

STRAWMAN OUTLINE
March 21, 2008

**ISWS/ISGS REPORT ON THE OPPORTUNITIES AND CHALLENGES
OF MEETING WATER DEMAND IN EAST-CENTRAL ILLINOIS**

REPORT TO BE DELIVERED TO THE RWSPC BY SEPTEMBER 30, 2008

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The water resources of East-Central Illinois are complex, interrelated and variable over space and time. The future is uncertain for water availability and water demand, but it is certain that the demand for water will increase. Water supply planning in the context of regional development is necessary to assure adequate water supplies, avoid conflict and unacceptable consequences, and minimize costs.

The report provides data and information on the regional scale for use by the Regional Water Supply Planning Group in the development of an initial regional water supply plan. Describing the diversity of regional water resources will be a major focus of the report.

This is a pilot project conducted within a three-year time span with available resources. The geology and hydrology will be described at a level of detail sufficient for regional planning. The descriptions will not be of sufficient detail for local analysis or to provide adequate analyses for the selection and installation of individual facilities.

Data availability and analysis across the region are uneven. The significance of data gaps, strengths and limitations of analytical tools, and confidence levels on the data and model output will be described. Recommendations for improving the data bases and analytical tools will be made. It is hoped that a permanent process

will be implemented for regional water supply planning and periodic updates of the regional plan will be made.

Water quantity is the focus of these studies. Water quality will be included in the report as it is relevant to water supply. Return flows and discharges of treated water will be included in the analyses.

Economics, water rates, law, infrastructure, utility operations, water treatment, detailed water use and management are not included in the study in a substantial manner.

The climate and drought scenarios are described in a separate ISWS document entitled “Climate Change and Drought Scenarios for Water Supply Planning”.

The streamflow accounting model will be available for the Sangamon and Mackinaw watersheds and the watershed model for the Sangamon watershed.

The groundwater flow model for the Mahomet aquifer system is a 6-layer model extending vertically from the land surface to the bedrock surface and horizontally extending across major portions of 14 east-central Illinois counties. This model uses our best knowledge of geology and layer hydrogeologic/hydraulic properties to simulate flow within and across model layers, principally including the Mahomet aquifer and overlying shallow aquifers, e.g., the Glasford aquifer. The flow model simulates heads (groundwater elevations) within each layer and is calibrated to head values observed in the field – principally from wells drilled into the Mahomet and Glasford aquifers. The model is linked to surface streams where such linkages are known to occur; therefore, the model will permit estimation of impacts to streamflow resulting from groundwater withdrawals. Recharge will be varied to simulate climate change and drought. The model will be run to simulate the impacts of a) continuing withdrawals at the current pumping rates and locations, b) the 3 water demand scenarios to 2050 produced by the consultant with increased pumping at existing locations, and c) climate change and drought scenarios.