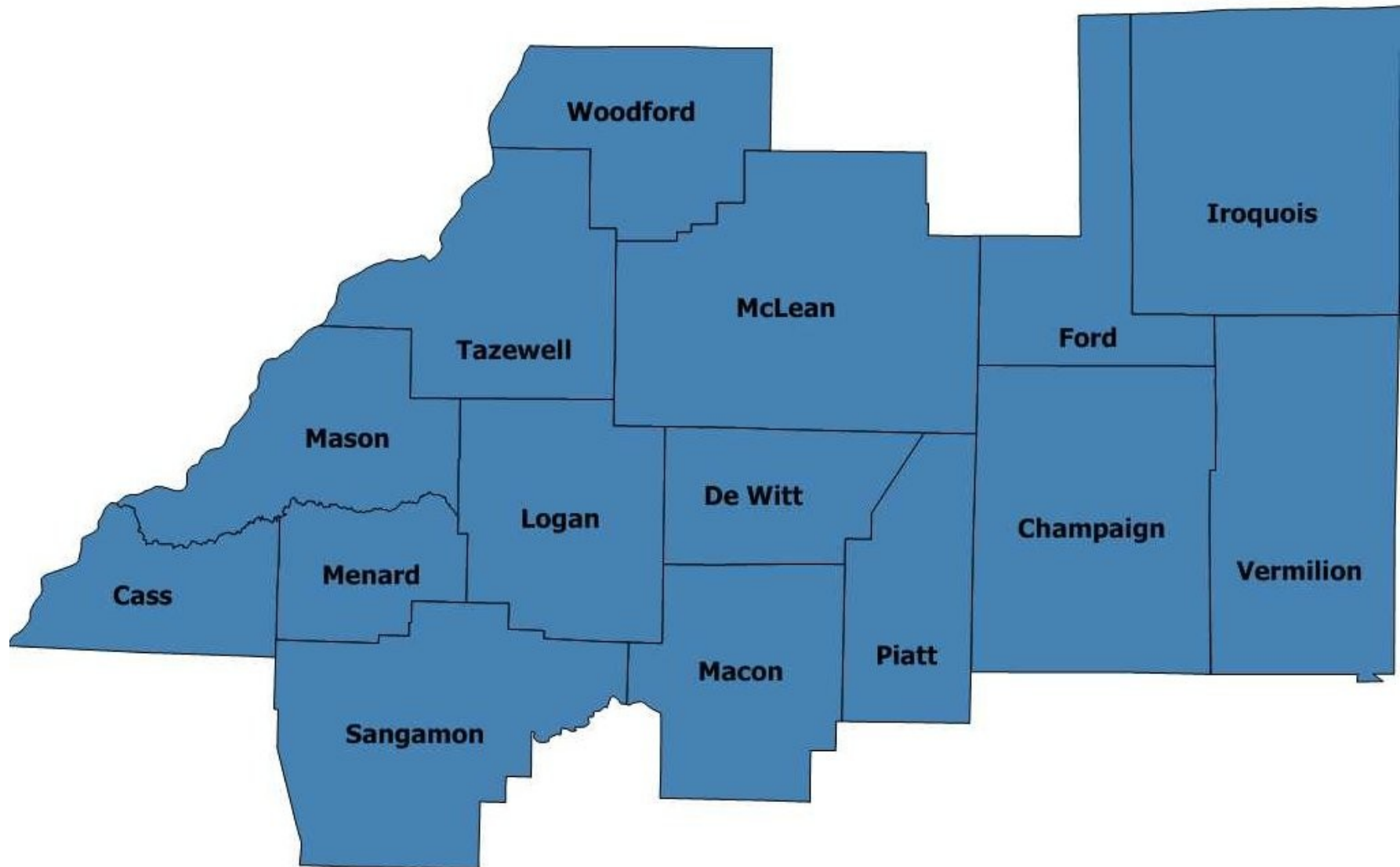


# Water Demand Study to 2050 for 15-County East Central Illinois Region



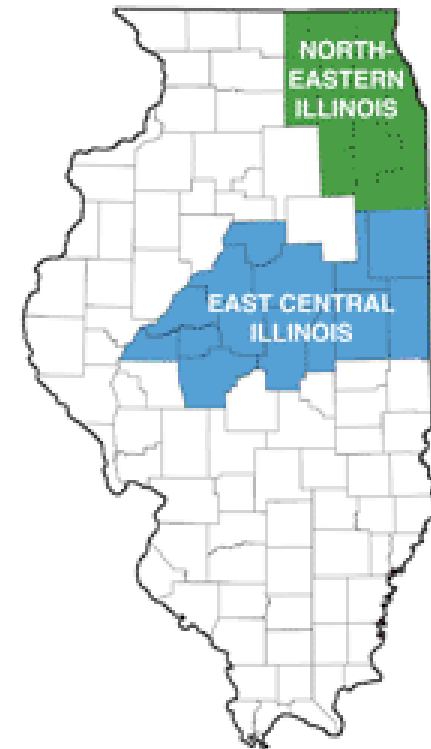
# Outline

- Study background
- Study areas
- Water demand sectors
- Method
- Water demand scenarios
- Historical data



# Study Background

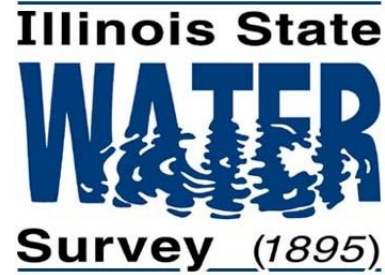
- Executive Order 2006-1
- 2 areas for priority planning
- Assessing demands and supplies through 2050
- Focus on regional cooperation and coordination



