinney, McHenry County Groundwater Coordinator
1:00 - 2:00 p.m.	Concurrent Break Out Session A <ul style="list-style-type: none">#1 Agriculture & Groundwater (Facilitator - Dennis McKenna, Marquette South)#2 IDPH and County Health Departments (Facilitator - Jerry Dalsin, LaSalle Room)
2:00 - 3:00 p.m.	Concurrent Break Out Session B <ul style="list-style-type: none">#1 Interface Between Groundwater Quality & Quantity - State's Role (Facilitator - Gary Clark, Marquette South)#2 New CWS Well Permitting & Wellhead Protection Requirements (Facilitator - Jerry Kuhn, LaSalle Room)
3:00 - 4:00 p.m.	Break Out Session Reports (Marquette South)

Sponsored by:

Priority Regional Groundwater Protection Planning Committees
Groundwater Advisory Council
Interagency Coordinating Committee on Groundwater

Speakers and Facilitators

Tom Anderson	McLean County Health Department 200 West Front Street Bloomington, IL 61701 (309) 888-5482 <i>tom.anderson@mcleancountyil.gov</i>
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Gary Clark	Illinois Department of Natural Resources One Natural Resources Way, 2 nd Floor Springfield, IL 62702 (217) 785-3334 <i>gary.clark@illinois.gov</i>
Bill Compton	Groveland Township Water District P.O. Box 300 Groveland, IL 61535 (309) 387-6100 <i>thecomptons311@comcast.net</i>
Jerry Dalsin	Illinois Department of Public Health 525-535 West Jefferson Street Springfield, IL 62761 (217) 782-5830 <i>jerry.dalsin@illinois.gov</i>
George Groschen	United States Geological Survey 1201 West University Avenue, Suite 100 Urbana, IL 61801 (217) 344-0037 <i>gegrosch@usgs.gov</i>
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2008 Groundwater Forum Objectives, Goals, and Format

The 2008 Groundwater Protection Policy Forum, entitled “Groundwater Degradation & Sustainability,” was designed to address and assess groundwater issues that the State of Illinois is facing at present, and will become increasingly important in the near and distant future. The rapid population growth of the urban areas of the state relies on the availability, sustainability, and quality of our groundwater resources.

The 2008 Groundwater Forum objectives are geared towards assessing where we are in our sustainability journey, what we have found out along the way, and the assessment of real and potential degradation issues. The response of the state in managing the quality and quantity issues is paramount to the proper use and preservation of the groundwater resources. In addition, the engagement of key governmental, planning, and citizen stakeholders is critical in this evaluation of our groundwater resources.

The 2008 Groundwater Forum goals are for groundwater experts to come together and share experiences and approaches to groundwater issues, discuss contaminant trends and emerging contaminants, develop approaches to addressing these new issues, and lay the groundwork for establishing priority initiatives and new policies.

The 2008 Groundwater Forum was comprised of presentations and concurrent working sessions. The morning consisted of a plenary session that addressed statewide groundwater issues including emerging contaminants, water quantity resources, and groundwater standards. The lunch speaker, Cassandra McKinney, provided a summary of McHenry County’s Groundwater Protection Program. The afternoon concurrent breakout sessions focused on regulatory, local government, and agricultural issues. The purpose of this open forum format is to encourage diversified, open dialog pertaining to perspectives, plans, ideas, and anticipated outcomes of the 2008 Groundwater Forum.

Proceedings - Presentations

The proceedings of the 2008 Groundwater Protection Policy Forum are summarized herein. The complete presentations are included on this CD in the format of Microsoft Office PowerPoint presentations and as Adobe PDF files. The morning sessions are summarized from the presentations and the afternoon sessions are summarized from the presentations and the resulting discussions, as well as the findings presented to the full Forum attendees at the close of the day.

