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# 1. INTRODUCTION

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## Purpose of the report

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543 The purpose of this report is to document the development of a plan for regional water supply  
544 planning and management in East-Central Illinois prepared by the Regional Water Supply Planning  
545 Committee (the Committee).

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## Mandate

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In January 2006, Executive Order 2006-01 was issued by the Governor directing the Office of Water Resources of the Illinois Department of Natural Resources, in coordination with the Illinois State Water Survey, to define a comprehensive program for state and regional water supply planning and management<sup>1</sup>. Regional water-supply plans are to be developed in accordance with existing laws, regulations and property rights. The Illinois Department of Natural Resources, assisted by the Illinois State Water Survey and the Illinois State Geological Survey, selected two priority areas for pilot planning: Northeastern Illinois and East-Central Illinois. A copy of the Executive Order is provided on page 5.

## The planning area and process

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To implement the Executive Order, the Office of Water Resources of the Illinois Department of Natural Resources signed a three-year contract with the Mahomet Aquifer Consortium to complete specified tasks for 15 counties in East-Central Illinois: Vermilion, Iroquois, Ford, Champaign, McLean, Macon, DeWitt, Piatt, Woodford, Tazewell, Mason, Logan, Menard, Cass and Sangamon. Funding for the crucial third year was not provided and this caused some important tasks in the work plan to be curtailed.

The Committee<sup>3</sup> has twelve members, one each from the following interest areas: Agriculture, Small Business, Public, Water Authorities, Water Utilities, Municipal, Environmental, County, Rural Water Districts, Industry, Electric Generating Utilities, and Soil and Water Conservation Districts. The members also are geographically balanced by region as follows: West region (Cass, Logan, Mason, Menard, Sangamon, and Tazewell Counties); Central region (DeWitt, Macon, McLean, Piatt, and Woodford Counties); and East region (Champaign, Ford, Iroquois, and Vermilion Counties).

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The Executive Order states that motivation for developing regional water supply plans is recognition that the citizens of Illinois rely on surface water and groundwater for personal consumption, and industries of the state use a significant amount of water for economic development. It also recognizes that the increasing demands on Illinois' water resources and the impacts of drought may lead to conflicts between users and adversely affect the health of the state's citizens, the environment and the

