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Illinois' Nonpoint Source Management Program

Illinois Environmental Protection Agency

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Acronyms

AWEP	Agricultural Water Enhancement Program
ALMP	Ambient Lake Monitoring Program
AWQMN	Ambient Water Quality Monitorign Network
AFO	Animal Feeding Operation
BMP	Best Management Practice
CWA	Clean Water Act
CMP	Coastal Management Program
CWS	Community Water Supply
CIG	Conservation Innovation Grants
CPP	Conservation Practices Program
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSP	Conservation Stewardship Program
CCPI	Cooperative Conservation Partnership Initiative
CTAP	Critical Trends Assessment Program
DMR	Discharge Monitoring Reports
DO	Dissolved Oxygen
DRSCW	DuPage River Salt Creek Workgroup
EWP	Emergency Watershed Protection Program
EQIP	Environmental Quality Incentives Program
FRSS	Facility-Related Stream Surveys
FRPP	Farm and Ranch Lands Protection Program
FSA	Farm Service Agency
FCMP	Fish Contaminant Monitoring Program
FRSG	Fox River Study Group
GIS	Geographic Information System
GRTS	Grants Reporting and Tracking System
GRP	Grassland Reserve Program
GMP	Groundwater Monitoring Program
HUC	Hydrologic Unit Code
IAC	Illinois Administrative Code
ICLP	Illinois Clean Lakes Program
IDA	Illinois Department of Agriculture
IDNR	Illinois Department of Natural Resources
IDPH	Illinois Department of Public Health
IGIG	Illinois Green Infrastructure Grant Program
IR	Illinois Integrated Water Quality Report and Section 303(d) List, 2012
IPCB	Illinois Pollution Control Board
IUM	Illinois Urban Manual
IPM	Integrated Pest Management
IBS	Intensive Basin Surveys
KIC2025	Keeping It for the Crops
LEAP	Lake Education Assistance Program

Acronyms – Continued

LMMP	Lake Michigan Monitoring Program
LRSP	Large Rivers Subnetwork Program
LA	Load Allocation - NPS Sources
LRS	Load Reduction Strategy
MOS	Margin of Safety
MRBI	Mississippi River Basin Healthy Watershed Initiative
MS4	Municipal Separate Storm Sewer System
NHD	National Hydrography Dataset
NPDES	National Pollutant Discharge Elimination System
NWQI	National Water Quality Initiative
NWR	National Wildlife Refuge
NRCS	Natural Resources Conservation Service
NPS	Nonpoint Source Pollution
NMP	Nutrient Management Program
O & M	Operation and Maintenance Plan
RC	Optional Reserve Capacity for Point Sources
PMS	Pesticide Monitoring Subnetwork
PCB	Polychlorinated Biphenyls
PAH	Polycyclic Aromatic Hydrocarbons
PLWIP	Priority Lake and Watershed Implementation Program
PWS	Public Water Supply
RMMS	Resource Management Mapping System
SV	Seasonal Effects and Growth
SSCG	Small Systems Compliance Grant Program
SIPES	Social Indicators for Planning and Evaluation System
SWCD	Soil and Water Conservation District
SWAP	Source Water Assessment and Protection Program
SWP	Source Water Protection
SRF	State Revolving Fund
SSRP	Streambank Stabilization and Restoration
SA	Sustainable Agricultre
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
VLMP	Volunteer Lake Monitoring Program
WLA	Wasteload Allocation
WBP	Watershed-based Plan
WPP	Wellhead Protection Program
WRP	Wetland Reserve program
WHIP	Wildlife Habitat Incentive Program
WLW	Working Land for Wildlife

Useful Tools and Guidance for NPS Pollution Control in Illinois

Water Quality Information	
Illinois Integrated Water Quality Report and Section 303(d) List, 2012, Illinois EPA December 2012 http://www.epa.state.il.us/water/water-quality/index.html	Illinois EPA
Resource Management Mapping System http://www.rmms.illinois.edu	University of Illinois
Water Quality Tool http://maps.epa.state.il.us/website/wqinfo/	Illinois EPA
Technical Documents – Best Management Practices (BMPs)	
Field Office Technical Guide http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/fotg/	USDA NRCS
Illinois Urban Manual http://aiswcd.org/IUM/index.html	Association of Illinois Soil and Water Conservation Districts
U.S. EPA Guidance	
Nonpoint Source Program and Grants Guidelines for States and Territories; U.S. EPA 4/12/2013 http://water.epa.gov/polwaste/nps/upload/319-guidelines-fy14.pdf	U.S. EPA
Supplemental Guidance 2007 - 2009 Watersheds In and Near Metropolitan Areas - Preventing, Reducing, and/or Eliminating Impacts Associated with Urban Runoff http://www.epa.state.il.us/water/watershed/publications/nps-pollution/urban-bmps-supplemental-guidance.pdf	U.S. EPA
Watershed-based Planning http://water.epa.gov/polwaste/nps/upload/319-guidelines-fy14.pdf	U.S. EPA
Other	
Grants Reporting and Tracking System http://iaspub.epa.gov/pls/grts/f?p=110:199:1425698992823918	U.S. EPA
Social Indicator for Planning and Evaluation System http://greatlakeswater.uwex.edu/social-indicators	University of Wisconsin
Water Quality Standards www.ipcb.state.il.us	Illinois Pollution Control Board

Chapter 1 – Introduction 1.0

Illinois is fortunate to have a wealth of water resources. The state has almost 120,000 miles of rivers and streams, 91,400 inland lakes; of which 3,256 are six acres or larger[1], 1,726,771 acres of shallow water wetlands[2], 63 miles of Lake Michigan shoreline, and jurisdiction over approximately 1,526 square miles of open water in Lake Michigan[3]. Illinois is also situated above billions of gallons of groundwater, located within coarse-grained material aquifers, sand and gravel aquifers and bedrock aquifers. The citizens of Illinois depend upon these water resources every day to meet their basic needs when at home, work and play. So it is vital that these resources are safe and clean.

It is estimated that 57.5 percent of Illinois' monitored streams and 98.7 percent of monitored lakes are impaired and that the majority of those impaired resources are negatively impacted by nonpoint source (NPS) pollution[4].

The federal Clean Water Act (CWA) amendments of 1987 laid a strong foundation for the implementation of NPS pollution control nationwide. *Illinois' Nonpoint Source Management Program* (Program) is the document Illinois follows to coordinate and implement NPS pollution control efforts to protect our water resources.

Definition of Nonpoint Source Pollution 1.1

NPS pollution is not defined in the Clean Water Act. A brief definition is that NPS pollution includes pollution caused by rainfall or snowmelt moving over and through the ground and carrying natural and human-made pollutants into lakes, rivers, streams, wetlands, estuaries, other coastal waters and ground water. Atmospheric deposition and hydrologic modification are also sources of NPS pollution.[5]

Illinois EPA also includes unnatural changes to the shape, flow, or biology of streams and other aquatic systems as a source of NPS pollution.

Agricultural runoff, construction site runoff, urban runoff, hydrologic modifications, and resource extraction activities are the major sources of NPS pollution that impair Illinois' surface water and groundwater resources.

Point Source Pollution

Section 502 (14) of the Clean Water Act defines point source as: any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm water discharges and return flows from irrigated agriculture.

The Illinois Environmental Protection Agency (Illinois EPA) has formally recognized NPS pollution control efforts as a part of its strategy to protect Illinois' environment since late 1980. The 1987 amendment to the federal CWA brought NPS pollution to the forefront of environmental issues nationwide and acknowledged that control of point source pollution alone was not enough for the nation's waters to achieve water quality standards. NPS pollution had to be controlled as well. Toward that end, Section 319(h) of the amended federal CWA established a framework and provided financial assistance to support state and local efforts to control NPS pollution.

[1] Illinois Department of Natural Resources, 1999
[2] Updating the National Wetland Inventory for Illinois – Final Report 8/31/10, Ducks Unlimited
[3] Illinois Integrated Water Quality Report and Section 303(d) List, 2012, Illinois EPA – December 2012
[4] Section 319 Biannual Report, Illinois EPA – March 2013
[5] Nonpoint Source Program and Grants Guidelines for states and Territories; US EPA 4/12/2013

Figure 1 - Point Sources versus NPS Sources - Indiana County Conservation District

Mission Statements 1.2

NPS pollution control is vital to achieving the mission of the Illinois EPA and the missions of the Bureau of Water and NPS Unit. These missions are as follows:

Illinois Environmental Protection Agency 1.21 – The mission is to safeguard environmental quality, consistent with the social and economic needs of the state, so as to protect health, welfare, property, and the quality of life.

Bureau of Water 1.22 – The mission of the Illinois EPA's Bureau of Water is to:

1. ensure that Illinois' rivers, streams and lakes will support all uses for which they are designated including protection of aquatic life, recreation and drinking water supplies, and;
2. ensure that every Illinois Public Water System will provide water that is consistently safe to drink; and
3. protect Illinois' groundwater resource for designated drinking water and other beneficial uses.

Nonpoint Source Unit 1.23 – The mission of Illinois EPA' Nonpoint Source Unit (NPS Unit) is to achieve and maintain the beneficial uses of Illinois' surface and groundwater resources through:

1. the abatement and prevention of known and presumed water quality impairments ensuing from NPS pollution and
2. the ongoing analysis of the degree to which Illinois' water resources support their beneficial uses and of the nature and extent to which those beneficial uses are impaired or threatened by the effects of NPS pollution.

Illinois' Nonpoint Source Management Program 1.24 – The mission of Illinois' Nonpoint Source Management Program is to:

1. establish and implement effective, integrated, and holistic actions for the abatement and prevention of known and presumed water quality impairments ensuing from NPS pollution;
2. foster multi-agency cooperation and local stakeholder input on the development, maintenance, implementation, and evaluation of this statewide plan of action
3. safeguard water quality from NPS pollution, consistent with the social and economic needs of the state, so as to protect health, welfare, property, and the quality of life; and
4. satisfy the informational and procedural requirements of a state NPS management program as stipulated under Section 319 of the CWA and associated federal guidance, including the nine key program elements of a successful state program as defined by a state/U.S. EPA workgroup.

Long-term Goals 1.3

The Program mission cannot be achieved unless long-term goals and objectives combined with short- and medium-term milestones are applied to guide its implementation over time. The short- and medium-term objectives and milestones are listed in Chapter 7 and are referenced throughout the Program.

The long-term (more than 10 years) goals of the Program are:

1. The restoration and protection of all beneficial uses of Illinois' surface and groundwater resources from impairment by NPS pollution. This goal will be achieved through watershed-based assessment, planning, implementation, and education activities carried out as part of an effective and efficient process that employs both regulatory and non-regulatory programs, agencies, authorities, and stakeholders.
2. The prioritization and targeting of impaired waterbodies for the selection and implementations of NPS pollution control measures so as to efficiently and expeditiously restore and protect the full support of their designated uses.
3. Effective communication, coordination, collaboration, and education among all partners and stakeholders involved in NPS pollution control.
4. The refinement and development of monitoring and assessment tools to better determine NPS pollution impairments, including nutrient impacts on Illinois waters.

Illinois Environmental Protection Agency – Legal Authority 1.4

The **ILLINOIS ENVIRONMENTAL PROTECTION ACT** (Act) [415 ILCS 5/1 *et seq* (2010)] designates Illinois EPA as the "water pollution control agency" for Illinois for all purposes of the CWA, which includes the development and implementation of state management programs to control pollution from nonpoint sources.

The following describes pertinent sections of the Act:

- Section 4(a) establishes in the Executive Branch of the State Government an agency to be known as the Illinois Environmental Protection Agency (Illinois EPA). [415 ILCS 5/4(a)(2010)]
- Section 4(j) requires the Illinois EPA to represent the State of Illinois in any and all matters pertaining to plans, procedures, or negotiations for interstate compacts or other governmental arrangements relating to environmental protection. [415 ILCS 5/4(j)(2010)]
- Section 4(k) authorizes Illinois EPA to, "...accept, receive, and administer on behalf of the State any grants, gifts, loans, indirect cost reimbursements, or other funds made available to the State from any source for purposes of the Act or for air or water pollution control, public water supply, solid waste disposal, noise abatement, or other environmental protection activities, surveys, or programs." This same provision gives Illinois EPA authority to promulgate regulations and enter into contracts as necessary to carrying out these functions. [415 ILCS 5/4(k)(2010)]
- Section 4(l) designates Illinois EPA as the "water pollution control agency" for the state <u>for all purposes</u> of the CWA. In addition, it authorizes Illinois EPA to take necessary action to secure for Illinois the benefits of the CWA and other federal acts. [415 ILCS 5/4(l)(2010)]
- Section 4(m) authorizes Illinois EPA to engage in planning processes and activities and to develop plans in cooperation with units of local government, state agencies and officers, and other appropriate person in connection with the jurisdiction or duties of each such unit, agency, officer, or person. [415 ILCS 5/4(m)(2010)]

The Illinois EPA's Nonpoint Source Management Program was initially approved by U.S. EPA on January 3, 1990. The Agency's program was approved for upgraded status on July 22, 1999 and for Enhanced Benefit Status on October 6, 2000. None of the relevant provisions of the Environmental Protection Act highlighted above have been amended since the program was last approved by U.S. EPA. In addition, no substantial changes have been made to the Illinois Nonpoint Source Management Program that would require a recertification of legal authority for the program.

Illinois EPA's Nonpoint Source Management Program (Program) is the road map Illinois follows to prevent and abate NPS pollution impairments of Illinois' surface and groundwater resources. In order for Illinois EPA and its partners to attain the mission and goals identified above, a comprehensive yet practical Program must be developed and implemented. The Program must be updated on a regular basis to address changes in state and federal guidelines and the social, economic and environmental issues related to the effective control of NPS pollution.

Chapter 8 of this document includes a previous Program review and gap analysis for the past (2001) Program. This includes a brief description of:

1. The 2001 Program,
2. U.S. EPA's Nine Key Elements provided in the recommendations to states for revisions of NPS Management Program, and
3. The location and how Illinois has addressed U.S. EPA's Key Elements within the 2013 Program.

Chapter 2 – State of Diversity – Water Resources, Watersheds, Land Use and Sources of NPS Pollution in Illinois 2.0

The state of Illinois encompasses 55,519 square miles of land and is home to 12,875,255 citizens. The area of Illinois that is covered by water is approximately 2,325 square miles; which is about 4 percent of the state[6].

The state is nearly 400 miles in length from its northern border to the southern tip. This distance supports a widely varying climate. Average yearly precipitation for Illinois varies from just over 46 inches at the southern tip to around 34 inches in the northern portion of the state. Normal annual snowfall exceeds 38 inches in the Chicagoland area, while the southern portion of the state normally receives less than 14 inches. Illinois averages around 51 days of thunderstorm activity a year, which ranks somewhat above average in the number of thunderstorm days for the United States.

Just under a quarter of the population of Illinois lives in Chicago, though over 65 percent of the population lives in what is known as Chicagoland, the metropolitan expanse that includes cities as far away as Rockford. Other major urban areas include 'Metro-East', the Illinois side of the Greater St. Louis Metropolitan Area, as well as the central urban areas of Champaign-Urbana, Bloomington-Normal, and Peoria.

Illinois' population is 5th largest in the United States. Manufacturing in the Chicago area makes up a significant portion of the economy, with world-leading industries in metal fabrication, electronic and transportation equipment, chemical products and machinery, as well as home to one of the publishing capitals of the world. Agriculture is also an important economic earner, with corn, soybean, hogs, and cattle leading the way.

With Chicago in the northeast, small industrial cities and great agricultural productivity in central and northern Illinois, and natural resources like coal, timber, and petroleum in the south, Illinois has a broad economic base. Illinois is a major transportation hub. The Port of Chicago connects the state to other global ports from the Great Lakes, via the St. Lawrence Seaway, to the Atlantic Ocean; as well as the Great Lakes to the Mississippi River, via the Illinois River.

Though Illinois lies entirely in the Interior Plains, it does have some minor variation in its elevation. In extreme northwestern Illinois, the Driftless Area, a region of unglaciated and therefore higher and more rugged topography, occupies a small part of the state. Charles Mound, located in this region, has the state's highest elevation above sea level at 1,235 feet. Illinois' lowest elevation is 279 feet above sea level and is located near the confluence of the Ohio and Mississippi Rivers in Alexander County. The lack of elevation difference does not equate to less NPS pollution as it is counteracted by areas of topography with exceedingly long slope lengths.

Our History…

In the 1810s, settlers began arriving from Kentucky. In 1818, Illinois achieved statehood. The state's population originally grew from south to north. Chicago was founded in the 1830s on the banks of the Chicago River, one of the few natural harbors on southern Lake Michigan.

Railroads and John Deere's invention of the self-scouring steel plow turned Illinois' rich prairie into some of the world's most productive and valuable farmlands. By 1900, the growth of industrial jobs in the northern cities and coal mining in the central and southern areas attracted immigrants from Eastern and Southern Europe.

[6] 2012 US Census

The combination of a diverse population, water resources, climate, topography, soils, and land use are a formula for NPS pollution requiring a wide variety of solutions. The programs and projects that control NPS pollution in the central agricultural areas will not control NPS pollution in the Chicagoland area, while the practices that can solve urban NPS pollution issues will not protect Illinois water resources from the vast agriculture and coal lands in the central and southern parts of the state. Differences in education, economic status, and religion also play a role in what programs and projects local communities and landowners are willing to adopt. Almost 95 percent of Illinois land is controlled by private ownership.

Even the process of watershed-based planning through community action is distinct in Illinois. This is mostly due to Illinois's diversity of communities. For instance, Chicago, along the shores of Lake Michigan, is the nation's third largest city. In 2010, 22.1 percent of Illinois' population lived in Chicago, 40.5 percent in Cook County and 64.8 percent in the counties of the Chicago metropolitan area: Will, DuPage, Kane, Lake and McHenry counties, as well as Cook County. The remaining population lives in the smaller cities and rural areas that dot the state's plains.[7]

A watershed planning effort in the Chicagoland area rarely emulates a planning effort in the more rural areas of the state. Stakeholders in the urban watershed might own, or rent, ¾ acre of land while agricultural watersheds have stakeholders that average 250 – 4,000 acres of land PLUS control of additional rental acreage. The average population density in Illinois is 231.1 persons per square mile[8] while the population density of Chicago is 11,842 per square mile.[9]

No-Till Farming with Horses!

Douglas County has the oldest old-order Amish communities in Illinois. Over 300 Amish families' farm there and most of the farms include a dairy operation. Farm operations are done with horses.

The Douglas County SWCD developed a horse drawn No-Till drill and fore cart rental program so that the Amish could try out No-Till drilled oats, hay, rye, wheat, soybeans, or pasture land.

In less than 3 years, over 60 agricultural producers have used the drill on 600 acres, saving over 2,400 tons of soil!

Illinois is dominated by massive urban and suburban expansion in the north, fertile prairies in the central part of the state, and more rugged landscapes of the southern tip.

The Mississippi River forms the western border with Iowa and Missouri, and the Ohio River forms the southern boundary with Kentucky.

Agriculture production in the state is also diverse. Certain areas of the state have large numbers of livestock farms, while other areas favor crop production. The farms also have a diversity of crops, with varying levels of vegetative cover that determines the crops ability for water quality protection. The amount of cropland tile drainage and irrigation also varies significantly throughout the state. Varying soil types also have an impact on the amount of agricultural fertilizers and pesticides needed for crop production.

[7] 2010 US Census
[8] 2010 US Census
[9] http://www.bestplaces.net/people/city/illinois/chicago

Water Resources Are Four Percent of Our State 2.1

Approximately four percent of Illinois is covered by water[10]. This includes rivers, streams, lakes, and wetlands, which are all considered waters of the state[11] and are protected under the Clean Water Act. This doesn't sound like very much water and it seems like it would be relatively easy to protect from sources of NPS pollution. However, if you stretch just the **known** stream miles (large rivers to intermediary streams) in Illinois into a straight line; that line would circle the earth's equator roughly 4.8 times! And this doesn't include the lakes, wetlands, nearshore area, or groundwater resources located in Illinois!

Surface Water Resources 2.2

Surface Water resources include streams, rivers, creeks, lakes, nearshore area, and wetlands.

Streams 2.21

Throughout this document, streams and rivers are collectively referred to as 'streams'. The total stream miles, including the state boundary rivers, listed for Illinois is 119,244[12]. Major rivers include the Big Muddy, Cache, Des Plaines, Embarras, Fox, Illinois, Kankakee, Kaskaskia, Little Wabash, Rock, Sangamon, and Vermilion Rivers. Approximately 911 miles of great rivers form the state's western (Mississippi River), eastern (in part, Wabash River), and southern (Ohio River) borders.

Inland Lakes 2.22

More than 91,400 inland lakes and ponds exist in Illinois. About three-fourths of Illinois' inland lakes are man-made, including dammed streams, side-channel impoundments, strip-mine lakes, borrow pits, and other excavated lakes. Natural lakes include glacial lakes, sinkhole ponds, and oxbow and backwater lakes. Major inland lakes include: Carlyle, Rend, Shelbyville, Crab Orchard, Clinton, Decatur and Springfield.

<u>Known</u> Stream Miles…

The **number** of stream miles, lake acres, and gallons of groundwater we use for the Program are a best professional estimate. An exact number is not available. However, the technology used (e.g., aerial photos and GIS mapping) to determine these measurements is improving and we get closer each year to an actual amount.

With this in mind, the target for NPS pollution control for our streams and even our lakes is a moving target.

Illinois EPA uses the U.S. Geological Survey's National Hydrography Dataset (NHD) as the basis for mapping streams in the state. For the 2010 cycle, the base layer used for mapping streams was upgraded from medium to high resolution. This resulted in a significant increase in the total stream miles considered in the *Illinois Integrated Water Quality Report and Section 303(d) List* (from 71,394 to 119,244 stream miles) due to the inclusion of many small first and second order streams.

[10] 2012 US Census
[11] U.S. Army Corps of Engineers
[12] Illinois Integrated Water Quality Report and Section 303(d) List, 2012, Illinois EPA – December 2012

Because of the state's geologic diversity, Illinois enjoys a great variety of lake types. Northern Illinois is home to most of the state's natural glacial lakes created thousands of years ago as glaciers advanced and receded. When a meandering stream cut a new and straighter channel, bends in the streambed were sometimes isolated, creating the generally horseshoe-shaped oxbow lake. Impoundments and reservoirs have been formed by obstructing the flow of a stream with a dam. They are often used for public water supplies in central and southern Illinois. Many ponds and stormwater detention basins have been created by excavation or by expansion of an existing lowland area.

Although there is no precise legal definition of a lake or pond in Illinois, over the years various agencies have used a general rule of thumb: lakes are non-free flowing (18 days or less residence time) bodies of water 6 or more acres in size, while ponds are less than 6 acres. Because of their small size, ponds can present special management challenges. Nevertheless, since lakes and ponds share many characteristics, for simplicity, both will be referred to as 'lakes' in this Program. It is estimated that there are 3,256 inland lakes which have a surface area of 6 acres or more.[13]

Lake Michigan 2.23

Illinois is bordered by one of the Great Lakes, Lake Michigan. The state has jurisdiction over approximately 1,526 square miles of open water and 63 miles of Lake Michigan shoreline, bordering Cook and Lake Counties in the northeastern corner of the state. Lake Michigan is the third largest of the Great Lakes and is the largest fresh water located entirely within the boundaries of the United States.

Nearshore 2.24

An important area within Illinois' portion of Lake Michigan is called the 'nearshore'. According to the Great Lakes Restoration Initiative Action , "The aquatic nearshore can be considered to begin at the shoreline and extend offshore to the depth at which the warm surface waters typically reach the bottom in early fall, generally 20m – 30m deep, and terrestrial nearshore areas range from narrow beaches to inland features influenced by Great Lakes processes."

Nearshore areas are impacted by NPS pollution in the same manner as inland lakes and wetlands. However, the impairments are not as easily detected because Lake Michigan is such a large body of water, and since many people believe the old saying of "Dilution is the Solution to the Pollution", these areas are not normally considered a high priority for protection or restoration by the general public. The area of Illinois that is considered to be nearshore would be approximately 63 miles in length with varying widths depending upon the topography of the lake bottom.

Wetlands 2.25

There are approximately 1,726,771 acres of shallow water wetlands in Illinois [14]. Palustrine, riverine, and lacustrine wetlands are found in Illinois along the margins of lakes and ponds, throughout river flood plains, and as isolated depressions.

In general terms, a wetland may be described as an area that is part land and part water. The legal definition of a wetland, however, is more technical. The State of Illinois defines a wetland in the Interagency Wetland Policy Act of 1989 as, "…*land that has a predominance of hydric soils and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions*". In this document, the term 'surface water' includes wetlands.

[13] Illinois Department of Natural Resources, 1999

[14] Updating the National Wetland Inventory for Illinois – Final Report 8/31/10, Ducks Unlimited

Wetland Facts…

- Illinois once contained more than eight million acres of wetlands.
- Illinois has lost as much as 90 percent of its original wetlands over the last 200 years.
- Approximately 1,726,771 acres exist today.
- Northeastern Illinois has the largest **concentration** of wetlands in the state.
- The largest **acreage** of wetlands is in the bottom-land forests & swamps along Illinois' maior rivers.

The term 'wetland' is all-inclusive. It includes anything ranging from a small area of ground that is relatively spongy for only a portion of the year, to a large area that is covered year-round by shallow water. As a result, there is not one all-encompassing wetland type. Swamps, marshes, bogs, fens, backwater lakes and sloughs, small streams, shallow ponds, lake and river shores, wet meadows and prairies, and bottomland hardwood areas are all considered wetlands. Each one has its own unique set of attributes and resulting functions; including wetlands that act as, or are built specifically, as a best management practice.

By their very nature, however, wetlands are dynamic resources. The characteristics of any wetland are constantly in flux. The biotic communities and physical qualities that classify a wetland are always changing. For example, through succession an area previously classified as Lacustrine may fill up from the gradual accretion of sediment and deposition of decaying organic material. After years of this activity, the physical changes to the ecosystem and the biotic community may cause the wetland to be more accurately classified as a Palustrine marsh. There are also many other ways wetlands undergo changes, and these natural and artificially induced changes make the monitoring and management of wetlands very difficult.

Groundwater Resources 2.3

Groundwater is a vital resource in Illinois. About 4.2 million people rely on groundwater for their drinking water. This is nearly 30 percent of the State's population. About 76 percent of the community systems in Illinois use groundwater. A major consumer of groundwater is public water supplies and private wells, consuming over 40 percent of the total groundwater used in Illinois each year. An estimated 400,000 private groundwater wells are used for potable water supplies throughout the State.[15]

Illinois sits upon a large reserve of groundwater resources. When quantifying groundwater, professionals discuss aquifers in terms of potential yield, depth, substrate materials and area encompassed. The number of wells and the capacity of water drawn is also a normally reported statistic.

To assess the groundwater resources of the state, the Illinois EPA utilizes three primary aquifer classes that were developed by O'Hearn and Schock[16]. These three principal aquifers are:

- sand and gravel,
- shallow bedrock, and
- deep bedrock aquifers.

Illinois Groundwater Numbers…

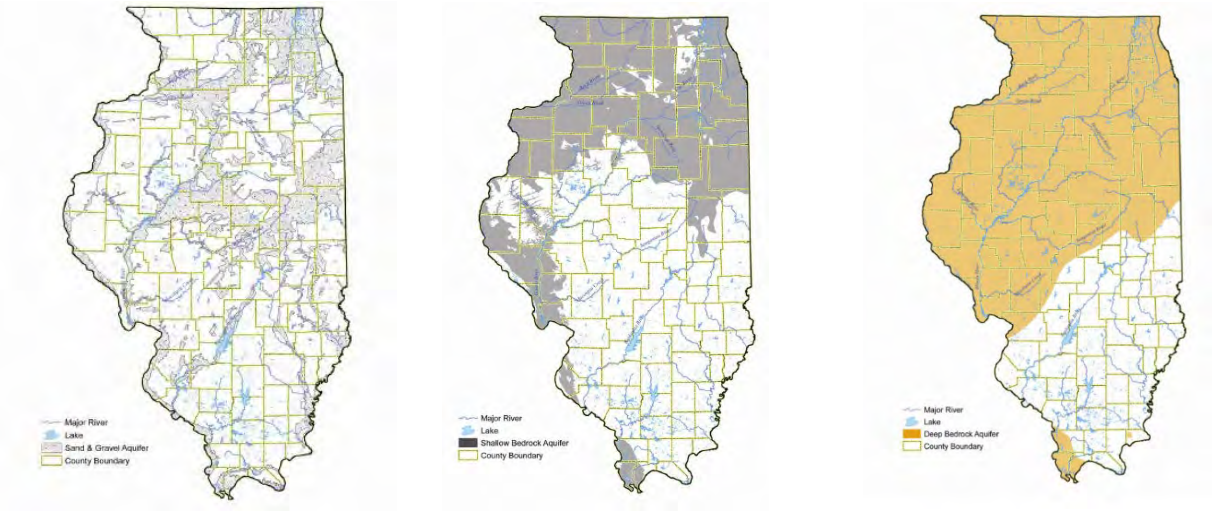
- about 3.8 million people use groundwater as a source of public water supply (PWS).
- there are 6,252 PWS, of which 4,864 are groundwater dependent.
- there are 1,746 community water supplies (CWS), of which 1,180 are groundwater dependent.
- there are approximately 4,100 non-community groundwater dependent systems that serve schools, parks, restaurants, and other businesses.
- approximately 400,000 residences are served by private wells.

[15] Illinois Integrated Water Quality Report and Section 303(d) List – Volume 2, 2012, Illinois EPA – December 2012
[16] O'Hearn and Schock, 1984

O'Hearn and Schock defined a principal aquifer as having a potential yield of 100,000 gallons per day per square mile and having an area of at least 50 square miles.

Approximately 58 percent (32,000 square miles) of the state is underlain by principal aquifers. Of these, about 33 percent (18,500 square miles) are major shallow groundwater sources. Of the 3,420 active CWS wells that withdraw from these aquifers, 46 percent (1,563) utilize sand-and gravel aquifer; 21 percent (732) utilize a shallow bedrock aquifer; 24 percent (807) utilize a deep bedrock aquifer, 5 percent (171) utilize a combination of two or more aquifers (mixed) and 4 percent (147) are undetermined.

Figure 2 - Sand and Gravel, Shallow Bedrock and Deep Bedrock Aquifers



Two Exceptions to the Rule…

Certain areas of Illinois have natural (e.g., karst) or man-made (e.g., storm sewers) systems that do not allow watershed drainage to fully function. Surface water in these areas might flow and outlet in one direction while the groundwater flows in another direction.

The truncated drainage process does not allow nature to filter out the pollutants before the water is delivered to the stream or lake. These systems also deliver water into the downstream drainage system faster than would normally occur – causing additional stress both during rainy and drought seasons.

Watersheds 2.4

It has been stated that we all live in a watershed. U.S. EPA defines a watershed as the area of land where all of the water that is under it or drains off of it goes into the same place.

Watersheds come in all shapes and sizes. They cross county, state, and national boundaries.

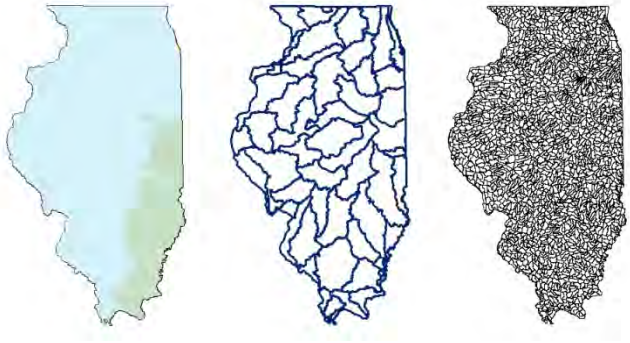
To provide a common identification approach for drainage areas, the U.S. Geological Survey established the original 8-digit Hydrologic Unit Code (HUC)[17]. In the late 1970s, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) initiated a national program to further subdivide HUCs into 11-digit watersheds for use in water-resource planning. These watersheds have since been sub-divided into successively smaller hydrologic units. The hydrologic units are arranged within each other, from the smallest (micro-watershed) to the largest (regions). Each hydrologic unit is identified by a unique numeric hydrologic unit code consisting of two to fourteen digits based on the levels of classification in the hydrologic unit system.

[17] U.S. Geological Survey, 1974

Hydrologic Units 2.41

Illinois is located within three regions, including the Great Lakes (04), Upper Mississippi (07), and the Ohio (05).

Figure 3 - Region, Major River Basin and Sub-sub-Watershed Levels



Illinois has 51 major river basins; these are also known as the 8-digit hydrologic unit codes (HUC). Some of these basins include the border rivers – such as the Mississippi and the Ohio. These 51 major river basins can be further dissected into 409 watersheds, also known as 10-digit HUCs. Or even farther down to 1,889 sub-sub-watersheds, also known as 12-digit HUCs.

Planning at the watershed scale, and smaller, is important when trying to protect and improve water quality through the control of NPS pollution. According to U.S. EPA, the watershed-based plan (WBP) must address a large enough geographic area so that its implementation will address all of the sources and causes of impairments and threats to the waterbody in question. These plans should include mixed ownership watersheds when appropriate to solve for the water quality problems. While there is no rigorous definition or delineation for this concept, the general intent is to avoid single segments or other narrowly defined areas that do not provide an opportunity for addressing a watershed's stressors in a rational and economic manner. At the same time, the scale should not be so large as to minimize the probability of successful implementation.[18] Illinois EPA recommends that watershed-based plans be developed at the 12-digit HUC level.

Table 1 - Example of Hydrologic Unit Codes in Illinois

Scale	Classification (digits)	Number in Illinois	Examples for Illinois	HUC
Region	2	3	Upper Mississippi River	07
Subregion	4	10	Illinois River	0713
Basin (Accounting Unit)	6	13	Upper Illinois River	071300
Watershed (Cataloging Unit)	8	51	Vermilion River (450,000 acres or less)	07130002
Sub-watershed	10	409	South Fork Vermilion (250,000 acres or less)	0713000202
Sub-subwatershed	12	1,889	Indian Creek (50,000 acres or less)	071300020205
Micro-watershed*	14	unknown	Unknown (~35,000 acres)	07130002020501

*Very few Micro-watersheds in Illinois have 14-digit HUCs identified. Delineations of individual micro-watersheds have been made, but a formal effort to correctly label and capture the HUC codes on an official level is not currently completed.

[18] Federal Register/Vol. 68, No. 205/ Thursday, October 23, 2003/Notices

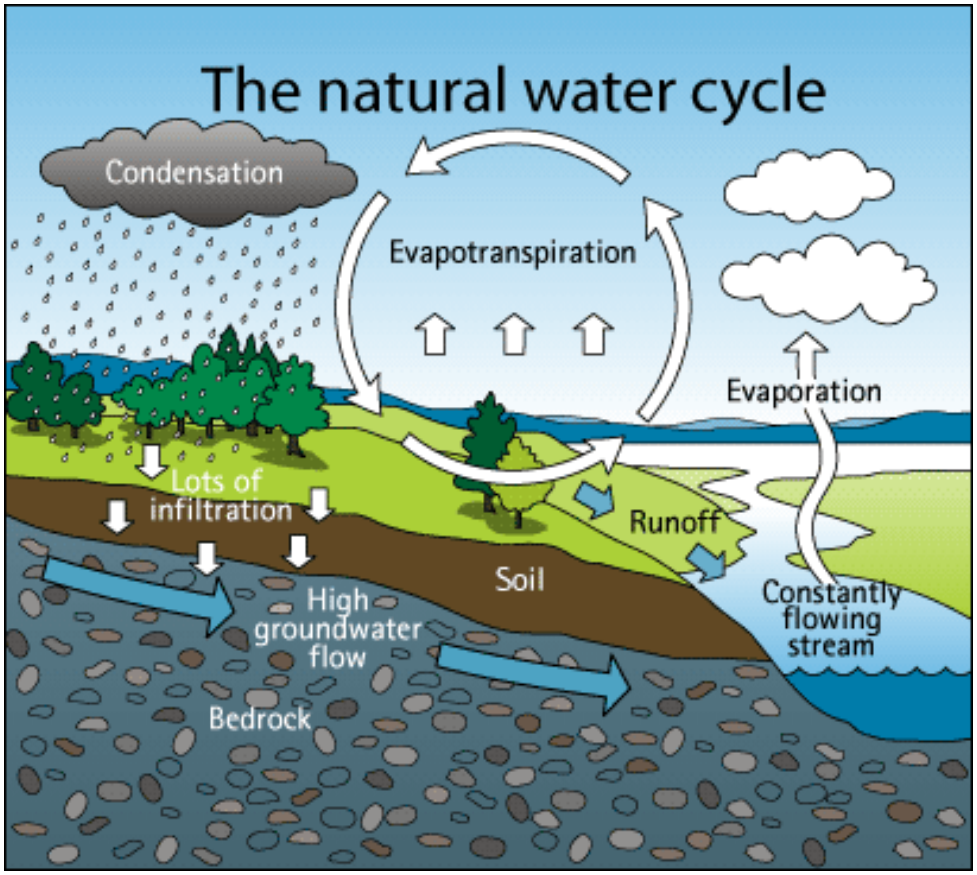
Water Cycle 2.5

The amount of NPS pollution that occurs depends upon the amount of precipitation, the soils and land use and the BMPs implemented to protect the land. Northern Illinois will see roughly 34 inches of rain annually, while southern Illinois will see 48 inches of rain annually. The duration and intensity of storms also impacts surface runoff rates.

The extent of a storm and the distribution of rainfall during the storm, are two major factors which affect the peak rate of runoff. The storm distribution can be thought of as a measure of how the rate of rainfall (intensity) varies within a given time interval. If a certain amount of precipitation was measured in a given 24-hour period, this precipitation may have occurred over the entire 24-hour period or in just one hour. The duration of the rain (and the peak intensity) directly affect the runoff rates.

The size of the storm is often described by the length of time over which precipitation occurs, the total amount of precipitation occurring and how often this same storm might be expected to occur (frequency). Thus, a 10-year 24-hour storm can be thought of as a storm producing the amount of rain in 24 hours with a 10 percent chance of occurrence in any given year.[19]

Figure 4 – The Natural Water Cycle. Source - Auckland Council



[19] http://rpitt.eng.ua.edu/Workshop/WSErorionControl/Module4/Module4.htm#_Introduction:_Hydrology_for

Conditions of Illinois' Water Resources 2.6

The *Illinois Integrated Water Quality Report and Section 303(d) List*, developed by Illinois EPA's Bureau of Water and published every two years, describes the conditions of Illinois' surface water and groundwater resources. Prior to circulation, Illinois EPA submits the document to U.S. EPA for review and approval. As the 2014 *Illinois Integrated Water Quality Report and Section 303(d) List* was only recently drafted for public comment, for purposes of the Program, we will rely upon the *Illinois Integrated Water Quality Report and Section 303(d) List, 2012* (2012 IR) for details regarding the quantity and quality of Illinois surface water and groundwater resources. The 2012 IR uses a combination of monitoring programs to identify surface water and groundwater resources that have been impaired by point and NPS pollution. The 2012 IR documents the potential sources and causes of impairment for specific waterbody segments.

Resource quality conditions are assessed in terms of the degree to which waters attain 'beneficial uses', also called 'designated uses'. Pollution control programs are designed to protect individual designated uses, including aquatic life, indigenous aquatic life, primary contact (swimming), public and food processing, water supply (drinking water), secondary contact, aesthetic quality, and fish consumption. Each state has the responsibility to set water quality standards that protects these uses. In Illinois, the Illinois Pollution Control Board (IPCB) is the regulatory body responsible for establishing water quality standards.

The vast amount of water resources in Illinois does not allow every waterbody segment to be monitored. For those waterbody segments that are monitored, the degree of support (attainment) of a designated use is determined by an analysis of various types of information, including biological, physicochemical, physical habitat, and toxicity data. When sufficient data are available, each applicable designated use in each segment is assessed as Fully Supporting (good), Not Supporting (fair), or Not Supporting (poor). Waters in which at least one applicable use is not fully supported are called 'impaired'.

Streams 2.61

For the 2012 IR, a total of 17,476 (14.7%) of the 119,244 stream miles in Illinois were assessed for attainment of at least one designated use.

Table 2 - Aquatic Life Use Assessments for Streams

IR Reporting Year	Use Impairments						No Use Impairments		Total Assessed		Waters Needing Additional NPS Corrective Action	
	NPS Only Of Assessed		NPS & Point Of Assessed		Point Source Only Of Assessed		Of Assessed		Of Assessed		Of Assessed	
	Miles	%	Miles	%	Miles	%	Miles	%	Miles	%	Miles	%
1992	4,657	33.3	3,034	21.7	79	0.6	6,211	44.4	13,981	100.0	7,691	55.0
1994	4,729	33.4	2,464	17.4	64	0.5	6,893	48.7	14,150	100.0	7,193	50.8
1996	12,811	36.4	3,203	9.1	3,024	8.6	16,137	45.9	35,175	100.0	16,014	45.5
1998	9,561	33.6	2,882	10.1	115	0.4	15,890	55.9	28,448	100.0	12,443	43.7
2000	3,604	23.6	1,742	11.4	97	0.6	9,861	64.4	15,304	100.0	5,346	35.0
2002	3,325	20.9	1,798	11.3	116	0.7	10,694	67.1	15,933	100.0	5,123	32.2
2004	3,471	23.0	1,429	9.5	170	1.1	6,499	43.1	11,569	***76.7	4,900	32.5
2006	6,856	44.5	1,529	9.9	93	0.6	6,946	45.0	15,424	100.0	8,385	54.4
2008*	7,367	47.3	1,446	9.3	84	0.5	6,672	42.9	15,569	100.0	8,813	56.6
2010**	7,811	45.9	1,398	8.2	101	0.6	7,701	45.3	17,010	100.0	9,209	54.1
2012**	8,673	49.1	1,384	7.9	78	0.4	7,419	52.5	17,476	100.0	10,057	57.5

* Partially Approved by U.S. EPA

** Not Yet Approved by U.S. EPA

As shown above, a total of 10,057 miles (57.5%) of the assessed streams in Illinois have been identified as 'perennial waters within the State which, without additional action to control NPS pollution, cannot reasonably be expected to obtain or maintain applicable water quality standards or the goals and requirements of the CWA.

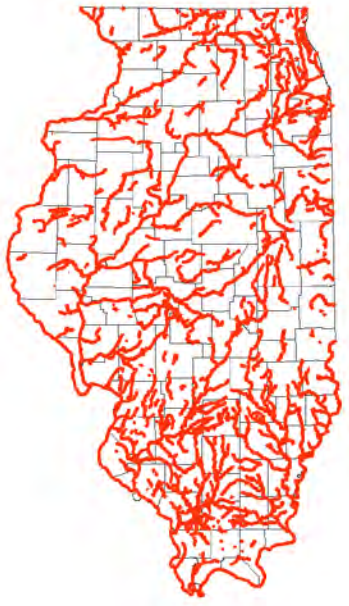


Figure 5 - NPS Impaired Streams

Lakes 2.62

For the 2012 IR, a total of 149,792 (47.0%) of the 318,477 lake acres in Illinois were assessed for aquatic life use support.

Table 3 - Aquatic Life Use Assessments for Lakes

IR Reporting Year	Use Impairments						Impairments		Total Assessed		Waters Needing Additional NPS Corrective Action	
	NPS Only Of Assessed		NPS & Point Of Assessed		Point Source Only Of Assessed		Of Assessed		Of Assessed		Of Assessed	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
1992	83,920	40.8	103,138	50.0	47	0.0	18,976	9.2	206,081	100.0	187,958	90.8
1994	67,670	36.0	62,052	33.1	0	0.0	57,877	30.9	187,599	100.0	129,722	69.1
1996	74,105	39.4	56,619	30.1	0	0.0	57,319	30.5	188,043	100.0	130,724	69.5
1998	78,537	41.8	63,358	33.6	0	0.0	46,393	24.6	188,288	100.0	141,895	75.4
2000	86,310	55.8	43,853	28.3	0	0.0	24,632	15.9	154,795	100.0	130,163	84.1
2002	95,585	63.5	44,059	29.2	0	0.0	11,063	7.3	150,707	100.0	139,644	92.7
2004	84,079	54.6	43,309	28.1	0	0.0	9,151	5.9	136,539	***88.6	127,388	82.7
2006	122,602	83.5	20,665	14.1	0	0.0	3,465	2.4	14,673	100.0	143,268	97.6
2008*	104,692	71.0	39,839	27.1	0	0.0	2,830	1.9	147,361	100.0	144,531	98.1
2010**	101,480	68.5	45,250	30.6	0	0.0	1,284	0.9	148,014	100.0	146,730	99.1
2012**	103,666	69.2	44,147	29.5	0	0.0	1,979	1.3	149,792	100.0	147,812	98.7

* Partially Approved by U.S. EPA
** Not Yet Approved by U.S. EPA
*** 2004 – Some sources were not classified as either point or nonpoint

As shown above, a total of 147,812 acres (98.7%) of the assessed lakes in Illinois have been identified as 'perennial waters within the State which, without additional action to control NPS of pollution, cannot reasonably be expected to obtain or maintain applicable water quality standards or the goals and requirements of the CWA.

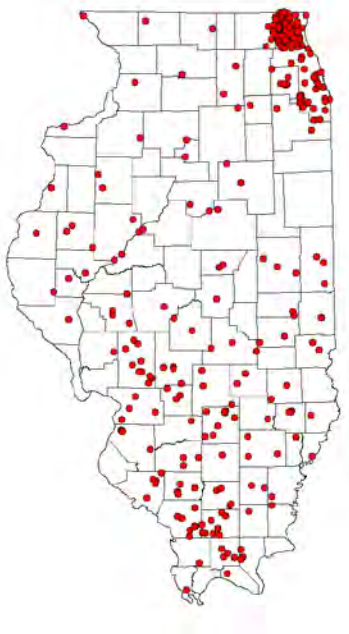


Figure 6 - NPS Impaired Lakes

Lake Michigan 2.63

For the 2012 IR, a total of 196 of the 1,526 square miles (12.8%) of Lake Michigan open waters in Illinois' jurisdiction were assessed for the degree of aquatic life use support. All 196 square miles are fully supporting aquatic life designated use.

A total of 2.58 (98.3%) of the 2.6 square miles of Lake Michigan bays and harbors in Illinois' jurisdiction were assessed for aquatic life use support. Only 0.06 square miles are not supporting aquatic life designated use. Contaminated sediments and urban runoff/storm sewers were identified as the sources of NPS pollution impacting Lake Michigan bays and harbors in Illinois. Cadmium, chromium, copper, lead, phosphorus, and zinc were identified as the causes of Lake Michigan bays and harbor not attaining full support ratings.

Lake Michigan includes a total of 63 shoreline miles, forming the northeastern portion of Illinois' border. All 63 miles were rated as not supporting fish consumption and primary contact designated uses. Atmospheric deposition, source unknown, combined sewer overflows, and urban runoff/storm sewers represent the NPS sources of pollution affecting the Lake Michigan shoreline in Illinois. Escherichia coli, mercury, and polychlorinated biphenyls were identified as the causes of Lake Michigan shoreline not attaining full support ratings.

Wetlands 2.64

For the 2012 IR, Illinois EPA partnered with Illinois Natural History Survey staff that work within the state of Illinois' Critical Trends Assessment Program (CTAP) to use their program as the basis for monitoring wetland resources throughout the state. CTAP monitors the health of various wetland resources throughout the state. Because it is impractical to individually sample every wetland in the state, a probabilistic monitoring design is used by CTAP to provide a reasonable determination of the health of the state's wetland resources, while also being economically feasible, logistically practical, and statistically valid. This program yields comprehensive data and information that will be used to 1) establish a baseline of wetland resources and conditions from which to determine trends and changes in quantity and quality over time, 2) determine reference conditions for the various classes of Illinois wetlands, 3) develop and maintain a database which can provide for management and compensatory mitigation decisions, 4) provide information from which to evaluate wetlands restoration, creation, mitigation, and protection programs, 5) incorporate wetland summary information into this, and future, Integrated Reports, and 6) provide necessary information required to develop applicable water quality standards.

Future = Wetland Use Assessment According to the Clean Water Act

Upon completion of the Wetland Index of Biotic Integrity (w-IBI) developed by the Illinois Natural History Survey (INHS), Illinois EPA will work with INHS and U.S. EPA Region 5 to understand how best to incorporate the w-IBI into a methodology to assess attainment of wetland use(s) in the 2016 Integrated Report. This will be the first Integrated Report that will truly assess wetland uses as described in the Clean Water Act.