Welcoming Remarks and Forum Objectives
Speaker: Bill Compton, Groundwater Advisory Council Chair

Theme: The Illinois Groundwater Protection Act (Public Act 85-863, 1987) assigned administrative and technical duties and responsibilities to the Illinois EPA and the Illinois Department of Natural Resources. It also established the Groundwater Advisory Council, the Interagency Coordinating Committee on Groundwater, and Priority Regional Groundwater Protection Planning Committees. The 2008 Groundwater Policy Forum objectives are to address issues regarding groundwater degradation and the sustainability of the groundwater reserves in the State of Illinois.

Mr. Bill Compton opened the Groundwater Policy Forum on September 24, 2008, by thanking all the participants for their attendance. The intended outcome of this Groundwater Forum is to find out where we are on our sustainability journey.

Emerging Contaminants Panel
Panelists: George Groschen, Rick Cobb, Walt Kelly, Dennis McKenna

Theme: The Emerging Contaminants Panel is comprised of representatives from the United States Geological Survey, the Illinois Environmental Protection Agency, the Illinois State Water Survey, and the Illinois Department of Agriculture. Each organization's representative gave a presentation on the current status of various state and federal research efforts and findings regarding emerging contaminants detected in Illinois' groundwater resources.

Presentation #1: *Previously Neglected Contaminants in the Environment: Toxic Substances, Hydrology, and NAWQA Programs*
(George Groschen, U.S. Geological Survey)

Historically, the list of organic and semi-organic compounds that have been tested for in groundwater has been very standard. However, evidence suggests that there may be many more compounds that are making their way into our water supplies. At present, these chemicals are not being identified during testing. In addition, no health standards have been established for them. Hence these "emerging contaminants" would best be called "previously ignored" contaminants.

A special sampling program was designed for testing wells for the National Water Quality Assessment Program (NAWQA) Source Water-Quality Assessment. As an initial step, the U.S. Geological Survey determined the top quartile of water suppliers from the Mahomet Aquifer. Contact was made to the private well owner or municipality, which ever well was in question of being sampled. Of the initial wells, the list was narrowed to 15 cooperative suppliers

distributed across the area of interest. The sampling took place for source water (untreated) and finished (treated) water. Resulting samples showed that a total of 19 pesticides and transformation products (TPs) were detected, and five of those appeared multiple times. Trihalomethanes (THMs) and volatile organic compounds (VOCs) were also detected. Overall, there was a strong correlation between well depth and number of detects, with the shallower wells showing higher numbers of detections.

Presentation #2: Degradation of Community Water Supply Wells by VOCs
(Rick Cobb, Illinois Environmental Protection Agency)

One of the objectives of the ICCG is to promote groundwater monitoring coordination among the Illinois EPA, IDOA, USGS, and IDPH. Year-to-year evaluation of the Illinois EPA's ambient network of community water system (CWS) wells have shown fluctuations of volatile organic compounds (VOCs), however, analyses of data collected from 1990 to the present shows a statistically significant increasing trend of CWS wells with VOC detections per year. The most prevalent VOCs being detected are Xylene and 1,1,1-Trichloroethane. These two compounds are generally showing up at low levels, but the number of detections is on the rise.

The results show the importance of doing long-term monitoring such that trend analysis can be performed. More importantly, this data shows an increasing trend of groundwater degradation. Degradation occurs based on the potential or actual diminishment of the beneficial use of the resource. When contaminant levels are detected (caused or allowed) or predicted (threat) to be above concentrations that cannot be removed via ordinary treatment techniques, applied by the owner of a private drinking water system well, potential or actual diminishment occurs. At a minimum, private well treatment techniques consist of chlorination of the raw source water prior to drinking. Illinois EPA is continuing to evaluate this groundwater monitoring data to determine the causes and potential sources of this groundwater degradation trend.

Presentation #3: Increasing Chloride Concentrations in Shallow Aquifers and Surface Water in the Chicago Metropolitan Region
(Walter Kelly, Illinois State Water Survey)

Chloride contamination may come from point or non-point sources, such as human and livestock wastes, road salt, water softeners, oil field brines, etc. In Illinois, a primary urban contaminant is road salt. The application of road salt started around 1960 and continued to increase moderately over the years. In the Chicago metropolitan region alone, the annual average road salt application totals greater than 270,000 tons. The shallow individual and public supply wells

throughout the Chicago metropolitan region show a significant, positive trend of chloride.