Source: Illinois State Water Survey



Office of Water  
Resources



**East Central Regional Water Supply Planning  
Committee**



**WHPA and Dr. Ben Dziegielewski**

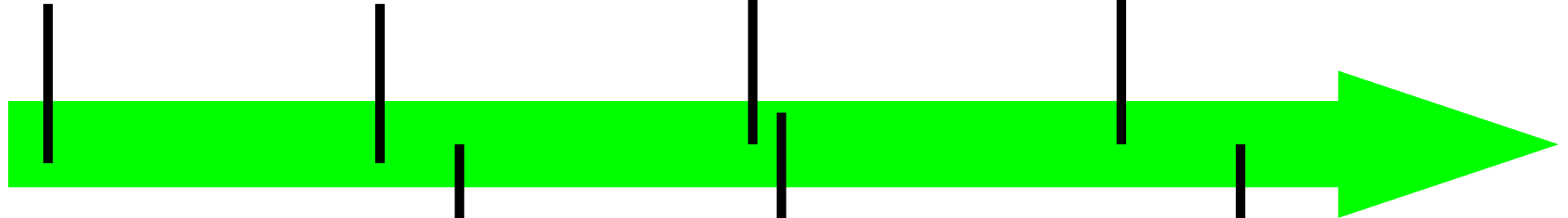


Water  
Supply  
Study  
Begins  
June,  
2006

Water  
Demand  
Study  
Begins  
June,  
2007

Water  
Demand  
Study Ends  
May, 2008

Water  
Supply  
Study Ends  
January,  
2009



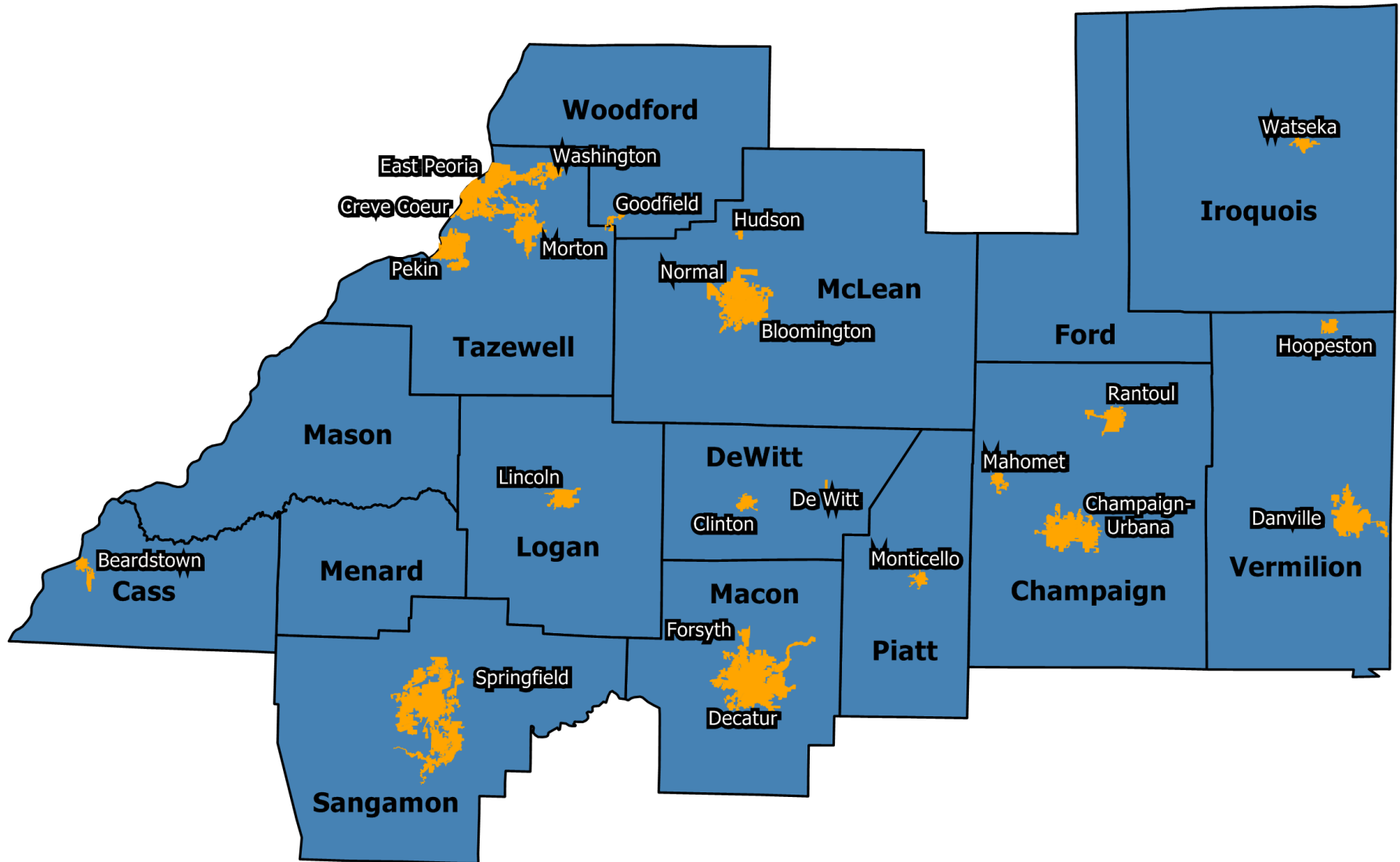
Outreach  
Meetings  
August-  
September,  
2007

Begin  
Incorporating  
Demand  
Study  
Results into  
Supply Study  
June, 2008