Based on cursory data analysis, wetlands in Illinois were generally found to be well populated with native plant species, but high-quality wetlands have fewer non-native species (see figures 7 -10). A much more reliable indicator of Ecological Integrity is illustrated with the conservation value of high-quality wetlands, based on the Floristic Quality Index (FQI), which was much higher in reference than in randomly selected sites, and remained stable across sample periods. A high number (29%, data not

shown) of randomly selected sites were dominated by reed canary grass (Phalaris arundinacea), which is a non-native, invasive plant species that usually dominates a wetland to the exclusion of other plant species. CTAP botanists also observed that many wetland sites were small in size and subject to disturbances such as artificial drainage, mowing, herbicide drift, or past attempts at cultivation and farming. Cattle also actively grazed some sites. An analysis of wetland size and adjacent land cover and use is ongoing.

Figure 7 - Wetland Plant Species Richness

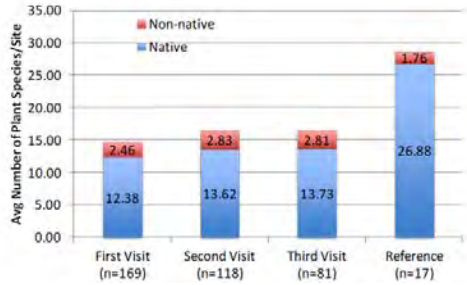


Figure 8 - Forested Wetland Species Richness

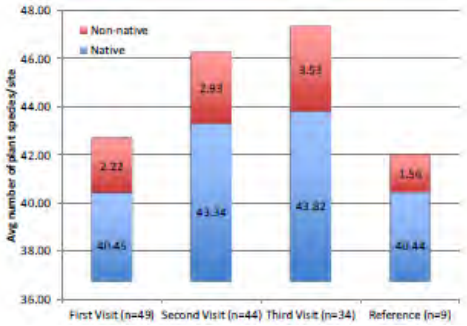


Figure 9 - Wetland Plant Conservation Value

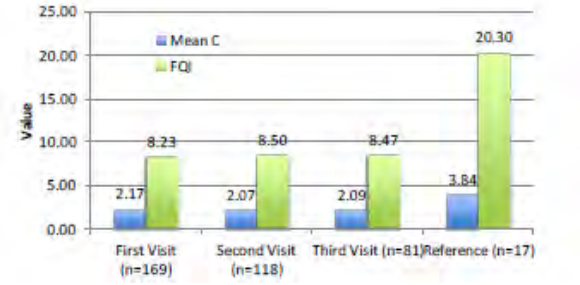
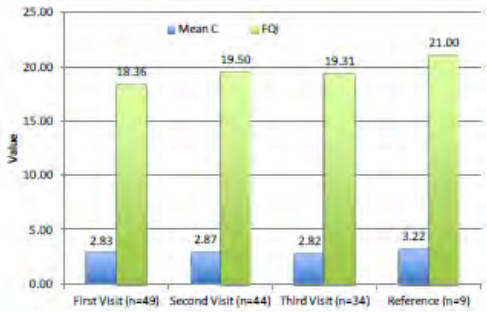


Figure 10 - Forested Wetland Conservation Value



Groundwater 2.65

Groundwater contamination can result from a variety of accidental mishaps and/or the intentional disregard for the environment. Examples include the improper use, storage, transport or disposal of chemicals; accidental chemical spills; and unintentional leaching of agricultural chemicals.

To assess groundwater quality, the Illinois EPA operates an ambient network of community water supply (CWS) network wells consisting of 354 fixed locations. For the 2012 IR:

- 235 wells within this network were rated as Fully Supporting ('good'),
- 91 were rated as Not Supporting ('fair'), and
- 28 were rated as Not Supporting ('poor').

Results of 132 samples collected from October 2008 through September 2010 from the Illinois Department of Agriculture's dedicated pesticide monitoring network wells indicate that parent pesticides (the term pesticides includes herbicides) were detected in ten (7.9%) of the 132 samples. Atrazine was detected in five samples, metolachlor was detected in three samples, and acetochlor and simazine were each detected in one sample. None of those samples had concentrations above levels of health concern.[20]

[20] http://www.epa.state.il.us/water/tmdl/303-appendix/2012/iwq-report-ground-water.pdf

Table 4 – Partial List of the Most Prevalent Potential Sources of Groundwater Contamination
*** Some are considered as both point and nonpoint source pollution.**

Contaminant Sources	Occurrence of Potential Source	Contaminants
Agricultural Activities		
Agricultural Chemical Facilities	587	A, B, E
Animal Feedlots	66	E, J, K, L
Fertilizer Applications	323	A, B, E
Irrigation Practices	63	A, B, E
Pesticide Applications	174	A, B, E
Storage and Treatment Activities		
Land Application	14	A, B, D, E, G, H, J
Material Stockpiles	683	G, H
Surface Impoundments	236	E, G, H, J, K, L
Waste Piles	231	E, G, H
Waste Tailings	9	G, H, I, J
Disposal Activities		
Landfills	40	C, D, G, H, J
Septic Systems	6,290	E, G, H, J, K, L
Other		
Mining and Mine Drainage	19	G, H, M
Salt Storage and Road Salting	76	G
Urban Runoff	1,184	A, B, D, E, G, H, J, K, L

* The basis for the analysis provided in this table is a combination of existing monitoring data and potential source of groundwater contamination data from the completed CWS well site survey reports which Illinois EPA has conducted over the past 20 years.

** Occurrences are based solely on the Illinois EPA Groundwater Section's existing databases. This is only an estimate and should not be used as anything more than an approximation of potential sources of contamination to CWS wells in Illinois.

*** Contaminants: A. Inorganic pesticides, B. Organic pesticides; C. Halogenated solvents; D. Petroleum compounds; E. Nitrate; F. Fluoride; G. Salinity/brine; H. Metals; I. Radio-nuclides; J. Bacteria; K. Protozoa; L. Viruses; and M. Other

Research on CWS wells in Northeastern Illinois has determined that road salting is the most threatening potential source causing and contributing to chloride contamination above background levels in that part of the state. Approximately 16 percent of the samples collected from CWS wells in Northeastern Illinois during the 1990s had chloride concentrations greater than 100 mg/L. However, prior to 1960 – before extensive road salting practices, the median values of groundwater samples collected from Northeastern Illinois were less than 10 mg/L.[21]

[21] Kelly and Wilson, 2004

Karst Lands Impact Illinois' Groundwater Resources[22] 2.65.1

The term 'karst' refers to a landscape that typically is pockmarked with sinkholes, may be underlain by caves, and has many large springs that discharge into stream valleys. Karst landscapes form when water from rain and snow melt seeps through a relatively thin soil cover and into fractured and soluble bedrock (limestone or dolostone).

As water moves through the fractured rock, it slowly (over thousands to tens of thousands of years) dissolves and enlarges pathways along the fractures and bedding planes of the rock.

Once these underground drainage pathways have been established in the bedrock, surface-water drainage is diverted underground. As a result, karst areas generally lack the network of surface streams seen in most other areas. In karst areas, surface runoff drains into sinkholes and flows through solution-enlarged conduits ('caves' if they are large enough for a human to crawl into) in the underlying rock until it is discharged through springs into surface streams at lower elevations.

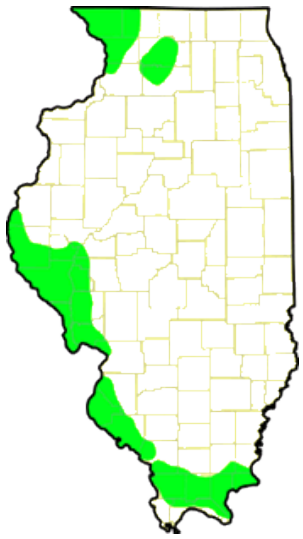


Figure 11 - Karst Areas of Illinois - Source - ISGS Prairie Research Institute

Karst Regions of Illinois 2.65.2

Two conditions are necessary for karst landscapes (green areas on map): 1) soluble rocks, generally limestone and dolostone, must lie at or near the surface of the ground; 2) the loose soil covering the soluble bedrock must be thinner than about 50 feet.

In the northern one-third of Illinois, the soluble bedrock strata in which karst features form are mostly dolostone made of the mineral dolomite (calcium-magnesium carbonate). In this area, the karst landforms tend to be comparatively small – sinkholes are generally round and measure a few tens of feet in diameter. Roadcuts along major highways expose solution-enlarged crevices in the rocks, many of which are completely or partially filled with soil.

In the southern two-thirds of Illinois, the soluble bedrock strata are mostly limestone, made of the mineral calcite (calcium carbonate). Because limestone is somewhat more soluble than dolostone, sinkholes and other karst landforms tend to be more numerous and larger here.

Some sinkholes in St. Clair, Monroe, and Randolph Counties (southeast of St. Louis, Missouri) are more than half a mile in diameter. Irregularly shaped compound sinkholes, generally formed by the growth and merger of several round sinkholes, also are more common here than in northern Illinois.

Contamination Susceptibility 2.65.3

Groundwater in karst landscapes is susceptible to contamination because of the fractured and honeycombed bedrock and the absence of a thick soil cover. Recharge to the groundwater does not benefit from the slow filtering that occurs when rain and snow melt seep through thick sequences of clay-rich glacial till or low- permeability bedrock. In karst areas, recharge to the water table is rapid (often occurring within minutes or a few hours of a rainfall) and can carry with it contaminants from the surface that may include effluent from private septic systems, agricultural chemicals, animal and livestock wastes, motor oil, industrial waste, and garbage. Consequently, in karst landscapes the risk of groundwater contamination from residential, agricultural, or industrial development is very high.

[22] S.V. Panno and C.P. Weibel (201). ©2013 University of Illinois Board of Trustees. All rights reserved. For permission information, contact the Illinois State Geological Survey. Panno and Weibel 2010, para.1-3; 6-9 and 10

Priority Waters for Protection 2.7

The Program's long-term goals include not only the restoration of waterbodies impaired by NPS pollution, but also the protection of all beneficial uses of Illinois' surface and groundwater resources from the impairment of NPS pollution. All unimpaired waterbodies in the state have the potential to be impaired by NPS pollution unless actions are taken and maintained to protect them. The Program includes two types of water resources that are a priority for protection activities. They include waterbodies that are currently monitored and still support all beneficial uses but have shown a downward trend that may not allow continued use support. The second type are waterbodies located within areas of the state undergoing significant land use changes that have potential to significantly impact water quality, such as intense urbanization.

Downward Trending Waterbodies 2.71

Illinois EPA and its partners have monitored inland lake and stream segments for over 30 years. The 2012 IR includes a Trends Assessment (Assessment) for many of the streams and inland lakes that have been sufficiently monitored. The Assessment was conducted to determine if the ecological health of the monitored inland lakes and stream segments had changed over time. The 2012 IR includes a summary of the Assessment findings and the data and processes used to develop the Assessment.

Those inland lakes and streams that are listed in the Assessment as showing a decrease in ecological health are Priority Waters for Protection for the Program and are a high priority for activities that prevent NPS pollution from occurring. The specific waterbody segments are listed in Tables 5 and 6.

Table 5 - Priority Waters for Protection – Lakes

Lake Name	PWS	Site Code	HUC	County
Altamont New	*	RCJ-1	0512011404	Effingham
Apple Canyon		RMJ-1	0706000506	JoDaviess
Catherine		RTD-1	0712000610	Lake
Cedar	*	RNE-1	0714010612	Jackson
Crab Orchard		RNA-1	0706000506	Williamson
Devils Kitchen		RNJ-1	0714010608	Williamson
George		RML-1	0708010105	Rock Island
Glen O. Jones		RAF-1	0514020403	Saline
Homer		RBO-1	0512010906	Champaign
Horseshoe		RIA-1	0714010803	Alexander
Kinkaid	*	RNC-1	0714010611	Jackson
Kollar		VTZE-1	0712000612	Cook
Mattoon	*	RCF-1	0512011401	Coles, Cumberland, Shelby
Mill Creek Pond		RBW-1	0512011110	Clark
Olney East Fork	*	RCC-1	0512011406	Richland
Otter	*	RDF-1	0713001202	Macoupin
Paris Twin East and West	*	RBL-1 and RBX-1	0512011105	Edgar
Pierce		RPC-1	0709000501	Winnebago
Pinckneyville	*	RNH-1	0714010610	Perry
Pittsfield		RDP-1	0713001108	Pike
Shabbona		VTU-1	0712000705	DeKalb
Shadow		REZM-1	0713000602	Champaign
Spring North		SDZM-1	0713000306	Tazewell
Twin Oaks		REZL-1	0713000602	Champaign
Vandalia	*	ROD-1	0714020206	Fayette
Virginia		SGB-1	0712000405	Cook
Washington County	*	RNM-1	0714010610	Washington

*denotes Public Water Supply

Table 6 - Priority Waters for Protection - Streams

Stream Name	PWS	Site Code	HUC	County
Beaucoup Creek		NC-09	0714010610	Perry, Washington
Big Creek		DJB-18	0713000513	Fulton
Big Ditch		EZU-01	0713000602	Champaign
Big Four Ditch		BPKP-05	0512010901	Ford, Livingston
Brush Creek		EOCA-01	0713000706	Macoupin, Sangamon
Cedar Fork		DJFD-01	0713000509	Knox, Warren
Coal Creek		DJE-02	0713000510	Fulton
Cypress Creek		IXM-04	0714010801	Union
E. Fork LaMoine River	*	DGL-04	0713001003	McDonough
E. Fork LaMoine River		DGL-03	0713001003	McDonough
Embarras River		BE-13	0512011201	Douglas
Grindstone Creek		DGIA-03	0713001006	McDonough
Hickory Grove Ditch		DKB-01	0713000408	Tazewell
Indian Creek		JQA-01	0714010102	Macoupin, Madison
Kaskaskia River		O-35	0714020102	Champaign
Kickapoo Creek		BEN-01	0512011206	Coles
Kishwaukee River		PQ-13	0709000602	McHenry
Lake Fork		EIG-01	0713000903	Logan
Lake Fork		OW-01	0714020101	Douglas, Piatt
LaMoine River		DG-07	0713001007	Hancock, McDonough
Langan Creek		FLE-01	0712000212	Iroquois
Little Indian Creek		DTAB-01	0712000705	DeKalb
Littlers Creek		DJG-01	0713000510	Fulton, Knox
Mackinaw River		DK-16	0713000405	McLean, Woodford
Mackinaw River	*	DK-17	0713000405	McLean, Woodford
Mackinaw River		DK-20	0713000403	McLean
Mackinaw River	*	DK-21	0713000401	Ford, McLean
Mary's River		II-02	0714010502	Randolph
N. Fork Embarras River		BEF-01	0512011210	Clark, Edgar
North Creek		DJJB-03	0713000505	Knox
Panther Creek - South		NCE-02	0714010610	Perry
Piasa Creek		JV-01	0711000902	Jersey, Madison
Pike Creek		DSJA-01	0713000204	Livingston
Pipestone Creek		NCDA-01	0714010609	Perry
Prairie DuPont Creek		JMAA-01	0714010109	St. Clair
Robinson Creek		OS-03	0714020108	Shelby
Salt Creek		EI-06	0713000904	DeWitt
Seven Mile Creek		NJC-01	0714010601	Jefferson
Silver Creek		OD-09	0714020405	St. Clair
Walnut Creek		DKJ-01	0713000504	Knox, Peoria, Stark
West Okaw River		OT-03	0714020106	Moultrie

*denotes Public Water Supply

In addition to the specific waterbodies listed above, to further protect both unassessed and unimpaired waterbodies within quickly urbanizing areas of the state these too are a Priority for Protection based on the 2012 IR or most recent Integrated Report.

Land Use 2.8

Lakes and streams are a reflection of their watersheds. Action, and in-action, taken within the watershed, can either improve or degrade the local water quality. Land use is a major factor influencing the amount and sources of NPS pollution generated within a watershed.

Land use in Illinois includes agriculture, urban, forestry, wetland, water, transportation, mining, and a wide variety of other activities. Land use is linked to our home, work and play. The Illinois Department of Agriculture estimates that 76,000 farms cover more than 28 million acres – nearly 80 percent of the state's total land area. It is estimated that at least 90 percent of Illinois is in private ownership.[23]

> *"Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect."*
>
> Chief Seattle
>
> *We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect".*
>
> Aldo Leopold

Many people live, work, and play without considering how their actions, regarding their property, may affect their local resources. They may subconsciously consider their property as 'islands' and that it doesn't have any impact on other land (offsite). At the same time, they expect that their neighbor's property will not damage their property or impede their lifestyle. The water quality impairments documented in Illinois show that this belief is incorrect. And although the saying "good fences make good neighbors" – may solve some of the neighborhood problems, it will never solve the NPS pollution problem. People need to accept that their actions and the actions of their neighbors can combine and exacerbate natural processes and cause significant water quality problems in their watershed.

Many individual actions or activities would not cause a significant NPS pollution problem. One house and driveway will increase stormwater runoff, but the local landscape can lessen the problem before it impacts the stream. However, a subdivision of 100 houses, all with driveways, sidewalks, turf grass, and road systems delivers an amount of stormwater that cannot be absorbed by the existing surroundings. On agricultural fields, sheet erosion from one field may not seem to deliver much sediment to the local lake or stream, but erosion from dozens of fields quickly leaves a depth of sediment that significantly impacts our water resources. Individuals need to accept that they are part of a larger community, the watershed community, and that they do not act alone; their actions are being compounded by their neighbors.

Illinois is a diverse state and our land use trends reflect that diversity. The current level of water quality impairments by NPS pollution reflects many of our land use decisions.

Illinois has three major geographical divisions. Northern Illinois is dominated by the Chicago metropolitan area; the city of Chicago, its suburbs, and the adjoining exurban area into which the metropolis is expanding. As defined by the federal government, the Chicago metro area includes several counties in Illinois, Indiana, and Wisconsin. Chicago is a cosmopolitan city, densely populated, industrialized, a transportation hub of the nation, and settled by a wide variety of ethnic groups with a population of 9.5 million people. The city of Rockford, the fourth largest metropolitan area, and the state's third largest city, sits along Interstates 39 and 90 some 75 miles northwest of Chicago. The Quad Cities region, located along the Mississippi River in northern Illinois, had a population of 382,630[24].

[23] Illinois Department of Agriculture - www.agr.state.il.us/about/agfacts.html
[24] 2012 US Census

Southward and westward, the second major division is Central Illinois, an area of mostly prairie. Known as the Heart of Illinois, it is characterized by small towns and mid-sized cities. The western section (west of the Illinois River) was originally part of the Military Tract of 1812 and forms the conspicuous western bulge of the state. Agriculture, particularly corn and soybeans, as well as educational institutions and manufacturing centers, figure prominently. This area of the state has the most tile drainage systems installed. Cities include Peoria, the third largest metropolitan area in Illinois at 380,447[25]; Springfield, the state capital; Quincy; Decatur; Bloomington-Normal; and Champaign-Urbana.

The third division is Southern Illinois, comprising the area south of U.S. Route 50, including Little Egypt, near the juncture of the Mississippi River and Ohio River. Southern Illinois is the site of the ancient city of Cahokia, as well as the site of the first state capital at Kaskaskia, which today is separated from the rest of the state by the Mississippi River. This region can be distinguished from the other two by its warmer climate, different variety of crops (including some cotton farming in the past), more rugged topography (due to the area remaining unglaciated during the Illinoian State, unlike most of the rest of the state), as well as small-scale oil deposits and coal mining. The Illinois suburbs of St. Louis comprise the second most populous metropolitan area in Illinois with over 700,000 inhabitants, and are known collectively as the Metro-East. The other significant concentration of population in Southern Illinois is the Carbondale-Marion-Herrin, Illinois Combined Statistical Area centered on Carbondale and Marion, a two-county area that is home to 126,745[26] residents. A portion of southeastern Illinois is part of the extended Evansville, Indiana Metro Area, locally referred to as the Tri-State with Indiana and Kentucky. Seven Illinois counties are in the area.

The diversity of Illinois' citizens and its landscape are mirrored in the sources of NPS pollution in Illinois. Waters of the state are monitored and assessed for their ability to meet specific designated uses. For waters that are determined to be 'impaired', Illinois EPA attempts to identify the sources related to the impairment. Sources of NPS pollution in Illinois include: agriculture, construction, hydrologic modification, resource extraction, and urban runoff. The following pages provide additional detail by source. Note – while some categories are easily definable as either NPS or point source, some sources have the potential to be both.

[25] 2012 US Census
[26] 2012 US Census

NPS – Source – AGRICULTURE 2.81

The 2012 IR identified the following impaired waters:

Sources	Lake Acres	Stream Miles
Agriculture	9,371	1,081
Animal Feeding Operations (NPS)	25,355	657
Crop Production	102,174	2,396
Irrigated Crop Production	-	50
Livestock Grazing and Feeding Operations	704	252
Managed Pasture Grazing	-	3
Non-irrigated Crop Production	-	85
Pesticide Application	925	22
Specialty Crop Production	71	-

Causes	Crops	Livestock
Dissolved Oxygen		X
Fecal Coliform		X
Nutrients	X	X
Sedimentation/Siltation	X	
Suspended Solids	X	
Total Suspended Solids		X

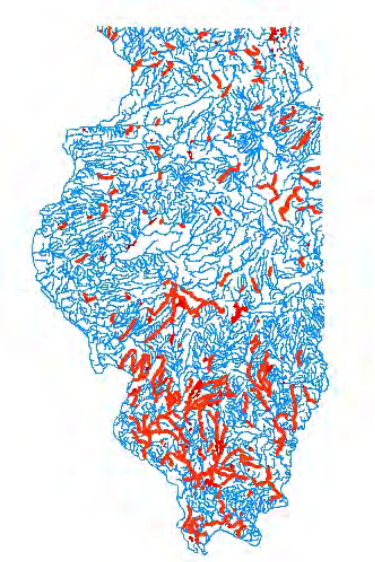


Figure 12- Streams and Lakes Impaired by Agriculture NPS Sources

Ten Frequently Used BMPs for Agricultural NPS Sources

- Bioengineering Stabilization Practices
- Conservation Cropping System
- Downspouts and Gutters (livestock buildings)
- Filter Strips
- Livestock Exclusion
- Nutrient Management Plans
- Revegetated Riparian Zone/Corridor
- Sinkhole Stabilization
- Terraces
- Wetland Creation and Protection

According to the Illinois Department of Agriculture, Illinois is a leading producer of soybeans, corn and swine. The state's climate and varied soil types enable agricultural producers to grow and raise many other agricultural commodities, including cattle, wheat, oats, sorghum, hay, sheep, poultry, fruits and vegetables. Illinois also produces several specialty crops, such as buckwheat, horseradish, ostriches, fish and Christmas trees.

Illinois has more than 76,000 farms and they cover more than 28 million acres – nearly 80 percent of the state's total land area.[27] The large number of farms, coupled with the diversity of commodities produced, makes it difficult to describe a typical operation. However, statistics provide some indication about what it means to farm in Illinois.

- The average size of an Illinois farm including hobby farms is 368 acres.
- Most farm acreage is devoted to crops, mainly corn and soybeans.
- Nearly 10 percent of Illinois farms have swine.
- Beef cows are found on about 23 percent of farms, while about 3 percent have dairy cows.
- Some farms produce specialty crops and livestock, including alfalfa, canola, nursery products, emus and fish.
- Many farming operations also support recreational activities such as hunting and fishing.

[27] Illinois Department of Agriculture - www.agr.state.il.us/about/agfacts.html

Much of Illinois is comprised of fertile flat loess (soil type), left behind by glaciers and wind millions of years ago. About 89 percent of the state's cropland is considered prime farmland, ranking the state third nationally in total prime farmland acreage. The central three-fourths of the state are generally used for growing crops, while hilly areas in the northwest and south provide pasture for livestock.

Although Illinois' food and fiber industry employs nearly 1 million people, there are only 76,000 farm operators, down from 164,000 in 1959. During the same time period, the average farm size more than doubled as sophisticated technology made many aspects of the industry less labor-intensive. Illinois agricultural producers are generally more than 50 years old. About 39 percent hold jobs off the farm and consider farming their secondary occupation. Family farms still dominate, though some of these have incorporated.

Water Quality Threats 2.81.1

It is estimated that more than 75 percent of Illinois land is used for agricultural production. This amount may have recently increased as Illinois agricultural producers have experienced the economic downturn of the nation, while also benefitting from the addition of multiple ethanol plants. The need for more income in conjunction with more market available for their product has been an increase in edge-of-field farming which does increase NPS pollution to the local water resources. Agriculture is a leading source of water quality impacts to monitored streams and lakes and also a major contributor to groundwater contamination and wetlands degradation.

Agricultural activities that cause NPS pollution include farming highly erodible land and riparian zones; excessive cultivation or cultivating at the wrong time; improper, excessive, or poorly timed application of pesticides and fertilizers; tile drainage; irrigation; and poorly located or managed animal feeding operations and overgrazing. Pollutants that result from farming include sediment, nutrients, pathogens, pesticides, metals, and salts.

Crop Production 2.81.2

One of the most prevalent sources of agricultural water pollution is soil that is washed off fields. Rain water and snow melt carry soil particles (sediment) and deposit them into nearby surface waters. Too much sediment can cloud the water, reducing the amount of sunlight that reaches aquatic plants. It can also clog the gills of fish or smother fish larvae. Sedimentation can also reduce the water quality and quantity of drinking water supplies.

In addition, other pollutants like nutrients, pesticides, and heavy metals are often attached to the soil particles and wash into the waterbodies, causing algal blooms and depleted oxygen, which is deadly to more aquatic life and creates foul taste and odor in drinking water. Agricultural producers can reduce erosion and sedimentation by applying management practices that control the volume and flow rate of rain water and snow melt runoff.

Nutrients 2.81.3

Besides sediment, nutrients are a major source of agricultural water pollution. Agricultural producers apply nutrients such as phosphorus, nitrogen, and potassium in the form of chemical fertilizers, manure, and biosolids. They may also grow legumes and leave crop residues to enhance future production. When these sources exceed plant needs, or are applied just before it rains or on frozen or snow-covered ground, nutrients can wash into aquatic ecosystems. There they can cause algae blooms, which can ruin swimming and boating opportunities, create foul taste and odor in drinking water, and kill fish by removing oxygen from the water. High concentrations of nitrate in drinking water can cause methemoglobinemia, a potentially fatal disease in infants, also known as blue baby syndrome. To

combat nutrient losses, agricultural producers can develop and implement nutrient management plans that help maintain high yields and save money on fertilizers.

Pesticides 2.81.4

Insecticides, herbicides, and fungicides are used to kill agricultural pests. These chemicals can enter and contaminate water through direct application, runoff, and atmospheric deposition. They can poison fish and wildlife, contaminate food sources, and destroy the habitat that animals use for protective cover. They can also impair drinking water supplies. To reduce contamination from pesticides, agricultural producers should use Integrated Pest Management (IPM) techniques based on the specific soils, climate, pest history, and crop conditions for a particular field. IPM encourages natural barriers and limits pesticide use and manages necessary applications to minimize pesticide movement from the field.

Irrigation 2.81.5

Irrigation water is applied to supplement natural precipitation or to protect crops against freezing or wilting. Inefficient irrigation can cause water quality problems. In times of drought, for example, where rainwater does not carry minerals deep into the soil, evaporation of irrigation water can concentrate salts. Excessive irrigation can affect water quality by causing erosion, transporting nutrients, pesticides, and heavy metals, or decreasing the amount of water that flows naturally in streams and rivers. All of these have an impact on drinking water supplies. It can also cause a buildup of selenium, a toxic metal that can harm waterfowl reproduction. Agricultural producers can reduce NPS pollution from irrigation by improving water use efficiency. They can measure actual crop needs and apply only the amount of water required. Agricultural producers may also choose to convert irrigation systems to higher efficiency equipment.

Animal Feeding Operations 2.81.6

By confining animals in small areas or lots, agricultural producers can efficiently feed and maintain livestock. But these confined areas become major sources of animal waste. Runoff from poorly managed facilities can carry pathogens such as bacteria and viruses, nutrients, and oxygen-demanding organics and solids that contaminate local water resources. Groundwater can also be contaminated by waste seepage. Both surface and groundwater drinking supplies can be impaired by runoff from animal feeding operations. Agricultural producers can limit discharges by storing and managing facility wastewater and runoff with appropriate waste management systems.

Livestock Grazing 2.81.7

Overgrazing exposes soils, increases erosion, encourages invasion by undesirable plants, destroys fish habitat, and may destroy streambanks and floodplain vegetation necessary for habitat and water quality filtration. All of these can have an impact on drinking water supplies. To reduce the impacts of grazing on water quality, agricultural producers can adjust grazing intensity, keep livestock out of sensitive areas, provide alternative sources of water and shade, and promote revegetation of ranges, pastures, and riparian zones.

Tile Drainage 2.81.8

By tiling land, agricultural producers can expand the acreage of crop production and conduct field work earlier in the spring. Tiling land can cause the loss of wetlands and increase the loss of nitrate through the tile drains. Drainage has both positive and negative effects on water quality. In general, less surface runoff, erosion, and phosphorus is lost from land that has good subsurface drainage than from land without drainage improvements or with only surface drainage.

Nitrate loss can be quite high from drained land. Because nitrate is very soluble, it flows easily through the soil and into tile lines. Nitrate flow from subsurface drains is one of the main sources of nitrate in

streams and rivers in the Midwest. High concentrations of nitrate in drinking water can cause methemoglobinemia, a potentially fatal disease in infants, also known as blue baby syndrome. Pesticides can also flow into subsurface drains, but usually only in very low concentrations. Pesticides move more easily in flow over the soil surface than through the soil, so the highest concentrations of pesticides in tiles are often in fields that have surface inlets into the drains. In fact, subsurface drainage may actually reduce pesticide loss to streams because it reduces surface runoff.[28]

Lakes and streams that have a large percentage of their watershed tiled can experience extreme water level fluctuations. After storms, water flows directly through the tile system rather than being absorbed by plants or soaking naturally into the soil and returning to the stream through the subsoil. This type of hydromodification or change in stream flow will sustain flooding, increase streambank and channel erosion, and cause the destruction of fish habitat. During droughts and in between storm events, the water level will be low; this impacts the water temperature and the amount of water available for plants adjacent to the stream and to the fish and critters in the stream itself.

Impacts from agricultural activities on surface water and groundwater can be minimized by using management practices that are adapted to local conditions. Many practices designed to reduce pollution also increase productivity and save agricultural producers money in the long run.

Control impacts from agriculture land uses by:

- Managing surface cover for erosion control
- Managing rain water and snow melt to avoid concentrated flow
- Managing nutrients effectively through proper product selection, rate of application and timing
- Managing livestock waste effectively
- Reducing insecticide use
- Reducing herbicide use
- Using less-toxic pesticides
- Retiring highly erodible land from production

[28] U.S. EPA http://www.epa.gov/agriculture/ag101/cropdrainage.html

NPS Source CONSTRUCTION 2.82

The 2012 IR identified the following impaired waters:

Sources	Lake Acres	Stream Miles
Highways, Roads, Bridges, Infrastructure (New Construction)	-	6
Site Clearance (Land Development or Redevelopment)	104	122

Causes	
Debris/Trash	X
Phosphorus	X
Sediment	X

Figure 13 - Streams and Lakes Impaired by Construction NPS Sources

Construction activities do impair stream miles and lake acres in Illinois. However, documenting sources contributing to specific waterbody segments is difficult due to the relatively short life span of construction activities and the monitoring schedule.

Construction activity, as used in this report, refers to residential, commercial and industrial development, highways and roads, transmission systems, utilities, water resource projects, or other land disturbing activities, except for certain agricultural activities. Specific construction activities include timber clearing, grubbing and topsoil removal, site grading and excavation; concrete, asphalt, and other facility operations; demolition of old structures; foundation and building construction; waste disposal; soil stabilization, fertilization, revegetation; pest control; and site restoration following construction.

Ten Frequently Used BMPs for Construction NPS Sources

- Critical Area Planting
- Detention Basins, Dry or Wet
- Diversions
- Heavy Use Area Protection
- Mud/Dust Control
- Protection of Existing Vegetative Cover
- Rock Outlet Protection
- Stabilized Construction Entrance
- Storm Drain Inlet Protection
- Well Setback Zones

Construction activities can be either a source of point or NPS pollution

Construction activities on sites regulated by state or federal law (e.g., National Pollution Discharge Elimination System (Phase 1 and 2)) are permitted and therefore are a **point** source.

Similar construction activities not regulated by state or federal law (e.g., construction activities on a site smaller than 1 acre and outside of a recognized urban or urbanizing area) are considered **nonpoint source**.

Water Quality Threats 2.82.1

The removal of vegetation from the land can allow erosion and sedimentation to occur. The length of time that the soil is left without an established vegetative cover can greatly increase the potential for water quality damage due to erosion. During construction, the introduction of building materials presents a new potential problem. If solid wastes, including vegetative materials, trash, spilled cement, bituminous mixtures, and chemicals are not properly contained and disposed of, they can impair water quality.

Development has both direct and indirect impacts on waterbodies and other valuable natural features. These impacts occur both during construction and after the development is complete. Some impacts result from the direct modification or destruction of streams, lakes and wetlands. Other impacts, primarily offsite, occur due to changes in the quality and quantity of runoff from the development. Groundwater can also be impacted by precipitation infiltrating through the construction site.

Erosion and sedimentation are natural geologic processes that human activities often accelerate. Erosion occurs through the action of water or wind. In Illinois, water is the primary cause of erosion. Wind erosion in urban areas is a minor concern, but it can be a nuisance and even a safety hazard in areas near a site under development.

There are three major processes that must be understood to effectively control or limit soil erosion and sedimentation on construction sites. These are detachment, transport and deposition. The four types of erosion are described as follows:

- Raindrop erosion is erosion resulting from the direct impact of falling drops of rain on soil particles. This impact dislodges soil particles and splashes them into the air. The dislodged soil particles can then be easily transported by the flow of surface runoff.
- Sheet erosion is the removal of a layer of exposed surface soil by the action of raindrop splash and runoff. The water moves in broad sheets over the land and is not confined in small depressions.
- Rill and Gully erosion occur after runoff flows concentrate into rivulets, cutting several inches deep into the soil surface. These grooves are called rills. Gullies may develop from rills if not repaired or in other areas where a concentrated flow of water moves over the soil.
- Stream and Channel erosion occurs with an increase in the volume and velocity of runoff. These larger and faster flows detach and then transport soil from the stream bottom and the stream bank toe. If not repaired, large sections of the stream bank may fail or slump into the stream.

National estimates indicate that uncontrolled erosion from construction activities can generate enormous quantities of sediment – 20 to 200 tons per acre per year. In comparison, typical erosion rates from cropland range from 1 to 20 tons per acre per year.[29]

Construction site erosion and the movement of sediment as it leaves the site can cause several offsite problems. Also, a site that has been degraded from excessive erosion is more expensive to landscape and maintain. The resultant sediment deposits are expensive to remove from culverts, ditches, lakes and stream.

Sediment from construction sites adversely affects water clarity, which reduces sunlight penetration thereby limiting photosynthesis by aquatic plants. In addition, impaired water clarity negatively impacts fish searching for their prey. Sediment-laden runoff also transfers nutrients and other pollutants to downstream lakes and rivers, degrading habitats and spawning areas of aquatic organisms.

Sedimentation in developing areas may create damage on land, in water supplies, and in drainage systems. The sedimentation in these areas can be costly in terms of the expense involved in correcting the damage. Sediment fills drainage channels and plugs culverts and storm drainage systems, thus necessitating frequent and costly maintenance. Sediment accumulation also reduces the stormwater conveyance and storage functions of streams, detention basins, and floodplains, leading to increased potential for flooding. Municipal and industrial water supply reservoirs lose storage capacity, navigable

[29] Illinois Urban Manual, Association of Illinois Soil and Water Conservation Districts

channels must continually be dredged, and the cost of filtering and disposing of muddy water in preparation for domestic or industrial use may create substantial financial burdens.

Impacts from construction activities on surface water and groundwater can be minimized by using management practices that are adapted to local conditions. Many practices designed to reduce pollution also save developers and landowner's money in the long run.

Control impacts from construction activities by:

- Installing temporary vegetative cover for those disturbed areas that are not scheduled for construction within seven (7) days.
- Managing surface cover for erosion control
- Controlling the flow of water
- Install, operate and maintain BMPs to ensure they remain effective
- Developing and following a Storm Water Pollution Prevent Plan

NPS Source – HYDROLOGIC MODIFICATION 2.83

The 2012 IR identified the following impaired waters:

Sources	Lake Acres	Stream Miles
Channelization	-	2,321
Dam or Impoundment	1,513	465
Drainage/Filling/Loss of Wetland	-	29
Dredging (e.g., for navigation channels)	9,038	19
Highway, Road/Bridge Runoff	727	72
Impacts from Hydrostructure Flow Regulation/Modifications	2,150	483
Littoral/Shore Area Modifications (non riverine)	99,164	-
Loss of Riparian Habitat	59	756
Stream Modification/Destabilization	235	547
Upstream Impoundments	4	134

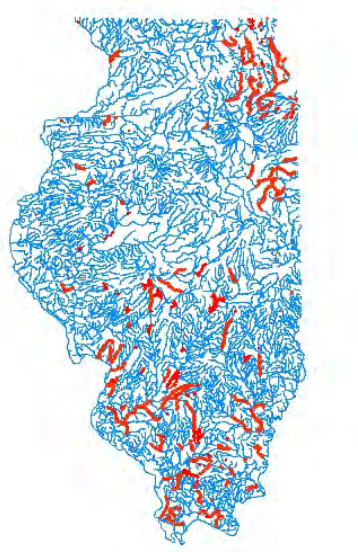


Figure 14 - Streams and Lakes Impaired by Hydrologic Modification NPS Sources

Causes	
Chloride	X
Fecal Coliform	X
Dissolved Oxygen	X
Manganese	X
Phosphorus	X
Sedimentation/Siltation	X
Temperature, water	X
Total Suspended Solids	X
Turbidity	X

Ten Frequently Used BMPs for Hydrologic Modification NPS Sources

- Aquatic Vegetation Reestablishment
- Bioengineering Stabilization
- Constructed Wetlands
- Dam Removal
- Filter Strips
- Livestock Exclusion
- Revegetated Riparian Zone/Corridor
- Stream Channel Stabilization
- Streambank and Shoreline Protection/Stabilization
- Tree Planting

In Illinois, many acres used for agricultural production and urban development experienced hydrologic modification before being cultivated or build upon. Streams and rivers were dammed to create lakes and reservoirs. Other streams and larger ditches were dredged to provide outlets for the tributary watersheds. Where soils were sufficiently permeable, tile drains were constructed by landowners and drainage districts. Ditches were dug in areas of low soil permeability. Levees were constructed in extensive areas, especially along major streams, to prevent overflows onto the flood plains. Maintenance of existing drainage systems and extensions of others continue at this time.

Water Quality Threats 2.83.1

Hydrologic modification projects are conducted for the purpose of obtaining specific benefits, but they typically result in unintended negative environmental impacts affecting aquatic wildlife, hydrology, and water quality. The type and degree of environmental impact depends upon the original composition of the natural community, construction activity undertaken, construction methods used, and soil type (i.e., erosion potential).

Many developing and expanding communities infringe on existing wetland and floodplain areas. The reduction of infiltration in urban areas increases stormwater runoff. Modified or channelized streams may no longer be able to protect the community from the impacts of flooding. In addition, the modified channel, in most cases, will still deliver larger amounts of water downstream faster causing additional damage downstream.

Hydrologic modification may be defined as activities that include the alteration of the geometry and/or physical characteristics of a body of water such as a stream, river, wetland, or lake. Modification activities include dredge and fill, wetland drainage, streambank and lakeshore alteration, dam construction, stream channelization, flow regulation, bridge construction, and removal of riparian or lakeside vegetation. These hydrologic modifications tend to affect the biological, chemical, and physical properties of ground and surface waters and adjacent habitats.

The removal of streambank vegetation reduces available shade and encourages increased water temperature. Higher water temperatures in modified channels can impair respiration, retard growth, lower disease resistance, and interrupt the spawning cycle for some fish. Increased solar input may enhance the growth of algae and other aquatic plants thereby reducing the waters capacity to hold dissolved oxygen. Removal of streamside vegetation also involves the removal of an important source of food and energy for aquatic communities. The removal of in-stream debris may eliminate the protective cover used by fish for resting or spawning and for invertebrates that cannot withstand the higher current velocities in an open stream. Construction activities in or near a stream and the removal of streamside vegetation increases the potential for erosion and the introduction of large quantities of particulate matter to the stream.

Channelization increases the slope and velocity of the altered stream. A channelized stream has its flow concentrated in a minimal area with a maximum velocity, which increases the unit stream power and enhances its capacity to erode streambanks and transport sediment. The channelized stream no longer has a release for this energy as is provided by stream meanders. Therefore, the channel flow may erode streambanks and bottoms in an alternating manner in an attempt to re-establish a sinuous course.

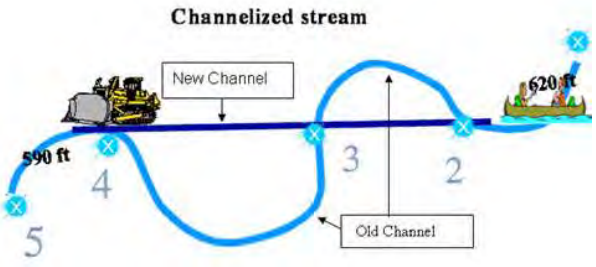


Figure 15 – Channelized Stream
Source - Missouri Stream Team

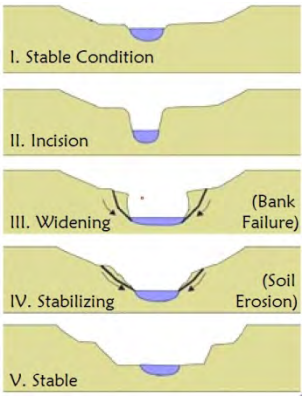


Figure 16 – Stream Cycle
Source - Fairfax County, Virginia

Channelization activities typically create straight channels of uniform depth, eliminating or reducing the natural pool and riffle areas, and stream flow obstructions. Pools and riffles serve as naturally effective means of reducing stream power and the erosive energy of a stream. They also trap sediment, nutrients, and NPS pollutants during low and medium flow conditions. For the modified channel, as well as for the waters to which it discharges, this enhanced erosive capacity creates many water quality problems in terms of suspended sediment and downstream sedimentation.

The diversity of terrestrial and aquatic habitat is diminished as a result of the elimination or reduction of pool and riffle areas and stream flow obstructions. Channel modification that reduces habitat diversity by creating a basically uniform stream water depth, velocity, and bottom type may prevent previously present stream organisms from living in this modified channel.

Channelization also reduces stream sinuosity and length thereby reducing the total quantity of aquatic habitat area. The sediment deposition pattern of a channelized stream is altered to reflect the homogeneous flow characteristics of the channel. This may result in a lower diversity of substrate conditions and habitat loss for some species.

The hydraulic connection between a stream and its adjacent floodplain and wetland area is reduced through channelization. Adjacent floodplains and wetlands are inundated less frequently due to the increased channel conveyance associated with a channelized stream. While channelization may seem to effectively transport stormwater away from a given area, it increases the potential severity of downstream flooding. By shortening the stream and reducing the friction associated with meanders, vegetation, and bottom diversity, channelization causes peak flows to move more rapidly downstream. Channel modification projects designed to reduce the frequency and duration of flooding may also lower the water table in the floodplain, which may eliminate wetlands and wildlife habitat.

Impacts from hydrologic modification activities on surface water and groundwater can be minimized by using management practices that are adapted to local conditions and are designed to avoid potential adverse off-site impacts.

Control impacts from hydrologic modification by:

- Reducing the implementation and use of channelization and levee systems
- Stabilize existing channel erosion
- Stabilize existing bank erosion
- Restore riparian buffers to an adequate width for the site
- Apply stormwater detention/retention BMPs upstream of the site to manage stormwater flow to the creek
- Manage riparian buffers to maintain healthy variety of plants to maintain stable environment

NPS Source – RESOURCE EXTRACTION 2.84

The 2012 IR identified the following impaired waters:

Sources	Lake Acres	Stream Miles
Surface Mining	-	395
Abandoned Mine Lands	250	172
Petroleum/Natural Gas Activities	-	116
Mine Tailings	-	102
Acid Mine Drainage	-	84
Coal Mining (subsurface)		8

Causes	
Chloride	X
Dissolved Oxygen	X
Iron	X
Manganese	X
pH	X
Phosphorus (Total)	X
Sedimentation/Siltation	X
Sulfates	X
Total Suspended Solids	X

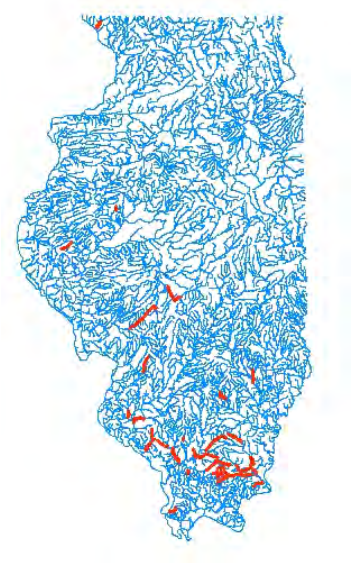


Figure 17 - Streams and Lakes Impacted by Resource Extraction NPS Sources

Ten Frequently Used BMPs for Resource Extraction NPS Sources

- Access Roads
- Barriers to Divert Runoff from Resource Extraction Worksites
- Critical Area Planting
- Flow Diversion
- Grade Stabilization Structures
- Land Reconstruction/Reclamation
- Prairie Restoration
- Runoff Control
- Trenches and Ponds
- Vegetative Protection/Soil Stabilization

Illinois possesses available reserves of coal, oil and gas, clays, fluorspar, sand and gravel, lead, zinc, and numerous other metals and minerals. The State's most abundant mineral resource is coal; Illinois ranks third in the nation for having the largest recoverable coal reserves.

About 68 percent of Illinois has coal-bearing strata of the Pennsylvanian geologic period. According to the Illinois State Geological Survey, 211 billion tons of bituminous coal are estimated to lie under the surface, having a total heating value greater than the estimated oil deposits in the Arabian Peninsula. However, this coal has a high sulfur content, which causes acid rain unless special equipment is used to reduce sulfur dioxide emissions. Many Illinois power plants are not equipped to burn high-sulfur coal. In 1999, Illinois produced 40.4 million tons of coal, but only 17 million tons (42%) of Illinois coal was consumed in Illinois. Most of the coal produced in Illinois is exported to other states, while much of the coal burned for power in Illinois (21 million tons in 1998) is mined in the Powder River Basin of Wyoming.

The Program is limited to mine lands that were abandoned prior to 1972.

All mining activities conducted after 1972 are regulated by the Surface-Mined Land Conservation and Reclamation Act of 1971 and the Surface Coal Mining Land Conservation and Reclamation Act of 1980.

Coal has been mined in 73 counties in Illinois. More than 4,500 coal mines have operated since commercial mining began in Illinois about 1810; fewer than 50 are currently active. By the late 1970s over 200,000 acres of land had been affected by surface and deep mining of coal in Illinois. Of this disturbed acreage, over 22,000 acres were identified as being 'problem' acreage. The acreage includes areas with exposed refuse material (gob and slurry), tipple sites, toxic or sparsely vegetated spoil banks and adversely affected water and land. The acreage also includes left open or inadequately sealed mine shafts and slopes, mine gas leads, polluting refuse piles and spoil ridges as well as subsidence problems.[30]

There is currently oil production in 40 counties in Illinois with most of the production located in the southern part of the state. There are currently 32,100 oil and gas production wells, 10,500 Class II injection wells and 1,750 gas storage wells in Illinois. These wells are controlled by 1,500 operators. Approximately 800 drilling permits for oil, gas and injection wells are issued each year by the IDNR. The majority of wells in Illinois are 'stripper wells' with a daily production of 1.5 barrels per day.[31]

Emerging Issue: "Fracking"

High volume hydraulic fracturing

Using large amounts of water and sand or sand-like materials to vertically crack (fracture) bedrock to release oil and gas reservoirs has become an emerging issue in southern Illinois. Currently oil and gas companies are buying mineral rights to reserve the right to "mine" areas of potential oil and gas reserves. There is also legislation (SB1715) to regulate this activity through permits and monitoring. The legislation is touted as the most stringent in the nation and is likely to become law. The language was successfully crafted by industry, environmental advocates and agency (Illinois EPA and IDNR) staff. State Senate has passed the legislation onto the House that may hear the legislation prior to the end of spring session, 2013. Without such legislation high volume fracking is a permitted activity in Illinois as a "regular" mining activity.

Water Quality Threats 2.84.1

Although all types of resource extraction have the potential to adversely affect air, land, and water quality, surface mined coal production, by sheer volume, is the major potential resource extraction source related activity in Illinois. Uncontrolled excavation and extraction of mine-related resources can produce severe environmental damage.