Current trends of shallow groundwater chloride concentrations in the Chicago metropolitan region are increasing in most collar counties. Cook and Lake Counties have much lower concentrations due to thicker overlying till, fewer shallow sand and gravel deposits, and the factor that major roads tend to be curbed, and thus, drain into storm water drainage systems. However, it has been theorized that peak chloride concentrations in groundwater may eventually be greater than at present.

Another source of year-round chloride is wastewater treatment plants. Over 3.2 billion gallons of wastewater are treated per day in Chicago, which results in the treatment of approximately 275,000 tons of chloride per year. Surface water sampling results from 2003 to 2005, at 14 river or tributary locations along the Illinois River, demonstrated that the highest levels of chlorides were in the Chicago Sanitary and Ship Canal and the Des Plaines River. The concentrations of chlorides in the Illinois River decreased with distance from the Chicago metropolitan area.

Overall, there is evidence of increasing chloride concentrations in the Illinois River watershed can be attributed to activities occurring in the Chicago area. Treated wastewater and road salt are the key sources of chlorides in the Illinois River. Elevated chloride levels are extremely likely to have negative effects on aquatic biota.

Presentation #4: Pesticides in Illinois Groundwater: The IDA Statewide Monitoring Well Network (Dennis McKenna, Illinois Department of Agriculture)

The Illinois Generic Management Plan for Pesticides in Groundwater (PMP) targets assessment monitoring to areas where aquifer materials occur within 50 feet of land surface. In 1995, the IDA contracted with the ISGS and ISWS to design and construct a statewide groundwater monitoring well network for use with future pesticide management plans. As originally designed, the network had two major goals: (1) provide data to test the utility of a map of aquifer sensitivity to contamination by pesticide leaching as a predictive tool for pesticide management plans; and (2) determine if the occurrence of selected agricultural chemicals varies seasonally and over longer periods of time.

The monitoring well network began in 1998 with sampling done by ISGS personnel. IDA then assumed both sampling and analysis in 2001, on a two-year cycle. The IDA monitoring well network has 144 shallow groundwater monitoring wells, with depths ranging from 10 to 83 feet. All of the wells were located in public right-of-ways adjacent to cropland to avoid potential detections from point sources of agricultural handling facilities. The network was designed

to determine the regional impacts of pesticide leaching from nonpoint sources only.

When detections over 10 percent of the maximum contaminant level (MCL) occur, the PMP response plan requires the following: (1) notifying the registrant, (2) identifying the cause, (3) performing a vulnerability assessment and defining response areas, (4) expanding monitoring, (5) encouraging use of voluntary best management practices (BMPs), and (6) imposing use restrictions or prohibiting usage. Since February 2001, only one sample contained a pesticide level, that of atrazine, at a concentration greater than 10 percent of the MCL. A resample within 30 days after showed the level below 10 percent of the MCL.

The state has developed and implemented a voluntary program to monitor, and appropriately respond to, the possible impacts to groundwater by the normal agronomic use of pesticides. Future plans involve continuing to follow the provisions of the Illinois PMP, as budget and other resources allow. The two-year cycle will remain the time frame for well sampling. The addition and removal of analytes will be based on product use patterns and detections in groundwater.

**Regionally Based Water Quantity Planning Process –
Project Update**

Speaker: Deborah Stone, Deputy Director, Illinois Department of Natural Resources

Theme: The Governor’s Executive Order 2006-01 called on IDNR’s Office of Water Resources, in conjunction with the ISWS and ISGS, to devise a comprehensive plan for managing the water resources in two priority areas of the State of Illinois.

The Governor’s Executive Order 2006-01 required INDR’s Office of Water Resources, in conjunction with the ISWS and ISGS, to develop a comprehensive plan for managing the water resources in two priority areas of the state. The water quantity planning project called for selection of regions of the state where groundwater quantity issues are critical.

