

# ACTION PLAN FOR A STATEWIDE WATER SUPPLY PLANNING AND MANAGEMENT PROGRAM

## MISSION STATEMENT:

WATER IS ESSENTIAL TO ALL ILLINOIS RESIDENTS, ILLINOIS BUSINESS AND INDUSTRY, AND TO THE ILLINOIS' AQUATIC ECOSYSTEMS. THE STATE OF ILLINOIS SHALL LEAD EFFORTS TO PROPERLY PLAN FOR THE ADEQUATE QUANTITY AND QUALITY OF WATER FOR ALL USES BY CREATING, MAINTAINING AND IMPLEMENTING A STATE OF ILLINOIS WATER SUPPLY PLAN. ALL EFFORTS SHALL BE MADE TO ENSURE THAT STATEWIDE PLANNING IS REVIEWED AND REVISED TO KEEP THE PLAN RELEVANT AND THAT SUFFICIENT INFORMATION BE GATHERED TO SUSTAINABLY MANAGE THE WATER RESOURCES IN ILLINOIS.

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## SECTION ONE –RECOMMENDATIONS

A Strategic Plan for Implementation of Statewide Water Supply Planning was developed in 2008 in response to Illinois Executive Order 2006-01. The plan which followed Executive Order 2006-01 has been used to facilitate the development of three regional water supply plans to-date. This document revises that Strategic Plan to create an Action Plan for Statewide Water Supply Planning and was developed by the Department of Natural Resources in consultation with the State Water Survey and affected water supply planners in order to further define the process for creating a State of Illinois Water Supply Plan with all of the necessary components of regional and state-wide plans. The following recommendations are a result of a review of the State's ongoing long term program for water supply planning and research; a review of previously prepared planning documents and task force reports listed in the references, and an evaluation of the planning process undertaken in the three completed study areas.

### RECOMMENDATIONS

- 1) Resources must be provided for a sustained long term water supply planning program in Illinois. These resources include regional water supply planning committees (RWSPC), scientific researchers, programmatic management, and state funding. Funded at a level of at least \$2,500,000 per year (includes IWIP) with a primary focus on completing all regional plans with implementation strategies and a secondary focus on creating, implementing and maintaining a state-wide plan. (See Section Six)
- 2) The IWIP program (See Section Two, Water Use in Illinois) should be continued with substantial state resources to support this program. The ISWS should continue to provide staffing support for this effort, and the IDNR should provide adequate financial and programmatic support for the program. There is an absolute need to maintain the legislatively mandated IWIP program at \$300,000 annually to support the high level of regional water supply modeling capability at the State Water Survey.
- 3) Regional planning committees for the entire state, including the remaining 58 of 102 counties in Illinois, should be created, maintained and efforts should be emphasized that contribute to the completion of all regional plans by 2022. Future RWSPGs should focus on the development of a regional water supply plan. This includes providing guidance to the Scientific Surveys while they complete a technical water supply and demand study, including initial surface and ground water supply analysis and models. This effort focuses a substantial amount of time and effort in identifying specific water supply conflicts and developing long-range implementable solutions to increase local supplies to meet needs. Once the water supply has been developed, the RWSPGs should be maintained to implement the recommendations of the plan to reduce or eliminate future potential water supply conflicts and shortfalls.
- 4) The Statewide and regional water supply plans should be created and implemented in a phased approach and then updated at intervals of not more than every 10 years to ensure adequate long term water supply to Illinois residents, businesses, industries and for the natural resources that depend on the state's water resources.
- 5) IDNR and Regional Water Supply Planning Committees shall provide resources for and promote the benefits of water conservation. This may include, but not limited to, municipal water loss auditing methods, IEPA's WaterSense® Program, water leak detection and new technology available to conserve water use.
- 6) Recommend that the DNR Office of Water Resources, the State Water and Geological Surveys, the IEPA, and regional planning groups continue their long term commitment to state-wide integrated water resources planning and management which creates the foundation for the science, engineering and technology used for the successful

initiation and conduct of regional water supply planning efforts. This includes continued support of the USGS stream gaging program, development of surface water models such as ILSAM, establishment and maintenance of groundwater monitoring programs, development of local groundwater models used to build the larger regional models, statewide analysis of drought vulnerability of all surface water systems and instream flow needs and aquatic habitat studies.