581 economy. Further, it is stated that the quantity of surface water and groundwater in Illinois must be  
582 assessed properly through a sound planning process as an essential part of any responsible,  
583 economically viable and secure water supply development.  
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585 The Committee interprets the Executive Order to imply that regional water supply plans should  
586 identify strategies for the reduction of conflict and adverse impacts on public health, the economy and  
587 the environment; that is, water supply plans should be developed to enhance public health, economic  
588 development and environmental protection.  
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590 The time horizon selected for the study is 2050. The accuracy and usefulness of estimates of  
591 conditions decades ahead always are open to question, but 2050 was chosen as it reflects two  
592 generations in the future. The study thus requires consideration of the needs of at least two future  
593 generations as well as those of the current population. Although some issues may require consideration  
594 of a more distant future, uncertainties increase over time and the usefulness of longer-term analysis  
595 would be questionable. The Committee is fully cognizant of major uncertainties associated with planning  
596 to 2050 and mindful of the future beyond 2050.  
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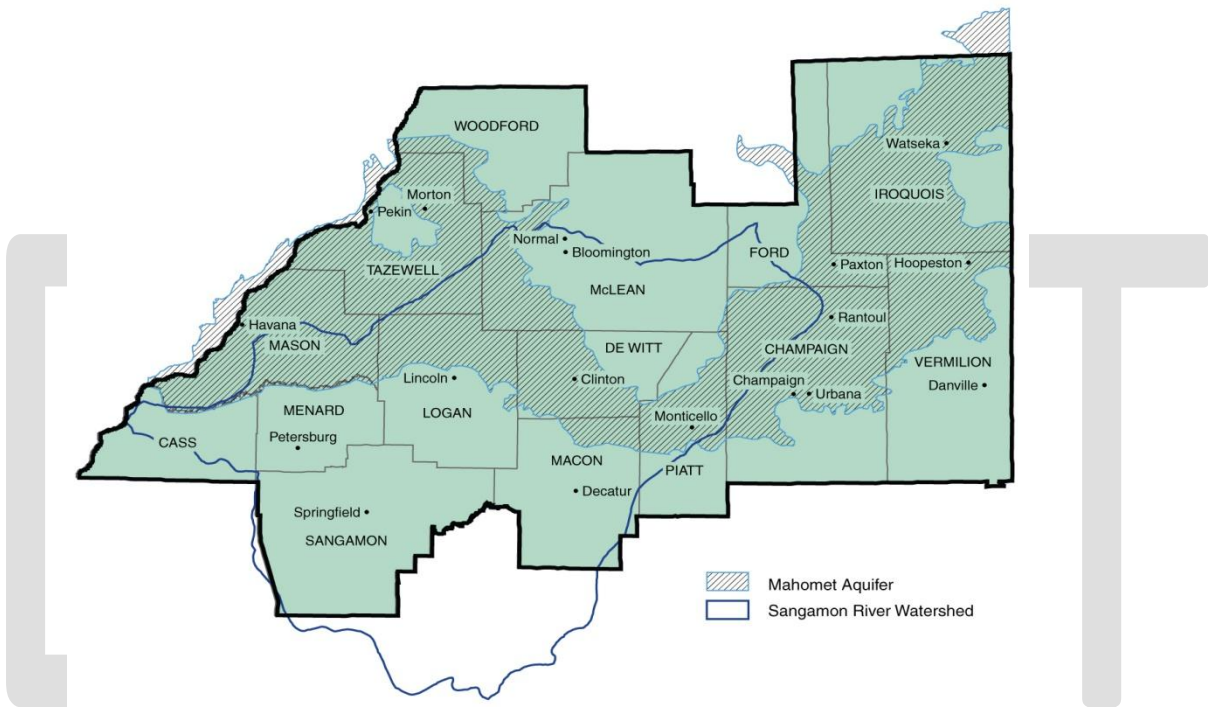
598 In developing a regional water supply plan, the Committee has drawn on the following information:  
599 i) relevant laws, regulations and property rights; ii) the history of water supply planning; iii)  
600 characteristics of the region; iv) scenarios of how much water may be needed to 2050; v) analyses of the  
601 impacts of drought and possible climate change on water demand and water supply; vi) evaluations of  
602 the environmental impacts of withdrawing sufficient water to meet demand; vii) challenges and  
603 opportunities for providing additional sources of water and decreasing water demand; and viii) water  
604 supply planning and management efforts in other states.  
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606 The Mahomet Aquifer and the overlying shallow aquifers within the boundary of the buried  
607 Mahomet Bedrock Valley are referred to as the Mahomet Aquifer System. All these aquifers are sand or  
608 sand and gravel. The regional plan focuses on the Mahomet Aquifer System and the surface waters of  
609 the major river basins. A map of the region is shown in Figure 1.  
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611 Wittman Hydro Planning Associates, Inc. of Bloomington, Indiana, developed for the Mahomet  
612 Aquifer Consortium and the Committee three scenarios of water demands and water withdrawals for  
613 the region to 2050<sup>4</sup>. Analyses of the sensitivity of water demands and water withdrawals to climate  
614 change and drought also were conducted. The water demand and withdrawal scenarios and sensitivity  
615 analyses are summarized in Appendix 1 of this report.  
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617 The water demand study used historical data from individual water users as reported to the Illinois  
618 State Water Survey and as provided to the consultant by some facility managers, but these data were  
619 not confirmed with individual users in all cases. Also, the water demand models used variables and  
620 factors not necessarily used by individual water operators in their planning efforts. Therefore, regional,  
621 county and sector water demand data in the water demand report and point withdrawal data provided  
622 to the Illinois State Water Survey likely differ from individual water users' planning results; they are not  
623 intended to provide definitive future water withdrawals for individual operators, or a sufficient basis for  
624 site-specific infrastructure planning. More detailed data are needed for site-specific planning and  
625 management.  
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627 The Committee utilized the best available data and information. Drawing on the water withdrawal  
 628 scenarios provided by Wittman Hydro Planning Associates, Inc. and geological data and information  
 629 provided by the Illinois State Geological Survey, the Illinois State Water Survey conducted analyses to  
 630 evaluate how drought, climate change, water withdrawals and discharges affect streamflow, reservoir  
 631 yield and groundwater availability. A final report from the State Surveys was not available for the  
 632 Committee's use; therefore, the Committee relied upon preliminary results in the form of draft  
 633 materials and PowerPoint presentations on climate records and climate scenarios, groundwater flow  
 634 modeling results, and surface water yield analyses<sup>5,6</sup> to form its recommendations.  
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 638 Figure 1. The East-Central Illinois water supply planning region<sup>2</sup>.  
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640 From March 2007 through June 2009, the Committee held 31 meetings, received public comments,  
 641 and was briefed on and discussed many aspects of water supply planning and management. Using this  
 642 information and data and information provided by Wittman Hydro Planning Associates, Inc. and the  
 643 Illinois State Geological Survey and the Illinois State Water Survey (the Scientific Surveys), the  
 644 Committee developed a plan for water supply planning and management in East-Central Illinois. The  
 645 Committee also drew on earlier efforts at water supply planning and management in Illinois and  
 646 experiences of other states that have developed, and continue to develop regional water supply plans,  
 647 especially Texas<sup>7</sup>.  
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649 The Committee developed its own operating guidelines. Policy recommendations required the votes  
 650 of two thirds of the members present for approval.  
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652 To inform the public about water supply planning and management and the activities of the  
 653 Committee, members of the Committee, the Mahomet Aquifer Consortium, the Illinois Department of  
 654 Natural Resources and the Scientific Surveys conducted extensive outreach and educational activities.