Major environmental problems include the disruption, and often permanent, degradation of large areas of land and water. Past mining operations have included the relocation and/or channelization of streams to locate them outside of the mining boundary area. Another potential source of NPS pollution associated with coal resource extraction activities is acid mine drainage, which results from the chemical reaction of pyritic or sulfide compounds (commonly iron sulfides) and oxygen in the presence of water. Precipitation falls upon erodible acidic spoil banks and discarded coal preparation wastes and ultimately

[30] www.dnr.state.il.us/mines/lrd/minx1.htm
[31] www.dnr.state.il.us/mines/gog/facts.htm

forms concentrated sulfuric acid, which can enter adjacent ground and surface waters through seepage and overland flow, respectively.

In addition to coal mining, oil and gas extraction can also impact the Illinois landscape. Oil brine damaged land from oil extraction deteriorates the ability of soils to produce vegetation, thereby increasing soil erosion and sedimentation potential to surface waters. Accidents and poorly maintained extraction and transfer equipment increase the risk of both ground and surface water contamination.

Impacts from resource extraction activities on surface water and groundwater can be minimized by using management practices that are adapted to local conditions.

Control impacts from resource extraction areas by:

- Managing surface cover for erosion control
- Tracking and controlling the flow of water
- Installing BMPs to deal with pH

NPS Source – TOXICANTS 2.85

As related to other NPS pollution sources

The 2012 IR identified the following impaired waters:

Sources	Lake Acres	Stream Miles
Acid Mine Drainage	-	84
Agriculture	9,371	1,081
Atmospheric Deposition - Toxics	77,212	3,047
Contaminated Sediments	-	422
Crop Production	102,174	-
Golf Courses	6,474	7
Impacts from Abandoned Mine Lands (inactive)	250	-
Irrigated Crop Production	-	50
Landfills	172	-
Mine Tailings	-	102
Other Spill Related Impacts	40	-
Other Turf Management	1,151	-
Permitted Silvicultural Activities	11	-
Pesticide Application	925	22
Petroleum/Natural Gas Activities	-	116

Causes	
Mercury	X
Polychlorinated Bihyenyls	X
Atrazine	X

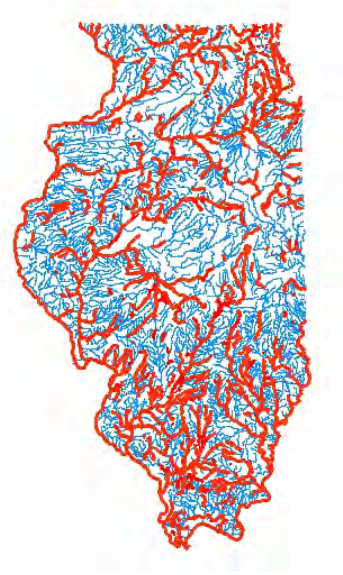


Figure 18 - Streams and Lakes Impaired by Toxicant NPS Sources

Ten Frequently Used BMPs for Toxicant NPS Sources

- Bioretention Practices
- Constructed Wetlands
- Infiltration Practices
- Oil and Grit Separator
- Pond Sealing or Lining
- Replace Leaking Storage Tanks
- Urban Filter Strip
- Urban Stormwater Wetlands
- Waste Storage/Control Structures
- Well Sealing/Site Protection

Toxicants are identified as a source of NPS pollution delivered to Illinois' surface and groundwater resources. It is important to note that this source has significant overlap with the other sources of NPS pollution listed in this chapter.

Water Quality Threats 2.85.1

Toxicants (e.g., arsenic, mercury, polycyclic aromatic hydrocarbons (PAH)) (or toxic substances) refer to any pollutant or combination of pollutants that cause impairment to aquatic or terrestrial life or cause an adverse impact to human health. Many substances occur naturally in the environment without reaching toxic levels. These same substances may become pollutants and reach toxic levels when human activities release excess quantities into the environment. Toxicity is never acceptable when it has the potential to cause adverse impacts to a waterbody, aquatic or terrestrial life, or to human health.

Toxicants in surface waters, bottom sediments, and bioaccumulations in fish tissue pose a threat to human health, recreation potentials, and the economy of local communities. Toxic substances must be recognized as a factor capable of degrading and therefore lessening the value of aquatic systems, along

Aquatic life toxicity standards are established to protect the most sensitive species of aquatic life from a given toxic substance, whether that is a fish, a fish food organism, or algae. Typically, compliance to standards is accomplished by regulating the discharge of toxicants from point sources through NPDES permits and by banning or restricting the use of substances that may find their way into waterbodies via NPS avenues. Control of toxicants is difficult unless the primary sources are regulated point source discharges.

with habitat destruction, conventional pollutant loading (oxygen depletion), thermal pollution, water quantity problems, over utilization of species and the introduction of harmful, non-native species.

Water quality standards are set at levels that will prevent bioaccumulations in fish from reaching levels that are harmful to humans if consumed. In addition to human health, direct toxicity to aquatic life is an important reason to control toxicants since aquatic life is often more sensitive to toxicants than are humans. Food chains need to be protected at all levels (producers, primary consumers, secondary consumers) if ecosystems are to be preserved. Changes in the structure of aquatic life communities can signal that toxics are present and may also warn that conditions may not be suitable for direct human use.

In the case of NPS pollution control to reduce the amount of pollutants reaching a waterbody, to be effective and improve water quality for long-term, it must also address the pollutants already contained by the waterbody and in the bottom sediments. Sediments contaminated with nutrients or toxic pollutants can contribute substantially to the impairment of designated uses of surface waters. Sediments tend to be a sink for both nutrients and toxic pollutants and can be a continuing source of contaminant to overlying and downstream waters even after point and NPS controls for these pollutants have been implemented. Therefore, remediation of sediments is often necessary before waterbodies can fully attain their designated uses.

Impacts from toxicants on surface water and groundwater can be minimized by using management practices that are adapted to local conditions.

People can help control impacts from toxicants by:

- Proper use and application of fertilizers, pesticides and insecticides
- Controlling the flow of water
- Reducing insecticide use
- Reducing herbicide use
- Using less-toxic pesticides

NPS Source – URBAN RUNOFF 2.86

The 2012 IR identified the following impaired waters:

Sources	Lake Acres	Stream Miles
Golf Courses	6,474	7
Impervious Surface/Parking Lot Runoff	179	-
On-Site Treatment (Septic Systems and Similar Decentralized Systems)	9,655	-
Other Turf Management	1,151	-
Public Bathing Areas	96	-
Residential Districts	754	-
Unspecified Urban Runoff	129	-
Urban Runoff/Stormsewers	40,072	1,218
Yard Maintenance	3,101	-

Causes	
Nutrients	X
Suspended Solids	X
Sedimentation/Siltation	X

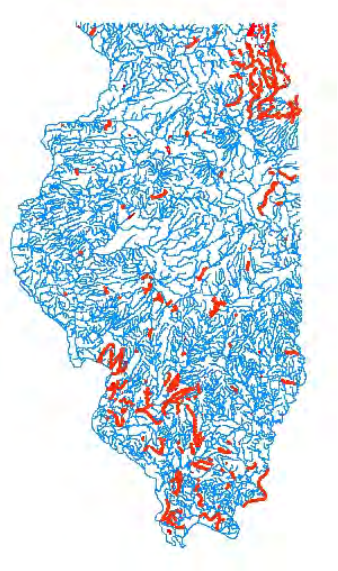


Figure 19 - Streams and Lakes Impaired by Urban Runoff NPS Sources

Illinois is ranked 5th in the nation for largest human population. At the same time, Illinois ranks 25th in the nation for size of land area.

The Chicago metropolitan area, the third most populous city in the United States, comprises only 8 percent of the land area of the state, but contains 65 percent of the state's residents.

Chicago is the state's largest city with a population of 2,714,856.[32] The U.S. Census Bureau currently lists seven other cities with populations of over 100,000 within Illinois. Aurora, a Chicago suburb, eclipsed Rockford for the title of 'Second City' of Illinois in 2006. Rockford is not only the number three city; it also remains the largest city in the state not located within the Chicago metropolitan area. Joliet, located southwest of Chicago, is the fourth largest city in the State. Naperville, a suburb of Chicago, is fifth, it shares its western border with the state's second largest city, Aurora, along Route 59. Springfield, the state capital of Illinois, comes in sixth. Peoria, which, decades ago, was the second largest city in the state, comes in seventh. The eighth largest and final city in the 100,000 club is Elgin, a northwest suburb of Chicago.

Ten Frequently Used BMPs for Urban Runoff NPS Sources

- Bioretention Practices
- Green Roofs
- Landscaping and Critical Planting Area
- Oil and Grit Separator
- Porous Pavement
- Street Sweeping
- Urban Filter Strip
- Urban Stormwater Wetlands
- Water harvesting
- Zoning

[32] 2012 US Census

The most populated city in the state south of Springfield is Belleville, with 44,478 people at the 2010 census. It is located in the Illinois portion of Greater St. Louis (often called the Metro-East area), which has a rapidly growing population of over 700,000 people.

Other major urban areas include the Champaign-Urbana Metropolitan Area, which has a combined population of almost 233,788 people, the Illinois portion of the Quad Cities area with about 215,000 people, and the Bloomington-Normal area with a combined population of over 188,715.[33]

Figure 20 - Populations > 100,000

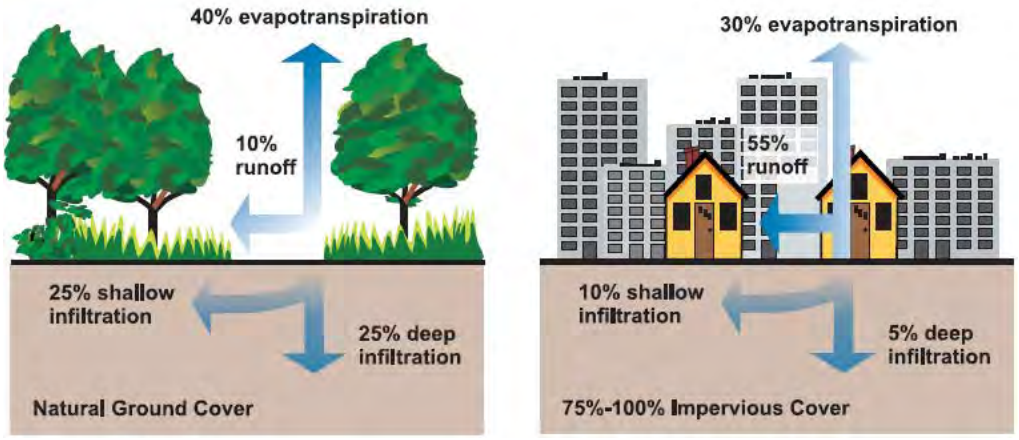
	Community	Population	Counties
1	Chicago	2,695,598	Cook, DuPage
2	Aurora	197,899	DuPage, Kane, Kendall, Will
3	Rockford	152,871	Winnebago
4	Joliet	147,433	Will
5	Naperville	141,853	DuPage, Will
6	Springfield	116,250	Sangamon
7	Peoria	115,007	Peoria
8	Elgin	108,188	Cook, Kane

Water Quality Threats 2.86.1

As open space is converted into urban areas the loss of natural water storage due to increased impervious surface area can adversely affect downstream floodplains, streams, and lakes. If not properly addressed during the planning stages of an urban project, increased runoff will intensify flooding potential, cause downstream damage (i.e., channel erosion, streambank erosion, flooding), and increase NPS pollutant loading to receiving waters. NPS pollutants that collect on urban surfaces, such as nutrients, solids or sediment, bacteria, salts, oil and grease, heavy metals, and organic and inorganic chemicals, are transported in stormwater runoff and ultimately discharged into receiving waters. The most common causes of water quality threats being reported in the IR are nutrients, total suspended solids, chlorides, and dissolved oxygen; which in turn are the causes that are most often targeted for NPS pollution control in Illinois.

It is estimated that as little as 10 percent impervious cover in a watershed can result in stream degradation.[34] Illinois EPA estimates that the six county northeastern Illinois region has an average value of approximately 18 percent of impervious land use. Cook County has the largest amount at almost 50 percent, while Will County and McHenry County are closer to 5 percent each.

Figure 21- Natural Landscape versus Urban Landscape Stormwater Runoff



[33] 2012 US Census

[34] U.S. EPA Protecting Water Quality from Urban Runoff – EPA 841-F-03-003

Impacts from urban activities on surface water and groundwater can be minimized by using best management practices that are adapted to local conditions. Many practices are designed to reduce pollution, increase aesthetics and provide other benefits such as flood prevention and wildlife habitat improvement.

Citizens and communities can help control impacts from urban land by:

- Managing surface cover for erosion control
- Harvesting rain water and snow melt for reuse
- Retrofit existing developed areas with green infrastructure
- Applying low impact development concepts
- Zoning and ordinance
- Managing nutrients effectively
- Reducing insecticide and herbicide use
- Using less-toxic pesticides

Green Infrastructure

Green infrastructure means any stormwater management technique or practice employed with the primary goal of preserving, restoring, or mimicking natural hydrology. Green infrastructure includes, but is not limited to, methods of using soil and vegetation to promote soil percolation, evapotranspiration, and filtration. Green infrastructure includes the preservation and restoration of natural landscape features, such as forests, floodplains, headwaters, and wetlands. Green infrastructure also includes rain gardens, permeable pavements, green roofs, infiltration planters, trees and tree boxes, and rainwater harvesting for non-potable uses, such as toilet flushing and landscape irrigation. (Public Act 96-26)

Public Act 96-26, the Green Infrastructure for Clean Water Act, required Illinois EPA to assess and evaluate using green infrastructure to help manage stormwater in Illinois. Illinois EPA worked with the University of Illinois - Chicago to undertake research to assess effective best management practices, green infrastructure standards and institutional and policy frameworks to support the development of a Green Infrastructure Plan for Illinois. This partnership produced a report which included recommendations regarding:

- Adoption of comprehensive stormwater management rules;
- Implementation of a stormwater permit fee program adequate to support the adoption and implementation of state stormwater regulations;
- Establishment of a statewide standard for stormwater management programs in order to transition toward the use of green infrastructure as the predominant stormwater management strategy;
- Rules on the distribution of money from the Water Revolving Fund; and
- Establishment of new criteria which prioritize the use of green infrastructure in all projects involving stormwater management and water efficiency.

In recent years, Illinois has experienced a groundswell of the adoption of green infrastructure practices. Many programs and best management practices have been applied in the Chicagoland area, the Metro-East area of St. Louis, and more urbanized areas throughout the remainder of the state.

Federal and state programs, such as the Green Reserve (State Revolving Fund), Illinois Green Infrastructure Grant Program and the Millennium Reserve are assisting local watershed stakeholders to expand their inventory of applied urban stormwater management projects.

NPS Source Impairments – Stream Miles and Lake Acres 2.87

Note – use assessments for wetlands are not currently made; so they are not included in the tables.

Agriculture is the most frequently identified source of stream related NPS pollution in Illinois. Hydrologic modifications, urban runoff, and resource extraction are other major NPS contributing to streams not attaining full support ratings. Fecal coliform, dissolved oxygen, alteration in streamside or littoral vegetative cover, sedimentation/siltation, phosphorus, nitrogen, and total suspended soils were the greatest NPS related causes of streams not attaining full support ratings.

Table 7 - Statewide Summary of Potential NPS Sources of All Use Impairments in Streams

Potential Source of Impairment	Stream Miles Impaired*
Source Unknown	6,338
Atmospheric Deposition/Toxics	3,047
Crop Production (Crop Land or Dry Land)	2,396
Channelization	2,321
Urban Runoff and Storm Sewers	1,218
Agriculture	1,081
Loss of Riparian Habitat	756
Animal Feeding Operations	657
Streambank Modifications/destabilization	547
Impacts from Hydrostructure Flow Regulation/modifications	483
Dam or Impoundment	465
Natural Sources	455
Contaminated Sediments	422
Surface Mining	395
Livestock (Grazing or Feeding Operations)	252
Habitat Modifications - other than Hydromodification	182
Impacts from Abandoned Mine Lands	172
Upstream Impoundments	134
Petroleum/natural Gas Activities	116
Mine Tailings	102
Non-irrigated Crop Production	85
Acid Mine Drainage	84
Highway/Road/Bridge Runoff (Non-construction Related)	72
Irrigated Crop Production	50
Runoff from Forest/Grassland/Parkland	39
Drainage/Filling/Loss of Wetlands	29
Pesticide Application	22
Dredging (e.g. for navigational channels)	19
Unpermitted Discharges (Domestic Wastes)	18
Other Recreational Pollution Sources	10
Golf Courses	7
Managed Pasture Grazing	3

* Stream miles may be impaired by more than one source.

NOTE – Some of the above sources, when found in different circumstances (i.e., Animal Feeding Operations - AFOs), may be recognized as a point source or a NPS source.

Agriculture, littoral/shore area modifications, other recreational pollution sources, runoff from forested/grassland/parkland, contaminated sediments, and urban runoff/storm sewers were identified as the most frequent sources of lake related NPS pollution in Illinois. Phosphorus, aquatic algae, total suspended solids, aquatic plants (macrophytes), atrazine, sedimentation/siltation, and dissolved oxygen were identified as the greatest NPS related causes of lakes not attaining full support ratings.

Table 8 - Statewide Summary of Potential NPS Sources of All Use Impairments in Inland lakes

Potential Source of Impairment	Lake Acres Impaired*
Source Unknown	109,652
Crop Production (Crop Land or Dry Land)	102,174
Littoral/Shore Area Modifications (Non-riverine)	99,164
Other Recreational Pollution Sources	83,394
Atmospheric Deposition - Toxics	77,212
Runoff from Forest/Grassland/Parkland	53,006
Urban Runoff/Storm Sewers	40,072
Animal Feeding Operations (NPS)	25,355
Contaminated Sediments	13,231
On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	9,655
Agriculture	9,371
Dredging (e.g., for Navigation Channels)	9,038
Natural Sources	6,715
Golf Courses	6,474
Waterfowl	6,295
Yard Maintenance	3,101
Impacts from Hydrostructure Flow Regulation/Modifications	2,150
Rural (Residential Areas)	2,037
Dam or Impoundment	1,513
Other Turf Management	1,151
Pesticide Application	925
Residential Districts	754
Highway/Road/Bridge Runoff (Non-construction Related)	727
Livestock (Grazing or Feeding Operations)	704
Impacts from Abandoned Mine Lands (Inactive)	250
Streambank Modification/Destabilization	235
Impervious Surface/Parking Lot Runoff	179
Landfills	172
Wildlife Other than Waterfowl	148
Unspecified Urban Stormwater	129
Pollutants from Public Bathing Areas	96
Introduction of Non-native Organisms (Accidental or Intentional)	88
Specialty Crop Production	71
Municipal (Urbanized High Density Area)	62
Loss of Riparian Habitat	59
Other Spill Related Impacts	40
Other Marina/Boating On-Vessel Discharges	23
Permitted Silvicultural Activities	11
Upstream Impoundments (e.g., PL-566 NRCS Structures	4

NOTE – Some of the above sources, when found in different circumstances (i.e., Animal Feeding Operations - AFOs), may be recognized as a point source or a NPS source.

Causes of NPS Impairment 2.88

Nutrients - phosphorus and nitrogen 2.88.1

Both phosphorus and nitrogen are essential nutrients for the growth of aquatic vegetation.

Phosphorus is essential for the growth of algae and other aquatic organisms. Serious problems such as algae blooms and fish kills have resulted when excess phosphorus exists in the aquatic environment.

Nitrogen is a complex element that can exist in seven states of oxidation. From a water quality standpoint, the nitrogen-containing compounds that are of most interest are organic nitrogen, ammonia, nitrate, and nitrogen gas.

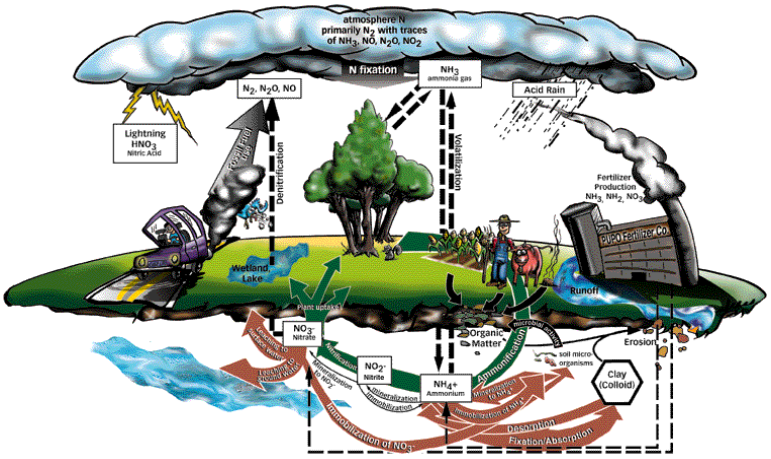


Figure 22 - The Nitrogen Cycle

Nutrient enrichment of surface waters may cause excessive algae and aquatic plant growth. This creates large diurnal oxygen fluctuations due to excessive DO production during daylight hours, followed by excessive consumption of oxygen (mainly through plant dieoff) when photosynthesis is not occurring. Seasonal die-off of vegetation due to frost may also create large oxygen demands and suffocate fish and aquatic organisms. Physical impediments to fishing and boating and operation of water supply facilities can also be affected when vegetation becomes so overgrown that leaves and roots clog motors and intakes.

Nitrate contaminants in drinking water significantly above the drinking water standard (10mg/L) may cause methemoglobinemia (a blood disease) in infants and has forced closure of several water supplies. High ammonia concentrations in water are also toxic to fish and cause an odor problem.

Pathogens 2.88.2

Pathogenic bacteria, protozoa, and viruses include infectious agents and disease-producing organisms normally associated with human and animal wastes. Waterborne pathogens can be transmitted to humans or animals through drinking water supplies, direct contact recreation, or consumption of contaminated shellfish. Bacterial pathogens of concern include *V. chloreae*, *Salmonellae*, and *Shigella*. Pathogenic protozoan eggs and cysts have been linked to *Giardia lambia* and *Entamoeba histolytica* (amoebic dysentery). Viruses ingested from water can lead to diseases such as hepatitis.[35]

Detection methods for pathogenic bacteria are severely limited because of the difficulty in isolating a small number of cells. Consequently, in spite of problems establishing direct correlations, coliform groups can serve as indicators of pathogens. Fecal coliform bacteria behave similarly to common enteric pathogens, and a close relationship exists between the growth and survival of fecal coliform and both *Salmonella* and *Shigella*.

[35] Thomann and Mueller, 1987

Dissolved oxygen (DO) 2.88.3

Dissolved Oxygen (DO) is defined as the amount of oxygen dissolved in water. The presence of oxygen is of fundamental importance in maintaining aquatic life and the aesthetic quality of waters. Low DO concentrations may harm fish and aquatic biota. Fish tolerance of low DO levels varies by species, growth cycle, acclimation time, and temperature. Cold water fish (e.g., salmon and trout) require higher DO concentrations than do warm water fish and biota. The preferred DO level for trout is generally greater than 5 mg/L. Some fish, if acclimated, can tolerate periods of oxygen levels as low as 2 mg/L but for most species, the longer-term effects of such low DO are not well known.

Additional to low DO, supersaturation and significant DO swings can result from excessive algae or other plant life and can have a negative effect on aquatic organisms.

Pollutant versus Pollution

The CWA defines a pollutant as *"dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water."* In general, pollutants are substances, chemicals, materials or wastes and their components that are discharged into the water.

The CWA defined pollution as *"the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of a water body."* This is a broad term that encompasses many types of changes to a water body, including alterations that do not result from the introduction of a specific pollutant or the presence of pollutants at a level that causes impairment. In other words, all waters impaired by human intervention suffer from some form of pollution.

Total suspended solids (TSS) 2.88.4

Total suspended solids include both sediment and organic material suspended in water, unlike suspended sediment concentration measurements that only include inorganic material. TSS can cause problems for fish by clogging gills and for aquatic plants by limiting growth because of reduced light penetration. In addition, TSS provides a medium for the accumulation and transport of other constituents such as phosphorus and bacteria.

TSS also decreases recreational values, adds to the mechanical wear of water supply pumps and distribution systems, and adds to treatment costs for water supplies. TSS may also provide a mechanism for transport of pesticides or other toxic compounds.

Chloride 2.88.5

Chloride, an ionic form of the element chlorine, is found in many common salts and is readily soluble. In its dissolved form, it does not degrade chemically or organically over time. Chloride should not be confused with chlorine, a soluble substance often used as a disinfectant. Reverse osmosis and distillation are potential methods of removing chloride from water.

Chloride has not always been viewed as a pollutant or contaminant of water. It is an essential part of the diet of humans and other animals, and the oceans have a normal, healthy, chloride concentration. However, elevated concentrations of chloride in fresh water can threaten aquatic life. The impact of chloride on aquatic life varies from species to species.[36]

[36] DuPage River Salt Creek Workgroup

pH (acidity) 2.88.6

pH represents the concentration of hydrogen ions in water and thus indicates the acidity of the water. As water becomes more basic, pH increases; as water becomes more acidic, pH decreases. pH affects the reaction and equilibrium relationships of many chemicals. Many water quality biological systems function only in relatively narrow pH ranges (typically 6.5 to 8.5). Fish and other aquatic species prefer a pH near neutral (7) but can withstand a pH in the range of about 6 to 8.5. Low pH in water inhibits enzymatic activity aquatic organisms. The toxicity of many compounds can also be altered if the pH is changed. The solubility of many metals, as well as other compounds, is affected by pH, resulting in increased toxicity in the lower pH range.

Temperature 2.88.7

Elevated stream temperatures can stress and cause behavioral changes in fish populations and other biota. Warmer water temperatures can change aquatic community assemblages, reduce growth rates, and increase disease.

Although land use impacts generally elevate stream temperatures, vegetation removal may cause cooler water temperatures during the winter. Cooler winter water temperatures may reduce growth of fish and can also cause the formation of anchor ice that smothers aquatic life in the stream substrate.

Temperature can also affect a number of other important water quality parameters. Gas solubility decreases with increasing temperature, resulting in generally lower DO concentrations and reaeration rates. With temperature increases, chemical and biochemical reaction rates typically increase markedly and mineral solubility increases. Most organisms have distinct temperature ranges within which they can reproduce and compete effectively.

Pesticides 2.88.8

Pesticides are most commonly used in agricultural or urban residential applications for the control of weeds and pest organisms. The presence of these substances in water is troublesome because they are toxic to most aquatic organisms and many are known or suspected carcinogens. Potential impairments from pesticides include damage to aquatic fauna and concerns for human health (contamination of domestic water supply or fisher). Concentration levels rather than overall loadings are most important. Contamination of groundwater by organic chemicals can occur through leaching.

Metals 2.88.9

Heavy metals are a group of elemental pollutants including arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc. Industries such as electroplating, battery manufacturing, mining, smelting, and refining have been identified as potential sources of heavy metals. Metals may enter surface waters either dissolved in runoff or attached to sediment or organic materials. Metals can also enter groundwater through soil infiltration.

Metals can have toxic effects on humans, fish, wildlife, and microorganisms. Since metals do not readily decay, their persistence in the environment is a problem potentially contributing to long-term habitat and public water supply degradation. A principal concern about metals in surface water is their entry into the food chain at relatively low concentrations and their bioaccumulation over time to toxic levels. High concentrations of arsenic can cause dermal and nervous system toxicity effects; high concentrations of cadmium can cause kidney effects; and high concentrations of chromium have been linked to liver and kidney effects. Lead can result in central nervous system damage and kidney effects and is also highly toxic to infants and pregnant women. High concentrations of mercury can cause central nervous system disorders and kidney effects; high concentrations of selenium have gastrointestinal effects; and high concentrations of silver can cause skin discoloration.

Other toxic chemicals 2.88.10

Thousands of industrial and petroleum processing chemicals such as plasticizers, solvents, waxes, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs) make up the final group of toxic substances. Alkyl phthalates, chlorinated benzenes, PCBs, and PAHs are broad subcategories in this group. Some chemicals are carcinogenic directly to humans, while others affect fish, aquatic organisms, or plants within the water column or in the benthic sediment layer. Toxicity-based water quality standards protective of aquatic life have been adopted to protect fish, fish food organisms (invertebrates) and plant growth from individual harmful substances.

Best Management Practices (BMPs) 2.89

NPS pollution control in Illinois depends upon the correct selection, design, installation, operation, and maintenance of best management practices (BMPs) for a specific site. BMPs can reduce or control NPS pollution IF the BMP is designed and sited correctly. Not all BMPs work in all locations. It is strongly recommended, that anyone considering the implementation of a BMP or treatment train (multiple linked BMPs), consult the advice of a professional, such as NRCS staff, an environmental consulting firm, or a certified professional civil engineer that has work experience in the area of stormwater runoff, hydrology, and erosion control. Many of the Program partners also have staff that can help guide landowners to select the most appropriate BMP for their property.

BMPs, installation techniques, materials used, and operation and maintenance requirements are constantly improving. The two leading sources of information for BMPs in Illinois are the:

- Field Office Technical Guide* – USDA Natural Resources Conservation Service
- Illinois Urban Manual* – Association of Illinois Soil & Water Conservation Districts

* Links for these documents are located at the front of the document.

Chapter 3 – The Program 3.0

The goal of the Program is to reduce NPS pollution and meet water quality standards; see Chapter 1 for additional details. NPS pollution is the leading factor for waters in Illinois not attaining their designated uses. The success of NPS pollution control in Illinois is dependent not only on actions and resources from Illinois EPA and U.S. EPA, but many federal, state, and local partners, including individual urban and rural landowners.

The Illinois NPS Management Program is a road map for Illinois' NPS pollution control activities, and guides the implementation of the activities and projects supported by Section 319(h) grant funds (see Chapter 4) and other NPS control activities in Illinois. The Section 319(h) grant program provides a sturdy foundation in Illinois for NPS pollution control and is an important Program tool. The activities implemented through the Section 319(h) grant program support Illinois' effort to reach many of the short and medium-term objectives and milestone documented in Chapter 7.

To include each action required to solve Illinois' NPS pollution problem within this Program is impossible. Physical changes that are constantly occurring in Illinois, such as streambank erosion and land development, make a static program ineffective for the control of NPS pollution. The Program must be dynamic and allow for fluctuating resource availability and the ever-changing landscape of what is currently impairing Illinois' waters. Adaptive management will be integral to the implementation of the Program. The Program provides specific strategies, objectives and milestones that, when implemented in concert with watershed-based plans (WBP), Total Maximum Daily Load (TMDL) and Load Reduction Strategy (LRS) implementation plans and other partner efforts will reduce water quality impairments caused by NPS pollution. The Program will be integrated into other state and federal programs to best leverage available resources as opportunities to do so are identified.

The Program recommends that priority for the use of financial assistance state-wide be guided by existing approved WBP, and TMDL, and LRS implementation plans. Areas with NPS pollution impaired water resources that are not covered by an approved WBP, TMDL, or LRS are recommended for assistance to develop plans for implementation or for the installation of demonstrative BMPs to encourage participating in watershed planning efforts. Support should also be provided for projects and programs that help prevent NPS pollution from occurring.

When is NPS pollution not NPS pollution?

In Chapter 1, NPS pollution is defined as a **physical process** that occurs throughout our state. However, in areas where this physical process is regulated by state or federal law it is **not** considered to be NPS pollution and is **not** covered by the Program. Rather, discharges from such activities are covered by the National Pollutant Discharge Elimination System (NPDES) permitting program. Examples of this include active mine sites, certain livestock operations, areas greater than 1.0 acres that are disturbed for non-agricultural activities and urbanized areas that receive an MS4 Permit to manage stormwater.

The Program **does** recognize the physical process as NPS pollution from mine land abandoned prior to 1972, certain livestock pasture and grazing issues, and land disturbance activities on sites less than 1.0 acres in size.

The major activities and programs implemented by our core partners to control NPS pollution are listed at the end of this chapter and are also used, as appropriate, as documentation toward the completion of the objectives and milestones listed in Chapter 7. In addition, federal, state, and local regulations that deal with activities that have potential to cause NPS pollution are also included in the chapter.

Illinois' Approach to NPS Pollution Control 3.1

To meet the mission and goals identified in Chapter 1, Illinois will rely upon both a state-wide effort and distinct management activities at the watershed-scale to control NPS pollution. This approach will depend upon the use of adaptive management to implement the Program as efficiently as possible, to address the current needs with the resources available. The approach is flexible enough to allow Illinois EPA and its partners to focus and, when necessary, refocus the Program's implementation as priorities and areas of concern are updated. The Program will support the development and implementation of NPS components of WBP, and TMDL, and LRS implementation plans as they are the key to control NPS pollution in Illinois. With this common goal, the efforts and activities are closely related and will be managed with as much uniformity as possible.

State-Wide Effort 3.11

The intensity of NPS pollution control in Illinois varies greatly from partner to partner, county to county, and acre to acre. Illinois is home to cutting-edge watershed planning groups as well as areas where the typical citizen has never heard of a watershed or a planning effort to protect local water quality from NPS pollution. The Program's state-wide effort acknowledges this diversity of awareness and knowledge and provides programs, projects, and tools that encourage and support individuals and groups at varying levels to improve and then maintain their NPS pollution control efforts.

A variety of voluntary federal, state, and local programs provide technical and financial assistance and tools to implement NPS pollution control in Illinois. There are also regulatory programs, laws, and acts at the federal, state, and local level to protect Illinois' water resources. Some of these were created specifically to address NPS pollution, while others were developed to solve another issue but have shown a history of NPS pollution control benefits in addition to their expected benefit. A list of the programs, laws, and acts is provided at the end of this chapter; followed by brief narratives of a selection of these programs, laws, and acts. All of the programs, laws, and acts listed play a part of the Program; however, their mission dictates how much of it is directly applied to NPS pollution control or influenced by the Program regarding priorities for implementation.

The state-wide effort will establish approaches and tools that will be useful in most watersheds. An example is the Illinois Urban Manual, described in the box to the right. Another example is the development of a nutrient strategy. The nutrient strategy in concert with Partner programs such as Keep It for the Crops – 2025 (KIC2025) and USDA – NRCS's one-on-one nutrient management plan development for agricultural producers will provide options for efficient implementation of NPS pollution control programs, projects and practices; especially the execution of NPS components of WBP, TMDL, and LRS implementation plans.

The components of the state-wide effort include: federal, state, and local partnerships, monitoring, assessments, capacity building, planning, BMP demonstration, and outreach activities. These components are described later in this chapter.

The state-wide effort relies upon strong partner communication and program coordination and voluntary participation for the implementation of the majority of the components.

Illinois Urban Manual (IUM): A State-Wide NPS Tool

The IUM is a great example of a tool developed to help control NPS pollution in Illinois. The IUM documents the standards and specifications for installation of urban BMPs in Illinois.

Citizens in Chicago, Carbon Cliff, and Carbondale can all make use of the IUM to get the specific details for installation of a BMP such as a permeable pavement system or bioswale.

Both technical and financial assistance is used to support the state-wide effort. Assistance is provided through the programs, laws, and acts listed in Tables 11 - 16. Program partners work together to leverage federal, state, and local assistance to accomplish the largest amount of NPS pollution control possible with the limited resources available. One-on-one communications between partners, memorandums of understanding, project/program peer review and the NPS Management Biennial Meeting are examples of the opportunities used by Program partners to coordinate priority areas for implementation and work to leverage financial and technical resources. The NRCS facilitated State Technical Committee and the Illinois EPA Bureau of Water Annual Hearing provide recurring opportunities to share Program priorities and areas of concern with the Program's federal and state partners.

The state-wide effort supports capacity building for Program partners and watershed groups to help them better develop and implement WBP, TMDL, and LRS implementation plans for NPS pollution control Capacity building includes the development of programs and tools, such as the *Illinois Urban Manual* and the *Guidance for Developing Watershed Action Plans in Illinois*.

The state-wide effort also includes programs and projects that encourage individual citizens to make wise choices to control NPS pollution on their private property. This occurs through progressive outreach efforts and the application of demonstrative BMPs.

Partners Protecting Multiple Watersheds

The Conservation Reserve Enhancement Program (CREP) is a great example of a federal, state, and local partner supported program that has reduced NPS pollution in multiple watersheds.

CREP is a voluntary, incentive-based conservation program for private landowners in the Illinois and Kaskaskia River Basins to establish conservation practices on erodible lands to reduce runoff and sedimentation of waterways and enhance fish and wildlife habitat.

Beyond traditional CREP, Illinois has partnerships that have provided financial and technical support to local soil and water conservation districts (SWCD) to employ CREP assistants. The addition of these staff has helped streamline the CREP application process and have allowed local SWCDs to maintain their normal workload even with the addition of such a massive conservation program.

The state-wide effort will:

- Ensure communication and coordination between Program partners to leverage resources in the priority areas of the state (e.g., CREP) to reduce NPS pollution in a multiple watershed or other large areas.
- Build NPS partners and existing watershed group's capacity to succeed in the area of WBP development and implementation of WBP, TMDL, and LRS implementation plans. This includes tools and training to help watershed groups use water quality and technology based actions and activities to control NPS pollution in Illinois and to become and remain sustainable for long-term water quality protection at the local level.
- Encourage citizens to control and prevent NPS pollution by applying appropriate BMPs on private property and through their day-to-day actions and to actively participate in local watershed planning and implementation projects.
- Provide an opportunity to implement NPS pollution control projects and programs statewide and reach areas not already covered by a local WBP, TMDL, or LRS implementation plan.
- Allow Illinois EPA to continue work with partners that voluntarily approach the agency for assistance to control NPS pollution at either specific sites or on a larger scale.

Illinois Statewide Nutrient Reduction Strategy

The impact of excess nitrogen and phosphorus in Illinois rivers, lakes, streams and the Gulf of Mexico is a very high profile water quality issue. Under the right conditions, nutrients can cause excessive algal blooms, low oxygen and nuisance conditions that adversely impact aquatic life, drinking water and recreational uses of the water.

Nutrients can come from many sources, including:

- Fertilizers from agriculture, golf courses, and suburban lawns
- Erosion of nutrient-rich soils
- Discharges from industrial and sewage treatment plants
- Failing on-site septic systems and
- Deposition of atmospheric nitrogen

In other words, most aspects of modern society contribute to this pollution problem. The proportion of loading to a particular waterbody from these sources varies from watershed to watershed, and includes point sources and NPS pollution sources, in both urban and agricultural landscapes.

Illinois EPA hosted meetings in 2010 for stakeholders representing government, environmental groups, municipal and industrial wastewater dischargers, agricultural groups, academia, non-governmental organizations and consulting firms with an interest in the topic of nutrient pollution. This was the beginning of a collaborative, problem-solving process to craft a statewide Nutrient Reduction Strategy to address excess nutrients in Illinois waters and the Gulf of Mexico.

Illinois EPA hosted a meeting of stakeholders in March, 2013, to announce that development of a statewide Nutrient Reduction Strategy was beginning. Approximately 100 attendees were present, representing the agricultural community, wastewater dischargers, environmental groups, government, technical assistance provides and academia.

The University of Illinois began conducting a scientific assessment in March 2013, to support an Illinois Nutrient Reduction Strategy. This project will compile a comprehensive statewide assessment of the current conditions and practices affecting nutrient losses to Illinois waters. The assessment will identify and assess nutrient (nitrogen and phosphorus) inputs and management practices, including current cropping practices, phosphorus losses, develop nutrient balance to understand the direction of soil pools, identify and estimate point source influences and determine total nitrogen, nitrate, total phosphorus and dissolved relative phosphorus loads leaving the state annually.

A Nutrient Reduction Strategy Policy Working Group has been formed to formulate the action steps for the strategy document, using the results of the science assessment; they will craft a strategy that is effective and implementable.

For more information about the strategy and the working group visit www.epa.state.il.us/water/nutrient

Watershed-Scale Management Activities 3.12

The watershed-scale management activities focus NPS pollution control efforts at the 10 – 12 digit HUC level or smaller; implementing NPS pollution control activities for specific waterbodies, sets of waterbody segments, or watersheds to attain full use support. These activities support everything within the state-wide effort but goes a step farther to include activities to ensure the voluntary 1) development or updates of WBPs, 2) 'on-the-ground' implementation of NPS components (BMPs and education outreach activities) of WBP, TMDL, and LRS implementation plans, 3) tracking plan implementation, and 4) follow-up monitoring efforts.

The watershed-scale management activities will use coordination of federal, state, and local resources to get the local community to a point, both technically and financially, where they can voluntarily apply NPS components of WBP, TMDL, or LRS implementation plans in priority areas to attain full use support for priority waterbody segments. Program partners need up-to-date local water quality data and information regarding local WBP, TMDL, or LRS implementation plans to be able to commit resources to address the issues of specific waterbodies that have been identified as having been impaired by NPS pollution.

A Systematic Approach 3.2

In an effort to help focus federal, state, and local resources on watersheds in need of NPS pollution control, Illinois EPA has implemented a systematic approach to pinpoint areas of the state that need a WBP, TMDL, or LRS implementation plan developed or, if already completed, its approved NPS components implemented. Outreach by Illinois EPA to Program partners will notify them regarding which impaired waterbodies and watershed need NPS pollution control; which in turn will help the partners to leverage technical and financial resources in those areas. In addition to contacting the regular Program partners, other organizations that have jurisdiction or an interest in an impaired waterbody will also be included in outreach efforts. The NPS pollution control priority watersheds and interests will be made public, on an annual basis, during the Illinois EPA Bureau of Water Annual Hearing.

Illinois EPA and Program partners currently conduct water quality monitoring throughout Illinois according to the *Illinois Water Monitoring Strategy 2007 - 2012* (Strategy). The results of these monitoring efforts are released every two years in the *Illinois Integrated Water Quality Report and Section 303(d) List*. The *2012 IR* includes a list of which waterbody segments are impaired and the causes and sources of impairment that keep the waterbody segment from attaining full use support. Nonpoint Source Unit staff use the monitoring results and the IR to establish which waterbody segments are impaired by NPS pollution. See the end of this chapter for more details about water quality monitoring in Illinois.

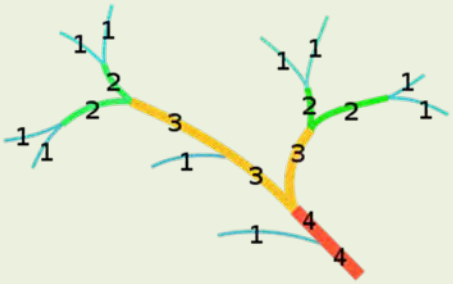
The Program will follow the rotational monitoring plan developed for the Strategy. This will ensure the use of the most recent water quality information available, which is essential to set appropriate priorities for implementation of NPS pollution control efforts in Illinois. The Strategy divides Illinois into 51 basins; a subset (8 – 11) of the basins are monitored each year; with 51 basins monitored by the end of the five-year schedule. The Strategy, like the Program, is a living document; it is updated on a five-year schedule. The Program will be updated as future versions of the Strategy are completed.

This approach allows Illinois EPA, and Program partners, to focus technical and financial assistance within specific watersheds in specific years. Using the Strategy means that the priority waters are those most recently confirmed to have been impacted by NPS pollution. The approach includes the following steps:

Step 1 – Monitoring 3.21 – The water quality monitoring is conducted primarily by Illinois EPA and Illinois DNR staff using a number of different monitoring programs. See the end of this chapter for additional details about monitoring programs used to determine NPS pollution impaired waters in Illinois. The monitoring is conducted for waterbodies and waterbody segments within the watersheds according to the Strategy monitoring schedule (see Figure 23). The quality assured- quality controlled monitoring data is included in the 2012 IR. The information provided includes: water quality use attainment and the sources and causes applicable to the specific impaired waterbody segments.

Stream Order

Stream order is a measure of the relative size of streams. Stream sizes range from the smallest, first-order, to the largest, the twelfth-order (the Amazon River).



Over 80 percent of the total length of Earth's rivers and streams are headwater streams (first- and second-order).

Step 2 – Identifying Priority Watersheds and Waterbody Segments 3.22 – The Strategy identifies which watersheds are to be monitored within a given year during the five-year monitoring rotation. The water quality data gathered from within those watersheds will determine the specific 10 – 12 digit HUCs and waterbody segments that are to be a priority for a given year. See Appendix 1 for maps depicting which watersheds are priorities for monitoring, planning, and implementation assistance during FY 2014 – 2018.

Waterbody segments, with the exception of mainstem waters that are not attaining their designated water quality uses due to NPS pollution impairments, are the priority waterbodies. The mainstem waterbodies will be upgraded in priority once their headwater areas have developed and implemented NPS components of WBP, TMDL, and LRS implementation plans.

The 10 to 12-digit HUCs that contain these impaired waterbody segments are the priority watersheds. A higher priority for assistance will be given to those watersheds that have multiple NPS impaired waterbody segments.

Step 3 – Outreach to Support Priority Watersheds and Waterbody Segments 3.23 – Illinois EPA's NPS Unit staff will provide, on an annual basis, information regarding the selection of priority watersheds and waterbody segments through the Illinois EPA Web site and at the Illinois EPA Bureau of Water Annual Hearing. This information will also be provided to Program partners during normal coordination meetings and at other meetings as appropriate including the statewide NPS Biennial Management Meeting.

Illinois EPA will conduct outreach activities for federal, state, and local entities that have jurisdiction or a stake in the long-term protection of the NPS impaired waterbodies identified in Step 2. The outreach efforts will explain the local NPS pollution issues and the watersheds and waterbody segments that are impacted. Outreach efforts will be tailored to the local watershed using the status of existing WBP, and TMDL and LRS implementation plans as a benchmark. The outreach efforts will encourage watershed stakeholders to consider implementing the most appropriate of the following options:

1. Actively participate in the development of TMDLs (Phases 1 – 3 as appropriate) and LRSs.
2. Actively participate in the development of WBPs according to U.S. EPA's minimum elements for watershed-based plans. When possible, this action will occur after a TMDL (Stage 1) has been approved.
3. Development of an Implementation Plan for an existing (pre 2014) TMDL or LRS.
4. Implementation of NPS components of a WBP or TMDL or LRS Implementation Plan or any other plan that meets U.S. EPA's minimum elements of a watershed-based plan.

This is a voluntary approach; it is going to be the responsibility of the local watershed community or other responsible entity to pursue technical and financial assistance to conduct appropriate activities as identified above. This includes, but is not limited to, application for funding through the Section 319 grant program or other sources of financial assistance.

Step 4 – WBP, TMDL, and LRS Development 3.24 – Illinois EPA will coordinate development of TMDLs (Stages 1 – 3, as appropriate) or a LRS for a portion of the priority watersheds identified in Step 2 of this approach. The number of TMDLs to be developed will be dependent upon the financial resources available and other priorities guiding the TMDL program. Once a TMDL or LRS is completed, Illinois EPA will encourage local watershed groups to develop implementation plans for the TMDL or LRS. The Program will also support any local watershed groups that are interested in developing a WBP prior to a TMDL or LRS.

Certain areas of the state have a much higher rate of success in the area of WBP development and implementation. Illinois EPA will assess the rate of participation for the voluntary development and implementation of WBP, TMDL, and LRS implementation plans. In the event that participation is low, Illinois EPA will look into development of a process to have a third party accomplish a portion of the more difficult elements of the WBP process for selected watershed. The semi-developed WBP would then be turned over to local watershed stakeholders to continue the WBP development process.

Local groups will be strongly encouraged to secure participation from a wide variety of Program partners to participate on the local Technical Advisory Committee (TAC). The TAC is a mechanism to not only develop the implementation plan, but to also secure federal, state, and local support to fund implementation.

Illinois EPA will review all WBP, TMDL, and LRSs developed with financial assistance provided through the Section 319 Grant Program to make sure that they meet U.S. EPA's minimum elements of a watershed-based plan. Those documents that meet the minimum elements will be approved and will be eligible to apply for Section 319 funds to implement the plans. Plans that are developed without Illinois EPA financial assistance will only be reviewed for approval to determine if Section 319 funds can be used to help implement the plan, or as resources allow, if a request for a review is made.

Step 5 – Plan Implementation and Tracking 3.25 – Once an implementation plan has been completed for the priority watershed, the local community will be encouraged to actively pursue technical and financial resources for implementation. An Implementation Plan Tracking Form will be provided to the local watershed planning committee to identify components of the plan that address NPS pollution including the site specific information for individual BMPs. The local planning group will be encouraged to update the tracking form, at a minimum, on an annual basis. The tracking information will be shared through RMMS and the Biannual Report with the Program partners to help them identify potential projects to help implement and to identify accomplishments.

Return to Step 1 and start again! 3.26 - At this point, Illinois EPA and Program partners are back within the watershed conducting water quality monitoring. The majority of watershed groups participating in this approach will only be a year or two into their plan's implementation – so significant changes in water quality are not anticipated. The local watershed planning group will have gained experience and can pursue a wide range of technical and financial assistance to continue execution of their implementation plan.