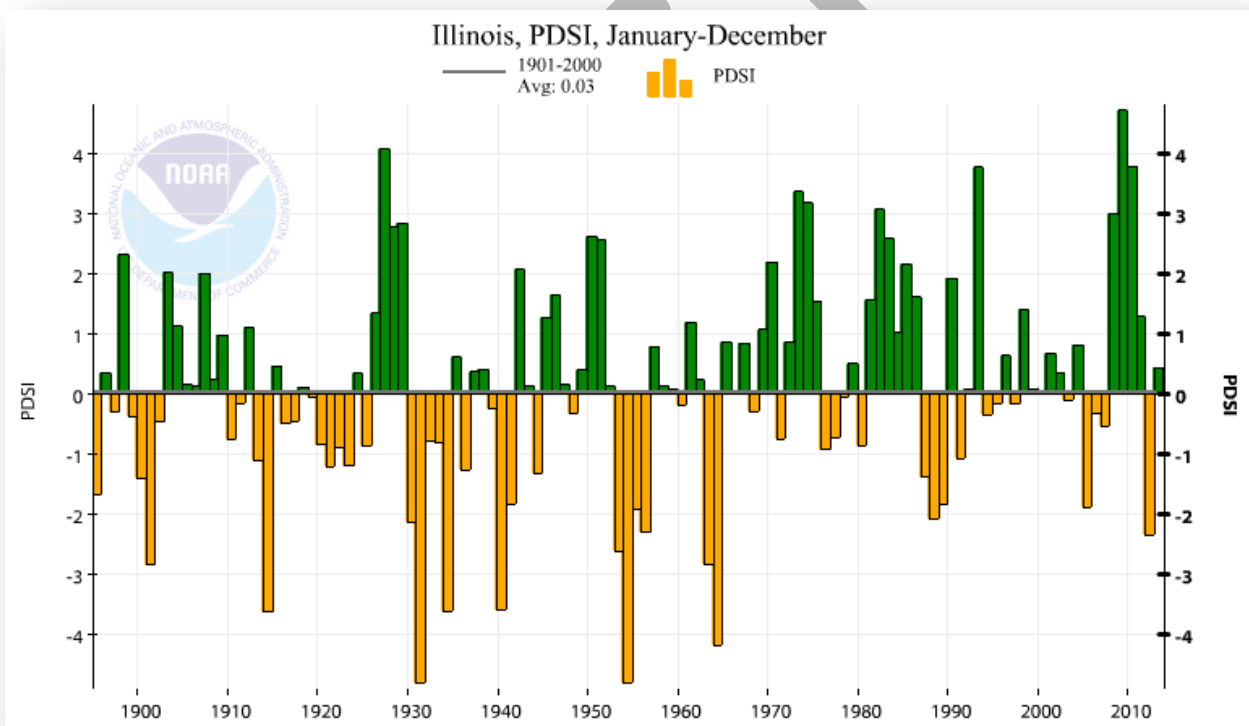
7) Recommend that the DNR Office of Water Resources develop a WEB based update of the state-wide water planning process, including the regional plans, the State Drought Response Plan, and ongoing efforts. Currently, the DNR has partnered with the ISWS and the ISGS to provide a website at <http://www.isws.illinois.edu/wsp/> which should be continually updated and expanded.

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## SECTION TWO - WATER SUPPLY NEEDS

### DROUGHT PLANNING AND RESPONSE

The Governor's Drought Response Task Force was established in response to past droughts and to monitor the conditions of the state's water resources and systems and coordinate the state's response to drought situations. The purpose of the task force is to assist community and state officials and the public with information and tools that promote better decision making in water supply planning and reduce drought related impacts, water competition and conflicts of use. The State Water Plan Task Force voted to most recently activate the Drought Response Task Force on the June 19<sup>th</sup>, 2012 meeting with approval of the Governor's Office. Numerous droughts have occurred in Illinois with the most significant occurring in the 1930's, 1954, 1964 and 1988 with less recent events occurring in 2005 and 2012 as shown below in Figure 1.



**Figure 1: Annual Palmer Drought Severity Index for Illinois from 1895 to 2014**

From the 2012 event "The Drought of 2012: A Report of the Governor's Drought Response Task Force" was published. In the report, 28 issues were documented and 26 recommendations were presented in the areas of agriculture, public water supplies, industrial uses, private water uses, natural resource impacts, navigation conditions, economic impacts, technical issues and policy issues. Below are a few items the report stated as issues or recommendations:

- **Importance of state and regional water supply planning and management,**
- **Communities need for adequate water supply,**

- Working with industries to development a sustainable water supply,
- Develop resource management plans to address fish kills and other aquatic habitat impacts,
- Developing navigation drought action plans,
- Review governmental authorities to respond to drought emergencies,
- Determine where new authorities are needed,
- Develop a statewide water use management strategy for drought periods.

Following the Drought of 2007, the State Water Plan Task Force began developing a report entitled “State of Illinois, Drought Preparedness and Response Plan”, published in October 2011. The report included drought impacts, recommendations for additional regulations and authorities, an overview of the water supply planning, and drought response information which have been incorporated into this Action Plan.