Two regions were designated Illinois Priority Planning Areas—northeastern Illinois and east-central Illinois. These two areas were chosen on the basis of limited water supply availability and substantial population and economic growth. Improved water supply planning and management of these aquifers and watersheds will help ensure current and future water demands can be met and conflicts minimized.

An 11-county regional water supply planning group for northeastern Illinois, composed of 35 members representing nine stakeholder groups, was created in November 2006, facilitated by CMAP. More information about the northeastern regional water supply planning group is available from the CMAP Web site at <http://www.chicagoareaplanning.org/watersupply/>. A 12-member regional water supply planning group for east-central Illinois was organized in February 2007, facilitated by

the MAC. More information about the planning group is available from the MAC Web site at <http://www.mahometaquiferconsortium.org/>. These two regional stakeholder water supply planning groups are tasked with creating plausible water demand scenarios to the year 2050.

The MAC and CMAP committees have produced three water demand scenarios. The first one is termed “Current Trends,” or baseline, and assumes that growth, water conservation, and other factors remain at a level similar to that being experienced currently. The second scenario, termed “Less Resource Intensive,” assumes a favorable scenario in which population growth is lower, water conservation is higher, and other factors are favorable for the existing reserves being able to supply the demand. The third scenario, termed “More Resource Intensive,” assumes an unfavorable scenario in which population growth is higher, water conservation is less, and other factors cause an increase in water usage.

A final report with the findings of the studies was then produced. The CMAP committee published their findings in May 2008, report entitled “Regional Water Demand Scenarios for Northeastern Illinois: 2005-2050.” The MAC produced their report, “Water Demand Scenarios for East-Central Illinois: 2005-2050,” in August 2008.

Considerations for the statewide strategic plan include a continuation of the regional approach, initiation of another pilot basin study, revision of the Statewide Drought Response Plan, more study of the observation well network and historical weather data by the ISWS, and more work with the Illinois Water Use Inventory Program.

Proposed Revisions to Groundwater Standards
Speaker: Rick Cobb, Deputy Director, Division of Public Water Supplies,
Illinois Environmental Protection Agency

Theme: The Illinois EPA is in the process of updating the groundwater standards (35 Ill. Adm. Code 620). Input from several committees is being sought in establishing the new standards.

Groundwater has an essential and pervasive role in the social and economic well-being of Illinois and it is vitally important to general health, safety, and welfare. Groundwater resources should be utilized for beneficial and legitimate purposes. Waste and degradation of the resource should be prevented, and underground water resources should be managed to allow for maximum benefit to the people of the state.

Section 12(a) of the Illinois Environmental Protection Act states:

“No person shall: (a) cause, threaten or allow the discharge of contaminants into the environment in any State so as to cause or tend to cause water pollution in Illinois, either alone or in combination with matter from other sources, or so as to violate regulations or standards adopted by the Pollution Control Board under this Act.”

The IGPA provides the requirements for establishing groundwater standards. On October 12, 2006, the Illinois EPA consulted with the ICCG and the GAC to discuss the proposed rulemaking and to obtain their input. The Illinois EPA has developed a draft proposal to add 41 contaminants with groundwater quality standards. One of the 41 includes revising the arsenic standard to be parallel with the drinking water standard. Forty proposed standards are new. These new standards are proposed for contaminants based on their common occurrence in Illinois groundwater pursuant to the requirement outlined in the Illinois Groundwater Protection Act (415 ILCS 55/8). The most controversial groundwater standard proposed is for Perchlorate (i.e. rocket fuel). Illinois EPA is using the procedure for deriving standards pursuant to the provisions codified in the Board's groundwater standards at Subpart F.

The GAC sponsored a regulatory development session on May 9, 2007, to provide an update on the proposed groundwater standards and to gain input from stakeholders. The Illinois EPA considered the input obtained from the ICCG, GAC and from the regulatory development session in developing their draft proposal.