Illinois EPA and Program partners will re-prioritize the watersheds and waterbody segments using the current Integrated Water Quality Report and Section 303(d) List and will start the process again by reaching out to watershed groups to start the process for watersheds that are home to waterbody segments that are impaired by NPS pollution. This process will continue as long as implementation plan development and execution is needed.

Illinois EPA will use both technical and financial assistance to implement Watershed-scale management activities. Illinois EPA will also identify a specific contact for each watershed (HUC 8) with the Watershed Management Section as a 'Watershed Contact' to help local watershed groups and other Program partners to access information from Illinois EPA that is pertinent to the specific 10-digit HUC watershed.

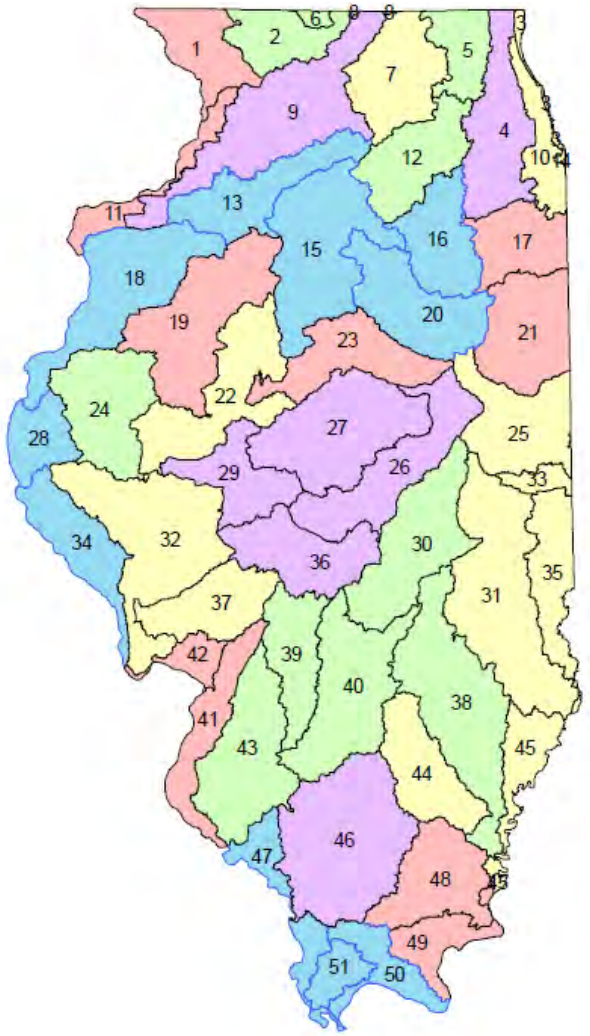
Table 9 –Quick View - A Systematic Approach

FFY	Action Taken
2013	Water quality monitoring conducted
2014	NPS impaired waterbody segments identified in the IR and priority watersheds determined
	Local stakeholders are notified regarding which 10-12 digit HUCs are priorities for NPS control efforts
	Interested local stakeholders pursue financial assistance for WBP development if needed
2015	Local stakeholders develop or updated implementation plan (as needed)
2016	Planning effort continues
	Local stakeholders pursue financial assistance to implement plan
2017	Plan implementation begins
2018	Water quality monitoring conducted

Table 10 - Five Year Rotation Schedule

Watershed	Monitoring (by IEPA)	Priority for Planning	Priority for Implementation
	FFY	FFY	FFY
	2013	2015	2017
	2014	2016	2018
	2015	2017	2019
	2016	2018	2020
	2017	2019	2021

Figure 23- Five year Rotation Watersheds



Components of State-Wide Effort and Watershed-Scale Management Activities 3.3

The components described below will be used within both the state-wide and watershed-scale management activities outlined earlier in this chapter. Both are essential in the control of NPS pollution in Illinois. However, the watershed-scale management activities are currently a higher priority, as Illinois needs up-to-date detailed WBP, TMDL, and LRS implementation plans developed to identify the site-specific programs and BMPs needed to control NPS pollution.

The following components will be used for both state-wide efforts and watershed-scale management activities:

- Strong working partnerships and coordination to leverage federal, state, and local resources for improved and increased NPS pollution control efforts;
- Monitoring and assessment of water resources and citizen knowledge, and as appropriate limited research;
- Capacity building and tool development to support implementation of NPS pollution control efforts;
- WBP, TMDL, and LRS implementation plan development;
- Implementation of NPS components of WBP, TMDL, and LRS implementation plans;
- BMP implementation tracking; and
- NPS control outreach and information programs for adults and students.

Figure 18 - Balance of Components between State-Wide Efforts and Watershed-Scale Management Activities

State-wide Implementation	Component *Balance of Implementation*	Watershed-specific Implementation
	Partnerships	
	Monitoring & Assessment	
	Capcaity Building	
	WBP, TMDL, LRS Development	
	WBP, TMDL, LRS Implementation	
	Outreach & Education	
	Tool Development (e.g., IUM, RMMS)	
	Tracking Plan Implementation	
	BMPs	
Less ⟷ More		Less ⟷ More

Partnerships 3.31

The control of NPS pollution in Illinois requires involvement of multiple partners at the federal, state, and local levels. The partners' involvement ranges from structured day-to-day working relationships throughout the life of the Program with core partners to implement multiple programs and projects to impromptu short-term relationships with individual stakeholders at a specific project site. The best probability to control NPS pollution in Illinois is to encourage coordinated involvement at the local level by federal, state, and local partners. Leveraging resources and programs will be the key to accomplish the Program mission.

Partnerships with sister agencies and other entities interested in NPS pollution control on a large scale throughout the life of the Program will be more formal in nature and will include the use of tools such as memorandums of understanding, coordination of technical and financial assistance programs, peer review, ordinances, support of the development and implementation of WBP, TMDL, and LRS implementation plans, and opportunities for continuous feedback regarding the Program. The relationship with individual stakeholders may be one-sided and occur through outreach and information efforts or may become a more formal partnership through the use of financial assistance or other tools, such as conservation easements, to secure NPS pollution control at a specific project site. A list of the State's core partners is located in Table 11. This list as provided is not inclusive. A list of partner programs relevant to NPS pollution control in Illinois is located in Table 12.

Illinois EPA will continue to use a combination of formal and informal efforts to sustain the current partnerships and to form new partnerships as opportunities surface.

Monitoring and Assessment 3.32

Environmental Monitoring and Assessment 3.32.1

Monitoring and assessment efforts are an integral part of the Program. The importance of monitoring for the purpose of defining and designating priority areas in the state, as well as monitoring implemented BMPs on a project basis for evaluation of NPS pollution reduction and watershed plan implementation effectiveness, is essential to reducing NPS pollution for improved water quality in Illinois.

Information for current monitoring and assessment programs conducted in Illinois is available at the Web pages listed in Tables 12 and 14. It has been determined that additional monitoring locations, tools, and activities are needed to better define NPS pollution impairments in Illinois. The *Illinois Water Monitoring Strategy 2007 – 2012* (*Strategy*) will be updated starting in the fall of 2013. This Program uses the *Strategy* as a foundation for prioritization and implementation of both the state-wide efforts and the watershed-scale management activities, so any updates to the *Strategy* will likely require updates to the Program in order for it to remain current. The NPS Unit will work with the Illinois EPA Surface Water Section to improve NPS pollution monitoring and documentation processes in the updated Strategy. The NPS Unit will also work with the Illinois EPA Groundwater Section to make sure that a solid monitoring program remains in place to help gage Illinois' NPS pollution problem in Illinois' groundwater resources.

Water quality monitoring activities in Illinois are designed to support and direct other program activities by providing information on the quality of water resources and to determine the effectiveness of water pollution control programs. This information is established through the collection and assessment of water and sediment chemistry, macroinvertebrates, fish population and species diversity, physical habitat, fish tissue residue, bioassay, and stream discharge data.

Both fixed station networks and bioassessment surveys (surface water only) are used to monitor water quality in Illinois. Fixed station networks are designed to provide background, current conditions, and long-term trend information from a broad geographic area. Bioassessment surveys are designed to provide more intensive, site-specific water resource information to accurately characterize the biological integrity of water resources and the identification of sources, both point and NPS.

Monitoring efforts are conducted by the Illinois EPA, Illinois DNR, Illinois Department of Public Health (IDPH), Illinois Department of Agriculture (IDA), the Prairie Research Institute and the U.S. Geological Survey (USGS). Interagency coordination reduces the duplication of monitoring, standardizes data units, and expands the research database. The participating agencies test different waterbody types for a variety of water quality parameters. Monitoring efforts include problem detection activities and long-term trend analysis.

In accordance with Sections 305(b) and 303(d) of the federal CWA, the Illinois EPA must report to the U.S. EPA on the quality of Illinois surface water (e.g., lakes, streams, Lake Michigan, wetlands) and groundwater resources (Section 305(b)) and provide a list of those waters where their designated uses are deemed 'impaired' (Section 303(d)). In addition, the Illinois EPA must assess the water quality of lakes in accordance with Section 314(a)(1). To aid in making these determinations, the Illinois EPA annually collects chemical, physical, biological, habitat, and toxicity data, depending on the type of waterbody. Data collected from outside sources may also be considered during this process.

Results of the most recent statewide assessments can be found in the 2012 IR and with the Illinois Water Quality Mapping Tool.[37] Previous assessments can be found in 'Illinois Water Quality Reports' and associated 'Condition of Illinois Water Resources' reports.[38]

The environmental monitoring programs that relate to NPS pollution are described later in this chapter. More extended descriptions of these programs are available in Illinois EPA documents such as 'Illinois Water Monitoring Strategy', "Water Pollution Control Program Plan', Illinois Fish Contaminant Monitoring Program;, and the '2012 IR'[38].

Social Indicator Monitoring 3.32.2

Social Indicators for NPS management provide information about awareness, attitudes, constraints, capacity, and behaviors that are expected to lead to water quality improvement and protection. By measuring these indicators over time, water quality managers can target their project activities and assess whether their projects are accomplishing changes expected to improve and protect water quality. Monitoring social indicators, like monitoring environmental indicators, provide valuable information about how well the management strategies are working. Social indicator monitoring will be a component of the Section 319 grant program.

Figure 24 - Social Indicator Projects

Social indicators complement other environmental and administrative indicators to present a complete picture of project effectiveness. Social indicator activities should be designed to help document the need for NPS pollution control and to also validate the

[37] http://maps.epa.state.il.us/website/wqinfo/
[38] http://www.epa.state.il.us/water/water-quality/index.html

accomplishments of ongoing and completed NPS pollution control projects. Illinois has participated in multiple pilot social indicator projects that supported U.S. EPA Region 5's multi-state Social Indicator Team's effort to develop the Social Indicators for Planning and Evaluation System (SIPES). The SIPES tool and handbook can be found at http://greatlakeswater.uwex.edu/social-indicators. Social Indicator projects in Illinois related to NPS pollution control should use SIPES to conduct the monitoring effort and to track the data collected.

Administrative Monitoring 3.32.3

The use of administrative monitoring to assess programmatic accomplishments and the need for additional capacity building is fundamental to the Program. This is an area that is overlooked by many organizations as they delve into program implementation. However, long-term success, including program documentation, is necessary to help identify gaps when a project or program is being evaluated as well as to track activities in particular watersheds. Illinois EPA and its partners enlist a wide range of tracking tools to accomplish this monitoring. These tools include, but are not limited to, Resource Management Mapping System (RMMS), annual reports, NRCS's Toolkit, and Grants Reporting and Tracking System (GRTS).

Capacity Building 3.33

NPS pollution control is largely dependent upon the premise that federal, state, and local organizations can efficiently deliver available technical, financial, and educational assistance in impaired watersheds. Due to the limited personnel at the federal and state levels it is essential that local organizations are equipped to develop and manage the on-the-ground efforts to restore and or protect water quality through NPS pollution control. In turn, federal and state partners need capacity building assistance to be able to train the trainers so that local groups also have the capacity and tools to fulfill the role they are expected to play.

In 2009, the Prairie Rivers Network implemented 'A Strategy for Building Capacity in Illinois Watersheds Section 319 project' (FAA 3190424) which developed and implemented a survey to measure the capabilities of active organizations in Illinois that are interested in NPS pollution control through watershed based activities.

The Program will follow the findings of the survey to enhance capacity building for NPS Partners and other organizations that implement NPS pollution control efforts. A summary of the survey indicated that local groups and water resource managers need to hone specific skills in order to be effective in their efforts to control NPS pollution.

Based on the finding from the workshop and through the survey results it was identified that information sharing and training needs exist. It was documented that local groups want help in the following areas:

- More accessibility to technical information (through activities such as shared knowledge), and
- Fundraising to support goal development and additional funds to implement the goals once developed.

It was recommended that a series of workshops be provided to help strengthen the skills of the individuals and groups that work on protecting water resources in Illinois. Topics for these workshops include:

- Effective communication,
- Fundraising
- Technology related resources,
- Developing fundable grant proposals,
- Volunteer water quality monitoring data in decision making, and
- Third-party TMDLs.

Capacity building for NPS Partners and other organizations looks very similar to the general concept of outreach and information – which is described later in this chapter. However, the audience and the messages developed for capacity building are quite different from general NPS pollution control messages and the audiences normally targeted. Capacity building is more of a 'train the trainers' concept. The staff at organizations such as the Association of Illinois Soil and Water Conservation Districts, IDA, IDNR, RiverWatch, and regional planning commissions can be trained to educate their local counterparts to include NPS pollution control activities as they complete work on their existing programs. The training for the 'trainers' would not only include the general information, but would also include tools and techniques to help them build the capacity at the next level – so that they can also go out and share the message and implement the NPS pollution controls needed.

Development of Watershed-based Plans, Total Maximum Daily Loads, and Load Reduction Strategies 3.4

There is a significant need for development of additional WBP, TMDL, and LRS implementation plans in Illinois. The state supports a voluntary approach to WBP efforts and the use of the plans as a supplement to the TMDL Program.

Voluntary implementation will be used for NPS pollution control for long-term water quality protection. A structured program built on a strong outreach and information strategy is necessary to make certain that the best programs, projects, and BMPs to improve water quality are implemented; let alone any action is taken at all. It is imperative that the local watershed community be involved in the development of WBP, TMDL, and LRS Implementation plans. The local community can identify what activities and projects the watershed is likely to support and in many cases, are the harbinger to introduce the plan successfully to the community for implementation. Leaving the local community, or individuals, out of the planning process most often leads to the failure of development or long-term implementation of a WBP.

Watershed-based Plans (WBP) 3.41

Watersheds in Illinois are definitely not a 'one size fits all'. Trying to apply the same solutions to all watersheds in Illinois will not work. Urban watersheds need different programs and practices than do their rural counterparts. The same can be said for lake and stream watersheds. The development of a comprehensive WBP developed by the local community following U.S. EPA's watershed development guidance is the foundation of long-term control of NPS pollution in Illinois.

Many of the requests for financial assistance received by Illinois EPA are for areas that do not have a WBP, TMDL, or LRS implementation plan. In fact, many partners have programs and projects that are not benefitting from the guidance of a local WBP, TMDL, or LRS implementation plan. Instead BMPs and programs are being implemented in areas determined by best professional judgment. While this may reduce NPS pollution at the project site, it is not enough to help Illinois water resources reach full use support and be delisted from the 303(d) list.

The Program prioritizes the development of WBP, TMDL, and LRS implementation plans in 10 to 12-digit HUCs where NPS water quality impairment has been documented. The Program also supports plan development in areas smaller than a 12-digit HUC and on occasion larger than a 10-digit HUC. WBP development is also supported for HUCs where Priority Waters for Protection caused by NPS pollution has been identified (see Chapter 2).

WBPs need to be developed, through community-based actions with assistance from technical advisory committees (TAC). An approvable plan will identify critical areas, appropriate types of control measures, and programs (both regulatory and non-regulatory) to achieve implementation of the NPS pollution control measures, including; technical assistance, financial assistance, education, training, technology transfer, demonstration projects and watershed-wide BMP implementation, monitoring, and tracking.

Summary of U.S. EPA's Minimum Elements of a well-designed Watershed-based Plan

1. Identification of causes and sources that will need to be controlled to achieve load reductions estimated within the plan.
2. Estimate of the load reductions expected for the management measures described in component.
3. Description of the NPS management measures that need to be implemented in order to achieve the local reductions estimated in element 2; and identification of critical areas.
4. Estimate of the amounts of technical and financial assistance needed; costs; and the sources and authorities (e.g., ordinances) that will be relied upon to implement the plan.
5. Information and public education component; and early and continued encouragement of public involvement in the design and implementation of the plan.
6. Implementation schedule.
7. Description of interim, measurable milestones for determining whether NPS measures or other actions are being implemented.
8. Criteria to measure success and reevaluate the plan.
9. Monitoring component to evaluate effectiveness of implementation efforts over time.

The local community, including local decision makers, is the key player in the development and adoption of a successful WBP for NPS pollution control. Continued involvement in the WBP process can be very cumbersome and many local volunteer partners struggle to complete the process. A challenge with some beginner watershed planning groups is that the planning efforts start off addressing NPS pollution control, but end up focused on an issue such as flooding or invasive species or just a subset of the NPS pollution issues that are occurring. A mechanism is needed to keep efforts on track and focused on water quality, specifically NPS pollution control.

A number of U.S. EPA's minimum elements can be provided, by an outside source, to the local community for their use in planning. By supplying these elements, such as through TMDL development, many locally-lead WBP efforts will be able to complete the WBP due to the reduced investment of resources required. The presentation of elements 1 and 2, by an outside source, can also ensure that local communities remain focused on the issue of NPS pollution control instead of flood control or habitat improvement. To that end, the Program will support third party development of several of the WBP elements to allow an abbreviated planning effort by the local community in order to develop and implement an acceptable WBP.

The voluntary approach to the development of WBPs has worked well in some areas of the state and has not been very successful in other areas. A local entity or champion is necessary to start the effort and then to keep the momentum going. In the past, organizations such as the NRCS did promote and conduct planning efforts to protect local waterbodies at the request of the local community. However, active support of watershed planning has been significantly reduced as NRCS focuses on other conservation program areas. To contrast the current trend, the voluntary approach will be supplemented with focused outreach activities to reinvigorate local stakeholders to invest energy in watershed-based planning and once the plans are completed to move on to plan implementation in a timely manner.

The development of the WBP can be conducted before, during or after the completion of an approved TMDL. It is considered optimum to complete the WBP at the conclusion of the TMDL-Stage 3 in order to leverage work completed by another entity. In that case, the information developed for the TMDL will allow for an abbreviated WBP effort, since many of the elements of a well-designed WBP would already be available through the TMDL.

In select cases an extensive WBP may not be necessary and an alternative plan, which still addresses the minimum elements in a meaningful way, may be sufficient to guide watershed project implementation of NPS pollution controls. The use of alternative plans may occur under the following conditions;

- When the impairment is not specific to a pollutant
- When responding to a NPS pollution emergency or urgent NPS public health risk
- When protecting assessed unimpaired/high quality waters
- When addressing an isolated, small-scale water quality problem resulting from one or a few sources of pollution

The alternative plans must directly address priorities outlined in the Program and reflect a geographically-appropriate scale to achieve water quality goals. The elements that should be fully addressed are:

- The identification of causes of impairment and pollutant sources or groups of similar sources that need to be controlled to achieve needed load reductions (element a)
- A description of the NPS management measures that will need to be implemented to achieve load reductions and a description of the critical areas in which those measures will be implemented (element c)
- A description of interim measureable milestones for determining whether NPS management measures or other control actions are being implemented (element g)

The exception of a minimum element plan will be considered when an emergency condition has been declared, such as fires, floods, tornados, and blow downs. Documentation needed for an alternative plan and project proposal should include:

- The emergency determination or declaration language
- Waterbody impacted
- The aerial extent of the damage
- The critical area identified
- What management measures will be implemented
- What load reduction is expected

Total Maximum Daily Load (TMDL) 3.42

The establishment of a TMDL sets the pollutant reduction goal necessary to improve impaired waters. It determines the load, or quantity, of any given pollutant that can be allowed in a particular waterbody. A TMDL must consider all potential sources of pollutants, whether point or NPS. It also takes into account a margin of safety, which reflects scientific uncertainty, as well as the effects of seasonal variation.

Developing TMDLs in a watershed begins with the collection of data on factors including water quality, point source discharge, precipitation, soils, geology, topography, and land use (construction, agriculture, mining, etc.) within that specific watershed. All impaired waterbody segments with the watershed are identified, along with the potential pollutants causing the impairments.

Components of a TMDL

- Watershed characterization (mining, construction, agriculture)
- Watershed/subwatershed delineations
- Land use data
- Soils data
- Waterbody description
- Precipitation
- Flow
- Point sources – Discharge Monitoring Reports (DMR) data
- Water quality data

What is a TMDL?

TMDL – WLA + LA + MOS [+RC] [+SV]

(WLA) Wasteload Allocation – Point Sources
(LA) Load Allocation – NPS Sources
(MOS) Margin of Safety
(RC) Optional Reserve Capacity for Point Sources
(SV) Seasonal Effects and Growth

The TMDL process in Illinois includes:

- Hire consultants to develop TMDLs
- Currently, Illinois EPA is only developing TMDLs for parameters with numeric standards
- TMDLs are currently being developed in three stages
- Ongoing public meetings in the watershed to inform stakeholders on TMDL development
- Once the TMDL report is complete, it is sent to U.S. EPA for approval
- Implementation of the TMDL

Next, Illinois EPA determines the tools necessary to develop the TMDL. In most cases, computer models are used to calculate pollutant loads. The appropriate model or models are selected based on the pollutants of concern, the amount of data available, and the type of waterbody. Once the model is selected, the data collected for the watershed are entered, and the model is calibrated and verified so that the computed values match those of known field data. The model can then be used to develop different scenarios, by first determining the amount of specific pollutants each source contributes, then calculating the amount each pollutant needs to be reduced, and finally specifying how the reduced pollutant load would be allocated among the different sources.

After the reduced pollutant loads have been determined, an implementation plan is developed for the watershed spelling out the actions necessary to achieve the goals. The plan specifies limits for point source discharges and recommends BMPs for NPS control. It also estimates associated costs and lays out a schedule for implementation. Commitment to the implementation plan by citizens who live and work in the watershed is essential to success in reducing the pollutant loads and improving water quality.

Load Reduction Strategies (LRS) 3.43

Load Reduction Strategies (LRS) are generally incorporated into TMDLs but can be incorporated into a WBP or act as standalone documents. Generally a LRS will be developed during the TMDL process for identified pollutants that are not being addressed by the TMDL. Pollutants listed as impairing waters but not being addressed by the TMDL are those pollutants for which Illinois does not currently have a numeric water quality standard. For each pollutant addressed under a LRS a Load Allocation is developed, but specific sources, (e.g., NPS or point source) are not defined. As part of the implementation plan for the watershed the LRS is as much of a part of the implementation strategy as the TMDL. Therefore you will find within an LRS BMPs to address the pollutant(s) and critical areas to focus implementation efforts, including point sources. The distinction is that the point source implementation activities are not affected by a LRS until a TMDL is completed for that pollutant. Whether the LRS is a component of a TMDL, WBP or is a standalone document it must meet U.S. EPA's minimum elements for a WBP in order to meet Program criteria.

Typical LRS pollutants:

- Nitrogen
- Phosphorus (streams & rivers)
- Total suspended solids
- Sedimentation

As stated earlier, the Program cannot accommodate all of the information for the exhaustive number of activities, projects, and programs needed to address Illinois' NPS pollution. Local WBP, TMDL (Stage 1 – 3), and LRS implementation plans are the road maps and tools that the watershed community can use to control local NPS problems.

This Program includes the auto-incorporation of the **NPS components** of Illinois EPA approved WBP (based upon U.S. EPA minimum elements for WBP), TMDL, and LRS implementation plans that again meet the U.S. EPA minimum elements for a WBP. The BMPs identified within these plans do not have to be identified within this document to be considered eligible for inclusion in the implementation of the Program. Illinois EPA tracks the WBP, TMDL, and LRS implementation plans that are approved by Illinois EPA based upon U.S. EPA's minimum elements for WBPs.

Implementation of NPS Components of WBP, TMDL, and LRS Implementation Plans 3.5

As stated above, components of a good implementation plan includes; monitoring, BMP identification and implementation, outreach and information and administrative activities. The heart of the Program is to get appropriate BMPs implemented, especially in critical areas, and to modify people's day-to-day activities to reduce NPS pollution.

The BMPs identified for implementation within a plan need to be designed for a specific site. It is imperative that the correct BMP be selected and that it is sited correctly as well. There are sites where a suite of BMPs could be used to control the NPS pollution. There are other sites where the NPS pollution can only be controlled by a single type of BMP. Drainage areas, site use, future development upstream of the project site are just a few of the items to consider when selecting and siting a BMP. The Field Office Technical Guide[39] and Illinois Urban Manual[40] are excellent sources of information for BMPs currently used to protect water quality in Illinois. There are a number of other documents that provide substantial information pertaining to BMPs appropriate for NPS pollution control in Illinois.

[39] Natural Resources Conservation Service

[40] Association of Illinois Soil and Water Conservation Districts

Illinois EPA strongly encourages the use of a certified professional civil engineer or an agency such as the NRCS to help select and site the most appropriate BMP for NPS pollution control. There are also a number of tools online that can give the benefits and limitations for specific BMPs.

When selecting a BMP for installation – long-term operation and maintenance must be considered. BMPs should be operated and maintained for their designed-life spans (e.g., terraces are normally designed to last at least 10 years). A BMP that is not well-maintained or correctly-operated can cause more problems than if the BMP was never installed. Poorly maintained BMPs can cause both an environmental and a social stigma. Many stakeholders will not install a BMP if they find it ugly or cumbersome to maintain. A single poorly planned or maintained BMP can wreak havoc in the implementation process of a WBP and cause the NPS pollution control to never be realized.

Outreach and Education 3.6

Educating the public about the impacts NPS pollution can have on groundwater and surface water resources and the solutions to abate those impacts are essential if progress in the reduction of NPS pollution is to be realized. Due to the magnitude and importance of NPS issues, it is imperative that all agencies and organizations involved in NPS pollution reduction address information and education as a key component of any NPS program initiative. Major emphasis has been placed on Program efforts aimed at soil erosion reduction, livestock waste management, and proper handling and application of fertilizers and pesticides. Educational materials are available to address the processes of urban and rural soil erosion, how to estimate soil loss, assessment of water resources and how to develop not only a conservation farm plan, but also a WBP.

Additional Program education efforts, such as workshops and webinars, Web sites, technical material development, on-site training should focus on urban development, construction site erosion control, and coordination of community zoning and ordinances through local regional planning commissions. Reduction of urban stormwater runoff through the use of BMPs should be a high priority in communities throughout Illinois.

Federal, state, and local staff available to conduct NPS pollution control outreach and education has decreased significantly in recent years. However, access to materials on the internet can provide much of the information that was previously transferred face-to-face or in hard copy. It is imperative that Illinois EPA and its partners provide information pertaining to which documents and tools are appropriate for use in Illinois.

Long-term comprehensive information/education programs assist the local community in making sound and timely decisions to best manage their resources to protect water quality. An informed and educated community can inventory and evaluate water resources, identify water quality concerns, and outline and develop implementation plans to protect water resources. The community, in turn, may be less dependent on outside assistance and may be able to start plan implementation sooner than would otherwise be possible.

Education and outreach projects should target decision makers and promote awareness and implementation of activities that may help to restore impaired waters but also may help protect waters from degradation due to changing land use activities that increase NPS pollution. Projects could include statewide or community-based efforts such as training, displays, and workshops.

Tools such as the internet, conferences, news releases, newsletters and workshops will be used to improve information sharing at the federal, state, and local levels.

Illinois EPA hosts a state-wide NPS Biennial Management Meeting for Illinois EPA staff and partners to interact with those groups and individuals that are committed to reducing NPS pollution to Illinois' water resources. The meeting topics will alternate between rural and urban issues and will include components that present information on topics such as: WBP, TMDL, and LRS development, BMP technologies and application, and use of water quality and technology-based tools. The meeting will also be used as a Feedback Loop tool to capture stakeholder and partner needs in regard to the Program.

Inreach 3.61

Staff at Illinois EPA have been practicing adaptive management throughout the lifespan of the Program. At the start of the Program, NPS Unit staff spent time researching and educating themselves regarding NPS pollution issues and control techniques to address them. When resources are stretched to the limit, one of the first responsibilities removed is education and continuing knowledge. Even if time is allocated to pursue information, NPS pollution and the waters it impacts are so diverse that it's almost impossible to stay well-informed on all of the fronts that need to be covered.

Illinois EPA will use a combination of tools to keep Watershed Management Section staff as current as possible on the topics of NPS pollution and its control. This will allow staff to continue to provide appropriate technical assistance and educational information.

Tools such as webinars, conferences, in-house cross training and personal development will be used to improve Illinois EPA's staff's ability to provide technical assistance for NPS pollution control to local watershed groups and Program partners.

Illinois EPA – Watershed Contacts

In an effort to better coordinate technical and educational assistance to watershed stakeholders, the Illinois EPA Bureau of Water has developed a point of contact system within the NPS Unit for each of the 51 major watersheds.

This contact will focus primarily on NPS pollution control issues, but will also work to facilitate coordination of resources to address other water quality concerns for the local watershed community.

It is anticipated that these points of contact will eventually become well versed in the activities and issues encountered within their appointed watersheds and can help facilitate potential solutions as quickly as possible.

Technical Assistance 3.62

Technical assistance provided to a WBP committee from a TAC is vital for the cost-effective development and execution of an implementation plan. Many of the Program's core partners have staff available to assist watershed planning groups as they conduct their planning efforts and then during the implementation of the plan.

Technical assistance, especially in the area of WBP efforts, is one of the most cost effective components of the Program. The information provided can be used and reused by the audience at no additional cost. There is not enough money in the CWA or all of Illinois state programs combined to implement all of the programs, projects, and practices needed to control Illinois' NPS pollution problems. However, hundreds of millions of dollars are spent annually in Illinois for projects (from highway and utility improvements to home landscaping), activities and outreach which could help control NPS pollution if the person coordinating the activity was aware of the needs and potential benefits. Many of these projects could be slightly modified in their planning stages to incorporate NPS pollution control components. With the proper information supplied, many citizens would choose to control NPS pollution as possible throughout their day-to-day activities.

Tool Development 3.63

Illinois EPA and the Program partners have developed a wide range of tools to help plan, implement, document, and track NPS pollution control programs, projects and practices throughout Illinois. These tools range from in-house spreadsheets, to technical guides, to web-based modeling and calculations, to field testing alternative approaches to meet water quality standards.

Examples of tools developed include:

The Resource Management Mapping Service (RMMS) which utilizes a wide range of coordinated natural resource related databases to provide an online, interactive mapping environment that is designed to help government agencies, non-governmental organizations, and the public evaluate and manage geographically-based information about Illinois' natural resources, particularly water resources, so that they can more effectively develop and implement appropriate resource protection and enhancement measures. RMMS is maintained by the University of Illinois with support from the Illinois EPA and other state agencies.

Illinois EPA uses RMMS to track individual BMPs funded by Section 319, Illinois Green Infrastructure Grant Program, and other NPS pollution control grant programs. The information tracked includes:

- the type of BMP,
- completion date,
- size of the BMP measured in acres, feet, or number;
- location of the BMP, and
- pollutant load reductions associated with the BMP.

RMMS is also used by Illinois EPA to track the development and implementation of WBPs in Illinois. These data, and the reports that can be generated on these data through RMMS, are used by Illinois EPA to assist in managing both individual grant projects and the Program.

Water Quality Standards

The Illinois Pollution Control Board, a sister Agency to the Illinois EPA, promulgates water quality standards in Illinois. Two Sections of 35 Illinois Administrative Code (IAC), Section 302, Water Quality Standards and Section 303, Water Use Designations and Site Specific Water Quality Standards contain the standards applicable to lakes and streams. The Program will be updated as current standards are updated and new standards are adopted.

TMDL Alternatives – Using alternative approaches to meet water quality standards

TMDLs are an important tool available to water resource managers to allow them to develop a plan with targeted goals for bringing an impaired waterbody to fully meeting its Use Support designations. However, we have discovered that sometimes locally led efforts that don't involve the traditional Illinois EPA TMDL process can have a great chance of successfully completing implementation activities that will lead to improved water quality. Some of these efforts can be seen in the following examples:

Fox River Study Group:

The Fox River Study Group (FRSG) is a diverse coalition of stakeholders working together to assess water quality in the Fox River watershed. The FRSG began meeting in the summer of 2001 to address water quality impairments. Although the emphasis in the original meeting was on monitoring water quality, it soon because clear that the FRSG presented a unique opportunity to foster sustainable growth throughout the watershed. To guide those efforts, the FRSG reached a consensus on the following work plan.

The work plan is made up of four phases. Phase 1 work (data compilation and modeling) was conducted by the Illinois State Water Survey. Part of the Phase II effort began in April 2002 when the FRSG water quality monitoring program started collecting samples at seven sites along

the Fox River. Those data, especially information describing how the watershed responds to storm events, were used in Phase III to calibrate a model of the Fox River watershed.

The fourth and final phase of the work plan is to develop an implementation plan as a management tool. The Implementation Plan will be used to:

- Ensure efficient use of taxpayer and private moneys on watershed projects
- Assess the effect of various development options throughout the watershed
- Educate stakeholders
- Evaluate management priorities
- Identify sensitive regions within the watershed
- Develop effective continuing monitoring program; and lastly
- 'Assign' load reductions to stakeholders to ensure implementation activities.

DuPage River/Salt Creek Workgroup
The DuPage River Salt Creek Workgroup (DRSCW) formed in 2005 in response to concerns about TMDLs being set for the East and West Branches of the DuPage River and Salt Creek. The DRSCW is made up of local communities, Publically Owned Treatment Works and private environmental organizations. The DRSCW is committed to producing comprehensive data sets for local watersheds in order to determine and resolve priority stressors to local aquatic systems. The organization seeks to implement targeted watershed activities that resolve priority waterway problems efficiently and cost effectively.

Hickory Creek Watershed
Residents, village and county leaders and conservation groups began meeting to focus on the challenges facing Hickory Creek and its watershed in 2007. The group is unusual because much of the leadership comes from representatives of the seven municipalities that govern most of the land in the watershed.

The Group is working to effectively reduce NPS pollution, attain water quality and habitat improvements, and engage a wide range of audiences in the Group's efforts. This is done by documenting sources of NPS pollutants to facilitate the preparation of action plans, implementing simple demonstration BMPs, participating in community education and outreach, and lastly, evaluating performance of local BMP projects. Recently the Group began looking at developing a Third Party TMDL in order to bring about both point and NPS pollution reductions.

Tracking Implementation of WBP, TMDL, and LRS Implementation Plans 3.7

Both BMP installation and outreach activity implementation need to be tracked at the watershed and state-wide scale. Tracking administrative activity is also appropriate. Tracking the implementation of the NPS components of local plans and the trends in water quality will guide the long-term application of NPS pollution control activities for the local watershed groups. The information documented will identify areas within specific plans and watersheds where implementation efforts need to increase or need to be modified if the anticipated outcomes are not realized. As larger areas of the state have WBP, TMDL, or LRS implementation plans completed, the BMP installation, outreach, and administrative activity tracking for the individual plans will help guide future plan development, updates, and implementation efforts for larger watershed and river basins.

BMP tracking includes documentation of the practice type, units installed, project location, pollutant load reductions, cost and date implemented. The BMP tracking can be used to help determine a BMPs success at improving local water quality or to determine the BMPs that the local community is willing to

adopt. The BMP tracking can, by using the date of installation, also help identify BMPs that are nearing the end of their life-span and when they should be checked for replacement needs. The outreach activity tracking includes the type of activity, the amount of units installed or completed, the cost per unit, and the location of the application. This information can be used to measure accomplishments through social indicator efforts. Administrative tracking can include accumulating information on the resource needs to accomplish design, permitting and coordination of the application of the specific BMPs. It can also include education and communication efforts to encourage plan implementation by everyone from individual land owners to municipalities. It's also appropriate to track participation in education and outreach events and the accomplishment of outside partners.

Illinois EPA tracks Section 319 grant program implementation in U.S. EPA's Grants Reporting and Tracking System (GRTS). This tool helps Illinois EPA report accomplishments toward the implementation of the Section 319 grant program and this Program. GRTS enables U.S. EPA and Illinois to demonstrate the accomplishments achieved with the use of Section 319(h) grant funds. The data entered into GRTS is also used by U.S. EPA to respond to inquiries received from Congressional committees, the White House, and various constituent groups.

Illinois EPA uses the Resource Management Mapping System (RMMS) to track the application of specific BMPs. RMMS includes geographic information system (GIS) capabilities to map the implementation of BMPs by a variety of criteria, including within a specific watershed, county, BMP type or date installed. RMMS users can generate GIS layers for use to enhance their watershed planning and implementation efforts. Illinois EPA is working with Program partners to increase the amount of information available in the RMMS system.

Best Management Practices 3.8

BMPs are the building blocks of NPS pollution control through the execution of a WBP, TMDL, or LRS implementation plan. A thorough implementation plan will identify the location, type, amount, and other appropriate details for each BMP that is recommended for implementation.

The following table lists BMPs that are normally used to control NPS pollution in Illinois. The fact that the BMP is listed does not mean that it is an appropriate NPS pollution control practice at all sites.

Illinois EPA strongly encourages the use of a certified professional civil engineer or an agency, such as the NRCS, to help select and site the most appropriate BMP for the NPS pollution control for the specific site. There are also a number of tools online that can give the benefits and limitations for specific BMPs, so that persons interested in NPS pollution control can narrow down the BMPs that they are considering for their property.

Program Partners 3.9

The best chance to control NPS pollution in Illinois is to encourage involvement at the local level by federal, state, and local partners, especially the local watershed community! Coordination of resources and programs will be the key to accomplish the Program goals.

As stated earlier, successful NPS pollution control depends upon many people and organizations working together. In Illinois, Program partners can be found at all levels of the spectrum, from federal agencies to local watershed planning groups. The resources that partners bring to the table vary widely.

Table 11 - Key Program Partners and the Program Components Their Resources Address

Key Partner	Partnership	Monitoring	Capacity Building	Plan & TMDL Development	Plan & TMDL Implementation	Outreach/ Education	Technical Assistance
U.S. Environmetal Protection Agency	X	X	X	X	X	X	X
USDA Natural Resources Conservation Service	X		X		X		X
USDA Farm Services Agency	X				X		X
U.S. Fish & Wildlife Service	X	X			X	X	X
U.S. Forestry Service	X				X		X
U.S. Army Corps of Engineers	X	X			X	X	X
U.S. Geological Survey	X	X					X
Illinois Department of Natural Resources	X	X	X		X	X	X
Illinois Department of Agriculture	X	X	X		X	X	X
Illinois Department of Transportation	X						X
Illinois Department of Commerce and Economic Opportunity	X				X	X	X
University of Illinois - Extension	X		X			X	X
University of Illinois	X					X	X
Illinois State Water Survey	X	X	X	X	X		X
Illinois State Geological Survey	X	X					X
Stormwater Management Commissions	X	X	X	X	X	X	X
Association of Illinois Soil and Water Conservation Districts	X		X		X	X	X
Soil and Water Conservation Districts	X		X	X	X	X	X
Illinois Lake Management Association	X		X			X	
The Conservation Foundation	X	X	X	X	X	X	X
DuPage River Salt Creek Workgroup	X	X	X	X	X	X	X
Prairie Rivers Network	X		X			X	
The Nature Conservancy	X	X	X	X	X	X	X
Illinois Farm Bureau	X		X			X	
Illinois Fertilizer & Chemical Association	X		X			X	
Illinois Beef Association	X		X			X	
Illinois Corn Growers Association	X		X			X	
Illinois Pork Producers	X		X			X	
Illinois Soybean Associations	X		X			X	
City of Chicago	X	X	X			X	X
Illinois River Task Force	X						
River Coordinating Councils (Illinois, Mississippi, Ohio & Wabash)	X						
Conservation Technology Information Center	X		X			X	X
Chicago Metropolitan Agency for Planning	X		X	X		X	X
Metropolitan Planning Council	X		X			X	X
Heartland Conservancy	X	X	X	X	X	X	X
Source Water Collaborative	X						
American Water Works Association	X					X	
Partner Groups (multiple entities per line)							
Local Watershed Planning Group	X			X	X		
Forest Preserves	X				X		
Conservation Districts	X						
Counties	X			X			
Municipalities	X			X	X		
Private Companies	X				X		

Table 12 - Key Partner Web sites

Entity	Web sites
U.S. Environmental Protection Agency	www.epa.gov
USDA Natural Resources Conservation Service	www.il.nrcs.usda.gov
USDA Farm Service Agency	www.fsa.usda.gov
U.S. Fish & Wildlife Service	www.fws.gov
U.S. Forestry Service	www.fs.fed.us
U.S. Army Corps of Engineers	www.usace.army.mil
U.S. Geological Survey	www.usgs.gov
Illinois Department of Natural Resources	www.dnr.illinois.gov
Illinois Department of Agriculture	www.agr.state.il.us
Illinois Department of Transportation	www.dot.state.il.us
Illinois Department of Commerce and Economic Opportunity	www.commerce.state.il.us
University of Illinois - Extension	www.extension.uiuc.edu
University of Illinois	www.illinois.edu
Illinois State Water Survey	www.isws.illinois.edu
Illinois State Geological Survey	www.isgs.illinois.edu
Stormwater Management Commission	www.lakecountyil.gov/STORMWATER/Pages/default.aspx
Association of Illinois Soil and Water Conservation Districts	www.aiswcd.org
Soil and Water Conservation Districts	http://www.aiswcd.org/
Illinois Lake Management Association	www.ilma-lakes.org
The Conservation Foundation	www.theconservationfoundation.org
DuPage River Salt Creek Workgroup	www.drscw.org
Prairie Rivers Network	www.prairierivers.org
The Nature Conservancy	www.nature.org
Illinois Farm Bureau	www.ilfb.org
Illinois Fertilizer & Chemical Association	www.ifca.com
Illinois Beef Association	www.illinoisbeef.com
Illinois Corn Growers Association	www.ilcorn.ncgapremium.com
Illinois Pork Producers	www.ilpork.com
Illinois Soybean Associations	www.ilsoy.org
City of Chicago	www.cityofchicago.org
Illinois River Task Force	http://www.guidestar.org/organizations/37-1197053/illinois-river-soil-conservation-task-force.aspx
Illinois River Coordinating Council	http://www2.illinois.gov/ltgov/Pages/IRCC.aspx
Conservation Technology Information Center	www.ctic.purdue.edu
Chicago Metropolitan Agency for Planning	www.cmap.illinois.gov
Metropolitan Planning Council	www.metroplanning.org
Heartlands Conservancy	www.heartlandsconservancy.org
Source Water Collaborative	www.sourcewatercollaborative.org
Illinois Section American Water Works Association	www.isawwa.org
Partner Groups (multiple entities per line)	
Local Watershed Planning Groups	na
Forest Preserves	na
Conservation Districts	na
Counties	na
Municipalities	na
Private Companies	na

Table 13 - Key Partner Program with Source Categories

Entity and Program (Bold = brief program description at end of chapter)	Agriculture	Construction	Hydrologic Modification	Resource Extraction	Toxicants	Urban Runoff	Program Support (e.g., monitoirn g, outreach)
Illinois Environmental Protection Agency							
Ambient Lake Monitoring Program							X
Ambient Water Quality Monitoring Network							X
American Recovery and Reinvestment Act (ARRA)		X				X	
Illinois Clean Lakes Program			X				X
Emergency Response Program							X
Facility-Related Stream Surveys							X
Fish Contaminant Monitoring Program							X
Groundwater Monitoring Program							X
Illinois Green Infrastructure Grant Program						X	
Intensive Basin Surveys							X
Lake Education Assistance Program							X
Lake Michigan Monitoring Program							X
Landfill Operational Permit Programs							X
Large Rivers Subnetwork Program							X
National Pollutant Discharge Elimination System (NPDES)							X
Pesticide Monitoring Subnetwork (PMN)							X
Priority Lake and Watershed Implementation Program (PLWIP)			X				
Sludge Disposal Permit Program							X
Small Systems Complance Grant Program						X	
Source Water Protection Program	X					X	
Toxicity Testing Program							X
UST Program							X
Volunteer Lake Monitoring Program							X
Wastewater and Drinking Water State Revolving Funds						X	
Wastewater Disposal Permit Program							X
Water Quality and 401 Certification			X				
Water Quality Management Program							X
Watershed-Based Monitoring							X
Wetland Monitoring							X
Wellhead Protection Program	X					X	
U.S. Environmental Protection Agency							
Coastal Management Program w/IDNR			X		X	X	
National Monitoring Program							X
Section 391(h) Program	X	X	X	X	X	X	X
Targeted Watershed or Watershed Initiative	X	X	X	X	X	X	X

Table 13 – Key Partner Program with Source Categories - Continued

Entity and Program (Bold = brief program description at end of chapter)	Agriculture	Construction	Hydrologic Modification	Resource Extraction	Toxicants	Urban Runoff	Program Support (e.g., monitoirn g, outreach)
USDA - Natural Resources Conservation Service							
Agricultural Water Enhancement Program	X		X				
Conservation Innovation Grants	X						
Conservation Reserve Program (USDA Farm Service Agency)	X						
Conservation Stewardship Program	X				X		
Cooperative Conservation Partnership Initiative	X						
Emergency Watershed Protection	X		X		X	X	
Environmental Quality Incentives Program (EQIP)	X		X				
Farm and Ranch Lands Protection Program	X						
Grassland Reserve Program	X						
Mississippi River Basin Healthy Watersheds Initiative (MRBI)	X						
National Water Quality Initiative (NWQI)	X		X				
Technical Service Providers	X				X		
Wetland Reserve Program	X		X				
Wildlife Habitat Incentives Program (WHIP)	X		X				
Working Land for Wildlife	X		X				
PL-566			X				
Rural Abandoned Mine Program				X			
Illinois Department of Agriculture							
Agricultural Areas Conservation and Protection Act	X						
Code of Country Living	X		X		X		
Conservation 2000, Sustainable Agriculture Grant Program	X		X			X	
Conservation Practices Program	X		X			X	
Illinois Conservation Partnership	X						
Cost-share Funds Targeted to TMDL Watersheds	X					X	
Environmental Programs - IDA	X		X		X		
Exotic Pests	X		X		X		
Electric Transmission Line Construction Standards	X	X					
Farmland Protection	X						
Henry White Experimental Farm	X		X		X		X
Land Evaluation and Site Assessment System						X	
Landcover Information and Data	X		X	X		X	
Livestock Management Facilities Program	X		X				
Mined Land Reclamation				X			
Nutrient Management Program	X						

Table 13 – Key Partner Program with Source Categories - Continued

Entity and Program (Bold = brief program description at end of chapter)	Agriculture	Construction	Hydrologic Modification	Resource Extraction	Toxicants	Urban Runoff	Program Support (e.g., monitoirn g, outreach)
Illinois Department of Agriculture (continued)							
Partners for Conservation	X		X			X	
Pipeline Standards and Policies	X	X	X	X	X		X
Soil and Water Conservation District - Grants -in - Aid	X	X	X		X	X	X
Soil Conservation Transect Survey	X		X			X	
SOILS - Conservation Tillage Project	X						X
Streambank Stabilization and Restoration	X		X				
Summary of Steps when Forming an Agricultural Area	X						
Sustainable Agriculture	X		X		X		
T by 2000: Soil Conservatoin	X						
Water and Sewer Line Construction Standards and Policies	X	X	X	X	X	X	
Illinois Water Well Construction Code	X						
Illinois Department of Natural Resources							
Acres for Wildlife Program	X		X				X
Conservation Reserve Enhancement Program	X		X				
Landowner Incentive Program (LIP)	X		X				
Partners for Conservation	X		X			X	
Illinois Urban and Community Forestry Program			X			X	X
Aerial Pesticide Application	X				X		
Clean and Green Marina Program		X	X		X		X
Great Lakes Restoration Initiative		X	X		X		X
Abandoned Mine Land Reclamation Fund				X			
Land Reclamation Programs				X			
Oil & Gas Program				X			
Mine Pollution Control Program				X			
Wetland Acquisition	X		X				
Riparian Corridor and Habitat Managment	X		X				