The IDNR, in cooperation with the Drought Response Task Force and Regional Water Supply Planning Committees shall continue coordinated efforts during times of drought, produce reports that include issues that occurred and recommended action following significant droughts, continually revise the “State of Illinois, Drought Preparedness and Response Plan”, and implement recommended actions.

## INSTREAM FLOW PROTECTION

The issue of instream flow protection has been investigated extensively by the State Water Plan Task Force (1983) and by the Interagency Instream Flow Protection Committee mandated under Public Act 86-191 (1991). The C-2000 consultant’s report on water quantity issues also discussed the public concern for this issue, along with legal issues and legal options for further consideration. The issue of protecting critical flows in rivers and streams was the number three priority recommendation of the Land and Water Management Committee of Conservation Congress III.

The Interagency Instream Flow Protection Committee summarized the instream flow protection issue in its 1991 report as follows:

“The protection of minimum instream flows within the rivers and streams of Illinois is a significant water resources management issue that has been widely recognized since the mid 1970’s. With each new drought and burst of economic development and growth in Illinois, numerous additional demands for the offstream use of the State’s surface water resources occur. The development of these resources occurs across the State and can cause significant negative impacts to streams of any size and at any location. Without the provision for the protection of some levels of minimum streamflows, the resource values, uses, and benefits of these aquatic resources are significantly impaired. In addition, it is now becoming recognized that most of the streams in Illinois cannot meet the demands of all users at all times. Therefore, developers of the surface water resources of the State of Illinois must recognize the need to cease withdrawals at various times to protect the values of instream uses. They must also recognize that most water supply developments in Illinois will require that



**Figure 2: Fish Kill during the 2012 Drought**

additional storage or alternative sources of supply be developed as a necessary part of any secure water resources development project.”

Recommendations shall be created by RWSPC’s, with guidance from the State Water Plan Task Force, to determine a management plan for instream flow protection on a stream, regional or statewide basis to account for the needs of all water users including aquatic habitat. The recommendations shall be approved by the State Water Plan Task Force. The State Water Task Force may propose specific state-wide instream flow protection authority changes to the legislature through IDNR pursuant to Department of Natural Resources Act (20 ILCS 801/5-10).

## GROUNDWATER MANAGEMENT

The issue of groundwater management and regulation was reviewed extensively by a subcommittee of the State Water Plan Task Force in 1989 and by the water law consultant in the C-2000 water law studies published in 1996. The groundwater regulatory and management issues defined by the Water Plan Task Force subcommittee and by the C-2000 water law consultant are basically identical, and are as follows:

- 1) A major issue in the development of groundwater resources is the resolution of well interference issues. This issue mainly occurs when the development of a high capacity well negatively impacts on the operation of a nearby smaller well, most generally in use by a rural household.
- 2) Political aspects of water supply competition are common between urban and rural users of groundwater. This issue was manifested in the drought of 1988 and 1989 between irrigators and rural homeowners in Kankakee County and between municipalities and newly formed water authorities that were created to provide protection for rural areas located over the Mahomet aquifer system.

Recommendations shall be created by RWSPC’s, with guidance from the State Water Plan Task Force, to determine a management plan for groundwater sustainability. The recommendations shall be approved by the State Water Plan Task Force. The State Water Task Force may propose specific state-wide groundwater protection authority changes to the legislature through IDNR pursuant to Department of Natural Resources Act (20 ILCS 801/5-10).

## LAKE MICHIGAN WATER SUPPLY

Public water supply intakes along the Illinois shoreline of Lake Michigan have been designed to accommodate fluctuating water levels on Lake Michigan, which can vary by up to 6 feet. This fact combined with the enormous storage volume of Lake Michigan, means that Lake Michigan is a very drought resistant source of public water supply.

In response to the 1967 U.S. Supreme Court Decree limiting Illinois' diversion of water from Lake Michigan, the General Assembly tasked the Illinois Department of Natural Resources (IDNR) with developing an ongoing program to equitably allocate Illinois' supply of Lake Michigan water. In Illinois' case, the program must remain in compliance with the specific requirements of the U.S. Supreme Court Decree. The objectives, or goals, of Illinois' allocation program can be summarized as follows:

- **To make the greatest amount of Lake Michigan water available for domestic water supply.**
- **To use Lake Michigan water allocations as a tool to preserve groundwater resources for communities in northeastern Illinois who will not have access to a Lake Michigan water supply.**

- To make long-term allocations so that communities receiving an allocation for the first time can secure the needed financing to construct regional water distribution systems.
- To carefully consider the competing needs of all water users in the region so that allocations promote the efficient development of water supplies in the region in light of long-range needs and objectives.
- To require all users of Lake Michigan water to conserve and manage this resource.