The proposal included the following:

- New wellhead protection area provisions include the following definition: “Wellhead Protection Area” or “WHPA” means the surface and subsurface recharge area surrounding a community water supply well or well field, delineated outside of any applicable setback zones (pursuant to Section 17.1 of the Act (415 ILCS 5/17.1)) pursuant to Illinois’ Wellhead Protection Program, through which contaminants are reasonably likely to move toward such well or well field.
- The Groundwater Protection Needs Assessment Guidance Document was incorporated by reference to codify the modeling procedure used to delineate WHPAs.
- The compliance point section of the regulations was amended to include WHPAs.
- The Illinois EPA proposed to include 41 new contaminants under the non-degradation provisions of the Pollution Control Board’s standards.
- New groundwater standards for inorganic and VOCs were also proposed.
- Several pesticides and explosive contaminants have also been added into the new groundwater standards proposal.

McHenry County’s Groundwater Protection Program
Speaker: Cassandra McKinney, Water Resource Manager, McHenry
County, IL

Theme: Groundwater is a vital resource in McHenry County. Rapid urban development is increasingly placing a strain on the known water reserves and a plan is being established to deal with all the issues. Input from a variety of stakeholders is being incorporated.

McHenry County officials have made significant progress in their efforts to implement key components of the Groundwater Resources Management Plan, completed in November 2006. The final plan includes five sections: Groundwater Resources Management Framework, Groundwater Resources Information for Planning, Countywide Groundwater Protection Plan, Countywide Wastewater Management Plan, and Chlorides and Agricultural Chemicals: Problem Assessments & Corrective Action. The county has hired a water resource manager (Mrs. McKinney) to help unify and encourage municipalities to develop sensibly in an effort to minimize potential water shortages predicted in the 2006 report.

The water resource manager has created a task force to evaluate county water issues, and a final report is expected sometime in 2009. McHenry County officials want to avoid a worst-case scenario of water rationing and dry faucets. Although the 120 million gallons per day that the county's aquifers can produce appear more than adequate to meet current needs, the availability of groundwater resources are limited in areas of the county predicted to have the greatest growth. Research has indicated that some of the more productive aquifers are located in rural areas and not in the county's more densely populated southeast corner. Some estimates contained within the plan predict that by 2030, Algonquin and Grafton Townships' water demands could far outstrip the supply. The plan concluded that if every municipality experienced the maximum growth allowed in their comprehensive plans, the daily water demand will jump to 164 million gallons, far exceeding what aquifers can provide.

The task force has developed a cooperative planning process that encourages integrated water resources planning by involving government leaders, regional partners, special interest groups, and citizens. The integrated water resources' planning is a seven step process.

Step I: Identify problems and opportunities in order to recognize the challenges within McHenry County. McHenry County relies solely on groundwater for drinking water. The water resources in this county are limited and the supply is not evenly distributed across the county. Adequate groundwater quantity and quality is essential to the present and future well-being of McHenry County residents. There is much opportunity to utilize a multi-governmental effort to unify approaches to conservation and protection. Building a strong base of support for groundwater protection through education and outreach and encouraging communication and dialogue among stakeholders are key points to a shared vision and common goals.

Step II: Form a technical committee to assist with scientific investigations, while providing direction to subcommittees and helping to manage studies. A task force is created to include several entities from municipalities and the public. Time is of the essence and it is important to stay on topic, and on time, while the planning process is underway. Through this process information needs to be readily accessible. A way in which to do is to provide an information clearinghouse for task force information; from business and industry, municipalities, teachers, and residents.

Step III: Take inventories and forecast. Currently groundwater capacity is being threatened due to demanding increase of fresh water, at the same time that the amount of

recharge is decreasing significantly due usage at an unsustainable rate. The projections for population growth of McHenry County will substantially change water usage. Projections of population in this region predict nearly a doubling of growth by 2030. Ultimately, water use will grow faster than population. The need for scientific data to support water projection conclusions is in the works. These supporting projects are currently being used to gather the data needed: 3-dimensional hydrogeologic mapping, an observation well network, and a hydrogeologic flow model. The benefits of such projects will lead to more accurate groundwater modeling. A connection can then be made from data collected to estimating groundwater fluxes and supplies. The observation well network is a Federal cost-share funded program to observe long term trends in multiple aquifer units throughout McHenry County, gather and make more timely informed management decisions, and to utilize real time data to develop and refine hydrologic flow models of the county. The final component is identifying issues and concerns of the task force through combining like ideas, prioritizing ideas through voting, and dividing topics and forming subcommittees.