RWSPC Planning  
and Management  
Recommendations  
due to IDNR  
June, 2009



# Study Areas





# Water Demand Sectors

## 1. Public water supply



## 2. Self-supplied Commercial & Industrial

## 3. Self-supplied domestic

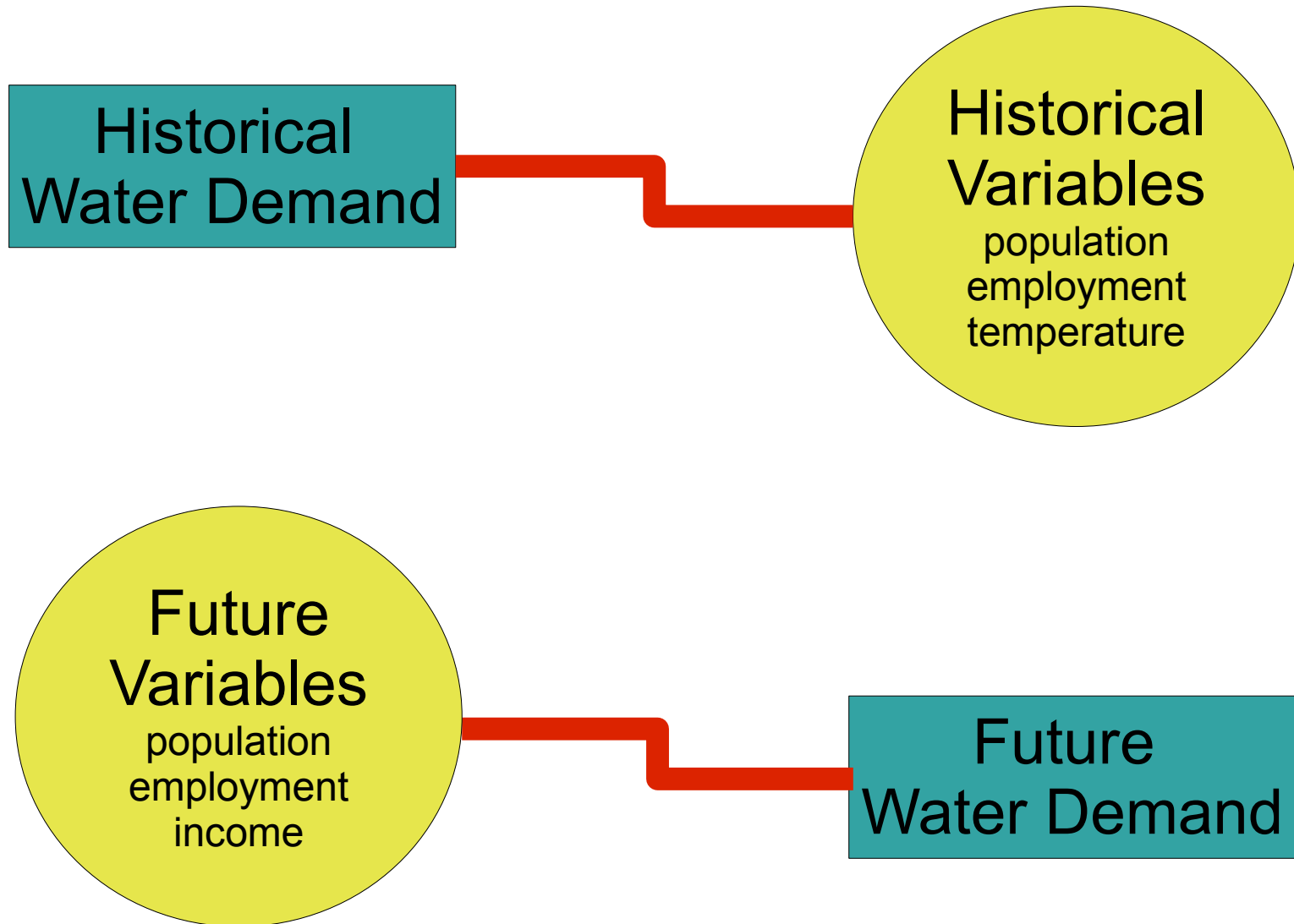


## 4. Irrigation & agriculture

## 5. Power generation



# Method





# Public Water Supply

- Approach - Multiple regression
- Historical Data - ISWS
- Driver - Population
- Explanatory Variables
  - Employment
  - Income
  - Single family housing
  - Price of water
  - Temperature & Precipitation



# Self-supplied Commercial and Industrial



- Approach – Multiple regression
- Historical Data - ISWS
- Driver - Employment
- Variables
  - Temperature
  - Cooling degree days
  - Fraction of employment in high-demand sectors

