

# WATER SUPPLY PLANNING IN ILLINOIS

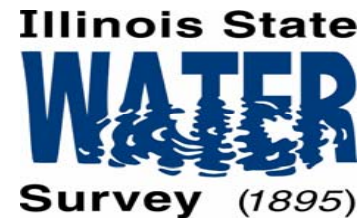
ILLINOIS SECTION AWWA

Springfield

March 15, 2007

**Derek Winstanley**

**Chief**



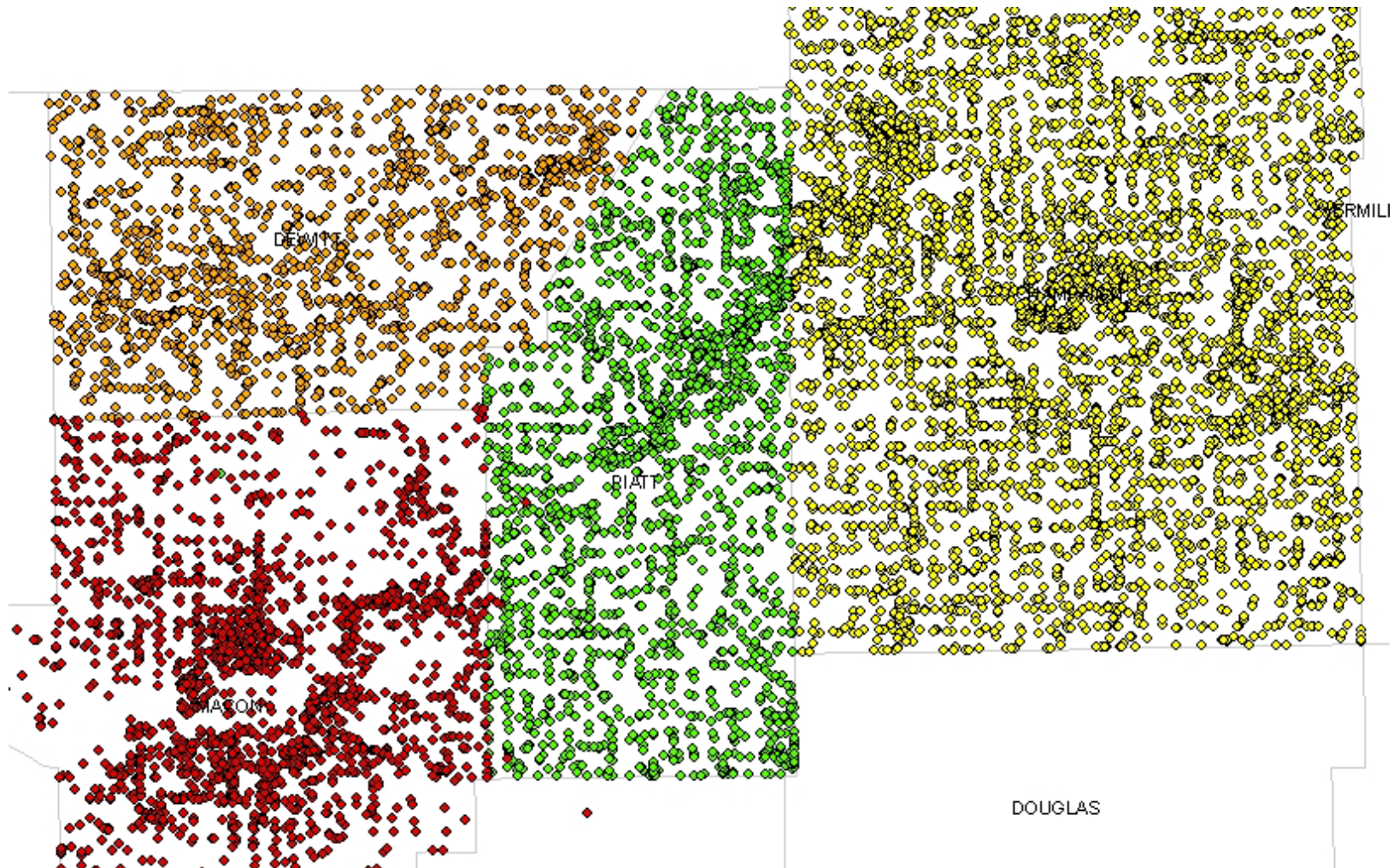
**GOAL OF WATER SUPPLY  
PLANNING:  
TO PROVIDE  
ADEQUATE SUPPLIES  
OF  
CLEAN WATER  
FOR ALL USERS  
AT REASONABLE COST**

# Fresh Water Use in Illinois 2000 and 2025 (mgd)

	2000	2025
Public Supply	1,678	2,205
Self-Supplied Industries	493	547
Livestock and Irrigation	38	42
Thermoelectric	13,272	16,889
<b>TOTAL</b>	<b>15,793</b>	<b>20,197</b>