## WATER USE IN ILLINOIS

Documentation of annual water withdrawals (water use) for all of Illinois began in 1978 by the Illinois State Water Survey (ISWS) under a cooperative agreement with the U.S. Geological Survey (USGS) under the Illinois Water Inventory Program (IWIP). Data is collected for water withdrawals, water use and water returns. For each water-using facility inventoried, the database includes locations and amounts of water withdrawn from surface water and groundwater sources, as well as significant amounts of water purchased from other facilities. Data can be summarized geographically by county, township, and drainage basin, as well as by various water use and water source categories for inclusion in the National Water Use Data System. Current uses of the data collected through the IWIP program include:

- Determination of community water supply usage.
- Determination of aquifer-wide withdrawals.
- Assessment of groundwater-level observations with respect to groundwater withdrawals (for example, comparisons of potentiometric surface maps and pumping from an aquifer systems).
- Water use projections.
- Comparisons of aquifer withdrawals to estimated aquifer recharge.
- Regional and site-specific groundwater flow modeling.
- Determination of groundwater withdrawals for the U.S. Army Corps of Engineers' Lake Michigan Diversion Accounting Program.
- Impact of high-capacity wells on neighboring wells.

Water use data collected in this program maintained by the ISWS is critical to water supply planning as well as for understanding the water future needs of the citizens of Illinois long after the planning process has been implemented. Illinois Water Inventory Program provides a database of large water users throughout the State of Illinois. Community, industrial and water utility users are required by state statute to report water usage to the ISWS where the data is compiled and analyzed. Information is made available to all water resource planners to assist in managing water use. Currently IWIP is in the process of being converted from an annual mailing process to a more digital and automated program. There have been no activities to include the third large group, self-supplied commercial and industrial users in the modernization of reporting; this needs to be completed as soon as possible.

Through the IWIP program, the 2011 water withdrawal in Illinois was determined as 53,409 mgd, 521 mgd from groundwater and 52896 mgd from surface water. Electric power generation accounts for 96.3 percent of the use which is largely non-consumptive. Excluding electrical power withdrawals, groundwater withdrawal would be 507 mgd and surface water withdrawal would be 1,471 mgd.

Annual support for this program is vital, and should be funded from regional water supply planning funds. Funding from IEPA is helping IWIP collect public water supply data and IDNR funding is being used to prepare large irrigators for reporting, which will be required starting in 2015. An enhanced IWIP program could include online

reporting and research on studies/project on Observation Well Monitoring, determining consumptive use, Historical Weather Data, Irrigation Assessment and Water Budget/Accounting Development.

## WATER SUPPLY SHORTAGES & CONFLICTS

In times of drought, water supply becomes limited which results in multiple water users' disputes resulting in numerous court claims. As an example, one only needs to look at the current conditions in California to see potential conflicts that may arise during a drought. Currently California is the only western state that does not regulate groundwater, which makes up 60% of the states water supply during droughts. In light of current drought conflicts, they are pursuing a bill to the legislation to change that.

Within Illinois, shortfall and conflicts occur for both ground and surface water supplies. Conflicts can include:

1. **Unregulated water use from a single limited supply results in intake pumps going dry and fish kills from poor aquatic water quality.**
2. **Nuclear power plants can not reduce water use when flow is at or below 7Q10 as FERC regulations take precedence over River Lakes & Streams act.**
3. **Documented depletion of deep aquifer in northeastern Illinois to cause future water conflicts between industries and public suppliers.**
4. **Sedimentation accumulation in reservoirs reducing available surface water volumes leading to increasing water shortages.**
5. **Most water users have no secondary water supply.**
6. **New groundwater users are not regulated which could add demand to an over-taxed water source**
7. **Groundwater is used as a primary water source instead of a water supply reserve for when surface water levels are inadequate resulting in a depleted groundwater supply when surface supplies are low.**

Regional water supply plans shall include recommendations to resolve shortages and conflicts in a manner that representatives from the affected users on the regional committee are in agreement.