# Irrigation and Agriculture

- Approach – Demand per irrigated acre / demand per livestock unit
- Driver - Irrigated acres/number of livestock
- Variables
  - Biofuel capacity
  - Temperature
  - Precipitation
  - Drought index



# Thermoelectric Power Generation

- Approach – Demand per unit of power generation
- Historical Data - ISWS
- Driver - Unit of power generation
- Variables
  - Type of generation
  - Type of cooling system
  - Temperature



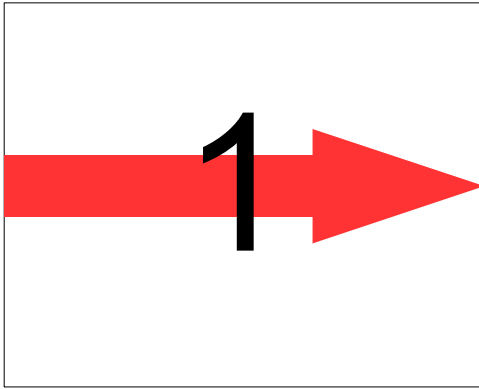


# Self-supplied Domestic

- Approach – Per capita unit-demand
- Historical Data – USGS
- Driver – Unserved population
- Variables
  - Median income

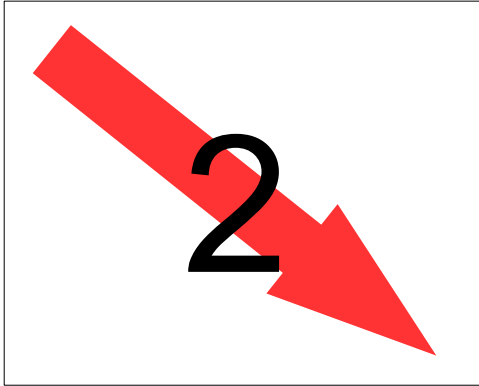


# Water Demand Scenarios



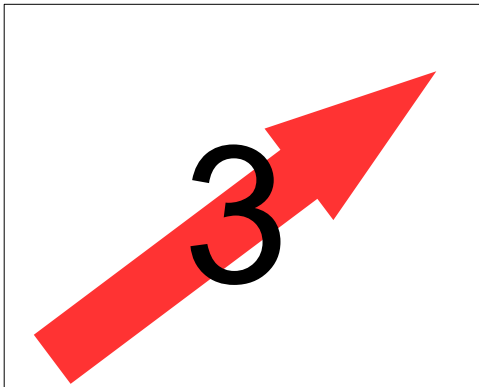
## 1) Current trends / Baseline

- recent trends continue
- includes known proposed increases



## 2) Less resource intensive

- smart growth occurs
- demand variables shift to less water demand
- more water conservation
- industrial water demand decreases