Source:SIU

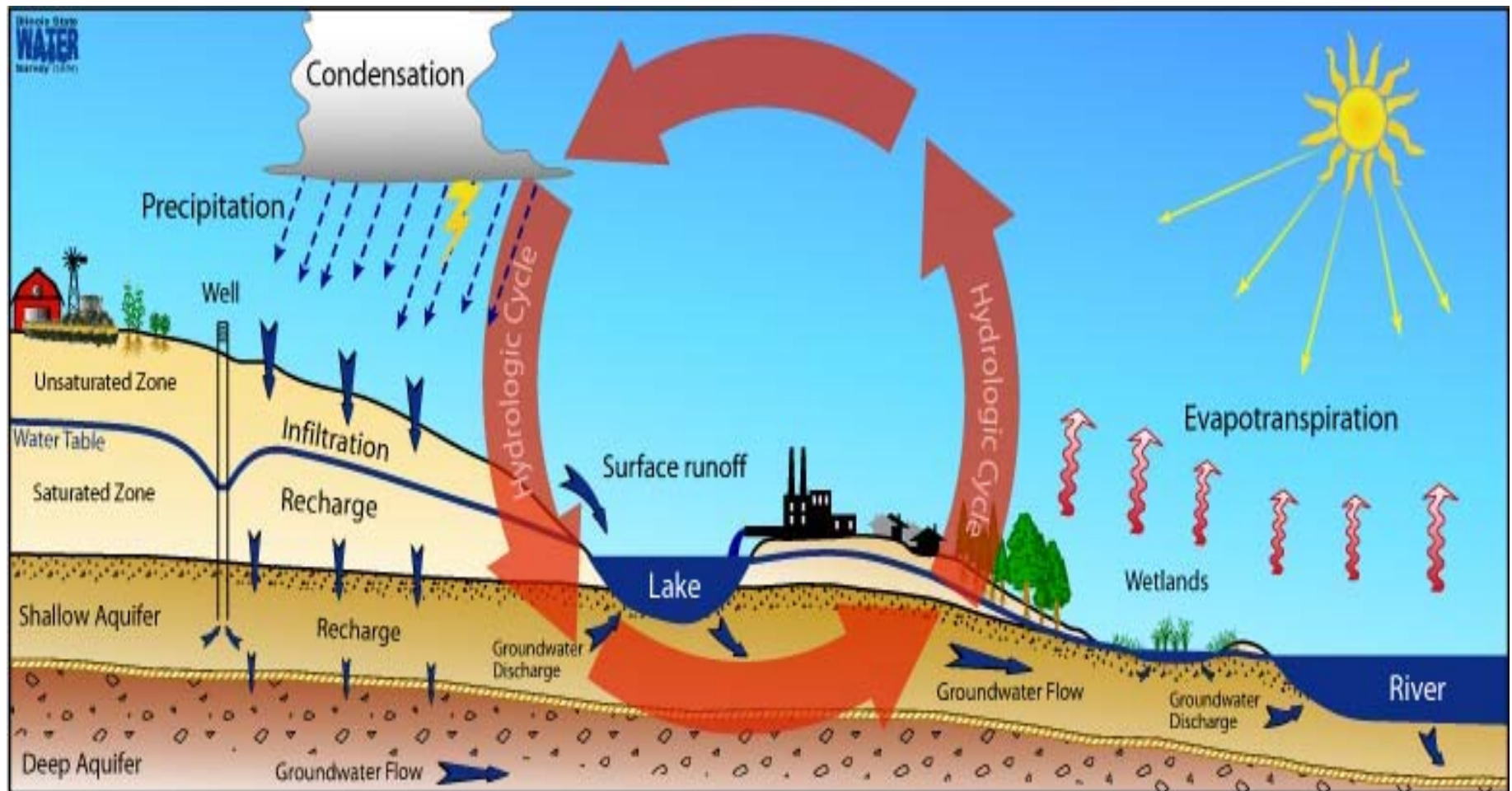
# Domestic Wells in Champaign, Piatt, Dewitt, and Macon Counties



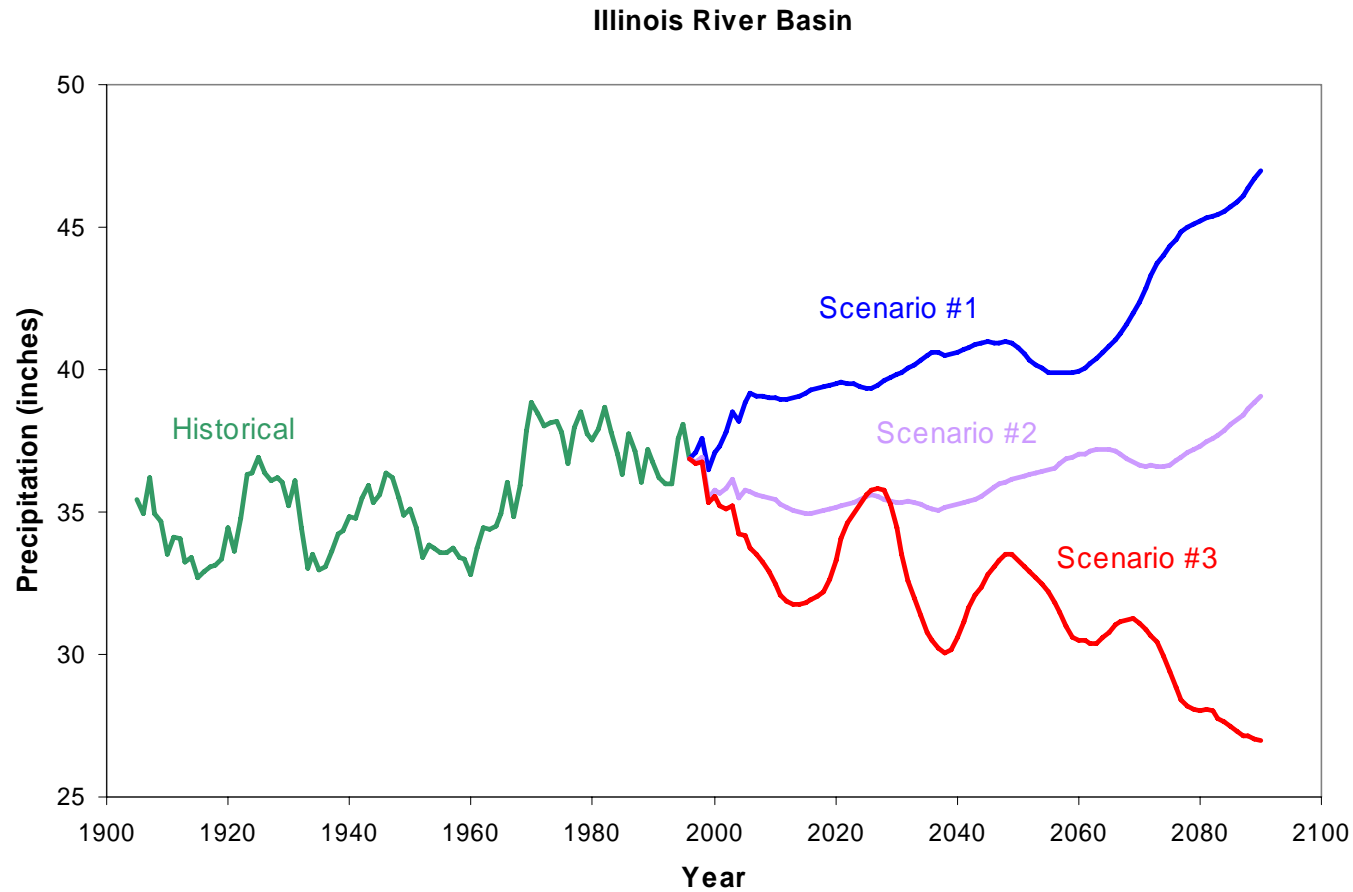
## **WATER AVAILABILITY IS GOVERNED BY:**