## SECTION THREE - WATER SUPPLY EXPECTATIONS

### LEGISLATIVE AUTHORITY

The Illinois General Assembly has authorized the Illinois Department of Natural Resources (20 ILCS 801/5-10) to

1. **Study and investigate ways and means by which the various water uses may be coordinated to the end that the water resources of the State be put to their maximum beneficial use and, in connection therewith, to request any department or agency of the State to make surveys, studies, investigations, prepare plans, reports, and furnish such data and information as may be necessary.**
2. **Coordinate, determine and provide ways and means for the equitable reconciliation and adjustment of the various conflicting claims and rights to water by users or uses.**
3. **Recommend legislation for the most feasible method or methods of conserving water resources and putting them to the maximum possible use, taking into account the problems of navigation, flood control, river flow control and stabilization, reclamation, drainage and recapture, and further their utilization of water after use for any purpose, domestic and industrial use, irrigation of land, municipal use, development of electric energy, public health, recreation, fish and game life, and other beneficial use.**

### GOVERNOR'S EXECUTIVE ORDER 2006-01

Droughts and reoccurring concerns caused by growing water supply demand and conflicts across the state led to the Illinois Governor's Office issuance of Executive Order 2006-01 which required that the following actions to 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 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.**

Governor's Executive Order 2006-01: Executive Order for the Development of State and Regional Water-Supply Plans. Issued by Governor's Office on January 9, 2006.

## WATER USE ACT OF 1983 (525 ILCS 45)

The Water Use Act of 1983 was intended to provide a review of potential water use conflicts prior to damages occurring and mitigating water shortage conflicts by: (a) Providing authority for County Soil and Water Conservation Districts to receive notice of incoming 100,000 gallons per day users of water, review the proposed effects and make the findings public. (b) Authorizing Soil and Water Conservation Districts to recommend restricting withdrawals of groundwater in emergencies. (c) Establishing a “reasonable use” rule for groundwater withdrawals.

In 1987, the Act was amended with the addition of a section dealing with groundwater emergency restrictions. The amendments provide authority to four county SWCDs (Kankakee, Iroquois, Tazewell and McLean) to recommend to the Department of Agriculture restrictions on groundwater withdrawal. The amendments require the registration of all existing points of withdrawal capable of producing more than 100,000 gpd of water, and provide for a procedure for an individual to file a complaint with the SWCD, when a point of withdrawal fails to furnish its normal supply of water due to a substantial lowering of the groundwater level in the area.

As of January 1, 2010, annual reporting of withdrawals from wells and surface water intakes for all public water supplies and major self-supplied industries, irrigation, fish and wildlife, and conservation uses that pump at a rate of 70 gallons per minute or greater (100,000 gallons per day) is mandatory in Illinois, according to the Water Use Act of 1983 (Public Act 096-0222). A notable exception to the mandated reporting is the use of high-capacity well and intake use in agricultural irrigation. Agricultural irrigators must begin reporting on January 1, 2015.

Currently, no regulations exist to enforce the water use reporting or to restrict withdrawals of groundwater in emergencies beyond a recommendation.

## RIVERS, LAKES AND STREAMS ACT (615 ILCS 5)

It shall be the duty of the Department of Natural Resources to have a general supervision of every body of water within the State of Illinois, to see that none of said bodies of water are encroached upon or wrongfully seized or used by any private interest in any way, except as may be provided by law and then only after permission shall be given by said department.

Under these authorities the Department presently requires permits for the placement of all dams, fills, or other permanent structures which are placed or constructed in the public waters. Permits are not required for the withdrawal of water if a permanent structure is not proposed as part of the withdrawal activity.

Permits given by the Department for withdrawal structures in public waters contain as a minimum a special condition for the protection of minimum stream flows including a statement that withdrawals will be limited or prohibited during periods of low flow if necessary to prevent adverse effects on navigation and other public uses.

## SECTION FOUR – REGIONAL WATER SUPPLY PLANNING AREAS

### CHARGE TO THE REGIONAL WATER SUPPLY PLANNING COMMITTEES

This document stresses that the water supply planning and management initiative described in the Executive Order 2006-01 that directs locally based Regional Water Supply Planning Committees to be organized and participate in the development of regional water supply plans. To develop a regional water supply plan requires two foundations: 1) knowledge of available water supply, and 2) forecasts or scenarios of future water demand. The State Water Survey, the State Geological Survey and the United States Geological Survey, Illinois' primary scientific research agencies for groundwater and surface water resources, provide water resource information responsible for updating and expanding information for use in each Water Quantity Planning Area. The Regional Water Supply Planning Committees are assigned responsibility for the development of water demand scenarios with a 50 year horizon. This charge to the regional groups stresses that the study is fundamentally a basic "WATER SUPPLY - WATER DEMAND STUDY."

Under this charge the regional groups are to develop a Regional Water Supply Plan that clearly describes water supply and demand issues of the region under study. The regional plan should contain at least the following principal components:

1. **A description of the planning region's available water supply.**
2. **A description of the planning region's water-demand scenarios.**
3. **A description of the water supply deficits or conflicts as found by work of the state surveys and the regional planning committee.**
4. **A description of possible sustainable solutions for water supply/demand management as determined by the RWSPC to meet future needs.**

### PRIORITY OF THE REGIONAL WATER SUPPLY PLANNING COMMITTEES

Three planning studies have been completed successfully to-date. The formation and administration of locally based Regional Water Supply Planning Committee's (RWSPC) by the Northeastern Illinois, East Central Illinois Basin and the Kaskaskia River Basin regions is recognized, commended and utilized as examples to future RWSPC. The technical engineering and research efforts of the State Water Survey and State Geological Survey and data from the United States Geological Survey are major contributions to these studies. The three completed regional plans can be found at the following web sites:

Northeastern Illinois: See <http://www.cmap.illinois.gov/livability/water> for CMAP's reports and study information.