Table 14 - Key Partner Program Web sites

Entity and Program		Web Pages
Illinois Environmental Protection Agency		
Ambient Lake Monitoring Program		http://www.epa.state.il.us/water/conservation/almp.html
Ambient Water Quality Monitoring Network		http://www.epa.state.il.us/water/surface-water/river-stream-mon.html#sw1
ARRA		www.epa.state.il.us/water/financial-assistance/economic-stimulus/
Illinois Clean Lakes Program		http://www.epa.state.il.us/water/conservation/iclp.html
Facility-Related Stream Surveys		http://www.epa.state.il.us/water/surface-water/river-stream-mon.html#sw3
Fish Contaminant Monitoring Program		http://www.epa.state.il.us/water/surface-water/river-stream-mon.html#sw6
Groundwater Monitoring Program		http://www.epa.state.il.us/land/waste-mgmt/groundwater-monitoring.html
Intensive Basin Surveys		http://www.epa.state.il.us/water/surface-water/river-stream-mon.html#sw4
Lake Michigan Monitoring Program		http://www.epa.state.il.us/water/surface-water/lake-michigan-mon.html
Large Rivers Subnetwork Program		http://www.epa.state.il.us/water/water-quality/monitoring-strategy/2007-2012/monitoring-strategy-2007-2012.pdf
Lake Education Assistance Program		http://www.epa.state.il.us/environmental-progress/v31/n2/leap.html
Pesticide Monitoring Subnetwork (PMN)		http://www.epa.state.il.us/water/surface-water/river-stream-mon.html#sw2
Priority Lake and Watershed Implementation Program		http://www.epa.state.il.us/water/conservation/plwip.html
Small Systems Complance Grant Program (?)		http://www.epa.state.il.us/water/financial-assistance/small-systems-compliance.html
Toxicity Testing Program		http://www.epa.state.il.us/water/surface-water/river-stream-mon.html#sw5
Illinois Green Infrastructure Grant Program		http://www.epa.state.il.us/water/financial-assistance/igig.html
Source Water Protection Program		http://www.epa.state.il.us/water/groundwater/source-water-quality-program.html
State Revolving Fund		http://www.epa.state.il.us/water/financial-assistance/state-revolving-fund.html
Volunteer Lake Monitoring Program		http://www.epa.state.il.us/water/conservation/vlmp/what-is-vlmp.html
Watershed-Based Monitoring		http://www.epa.state.il.us/water/water-quality/monitoring-strategy/2007-2012/monitoring-strategy-2007-2012.pdf
Wetland Monitoring		http://www.epa.state.il.us/water/water-quality/report-2007/WetlandFinalOct152007.pdf
Water Quality Management Program		http://www.epa.state.il.us/water/watershed/nonpoint-source.html
NPDES Program and State Regulations		http://www.epa.state.il.us/water/permits/waste-water/
Sludge Disposal Permit Program		http://www.epa.state.il.us/water/permits/waste-water/forms/schedule-g.pdf
Wastewater Disposal Permit Program		http://www.epa.state.il.us/water/permits/waste-water/
Landfill Operational Permit Programs		http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/forms/
Section 404; Sectin 401 Permit Program		http://www.epa.state.il.us/water/permits/
Wellhead Protection Program		http://www.epa.state.il.us/water/groundwater/wellhead-protection.html
Emergency Respone Program		http://www.epa.state.il.us/emergency-response/
UST Program		http://www.epa.state.il.us/land/lust/
Toxicity Testing Program		http://www.epa.state.il.us/water/surface-water/river-stream-mon.html#sw5
U.S. Environmental Protection Agency		
Coastal Management Program - IDNR		http://www2.epa.gov/aboutepa/epa-noaa-issue-guidelines-reduce-coastal-pollution
National Monitoring Program		https://www.bae.ncsu.edu/programs/extension/wqg/319monitoring/
Section 391(h) Program		http://www.waterboards.ca.gov/water_issues/programs/grants_loans/319h/
Targeted Watershed or Watershed Initiative		http://water.epa.gov/grants_funding/twg/initiative_index.cfm
USDA Natural Resources Conservation Service		
Agricultural Water Enhancement Program		http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/financial/awep/?&cid=nrcs143_008334
Conservation Innovation Grants		http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/cig/?cid=nrcs143_008205
Conservation Reserve Program		http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/?cid=stelprdb1041269
Conservation Stewardship Program		http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/releases/?cid=STELPRDB1117404
Emergency Watershed Protection		http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/landscape/ewpp/?&cid=nrcs143_008258
Environmental Quality Incentives Program (EQIP)		http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?&cid=stelprdb1046252
Grassland Reserve Program		http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/grassland/?cid=nrcs143_008401
(MRBI)		http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/farmbill/initiatives/?cid=stelprdb1048200
Technical Service Providers		http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045178.pdf
Wetland Reserve Program		http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/wetlands/?cid=nrcs143_008419

Table 14 - Key Partner Program Web sites - Continued

Entity and Program		Web Pages
USDA NRCS Continued		
Wildlife Habitat Incentives Program (WHIP)		http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/whip/?cid=nrcs143_008423
PL-566		http://www.nrcs.usda.gov/wps/portal/nrcs/detail/nd/technical/?cid=nrcs141p2_001674
Rural Abandoned Mine Program		http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_002089.pdf
Illinois Department of Agriculture		
Agricultural Areas Conservation and Protection Act		e=Agricultural+Areas+Conservation+and+Protection+Act%2E
Code of Country Living		http://www.ilfb.org/media/66828/code_of_country_living_1_.pdf
Conservation 2000, Sustainable Agriculture Grant Program		http://www.agr.state.il.us/C2000/
Illinois Conservation Partnership		http://www.agr.state.il.us/Environment/
Cost-share Funds Targeted to TMDL Watersheds		http://www.agr.state.il.us/Environment/LandWater/tmdl.html
Environmental Programs - IDA		http://www.agr.state.il.us/Environment/
Electric Transmission Line Construction Standards		http://www.agr.state.il.us/Environment/LandWater/electrictransmissionlineconstructionstds.pdf
Farmland Protection		http://www.agr.state.il.us/Environment/LandWater/farmlandprot.html
Henry White Experimental Farm		http://www.agr.state.il.us/Environment/LandWater/henrywhite.html
Land Evaluation and Site Assessment System		http://www.agr.state.il.us/Environment/LandWater/LESA.pdf
Landcover Information and Data		http://www.agr.state.il.us/gis/landcover.html
Livestock Management Facilities Program		http://www.agr.state.il.us/Environment/LMFA/
Pipeline Standards and Policies		http://www.agr.state.il.us/Environment/LandWater/pipelinestandards&policies.pdf
Illinois Soil Conservation Transect Survey Summary		http://www.agr.state.il.us/Environment/LandWater/2011%20Transect%20Survey%20Summary%20Report.pdf
SOILS - Conservation Tillage Project		http://www.agr.state.il.us/programs/
Summary of Steps when Forming and Agricultural Area		http://www.agr.state.il.us/Environment/LandWater/agareastepsummary.html
Sustainable Agriculture		http://sustainableagriculture.net/
T by 2000: Soil Conservatoin		http://www.agr.state.il.us/Environment/LandWater/tby2000.html
Water and Sewer Line Construction Standards and Policies		http://www.agr.state.il.us/Environment/LandWater/sewerlines.pdf
Illinois Water Well Construction Code		http://www.kanedupageswcd.org/pdfs/Forms/WellSealingApplicationFY10.pdf
Illinois Department of Natural Resources		
Acres for Wildlife Program		http://dnr.state.il.us/orc/Wildliferesources/AFW/
NRCS and IDNR)		http://www.dnr.illinois.gov/conservation/CREP/Documents/CREP_brochure_2010.pdf
Landowner Incentive Program (LIP)		http://www.dnr.state.il.us/orep/pfc/incentives.htm
Partners for Conservation		http://dnr.state.il.us/orep/pfc/
Illinois Urban and Community Forestry Program		http://dnr.state.il.us/ORC/urbanforestry/
Aerial Pesticide Application		http://www.agr.state.il.us/Environment/Pesticide/training/commappl.html
Clean and Green Marina Program		www.dnr.illinois.gov/cmp/.../Clean%20Marina%20Program.pptx
Great Lakes Restoration Initiative		http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?&cid=nrcsdev11_023903
Keep It for the Crops		http://www.nutrientstewardship.com/partners/institutional-supporters/illinois-council-best-management-practices-0
Abandoned Mine Land Reclamation Fund		https://dnr.state.il.us/mines/aml/recpgm.htm
Land Reclamation Programs		https://dnr.state.il.us/mines/aml/recpgm.htm
Oil & Gas Program		http://dnr.state.il.us/mines/dog/
Mine Pollution Control Program		https://dnr.state.il.us/mines/aml/recpgm.htm
Wetland Acquisition		http://dnr.state.il.us/wetlands/ch5b.htm
Riparian Corridor and Habitat Managmeent		http://urbanext.illinois.edu/lcr/environmental.cfm
Local Stormwater and Soil Erosion Control Ordinances		http://www.aiswcd.org/IUM/sections/section9.html

Table 15 - Illinois Laws and Acts that Help Control NPS Pollution

State Act and Laws	Date	Agriculture	Construction	Hydrologic Modification	Resource Extraction	Toxicants	Urban Runoff	Program Support (e.g., monitoring, outreach)
Agrichemical Container Recycling Schedule	effective 9/2011					X		
Anhydrous Ammonia & Nitrogen Equipment, Containers and Storage Rules	filed and effective 5/15/1967; still effective as of 11/25/2003	X				X		
Agricultural Areas Conservation and Protection Act	effective 7/29/1999; still in effect as of 5/19/2006	X		X				
BMPs to Reduce Atrizine Losses to Surface Water	2008/2009	X				X		
Illinois Commercial Feed Act of 1961	filed 12/22/1961; effective 1/1/1962; still effect as of 7/27/2010	X						
Conservation 2000 - State Finance Act	effective 9/30/1995; still effect as of 6/30/2009	X		X			X	
Illinois Conservation Enhancement Act	effective 2/7/1996; still in effect as of 1/1/2003	X		X			X	
Conservation Stewardship Law (Senate Bill 17)	effective 10/1/2007	X		X			X	
Illinois Fertilizer Act of 1961	effective 1/1/1962; still in effect as of 8/15/2012	X				X		
Environmental Protection Act	effective 7/7/2000; still in effect as of 8/12/2011							
Environmental Protection Act - Agrichemical Containment	7/1/2002					X		
Farmland Preservation Act	1982; still in effect as of 6/14/13							
Fertilizer Act of 1961 Rules	filed 12/15/1977; effective 1/1/1978; still in effect as of 11/18/1972							
Fertilizer Research and Education Program	1989; still in effect as of 2004	X				X		
Illinois Forestry Development Act	1983; still in effect as of 6/2006	X		X			X	
Illinois Generic Management Plan for Pesticides in Groundwater	2000				X			
Illinois Green Infrastructure (PA 96-26)	2009		X	X		X	X	
Groundwater Monitoring Program	1992	X		X	X	X		
Illinois Insect Pest and Plant Disease Act	filed 10/24/1974; effective 11/2/1974; still in effect as of 11/1/2001 November 2, 1974; still in effect as of 9/23/2002	X				X		

Table 15 – Illinois Laws and Acts – Continued

State Act and Laws	Date	Agriculture	Construction	Hydrologic Modification	Resource Extraction	Toxicants	Urban Runoff	Program Support (e.g., monitoring, outreach)
Illinois Lawn Care Products Application and Notice Acts	effective 2/9/1993; still in effect as of 6/7/2002					X	X	
Livestock Management Facilities Act	effective7/13/1999; still in effect as of 1/21/2001	X		X				
Illinois Noxious Weed Law	filed 12/20/1972; effective 1/1/1973; still in effect as of 9/23/2002	X		X			X	
Nursery Program	effective 6/2/1927	X		X		X		
Pest Control Compact Act	effective 7/15/1965	X				X	X	
Illinois Pesticide Act	effective 1/6/1981; still in effect as of 1/1/2011	X				X	X	
Pesticides in Water	effective 1/6/1981; still in effect as of 1/1/2011	X					X	X
Illinois Rivers-Friendly Farmer Program Act	effective 1/1/2000	X		X				
Soil Amendment Act	effective 9/10/1991	X						
Soil and Water Conservation District Act	effective 7/13/2012	X	X	X	X	X	X	X
Sustainable Agriculture Rules	effective 4/29/1993	X				X		
Water Use Act of 1983	effective 1983; still in effect as of 1/1/2010	X		X	X		X	
Watershed Improvement Act	effective 7/10/1957	X	X	X	X	X	X	

Table 16 – Illinois Laws and Acts Web sites

State Act and Laws	Date	Web site
Agrichemical Container Recycling Schedule	effective 9/2011	http://www.ilga.gov/legislation/ilcs/ilcs4.asp?DocName=041500050HTit%2E+IV&ActID=1585&ChapAct=415%A0ILCS%A05%2F&ChapterID=36&ChapterName=ENVIRONMENTAL+SAFETY&SectionID=56495&SeqStart=18500&SeqEnd=21400&ActName=Environmental+Protection+Act%2E
Anhydrous Ammonia & Nitrogen Equipment, Containers and Storage Rules	filed and effective 5/15/1967; still effective as of 11/25/2003	http://www.ilga.gov/commission/jcar/admincode/008/00800215sections.html
Agricultural Areas Conservation and Protection Act	effective 7/29/1999; still in effect as of 5/19/2006	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1672&ChapterID=40
BMPs to Reduce Atrizine Losses to Surface Water	2008/2009	http://www.agr.state.il.us/Environment/AtrazineBMPGuide.pdf
Illinois Commercial Feed Act of 1961	filed 12/22/1961; effective 1/1/1962; still effect as of 7/27/2010	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1677&ChapAct=505 ILCS 30/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Illinois+Commercial+Feed+Act+of+1961%2E
Conservation 2000 - State Finance Act	effective 9/30/1995; still effect as of 6/30/2009	http://www.agr.state.il.us/Laws/cons2k.pdf
Illinois Conservation Enhancement Act	effective 2/7/1996; still in effect as of 1/1/2003	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1678&ChapAct=505 ILCS 35/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Illinois+Conservation+Enhancement+Act%2E
Conservation Stewardship Law (Senate Bill 17)	effective 10/1/2007	http://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=095-0633
Illinois Fertilizer Act of 1961	effective 1/1/1962; still in effect as of 8/15/2012	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1688&ChapAct=505 ILCS 80/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Illinois+Fertilizer+Act+of+1961%2E
Environmental Protection Act	effective 7/7/2000; still in effect as of 8/12/2011	http://www.ipcb.state.il.us/SLR/TheEnvironmentalProtectionAct.asp
Environmental Protection Act - Agrichemical Containment	7/1/2002	http://www.ilga.gov/commission/jcar/admincode/008/008002550001100R.html
Farmland Preservation Act	1982; still in effect as of 6/14/13	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1687&ChapAct=505 ILCS 75/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Farmland+Preservation+Act%2E
Fertilizer Act of 1961 Rules	filed 12/15/1977; effective 1/1/1978; still in effect as of 11/18/1972	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1688&ChapterID=40
Fertilizer Research and Education Program	1989; still in effect as of 2004	http://www.ifca.com/media/files/nrec_brochure_march_2013.pdf
Illinois Forestry Development Act	1983; still in effect as of 6/2006	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1736&ChapterID=44
Illinois Generic Management Plan for Pesticides in Groundwater	2000	http://www.agr.state.il.us/pdf/pmp.pdf
Illinois Green Infrastructure (PA 96-26)	2009	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=3092&ChapterID=36
Groundwater Monitoring Program	1992	http://www.epa.gov/osw/hazard/tsd/td/ldu/financial/gdwater.htm
Illinois Pest and Plant Disease Act	filed 10/24/1974; effective 11/2/1974; still in effect as of 11/1/2001	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1691&ChapAct=505 ILCS 90/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Insect+Pest+and+Plant+Disease+Act%2E
Lawn Care Products Application and Notice Acts	effective 2/9/1993; still in effect as of 6/7/2002	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1597&ChapAct=415 ILCS 65/&ChapterID=36&ChapterName=ENVIRONMENTAL+SAFETY&ActName=Lawn+Care+Products+Application+and+Notice+Act%2E
Livestock Management Facilities Act	effective7/13/1999; still in effect as of 1/21/2001	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1720&ChapAct=510 ILCS 77/&ChapterID=41&ChapterName=ANIMALS&ActName=Livestock+Management+Facilities+Act%2E
Illinois Noxious Weed Law	filed 12/20/1972; effective 1/1/1973; still in effect as of 9/23/2002	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1693&ChapAct=505 ILCS 100/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Illinois+Noxious+Weed+Law%2E
Nursery Program	effective 6/2/1927	http://www.agr.state.il.us/Environment/nursery/
Pest Control Compact Act	effective 7/15/1965	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=641&ChapAct=45 ILCS 5/&ChapterID=10&ChapterName=INTERSTATE+COMPACTS&ActName=Pest+Control+Compact+Act%2E
Illinois Pesticide Act	effective 1/6/1981; still in effect as of 1/1/2011	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1596&ChapAct=415%26nbsp%3BILCS%26nbsp%3B60%2F&ChapterID=36&ChapterName=ENVIRONMENTAL+SAFETY&ActName=Illinois+Pesticide+Act%2E
Pesticides in Water	effective 1/6/1981; still in effect as of 1/1/2011	http://ga.water.usgs.gov/edu/pesticidesgw.html
Illinois Rivers-Friendly Farmer Program Act	effective 1/1/2000	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1695&ChapAct=505 ILCS 106/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Illinois+Rivers%2DFriendly+Farmer+Program+Act%2E
Soil Amendment Act	effective 9/10/1991	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1698&ChapAct=505 ILCS 120/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Soil+Amendment+Act%2E
Soil and Water Conservation District Act	effective 7/13/2012	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=857&ChapAct=70 ILCS 405/&ChapterID=15&ChapterName=SPECIAL+DISTRICTS&ActName=Soil+and+Water+Conservation+Districts+Act%2E
Sustainable Agriculture Act	effective 4/29/1993	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1701&ChapAct=505 ILCS 135/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Sustainable+Agriculture+Act%2E
Water Use Act of 1983	effective 1983; still in effect as of 1/1/2010	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1743&ChapAct=525 ILCS 45/&ChapterID=44&ChapterName=CONSERVATION&ActName=Water+Use+Act+of+1983%2E
Watershed Improvement Act	effective 7/10/1957	http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1702&ChapAct=505 ILCS 140/&ChapterID=40&ChapterName=AGRICULTURE&ActName=Watershed+Improvement+Act%2E

Key Partner Program Summary (Partial List) 3.10

Illinois EPA

Ambient Lake Monitoring Program (ALMP)

Illinois EPA conducts the ALMP at approximately 50 inland lakes annually to diagnose lake problems, encourage development of management plans, and to evaluate the effectiveness of programs implemented. ALMP monitoring involves the collection of physical data (e.g., temperature/dissolved oxygen profiles, water clarity, and water color), water and sediment chemical data, and field observations, including weather conditions and the presence of algae and macrophytes.

Inland lakes monitoring as part of the ALMP are monitored five times; once during the spring runoff and turnover period (April or May), three times during the summer (June, July, August) and once during fall turnover (October). Data are routinely collected from three distinct lake stations. Station 1 is the deep lake station. A near-surface and a near-bottom water sample are collected at this station. Station 2 is generally at mid-lake and Station 3 is typically located in the headwater area of the lake. Near-surface-only water samples are collected at Stations 2 and 3. Water quality parameters analyzed include suspended solids, nutrients, and chlorophyll. A sediment grab sample is collected at Stations 1 and 3 once during the sampling season and analyzed for organic and inorganic constitutes. Lakes that serve as source water for public waters supplies are also sampled for organic and inorganic compounds as part of the Source Water Protection Program. A more detailed description of the ALMP is available in *Lake Notes* brochure.

To enhance Illinois EPA's ability to assess lake trends, a total of 78 inland lakes have been chosen to be included in a trends-monitoring program that began in 1991. These 78 lakes, collectively known as the Ambient Cork Lakes, are sampled on a three-year rotating schedule. Other ALMP lakes are monitored les frequently, usually once every five years.

Ambient Water Quality Monitoring Network (AWQMN)

Historically, stream water quality data in Illinois have been collected by several state and federal agencies including the Illinois State Water Survey (ISWS), the Illinois Department of Public Health (IDPH), Illinois EPA, and the U.S. Geological Survey (USGS). This monitoring has resulted in a rich data set from streams ranging in size from small agricultural drainage ditches to the Mississippi River.

The present AWQMN design began in Water Year 1977 and included 209 stations through September 1996. Beginning in Water Year 2001, the AWQMN was increased to 213 stations. This network currently includes 202 stations on interior streams and the Wabash River, sampled by Illinois EPA nine times a year on a six-week rotation, and an additional 11 stations sampled quarterly on the Mississippi River. For a comprehensive description of the AWQMN program see Appendix B of the Water Quality Monitoring Strategy. This will also include details about the program prior to 1977.

Illinois EPA uses the AWQMN to (a) provide baseline water quality information; (b) characterize and define trends in the physical, chemical, and biological conditions of the Illinois' waters; (c) identify new or existing water quality problems; and (d) act as a triggering mechanism for special studies or other appropriate actions.

Illinois Clean Lakes Program (ICLP)

The Illinois Clean Lakes Program is a financial assistance grant program that fosters lake owners' interest and commitment to long-term, comprehensive lake management. Generally, three to five lakes are

sampled each year as part of the ICLP. Grant availability in any given year depends on the level of ICLP funding appropriated by the state legislature.

The monitoring design follows the ALMP. However, sampling frequency is enhanced for the ILCP. For ICLP Phase I and II projects, lake monitoring is generally conducted twice a month from April to October and monthly from November to March for a one-year period. Water quality samples are collected from one foot below the surface, intake depth (for lakes with a PWS intake), and two feet above the bottom at the deepest station. Surface samples (one foot below the surface) are also collected at two other lake stations.

In addition, Phase I monitoring includes flow and chemical data collected at major inflows and outflows for development of nutrient, sediment, and hydrologic budgets.

Additional Phase I monitoring and mapping activities include: major biological resources (i.e., phytoplankton, fish populations, aquatic vegetation, and periodically, zooplankton and benthos), bathymetric (water depth) maps, sedimentation surveys, fish contaminant monitoring conducted pursuant to the Fish Contaminant Monitoring Program (FCMP), and surficial or core sediment sampling an analyses.

Detailed diagnostic/feasibility studies (Phase I) scientifically document the causes, sources, and magnitude of lake impairment. Data generated from these monitoring studies are used to recommend lake protection/restoration practices for future implementation. Final monitoring conducted at the conclusion of the Phase II project is intended to assess the effectiveness of the BMPs implemented during the project.

Facility-Related Stream Surveys (FRSS)

Illinois EPA conducts Facility-Related Stream Surveys (FRSS) primarily on wadeable streams. These surveys involve the collection of macroinvertebrate, water chemistry, stream flow, and habitat data upstream, and incrementally downstream, from municipal and industrial wastewater treatment facility discharges. The FRSS information is used to evaluate water quality impacts and the need for additional wastewater treatment controls. Data are also used to (a) characterize the existing and potential aquatic resource of each receiving stream; (b) determine whether there is a significant biological impact to the receiving stream; and (c) support BOW's NPDES permit reissuance activities.

Depending on staff resources, 10 to 30 surveys may be conducted annually, usually during July through September.

Fish Contaminant Monitoring Program (FCMP)

Illinois EPA participates in the FCMP in accordance with a memorandum of agreement with IDNR, IDPH, and Illinois Department of Agriculture. Fish samples area analyzed for approximately 28 parameters. During the 2005 Water Year, 450 fish samples were collected from 100 Illinois inland lakes and streams. Six fish samples were also collected from the Illinois waters of Lake Michigan.

The statewide monitoring network consists of the following components:

- Intensive Basin Survey Samples
- Follow-up Samples
- Lower Priority Samples
- Lake Michigan Samples
- Special Samples

Groundwater Monitoring Program (GMP)

The collection of high quality chemical data is essential in assessing groundwater programs. In response to this belief, Illinois EPA and the USGS Illinois District Office, located in Urbana, began a cooperative effort to implement a pilot groundwater monitoring network (i.e., ambient monitoring network) in 1984. CWS ambient network design started with pilot efforts in 1984, moved to implementation of the ISWS network design for several years, and was followed by sampling all of Illinois' CWS wells (3,000+) until 1995.

From the experience gained from this prototype network, Illinois EPA designed a probabilistic monitoring network of CWS wells. The design of this network was completed in coordination with the USGS, the Illinois State Geological Survey (ISGS), and the ISWS, with USGS performing the detailed design. These network wells were selected using a random stratified probability-based approach (95 percent statistical confidence in the data with an associated plus or minus five percent precision and accuracy level) with a goal of representing contamination levels in the population of all active CWS wells. Further, the random selection of the CWS wells was stratified by depth, aquifer type, and the presence of aquifer material within 50 feet of land surface. Illinois EPA used geological well log and construction log detail to perform this process.

The random stratified selection process included nearly 3,000 CWS wells resulting in 356 fixed monitoring locations. This probabilistic network is designed to (a) provide an overview of the groundwater conditions in the CWS wells; (b) provide an overview of the groundwater conditions in the principle aquifers (e.g., sand and gravel, Silurian, Cambrian-Ordovician, etc.); (c) establish baselines of water quality within the principle aquifers; (d) identify trends in groundwater quality in the principle aquifers; and (e) evaluate the long-term effectiveness of the Illinois Groundwater Protection Act, Clean Water Act, and Safe Drinking Water Act program activities in protecting groundwater in Illinois.

Illinois EPA utilizes routine monitoring data to determine if deterioration (or improvement) in water quality has occurred over time. In principle, this information will accurately represent hydrogeologic conditions at a station and enable an understanding of the dynamics of subsurface aquifer systems. Illinois EPA has determined that the practical elements of a viable long-term groundwater monitoring program should include (a) evaluation of hydrogeologic setting and program information needs, (b) evaluation of well performance and purging strategies, and (c) execution of effective sampling protocols that include the appropriate selection of sampling mechanisms and materials, as well as sample collection, preservation, and handling procedures.

Groundwater in Illinois is routinely monitored for biological and chemical contaminants and, to some degree, withdrawal rates. Since 1997, Illinois EPA has operated an ambient network of CWS wells via a rotating approach. The random stratified probabilistic network consisting of 356 fixed stations is sampled every other year to allow the flexibility to conduct special/intensive monitoring during the second year cycle.

An average of 350 wells has been maintained since the inception of the probabilistic monitoring network in 1996. When a well in this network is taken out of service, or otherwise not readily able to be sampled, Illinois EPA designates an alternative well with generally the same location, depth, and aquifer properties. By doing this, Illinois EPA has historical datasets for over 455 CWS wells that are currently or have been previously sampled in the probabilistic network.

Since 1993, Illinois EPA has operated a pesticide monitoring subnetwork of the ambient CWS network.

Illinois Green Infrastructure Grant Program (IGIG)
Illinois Green Infrastructure Grants are available to local units of government and other organizations to implement green infrastructure best management practices to control stormwater runoff for water quality protection in Illinois. Projects must be located within a Municipal Separate Storm Sewer System (MS4) or Combined Sewer Overflow (CSO) area. Funding categories include: 1) Combined Sewer Overflow Rehabilitation, 2) Stormwater Retention and Infiltration, and 3) Small Projects. Funds are limited to the implementation of projects to install best management practices (BMPs).

The total amount of funding available under IGIG is approximately $5 million annually.

Intensive Basin Surveys (IBS)
Surveys are conducted in selected basins each year by the Illinois EPA's Bureau of Water in cooperation with the Illinois Department of Natural Resources (IDNR). An IBS is designed to meet several objectives, some of which apply only to one of the two cooperating entities. Basins are selected each year so that statewide coverage is achieved once every five years. Each year, more than 100 stations are monitoring for biological, chemical, and physical indicators of aquatic resource condition.

Intensive Basin Surveys are a major source of information for assessing attainment of aquatic life use in Illinois streams. At each IBS station, fish and macroinvertebrate assemblages, physical habitat (including stream discharge), and water chemistry are measured or otherwise characterized to determine resource conditions. Sampling for fish-tissue contaminants and sediment chemistry also is conducted to screen for the accumulation of toxic substances. For IBS sites that occur near an AWQMN site, water chemistry samples from the AWQMN monitoring are used.

Lake Education Assistance Program (LEAP)
The Lake Education Assistance Program (LEAP) is part of an education initiative offered by the Illinois EPA. Funding is provided by "Partners for Conservation". LEAP funds are available to all school children whether they attend public or private schools, and for grades from kindergarten through graduate school. Funds are also available to not-for-profit organizations. LEAP has approximately $50,000 in available funding per year. The maximum award per school and/or organization is $500 per application period.

The Illinois EPA provides funding for approximately one hundred lake and lake watershed related educational field trips, seminars/workshops, projects, and activities per fiscal year. Projects and activities must have stated goals and involve the enhanced lake/lake watershed education of teachers, students, organizations and/or the community.

Lake Michigan Monitoring Program (LMMP)
Recognizing the great importance of Lake Michigan as a natural asset, the 75th Illinois General Assembly authorized Illinois EPA through 615 ILCS 5/14a to "*regularly conduct water quality and lake bed surveys to evaluate the ecology and quality of water in Lake Michigan."* Since 1977, the Illinois/Indiana portion of Lake Michigan has been monitored under the terms of a cooperative agreement between the city of Chicago and Illinois EPA.

The current Lake Michigan Monitoring Program, as conducted by the city of Chicago's Water Quality Surveillance Section, consists of 80 stations on five separate surveys:

- 14 Open Water stations (6 – 18 miles offshore)
- 23 Jardine Water Purification Plant Radial stations
- 22 South Water Purification Plant Radial stations
- 10 North Shore stations (1-4 miles offshore)
- 11 South Shore stations (<1-6 miles offshore)

Radial surveys are designed to collect samples within a ten-mile radius of the water purifications plants. An ideal monitoring season would consist of 22 surveys; four open water surveys, six radial surveys, and twelve shore surveys. Water quality parameters routinely collected by the city include water temperature, nutrients, solids, chloride, sulfate, bacteria, and plankton.

Shore surveys are conducted more often than radial and open water surveys. Generally six north shore and six south shore surveys are run each year. As a result, Illinois EPA attempts to accompany the city of Chicago on these shore surveys in order to collect additional information not routinely collected by the city including: metals, cyanide, pesticides, phenols, and field measurements of pH, dissolved oxygen, conductivity, and turbidity.

The Lake Michigan Monitoring Program is utilized by Illinois EPA to provide ongoing water quality information to define trends in chemical and biological conditions of the state's portion of Lake Michigan, to identify new or existing water quality problems, and to review existing water quality standards. Because of the size of Lake Michigan and the availability of the city of Chicago's tugboat, as well as weather related problems, significant Illinois EPA staff resources are required to conduct these annual surveys.

Large Rivers Subnetwork Program (LRSP)
Illinois EPA participates in various efforts to monitor the environmental conditions of large rivers, including U.S. EPA's "Survey of the Nation's Rivers' project and ongoing large-river sampling and biological assessment studies by the Midwest Biodiversity Institute and US EPA Region 5.

National Pollutant Discharge Elimination System (NPDES)
The National Pollutant Discharge Elimination System (NPDES) has its origin in the Federal Clean Water Act. The program requires permits for the discharge of treated municipal effluent, treated industrial effluent and stormwater. The permits establish the conditions under which the discharge may occur and establish monitoring and reporting requirements.

The NPDES program was implemented in two phases; Phase 1 addressed the most significant sources of pollution in stormwater runoff. Phase II addresses other sources to protect water quality.
Municipalities located in urban areas are required to obtain NPDES permit coverage for discharges from their municipal separate storm sewer systems. Municipalities located outside of urbanized areas may need to comply as determined by Illinois EPA.

Construction sites that disturb one acre of more are required to have coverage under the NPDES general permit for stormwater discharges from construction site activities.
Municipalities under 100,000 must also meet the construction site stormwater requirements and the industrial stormwater requirements.

Pesticide Monitoring Subnetwork of the Community Water Supply Network (PMS)
Since 1993, the Illinois EPA has operated a Pesticide Monitoring Subnetwork of the CWS Network. Initially, Illinois EPA tested all wells in the CWS Network for triazine and alachlor using immunoassay screening methods. However, in the 1998 monitoring cycle Illinois EPA discontinued the use of immunoassay and randomly selected 50 percent of the network wells which were then analyzed for synthetic organic chemicals (SOCs) using standard laboratory test methods. In the year 2000 monitoring cycle, the remainder of the wells in the network were analyzed for SOCs. The Illinois EPA anticipates that this rotation will be maintained in the future.

Priority Lake and Watershed Implementation Program (PLWIP)
PLWIP is funded through the 'Partners for Conservation' program, a long-term, comprehensive, Illinois natural resource protection bill. PLWIP is a reimbursement grant program designed to support lake protection, restoration and enhancement activities at "priority" lakes where causes and sources of problems are apparent, project sites are highly accessible, project size is relatively small and local entities are in a position to quickly implement needed treatments. In general, priority lakes are unique, high quality aquatic resources, and/or serve multiple purposes (recreation and public water supply) and are in need of protection or restoration.

Small Systems Compliance Grant Program (SSCG)
The small Systems Compliance Grant Program (SSCG) is an opportunity for small community water supplies that are in noncompliance with the Safe Drinking Water Act and state drinking water requirement, to receive funding from the Illinois EPA to construct projects that will remedy system deficiencies and bring them back into compliance.

The total amount of funding available under the SSCG is $2 million. The amount of funds available for any one compliance project may range from $10,000 to $200,000 and will cover 100 percent of the eligible compliance project cost.

Source Water Assessment and Protection Program (SWAP)
The Illinois EPA is implementing a source water assessment program (SWAP) to assist with wellhead and watershed protection of public drinking water supplies. The 1996 amendments to the federal Safe Drinking Water Act established several programs that will help water suppliers continue to provide safe, adequate, and affordable water to their customers. As required by these amendments, the Illinois EPA, in cooperation with water utilities and other stakeholder, has developed and the U.S. EPA has approved, Illinois' SWAP. The purpose of SWAP is to:

- Identify areas that supply drinking water to the public
- Inventory potential sources of contamination
- Determine the susceptibility of the source water to contamination
- Information the public of the assessment results

Assessments will be conducted for all public water supplies in Illinois, including approximately 1,800 community water supplies. In addition, more than 4,100 non-community water supplies will be assessed.

The Source Water Assessment Program will help communities make important decisions about how to protect their drinking water. By working to ensure safe drinking water supplies, the health and economy of the community, as well as the preservation of natural resources, will be greatly improved.

Volunteer Lake Monitoring Program (VLMP)
The Volunteer Lake Monitoring Program (VLMP) serves as an educational program that teaches Illinois citizens about lake ecosystems, contributing to an understanding of lake/watershed relationships and promoting informed decision-making. It also provides a cost-effective method of gathering fundamental information about inland lakes.

About 175 lakes statewide participate annual in the VLMP. Water quality monitoring locations for this program are determined in the same manner as the ALMP. Each VLMP lake generally has three stations: Station 1 is the deep station; Station 2 is at mid-lake and generally mid-depth; and Station 3 is located in the headwater area or opposite of Station 2. Volunteers are requested to monitor each station twice a month from May through October. Volunteers collect Secchi transparency, total depth, and various field observations at each station. Additionally, volunteers collect water quality samples on a monthly basis at 100 lakes. These samples are analyzed for nutrients, suspended solids and chlorophyll. In addition to monitoring, volunteers are given a zebra mussel sampler and trained to identify zebra mussels.

The basic VLMP includes training volunteers to measure water clarity (transparency) by using a Secchi disk. These measurements are used to document changes in the transparency of lake water within a given year, and to develop transparency trends over many years. Monitoring is conducted twice a month from May to October, typically at three stations per lake. The basic program also includes monitoring for zebra mussels. The main purpose of this effort is to determine whether or not zebra mussels are being transported from the state's major rivers to inland lakes.

The expanded VLMP includes volunteer collection of water samples from one foot below the surface of the water, in addition to the collection of Secchi transparency and zebra mussel information. Samples are shipped to Illinois EPA or private laboratories for analysis of basic water quality parameters including: ammonia, nitrates, total phosphorus, as well as total and volatile suspended solids.

Chlorophyll sampling and analysis are also performed. Water samples are collected at twice the Secchi depth, filtered, and sent to the laboratory for analysis. Chlorophyll data, Secchi transparency information, and water quality measurements are used for assessing a lakes' condition or trophic status.

Wastewater and Drinking Water State Revolving Funds (SRF)
The State Revolving Fund (SRF) programs include the Water Pollution Control Loan Program for wastewater projects and the Public Water Supply Loan Program for drinking water projects. These two programs are annually the recipients of federal capitalization funding, which is combined with state matching funds, program repayments, and bond and interest proceeds to form a perpetual source of low interest financing for environmental infrastructure projects. The SFR program includes the Green Reserve, which makes funds available for green infrastructure, water or energy efficiency improvements, or other environmentally innovative activities. The SRF program will be the funding conduit for the Clean Water Initiative (CWI), an initiative that will utilize the existing program capacity of the well-developed SRF programs to leverage funding available for water infrastructure.

Water Quality and 401-Certification
Water Quality Standards for Wetlands; water quality standards are an effective tool available to protect the overall health of wetland resources and the valuable functions they provide, including shoreline stabilization, NPS runoff filtration, wildlife habitat, and erosion control, which directly benefit adjacent and downstream waters.

Watershed-Based Monitoring (e.g., Nonpoint Source/BMP, TMDL)
When monitoring data from various surface water programs are available and relevant to specific CWA Section 319 projects, Illinois EPA uses these data to "…evaluate to the extent that appropriate information is available, reductions in NPS pollutant loading and improvements in water quality… resulting from implementation of the management program," in accordance with CWA Section 319(h)(11). When monitoring data from various Agency surface water programs or contractual efforts are available and relevant to specific watershed or TMDL plans; Illinois EPA intends to use these data to help develop the plan, track its success, and adapt it accordingly.

Wellhead Protection Program (WPP)
Illinois EPA conducts a groundwater protection program with a mission of restoring, protecting, and enhancing the state's groundwater as a natural and public resource. The program derives much of its authority from the Illinois Groundwater Protection Act (IGPA) that emphasizes a prevention-oriented process.

The IGPA is a comprehensive law that relies on a state and local partnership. Though the IGPA is directed toward protection of groundwater as a natural and public resource, special provisions target drinking water wells.

Wetland Monitoring
Currently, Illinois EPA neither monitors environmental conditions nor assesses attainment of uses in wetlands. With the help of other government agencies and interested stakeholders, Illinois EPA has begun and will continue to address how to include wetlands in Illinois water quality management. Inclusion of wetlands represents progress toward the ultimate goal of resource management for all surface water types in Illinois. Recently, Illinois EPA coordinated the creation of an Illinois Wetland Technical Working Group that comprises natural resource professionals and stakeholders with diverse public and private interests. This wetland work group will address (a) how to define the beneficial uses of Illinois wetlands; (b) how to monitor wetland resources to assess if such uses are being attained; (c) how to identify causes of non-attainment; and (d) how to track wetland resource conditions through time.

U.S. Environmental Protection Agency

Coastal Management Program (CMP)
The Coastal NPS Pollution Control Program (Section 6217) addresses NPS pollution problems in coastal waters. Section 6217 requires state with approved Coastal Zone Management Programs to develop Coastal Nonpoint Pollution Control Programs. In its program, a state describes how it will implement NPS pollution controls, known as management measures, that conform with those described in guidance specifying management measures for sources of NPS in coast waters. This program is administered jointly between U.S. EPA and the National Oceanic and Atmospheric Administration (NOAA). The Illinois Department of Natural Resources has taken the lead at the state level to implement this guidance.

USDA Natural Resources Conservation Service

Illinois Farm Bill Programs

The conservation provisions in the Food, Conservation, and Energy Act of 2008 (2208 Farm Bill) provides conservation opportunities for farmers and ranchers. The new provisions build on the conservation gains made by farmers and ranchers from previous Farm Bills.

Agricultural Water Enhancement Program (AWEP)

The Agricultural Water Enhancement Program (AWEP) is a voluntary conservation initiative that provides financial and technical assistance to agricultural producers to implement agricultural water enhancement activities on agricultural land for the purposes of conserving surface and groundwater and improving water quality. AWEP operates through program contracts with producers to plan and implement conservation practices in project areas established through partnership agreements.

Conservation Innovation Grants (CIG)

The Conservation Innovation Grant program (CIG) is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging Federal investment in environmental enhancement and protection, in conjunction with agricultural production. Under CIG, Environmental Quality Incentives Program (EQIP) funds are used to award competitive grants to non-Federal governmental or non-governmental organizations, Tribes, or individuals.

CIG enables NRCS to work with other public and private entities to accelerate technology transfer and adoption of promising technologies and approaches to address some of the Nation's most pressing natural resource concerns. CIG will benefit agricultural producers by providing more options for environmental enhancement and compliance with Federal, State, and local regulations. The NRCS administers CIG. The CIG requires a 50-50 match between the agency and the applicant.

Conservation Stewardship Program (CSP)

The Conservation Stewardship Program (CSP) is a voluntary conservation program that encourages producers to address resource concerns in a comprehensive manner by:
Undertaking additional conservation activities; and
Improving, maintaining, and managing existing conservation activities.

CSP is available on Tribal and private agricultural lands and non-industrial private forest land. The program provides equitable access to all producers, regardless of operation size, crops produced, or geographic location.

Through CSP, NRCS will provide financial and technical assistance to eligible producers to conserve and enhance soil, water, air, and related natural resources on their land. Eligible lands include cropland, grassland, prairie land, improved pastureland, non-industrial private forest lands, agricultural land under the jurisdiction of an Indian tribe, and other private agricultural land (including cropped woodland, marshes, and agricultural land used for the production of livestock) on which resource concerns related to agricultural production could be addressed.

The entire agricultural operation must be enrolled and must include all agricultural land that will be under the applicant's control for the term of the proposed contract that is operated substantially separate from other operations.

Cooperative Conservation Partnership Initiative (CCPI)
The Cooperative Conservation Partnership Initiative (CCPI) is a voluntary conservation initiative that enables the use of certain conservation programs along with resource of eligible partners to provide financial and technical assistance to owners and operators of agricultural and nonindustrial private forest lands.

Environmental Quality Incentives Program (EQIP)
The Environmental Quality Incentive Program (EQIP) is a voluntary conservation program that provides financial assistance to individuals/entities to address soil, water, air, plant, animal, and other related natural resource concerns on their land. Through EQIP, the NRCS provides assistance to agricultural producers in a manner that will address resource concerns, increase environmental benefits, and help participants to meet Federal, State, Tribal, and local environmental regulations. EQIP offers financial and technical help to assist participants install or implement structural and management practices on eligible agricultural land and non-industrial private forestland. In addition, applicants can apply for a Conservation Activity Plan that best suits their own operation.

EQIP is a competitive process. EQIP applicants compete for funding on a state-wide or area-wide basis. A ranking process is used to determine which applications will receive EQIP funding. The Illinois NRCS has several different EQIP funding pools. The ranking criteria was developed with input from the Illinois State Technical Committee.

National Water Quality Initiative (NWQI)
Through the National Water Quality Initiative, eligible producers will invest in voluntary conservation practices to help provide cleaner water for their neighbors and communities. Using funds from EQIP, NRCS will provide financial and technical assistance to producers for implementing conservation practices such as cover crops, grassed waterways, terraces, and water and sediment control basins in watersheds with impairments where federal investments can make a difference in improving water quality.

Wildlife Habitat Incentive Program (WHIP)
The Wildlife Habitat Incentive Program (WHIP) is a voluntary program for conservation-minded landowners who want to develop and improve wildlife habitat on agricultural land, nonindustrial private forest land, and Indian land.

NRCS administers WHIP to provide both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP cost-share agreements between NRCS and the participant generally last from one year after the last conservation practice is implemented but no more than 10 years from the date the agreement is signed.

Working Land for Wildlife (WLW)
Working Land for Wildlife is a new partnership between NRCS and the U.S. Fish & Wildlife Service to combat the decline of seven specific wildlife species whose decline can be reversed and will benefit other species with similar habitat needs.

Easement Programs

Emergency Watershed Protection Program (EWP)

The purpose of the Emergency Watershed Protection (EWP) program is to undertake emergency measures, including the purchase of floodplain easements, for runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood or any other natural occurrence is causing or has caused a sudden impairment of the watershed.

It is not necessary for a national emergency to be declared for an area to be eligible for assistance. One program objective is to assist sponsors and individuals in implementing emergency measures to relieve imminent hazards to life and property created by a natural disaster. Activities include providing financial and technical assistance to remove debris from streams, protect destabilized streambanks, establish cover on critically eroding lands, repairing conservation practices, and the purchase of floodplain easements. The program is designed for installation of recovery measures.

Farm and Ranch Lands Protection Program (FRPP)

The Farm and Ranch Land Protection Program (FRPP) provides matching funds to help purchase development rights to keep productive farm and ranchland in agricultural uses. Working through existing programs; USDA partners with State, tribal or local governments and non-governmental organizations to acquire conservation easements or other interests in land from landowners. USDA provides up to 50 percent of the fair market easement value of the conservation easement.

To qualify, farmland must: be part of a pending offer from a State, tribe, or local farmland protection program; be privately owned; have a conservation plan for highly erodible land; be large enough to sustain agricultural production' be accessible to markets for what the land produces; have adequate infrastructure and agricultural support services; and have surrounding parcels of land that can support long-term agricultural production.

Grassland Reserve Program (GRP)

The Grassland Reserve Program (GRP) is a voluntary conservation program that emphasizes support for working grazing operations, enhancement of plant and animal biodiversity, and protection of grassland under threat of conversion to other uses.

Participants voluntarily limit future development and cropping uses of the land while retaining the right to conduct common grazing practices and operations related to the production of forage and seeding, subject to certain restrictions during nesting seasons of bird species that are in significant decline or are protected under Federal or State law. A grazing management plan is required for participants.

Wetland Reserve Program (WRP)

The Wetlands Reserve Program is a voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property. NRCS provides technical and financial support to help landowners with their wetland restoration efforts. The NRCS goal is to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on every acre enrolled in the program. This program offers landowners an opportunity to establish long-term conservation and wildlife practices and protection.

Mississippi River Basin healthy Watershed Initiative (MRBI)
To improve the health of the Mississippi River Basin, including water quality and wildlife habitat, the NRCS is developing the Mississippi River Basin Healthy Watershed Initiative (MRBI). Through this new initiative, NRCS and its partners will help producers in selecting watersheds in the Mississippi River Basin voluntarily implement conservation practices that avoid, control, and trap nutrient runoff; improve wildlife habitat; and maintain agricultural productivity.

These improvements will be accomplished through a conservation systems approach to manage and optimize nitrogen and phosphorous within field to minimize runoff and reduce downstream nutrient loading. NRCS will provide producers assistance with a system of practices that will control soil erosion, improve soil quality, and provide wildlife habitat while managing runoff and drainage water for improved water quality.

Conservation Reserve Program (CRP) Administered by USDA Farm Service Agency
The Conservation Reserve Program (CRP) is a land conversation program administered by the Farm Service Agency (FSA). In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Contracts for land enrolled in CRP are 10 - 15 years in length. The long-term goal of the program is to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat.

Illinois Department of Agriculture

Conservation Practices Program (CPP)
The Conservation Practices Program assists land users with sheet and rill erosion exceeding "t" (tolerable soil loss level) or with ephemeral/gully erosion with the construction of conservation practices which helps conserve soil, protect water quality, and reduce flooding. Practices eligible include No-Till/Strip-Till, Contour Farming Establishment, Contour Buffer Strip Establishment, Cover Crops, Temporary Cover, Critical Area Planting, Filter Strips, Diversion, Grade Stabilization Structures, Grassed Waterways, Pasture and Hayland Planting, Contour Strip Cropping, Terraces, and Water and Sediment Control Basins.

Nutrient Management Program (NMP)
The Nutrient Management Program provides incentives to eligible land users for nutrient management projects that minimize the transport of nutrient and pollutant load to surface and groundwater. Projects include soil testing, developing a nutrient management plan and implementing the plan for four years. Soil and Water Conservation Districts prioritize applications while considering geographic location, watersheds, and soils.

Streambank Stabilization and Restoration (SSRP)
The Streambank Stabilization and Restoration Program (SSRP) has three primary objectives.

1. Distribute educational materials on the effects of streambank erosion along with the practices available to stabilize the erosion through SSRP.
2. Provide funding to construct effective, low-cost practices, such as rock riffles, stream barbs or stone toe protection at suitable locations.
3. Provide technical assistance to landowner interested in stabilizing an eroding streambank.

The program provides cost-share funding assistance to qualified Illinois landowners for stabilizing or restoring severely eroding streambanks.