- **CLIMATE**: droughts, floods & climate change affect water quantity
- **LAND CHARACTERISTICS**: slope, permeability & land cover affect evaporation, runoff & infiltration
- **GEOLOGY**: characteristics of soils and rocks affect water movement & water storage
- **ECONOMICS**: costs of constructing wells, reservoirs, pipelines, pumps, treatment plants etc
- **LAWS & REGULATIONS**

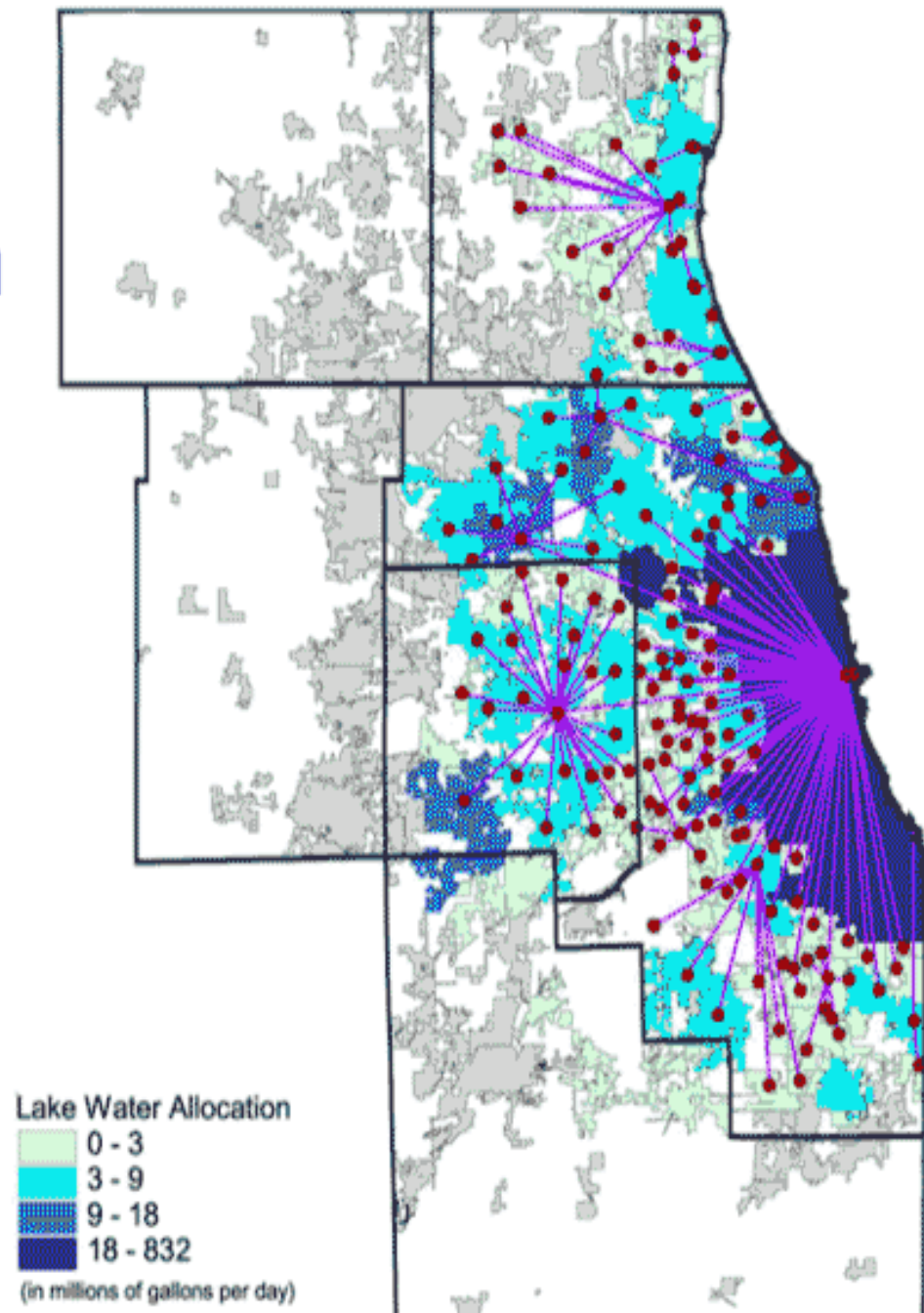
# THE WATER CYCLE: CLIMATE, SURFACE WATER, and GROUNDWATER ARE ALL LINKED



# Historical and possible future precipitation in Illinois



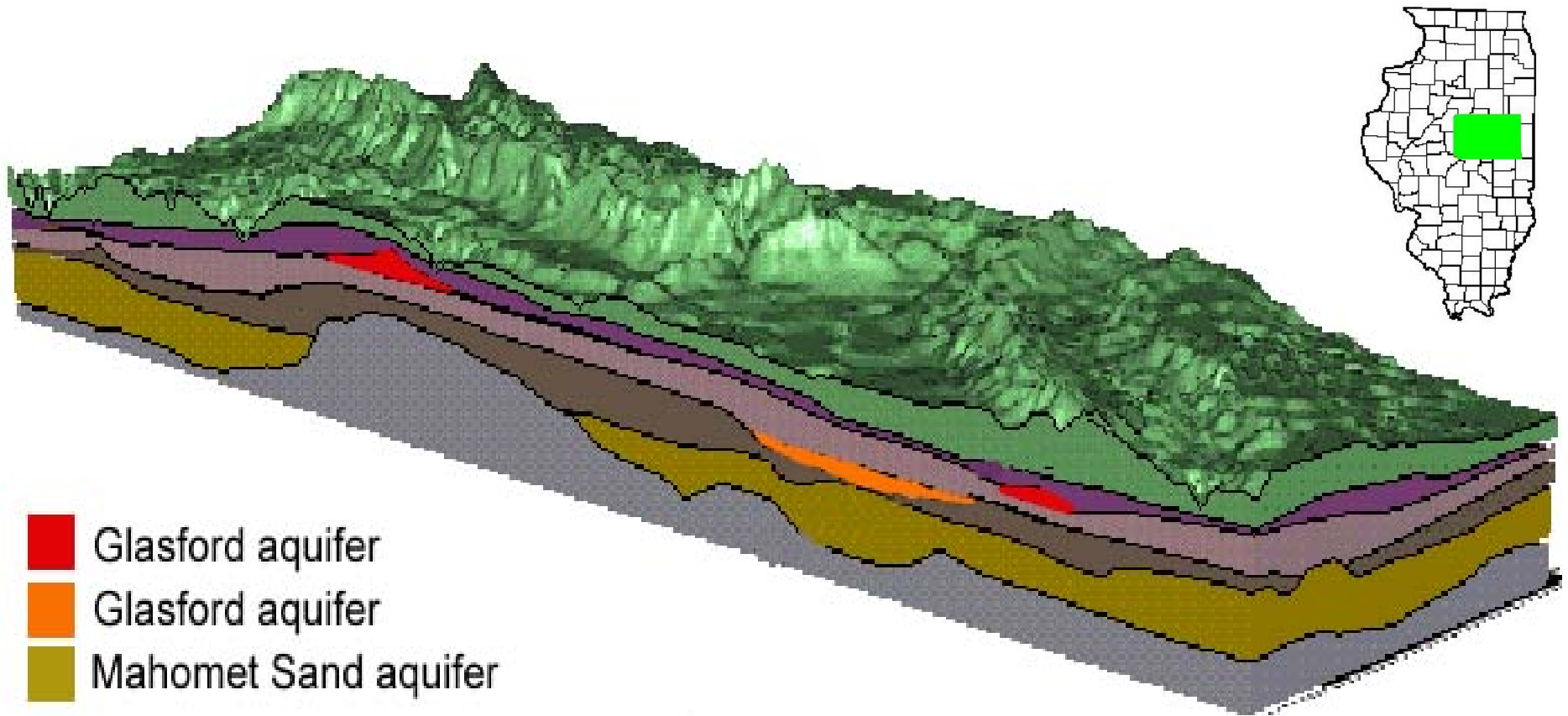
# Lake Michigan Allocations In Year 2000



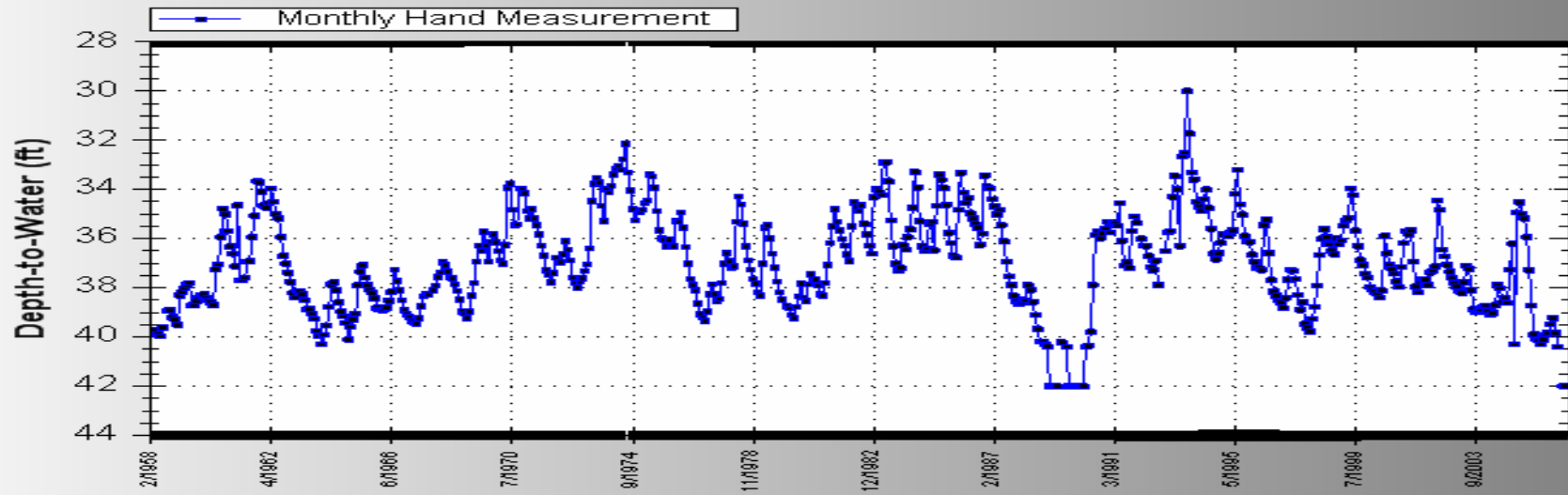
Graphic: Martin Jaffe, University of Illinois at Chicago



