Illinois State Water Survey
Illinois State Geological Survey

Annual Summary Progress Report: Water Supply Planning For Illinois
July 1, 2006 – March 30, 2007

Hiring: Since the initiation of this program, effective July 1, 2007, the following staff positions have been filled to carry out the program.

ISWS: Illinois Water Inventory Program Coordinator, July1, 2006
ISWS: Water Supply Planner, October 23, 2006
ISWS: Hydrologist, January 2, 2007
ISGS: Hydrogeologist, January 5, 2007. Staff member has subsequently moved laterally within the Survey. The search has been reactivated and is in progress
ISWS: Database Programmer, March 19, 2007

Meetings: ISWS and ISGS staff participated in at least 50 meetings related to water supply planning, gave 32 presentations and participated in numerous conference calls.

Deliverables: Below are the deliverables described in the approved research proposal for the period through March 30, 2007, and commentary on their status:

September 2006 and updated and improved constantly over the three years:
A Decision Support System (DSS) for state and regional water supply planning that will be publicly accessible via the Internet. The DSS will include identification of water sources, estimates of water withdrawals and use, water quality observations, relevant geological maps, observations and maps of groundwater and surface water levels, aquifer property estimates, estimates and maps of low streamflows, climate data, analytical tools and lists of ongoing projects, committees, meetings, and contacts. This deliverable will be met by conducting the following tasks:

Data management and web development: A Water Supply Planning Web site, to be updated and improved constantly, became publicly accessible at www.sws.uiuc.edu/wsp on March 19, 2007. This site includes the DSS features listed above. A section titled Management Options is envisioned to evolve into the primary feature of a DSS.

Analytical tool development, testing, and application, including:

Estimating groundwater recharge/discharge – work is underway and continues over the three years.
Regional climate model – Development scheduled for FY 08.
Shallow aquifer groundwater flow models – work is underway, initial model scheduled to be complete in FY 08.
Regional deep aquifer groundwater flow model – work is underway, initial work scheduled to be complete in FY 08.
Surface water accounting tool – work is underway, initial tool scheduled to be complete in FY 08.

Surface water yield analysis – Methodology revision scheduled for FY 08.
Continuous simulation watershed models – Development is scheduled to begin in FY 08.

Monitoring of water levels: work is underway and continues over the three years.
Development of an inventory of water withdrawals and use: work is underway and continues over the three years.
Identification of groundwater-surface water interconnections: work is underway and continues through FY 08.
Construction of observation wells: Scheduled for FY 08 and 09.
Display of real-time water levels via the Internet: Scheduled for FY 08.
Evaluation of the impacts of droughts and floods on water-supply facilities: Scheduled for FY 09.
Production of a surface water accounting tool: work is underway and is scheduled for completion in FY 08.
Collection of synoptic groundwater head measurements for the Deep Bedrock Aquifer and Silurian Aquifer in northern Illinois: work is underway and scheduled through FY 08.
Collection of synoptic groundwater head measurements for the Mahomet Aquifer in central Illinois: work is underway and continues over the three years.
Production of initial groundwater flow models for the Mahomet Aquifer in central Illinois; for the Deep Bedrock Aquifer in northern Illinois; and for the sand-and-gravel and shallow bedrock aquifers (including the Silurian Aquifer) in the Fox River watershed: Scheduled for FY 08.
Collection and analysis of water quality data: Scheduled for FY 08.
Baseline studies of water availability and water quality: Scheduled for FY 08.
Production of scenarios of future climate variations through analysis of historical data and model projections of the future: Scheduled for FY 09.
Identification of data needs for regional water supply planning and management: Scheduled for FY 08.

Characterization of uncertainty and consequences: Deliverables will be accompanied by a characterization of the uncertainty and/or confidence levels of the deliverables and a discussion of the consequences of these uncertainties on addressing the water resource issues being considered. Scheduled for FY 09.

July 1, 2006:
Renew the Illinois Water Inventory Program to document surface water and groundwater withdrawals across Illinois. This program has been fully reinstated beginning with the hiring of a staff person on July 1, 2006.

December 2006:
Updated/new web-pages for the Mahomet and Deep Bedrock Aquifers containing initial information pertinent to water supply planning for these aquifers. A Water Supply Planning Web site, to be updated and improved constantly, became publicly accessible at www.sws.uiuc.edu/wsp on March 19, 2007.

Discussion of stakeholder interaction: Staff of the Surveys have assisted CMAP and the MAC with planning, and by participating in meetings for formation of the Regional Water Supply Planning Groups (RWSPG). The Northeastern Illinois RWSPG was formed in December, 2006. The East Central RWSPG was formed in February, 2007. Following formation, staff of the Surveys have participated in the RWSPGs' meetings and made presentations.

Deliverables – The Year Ahead: Below are the scheduled deliverables as described in the approved research proposal for the period April 1, 2007 through March 30, 2008. Given current staffing and subject to continued funding in accordance with the contract, it is anticipated that these deliverables will be produced on a schedule that meets the overall program objectives.

June 2007:
Revised state drought plan.
Updated potentiometric surface map of the Silurian dolomite aquifer in northeastern Illinois using available data from Kane and McHenry counties with existing data from Lake, Cook, DuPage, and Will counties.
Interactive maps of the priority areas containing water well information including geologic data, groundwater and surface water withdrawals, surface discharges, and appropriate climatologic data.

September 2007:
Compilation of existing geologic sample descriptions, geophysical logs, regional and local geologic maps and reports of the Deep Bedrock Aquifer for northern Illinois.
Provide scientific data and regional groundwater flow model for input to development of an initial regional plan to manage the Deep Bedrock Aquifer of northern Illinois.
Completion of surface water accounting tools for the Fox River Basin and central Illinois region.

December 2007:
Regional geologic maps and reports and groundwater flow models for the shallow aquifers underlying the Fox River Basin and in the Mahomet Aquifer in east-central Illinois.
Provide output from regional deep bedrock flow model based on preliminary water demand scenarios created by ISWS.
Receive initial water demand scenarios to 2050 from the two regional water supply planning committees.