Steps IV, V and VI: Formulate, evaluate, and rank alternative plans. Through managing supply and demand the county will plan for growth and drought of fresh water resources. The utilization of water conservation programs and increasing access to recycling centers will in turn educate and promote participation of the county's citizens. The process of evaluating recommendations follows the acronym "SMARTER"— Specific, Measurable, Attainable, Realistic, Timely, Effective, and Reviewed.

Step VII: Implement plan. The key strategy is to consider the water supply implications of the plan's decisions. Making water supply planning a part of each community's comprehensive plan strives to support sustainability of water resources. Utilizing intergovernmental cooperation is essential for effective water protection. And finally, creating a level playing field for development will connect all levels to advocate for growth and water protection.

Concurrent Breakout Sessions

Session A #1: Agriculture and Groundwater Facilitator: Dennis McKenna, Illinois Department of Agriculture

Theme: The Illinois Department of Agriculture conducts a Statewide Monitoring Well Network, aimed at evaluating the impact of agriculture on groundwater supplies. What has been found is that the occurrence of agricultural chemicals in groundwater is on the increase.

Key Message: It was suggested that it may be beneficial to form a workgroup to include industry experts to talk about new approaches that lessen nutrient and chemical usage.

Agriculture is the primary land use in the state of Illinois, with approximately 75 percent of the land being used for agricultural purposes. As groundwater is the primary source of water for potable purposes, and the fact that there exists a plethora of sensitive, shallow sand and gravel aquifers, the presence of agricultural compounds is an important concern. For example, the maximum contaminant level (MCL) for nitrate is 10 parts per million (mg/L) and approximately 15 to 20 percent of the shallow groundwater exceeds this level. This alarming trend appears to be on the increase.

Application of nitrogen for the production of corn is a major concern for many water supplies. The City of Bloomington utilizes two lakes for their water source. Lake Bloomington is surrounded by farm land. In an effort to protect their watershed from excessive nitrate runoff, approximately 85 percent of the farmers have participated in BMPs aimed at reducing the nutrient load in the lake. Area producers get their soil tested and from the results they can apply nitrogen at rates which will be adequate for the crops and reduce any excess, unused load in the soil, which is easily leached out by rainwater.

A study conducted by the University of Illinois found that high nutrient levels were primarily a surface water issue, as opposed to a groundwater issue. Phosphorus was found to be at a deficit. The impact of irrigation is also an important issue, as this can potentially leach through the soil and carry the nutrients into ground or be transported to surface waters, especially in fields that have been tilled to drain the soil during excessively wet conditions.

The advent of genetic engineering is bound to have an impact on the nutrients in water issues in the near future. New biotechnologies are producing corn that requires less nitrogen. In addition, some crops are now being produced which are resistant to different pests, blights, and herbicides. These technological advances are changing the way that pesticides and herbicides are applied and used for agricultural purposes.

Session A #2: County Health Departments: Geothermal Well Regulations and Permitting

Facilitator: Jerry Dalsin, Illinois Department of Public Health

Theme: There is currently little regulation of geothermal wells, in terms of construction, inspection, and documentation. This session is designed to present the methodology used by McLean and Tazewell Counties in dealing with geothermal wells. Given that no legislation has been passed by the State, counties must work within current local governmental policies and ordinances to be able to document and monitor the construction of the wells.

Key Message: Statewide regulation of geothermal professionals, and development of comprehensive rules and an education component addressing geothermal systems would assure protection of groundwater aquifers.