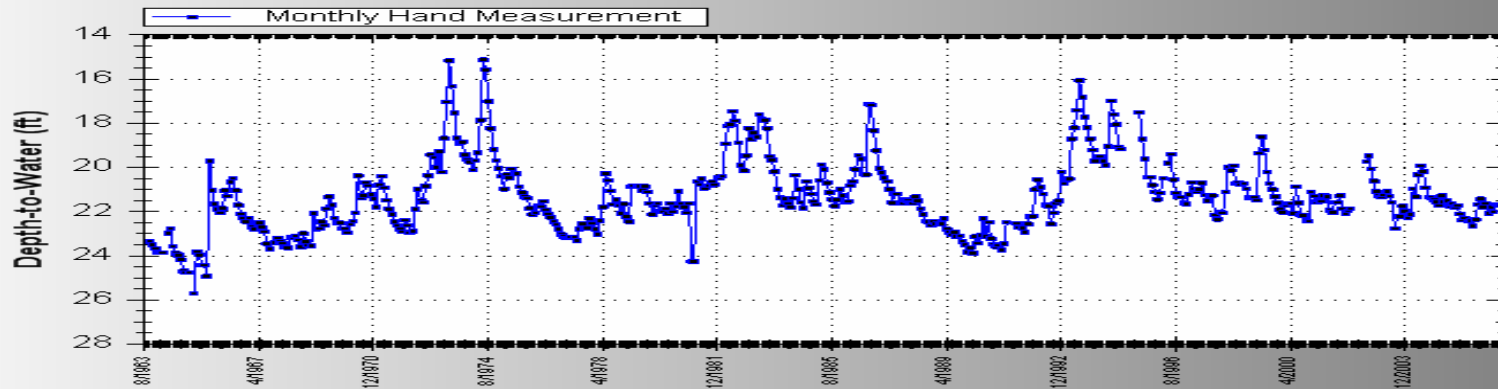
# Geology of the Mahomet Aquifer



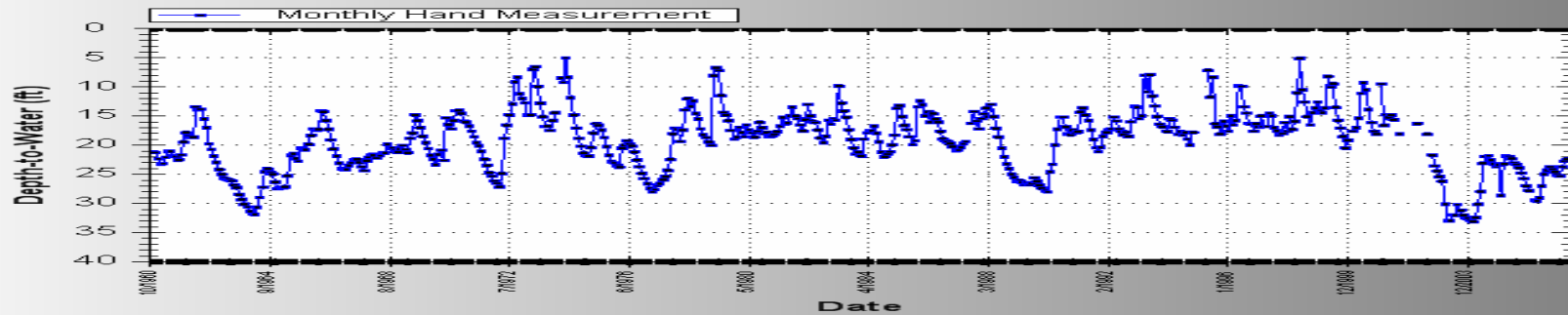
### Hydrograph of Snicarte WARM Well



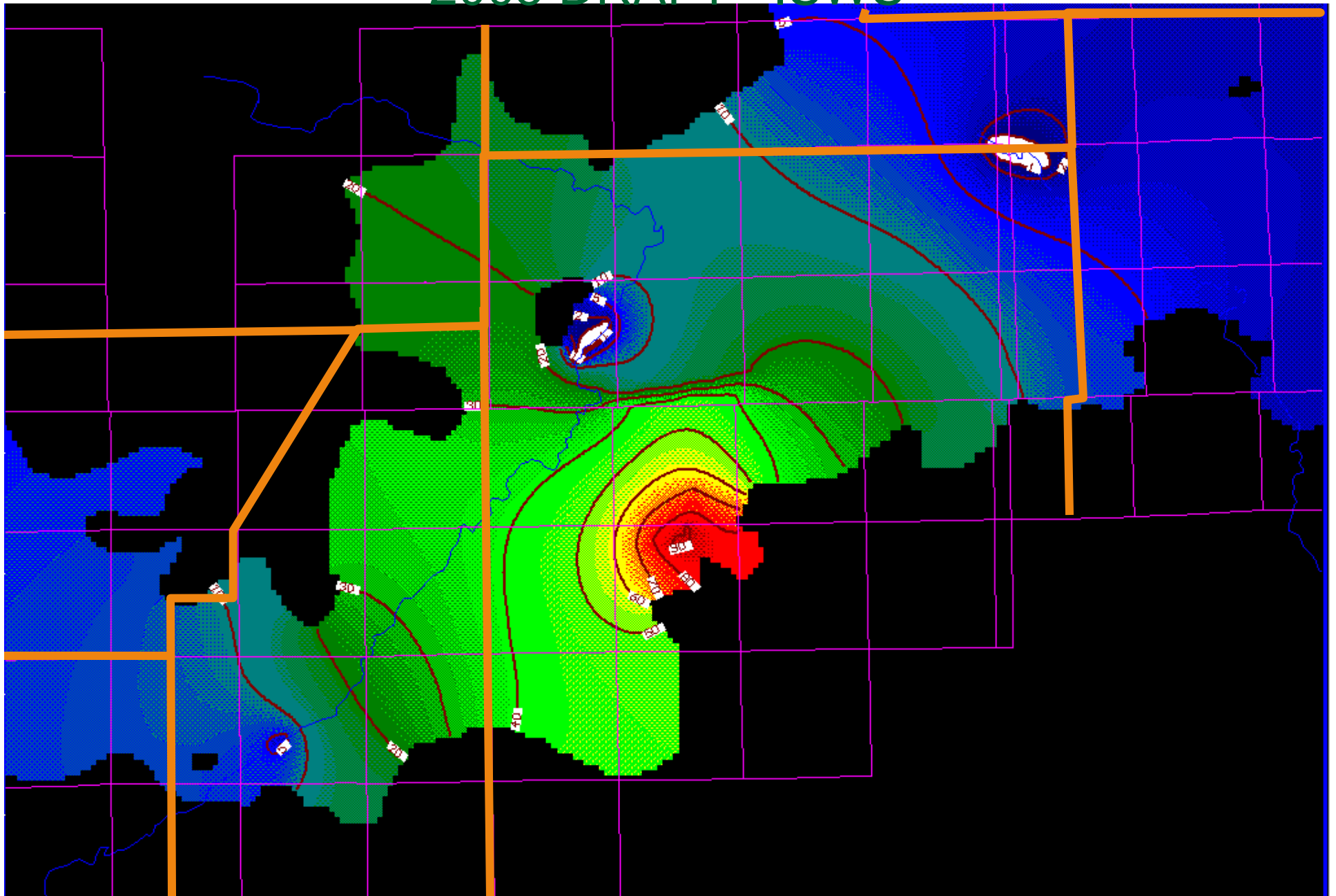
### Hydrograph of Galena WARM Well

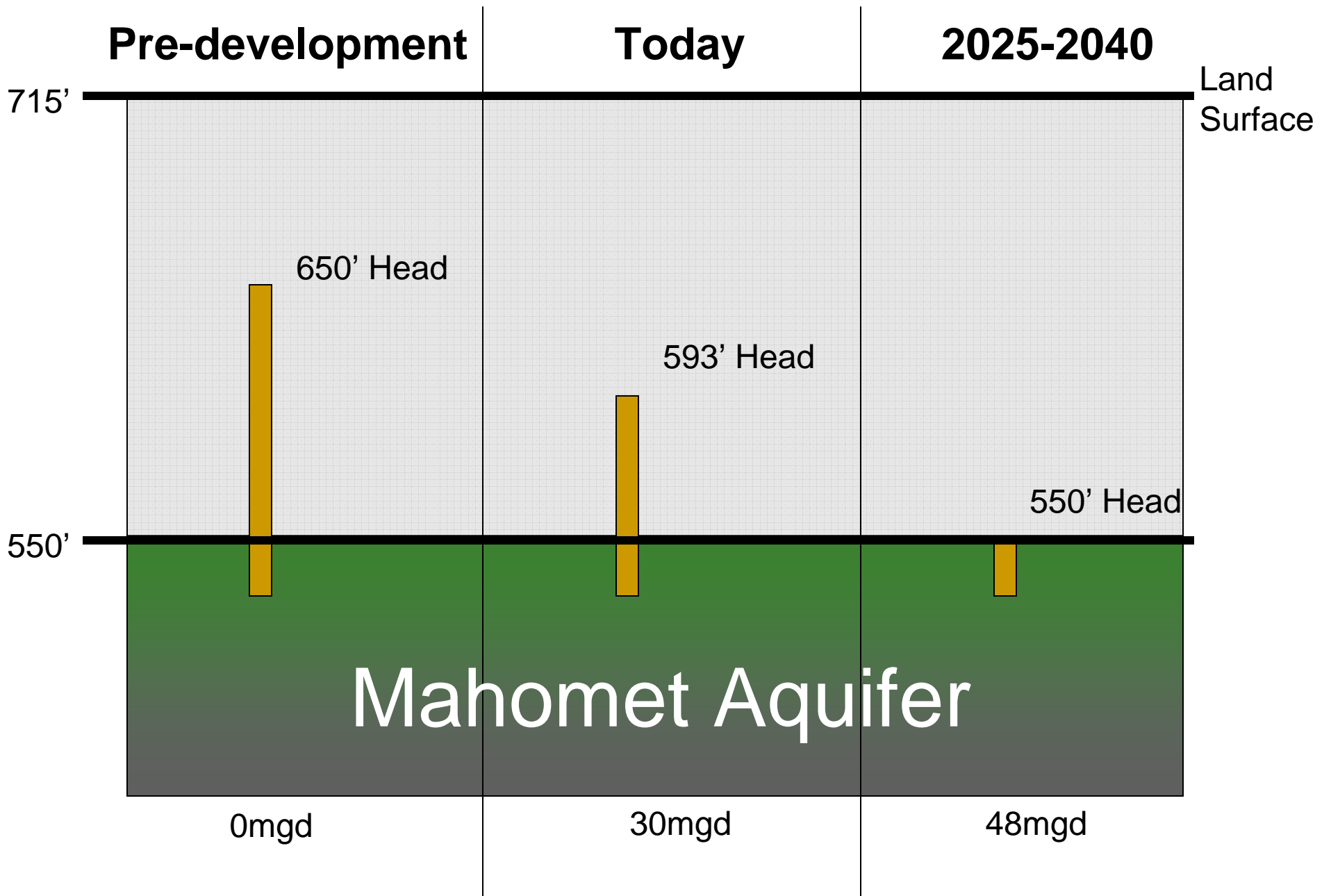


### Hydrograph of Mt. Morris WARM Well



# Cone of Depression in the Mahomet Aquifer 2005 DRAFT ISWS

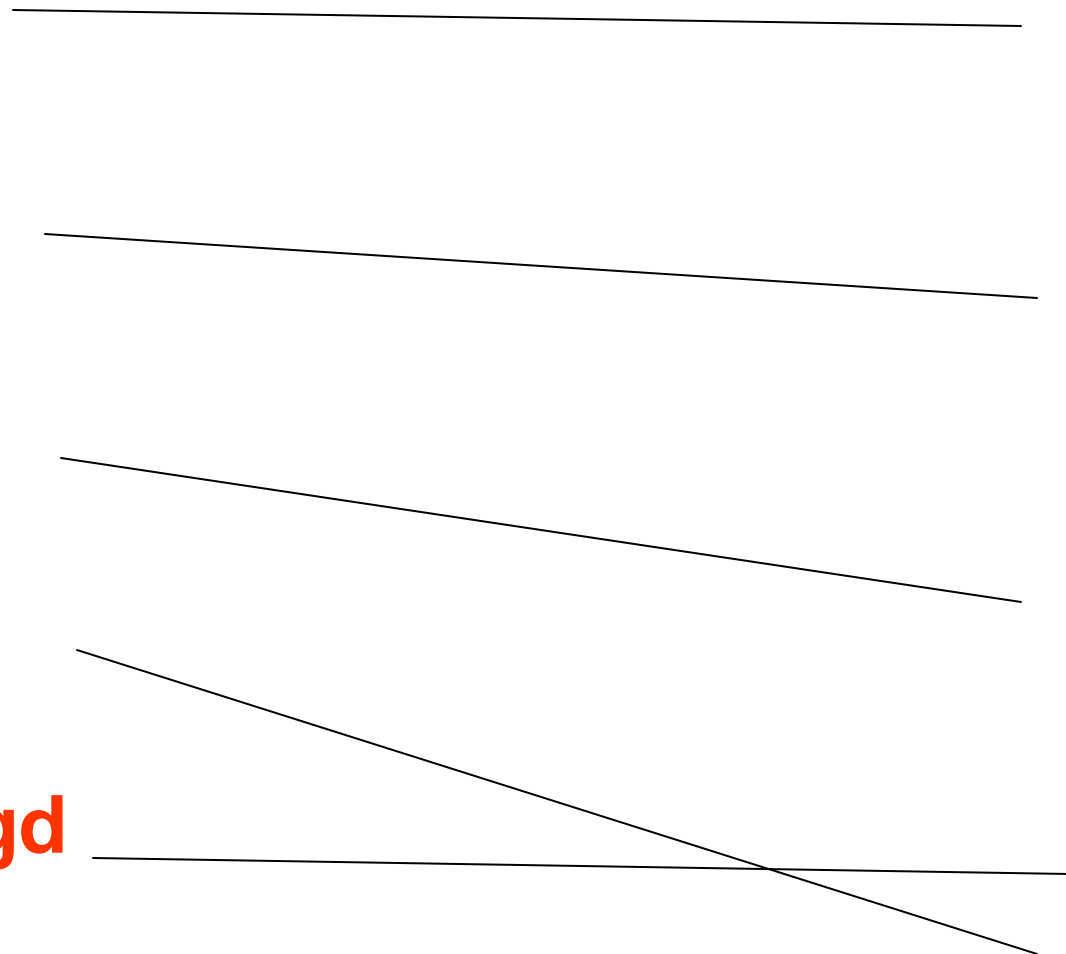




**Decline in artesian head west of Champaign**

# CUMULATIVE IMPACTS WITH +10 MGD THRESHOLD

- +2 mgd
- +4 mgd
- +6 mgd
- Total +12 mgd
- **Threshold 10mgd**

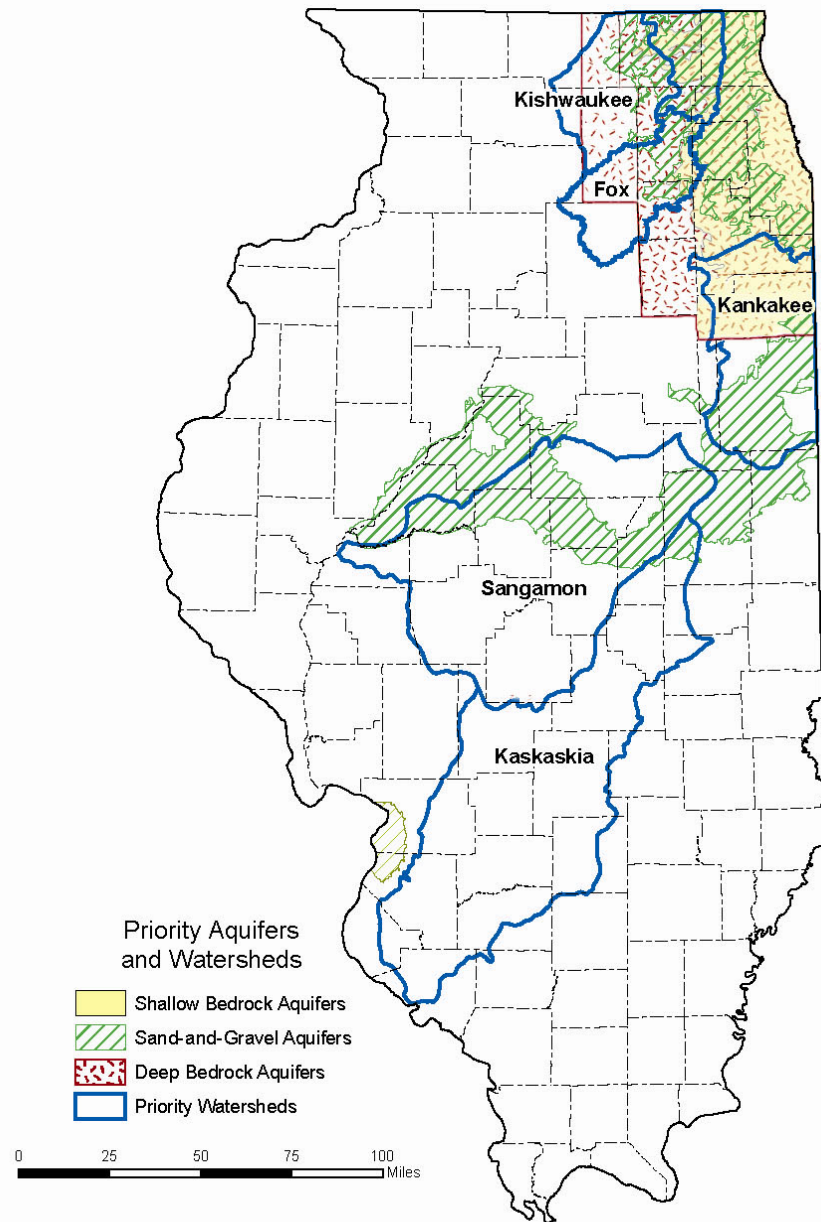


# **GOVERNOR BLAGOJEVICH**

## **Executive Order 2006-01**

- **Establish a scientific basis (ISWS & ISGS) and an administrative framework (OWR) for state and regional water supply planning and management.**