Mahomet Aquifer Region: See <http://www.rwspc.org/> for the MAC's reports and information.

Kaskaskia River Region: See <https://www.heartlandsconservancy.org/kaskaskia-basin-water-supply-plan/> for the Heartland Conservancy's reports and information.

This Action Plan is recommending a phased approach to implementing the continuation of water quantity planning program based on a regional approach that over a period of time would cover the entire State of Illinois. Future regional plans have been given the preliminary priority order from the concerns listed below.

Region	Report Completed	Report Revised
Northeastern	<b>March 2010</b>	2017, 2026
East Central	<b>June 2009</b>	2015, 2025
Kaskaskia	<b>December 2012</b>	2024
Middle Illinois	2017	2027
Rock River	2018	2028
Big Muddy	2019	2029
Spoon & LaMoine	2020	2030
American Bottoms	2021	2031
Wabash & Ohio	2022	2032
Lower Illinois	2023	2033
<b>Statewide Plan</b>	<b>2020</b>	<b>2030</b>

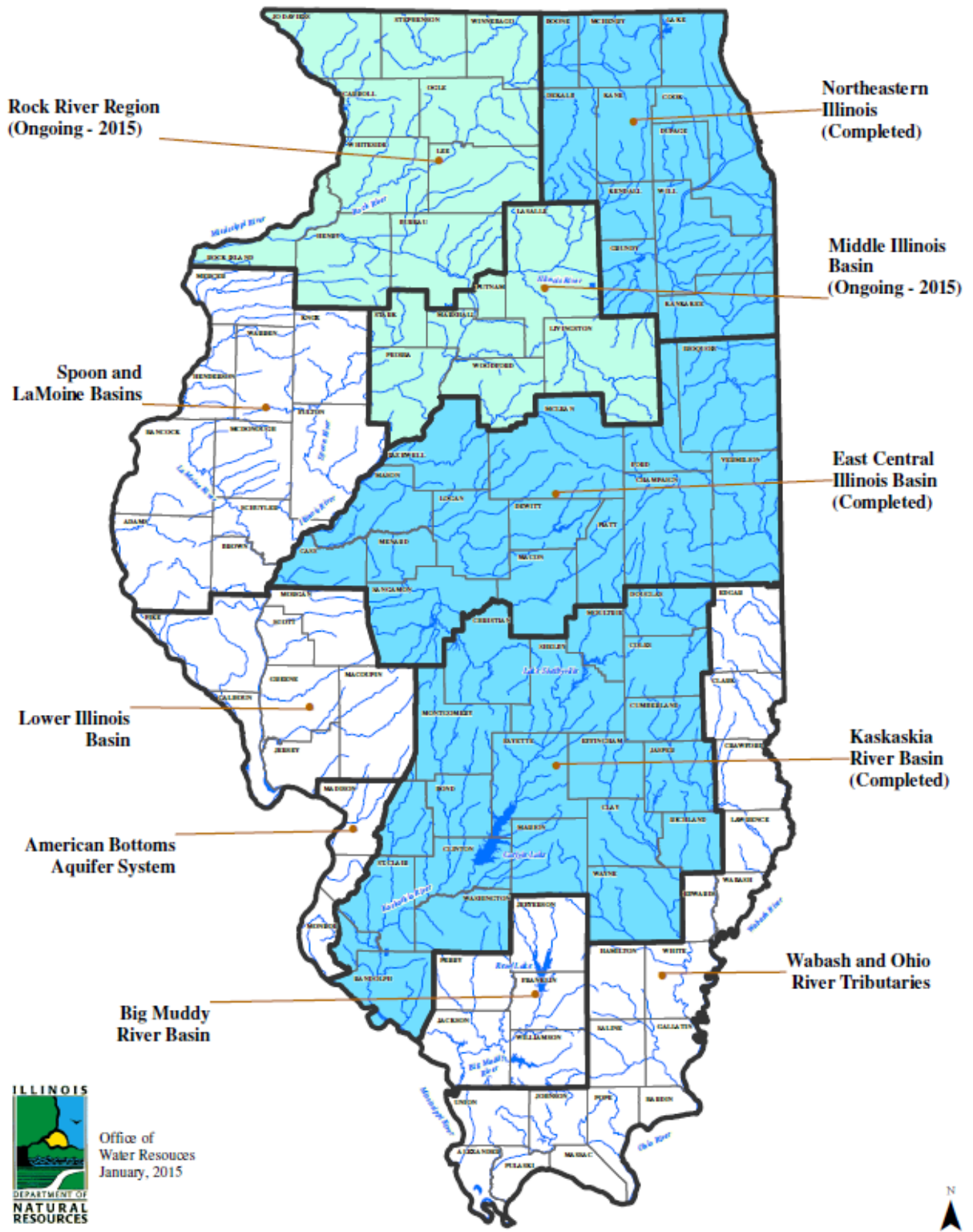
1. **Middle Illinois River Basin - Conflicts in water use during the drought of 2012 make this region of significant importance.**
2. **Rock River Region - Increased agricultural irrigation in this region makes water conflicts likely.**
3. **Big Muddy Basin/Rend Lake Area - This basin has substantial allocations of the water supply storage in the existing Corps of Engineers reservoir leading to concerns about meeting the need of future water supply demands for energy, mining, recreation and public water supply systems.**
4. **Spoon and LaMoine Basins - These two basins have substantial surface water and groundwater resources available for future development but a detailed analysis is needed to identify the needs and impacts of such potential developments to recreational and environmental resources.**
5. **American Bottoms Aquifer System - High urban water use is expected.**
6. **Wabash and Ohio River Tributaries - Major concerns for future planning will most likely focus on the needs of individual public water supply systems, coal mining, hydraulic fracturing and less on regional issues for these two basins.**
7. **Lower Illinois River Basin - Navigation and public water withdrawals make this region important.**