Presentation #1: McLean County Health Department Geothermal Registration and Water Well Sealing Programs (Tom Anderson, McLean County Health Department)

McLean County Health Department personnel, in recent years, had been noticing unusual amounts of additional piping and construction materials, unexpected excavations, and large amounts of grout on the ground at new construction sites—obvious signs of geothermal system installations. The Health Department became alarmed at this, as many issues can arise from incorrectly installed systems, including lack of knowledge of the process, unknown construction techniques, encroachment on potable water well setbacks, and interference with adjacent lot development within subdivisions.

Prior to registering geothermal systems, and the contractors and excavators who install them, McLean County Public Health held multiple meetings in 2001 and 2002 with the following groups:

- Illinois Department of Public Health
- Illinois Environmental Protection Agency
- Illinois State Water Survey
- McLean County Health Department
- Illinois Association of Groundwater Professionals
- Heating and Air Conditioning Industry

As a result, since 2002 communication between the health department and various contractors working at specific sites has increased; a knowledge base has developed; encroachment of setbacks and reserved areas has been minimized; and systems have not been damaged. Inspections of abandoned wells, both potable water and monitoring wells, in McLean County was instituted in 1991,

with an average of 68 per year. Persons authorized to seal abandoned wells include:

- Licensed well contractors, who seal most wells in McLean County;
- Homeowners who live on the same property that the well served, most of whom are farmers or tenant farmers; and
- Engineering firms that seal monitoring wells only.

Some of the impediments associated with well sealing include late submission of well sealing forms; lack of information presented to developers; failure to conduct due diligence; unfamiliarity with state and local regulations; and lack of knowledge of the location of monitoring wells.

Presentation #2: Tazewell County New Well Application and Inspection Program
(Evelyn Neaver, Tazewell County Health Department)

Tazewell County Health Department requires an inspection of newly installed geothermal systems. Proper documentation regarding the location and type of geothermal system must be on file with the Board of Health. Geothermal systems installed within corporate limits of a municipality shall be exempt from inspection. Geothermal systems must meet location requirements, set forth in the IDPH Water Well Construction Code Section 920.50, and are subject to penalties found in Section 6 TCC 6-12.

Rules regarding construction and excavation personnel involve a registration fee and application. Registration of the license shall expire on December 31 of the year of issue. All individuals excavating or installing on land which is owned or leased by the excavator/ installer are exempt from registration.

Session B #1: Interface Between Groundwater Quality and Quantity – the State’s Role

Facilitator: Gary Clark, Department of Natural Resources, Director of the Office of Water Resources

Theme: As the population of the State of Illinois grows, the quantity of water needed is going to likewise increase. The sustainability of this increased draw on a set number of aquifers is not currently known. Studies are being conducted to determine this. In the meantime, the quality of the groundwater is also in question. These two issues are integrally linked.

Key Message: The response of the state in managing the quality and quantity issues is paramount to the proper use and preservation of groundwater resources. In addition, the engagement of key governmental, planning, and citizen stakeholders is critical in this evaluation of our groundwater resources

The interface between water quantity and water quality is a three-way issue. As the demand for water increases, water quantity is going to increasingly conflict with water

quality. The complication presented is the costs associated with treating water that is not of ideal quality. Public water systems, both community and non-community, are going to have to increasingly be aware of the groundwater issues so that they can make the appropriate decisions regarding the question of where to obtain their water. In some cases, the water may be plentiful, but the cost of treating it to remove contaminants or naturally occurring substances would not make it economically feasible to use as a source of drinking water.

Traditionally, water systems consist of one single connected infrastructure which supplies water of uniform quality to every point within the system. As the cost of treatment goes up, the reality of this may need to be revisited. Does the quality of water needed for fire protection need to meet drinking water standards? Will there be a point in time at which it will be cost-effective to operate parallel systems, supplying water of different quality for different uses?

A rising trend in groundwater monitoring is the desire to test for an increasing number of chemicals and contaminants. As testing methods improve, the detectable levels of these compounds are becoming lower, which leads to questions: “Where is the point of diminishing returns?” and “Is there a benefit, when the lower levels may not have any adverse health effects?”