- **Establish a package of support for the State Surveys and locally-based regional water supply planning committees.**
- **By June 3, 2009 produce:**
  - **pilot regional water supply plans (surface and ground water) in 2 priority regions**
  - **define comprehensive program for state and regional water supply planning and management consistent with existing laws, regulations and property rights**

# PRIORITY AQUIFERS and WATERSHEDS for WATER SUPPLY PLANNING



# IMPLEMENTATION

- **2 locally based regional groups up and running:**
  - **NE Illinois – CMAP – 11 counties**
  - **East Central Illinois – MAC – 15 counties**
- **Produce water demand scenarios to 2050**
- **Evaluate water supply/demand options and make recommendations by June 2009**



# KEY QUESTIONS:

- **What are the sustainable yields of the aquifers and rivers?**
- **What will be the impacts of additional withdrawals on i) existing wells, ii) rivers, streams, wetlands, ecosystems, and iii) aquifers?**
- **How resistant to drought and possible climate change are water supplies?**
- **What are the management options – supply and demand?**

# IMPROVED INFORMATION FOR REGIONAL WATER SUPPLY PLANNING

**BY JUNE 2009:**

- Determine **water availability** under a range of climate scenarios
- Develop scenarios of **water demand** to 2050
- Evaluate regional **management options** taking into account uncertainty and risk
- Develop **initial regional plans and a statewide program**

# Illinois Water Supply Planning

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This site is a work in progress

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Due to projected growth of the population and economy, Illinois could require 20 to 50 percent more water in coming decades. Ensuring adequate and reliable supplies of clean water for all users at reasonable cost