Sustainable Agriculture Act (SA)

The Sustainable Agriculture Act was signed into law in January, 1990. It called for research, demonstration and educational efforts related to sustainable agriculture systems. The Sustainable Agriculture (SA) Committee established by the Act, as well as the Governor's Water Resources and Land Use Priorities Task Force, have both made several recommendations in published reports regarding sustainable agriculture. The Sustainable Agriculture component of the Partners for Conservation Fund supports the following:

- On-farm research and demonstration grants
- Outreach and education grants
- University Research grants

Vegetative Filter Strip Assessment Law

The Vegetative Filter Strip Assessment Law (35 ILCS 200/10-152), became effective on January 1, 1997. Under the law, qualifying property used as a vegetative filter strip is eligible to be assessed at a reduced rate. Soil and Water Conservation Districts (SWCDs) have been given the authority for certifying that a parcel of property meets the requirements for a vegetative filter strip established under the law, for determining the size of the vegetative filter strip and for creating a conservation plan for the area occupied by the strip.

Henry White Experimental Farm

The Henry White Experimental Farm is located in St. Clair County. The farm serves as an outdoor laboratory for research into sustainable agriculture, a system of farming that emphasizes profitability and natural resource protection. In addition to research plots, the farm's 94 acres contain wetlands, evergreen and deciduous groves, restored prairie and wildlife habitat. The University of Illinois Cooperative Extension Serve provides leadership and technical support for many research projects.

Soil Conservation Transect Survey

The Soil Conservation Transect Survey provides a snapshot of the current status of soil conservation efforts on agriculture land in Illinois. Survey results provide data on the presence of conservation practices in each county, as well as an estimate of remaining land treatment needs.

Since 1982, the Conservation Technology Information Center, in cooperation with local SWCDs and the NRCS, has conducted an annual survey of tillage practices. Information on tillage systems and crop residue is collected at more than 49,000 points across the state. In addition to collecting information on crop residue management and tillage practices, the surveyors also collect data on sheet/rill and ephemeral soil erosion. Data is sent to the Illinois Department of Agriculture to be analyzed. The transect surveys are conducted on a biennial schedule.

SWCD Grants-in-Aid

In Fiscal Year 2011, the Illinois Department of Agriculture distributed over $12.5 million in funds to Illinois' Soil and Water Conservation Districts for programs aimed at reducing soil loss, enhancing agricultural productivity and protecting water quality. The SWCDs provide valuable technical assistance to rural and urban customers on a variety of natural resource issues, such as soil conservation, water quality protection, nutrient management, wetlands management, flood control, soil erosion control at urban construction sites, streambank stabilization, land use, and site suitability for various uses and conservation education.

Partners for Conservation
The Partners for Conservation Fund Program is a long-term, state-supported initiative to protect natural resources and enhance outdoor recreational opportunities throughout Illinois. The Illinois Department of Agriculture oversees the agriculture resource enhancement portion of the program, consisting of sustainable agriculture grants, conservation practices cost-share, streambank stabilization and restoration, water well decommissioning and nutrient management.

Farmland Protection
Illinois Department of Agriculture administers the Illinois' Farmland Protection Program under the auspices of the Illinois Farmland Preservation Act. The Act requires state agencies to provide written notice to the Department of development projects (e.g., highways, airports, facility planning areas, enterprise zones, and wildlife habitat acquisition proposals) that will lead to farmland conversion.

Mined Land Reclamation
As provided by an agreement with the Illinois Department of Natural Resources – Office of Mines and Mineral, the Illinois Department of Agriculture reviews coal mining permit applications to help facilitate the reclamation of agricultural land affected by coal mining operations.

Illinois Department of Natural Resources

Conservation Reserve Enhancement Program (CREP)
The Conservation Reserve Enhancement Program (CREP) is an enhanced version of the USDA Conservation Reserve Program (CRP). The CREP Program is a federal, state, and local partnership designed to retire frequently flooded and environmentally sensitive cropland to achieve restoration and long-term protection. In Illinois, landowners implement conservation practices in the eligible CREP watershed to reduce sedimentation and nutrients, improve water quality, and to create and enhance critical habitat for fish and wildlife populations.

Illinois Urban and Community Forestry Program
The purpose of the Illinois' Urban and Community Forestry program is to assist communities and local units of government in the development and growth of local community forestry programs. Citizens benefit by living in a high quality forest management for aesthetic, health, and safety that will provide oxygen, air conditioning, pollution reduction, wind breaks, and habitat.

Chapter 4 – The Section 319 NPS Grant Program 4.0

The Section 319 NPS grant program (Grant Program) started out as the keystone for the Program and today it still plays an essential role in Illinois in the control of NPS pollution. Under Section 319 of the CWA, those states with approved Programs are eligible to receive federal funds to implement or supplement NPS initiatives identified within the approved program. Since 1990, U.S. EPA has awarded Illinois EPA Section 319(h) CWA funds to implement the Grant Program. The Program, along with guidance from U.S. EPA and the CWA, provides the structure for the Grant Program in Illinois.

At first, financial assistance was used to support, 1) Grant Program administrative, 2) technical support and 3) installation of demonstrative cost-effective BMPs to encourage the implementation of NPS pollution control programs and projects throughout the state. To date, the Grant Program has funded dozens of demonstration BMPs in Illinois. These projects were either traditional BMPs in areas of Illinois where they had not been previously applied or were demonstrating innovative BMP technologies and techniques. Funds were also used for information and outreach efforts to promote the public's knowledge and awareness of NPS pollution and for the development of tools to support NPS pollution control efforts.

Over time, the Grant Program has segued from funding individual BMP demonstration projects throughout the state to funding the development and implementation of WBP, TMDL, and LRS implementation plans. Components of the plans that address NPS pollution control are eligible to receive Grant Program funds, while those components that are most effective in achieving and maintaining water quality standards through NPS pollution control are considered a priority. Tools, such as the Illinois Urban Manual and the Resource Management Mapping System (RMMS) that support the development and implementation of WBP, TMDL, and LRS implementation plans are also a priority for the Grant Program funds.

Under the base operating program, Illinois EPA employs staff to more fully manage NPS activities at the state-wide and watershed – specific levels by providing a more active role in the assessment of NPS pollution, the development of management strategies, and the provision of administrative, technical, and educational assistance.

Now and Then…

Today's outreach and information efforts include Web based programs and tools to assist local watershed planning efforts to access and incorporate the most up-to-date information available during the planning and implementation process.

NPS outreach and information efforts in the 1990s included projects that posted billboards and published books to introduce NPS pollution to the citizens of Illinois.

The Grant Program continues to leverage federal, state, and local technical and financial assistance for use in Illinois to maximize NPS pollution control efforts and to realize the associated environmental benefits. In addition, the Grant Program supports Program partners that can enhance existing projects and programs by including additional NPS pollution controls. Open communication with federal, state, and local partners has increased the number of partners implementing NPS pollution control programs and projects across the state. The outcome of the communication efforts includes; 1) better coordinated efforts in outreach and information activities; 2) more efficient integration and leveraging of technical and financial assistance programs resulting in the installation of additional BMPs on-the-ground; and 3) better informed staff to implement NPS pollution control programs and projects.

It is imperative that the Program remains dynamic and flexible enough to allow continued evolution of the Grant program especially as opportunities to integrate with and leverage other environmental and natural resource management programs for increased NPS pollution control.

Illinois EPA's administration of the Grant Program includes the following:

Development and update of an approved state NPS Management Program – In order to be eligible for the Section 319(h) financial assistance, Illinois must have a Program that has been approved by U.S. EPA. U.S. EPA has provided the **NONPOINT SOURCE PROGRAM AND GRANTS GUIDELINES FOR STATES AND TERRITORIES** (4/12/2013) to states for use in the development and updates of NPS management programs. The guidance can be found at http://water.epa.gov/polwaste/nps/upload/319-guidelines-fy14.pdf. The Program was developed per U.S. EPA's guidance and is scheduled for an update every four years with a start date of September 2013.

Identification of Grant Program Priorities – Illinois' NPS pollution control priorities include actions and activities that are most effective and cost efficient in achieving and maintaining water quality standards through NPS pollution control. Illinois EPA uses the water quality assessment detailed in the 2012 IR to identify watersheds and their waterbodies that have been impaired by NPS pollution. The development and implementation of WBP, TMDL, and LRS implementation plans for NPS pollution control is an utmost priority; as it is the link between the areas impacted by NPS pollution and the actions and activities needed for those specific waterbodies to attain water quality standards. In addition to the impaired watersheds and waterbodies, Illinois EPA has identified Priority Waters for Protection that are also eligible under the Grant Program. The Priority Waters for Protection are listed in Chapter 2.

The Grant Program priorities are also directed by the Program as described in Chapter 3. Illinois EPA uses a five-year rotation system of priority watersheds to condense technical and financial assistance (monitoring, plan development, plan implementation) into smaller geographical areas to accomplish the ultimate goal of delisting waterbody segments from the Section 303(3) list. The Program uses a five-year rotation to reach all 51 watersheds within Illinois. In addition to the priority watersheds for planning, plan implementation, and monitoring, Grant Program funds can be used for state-wide efforts including outreach and information and capacity building projects; including the development of tools to enhance NPS pollution control efforts. Grant Program priorities may be adapted to take advantage of opportunities to leverage additional technical and financial resources from new initiatives, and updated programs that have potential for additional NPS pollution control benefits (e.g., coordinated nutrient reduction efforts).

Program Announcement, Request for Proposals, Application Review and Selection for Funding – Illinois EPA will use both static and interactive methods to encourage participation in the Section 319(h) Grant Program. The Grant Program information is available on Illinois EPA's Web site throughout the year at http://www.epa.state.il.us/water/watershed/nonpoint-source.html. In addition, Illinois EPA will conduct appropriate outreach to federal, state, and local partners in priority watersheds (see Chapter 3) to encourage participation in the control of NPS pollution through plan development, updates, implementation and BMP tracking. The Program is also supported by NPS Unit staff as they provide technical assistance to stakeholders and their organizations.

On an annual basis, Illinois EPA seeks proposals for projects that prevent, eliminate, or reduce water quality impairments caused by NPS pollution. A Grant Program Request for Proposals and an electronic application, including additional required materials and instructions, are available on the Illinois EPA Web site at http://www.epa.state.il.us/water/watershed/nonpoint-source.html. Each of these documents is reviewed on an annual basis by NPS Unit staff and updates are made as necessary.

After the submittal deadline, copies of the applications are provided to an established grant review group. The group includes members of the Illinois EPA NPS Unit, Watershed Management Section, Surface Water Section and representatives from key federal and state departments and agencies. Reviews are conducted to evaluate the projects in terms of a number of established criteria (see box at right). The criteria were developed to make sure that selected projects meet the requirements of the Program and, as appropriate, other pertinent state and federal Program guidelines. Upon completion of all reviews, selected projects are incorporated into the Annual Work Plan.

Grant Program Application Review

Upon receipt, by the application deadline, all Grant Program applications are reviewed for completeness, technical merit, and adherence to the 1987 amendments to the CWA, U.S. EPA Section 319(h) program guidance, and Request for Proposals criteria. Applications found to be complete will undergo a comprehensive review designed to evaluate the following:

- Environmental results likely to be achieved
- Relationship to WBP, TMDL, or LRS implementation planning efforts
- Applicant's prior performance with Grant Program
- Overall effectiveness of the project
- Project feasibility including ability and schedule
- Local commitment and matching funds
- Applicant's capability to administer federal grant funds.

Once U.S. EPA provides confirmation of the amount of Section 319(h) funds available, Illinois EPA finalizes its Annual Work Plan and submits it to U.S. EPA for award. The Annual Work Plan includes a project matrix which identifies the projects recommended for funding, the project applicant, total project cost, and amount of assistance requested along with the local match proposed. A project fact sheet for each of the recommended projects is also included in the Annual Work Plan. The fact sheets briefly describe the proposed project and give additional detail regarding the project applicant and contact information, the project location, as appropriate, including watershed, waterbodies and site location for BMPs, an implementation schedule, outputs and outcomes to be achieved and the Program milestones that each of the projects will address. The fact sheets also describe if the proposed project will implement a watershed-based plan, or equivalent; the nature of such implementation; what percentage of the load reductions recommend by the plan will be achieved by the project; and what, if anything, beyond the proposed project is intended for the future. In addition to the projects for funding, Illinois EPA identifies the source, schedule, and outcomes and outputs to meet the match requirement of the Annual Work Plan.

Fiscal and Project Management 4.1

Upon award of the Annual Work Plan by U.S. EPA, Illinois EPA implements appropriate programmatic and financial systems to ensure that the Section 319(h) funds are used consistently with the state's legal obligations and to maximize environmental benefits.

Each Grant Program recipient enters into a legally binding Financial Assistance Agreement (Agreement) that details the project scope of work, schedule, and budget. Along with the Agreement, the recipient submits 1) an executed Organization Certifications and Grant Conditions for CWA Section 319(h) Financial Assistance Agreement (see box to right), 2) Taxpayer Identification Form, and 3) Federal Funding Accountability and Transparency Act Required Reporting Form to Illinois EPA. Execution of these documents by the recipient is confirmation that they shall follow all appropriate federal and state laws and guidance that are pertinent to the Grant Program.

With an executed Agreement and supporting documents in place, the recipient begins implementation of the project scope of work. Illinois EPA staff work with the recipient to ensure that all work products are submitted and approved before the recipient moves on to the next stage of the project. Quarterly reporting and a final project report art required for all Grant Program projects. As the scope of work is implemented; the recipient is allowed to invoice the Illinois EPA for the completed outputs. Invoices and documentation of expenses and required match are thoroughly reviewed before the eligible expenses are reimbursed and match is approved. Project files, including the Agreement, Amendments, work products, invoices, and audits are all kept on file at Illinois EPA. Subsets of the documentation are also on file, as appropriate, with Illinois EPA Fiscal Services and with the Illinois Central Management Services and Office of the Comptroller.

Once recipient invoices are approved by Illinois EPA, a request for reimbursement from U.S. EPA for the documented work is made. Documentation of required match is supplied to U.S. EPA with the request for reimbursement.

Organization Certifications and Grant Conditions

Organization Certifications:

1. Capability
2. Recipient Share
3. Responsibility of the Recipient
4. Findings Confidential
5. Subcontracts
6. Statutory Certifications
7. Contracting with Small and Minority Firms, Women's Business Enterprise, and Labor Surplus Area Firms
8. More Favorable Terms Clause
9. Violating Facilities
10. Fraud and Other Unlawful or Corrupt Practices
11. Educational Loans & Debt Delinquency
12. Sarbanes-Oxley Act of 2002/Illinois Securities Law of 1952
13. Bid Rigging and Bid Rotating
14. Suspension and Debarment
15. Bribery
16. Drug Free Workplace Certification
17. Privity of Agreement
18. Covenant Against Contingent Fees
19. Compliance with Government-Wide Guidance on Lobbying Restrictions
20. Single Audit Act
21. Audit and Access to Records
22. Indemnity
23. Recycling and Waste Prevention
24. Trafficking Victim Protection Act of 2000
25. Management Fees
26. Hotel-Motel Fire Safety

Grant Conditions:

27. Supersession
28. Right of Illinois EPA to Products of the Agreement
29. Appropriation Contingency (Multiyear)
30. Liability of the Illinois EPA
31. Disputes
32. Amendments
33. Termination
34. Payments

Grant Program Reporting and Tracking – Illinois EPA submits an End of year Report (Report) to U.S. EPA annually in September. The Report details the activities accomplished toward the implementation of the Annual Work Plan, the Grant program, and the Program. The Report includes project details, such as: grant recipient, project milestones and their status, outputs completed, budget amount expended, and estimated pollutant load reductions. The Report also links the specific project milestones to the Program milestones that the project addresses. A copy of the final project report for recently completed projects is submitted to U.S. EPA with the Report. The Report also includes an appendix that documents abbreviated information on projects that were completed in the previous fiscal years. A collection of past year reports can be found at http://www.epa.state.il.us/water/watershed/nonpoint-source.html.

NPS pollution control projects implemented in Illinois with Grant Program funds are tracked through U.S. EPA's Grants Reporting and Tracking System (GRTS) Web site (http://iaspub.epa.gov/pls/grts/f?p=110:199:1425698992823918).

Individual BMPs implemented in Illinois with Grant Program funds are tracked geographically through the University of Illinois and Illinois EPA's Resource Management Mapping Service (RMMS) Web site http://www.rmms.illinois.edu.

Grant Program Details 4.2

With Grant Program funding, Illinois EPA has provided assistance to landowners, municipalities, and others for the implementation of NPS pollution control projects. Below is a brief view of the Grant Program, for more information on the Grant Program and to review the Request for proposals visit Illinois EPA's Web site (http://www.epa.state.il.us/water/financial-assistance/non-point.html

Eligible Entities 4.3

Section 319(h) Grant Program funds are available to any entity that has legal status to accept funds from the state of Illinois. This can include: local watershed groups; land conservancies or trusts; public and private profit and nonprofit organizations and institutions; units of county, municipal, township, and state governments; universities and colleges; park districts and other local land managing agencies; soil and water conservation districts; conservation organizations; and others. Grant applicants must have the financial ability to initiate the project; pay expenses, and then request reimbursement from the Illinois EPA, while continuing to finance their normal operating expenses.

Applicants must have the authority and ability to implement the proposed project, or propose to subcontract portions of the project to the appropriate entities for implementation.

Project Eligibility and Priority 4.4

The types of eligible projects include the implementation of a WBP, TMDL, or LRS implementation plan; development of a WBP, TMDL, or LRS implementation plan; BMP implementation; information and outreach; monitoring; and research.

The Section 319(h) Grant Program prioritizes projects addressing Illinois waters for which NPS pollution is a significant cause of water quality impairment. Assessment information for Illinois' waterbodies can be found in the *2012 IR*.

NPS pollution control projects with the potential to eliminate such impairments and restore impaired waters will rank higher in the review process and receive more favorable consideration than general NPS pollution control projects that are not linked to a specific waterbody or do not address a waterbody's current impairments. NPS pollution control projects that are identified within completed WBP, TMDL, or LRS implementation plans that eliminate impairments and/or restore impaired waters will receive higher consideration than projects submitted without the support of such a plan.

Priority will be given to applications that show that the project is to be designed, implemented and monitored to show measureable environmental results such as quantifying water quality improvements, estimating or modeling pollutant load reductions associated with innovative demonstration projects or programs, or documenting social results, 'such as increased awareness and knowledge or changes in behavior resulting from educational efforts that lead to improved water quality'.

Project Priority 4.5

The following are the types of priority projects that Illinois EPA is seeking to support with the Section 319(h) Gant Program. Also included are general grant guidelines as they apply to the specific types of projects.

High Priority Project Types 4.51

Implementation of a WBP or a TMDL or LRS implementation plan to address NPS Pollution. Implementation activities include installation of BMPs that have been identified for specific critical areas by the WBP or TMDL or LRS implementation plan; NPS water quality modeling, environmental and social indicator monitoring, and outreach activities that are specifically identified in the TMDL implementation plan or WBP.

Development of a WBP to address NPS pollution. A WBP must include the minimum elements required in U.S. EPA guidance. These elements are listed as items a. through i. starting on page 18 of the guidance at the following U.S. EPA Web site: http://water.epa.gov/polwaste/nps/upload/319-guidelines-fy14.pdf.

The Illinois EPA recognizes the importance of preventing currently unimpaired waters from becoming impaired. Development of WBP for unimpaired or unassessed waters is also eligible for funding. These plans will also need to follow the U.S. EPA guidance for Watershed-based plans, although slight modifications to the requirements are needed. For additional information on WBP, please refer to the *Guidance for Developing Watershed Action Plans in Illinois.*[41]

Development of a TMDL, LRS, or TMDL, LRS implementation plan or SWP to address NPS pollution. A TMDL is the maximum amount of a specific pollutant loading a waterbody can tolerate and still support all of its intended uses. The proposed TMDL to be developed must be related to a 303(d) listed waterbody that is being impaired by NPS pollution. Visit http://www.epa.gov/r5water/wshednps/topic_tmdls.htm for additional information about TMDL requirements as defined in U.S. EPA guidance.

[41] Chicago Metropolitan Agency for Planning, 2007 http://www.epa.state.il.us/water/watershed/publications/watershed-guidance.pdf)

Low Priority Project Types 4.52

Illinois EPA considers projects that address NPS pollution control that are not identified in or supported by a WBP, TMDL, or LRS implementation plan as low priority projects. These projects can include BMP implementation, BMP demonstrations, environmental monitoring, social indicator monitoring, and outreach efforts that are not yet identified for implementation in a WBP, TMDL, or LRS implementation plan.

Individual BMPs, treatment systems or statewide or regional outreach efforts are eligible for funding, but will not be prioritized as highly as those projects specifically identified in a WBP, TMDL, or LRS implementation plan.

In select cases a complete WBP may not be necessary and an alternative plan may be sufficient to guide watershed project implementation of NPS pollution controls. Illinois EPA and U.S. EPA will review alternative plans proposed for implementation with Section 319 watershed project funding to ensure the following planning elements are adequately addressed:

- Identification of the causes or sources of NPS impairment, water quality problem, or threat to unimpaired/high quality waters
- Watershed project goals(s) and explanation of how the proposed project(s) will achieve or make advancements towards achieving water quality goals
- Schedule and milestones to guide project implementation
- Proposed management measures (including a description of operation and maintenance requirements) and explanation of how these measures will effectively address the NPS impairment identified above
- Water quality results monitoring component, including description of process and measures (e.g., water quality parameters, stream flow metrics, biological indicators) to gauge project success

Not Eligible for Section 319(h) Funds:

- Activities that do not control, prevent, or address NPS pollution
- Any activities required by mitigation
- Any activity or project required by federal or state law or federal or state permit, including activities required or anticipated to be required by National Pollutant Discharge Elimination System (NPDES) regulations, including Phase I and Phase II stormwater permit requirements;
- Routine maintenance or repair of existing on-site systems, such as culvert replacement, street sweeping, catch-basin cleaning, septic systems;
- Projects to principally protect wildlife habitat, control flooding, protect infrastructure, or remove invasive species;
- Ineligible activities based on current U.S. EPA guidelines for Section 319(h) grants.

The use of watershed project funding to implement alternative plans containing the above elements may be approved in the following circumstances:

- When the impairment is not specific to a pollutant
- When responding to a NPS pollution emergency or urgent NPS public health risk
- When protecting assessed unimpaired/high quality waters
- When addressing an isolated, small-scale water quality problem resulting from one or a few sources of pollution

Urban BMPs – Eligible or Not? 4.53

Illinois EPA intends to support as many urban NPS pollution control projects and programs as possible through this Grant Program. However, programmatic limits in regard to activities or projects required by federal or state law makes many urban projects and programs ineligible to receive Grant Program funds. Visit *Urban BMPs – Supplement Guidance for Funding Eligibility to review U.S. EPA's Supplemental Guidance 2007-2009 – Watershed In and Near Metropolitan Areas – Preventing, Reducing and/or Eliminating Impacts Associated with Urban Runoff* at: http://www.epa.state.il.us/water/watershed/publications/nps-pollution/urban-bmps-supplemental-guidance.pdf

Application and Submittal Process 4.6

The deadline for Grant Program application is normally 5:00 p.m. on August 1st. In the event that August 1st is a Saturday or Sunday, the deadline becomes 5:00 p.m. on the Friday prior to August 1st. Illinois EPA employs an electronic application that is in a format that allows the applicant to download the files, enter and save data on their own computer, and return the completed documents, including an original signature, to Illinois EPA by post, delivery service, or in person.

The Grant Program application packet is available at Illinois EPA's Web site at http://www.epa.state.il.us/water/watershed/forms/319-application.pdf.

Project Length 4.7

Project length is two years unless otherwise requested and approved. Costs incurred prior to the execution of the Agreement, or after the project period ends are ineligible for reimbursement. Costs incurred prior to the execution of the Agreement, or after the project period ends are ineligible as match unless otherwise approved by Illinois EPA, prior to Agreement execution.

Project Costs, Reimbursement Requirements, and Match Requirements 4.8

The Grant Program does not have a set maximum or minimum total project cost or grant amount. In previous program years, Grant Program funded projects have had total project costs that ranged from $80,000 to $2,000,000 and Grant program assistance has ranged from $48,000 to $1,200,000.

The Grant Program is a reimbursement program. Grant recipients must perform the work, pay project costs, and submit an invoice with supporting documentation before Illinois EPA will reimburse recipients for any approved costs. Illinois EPA will only make reimbursements to the grant recipient and will reimburse the grant recipient no more frequently than monthly.

The Grant Program funding is 60 percent of the eligible total project cost. The reminding 40 percent is the responsibility of the recipient and constitutes the local match. This local match may include cash spent or in-kind services utilized to complete the approved project tasks but cannot be federal funds or funds used to match another federal program. Local match can be provided by the recipient, sub-contractor, or project partners (including state programs, private foundations, landowner, etc.) Greater than 40 percent local match is encouraged.

Other Important Information

- The recipient, or its approved designee, is responsible for the development of designs and application for all applicable federal and state permits for all BMPs to be implemented. The design must be stamped by a certified professional engineer or NRCS staff unless the recipient obtains a waiver of this certification requirement from the Illinois EPA. The designs must be approved by the Illinois EPA NPS Unit prior to the start of BMP construction or implementation. Costs associated with development of BMP designs are eligible for Section 319(h) grant funds as long as the costs are incurred within the Illinois EPA approved project period and included in the Agreement budget.
- The recipient, or its approved designee, is responsible for the development and implementation of an operation and maintenance plan (O & M Plan) for all the BMPs installed during the project period. This includes BMPs installed with match funds or Section 319(h) funds. O & M Plans must be approved by the NPS Unit and are for a minimum of ten (10) years starting from the point of BMP implementation, unless otherwise agreed to by Illinois EPA.
- Project sponsors may subcontract portions of their Section 319(h) grant or local matching funds for technical or other services associated with implementation of the proposed project.
- The recipient may utilize subcontractors to complete project components. However, any costs associated with a subcontract must be approved in writing by Illinois EPA prior to the start of the subcontracted work.
- All projects will require quarterly reporting and a final project evaluation and report.

See Table 17 for a partial list of BMPs that can be used to control NPS pollution. Inclusion of a BMP, in the Program does not equate to automatic eligibility for the Grant Program. Appropriate practice location and the practice's ability to provide water quality benefits through NPS pollution control are considered a priority.

The BMPs are listed in alphabetical order. The table includes priority for Grant Program funds for NPS pollution source. This is a **generic table** that should be used as a starting point for BMPS to consider for implementation. Illinois EPA reviews Grant Program applications to verify that the proposed BMP addresses the site specific conditions, the local waterbody segment water quality impairments and the identified NPS sources. BMPs that are marked 'high' in the table for funding priority may actually become a 'low' priority if an impairment and appropriate NPS source are not identified in the *2012 IR, or more recent version of the Integrated Report.*

Table 17 - Grant Program Priorities for BMPs to Reduce NPS Pollution

Categories	Agriculture	Construction	Urban Runoff	Hydrologic Modification	Resource Extraction
Practices	**Priority**	**Priority**	**Priority**	**Priority**	**Priority**
Access Roads	Low	Low	Low	Low	Low
Aeration/Destratification	---	---	Low	Low	---
Aquatic Vegetation Re-establishment	Low	Medium	Medium	High	Medium
Artificial Circulation	Low	Low	Low	Low	Medium
Barley Straw Addition	Low	Low	Low	Medium	Low
Barriers to Divert Runoff from Resource Extraction Work Sites	---	---	---	---	Medium
Bioengineering Stabilization Practices	High	High	High	High	High
Biorentention Practices	High	High	High	High	High
Bioswale	High	High	High	High	High
Bottom Feeding Fish Species Eradication	---	---	---	Low	---
Bottom Sealing	Low	Low	Low	Low	Low
Brush Management	Low	Low	Medium	Medium	Low
Buffer Strips	Medium	Medium	Medium	Medium	Medium
Catchment Basins	Medium	Medium	Medium	Medium	Medium
Channel Vegetation	High	Medium	High	High	Medium
Check Dams	High	Low	Medium	High	Medium
Cistern	Medium	Low	Medium	Low	Low
Clearing and Snagging	Low	Low	Medium	Medium	Low
Compost Facility	Low	Low	Low	Low	Low
Concrete Collection Pit	Medium	Low	Low	Low	Low
Confinement Pens	Low	---	---	Low	---
Conservation Cover	High	Medium	High	High	High
Conservation Cropping Systems	Medium	---	---	Medium	---
Conservation Reserve Programs	High	---	---	Medium	---
Conservation Tillage	Medium	---	---	Medium	---
Constructed Wetlands	High	Medium	High	High	Medium
Contour Farming	Medium	---	---	Medium	---
Contour Orchard and Other Fruit Area	Medium	---	---	Medium	---
Cover and Green Manure Crop	Medium	Low	---	Medium	Low
Critical Area Planting	High	Medium	High	High	Medium
Dam, Diversion	Low	Low	Low	Medium	Low
Dam, Floodwater Retarding	Low	Low	Low	Medium	Low
Dam, Multiple Use	---	---	---	---	---
Dam, Removal	Low	Low	Low	Low	Low
Day Lighting	Low	Low	Medium	Medium	Low
Deferred Grazing	Medium	---	---	Medium	---
Detention Basins, Dry or Wet	High	Low	Medium	High	Low
Dewatering Practices	Medium	Low	Medium	Medium	Low
Dike	Medium	Low	Low	Medium	Low
Dike Floodway Channel	Medium	Low	Low	Medium	Low
Discharge Flow Regulation	High	Low	Medium	High	Low
Ditch Stabilization	High	High	High	High	High

Table 17 - Grant Program Priorities for BMPs to Reduce NPS Pollution - Continued

Categories	Agriculture	Construction	Urban Runoff	Hydrologic Modification	Resource Extraction
Practices	**Priority**	**Priority**	**Priority**	**Priority**	**Priority**
Diversions	Medium	Low	Medium	Medium	Low
Downspouts and Gutters	Medium	Low	Medium	Low	Medium
Dredging, Retention Site Development Reclamation	Low	Low	Low	Low	Low
Earth Dike	Medium	Low	Low	Medium	Low
Earthen Storage Basins	Medium	Low	Low	Medium	Low
Energy Dissapators	High	Medium	High	High	Medium
Erosion Control Plantings	High	Medium	High	High	Medium
Farmstead and Feedlot Windbreak	Low	---	---	---	---
Fences	Medium	Low	Low	Medium	Low
Field Borders	Medium	---	---	Medium	---
Filter Strips	Medium	---	Medium	Medium	---
Floculant (Bricks/Tubes/Feeders	Medium	Medium	Medium	Low	Low
Flow Diversion	High	Low	High	High	Low
Forest Fertilization	Low	Low	Low	Low	Low
Forest Management	Medium	Low	Medium	Medium	Low
Gabions/Wire Mattresses	Low	Low	Medium	High	Low
Grade Stabilization Structures	High	Low	High	High	Low
Grass Waterway (w/or w/o Swale & Outlet Green	High	Low	Medium	Medium	Low
Grass-Lined Channels	High	Low	Medium	Medium	Low
Green Roofs	Low	Low	Medium	Medium	Low
Groundwater Recharge Area Protection	Low	Low	Low	Low	Low
Heavy Use Area Protection	Low	Low	Medium	Medium	Low
Holding Pond/Settling Basin	Low	Low	Low	Low	Low
Hypolimnetic Aeration	Low	---	Low	Low	---
Hypolimnetic Withdrawal	Low	---	Low	Low	---
Impoundment Structure	Low	Low	Low	Medium	Low
Infiltration Practices	High	Medium	High	High	Medium
Information/Education	High	High	High	High	High
Inlet Protection	High	Medium	High	High	Medium
Irrigation Water Management	Medium	Low	Low	Low	Low
Irrigation Water Management	Medium	Low	Low	Low	Low
Lagoons	Low	Low	Low	Low	Low
Land Application	Low	---	---	---	---
Land Grading	Medium	Low	Medium	High	Low
Land Reconstruction/Reclamation	Medium	Low	Medium	High	Low
Land Use Change	Low	Low	Low	Low	Low
Landscaping	Low	Low	Low	Low	Low
Leachate Collection Systems	Medium	Low	Low	Low	Low
Level Spreader	Medium	Low	Medium	High	Low
Liming	Low	---	High	---	---
Lined Waterway or Outlet	Medium	Low	Medium	High	Low
Livestock Exclusion	Medium	---	---	Medium	---

Table 17 - Grant Program Priorities for BMPs to Reduce NPS Pollution - Continued

Categories	Agriculture	Construction	Urban Runoff	Hydrologic Modification	Resource Extraction
Practices	**Priority**	**Priority**	**Priority**	**Priority**	**Priority**
Livestock Shade Structure	Medium	---	---	Medium	---
Macrophyte Harvesting	---	---	---	Low	---
Mixing/Loading Pads	Low	Low	Low	Medium	Low
Monitoring	Medium	Low	Medium	Medium	Low
Mud/Dust Control	Low	Low	Low	Low	Low
Mulching	Low	Low	Low	Low	Low
Nutrient Management	Medium	---	Medium	---	---
Nutrient Management Plans	Medium	---	Medium	---	---
Oil and Grit Separator	Medium	Low	Medium	---	Low
On-Site Treatment System Correction	---	---	---	---	---
Open Channel Construction/Improvement	High	Medium	High	High	Medium
Open Gutter Systems	Low	Low	Low	---	---
Open Space Land Acquisition	Low	---	Low	Low	---
Outlet Protection	High	Medium	High	High	Medium
Outside Concrete Collection Systems	Low	---	Low	---	Low
Oxidation Ditch	Low	Low	Low	Low	Low
Pasture Protection	Medium	Low	---	Medium	Low
Pasture Rotation	Medium	---	---	---	---
Pasture/Hayland Management & Planting	Low	---	---	---	---
Paved Waterways	---	---	---	---	---
Pest Management	Low	---	Low	---	---
Pesticide Application Certification and Training	Low	---	Low	---	---
Phosphorus Inactivation	Medium	---	Medium	---	Low
Planned Grazing Systems	Medium	---	---	---	---
Planning/Administration	Medium	Medium	Medium	Medium	Medium
Pond	Low	---	Low	Low	---
Pond Sealing or Lining	Low	---	Low	Low	---
Porous Pavement	Low	---	Medium	Low	---
Portable Sediment Tank	---	---	---	---	---
Prairie Restoration	Medium	Low	High	Medium	Low
Prescribed Burning	Low	---	Low	Medium	Low
Protect Existing Vegetation	Medium	Low	Medium	Medium	Low
Rain Barrel	Low	---	Low	Medium	Low
Rain Garden	Low	---	Medium	Medium	Low
Recessed Street	---	---	---	---	---
Recreation Area Improvement	Low	---	Low	Low	---
Regeneration/Reforestation	Medium	---	Medium	High	Medium
Regulations	Medium	Medium	Medium	Medium	Medium
Replace Leaking Storage Tanks	Low	---	---	---	---
Reshape Banks/Sideslopes	High	Medium	High	High	Low
Retards & Jetties	Low	Low	Low	Medium	Low
Retention Basin	Medium	Medium	High	High	Medium

Table 17 - Grant Program Priorities for BMPs to Reduce NPS Pollution - Continued

Categories	Agriculture	Construction	Urban Runoff	Hydrologic Modification	Resource Extraction
Practices	**Priority**	**Priority**	**Priority**	**Priority**	**Priority**
Revegetated Riparian Zone/Corridor	High	Medium	High	High	Medium
Rip Rap	Medium	Medium	High	High	Medium
Rock Barrier	Medium	Medium	High	High	Medium
Rock Outlet Protection	High	Medium	High	High	Medium
Roof Runoff Management	High	---	Medium	Medium	---
Runoff Control	High	Medium	High	High	Medium
Sand Filters	Medium	Low	High	Medium	Low
Sealing Bore Holes	Low	---	Low	Low	---
Sediment Oxidation	Medium	---	Medium	---	Low
Sediment Traps/Basins	High	Medium	High	Medium	Medium
Seeding	High	Medium	High	High	Medium
Shading and Sediment Covers	Low	Medium	Low	High	Medium
Silt Fence	Medium	Medium	Medium	Medium	Medium
Sinkhole Stabilization	Medium	Low	Medium	Medium	Low
Site Evaluation Requirements	High	Medium	High	High	Medium
Sodding	Low	Low	Medium	Medium	Low
Soil Testing/Nutrient Management	High	---	Medium	---	---
Spillway Restoration	---	---	---	Low	---
Spray Nozzle Refinements	Medium	---	Low	---	---
Stabilized Construction Entrance Stacking Area	Medium	Low	Low	Medium	Low
Stacking Area	Medium	Low	Low	Low	Low
Staging of Clearing, Grubbing, Scalping, Grading and Reclamation Activities	Low	Low	Low	Medium	Low
Stock Trails and Walkways	Low	---	Low	Medium	Low
Storm Drain Inlet Protection	---	---	Low	---	---
Straw Bale Dike	Low	---	Low	Low	---
Stream Channel Restoration	High	Medium	High	High	High
Stream Channel Stabilization	High	Medium	High	High	High
Streambank and Shoreline Protection/Stabilization	High	Medium	High	High	High
Street Sweeping	---	---	---	---	---
Strip Cropping (Contour)	Medium	---	---	Medium	---
Subsurface Drainage	Low	Low	Low	Medium	Low
Surface Drainage	Low	Low	Low	Low	Low
Sustainable Management Practices	High	Medium	High	High	Medium
Swale	High	Medium	High	High	Medium
Technical Assistance	Medium	Medium	Medium	Medium	Medium
Temporary Vegetative Cover	Low	Low	Low	Low	Low
Terraces	Medium	Low	Medium	High	Low
Topsoiling	Low	Low	Low	Low	Low
Toxic Salt Reduction	Medium	Medium	High	---	Low
Tree Planting	Medium	Medium	Medium	Medium	Medium
Trenches and Ponds	Low	Low	Low	Low	Low
Triple Rinsing Pesticide Containers	Low	---	---	---	---
Trough or Tank	Medium	---	---	Medium	---

Table 17 - Grant Program Priorities for BMPs to Reduce NPS Pollution - Continued

Categories	Agriculture	Construction	Urban Runoff	Hydrologic Modification	Resource Extraction
Practices	**Priority**	**Priority**	**Priority**	**Priority**	**Priority**
Two Stage Ditch	High	Low	Medium	High	Medium
Underground Outlet	Medium	Low	High	High	Low
Urban Filter Strip	---	Medium	High	High	Low
Urban Stormwater Wetlands	---	Medium	High	High	Low
Vegetative Bank Stabilization	High	Medium	High	High	High
Vegetative Buffers	High	Medium	High	High	Medium
Vegetative Deflectors	High	Medium	High	High	Medium
Vegetative Filter Strips	High	Medium	High	High	Medium
Vegetative Management	High	Medium	High	High	Medium
Vegetative Protection/Soil Stabilization	High	Medium	High	High	Medium
Vegetative Removal	Low	Low	Medium	High	Low
Vegetative Stabilization	High	Medium	High	High	Medium
Vegetative Swale	High	Medium	High	High	Medium
Waste Application (Application on Land)	Low	---	---	---	---
Waste Management System	Medium	---	---	---	---
Waste Storage Lagoons/Ponds (various)	Medium	---	---	---	---
Waste Storage/Control Structures	Medium	---	---	---	---
Waste Water Recovery	Medium	---	---	---	---
Water Harvesting	Medium	Low	Medium	Medium	Low
Water Level Drawdown/Refilling	Medium	Low	Medium	Medium	Low
Water/Sediment Control Basins	High	Medium	Medium	High	Medium
Well Sealing	Low	Low	Low	Low	Low
Well Setback Zones	Low	Low	Low	Low	Low
Well Site Protection	Medium	Low	Medium	Medium	Medium
Wetland Acquisition	Low	Low	Low	Low	Low
Wetland Creation	High	Low	High	High	Low
Wetland Protection	High	Medium	High	High	Medium
Wetland Restoration	High	Medium	High	High	Medium
Wildlife Plantings	Medium	Low	Medium	Medium	Medium
Wildlife Upland Habitat Management	Medium	Low	Medium	Medium	Medium
Wildlife Wetland Habitat Management	Medium	Low	Medium	Medium	Medium
Willow Spikes	Medium	---	Medium	High	Medium
Windbreaks (Field, Farmstead, Feedlots)	Low	---	---	---	---
Winter Feed Station	Medium	---	---	Medium	---
Woodland and Pruning	Low	Low	Low	Low	Low
Woodland Improvement	High	Low	Medium	High	Low
Zoning	Low	Low	Low	Low	Low

Chapter 5 – Federal Consistency Reviews 5.0

U.S. EPA has provided guidance that the Program should include an identification and review of federal land management programs, development projects and financial assistance programs that are or may be inconsistent with the Program. This chapter was included to address that request.

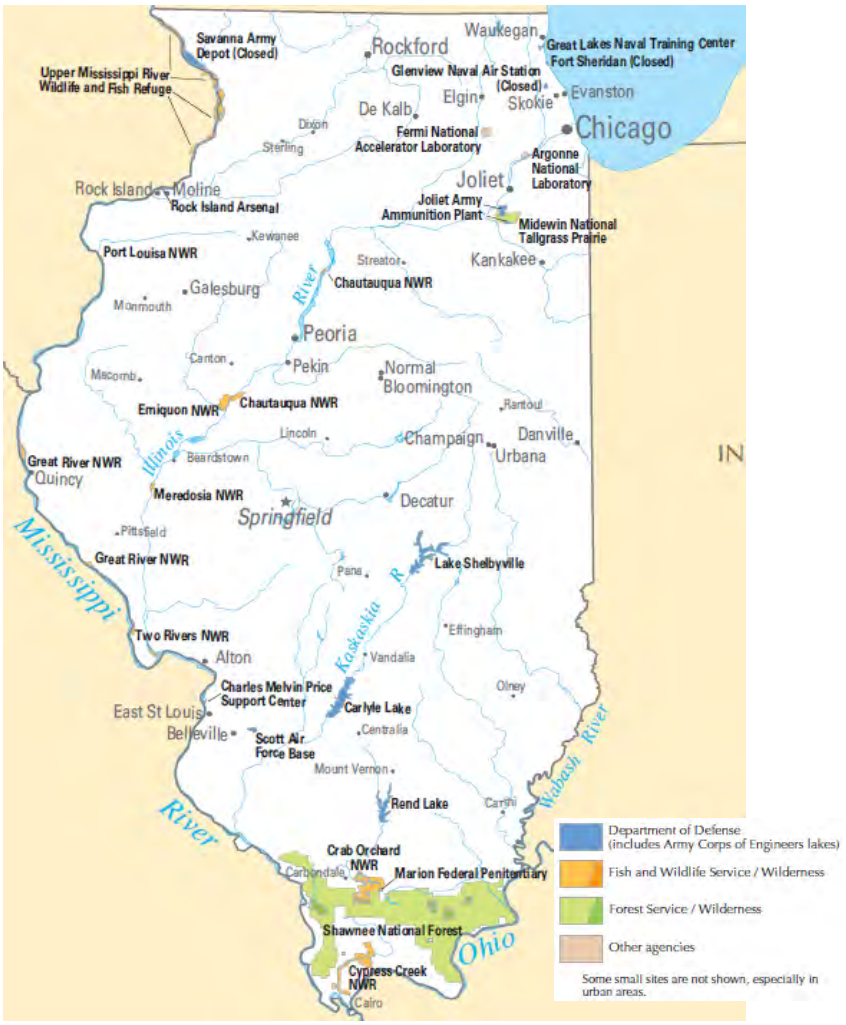
There are at least five federal entities that own land in Illinois. According to the 2010 U.S. Census, the federal government owns approximately 1.8 percent of Illinois' land and water area in Illinois. This equates to roughly 628,000 acres. This does not take into account individual buildings such as USDA Service Centers or U.S. Post Office buildings. Illinois ranks 37th in the nation for the amount of land owned and operated by the federal government. Figure 25 shows the general location and size of the federal land holdings.

Table 18 - Federal Entities with Property Holdings in Illinois

Organization	Property	Acres	WBP or TMDL	Compliant 2/Program	Last Date Confirmed
Department of Defense - Army Corp of Engineers	Savanna Army Depot (Closed)	13,062	No	Unknown	-
	Carlyle Lake	26,000	No	Unknown	-
	Rend Lake	18,900	No	Unknown	-
	Lake Shelbyville	11,000	No	Unknown	-
	Joliet Army Ammunition Plant	23,500	Yes	Unknown	-
Department of Defense - Navy	Great Lakes Naval Training Center - Fort Sheridan (Closed)	1,628	No	Unknown	-
	Glenview Naval Air Station (Closed)	1,121	Yes	Unknown	-
Department of Defense	Scott Air Force Base	3,589	No	Unknown	-
	Rock Island Arsenal	946	No	Unknown	-
United States Forest Service	Shawnee National Forest	265,616	Partial	Unknown	-
	Midewin National Tallgrass Prairie	19,000	Partial	Unknown	-
United States Fish and Wildlife Service	Chautauqua National Wildlife Refuge (NWR) (x 2)	2,451	No	Unknown	-
	Upper Mississippi River Wildlife and Fish Refuge (x 3)	240,000	No	Unknown	-
	Port Louisa NWR	8,373	No	Unknown	-
	Emiquon NWR	11,122	No	Unknown	-
	Great River NWR (x 2)	11,600	Yes/No	Unknown	-
	Meredosia NWR	5,255	No	Unknown	-
	Two Rivers NWR	8,501	No	Unknown	-
	Crab Orchard NWR	43,890	Yes	Unknown	-
	Cypress Creek NWR	16,000	No	Unknown	-
United States Department of Energy	Argonne National Laboratory	1,700	No	Unknown	-
	Fermi National Accelerator Laboratory	6,800	Partial	Unknown	-
Other	Charles Melvin Price Support Center	686	No	Unknown	-
	Marion Federal Penitentiary	146	Yes	Unknown	-

The entities listed in Table 18 will be surveyed by the Illinois EPA NPS Unit in 2014 to determine their compliance with the updated Program for the above properties. In the event that they are not in compliance, Illinois EPA will work with these entities to develop and implement local NPS pollution control efforts. For those areas that do not comply with the Program, Illinois EPA will request assistance from U.S. EPA as appropriate.

Figure 25 - Federal Land Holdings in Illinois



Federal Development Projects and Financial Assistance Programs 5.1

Section 319 of the CWA requires that the Program identify federal financial assistance programs and federal development projects, which the state will review for their effect on water quality and their consistency with the Program. Illinois currently has a federal consistency review process pursuant to Executive Order 12372; a clearinghouse has been established and a single point of contact identified. Development plans for federally assisted projects, as identified by an asterisk in the list below, are distributed to the State's clearinghouse and subsequently forwarded to the Illinois EPA for review and comment in accordance with the state's project notification and review system. The Illinois EPA reviews other programs (identified below) for consistency pursuant to the National Environmental Policy Act process and through requests made by cooperating agencies/organizations to review draft program proposals (i.e., FSA, U.S. EPA).

Frequently, federal agencies and the Illinois EPA will meet to discuss their particular agency initiatives and determine where mutual partnerships can be formed on a formal or informal basis. Those federal agencies where we have most frequently coordinated efforts have been with U.S. Department of Agriculture, U.S. Army Corps of Engineers, U.S. Geological Survey, U.S. Fish & Wildlife, and the U.S. Department of Defense. Most of these efforts involve participation in planning committees, site visits, and technical assistance.

Pertinent programs identified below are arranged and numbered similar to that found in the 'Catalog of Federal Domestic Assistance'.[42]

DEPARTMENT OF AGRICULTURE

Farm Service Agency

- 10.054 Emergency Conservation Program
- 10.069 Conservation Reserve program

Rural Development

- 10.760 Water and Waste Disposal Systems for Rural Communities
- 10.763 Emergency Community Water Assistance Grants

Natural Resources Conservation Service

- 10.072 Wetlands Reserve Program
- 10.902 Soil and Water Conservation
- 10.904 Watershed Protection and Flood Prevention
- 10.912 Environmental Quality Incentive Program
- 10.914 Wildlife Habitat Incentive Program
- 10.920 Grassland Reserve Program
- 10.921 Conservation Security Program
- 10.924 Conservation Stewardship Program

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

- 11.419 Coastal Zone Management Administration Awards

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

- 20.106 Airport Improvement Program

Federal Highway Administration

- 20.205 Highway Planning and Construction

ENVIRONMENTAL PROTECTION AGENCY

The opportunity to comment on all U.S. EPA programs is reserved, including programs under the following offices:

- Office of Water (66.418-66.480
- Office of Pollution Prevention and Toxic Substances (66.700-66.714)
- Office of Solid Waste and Emergency Response (66.801-66.805)

OTHER

Section 401 Certification of Section 404 Permits
(Environmental review of hydrologic modifications)
National Wild and Scenic Rivers Review
National Environmental Policy Act Review

[42] https://www.cfda.gov

Federal Consistency Review Requirements 5.2

Section 319(b)(2)(F) requires states to identify federal financial assistance programs and development projects, which will be reviewed for their effect on water quality consistent with the Program.