The regional planning areas listed above are selected on potential shared water supplies, such as watershed or aquifer, detailed on the map below. This selection results in a number of “border counties” that will be addressed in overlapping study areas for demand analysis in two adjacent basins. For these “overlapping counties” the technical focus of water supply availability and representation will be addressed in only one regional study. An example are the border counties on the eastern edge of the Kaskaskia River Basin (i.e., Wayne, Clay and Cumberland) which will be included in the demand studies for the Kaskaskia basin due to the potential for service by Kaskaskia River-based regional water supply systems but the more detailed actual supply demand studies for the public systems and other uses in these counties will be the focus of the Wabash and Ohio River Tributaries study conducted in a later study phase.

The Northeastern, East Central and Kaskaskia regional planning groups have projected planning and implementation efforts on a ten year cycle to ensure adequate long term water supply is available. Once additional regional planning committees complete their first report, they would be placed on a ten year cycle as well.

Regional Model Maintenance and Application – The regional groundwater and surface water models developed at the SWS need to be maintained and routinely updated in order to be useful tools for future modeling, and evaluations of water supply alternatives in the three completed regions.

# WATER SUPPLY PLANNING AREAS (Completed and Ongoing)



## SECTION FIVE - PROMOTE CONSERVATION AND SUSTAINABILITY

### WATER DEMAND CONSERVATION

The Department of Natural Resources in cooperation with the Illinois Environmental Protection Agency shall provide training and resources to equip municipalities with the ability to perform and track water loss. Methods such as the AWWA M36 auditing process provides water suppliers with a system to determine economically beneficial improvement to their distribution system and track the improvements over time. The IDNR shall also provide resources for water supply systems to conduct water leak detections when their auditing process has determined it economically beneficial to locate and repair system leaks.

In addition to improving water use efficiencies to the distribution system, the IDNR and IEPA shall promote EPA's WaterSense® product certification system for eligible water efficient products such as toilets, faucets, showerheads, irrigation controls, commercial pre-rinse spray valves and more.

With new technology in water use and conservation measures always becoming available, the IDNR shall provide the resource information to the public from the IDNR water supply website.

### SUSTAINABLE WATER SUPPLY MANAGEMENT

Illinois is generally considered as having adequate water supply between Lake Michigan, the extensive large river throughout the state and multiple aquifers available, but there is a need to ensure our supplies are sustainable for the long term future demand and climate changes. Monitoring groundwater supply and implementing a sustainable plan that ensures that supplies are not depleted through the withdrawal in amounts greater than an aquifer can yield. Similarly, surface water supply in the form of reservoirs should maintain an adequate volume for times of drought by methods such as implementing an ongoing dredging plan or other measures to contend with the accumulation of sediment that is naturally occurring. While river systems recover quickly from droughts where groundwater supplies require extensive time to recharge, during a drought the supply can be quickly lost and ecosystems can be dramatically affect. All water supply sources should be utilized to the greatest sustainable extent possible and protected from hazards conditions or depletion. A plan to manage these resources should be created by the regional committees and promoted to voluntarily implement by the water users in which they represent.