requires us to think ahead to the year 2050. As a state, we need to know how much water will be available, how much water we will need, what the options are for providing additional supplies, reducing demand and what the impacts and costs will be.

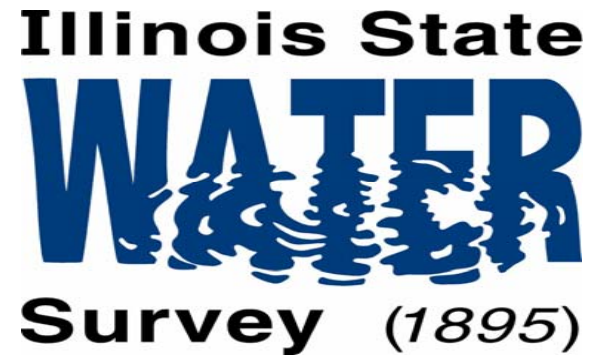
In January 2006, Governor Rod Blagojevich signed Executive Order 2006-01, requiring the Illinois Department of Natural Resources (IDNR) to lead state and regional water-supply planning activities. To begin that effort, the State has selected two areas for priority pilot planning: northeastern Illinois and east-central Illinois.

This web site provides scientific, technical and background information to support this project.

## Priority Planning Areas



Click on a region  
for more information



**ILLINOIS STATE WATER SURVEY**

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**217-244 5459**