Program Review

The proposed approach to federal consistency review involves two stages. The first stage is a programmatic review. This is a state level review that may occur at different frequencies (one-time, annually, every three years) depending on the program. The intent of the programmatic review is to answer the question – Does the federal program process have components that satisfy the Program? The second stage is review of individual development projects.

Criteria for Programmatic Review 5.21

Review of the programs will be completed using the following criteria:

- ☐ Meets requirements of Section 319 of Federal CWA.
- ☐ Meets the State Water Quality Standards.
- ☐ Is consistent with the implementation schedule and projects identified in the Program.
- ☐ Identifies BMPs or BMP process.
- ☐ Identifies process for on-site application BMPs.
- ☐ Identifies a process for modification of BMPs.
- ☐ Planning for water quality.

Criteria for Individual Assistance or Development Project Review 5.22

To implement state review of federal projects efficiently requires the utilization of a state clearinghouse process. The clearinghouse routes the project to the appropriate state agencies for review. Generic criteria for federal consistency with the program are listed below.

Federal Consistency Checklist for Planned Projects 5.23:

1. Which NPS activities included in the Program are within the project area?
2. Are state approved BMPs for each NPS control activity included?
3. For NPS control activities that do not have approved BMPs, are conservation practices identified that demonstrate a knowledgeable and reasonable effort to minimize resulting water quality impacts?
4. What process (including feedback from water quality monitoring) exists for modifying the approved or specialized conservation practices in order to protect beneficial uses of water?
5. What is the appropriate beneficial use of water for the waterbodies in the project area?
6. Is the project consistent with the prioritization of watersheds as identified in the Program?
7. Have the water quality standards and criteria applicable to protecting the beneficial uses been identified?
8. Does pre-project planning and design include an analysis of water quality resulting from implementation of the proposed activity sufficient to predict exceedance of water quality criteria for the appropriate beneficial uses(s)? Or in the absence of such criteria, sufficient to predict the potential for beneficial use impairment?

Procedures and mechanisms for reviewing federal assistance programs already exist at the state level. These include the state clearinghouse and the National Environmental Policy Act (NEPA) environmental assessment/environmental impact statement (EA/EIS) process. The success of the review process will depend on the ability of the federal and state agency involved to work cooperatively to resolve any conflicts.

The 1990 Farm Bill created a team in each state called the State Technical Committee. This committee serves as an advisory group to the USDA NRCS State Conservationist on technical aspects of the conservation provisions of the farm bills. Additionally, the NRCS and Illinois EPA continue communications to provide technical assistance in resource planning and facilitate the integration of NRCS programs into the Program.

Specific federal assistance programs and development projects that are reviewed by the state for consistency with the Program are as follows:

* 10.069 Conservation Reserve program
* 10.072 Wetlands Reserve Program
* 10.902 Soil and Water Conservation
* 10.904 Watershed Protection and Flood Prevention
* 10.912 Environmental Quality Incentive Program
* 10.914 Wildlife Habitat Incentive Program
* 10.920 Grassland Reserve Program
* 10.921 Conservation Security Program
* 10.924 Conservation Stewardship Program

Chapter 6 – Feedback Loop 6.0

The key to a successful long-term Program is to monitor and evaluate it during its implementation. The application of the lessons learned through the evaluation must also occur in order to keep the Program up to date, especially in the area of the resources needed to implement it.

To ensure the success of the Program, Illinois EPA will use a combination of tools to monitor and evaluate. The information gathered will be applied to the Program to keep it current, efficient and as effective as possible. As appropriate, Illinois EPA will also update the Program in response to major changes in resource availability, program, and policy changes, and per guidance from U.S. EPA or the federal CWA.

Every Four Years 6.1

Illinois EPA will conduct a comprehensive evaluation to the Program on a four year schedule. The comprehensive evaluation of the Program will be scheduled to occur after the release of the *Illinois Integrated Water Quality Report and Section 303(d) List*, which is released every two years (e.g., 2014, 2016).

Throughout the life of the Program, Illinois EPA may also conduct additional evaluations of the Program in response to changes in Agency resource availability and program functionality or per guidance from U.S. EPA or the federal CWA.

During the comprehensive evaluation, the Program will be available for review and comments by our Partners (see Chapter 3 for a list of Partners). Illinois EPA will ensure that the evaluation will:

- Re-appraise the Program's mission and goals;
- Include a gap analysis and will address how to resolve the gaps that are identified;
- Update the identification of watersheds and waters impaired by NPS pollution, and Priority Waters for Protection (scheduled to happen every two years);
- As necessary, update information for watersheds, land use, and sources of NPS pollution;
- Attend to the Program implementation components, including monitoring, partnerships, capacity building, plan development and implementation, and outreach activities. Environmental, social, and administrative factors will be used to assess Program implementation;
- Review federal, state, and local laws to determine the extent that they are relevant to the Program and update as appropriate;
- Document progress toward the stated short and medium-term objectives and milestones, and revise these items, as appropriate;
- Review the BMP tables and update as needed;
- Assess the implementation of the Section 319 grant program including its efficiency and effectiveness, plus the necessary financial management (e.g., internal audit of financial practices of the Program including sub-recipient single audit act and reimbursement tracking and U.S. EPA grant fund internal review), and identify recommendations for improvement;
- Update identification of federal programs and partners not consistent with the Program; and
- Assess the Feedback Loop, including tools and processes used, and identify recommendations for improvement.

Each time the Program is updated it will be formally announced through the Illinois EPA Bureau of Water Annual Hearing. There will be a 30-day comment period after the hearing has been held. This approach will allow Illinois EPA to collect comments from the Program Partners and the citizens of Illinois. Once the comment period has ended, Illinois EPA will finalize the Program and submit it to U.S. EPA for approval. Upon approval from U.S. EPA, Illinois EPA will commence use of the new Program to guide the state NPS control activities. In the event that the approval is delayed, Illinois EPA will continue to implement the existing Program until the new Program is approved by U.S. EPA. Illinois EPA will endeavor to have updates to U.S. EPA so that approvals will be in place prior to the end of the federal fiscal year.

Illinois EPA will work with Program partners, including Grant Program recipients to include social indicator components in programs and projects, as appropriate, and to track and relay the gathered social indicator information regarding NPS pollution control back to U.S. EPA.

Measures of Progress
List of appropriate measures that can be used:

- Waterbody assessment attainment (305(b) and 303(d))
- Number of WBPs developed
- Number of TMDLs and LRSs developed
- Number of BMPs installed/implemented
- Reduction in pollutant load
- Number of meetings held
- Number of dollars leveraged by Section 319 program
- Waterbody segments removed from impaired list
- Increase in number of monitoring stations
- Increase in partners
- Increase in Clean Watershed Needs Survey documentation
- Number of projects with social indicator component

Every Two Years 6.2

Starting in 2012, Illinois EPA will conduct a statewide biennial NPS Management Meeting for Program partners and general stakeholders to share knowledge on NPS control issues, programs, projects, and practices. The workshop is an opportunity to bring together NPS pollution control experts, watershed associations, environmental advocates, and lay persons to provide information about the Program and NPS pollution control to them while also collecting feedback on the Program as well. Additional information regarding the statewide biennial NPS Management Workshop is located in Chapter 3.

The Illinois EPA will continue to submit updated IRs, including the NPS assessment, to U.S. EPA.

Every Year 6.3

Illinois EPA will conduct a gap analysis on the objectives and milestones listed in Chapter 7 of the Program every year. The results of the analysis will be submitted to U.S. EPA with the End-of-Year Report which documents Illinois EPA's Annual Work Plan achievements. The information gathered through the annual gap analysis will be used to help tailor the subsequent year's Annual Work Plan.

Measures of progress will be captured under the following water quality and implementation categories:

1. Water quality improvement from NPS control
2. NPS pollution load reduction
3. Implementation of NPS controls
4. Public education, awareness, and actions
5. Development of WBP, TMDL, LRS implementation plans

In addition, Illinois EPA will work with Program partners to document efforts accomplished and the remaining gaps that need to be addressed toward the completion of WBP, TMDL, and LRS implementation plans. The final result will be a uniform tracking system for partners to use to document their plan objectives and milestones, in terms of need and status. With that information, Illinois EPA will be better able to coordinate Program efforts to assist those groups with documented needs. The information gathered will also, as allowed, be incorporated into Illinois EPA's NPS portion of the Clean Watersheds Needs Survey.

As proposed in Chapter 4, Illinois EPA and U.S. EPA should meet at least once a year to discuss (i) Illinois' NPS environmental accomplishments and remaining problems, (ii) the Program and needs for adjustment or evolution, (III) overall progress towards the vision of the national NPS program, and the technical assistance needs for the upcoming year. The Program should be discussed in the context of the overall environmental needs and goals of Illinois.

Additional opportunities to gain feedback will be pursued throughout the life of the Program. Entities such as the NRCS facilitated State Technical Advisory Committee and the Rivers of Illinois Coordinating Council meet regularly and their mission includes many components of the Program. In addition, implementation of capacity building activities, such as workshops and webinars, are a prime activity to secure additional feedback information. In-house training and managers' meetings are another potential source for information to improve the Program.

Tracking and Mapping Tools

Illinois EPA tracks specific project accomplishments through GRTS. This information is available to U.S. EPA on a daily basis.

Illinois EPA and its partners also track Program accomplishments using the RMMS. Efforts are being made to capture additional information that can be used for implementation plan tracking that can be used by federal, state, and local partners and the general public as well.

In September 2011, the draft 2011 Illinois NPS Management Program (version 1.1) was presented at the Illinois EPA, Bureau of Water Annual Hearing. The Program is now part of the permanent record and is posted on the Illinois EPA Web site. The annual hearing process includes a verbal comment period during the hearing and 30-day written comment starting at the conclusion of the hearing. Comments and questions received during the hearing or within the 30-day public comment period were included, and addressed, as appropriate, in the responsiveness summary created for the hearing. In addition to the 30-day comment period, the Watershed Management Section accepted comments on the draft Program through June 30, 2012.

The Program will be included annually in the Bureau of Water's Annual Hearing. This strategy will insure a minimum 30-day review process for public comment every year. In years, where significant changes are made to the Program, Illinois EPA will consider implementation of a longer comment period- outside of the hearing process. This process will also give Illinois EPA an official annual update to the Program; with U.S. EPA approving those updates on a four year basis as described in Section 6.1.

Chapter 7 – Short- and Medium-Term Objectives and Milestones 7.0

For Illinois to use this Program as an effective road map for NPS pollution control, it needs to have specific 'destinations' and a schedule to reach those points. This chapter includes the short- and medium-term objectives and corresponding milestones for the Program. The objectives have been developed to demonstrate reasonable progress that leads to accomplishment of the Program's long-term goals. The goals will be attained through environmental, social, and administrative activities. The short-term objectives are projected to be attained within one to three years, while the medium-term objectives are projected to be attained within three to five years. The long-term objectives for the Program are discussed elsewhere in the Program, principally in Chapters 1 and 3, with a few additional objectives in other chapters as appropriate.

The list of short-and medium-objectives and their milestones, including an implementation schedule, within a single table will help Illinois EPA and its NPS partners to understand, implement, and evaluate the work needed for a successful Program. With these details, Program partners will also be better able to expand these activities into their existing programs that would not normally include components for NPS pollution control.

Table 19 – Program Short- and Medium-Term Objectives and Milestones has been designed by Illinois EPA to track objective and milestone attainment for internal use and for inclusion in work plans and reporting to U.S. EPA. As discussed in Chapter 3, 4, and 6, Illinois' Annual Work Plan will reflect the appropriate portion of the Program's objectives and milestones to be implemented. Chapters 4 and 6 have additional details regarding Program reporting to U.S. EPA.

The format of the table will also be used by Illinois EPA to conduct a comprehensive Program evaluation every four years. In addition to the comprehensive Program evaluation, Illinois EPA will conduct a semi-formal 'gap analysis' annually on the Program's goals, objectives, and milestones. This will allow Illinois EPA to refine and refocus activities to make sure that the goals, objectives, and milestones are accomplished as scheduled and to modify the Program as necessary to keep it functioning in an efficient manner. The findings of the annual gap analysis will be included within the annual reports to U.S. EPA for the Section 319(h) Grant Program.

Table 19 – Program Short- and Medium-Term Objectives and Milestones

TX #	ENVIRONMENTAL BENEFITS - MILESTONES	STATUS	CITATION/DESCRIPTION
A1	The total number of assessed stream miles in Illinois impaired by nonpoint source pollution will decrease 10% (minimum of 1,006 miles) from 10,057 stream miles in 2012 to 9,051 stream miles in 2018.		
A2	The total number of assessed lake acres in Illinois impaired by nonpoint source pollution will decrease 2.5% (minimum of 3,695 acres) from 147,812 lake acres in 2012 to 144,117 lake acres in 2018.		
A3	Each Federal fiscal year from 2014 through 2019, Illinois EPA will achieve an additional annual load reduction in sediment of 8,000 tons/year (as estimated with approved U.S. EPA models) discharged to water resources through the installation of new nonpoint source pollution control best management practices implemented with funding under Section 319 (or with approved match sources) and completed during that particular Federal fiscal year. This objective corresponds to National Water Program Guidance Measure WQ-09c.		
A4	Each Federal fiscal year from 2014 through 2019, Illinois EPA will achieve an additional annual load reduction in total suspended solids of 200,000 pounds/year (as estimated with approved U.S. EPA models) discharged to water resources through the installation of new nonpoint source pollution control best management practices implemented with funding under Section 319 (or with approved match sources) and completed during that particular Federal fiscal year.		
A5	Each Federal fiscal year from 2014 through 2019, Illinois EPA will achieve an additional annual load reduction in nitrogen of 15,000 pounds/year (as estimated with approved U.S. EPA models) discharged to water resources through the installation of new nonpoint source pollution control best management practices implemented with funding under Section 319 (or with approved match sources) and completed during that particular Federal fiscal year. This objective corresponds to National Water Program Guidance Measure WQ-09a.		

		STATUS	CITATION/DESCRIPTION
A6	Each Federal fiscal year from 2014 through 2019, Illinois EPA will achieve an annual load reduction in phosphorous of 8,000 pounds/year (as estimated with approved U.S. EPA models) discharged to water resources through the installation of new nonpoint source pollution control best management practices implemented with funding under Section 319 (or with approved match sources) and completed during that particular Federal fiscal year. *This objective corresponds to National Water Program Guidance Measure WQ-09b.*		
	PROGRAMATIC MILESTONES-establish and implement effective, integrated, and holistic actions for the abatement and prevention of known and presumed water quality impairments ensuing from NPS pollution; foster multi-agency cooperation and local stakeholder input on the development, maintenance, implementation, and evaluation of this statewide plan of action; safeguard water quality from NPS pollution, consistent with the social and economic needs of the state, so as to protect health, welfare, property, and the quality of life; and satisfy the informational and procedural requirements of a state nonpoint source management program as stipulated under Section 319 of the Clean Water Act and associated federal guidance, including the nine key program elements of a successful state program as defined by U.S. EPA.		
B1	The RMMS database will continue to be updated monthly and information added to track present and historical BMP implementation (date, type, location, effectiveness, etc.) by state and federal agencies.		
B2	Financial assistance will be provided through Section 319 CWA and Illinois Clean Lake Program (Partners in Conservation) to assist in diagnosing, restoring, and protecting Illinois lakes through Diagnostic/Feasibility Studies (Phase I) and Implementation Projects (Phase II). Between 2014 and 2019 a combination of five Phase 1 and Phase II projects will be started.		
B3	A 305(b) assessment of Illinois Waters and a 303(d) List of Impaired Waters will be submitted to U.S. EPA Region 5 for review and approval in 2016 and 2018. Update of the Illinois EPA's Assessment of Nonpoint Source Impacts on Illinois Water Resources (Assessment) will be achieved through the biennial Illinois Integrated Water Quality Report required by Section 305(b) and 303(d) of the CWA.		
B4	Investigate a Watershed Coordinator Pilot Program to assist with CREP sign-ups, watershed planning and implementation and build watershed group capacity. If appropriate implement the Pilot Program and report after two years of implementation. This pilot program will be completed by 2016.		

		STATUS	CITATION/DESCRIPTION
B5	Four (4) Illinois waterbodies identified in 1998/2000 or subsequent years as being primarily nonpoint source impaired will be partially or fully restored during 2014 through 2018. This objective corresponds to National Water Program Guidance Measure WQ-10.		
	-	-	-
B6	During 2014 through 2018, initial restoration planning will be completed (i.e., U.S. EPA has approved all needed TMDLs for pollutants causing impairments to the waterbody or has approved a 303(d) list that recognizes that the waterbody is covered by a Watershed based Plan) for ten (10) water segments identified as impaired by nonpoint source pollution in 2002. *This objective corresponds to National Water Program Guidance Measure WQ-21.*		
	-	-	-
B7	By 2015, Illinois EPA will investigate opportunities for completing at least 2 of the major components (water chemistry, biology, habitat, landscape condition, hydrology, or fluvial geomorphology) of a Healthy Watershed Initiative assessment. Watersheds of a 12 HUC size will be targeted. *This objective corresponds to National Water Program Guidance Measure WQ-22b.*		-
B8	All watershed-based plans begun after June 2012 and funded under Section 319 will contain a consistent format for identifying recommended tasks and an associated schedule. At a minimum this format will include a table identifying site-specific and watershed-wide BMP recommendations along with the associated units (number, feet, acres) that should be implemented, cost of implementation, estimated pollutant load reduction, priority, and responsible entity for each recommended BMP. Parties developing watershed-based plans without Section 319 funding will be encouraged to adopt the same format. The Illinois EPA will also investigate ways to have watershed groups "self-report" progress made toward implementing these watershed-based plan recommendations. Anticipated schedules of self-reporting will be at the 4-5 year time frame or sooner if applying for financial assistance.		
B9	Illinois EPA will work with Federal Partners to align NPS pollution control programs and determine deficiencies. In conjunction with the Illinois EPA's biannual Nonpoint Source Pollution Workshop, the Illinois EPA will survey Federal entities to determine if their property holdings are in compliance with the Program.		

		STATUS	CITATION/DESCRIPTION
B10	Annually submit a success story to U.S. EPA Region 5 for consideration.		
B11	By December 2014 all TMDLs will have a universal implementation tracking system in place.		
B12	Illinois EPA will assist the Illinois Department of Natural Resources and other partner agencies in the development and implementation of the state coastal nonpoint pollution control program under the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA).		
B13	Annually the Illinois EPA will issue a request for proposals soliciting applications for Section 319(h) funding for projects that prevent, eliminate, or reduce water quality impairments by nonpoint source pollution.		
	NUTRIENTS-Provide programs and initiatives for the development of nutrient reductions in the state to address water quality protection.		
C1	As part of the TMDL process, develop Load Reduction Strategies (LRS) for all identified nutrient pollutants that do not have an Illinois Water Quality Standard. This will be a contractual item for all vendors beginning with the 2012 contracts. The number of watersheds for which a LRS was developed will be reported annually.		
C2	Illinois EPA along with our partners will develop and implement a Nutrient Reduction Strategy for Illinois waters. Through this document it is anticipated the NPS Program will be altered to meet the goals and objectives of this strategy. The Program will be amended to meet these objectives during the 2014 Bureau of Water Annual Hearing. This strategy will be released to the public January 2014.		
C3	Illinois EPA will support, through 319 grant opportunities, monitoring assistance and technical advisory assistance in Mississippi River Basin Initiative watersheds. Annually Illinois EPA will provide monitoring, laboratory analysis and technical assistance in at least one designated MRBI watershed for the life of the MRBI program.		
C4	On a continuous basis, foster nutrient management plans in watersheds where the groundwater has been contaminated by nitrates due to NPS contamination as provided by the Illinois EPA Groundwater program.		

		STATUS	CITATION/DESCRIPTION
	GROUNDWATER-Create projects and programs to increase the number of groundwater wells sampled; to educate and inform the general public about the various ways in which NPS pollution problems in shallow, rural wells and in groundwater can be reduced; that increase the number of investigations, which assist in the identification of alternative best management practices that help minimize surface runoff and leaching of pesticides.		
D1	Report on the progress of the Groundwater NPS Program for NPS Source Impacts to Groundwater in the ICCG Biennial Report.		
D2	Integrate source water assessments and protection areas into geographic information system (GIS) layers to be incorporated into the Resource Management Mapping Service (RMMS).		
D3	Training and BMP Implementation will be used to foster road salt application BMPs and training to prevent and reduce chloride contamination trends in Priority Regional Groundwater Protection Planning Areas and in designated Class III: Special Resource Groundwater Areas. (Groundwater Section)		
D4	Provide a feedback mechanism to identify the acres of BMPs implemented under the Conservation Reserve Program within delineated wellhead protection areas. (Groundwater Section)		
	WETLANDS- Promote voluntary projects and programs to increase public awareness of wetlands and their benefits through education, demonstrations, and wetland monitoring. Planning, design, and implementation of BMPs for wetland NPS control projects should be evaluated and compared across a large cross section of restoration sites. This will allow identification of common characteristics, which contribute to project success, regardless of its geographic location or type.		
E1	Investigate the possibility of incorporating a statewide wetlands net gain/loss as a data layer to RMMS by 2016.		
E2	Wetland protection will be incorporated into watershed-based plans. The NPS components of Illinois EPA-approved watershed-based plans will be incorporated by reference into the Program and implementation of watershed-based plans will be tracked through RMMS.		
	EDUCATION-Encourage the creation, improvement and training of information and education programs that specifically explain NPS pollution, evaluation, prevention, implementation, restoration/preservation and planning through displays, audio and visual presentation materials, and printed materials.		
F1	Participation in the Volunteer Lake Monitoring Program will increase by five percent between 2012 and 2018. Baseline for this milestone is 140 VLMP lakes in 2012.		
F2	Develop and hold, once every two years, a Nonpoint Source Pollution Workshop. To be held alternatively upstate and downstate; agricultural and urban topics. The first workshop was held in November 2012.		

		STATUS	CITATION/DESCRIPTION
	MONITORING-Review, and when appropriate expand on monitoring efforts throughout the State. Evaluate and incorporate monitoring initiatives into NPS pollution reduction programs as part of the comprehensive watershed approach. Develop initiatives and programs that employ monitoring efforts as an educational tool to make sound and adaptive planning decisions. Apply the relevant data into the documentation of long-term water quality trends. Continue to incorporate the data collected into an accessible and useable database.		
G1	Refine and standardize field assessment and data interpretation techniques to improve NPS assessments and ensure future trend evaluations are based on consistent and reliable indicators. This includes reviewing the Narrative Standard and giving consideration to updating the Standard and field assessments. To be completed by 2015.		
G2	Participate in watershed monitoring and reporting for Section 319 National Monitoring Program Projects. Continue current project (The Grove on Kickapoo) until at least 2015.		
G3	Illinois EPA will complete development of the 2013-2018 Illinois Water Monitoring Strategy by September 2014. Consideration will be given to comments provided by Region 5 on the Agency's previous strategy; new state and federal priorities; availability of Agency staff and financial resources; technical capabilities; etc. Illinois EPA will consider the addition of suspended sediment concentration as a parameter to be monitored under the 2013-2018 Illinois Water Monitoring Strategy.		
G4	Illinois EPA will work with Region 5 to develop an effective NPS monitoring program as part of the Illinois Water Monitoring Strategy, by September 2014. As deemed appropriate, additional monitoring locations, tools, and activities to better define NPS pollution impairments in Illinois will be identified as part of the Illinois Water Monitoring Strategy, by September 2014.		
G5	Implementation of the Illinois EPA's "Illinois Water Monitoring Strategy" (which identifies specific monitoring sites, methods, schedules, parameters, etc. and is incorporated by reference as part of this Program).		

		STATUS	CITATION/DESCRIPTION
G6	Illinois EPA will complete a pilot project for developing TMDLs for fecal coliform, total phosphorus, total dissolved solids, atrazine, and manganese that uses intense flow and water quality monitoring data to prioritize subwatershed loadings, target implementation areas, and specific implementation activities. The pilot project will be conducted on Vermont Reservoir/Sugar Creek and Canton lake. Stage one and two of the pilot TMDLs was completed by December 31, 2012. Stage 3 of the pilot TMDLs will be dependent upon funding availability and the findings of Stage one and two.		
G7	Annually have a Social Indicator Project either started or in the process of completion.		
	PLANNING-Develop programs and projects that are supported by local interest; create intergovernmental cooperation; develop comprehensive resource management plans for the protection or restoration of lakes, streams, reservoirs, and groundwater aquifers.		
H1	During 2014 through 2018, seven (7) Watershed-based Plans covering at least ten (10) 12-digit hydrologic unit codes will be completed or updated.		
H2	Continue quarterly meetings, and information gathering from the ICCG, GAC, and the Regional Priority Groundwater Protection Planning on the Plan for NPS Impacts to Groundwater.		
H3	Incorporate groundwater and source water protection into watershed-based plans.		
H4	Watershed-based plans that meet U.S. EPA's minimum elements, as determined by Illinois EPA, will be identified in Illinois EPA's Section 319 Biannual Report and the Resource Management Mapping Service (RMMS) website. The NPS components of Illinois EPA-approved watershed-based plans will be incorporated by reference into the Program and implementation of watershed-based plans will be tracked through RMMS.		

		STATUS	CITATION/DESCRIPTION
	AGRICULTURE- A primary state objective is to assist agricultural landowners to apply BMPs to the land to reduce soil erosion and sedimentation. Because water quality has always been an important resource concern in Illinois, programs and initiatives that promote actions to address water quality are a high priority.		
I1	Consistent with the NPS Program the Conservation Practices Program (CPP), Sustainable Agriculture (SA) Grant Program and Streambank Stabilization and Restoration Program (SSRP) administered by the IDA has been instrumental regarding BMP implementation for the improvement of water quality through the reduction of soil erosion and sedimentation throughout the State. Illinois will maintain 2010 funding levels. 2010 levels: CPP- 1.8M; SA- 275,000; SSRP- $475,000		
	CONSTRUCTION/URBAN/STORMWATER-Develop statewide programs and projects that are designed to inform and educate community planners and decision makers, developers, local, state and federal officials, and citizens of urban and urbanizing areas about the impacts of stormwater on local water quality and BMPs to reduce stormwater runoff. Included in these programs and projects, technical and/or financial assistance to promote, design, implement, and maintain the BMPs identified to reduce stormwater runoff.		
J1	The Illinois EPA, in cooperation with AISWCD, will update and maintain The Illinois Urban Manual (IUM) technical guide for use in Illinois EPA's wastewater construction permit applications, and as general guidance in the design of urban nonpoint runoff controls. Internet access of designs will continue to be available and updated.		
J2	Assuming State funds are available; Illinois EPA will implement a Green Infrastructure Grant Program during SFY2014 and 15, offering a total 5 million dollars of grant funds for three different funding categories (CSO Rehabilitation, Stormwater Infiltration/Retention and Small Project) with a matching requirement between 15 and 25 percent.		
	TOXICANTS-Develop projects and programs that assist in the promotion of NPS pollution prevention for all sources of toxicants in all media in Illinois, including the Great Lake basin. Additionally create projects and programs to implement and assess effectiveness of BMPs designed to break down, remove, or reduce existing in-place contaminants; create systems to reduce or remove toxicants from waterbodies or from watershed runoff before impacting local water quality.		
K1	Continue coordination of the Generic SMP for Pesticides in Groundwater (include the dedicated pesticide monitoring network) with the ICCG, GAC, and Regional Planning Committees		

Chapter 8 – Self Evaluation – Illinois NPS Program and Gap Analysis 8.0

Chapter 6 describes a 'Feedback Loop' for Illinois EPA to monitor and evaluate the implementation of the program. This chapter includes a "Self Evaluation' that identifies the current milestones and the sections within the Program that address those milestones.

U.S. EPA requested that Illinois EPA conduct a Gap analysis to verify that all of milestones in the 2001 Program are addressed in the 2013 version.

Self-Evaluation 8.1

Pursuant Appendix A - Key Components of an Effective State Nonpoint Source Management Program (Final Nonpoint Source Program and Grants Guidelines for States and Territories, April 12 2013) this section serves as a self-evaluation for the Illinois NPS Program. For each component the section or milestone that satisfies the component is noted. Many of the Program sections and milestones cut across a couple if not several of the components, so some sections will satisfy several components. The most appropriate sections/milestones were identified; other sections/milestones act to support the Program and the components equally.

Section Numbers are listed in blue at the end of Section Title. Milestones can be found in Chapter 7.

1. The state program contains explicit short- and long-term goals, objectives and strategies to restore and protect surface water and ground water, as appropriate.

   1.2, 1.3, 7.0

2. The state strengthens its working partnerships and linkages to appropriate state, interstate, tribal, regional, local entities (including conservation districts), private sector groups, citizen groups and federal agencies.
   1.24, 3.0, 3.11, 3.12, 3.23, 3.3, 3.31, 3.33, 3.5, 5.0, B4, B12, D2, G6, H1, H2, J1, J2

3. The state uses a combination of statewide programs and on-the-ground projects to achieve water quality benefits efforts are well-integrated with other relevant state and federal programs.

   1.22, 1.24, 1.3, 3.0, 3.11, 3.12, 3.2, 3.3, 3.31, 3.5, 5.0, B1, B3, B9, C1, C2, C3, D2, G1, H1, H3, J2, for all required subcomponents, specific sections/milestones for subcomponents identified below

   a. Total Maximum Daily Loads: 1.23, 3.4, 3.5, B11, D3, G6
   b. Clean Water State Revolving Fund: 1.23
   c. U.S. Department of Agriculture (USDA) farm bill conservation programs: 1.23, I1
   d. State agriculture conservation: 1.23, 3.4, 3.5, I1
   e. State nutrient framework or strategy: 1.23, 3.4, 3.5, C4, I1
   f. Source water protection: 1.23, 3.4, 3.5, D3, G6, K1
   g. Point sources (including stormwater, confined animal feeding operations and enforcement of permitted facilities: 3.4
   h. Groundwater: 1.23, 3.4, 3.5, C4, D1, D3, K1
   i. Drinking water: 1.23, 3.4, 3.5, C4, D1, D3, G6, K1
   j. Clean lakes: 1.23, 3.4, 3.5, B2, D3, F1, K1
   k. Wetlands protection: 1.23, 3.4, 3.5, D3, E1
   l. National estuary program – N/A
   m. Coastal nonpoint pollution control program: 1.23, 3.4, 3.5, B12, D3

n. Pesticide management: 1.23, G6, K1
o. Climate change planning: 1.23, 3.4
p. Forestry, both federal (U.S. Forest Service) and state: 1.23
q. U.S. Army Corps of Engineers programs: 1.23
r. And other natural resource and environmental management programs: 1.23, 3.4, 3.5, B4, D3, I1

4. The state program describes how resources will be allocated between (a) abating known water quality impairments from NPS pollution and (b) protecting threatened and high quality waters from significant threats caused by present and future NPS impacts.
3.0, 4.0, B7

5. The state program identifies waters and watersheds impaired by NPS pollution as well as priority unimpaired waters for protection. The state establishes a process to assign priority and to progressively address identified watersheds by conducting more detailed watershed assessment, developing watershed-based plans and implementing the plans. Factors to be considered when assigning priority watersheds may include:
1.24, 1.3, 2.7, 2.8, 2.14, 3.0, 3.1, 3.2, 3.22, 3.3, 3.5, 4.0, 5.0, B12, C2, D2, D3, D4, G2, H1, H2, H3, for all required subcomponents, specific sections/milestones for subcomponents identified below

s. Human health considerations including source water protection: 2.6, 3.12
t. Ecosystem integrity, including ecological risk and stressors: 2.6, 3.12
u. Beneficial uses: 2.6, 3.12
v. Value of the watershed or groundwater area to the public: 3.12
w. Vulnerability of surface or ground water to additional environmental degradation: 3.12
x. Likelihood of achieving demonstrable environmental results: 3.12, J1
y. Degree of understanding of causes of impairment and solutions capable of restoring the water: 2.6, 2.14, 3.3, 3.5, J1
z. Implementability: 2.14, 3.3, 3.5, J1
aa. Adequacy of existing water quality monitoring data or future monitoring commitments: 2.6, 3.2
bb. Degree to which TMDL allocations made to point sources are dependent on NPS reductions being achieved: 3.3
cc. Extent of partnerships: 3.12, 3.3, 3.15, B4, B9
dd. Availability and access of funding sources other than Section 319: 3.3, 3.31, J2
ee. Readiness to proceed amount stakeholders and project partners: 3.3

6. The state implements all program components required by section 319(b) of the Clean Water Act, and establishes strategic approaches and adaptive management to achieve and maintain water quality standards as expeditiously as practical. The state reviews and upgrades program components as appropriate. The state program includes a mix of regulatory, nonregulatory, financial and technical assistance, as needed.
1.3, 3.0, 3.31, 3.5, 4.0, 6.0, B6, B8, B12, C2, D1, D3, G1, H1, for all required subcomponents, specific sections/milestones for subcomponents identified below

ff. An identification of measures that will be used to control NPS pollution, focusing on those measures which the state believes will be most effective in achieving and maintaining water quality standards: 2.14, 3.3, 3.5, B5

gg. An identification of the key programs to achieve implementation of the measures including, as appropriate , nonregulatory or regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfer and demonstration projects: 3.11, 3.12, 3.31

hh. -A description of the processes used to coordinate and, where appropriate, integrate the various programs used to implement NPS pollution controls in the state: 3.11, 3.12, 3.23, B4

ii. A schedule with goals, objectives and annual milestones for implementation at the earliest practical date, legal authority to implement the program; available resources; and institutional relationships: 1.4

jj. Sources of funding from federal (other than section 319), state, local and private sources: 3.3, 3.31, B4, B9, I1, J2

kk. Federal land management programs, development of projects and financial assistances programs: 3.12, 3.3, B9

ll. A description of monitoring and other evaluation programs that the state will conduct to help determine short- and long-term NPS management program effectiveness: 3.11, 3.2, 3.3, 3.5, A1, A2, A3, A4, A5, A6, G2, G3, G4, G5

7. The state manages and implements its NPS management program efficiently and effectively, including necessary financial management.
   1.24, 1.3, 2.14, 3.0, 3.12, 3.3, 3.31, 3.33, 3.5, 4.0, 6.0, B5, B6, B8, B10, F2, G6

8. The state reviews and evaluates its NPS management program using environmental and functional measures of success, and revises its NPS management program at least every five years.
   1.24, 3.0, 3.32, 4.0, 6.0, Appendix A, B1, B10, B12, F2

Previous Program Review and Gap Identification 8.2

Illinois' Nonpoint Source Management Program (Program) is the road map Illinois follows to prevent and abate NPS pollution impairment of Illinois'' surface and groundwater resources. In order for Illinois EPA and its partners to attain the mission and goals identified in Chapter 1 a comprehensive yet practical Program must be developed and implemented. Over the past five years, work has been done to review and update the 2001 Program; however, the update was never finalized. Meanwhile, Illinois EPA and its partners have continued to implement the July 2001 version of the Program.

The U.S. EPA has requested that Illinois EPA include a 'gap analysis' as part of the 2013 update of the Program. This appendix was written to address that request and therefore includes a brief description of:

1. The 2001 Program,
2. U.S. EPA's Nine Key Elements provided in the recommendations to states for revisions of NPS Management Programs, and
3. The location and how Illinois has addressed U.S. EPA's Nine Key Elements within the 2013 Program.

Illinois Nonpoint Source Management Program – 2001

The 2001 Program was developed to provide an overview of program initiatives that could be utilized to address water resource problems caused by NPS pollution. The Program provided an effective statewide plan of action for the abatement and prevention of water quality impairments ensuing from NPS pollution and satisfied the informational and procedural requirements of a state NPS management program as stipulated under Section 319 of the CWA and associated federal guidance. These informational and procedural requirements included:

1. Identification of BMPs and measures that will be used to reduce pollutant loads upon the state's surface and groundwater resources;
2. Identification of programs to achieve implementation of BMPs;
3. Identification of goals to guide the implementation of BMPs and NPS control programs'
4. Certification that the laws of the state of Illinois provide adequate authority to implement the NPS management program;
5. Identification of financial assistance programs, which will support the implementation of BMPs and NPS control programs; and
6. Identification of federal assistance programs and development projects that state will review for their effect on water quality.

The primary objective for the 2001 Program: Continue the reduction of NPS pollution in Illinois so that the attainment of Illinois Water Quality management Plan policies and recommendations can be realized.

Primary goals established for the 2001 Program to reach this objective were:

1. Expand, update, and/or create state implementation and research programs within current budgetary constraints, which will better serve to protect the state's water resources from NPS pollution (i.e., to reduce the number of lake acres, stream miles, and groundwater having use impairments caused by NPS pollution);
2. Continue the statewide mechanism and process that enables state agencies and organizations, as a collective group, to equitably prioritize NPS pollution control projects for funding, which may become available from local, state, and/or federal sources;
3. Continue the incorporation of 'improved water quality' as a priority objective in all NPS pollution reduction programs; and
4. Increase the public's awareness and involvement in local NPS initiatives to serve as a catalyst for federal and state involvement at the local level.

The 2001 Program provided a(n):

- Brief discussion of statewide authorities that give the Illinois EPA the responsibility to develop and implement Illinois' Program,
- Summary of results of the states NPS assessment,
- Summary of the NPS reduction programs,
- Summary of BMPs,
- Outline of goals and objectives regarding significant NPS initiatives,
- Description of the 'process' or 'mechanism' which Illinois used to prioritize and fund future projects, and
- Identification of federal programs that the Illinois EPA reviewed for consistency with statewide NPS goals and objectives.

To accomplish the recommendations of the Program, the Illinois EPA developed Annual Work Plans that identified specific planning and implementation projects, associated BMPs to reduce NPS pollution, NPS pollution control demonstration projects and educational programs along with a schedule for their implementation over a two-year period. Progress in satisfying the milestones and objectives stated in the Annual Work Plans was to be evaluated every six months and reported in the 'State of Illinois Section 319 Biannual Report'. Specific goals and schedules for the implementation of BMPs were also to be contained in Watershed implementation Plans developed and approved by the Illinois EPA in accordance with the Watershed Management Program. In addition to the biannual evaluation of Annual Work Plan milestones, the effectiveness of Illinois' Program was to be assessed based on the Measures and Indicators of Program Success. Utilizing water quality based indicators and appropriate assessment data, the Illinois EPA could determine if satisfactory progress was being achieved and make Program adjustments as necessary. Furthermore, progress on the achievement of Program recommendations related to groundwater protection would be described in the 'Illinois Groundwater Protection Program – Biennial Comprehensive Status and Self-Assessment Report' prepared by the Interagency Coordinating Committee on Groundwater. This report provided a detailed discussion of the nature, schedule, and status of specific activities that were implemented to reduce groundwater contamination from NPS pollution.

In establishing the 2001 Program and preparing Annual Work Plans, the Illinois EPA also considered input from federal, state, and local agencies, as well as from the general public. Prior to formal adoption, proposed revisions to the Program were made available for review and comment through a public hearing. The Illinois EPA invited participation in the hearing process from all interested and affected parties, including federal, state, and local agencies; the business community; not-for-profit and environmental organizations; and individuals. The input generated through the public review process was considered as the Program was finalized.

Updates and revisions to the Program were to be made in accordance with state and federal program changes and as needed to assure that it comprehensively addresses the initiatives that would be utilized to address water resource problems.

2001 Program Review/Gap Analysis

The 2001 Program has served its purpose; the Program needs to be updated and refined to set the future course for NPS pollution control activities in Illinois. Illinois has shifted its focus away from implementing individual demonstration projects in favor of watershed- and community-based NPS pollution control programs. Technology has vastly improved not only in the area of BMPs but also in the area of monitoring, modeling, and outreach. The 2001 Program included a total of almost 240 milestones. With so many milestones, effective project prioritization and focus was difficult. In addition, the resources available at the federal, state, and local level have been drastically impacted by the national economic downturn and partner's program priorities reflect this impact. The Program needs to be revised to better reflect the current programs and resources available. Finally, a significant amount of additional detail was necessary to fulfill U.S. EPA's recommended Nine Key Elements and to make this a dynamic and effective Program to control NPS pollution to achieve and maintain beneficial uses of surface and groundwater in Illinois.

U.S. EPA – Region 5 requested Illinois EPA to include a 'gap analysis' within the 2013 Program to show how both the 2001 and 2013 Programs match up to the Nine Key Elements. U.S. EPA had provided the Nine Key Elements within previous guidance for states to use when revising their NPS management programs.

Table A1 lists U.S. EPA's Nine Key Elements, shows an overall rating for the 2001 Program, and shows the chapters within the 2013 Program that address the Nine Key Elements. Note – the overall rating for the 2001 Program is focused on the time period of FY 2001 through FY 2010.

Table 20 - U.S. EPA's Key Elements for NPS Management Program, with an assessment of the 2001 NPS Management Program and the location of these items in the 2013 Program

	Key Elements (Good = 👍 Fair = 👌 Poor = 👎)	Programs	
		2001	2013
1	Explicit short- and long-term goals, objectives and strategies to protect surface and ground water.	👎	Chapter 7
2	Strong working partnerships and collaboration with appropriate State, interstate, Tribal, regional, and local entities (including conservation districts), private sector groups, citizen groups, and Federal agencies.	👍	Chapter 3
3	A balanced approach that emphasizes both State-wide NPS programs and on-the ground management of individual watershed where waters are impaired or threatened.	👌	Chapter 3
4	The State program (a) abates known water quality impairments resulting from NPS pollution and (b) prevents significant threats to water quality from present and future activities.	👍	Chapter 3
5	An identification of waters and watershed impaired or threatened by NPS pollution and a process to progressively address these waters.	👌	Chapter 2 Chapter 3
6	The State reviews, upgrades and implements all program components required by Section 319 of the Clean Water Act, and establishes flexible, targeted, iterative approaches to achieve and maintain beneficial uses of water as expeditiously as practicable.	👎	Chapter 3 Chapter 4 Chapter 6
7	An identification of Federal lands and objectives which are not managed consistently with State program objectives.	👍	Chapter 5
8	Efficient and effective management and implementation of the State's NPS program, including necessary financial management.	👌	Chapter 4
9	A feedback loop whereby the State reviews, evaluates, and revises its NPS assessment and its management program at least every 5 years.	👎	Chapter 6

Key Elements – Bridging the Gaps

The essential portions of the 2001 Program will be retained within the 2013 Program, although it may be presented in different sections or in different formats. However, the Program has been significantly re-written and reformatted to address the gaps that have been identified in the 2001 Program. The gap analysis has helped prioritize areas of the Program that need considerable work to make it an effective tool to control and abate NPS pollution in Illinois. We recognize that all areas of the Program, even those rated 'good' in Table 20, need to be updated to create a well-integrated program that will achieve and maintain beneficial uses of our surface and groundwater resources. The updated report also captures information that documents the significant amount of adaptive management that was practiced during the implementation of the 2001 Program over the last ten years by both Illinois EPA and our partners. Even though the 2013 Program will be much more tailored to the current situation and includes the Nine Key Elements recommended by U.S. EPA, Illinois plans to continue use of adaptive management to reach the goals and objectives identified in Chapter 1.

1. Explicit short- and long-term goals, objectives, and strategies to protect surface and groundwater. – The Program was revised in 2001 to address a significant implementation dilemma. The original Program as written did not allow Illinois EPA to support many of the NPS pollution control project proposals that were being submitted for financial assistance through

the Section 319 grant program. The Program originally focused on support of demonstrative BMP projects and included goals and milestones that could not respond to changes in technology, social, and economic trends. Many progressive NPS pollution control projects could not be included in the Annual Work Plan because the Program was written too specifically and did not identify the project or activity as a goal, objective, or milestone. In an effort to solve that problem, the Program was rewritten to accommodate new projects and practices as they were developed. The 2001 Program included almost 240 general objectives and milestones to be accomplished to control NPS pollution. These objectives and milestones were written in language generous enough to accommodate virtually anything from a single demonstrative BMP up to multi-county cost-share programs for implementing a variety of BMPs and outreach and education efforts. The original goals depended upon federal, state, and local partners to voluntarily implement the activities and programs identified. Now, as we try to document accomplishments, the generous nature of the objectives and milestones cause difficulties when trying to show success and completion. We have determined that the Program needs to be re-focused to get the Illinois EPA staff and partners to strengthen objectives, milestones, and strategies in specific areas of the state to remove waterbodies from the list of impaired waters. The review of the existing Program and resultant creation of a new Program will address this problem without allowing Illinois to swing back to the problem of being too specific and not being able to accommodate innovative and effective NPS pollution control projects and programs.

Table 21, located at the end of this chapter, lists all of the milestones reported in the 2001 Program. The table includes the original milestone number, the task, status (complete, partially complete, or not addressed) and brief explanation of what was done to complete or partially complete the milestone.

2. Strong working partnerships and collaboration with appropriate state, interstate, Tribal, regional, and local entities (including conservation districts), private sector groups, citizen groups, and federal agencies. – Illinois has a strong group of federal, state, and local partners all working to control NPS pollution in Illinois. However, the economic downturn at the federal, state, and local level has had a significant impact on our Program partners and the resources that they have had available to invest to control NPS pollution. More formal partner interaction will allow Illinois to better coordinate existing and future programs to control NPS pollution as cost-efficiently as possible and to prevent areas not yet impacted from becoming impaired. This reinforces the need to work in smaller areas on more specific local NPS issues. The 2013 Program will enlist a new format to better document the efforts and activities conducted by Illinois EPA and its partners to support the Program. The Program will include components that focus NPS pollution control efforts in areas where a water quality impairment caused by NPS pollution exists or in areas that are considered Priority Water for Protection, which may be impaired in the future. These components will allow Illinois EPA and its partners to target programs and policies to specific areas so that the local community can see an improvement in their local water quality. The 2013 Program also includes a state-wide approach to keep NPS pollution control as a priority for our partners and stakeholders and will help protect areas of concern.
3. A balanced approach that emphasizes both state-wide NPS programs and on-the-ground management of individual watersheds where waters are impaired or threatened. The 2001 Program included implementation at the state and watershed level. The 2013 Program includes a strategy to target watersheds and waterbodies within watersheds to focus the NPS pollution control in areas impacted by sources of NPS pollution. A more focused prioritization for WBP,

TMDL, and LRS implementation plan development will make certain that watersheds with waterbodies impaired by sources of NPS pollution are evaluated and specific tasks for outreach and BMP implementation are outlined.

4. The state program (a) abates known water quality impairments resulting from NPS pollution and 9b) prevents significant threats to water quality from present and future activities. – Illinois will continue to implement programs and projects to address current and future impairments. Additional focus will be placed on leveraging programs to accomplish as many of the milestones as practicable.

5. An identification of waters and watersheds impaired or threatened by NPS pollution and a process to progressively address these waters. – Illinois EPA will continue current water quality monitoring programs and will continue to work with monitoring partners to investigate opportunities to conduct additional monitoring of headwaters to help focus NPS pollution control activities. Better coordination between Illinois EPA's Watershed Management Section and Surface Water Section and other partners will assist Illinois in documenting water quality improvements achieve through NPS pollution control efforts.

6. The state reviews, upgrades, and implements all program components required by Section 319 of the CWA, and establishes flexible, targeted, iterative approaches to achieve and maintain beneficial uses of water as expeditiously as practicable. – A strategy in Chapter 4 outlines activities related to this element. This strategy includes updates to the Annual Work Plan and End-of-Year Report and an assessment of other tools that can be used to administer the Program. Additional milestones are included in Chapter 7.

7. An identification of federal lands and objectives which are not managed consistently with state program objectives. – Illinois will continue the activities to accomplish this element and has included new Program milestones to ensure that this element remains up-to-date.

8. Efficient and effective management and implementation of the state's NPS program, including necessary financial management. – Chapters 3 and 4 include details on the management of the Program including financial management. New milestones have been included in Chapter 7 to ensure that this element is accomplished.

9. A feedback loop whereby the state reviews, evaluates, and revises its NPS assessment and its management program at least every 5 years. – This element is being addressed in Chapter 5 and it includes an outline of a feedback loop which includes annual, two- and four-year reviews of the Program. The Annual Work Plan and End-of-Year Report will have a new format and will play a vital role in the annual reviews conducted by the state. Other tools will be developed to ensure that the four-year review captures any potential gaps and provides the information needed to address them in a timely and cost-effective manner. See Chapter 7 for specific milestones to ensure timely reviews, evaluations, and revisions of the Program. The feedback loop will include input from federal, state, and local partners and from Illinois EPA staff as well.

The Program has undergone a significant evolution and expansion to provide guidance to Illinois EPA staff and partners to combat NPS pollution in Illinois. The Program will continue to guide the Grant Program, but also addresses partners and resources that significantly supplement the Grant Program. A combination of voluntary and regulatory programs at the local and state-wide level will allow a much more effective and yet flexible Program to be implemented. The feedback loop schedule will ensure that the Program, including BMPs, partners, and strategies are as current as possible.