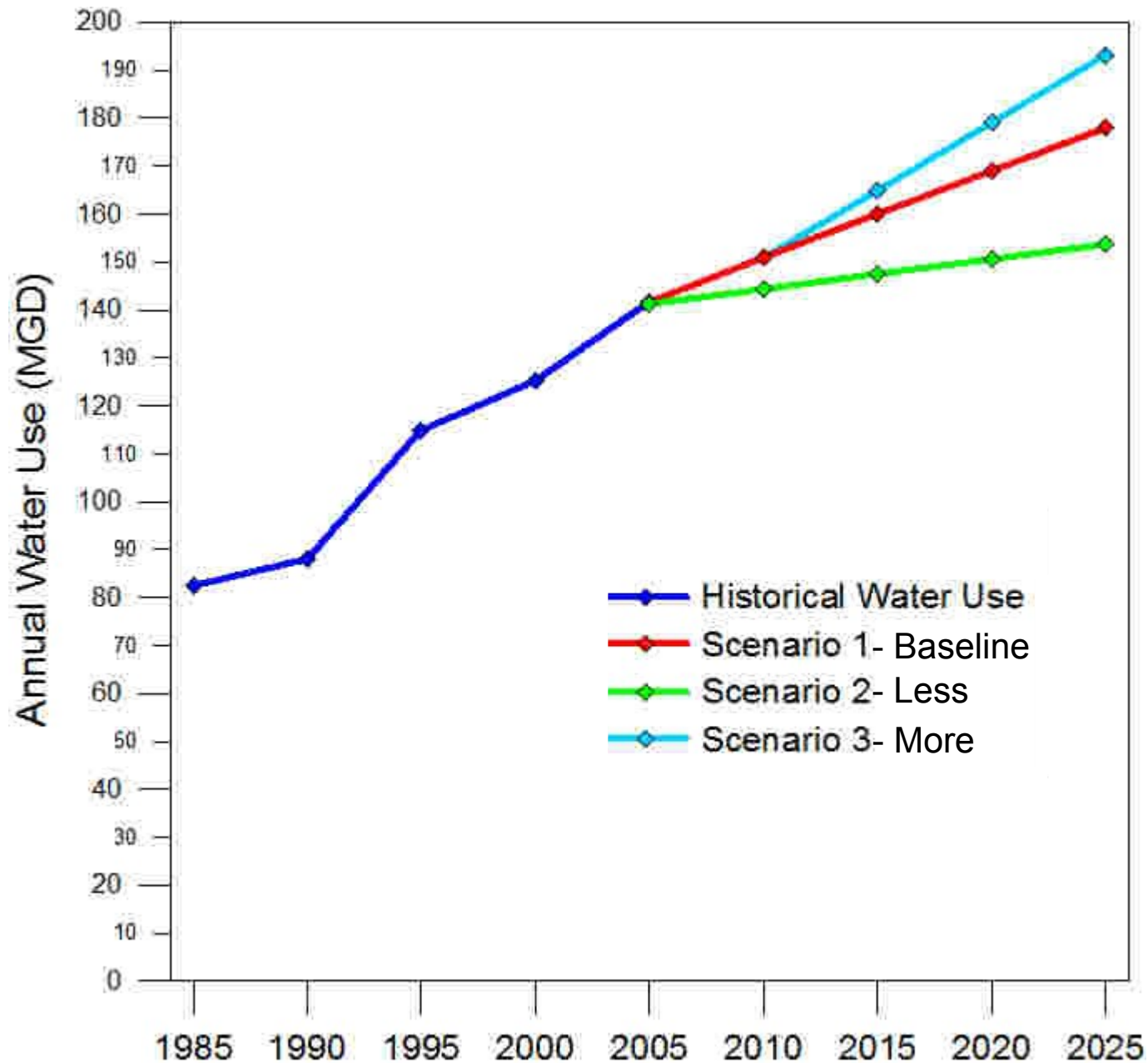


## 3) More resource intensive

- add ethanol plants
- demand variables shift to more water demand
- less water conservation

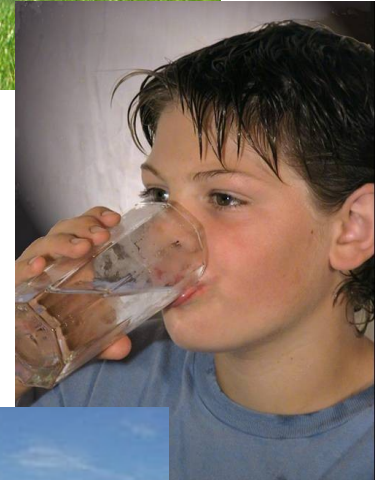


# Water Demand Scenarios



# Water Demand Scenarios

- **Future water demand**
  - geographical area
  - water demand sector
  - water sources
- **Seasonality** – PWS peak day and peak season
- **Sensitivity analysis** – climate change



# Discussion and Questions

**Regional Water Supply Planning Committee**

[www.rwspc.org](http://www.rwspc.org)

**Illinois State Water Survey**

<http://www.sws.uiuc.edu/wsp/>

**Mahomet Aquifer Consortium**

[www.mahometaquiferconsortium.org](http://www.mahometaquiferconsortium.org)