655 Meetings and agendas were announced and were open to the public, brochures and reports were  
656 distributed, and copies of presentations, contact information and other materials were made available  
657 via the Internet<sup>2,3,6</sup>. A draft final copy of the report was made available for public review and comment  
658 for four weeks. Comments and suggestions received helped to strengthen the final report.

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## 661 Report structure

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663 The report presents the major findings of the Committee (Chapter 2), the Committee's  
664 recommended regional water supply plan (Chapter 3) and the Committee's conclusions (Chapter 4).  
665 References are provided at the end of each chapter and each appendix. A glossary and references for  
666 additional background information are provided at the end of the report.

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668 Two appendices are attached to the report: Appendix 1 describes the major relevant features of the  
669 region, including a summary of the water demand scenarios; Appendix 2 documents the history of water  
670 supply planning and management in Illinois in general and East-Central Illinois in particular. Included in  
671 Appendix 2 are summaries of relevant laws, regulations and property rights and relevant functions of  
672 water agencies.

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## 675 References

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678 February 17, 2009).
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688 Natural Resource Sustainability, University of Illinois, Champaign, March 2009.
- 689 6. PowerPoint presentations (<http://isws.illinois.edu/wsp/meetings/wsdefault.asp>, accessed March 28,  
690 2009).
- 691 7. Texas Water Development Board (<http://www.twdb.state.tx.us/home/index.asp>, accessed February  
692 19, 2009).

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## EXECUTIVE ORDER 2006-01



2006-01

### EXECUTIVE ORDER FOR THE DEVELOPMENT OF STATE AND REGIONAL WATER-SUPPLY PLANS

**WHEREAS**, the citizens of Illinois rely on surface water and groundwater for personal consumption, and industries of the State use a significant amount of that water for economic development; and

**WHEREAS**, the increasing demands on Illinois' water resources and the impacts of drought may lead to conflicts between the multiple water supply users and may adversely affect the health of the State's citizens as well as adversely impacting the environment and the economy; and

**WHEREAS**, the quantity of surface water and groundwater in Illinois must be properly assessed through a sound planning process as an essential part of any responsible, economically viable and secure water supply development for the citizens of the State; and

**WHEREAS**, the Illinois Interagency Coordinating Committee on Groundwater, the Illinois State Water Survey, and the Illinois State Water Plan Task Force have identified the Priority Water Quantity Planning Areas that are most at risk for water shortages and conflicts; and

**WHEREAS**, the Illinois Integrated Water Quantity Planning and Management Committee recommends the development of regional aquifer and watershed plans for managing water supplies;

**THEREFORE, BE IT ORDERED** that the following actions shall be executed:

Consistent with the authority granted to the Department of Natural Resources under the Rivers, Lakes, and Streams Act, 615 ILCS 5/5 *et seq.* and the Level of Lake Michigan Act, 615 ILCS 50/1 *et seq.*, the authority of the Department of Natural Resources' Office of Water Resources under 20 ILCS 801/5-5, the Office of Water Resources, in coordination with the State Water Survey, shall:

1. Define a comprehensive program for state and regional water supply planning and management and develop a strategic plan for its implementation consistent with existing laws, regulations and property rights,
2. Provide for public review of the draft strategic plan for a water supply planning and management program;
3. Establish a scientific basis and an administrative framework for implementing state and regional water supply planning and management;
4. Develop a package of financial and technical support for, and encouragement of, locally based regional water supply planning committees. These committees, whether existing or new entities, shall be organized for participation in the development and approval of regional

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plans in the Priority Water Quantity Planning areas;

5. By December 31, 2006, ensure that Regional Water Quantity Plans are in process for at least two Priority Water Quantity Planning Areas.

EFFECTIVE DATE

This Executive Order shall be in full force and effect upon its filing with the Secretary of State.

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Rod R. Blagojevich, Governor

Issued by Governor: January 9, 2006  
Filed with Secretary of State: January 9, 2006

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