At present, among state agencies and governmental entities, the issues of quality and quantity are dealt with by different methods. If the State leans towards controlling the access to reserves, a separate agency or board will have to be established, such as is the case in Texas. In Texas, the Edwards Aquifer supplies a large portion of the state’s groundwater and the Edwards Aquifer Authority was set up to handle the division of the resource between all the parties drawing from it.

The issue was raised that, at present, some of these quality and quantity issues are being moved around between the different state entities and that no one is addressing these issues together. Solving such issues is going to require more cooperation and joint projects between the different parties involved. There are projects in select areas of the state that are addressing some of these issues. There exists a plethora of data, but more data needs to be collected to begin to get a regional view of the quantity of groundwater in the state.

Session B #2: Proposed Changes to CWS Well Permitting & Wellhead Protection Requirements
Facilitator: Jerry Kuhn, Illinois Environmental Protection Agency, Division of Public Water Supplies

Theme: The Environmental Protection Act (Chapter I, Section 601.101) assures, “... *that all persons served by community water supplies receive water that is safe in quality, clean, adequate in quantity, and of satisfactory mineral characters for ordinary domestic consumption.*” Under the authority of this clause, the Permit Section of the Division of Public Water Supplies permits the construction of new wells. To further

safeguard the citizens of the state, the permit section is proposing new changes in that permitting process.

Key Message: The Illinois EPA should continue their efforts to modify the CWS well construction permit application procedures to include collection of information on potential sources and routes, well logs, pumping tests, and chemicals analyses.

In the state of Illinois, public water supplies are regulated by the Illinois EPA, Division of Public Water Supplies (DPWS), pursuant to the Environmental Protection Act, Title 35: Subtitle F: Chapters I and II. New well construction is regulated by the DPWS under the authority established under Chapter I, Section 602.101 which states that,

“No person shall cause or allow the construction of any new public water supply installation or cause or allow the change of or addition to any existing public water supply, without a construction permit issued by the Environmental Protection Agency.”

In addition, standards for the construction of public water utilities and changes to existing infrastructure are established in the “Recommended Standards for Water Works,” as part of the Ten States Standards from the Great Lakes—Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers. Additional standards are provided by the American Water Works Association.

The current permit application for a community well is a three-step process consisting of the following parts:

- Schedule A – Engineer’s Cost Estimate
- Schedule C-I – Well construction form (well drilling permit)
- Schedule C-II – Well Completion form (well operating permit)

The DPWS Permit Section has 90 days in which to approve or deny a permit for the construction of a new CWS well. At present, there are between 25 and 50 new wells permitted each year. The current permitting procedure requires the following information:

- Name of public water supply and project
- Well number and location – general description and legal description (latitude and longitude)
- Location of sources of contamination, sewers, septic tank and seepage fields, sewage lagoons or treatment works (within one mile), landfill operations (within one mile)
- Potential primary and secondary sources of contamination and potential routes within a 1000 foot radius
- Flood threat evaluation: maximum flood stage elevation determines the level of the top of the casing
- Aquifer description

- Well description and technical information (anticipated well log details, well depth, casing and screen specifications, grouting, temporary capping – if needed)
- Water sample testing (disinfection and bacteriological analysis – via the membrane method, and mineral analysis of certain inorganic constituents)
- Test pumping to determine safe yield
- Agency review by the Permit Section (technical parameters) and the Groundwater Section (setbacks, risk assessment, geology.)

The changes that are being proposed to the permitting application by the Permit Section will include the following additional information:

- Locational information – acknowledge and allow utilization of current technology (i.e. GPS) to more accurately locate wells
- Sampling requirements – require more specific sampling for Part 620 constituents, both inorganic and organic, and BETX
- Examine sources and potential sources of contamination within setbacks and beyond
- Determine lateral area of influence (LAI) for proposed well, using volumetric flow equation, for wells using unconfined aquifers

Updating and revising the CWS permit application process would provide an additional benefit to well drillers by allowing them to complete and submit applications on-line. In addition, the Illinois EPA would require well drillers to complete well log records and submit them to the Agency, which is not currently a requirement. The Permit Section is in the process of re-writing the applications to incorporate the additional material.