### SUSTAINABLE INFRASTRUCTURE MAINTAINENCE

The water supply infrastructure within the state of Illinois is in critical condition in many locations leading to excessive water loss due to water main break and leaks which are often too costly for water suppliers to repair. The IDNR through the regional water supply planning committees will provide education and public outreach to water suppliers to the importance of incorporating the long term maintenance costs into the water billing fees. This is a cost to provide adequate water supply to the users and the maintenance of these infrastructure in essential.

## SECTION SIX - IMPLEMENTATION

The re-initiation of a fully developed water quantity planning program will require a long term commitment of \$4,000,000 per year to initiate all water planning basins/regions sequenced to undertake no more than one basin at a time. After one planning cycle is complete in all basins over the initial ten year period the regions will revise their reports with updated supply and demand forecasts. This also assumes that long term model maintenance for both surface water and groundwater models in all basins will be adequately staffed, maintained and updated.

The Department of Natural Resources, Office of Water Resources will require at least two full-time staff planners to initiate, coordinate and maintain a viable multi- year water supply planning and management program including establishing and maintaining a regional water supply program, a drought preparedness and response program and the development and implementation of a State Water Plan. One staff member was hired to water supply planning program in July 2014 and a second staff member would be hired in Fiscal Year 2016.

For a summary of proposed program spending by fiscal year, please see the attached table "State Water Supply Planning Program - Schedule of Funding".

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## SECTION SEVEN - PROGRAM FUNDING

The funding of the state water supply planning program is subject to legislation.

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## SECTION EIGHT - RESOURCE AND SUPPORT DOCUMENTS:

The references listed below are just a few of the more substantial documents prepared over the last fifteen years that address in a comprehensive manner, Illinois' long term program for water supply planning and management. Reference number 2, 6, and 8 present a foundational overview for understanding Illinois' long term commitment to programs for water supply planning and research.

- 1.) "The Water Cycle and Water Budgets in Illinois: A Framework for Drought and Water-Supply Planning." Derek Winstanley, James A. Angel, Stanley A. Changnon, H. Vernon Knapp, Kenneth E. Kunkel, Michael A. Palecki, Robert W. Scott, and H. Allen Wehrmann  
<http://www.sws.uiuc.edu/iswsdocs/wcwbiiil/WaterCycleandWaterBudgetsinIL.pdf>
- 2.) Illinois State Water Survey, 2001. "A Plan for Scientific Assessment of Water Supplies in Illinois." Illinois State Water Survey, Information/Educational Material 2001-03, Champaign, IL.  
<http://www.isws.illinois.edu/pubdoc/IEM/ISWSIEM2001-03.pdf>
- 3.) "Prioritizing Illinois Aquifers and Watersheds for Water Supply Planning" by H. Allen Wehrmann and H. Vernon Knapp , <http://www.sws.uiuc.edu/pubdoc/IEM/ISWSIEM2006-04.pdf>
- 4.) Troubled Waters: Meeting Future Water Needs in Illinois. Campaign for Sensible Growth, Metropolitan Planning Council, and Openlands Project. Undated.  
[http://www.openlands.org/filebin/images/plans\\_reports/Policy\\_Issues\\_Water\\_Supply\\_Troubled\\_Waters.pdf](http://www.openlands.org/filebin/images/plans_reports/Policy_Issues_Water_Supply_Troubled_Waters.pdf)
- 5.) Report to the INTERAGENCY COORDINATING COMMITTEE ON GROUNDWATER from the SUBCOMMITTEE ON INTEGRATED WATER PLANNING AND MANAGEMENT, With Recommendations Pursuant to Executive Order Number 5, 2002, December 20, 2002.  
<http://www.isws.illinois.edu/docs/iwqpm/docs/ICCGSubcommitteeReport.pdf>
- 6.) Integrated Water Quantity Planning & Management, January 2005, Illinois Department of Natural Resources.  
<http://www.isws.illinois.edu/iswsdocs/iwqpm/DNR2005WaterQuantityReport.pdf>
- 7.) "The Drought of 2012: A Report of the Governor's Drought Response Task Force", March 2013, Illinois Department of Natural Resources and Illinois Environmental Protection Agency.  
<http://www.isws.illinois.edu/hilites/drought/archive/2012/docs/TheDroughtOf2012.pdf>
- 8.) "State of Illinois Drought Preparedness and Response Plan" October 2011, State Water Plan Task Force.  
[http://www.sws.uiuc.edu/hilites/drought/archive/2011/docs/St\\_Ill\\_Drought\\_Plan\\_2011.pdf](http://www.sws.uiuc.edu/hilites/drought/archive/2011/docs/St_Ill_Drought_Plan_2011.pdf)