Chapter 7 of this document lists the short- and medium-term objectives with milestones for the 2013 Program. The chapter includes an example of the new annual reporting format that will be used to show the Program accomplishments. Chapters 4 and 6 include information on the Annual Work Plan and End-of-Year Report and how those tools will be used to track and report on the Program milestones.

We believe that the 2013 Program addresses the Nine Key Elements and other guidance provided by U.S. EPA for a NPS management program. Illinois EPA will conduct a gap analysis of the Program milestones annually through the State of Illinois Section 319 End-of-Year Report submitted to U.S. EPA. A more thorough gap analysis will be conducted on the entire Program every four years, see Chapter 6 for more details. In addition, the Program will be revised as necessary for situations such as new guidance received from U.S. EPA and other major decisions that impact the Programs' implementation. Appropriate milestones are included in Chapter 7 regarding when and how to conduct a gap analysis on the Program.

2001 Gap Analysis Table

The following table lists all of the goals and objectives identified in the 2001 Program. The table lists these items in the same order as they appear in the 2001 Program. The table includes the:

- Original milestone number,
- Goals/objectives/milestones,
- Timetable,
- Met?, and
- How met.

The 'Met?' column will be answered using a 'yes', 'partial', or 'no'. The 'How Met' includes an explanation of what occurred to meet the goal. All milestones were at least partially addressed.

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
1.0 All Categories				
1.1	Surface water supplies in Illinois are important resources and are a high priority for protection. Surface waters are also valuable recreational resources used for boating, fishing, swimming, and other activities by the general public.	Evaluate and revise program directives biannually based on progress.	Yes	Under Illinois Clean Lakes Program (ICLP) & NPS Pollution Control Financial Assistance Program (319) funding priority has been given to projects that protect surface water supplies. 319 projects have been funded in the watersheds of the following surface public water supplies: E. Fk. La Moine R. (2001, 2005, 2006, 2007, 2010), Fox R. (2001, 2004, 2006, 2007, 2008, 2010), Illinois R. (2005, 2006, 2007), Kaskaskia R. (2002), Little Wabash R. (2001, 2004, 2009, 2010), Mackinaw R. (2004), Mississippi R. (2001, 2004, 2010), N. Fk. Vermilion R. (2003, 2005, 2009), Shoal Cr. (2008), Spring Cr. (2003, 2004), Governor Bond Lake (2001, 2003, 2005), Lake Paradise (2001), Otter Lake (2002, 2007, 2010), Vandalia Lake (2002), Lake Springfield (2003), Hillsboro Lake (2003), Cedar Lake (2004, 2009), Greenfield Lake (2004), Kinkaid Lake (2004, 2005, 2008, 2010), Pana Lake (2004), Evergreen Lake (2004), Lake Bloomington (2005), Spring Lake (2005, 2010), Carlinville Lake (2005), Highland Silver Lake (2008), Holiday Shores Lake (2009), & Lake Sara (2009). ICLP projects have been funded for the following public water supply lakes: Bloomington, Cedar, Evergreen, Gillespie, Governor Bond, Highland Silver, Hillsboro, Kinkaid, Carlinville, Lake Carlyle Reservoir, Glen Shoals, Lou Yaeger, Mattoon, Paradise, Nashville City Reservoir, Old Kimundy Reservoir, Otter, Raccoon, Silver, & Staunton Reservoir.
1.12	Develop voluntary NPS programs that address one or more of the following: monitoring, education, information, demonstration, technical assistance, and positive incentives to protect or improve the waters of Illinois.	Evaluate and revise program directives biannually based on progress.	Yes	Volunteer Lake Monitoring Program (VLMP), Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), Lake Education Assistance Program (LEAP), NPS Pollution Control Financial Assistance Program (319), IEPA/ILMA Scholarship Program, Streambank Cleanup And Lakeshore Enhancement (SCALE), Ecosystems Program, Erosion & Sediment Control Program (ESC), Nutrient Management Program (NMP), Well Decommissioning Program (WDP), Streambank Stabilization and Restoration Program (SSRP), Soil and Water Conservation District Grants, NRCS Urban Office Technical Assistance, Chicagoland Environmental Network, Rivers Project, Illinois Envirothon
1.2	A primary state objective is to assist landowners to apply BMPs to the land to reduce soil erosion and sedimentation. Because water quality has always been an important resource concern in Illinois, programs and initiatives that promote new actions to address water quality are a high priority.	Assistance, training, and programs are ongoing initiatives and will be evaluated yearly for their comprehensiveness.	Yes	Assistance has been provided to landowners to apply BMPs to reduce soil erosion and sedimentation through the following programs: Conservation Reserve Program (CRP), Conservation Reserve Enhancement Program (CREP), Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), NPS Pollution Control Financial Assistance Program (319), Sustainable Agriculture Program, Erosion & Sediment Control Program (ESC), Streambank Stabilization and Restoration Program (SSRP), Soil and Water Conservation District Grants, Vegetative Filter Strip Assessment Program, Environmental Quality Incentives Program, Wetlands Reserve Program, Wildlife Habitat Incentives Program
1.21	Provide water quality assistance, training, and programs to state and local agencies, watershed planners and to land users, and incorporate water quality initiatives into existing standards and regulations, technical guides, and resource materials.	Assistance, training, and programs are ongoing initiatives and will be evaluated yearly for their comprehensiveness.	Yes	Since 2001, over 120 section 319 funded projects have been implemented with the NPS functional category of 319(h) National Monitoring Project, BMP Effectiveness Monitoring, Develop/ Revise Basin plans smaller than 8 digit HUC code, Geographic Information Systems, Local (Specific Target) Education/Information Programs, Nutrient Management Planning, Other Technical Assistance Activity, Other Water Quality Assessment /Monitoring, Riparian Assessment/ Monitoring, Statewide Education/Information Programs, Stormwater Management Planning, Technical Assistance to State/Local, Water Quality Problem Identification, Watershed Management Planning, Watershed Planning, or Wetland Assessment/ Monitoring. Also several technical guides have been developed such as the Illinois Urban Manual and the Guidance for Developing Watershed Action Plans in Illinois
1.3	There are many ongoing and completed watershed projects in Illinois. Multi-agency cooperation should be utilized to study the effects of BMP implementation on ground and surface water quality. Pre-implementation conditions have been and should continue to be gathered and documented for the purpose of accurate evaluation of BMPs applied and their effectiveness. Land use data is also beneficial in helping field staff to determine the source(s) and cause(s) of pollutants taken from sampling stations and during onsite assessments.	Evaluate and establish program directives yearly based on progress.	Yes	The effects of BMP implementation have been evaluated through the Illinois Soil Conservation Transect Survey, Section 319 National Monitoring Program Projects (Waukegan R. (1994, 1995, 1996, 1997, 1998, 2000, 2006), Lake Pittsfield (1992, 1994, 1995, 1995, 1996, 1997, 1998, 2000), Kickapoo Cr.(2006, 2010)), and other special projects such as Brewster Creek Monitoring Project, Evaluation of N Management Practices, & Northeastern Illinois Stream Restoration Inventory

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
1.4	The Federal Clean Lakes Program was developed in 1980 to monitor and control in-lake and NPS pollution that affect the quality and use of publicly owned lakes. As of September 1, 1997, the Illinois EPA completed administration on thirteen Phase I projects, five Phase II projects, and two Phase III projects with administration continuing on three Phase II projects.	Program coordination to occur on a yearly basis.	Yes	All Federal Clean Lakes Program projects in Illinois have been completed. Funding for the Federal CLP was discontinued.
1.5	The Illinois Lake Management Program Act, passed by the state legislature in November 1989, required the development of an Administrative Framework Plan to act as a blueprint for expanded inland lake management activities based on four comprehensive objectives: 1) public education, 2) technical assistance, 3) monitoring and research, and 4) financial incentives for local lake management. A portion of the funding approved under Illinois' "Conservation 2000" initiative has been dedicated to begin implementation of the comprehensive plan, now better known as the Illinois Clean Lakes Program (ICLP).	Continued on an ongoing basis with yearly review.	Yes	State funding has been used to implement monitoring, best management practices, and education through the Illinois Clean Lakes Program (ICLP) as well as the Priority Lake and Watershed Implementation Program (PLWIP) and Lake Education Assistance Program (LEAP). However, ICLP & PLWIP funding was eliminated in 2010.
1.51	Provide assistance in diagnosing, restoring, and protecting Illinois lakes through Diagnostic/Feasibility Studies (Phase I), Long -Term Restoration and Protection Projects (Phase II), and Lake Quality Maintenance Programs (LQMP).	Continued on an ongoing basis with yearly review.	Yes	State funding has been used to implement diagnostic/feasibility studies, protection and restoration, and maintenance activities through the Illinois Clean Lakes Program (ICLP) and Priority Lake and Watershed Implementation Program (PLWIP).
1.52	Coordinate Section 319 and state funds to implement restorative and corrective measures to lake watersheds consistent with the findings of the diagnostic/feasibility studies performed in the ICLP.	Continued on an ongoing basis with yearly review.	Yes	NPS Pollution Control Financial Assistance Program (319) projects have been funded to implement the 314/ICLP funded diagnostic/feasibility study recommendations of at least 15 lakes (Cedar Lake / Carbondale City Reservoir (2004,2009), Charleston Side Channel Reservoir (2003), Lincoln Park Lagoon (2003, 2005, 2008), Governor Bond Lake (2001, 2003, 2005), Highland Silver Lake (2008), Hillsboro Old (2003), Homer Lake (2004), Kinkaid Lake (2004, 2005, 2008, 2010), Lake Carlinville (2005), Lake Paradise (2001), Lake Sedgewick (2005), Lake Vermilion (2003, 2005), Otter Lake (2002, 2007, 2010), Patriot's Pak Lake (2009), Springfield (2003))
1.6	Assessments of BMP effectiveness are essential for 1) selecting the most appropriate BMP for a particular problem site; 2) projecting the benefits of BMP implementation; 3) ranking BMP alternatives in terms of cost-effectiveness; and 4) determining an optimum BMP program based upon program objectives. One approach to BMP assessment is the use of mathematical models.	Modeling will be utilized when appropriate and reviewed/evaluated yearly.	Yes	Computer modeling for best management practice selection or evaluation is conducted during development of many watershed-based plans and all Total Maximum Daily Loads (TMDLs) and implementation plans. The development of a project prioritization matrix for use by local and county government staff was completed under the DuPage River Salt Creek TMDL Implementation Program project (10-08). Two National Monitoring programs in Illinois have been completed and one is underway.
1.61	Use modeling when appropriate to provide assistance in the watershed planning process to site-specific areas of concern and for selection of the proper BMPs which will best address the problem in the most cost-effective manner	Modeling will be utilized when appropriate and reviewed/evaluated yearly.	Yes	Computer modeling for best management practice selection or evaluation is conducted during development of many watershed-based plans and all Total Maximum Daily Loads (TMDLs) and implementation plans.
1.62	Use modeling when appropriate to show success of BMPs in completed projects towards the reduction of pollutants. Use generated data to support and show statewide achievements toward pollutant reduction and water quality improvement when adequate field assessment and monitoring time is not available.	Modeling will be utilized when appropriate and reviewed/evaluated yearly.	Yes	The Region 5 Load Estimation Spreadsheet Model (Microsoft Excel) is used to estimate the pollutant load reduction achieved by all BMPs completed and funded under Section 319. BMP specific pollutant load reduction estimates are tracked through the Resource Management Mapping Service. Project specific pollutant load reductions are tracked through the Grants Reporting and Tracking System (GRTS).
1.7	Protection/restoration projects designed to address NPS pollution through the implementation of BMPs, educational programs, information campaigns, often require funding levels of a magnitude greater than those available to local groups, organizations, municipalities. It is imperative that sources of funding such as Section 319, 104(b)(3) and 314 be made available to assist local entities in carrying out projects which abate NPS pollution.	Assistance, training, and programs are ongoing initiatives and will be evaluated yearly for their comprehensiveness.	Yes	Assistance has been and continues to be made available to local stakeholders through the NPS Pollution Control Financial Assistance Program (319) projects, 104(b)(3), 604(b). Although funding for the Federal Clean Lakes Program (314) was discontinued, a state-funded Illinois Clean Lakes Program was established to fill this gap until 2010. However, ICLP funding was eliminated in 2010. NPS needs exceed the financial resource available through federal and state programs.
1.71	Coordinate planning efforts to maximize the efficiency and effectiveness of grants available by integrating programs such as 319, 104(b)(3), and 314 to achieve the largest benefit possible through a holistic approach to NPS pollution abatement.	Assistance, training, and programs are ongoing initiatives and will be evaluated yearly for their comprehensiveness.	Yes	The NPS Pollution Control Financial Assistance Program (319) prioritizes projects for which there is a completed watershed-based plan, Clean Lakes Phase I Diagnostic/Feasibility Study, or TMDL report. Watershed-based planning, Diagnostic/Feasibility Study, and TMDL development activities are coordinated so as to supplement one another and avoid duplication of effort

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
1.72	Make available funds from Section 319 for use in funding NPS implementation projects under 314 and 104(b)(3). This will allow for continued program integration and watershed protection/restoration when lack of adequate funding in these programs exists.	Assistance, training, and programs are ongoing initiatives and will be evaluated yearly for their comprehensiveness.	Yes	NPS Pollution Control Financial Assistance Program (319) funds have been made available to fund 314 type projects (i.e., development and implementation of diagnostic/feasibility studies) and 104(b)(3) type projects (i.e., monitoring, watershed planning). NPS Pollution Control Financial Assistance Program (319) has funded 314 type projects at the following lakes: Governor Bond (2001, 2003, 2005), Paradise (2001), Otter (2002, 2007, 2010), Vandalia (2002), Springfield (2003), Hillsboro (2003), Vermilion (2003, 2005), Charleston Side Channel Reservoir (2003), Charlie Brown(2004), Highland Old City (2008), Cedar (2004, 2009), Greenfield (2004), Kinkaid (2004, 2005, 2008, 2010), Pana (2004), McLeansboro (2004), Evergreen (2004), Bloomington (2005), Clinton (2008), Spring (2005, 2010), Carlinville (2005), Long (2002), Homer (2004), Lincoln Park South Pond (2005, 2008), Joliet Junior College (2009), Lost Nation (2010), Wonder (2010), Highland Silver (2008), Holiday Shores (2009), Sara (2009)
1.A	Participation in the Volunteer Lake Monitoring Program and Illinois Rivers Project will increase by five percent from 1997 to the year 2010.	From 1997 until 2010	Yes	Participation in the Volunteer Lake Monitoring Program increased by 17 percent from 1997 (144 lakes) to the year 2010 (169 lakes).
1.B	Ten (10) Comprehensive Resource Management Plans will be developed in priority areas from 1997 to the year 2010.	From 1997 until 2010	Yes	29 watershed-based plans were developed between 1997 and 2010.
1.C	Ten (10) Phase 1 or Phase 2 State Clean Lakes Projects will be implemented from 1997 to the year 2010.	From 1997 until 2010	Yes	Fifty (50) Phase 1 or Phase 2 State Clean Lakes Projects were implemented from 1997 to the year 2010. This includes twenty-six (26) Phase 1 projects and twenty-four (24) Phase 2 projects.
1.D	Five modeling projects for best management practice selection or evaluation will be conducted by the year 2010.	Year 2010	Yes	Computer modeling for best management practice selection or evaluation is conducted during development of many watershed-based plans and all Total Maximum Daily Loads (TMDLs) and implementation plans.
1.E	Provide database printouts to the Illinois Department of Agriculture, and to the Illinois EPA/NRCS Liaison for use in discussions with the SWCDs. Primary efforts will be to prepare a poster size map for each county office showing subwatersheds contiguous with unconfined aquifers. This map will contain the relevant watershed/wellhead protection information to allow targeting of awareness programs by SWCDs and potential local/state or federal pollution prevention funds. The effort should be coordinated with the Illinois EPA/NRCS Liaison. Once these coverages are completed, the Illinois EPA will develop a process to keep the information updated indefinitely and provide the counties maps at intervals that would be mutually agreed upon.	Ongoing	Yes	Database printouts and maps were provided to the Illinois Department of Agriculture and Illinois EPA/NRCS Liaison. The Illinois EPA/NRCS Liaison position has been discontinued. However, this liaison function between the Illinois EPA and local swcds is now achieved through a partnership with the Illinois Association of Soil and Water Conservation Districts. An ongoing process to update and disseminate the database printouts and maps is provided through the Resource Management Mapping Service website and the Source Water Assessment Program (SWAP) ArcIms Mapping Tool at Illinois EPA's website.
2.0 Education				
2.1	NPS information and education programs for all age levels are necessary to ensure the long-term protection of Illinois water resources. Additional information/education initiatives are listed within the categories in this Program. Information/education is an essential component in any implementation plan developed for the reduction of nonpoint source pollution. The information/education initiatives listed below and throughout this Program are cross cutting and may stand alone, or as a component of a project or program.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Information and Education on NPS pollution has been promoted through the following programs: Jr. GEC, Earth Stewardship Day, SWCD Conservation Days, Project WET, Envirothon, Farm Prorgress Show, Water Festivals, and Lake Festivals.
2.11	Encourage the creation and/or improvement of information and education programs that specifically explain NPS pollution, evaluation, prevention, and restoration.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Financial Assistance has been provided through the following 319 projects: Fourth Ward Yard NPS Polution Control Demonstration (2001), CREP & Watershed Management Education In Illinois (2001), Vandalia Lake WQ Info & Ed.(2002), Rain Simulator/Crop Residue Demonstration (2002), Livestock Winter Feed Stations Demonstration (2002), Calumet Region Green Infrastructure NPS Demonstration (2003), Fox River Watershed Protection, Restoration (2008), and Education, South Pond Enhancement Demonstration and Education Project (2005, 2008), and American Bottom Wetland Interpretive Site & Educational Campaign (2010)
2.12	Adapt new and existing NPS information and education programs for all age levels into current curriculums and existing management plans used in Illinois.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Financial and staff assistance has been given through the following projects: NPS Book Phase II 2001 (Worm Book 2), and the Illinois Envirothon and Dept of Agriculture's Watershed Park both annually reoccuring educational activities.
2.13	Improve the clearinghouse system to make data more readily available to educators.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Financial Assistance and Assistance has been given to Chicago Enviornmental Network (2001), Secret Agent Worm Website (2001), Environmental Education Association of Illinois, River Watch and various list serves.
2.14	Provide documentation to show the need to incorporate NPS pollution control into existing curriculum for all age levels. Create and implement programs and/or projects to address the areas identified.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Financial Assitance has been given through the following projects: NPS Book Phase II 2001 (Worm Book 2).

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
2.15	Provide additional training such as "Train The Trainers" concerning BMPs and current resource planning techniques. Coordinate state agency and organization efforts to reduce duplication of work in these areas.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Partial	Chicago Enviornmental Network (2001). To further address this goal, the following milestone is included in the updated NPS Program, "Develop and hold, once every two years, a Nonpoint Source Pollution Workshop. To be held alternatively upstate and downstate; agricultural and urban topics. The first workshop was held in November 2012. " (F2)
2.16	Provide displays, audio and visual presentation materials, and printed materials concerning NPS pollution and its solutions.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Financial assistance has been given to the following project: Rivers Rising Video 2001. 2010 The Grove on Kickapoo Creek, urban stormwater management through green infrastructure PBS Program, Adventures in Aqua (2006), Roof Greening Project and RiverWorks Exhibit at the Peggy Notebaert Nature Museum (2003), Of Time and the River at the Illinois State Museum Society, etc.
2.17	Create programs that provide training in the selection and implementation of BMPs for water resource managers and others who have authority over Illinois water resources. Encourage the use of an education/information component into resource planning efforts.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Partial	Financial Assistance was given to the following projects: NPS 2nd National Info/Ed Conf. (2001), Fourth Ward Yard NPS Polution Control Demo.(2001), Watershed Based Planning Assist.(2001), Livestock Winter Feed Stations Demo.(2002), Calumet Region Green Infrastructure NPS Demo (2003), Mid-Illinois River TMDL Education (2007), Roosevelt Park Stormwater BMPs and Education (2009)
2.A	Nonpoint source pollution materials will be incorporated into educational packets for different grade levels by the year 2000.	Year 2000	Yes	Environmental Pathways is the Illinois EPA's curriculum guide geared towards middle school (5th & 6th grade) students. Staff worked with a curriculum writer who specialized in environmental education. The guide was written to meet Illinois Learning Starndards. Environmental Pathways educates middle school students about the state's natural resources through awarenss and protections of those resources. A portion of the guide foucuses on NPS pollution and water quality protection.
2.B	The Illinois EPA will work with the Illinois State Board of Education to expand on natural resource education techniques by the year 2010.	Year 2010	Yes	The Environmental Literacy for Illinois is a strategic plan for environemental education. The original plan was endorsed by over 200 leaders throughout the state, from agency personnel and nature center staff, to teachers and State Board of Education staff. During Conservation Congress 2000 EL for IL won the full support of the congressional body and was unanimously passed for statewide adoption. In May of 2005 a revision team convened to amend the plan. The outcome is this version of EL for IL, which reflects the accomplishments of the plan's goals since its conception and modifies it for the next five years. Agency staff have worked on the last four re-writes of the EL for IL plan.
2.C	The number of in-class presentations on nonpoint source pollution will be increased by ten percent by the year 2005.	Year 2005	Yes	Assistance has been given to local schools on an average of 50 presentations per year. This task is completed by either a single or group staff person/people. Staff present topics by lecture and hand-on activities. In recent years staff have worked collaboratively reaching to multiple classes via timed stations. Topics include various nonpoint source issues and/or water quality activites. This has allowed staff to reach a greater multitude of students at one time.
2.D	The Illinois EPA, working through the Illinois EPA/NRCS Liaison, will provide training to NRCS staff on water quality conditions in Illinois. Additionally, NRCS will provide training opportunities to Illinois EPA staff in resource planning and other NRCS field staff activities.	Discontinued in 2005	Yes	The Illinois EPA/NRCS Liaison facilitated the integration of NRCS programs such as EQIP with the Illinois EPA's watershed management planning program, provided technical support in the development of program cross-training modules, assisted in Illinois EPA efforts to further promote the state water quality focus group under the guidance of the Natural Resources Coordinating Council and Watershed Management Committee.
2.E	The Illinois EPA, utilizing Section 319 funding, will continue to provide educational opportunities in nonpoint source pollution through work with various conservation resources and educational institutions in Illinois. One youth publication, and development of nonpoint source information displays at Brookfield Zoo will be completed by the year 2005	Year 2005	Yes	Financial Assistance was given to the following project: Adventures in Aqua (2006).
3.0 Monitoring				
3.1	Monitoring efforts are an integral part of every NPS management program and initiative. The importance of monitoring programs for the purpose of defining and designating problem areas in the state, as well as monitoring implemented BMPs on a project basis for evaluation of NPS pollution reduction, are essential to reduce/eliminate NPS pollution for improved water quality in Illinois	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Three USEPA Section National Monitoring Projects Kickapoo Creek (2006, 2010), Lake Pittsfield (1992, 1993, 1994, 1995, 1996, 1997, 1998, 2000) and Waukegan River (1994, 1995,1996,1997,1998,2000)) have been conducted to demonstrated BMPs effectiveness and reduction of NPS pollutants to improve water quality in Illinois. Watershed monitoring is performed in the Illinois EPA monitoring program such as Intensive River Basin, Facility Related Surveys, Clean Lakes Volunteer Monitoring program, and special monitoring projects

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
3.11	Expand upon and continue current monitoring efforts throughout the State. Incorporate monitoring initiatives into NPS pollution reduction programs as part of the comprehensive resource management system.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA BOW monitors and assesses surface waters and groundwater through various monitoring programs The Illinois EPA is an active member of the Upper Mississippi River Basin Association (UMRBA), TMDL stage II monitoring, Mississippi River Basin Initiative- two watersheds and the Kickapoo National Monitoring project.
3.12	Prepare guidelines and standard operating procedures for data collection to make existing and future databases compatible for use in determining long-term trends, and to compare potential water quality improvement of selected BMPs. Create a process in which the database is available to the general public.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Guidelines and standard operation procedures for data collection are outlined in the Illinois EPA Water Monitoring 2007-2012. The new STORET is maintained by the USEPA and is the avenue in which the public can access water quality databases
3.13	Create projects and/or programs that use monitoring as an educational tool and that use the data collected to make sound resource planning decisions. Use the data collected in the documentation of long-term water quality trends. Incorporate the data collected into a statewide database.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Three USEPA Section National Monitoring Projects (Kickapoo Creek (2006, 2010), Lake Pittsfield (1992, 1993, 1994, 1995, 1996, 1997, 1998, 2000) and Waukegan River (1994, 1995,1996,1997,1998,2000) have educational components that are "tools" and have highlighted long-term water quality trends in which resource planning can draw upon. The data collected from these project and other Section 319 projects with an monitoring element will be entered into the new USEPA STORET. Other statewide programs such as Illinois Clean Lakes Program, Illinois River Project and the past Illinois DNR C2000 programs has established long-term trends that can be used as an educational tool.
3.14	Establish long-term biological monitoring programs. Monitor to identify overall biological quality of Illinois water and to provide information on long-term trends statewide.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Two of the USEPA Section National Monitoring Projects Kickapoo Creek (2006, 2010), and Waukegan River (1994, 1995,1996,1997,1998,2000) have long-term biological variables that are and were measured (i.e., Fish, Macroinvertebrates, Stream Habitat) in these projects to determine the effectiveness of stream restoration techniques. The Illinois EPA BOW Intensive Basins Survey Program monitors the overall biological quality that are conducted on a 5-year cycle cooperatively with the Illinois Department of Natural Resources; each basin survey comprises about 10 to 35 stations. Six to eight basin surveys annually; one to three surveys per each of three regions (north, central, south) that documents long-term trends statewide since 1982.
3.15	Evaluate and update stream habitat assessment methodology for predicting biotic integrity and augmenting procedures to allow evaluation of biotic habitat quality based on metric scoring.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA QUALITY ASSURANCE AND FIELD METHODS MANUAL - SECTION D: SPECIAL STREAM SURVEYS Revised 1996 - 2.5.3 Stream Habitat Measurements provides information on Stream Habitat Assessment Methodology (SHAM). This methodology was utilized in assessments made for the years prior to the Illinois Integrated Water Quality Report and 303d List - 2008 and was evaluated and replaced by a new methodology Quality Habitat Evaluation Index (QHEI) in the assessments made in the Illinois Intergreated Water Quality Report and 303d List for 2008 and 2010. There are current efforts in-house to update the last Illinois EPA QUALITY ASSURANCE AND FIELD METHODS MANUAL Section D: Special Stream Surveys -1996 revision.
3.16	Refine and standardize field assessment and data interpretation techniques to improve NPS assessments and ensure future trend evaluations are based on consistent and reliable indicators.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Illinois EPA Water Monitoring Strategy 2007-2012 outlines the refinement and standardization of field assessment, data interpretation techniques and consistent and reliable indicators for NPS assessment.
3.17	Create programs to enhance the public's knowledge of NPS pollution problems and solutions. Solicit the public's interest and participation in water quality improvement programs	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA has and continues to create programs to enhance the general public's knowledge of NPS pollution problems and solutions. Many past and current Illinois EPA Section 319 projects contain educational tools (i.e., signs, brochures, articles, etc…) that educates the public about NPS pollution. Such projects include; Rivers Rising Video (2001), Morton Arboretum Parking Lot Runoff (2002), River Works Exhibit (2003), Farm Progress Show Site BMP Project (2004), Bringing Wetlands to Life (2005), South Pond Enhancement Demonstration and Education Project (2008), American Bottom Wetland Interpretive Site & Educational Campaign (2011).
3.18	Participate in watershed monitoring and reporting for Section 319 National Monitoring Program Projects.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Three USEPA Section National Monitoring Projects Kickapoo Creek (2006, 2010), Lake Pittsfield (1992, 1993, 1994, 1995, 1996, 1997, 1998, 2000) and Waukegan River (1994, 1995,1996,1997,1998,2000) have been conducted to demonstrated BMPs effectives and reduction of NPS pollutants to improve water quality in Illinois.
3.A	Illinois EPA water quality data will be made available to the public through “Surf your Watershed” on the Internet by the year 2001.	Ongoing	Yes	Illinois EPA has and will continue to provide the necessary water quality data to support this USEPA Web-based tool.
3.B	Two 10-year Section 319 National Monitoring Program projects will be completed by the year 2007.	Year 2010	Yes	The USEPA Section National Monitoring Projects Lake Pittsfield (1992, 1993, 1994, 1995, 1996, 1997, 1998, 2000) and Waukegan River (1994, 1995,1996,1997,1998,2000) have concluded as of 2009
3.C	Implementation of the Illinois EPA’s “Surface Water Monitoring Strategy” (which identifies specific monitoring sites, methods, schedules, parameters, etc. and is incorporated by reference as part of this Program) will be completed by the year 2001.	Year 2001	Yes	Implementation of the Illinois EPA Water Monitoring 2002-2006 was completed by the Illinois EPA and began as of August 2002.

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
3.D	The Illinois EPA will prepare a new "Surface Water Monitoring Strategy" for years 2002 - 2006 by September 30, 2001.	Year 2001	Yes	Illinois EPA Water Monitoring 2002-2006 was completed by the Illinois EPA in August 2002.
3.E	Review and revision to the assessment methodologies utilized in Section 305(b) reporting will be completed and implemented by the year 2003.	Year 2003	Yes	Revisions to the assessment methodologies utilized in the Section 305(b) reporting were outlined in the Illinois EPA Integrated Water Quality Report and 305(b) List - 2008, 2010.
4.0 Agriculture				
4.1	Ground and surface water supplies in Illinois are important resources and are a high priority for protection. Surface waters are also valuable recreational resources used for boating, fishing, swimming, and other activities by the general public. Major program objectives include:	Evaluate and revise program directives biannually based on progress.	Yes	Under Illinois Clean Lakes Program (ICLP) & NPS Pollution Control Financial Assistance Program (319) funding priority has been given to projects that protect surface water supplies. 319 agriculture projects have been funded in the watersheds of the following surface public water supplies: E. Fk. La Moine R.(2007), Illinois R.(2002-2010), Kaskaskia R.(2002-2005,2008-2010), Little Wabash R.(2009), Mackinaw R.(2002), Mississippi R.(2002-2010), N. Fk. Vermilion R.(2009), Shoal Cr.(2008), Spring Cr.(2010), Lake Pittsfield(1998), Governor Bond Lake(2005), Otter Lake(2010), Vandalia Lake(2002), Lake Springfield(2003), Hillsboro Lake(2003), Cedar Lake(2009), Greenfield Lake(2005), Kinkaid Lake(2008), Pana Lake(2004), Evergreen Lake(2004), Lake Bloomington(2000), Spring Lake(2010), Carlinville Lake(2005), Highland Silver Lake(2008), Holiday Shores Lake(2009), & Lake Sara(2009). ICLP agriculture projects have been funded for the following public water supply lakes: Bloomington, Cedar, Evergreen, Gillespie, Governor Bond, Highland Silver, Hillsboro, Kinkaid, Carlinville, Lake Carlyle Reservoir, Glen Shoals, Lou Yaeger, Mattoon, Nashville City Reservoir, Old Kimundy Reservoir, Otter, Raccoon, Silver, & Staunton Reservoir.
4.11	Develop programs and/or projects that are supported by local interest; create intergovernmental cooperation; develop comprehensive resource management plans for the protection and/or restoration of lakes, streams, reservoirs, and groundwater aquifers.	Evaluate and revise program directives biannually based on progress.	Yes	Since 2001, 39 predominately agriculture Section 319 projects have been funded to 8 SWCDs, 1 State agency, 4 RC&Ds, 2 Universities, and 8 Associations or local entities. 4 watershed based planning efforts and 1 study has been performed in agriculture watersheds during this time.
4.12	Develop voluntary NPS programs that address one or more of the following: monitoring, education, information, demonstration, technical assistance, and positive incentives to protect or improve the waters of Illinois.	Evaluate and revise program directives biannually based on progress.	Yes	Volunteer Lake Monitoring Program (VLMP), Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), Lake Education Assistance Program (LEAP), NPS Pollution Control Financial Assistance Program (319), IEPA/ILMA Scholarship Program, Streambank Cleanup And Lakeshore Enhancement (SCALE), Ecosystems Program, Erosion & Sediment Control Program (ESC), Nutrient Management Program (NMP), Well Decommissioning Program (WDP), Streambank Stabilization and Restoration Program (SSRP), Soil and Water Conservation District Grants, NRCS Office Technical Assistance, Illinois Envirothon.
4.2	The Illinois EPA has implemented the State's Livestock Waste Regulations since 1978. Of the about 35,000 animal feeding operations in Illinois in 1998, less than three dozen have been identified as requiring an NPDES permit. Assessments conducted on Illinois' lakes and streams indicate that livestock facilities are contributors to NPS pollution. Water quality improvement will be dependent upon implementation of programs and project initiatives that specifically address this issue:	Evaluate and revise program directives biannually based on progress.	Partial	The Illinois EPA continues to implement the State's Livestock Regulations. Currently 26 animal feeding operations have an NPDES permit and the Illinois EPA continues to identify and issue permits.
4.21	Develop programs and/or projects that provide for planning, technical assistance, and implementation of initiatives related to the reduction of NPS pollution from livestock facilities and their operation. Priority initiatives involve, but are not limited to: the development of new livestock facilities; livestock operation BMPs; livestock waste facility upgrades and other techniques for the protection and improvement of water quality. The Illinois EPA will expeditiously implement programs to control pollution from all new livestock facilities.	Evaluate and revise program directives biannually based on progress.	Yes	The Illinois Department of Agriculture (IDA) reviews all new and expanding livestock facilities that are covered under the IL Livestock Management Facilities Act (ILMFA). Since 2001, four Section 319 projects located in high livestock density watersheds. Livestock Winter Feed Station Demo(2002), Animal Waste BMP Program(2006), LaMoine Livestock Exclusion(2007), and Clinton Co Livestock Nutient Management Project(2008).
4.22	Develop and disseminate fact sheets, visual aids, and other materials concerning livestock facility BMPs and water quality management.	Evaluate and revise program directives biannually based on progress.	Yes	Since 2001, three Section 319 projects have been funded with 2 Universities. Manure Management Manual, Web-Based IL Manure Management Planner, Manure Management Options for Swine Producers. Two fact sheets produced by the Illinois EPA. CAFO FAQ 2/10/2009, and BMPs for Pork Production 10/2004. The University of IL conducts a Certified Livestock Manager Training Course and a Livestock Manure Conference for producers.
4.23	Provide technical assistance on the watershed level to control NPS pollution, by using available resources through the coordination of appropriate federal, state, and local agency programs.	Evaluate and revise program directives biannually based on progress.	Yes	Environmental Quality Incentives Program (EQIP)-Natural Resources Conservation Service (NRCS), ILMFA - IDA, Comprehensive Nutrient Management Plans (CNMP)- NRCS & private consultants. Five regional Ag Engineer Inspectors- Illinois EPA.

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
4.3	A primary state objective is to assist agricultural landowners to apply BMPs to the land to reduce soil erosion and sedimentation. Because water quality has always been an important resource concern in Illinois, programs and initiatives that promote actions to address water quality are a high priority. Currently, an estimated 111 million tons of soil are eroding from agricultural land each year (Reference #4).	Assistance, training, and programs are ongoing initiatives and will be evaluated yearly for their comprehensiveness.	Yes	Assistance has been provided to landowners to apply BMPs to reduce soil erosion and sedimentation through the following programs: Conservation Reserve Program (CRP), Conservation Reserve Enhancement Program (CREP), Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), NPS Pollution Control Financial Assistance Program (319), Sustainable Agriculture Program, Erosion & Sediment Control Program (ESC), Streambank Stabilization and Restoration Program (SSRP), Soil and Water Conservation District (SWCD) Grants, Vegetative Filter Strip Assessment Program, Environmental Quality Incentives Program (EQIP), Wetlands Reserve Program (WRP), Wildlife Habitat Incentives Program (WHIP). In 2007, the transect survey conducted showed 86 percent of all cropland acres in the state were at or below the tolerable soil loss level (T).
4.31	Provide assistance to increase the development of comprehensive watershed/hydrologic unit resource plans that identify traditional and/or new approaches to reduce soil erosion and sedimentation for the protection and improvement of water quality.	Assistance, training, and programs are ongoing initiatives and will be evaluated yearly for their comprehensiveness.	Yes	National Monitoring Projects, BMP Effectiveness Monitoring, Geographic Information Systems, Local (Specific Target) Education/Information Programs, Other Technical Assistance Activity, Other Water Quality Assessment /Monitoring, Riparian Assessment/ Monitoring, Statewide Education/Information Programs, Technical Assistance to State/Local, Water Quality Problem Identification, Guidance for Developing Watershed Action Plans in Illinois.
4.32	Provide water quality assistance, training, and programs to state, federal and local agencies, organizations, watershed planners and to land users, incorporate water quality initiatives into existing standards and regulations, technical guides, and resource materials.	Assistance, training, and programs are ongoing initiatives and will be evaluated yearly for their comprehensiveness.	Yes	Since 2001, 42 section 319 funded projects have been implemented to reduce soil erosion and sedimentation from agriculture, National Monitoring Projects, BMP Effectiveness Monitoring, Develop/ Revise Basin plans smaller than 8 digit HUC code, Geographic Information Systems, Local (Specific Target) Education/Information Programs, Nutrient Management Planning, Other Technical Assistance Activity, Other Water Quality Assessment /Monitoring, Riparian Assessment/ Monitoring, Statewide Education/Information Programs, Technical Assistance to State/Local, Water Quality Problem Identification, Watershed Management Planning, Watershed Planning, or Wetland Assessment/ Monitoring. Also several conservation expos and demonstration field days held. Crop Residue Demo, Farm Progress Show Site BMP Project, IL Land Improvement Contractors Association (LICA) 2007 & 2008 Conservation Expos.
4.4	In FY88, the Illinois General Assembly passed the "Conservation Enhancement Act." Two programs were established under the Act; the "Save Illinois Topsoil Program" administered by IDA, and the "Illinois Natural Resource Enhancement Program" administered by IDNR.	Program coordination and development of new sources of local funding is an ongoing initiative that will be evaluated yearly.	Yes	IDA continues to supply technical assistance through the 98 SWCD and soil erosion implementation funding through ESC and SSRP. IDNR continues to administer the CREP program in the IL and newly added Kaskasia River basins.
4.41	Ensure that natural resources are protected and wisely used through the implementation of programs such as the Conservation Enhancement Act. Work with agricultural and natural resource interests in an attempt to coordinate funds to implement the objectives of the law.	Program coordination and development of new sources of local funding is an ongoing initiative that will be evaluated yearly.	Yes	State funds are leveraged whenever possible with Section 319 program. An IDA liason position funded through Section 319.
4.5	There are many ongoing and completed watershed projects in Illinois. Multi-agency cooperation should be utilized to study the effects of BMP implementation on ground and surface water quality. Pre-implementation conditions have been and should continue to be identified and documented for the purpose of accurate evaluation of BMPs applied and their effectiveness. Land use data is beneficial in helping field staff determine the sources and causes of NPS pollutants taken from sampling stations and during onsite assessments.	Evaluate and establish program directives yearly based on progress.	Yes	The effects of BMP implementation have been evaluated through the Illinois Soil Conservation Transect Survey, Section 319 National Monitoring Program Project (2006, 2010), and other special projects such as Evaluation of N Management Practices (2003), Kaskaskia R. Hypoxia WS Analysis (2004), & Manure Management Options for Swine Producers to Reduce NPS Pollution (2005).
4.51	Continue technical assistance, cost-share assistance, monitoring and evaluation activities, and land use inventories by watershed on a statewide basis. Utilize trends and assessments to define statewide water quality objectives and to update or create state programs; make data available to the general public.	Evaluate and establish program directives yearly based on progress.	Yes	NRCS field offices, SWCDs, IDNR, Land Grant University, EQIP, WRP, WHIP, CRP, CREP, Section 319, ESC, SSRP, Sustainable Agriculture Program, VLMP, Intensive Basin Surveys, national Monitoring Projects, BMP Effectiveness Monitoring, Special Project Monitoring, GIS, IL Integrated Water Quality Report and Section 303(d) List, and RMMS.
4.52	Standardize field assessment and data interpretation to improve NPS assessments and trend evaluations.	Evaluate and establish program directives yearly based on progress.	Yes	The Illinois Monitoring Strategy 2007-2012 outlines the refinement and standardization of field assessment, data interpretation techniques and consistent and reliable indicators for NPS assessment.

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
4.53	Evaluate and update aquatic and riparian habitat assessment methodologies for use in predicting biotic integrity (PBI).	Evaluate and establish program directives yearly based on progress.	Yes	The Illinois EPA QUALITY ASSURANCE AND FIELD METHODS MANUAL - SECTION D: SPECIAL STREAM SURVEYS Revised 1996 - 2.5.3 Stream Habitat Measurements provides information on Stream Habitat Assessment Methodology (SHAM). This methodology was utilized in assessments made for the years prior to the Illinois Integrated Water Quality Report and 303d List - 2008 and was evaluated and replaced by a new methodology Quality Habitat Evaluation Index (QHEI) in the assessments made in the Illinois Intergreated Water Quality Report and 303d List for 2008 and 2010. There are current efforts in-house to update the last Illinois EPA QUALITY ASSURANCE AND FIELD METHODS MANUAL Section D: Special Stream Surveys -1996 revision.
4.54	Participate in watershed monitoring and reporting for Section 319 National Monitoring Program projects.	Evaluate and establish program directives yearly based on progress.	Yes	Three USEPA Section National Monitoring Projects Kickapoo Creek (2006, 2010), Lake Pittsfield (1992, 1993, 1994, 1995, 1996, 1997, 1998, 2000) and Waukegan River (1994, 1995,1996,1997,1998,2000) have been conducted to demonstrated BMPs effectives and reduction of NPS pollutants to improve water quality in Illinois.
4.6	Illinois law currently requires that preventive measures be taken to reduce spills of contaminants that cause water pollution. Efforts by the Illinois EPA, IDA and agri-business representatives have produced more detailed rules and regulations regarding storage, handling, and operational area secondary containment at agrichemical facilities within setback zones, and regulated recharge areas of potable wells (8 Illinois Administrative Code, Part 255). Many of the facilities subject to the containment requirements have been operating for the past two decades with minimal spill control provisions. As a result, some areas where the containment structures are to be placed have become contaminated and are posing a threat to water resources. Limited availability or lack of funds to realize remediation is a major impediment in implementing preventative measures.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	IDA and Illinois EPA continues to implement the 255 program.
4.61	Develop initiatives to address preventive measures such as chemical handling, containment, and spill clean-ups. Programs may include structural practices, information/education, technical assistance, and development of setback zones. These initiatives should be available to agri-businesses, landowners and operators, and technical assistance groups, such as the local soil and water conservation district, to address on-farm storage, handling, mixing, application, and chemical and container disposal.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	IDA-Commercial & Private Applicator Training and Testing, Obsolete pesticide/container disposal, spill reporting.
4.62	Conduct surveys and field research to identify and assess the extent of the problem and priority areas, and to determine future program needs. Conduct inventories that assess the volume of obsolete pesticides and chemicals in Illinois and identify strategic regional drop-off center locations. Develop and conduct intensive educational programs.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	IDA-Four permanent collection sites established and multiple scheduled single-day sites.
4.63	Coordinate local, state, and federal programs and initiatives to prevent pesticide contamination.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	SWCDs, Producer Associations, IDA, Illinois EPA, Land Grant University, FIFRA.
4.7	The Federal Clean Lakes Program was developed in 1980 for lake restoration, demonstration, and monitoring to control in-lake and NPS pollution which affect the quality and use of publicly owned lakes. As of September 1, 1997, the Illinois EPA completed administration on thirteen Phase I projects, five Phase II projects, and two Phase III projects with administration continuing on three Phase II projects.	Program coordination to occur on a yearly basis.	Yes	All Federal Clean Lakes Program projects in Illinois have been completed. Funding for the Federal CLP was discontinued. The Illinois EPA continues to reference the completed Phase I diagnostic reports.
4.71	Coordinate local, state, and federal guidelines and procedures when appropriate to increase funding of lake and watershed NPS pollution control programs in Illinois.	Program coordination to occur on a yearly basis.	Yes	Since 2001, 25 Section 319 projects on 21 lakes in agricultural watershed have been implemented. ICLP, PLWIP, & LEAP established and funded by State in 1997 to replace Federal CLP. However, funding was eliminated in 2010.
4.8	The Illinois Lake Management Program Act, passed by the state legislature in November 1989, required the development of an Administrative Framework Plan to act as a blueprint for expanded inland lake management activities based on four comprehensive objectives: 1) public education, 2) technical assistance, 3) monitoring and research, and 4) financial incentives for local lake management. A portion of the funding approved under Illinois' "Conservation 2000" initiative has been dedicated to begin implementation of the comprehensive plan, now better known as the Illinois Clean Lakes Program (ICLP).	Program coordination to occur on a yearly basis.	Yes	State funding has been used to implement monitoring, best management practices, and education through the Illinois Clean Lakes Program (ICLP) as well as the Priority Lake and Watershed Implementation Program (PLWIP) and Lake Education Assistance Program (LEAP). However, ICLP & PLWIP funding was eliminated in 2010.
4.81	Provide assistance in diagnosing, restoring, and protecting Illinois lakes through Diagnostic/Feasibility Studies (Phase I), Long -Term Restoration and Protection Projects (Phase II), and Lake Quality Maintenance Programs (LQMP).	Program coordination to occur on a yearly basis.	Yes	State funding has been used to implement diagnostic/feasibility studies, protection and restoration, and maintenance activities through the Illinois Clean Lakes Program (ICLP) and Priority Lake and Watershed Implementation Program (PLWIP),

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
4.9	The Conservation Practices Program (CPP) and Watershed Land Treatment Program (WLTP) (1986-1992) administered by the IDA have been instrumental regarding BMP implementation for the improvement of water quality through the reduction of soil erosion and sedimentation throughout the State. As of July 1, 1992, $19.3 million in state cost-share dollars had been allocated for BMP implementation (IDA-1992).	Program coordination and development of new sources of local funding is an ongoing initiative that will be evaluated yearly.	Yes	CPP and WLTP renamed Agriculture Resource Enhancement (ESC, NMP, WDP, SSRP). This program continues at over $4M annually.
4.91	Continue to seek and support funding for implementation of watershed programs addressing water quality concerns. Determine the effectiveness of the CPP and WLTP programs in terms of soil saved, sediment reduced, cost-effectiveness of BMPs, and improvement in water quality.	Program coordination and development of new sources of local funding is an ongoing initiative that will be evaluated yearly.	Yes	IDA continues to receive funding for Agriculture Resource Enhancement. IDA uses a Load Estimation Spreadsheet Model that is comparable to the Region 5 version used by Illinois EPA.
4.10	Since October 1985, the Illinois EPA has conducted a surface water monitoring pesticide subnetwork in which 30 streams in Illinois are routinely monitored for commonly used herbicides and insecticides. Data has been compiled for the first five-year period, which indicates several herbicides are being detected on a regular basis. Of the samples collected, atrazine, metolachor, alachlor, and cyanazine were the most commonly detected. The general pattern of detection indicates higher concentrations occurring in the spring and summer, which are likely associated with field applications and subsequent precipitation/runoff events.	The efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	To provide more information for 305(b)/303(d) designated use assessments the emphasis of the Pesticide Monitoring Subnetwork has shifted beginning with the 2007 Water Year to ambient stations associated with or in close proximity to public-water-supply intakes.
4.10.1	Develop state pesticide management strategies which incorporate local pesticide management plans, consistent with the Illinois Pesticides Act, in order to prevent contamination, protect resources for current and future generations, and to foster federal and state partnerships to allow the state significant flexibility in responding to localized risks and pesticide use and local community priorities.	The efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Five year study- Assessment of BMPs Effectiveness on Water Quality and Agronomic Production in Lake Springfield. IDA- IL Farm-A-Syst.
4.10.2	Provide programs and initiatives for the development of pesticide management plans that address water quality protection.	The efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Lake Springfield Watershed BMP Implementation (2003), Integrated Pest Management, IL Buffer Partnership, IL Council on BMPs.
4.10.3	Provide programs and initiatives for the development of nutrient management plans that address water quality protection.	The efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	319 has supplied funds to IDA for NMP statewide. IDA has continued the program from State funds. The Land Grant University continue to research agronomic rates for crop nutrients.
4.11	Assessments of BMP effectiveness are essential for 1) selecting the most appropriate BMP for a particular problem and site; 2) projecting the benefits of BMP implementation; 3) ranking BMP alternatives in terms of cost-effectiveness; and 4) determining an optimum BMP program based upon program objectives. One approach to BMP assessment is the use of mathematical models.	Modeling will be utilized when appropriate and reviewed/evaluated yearly.	Yes	Computer modeling for best management practice selection or evaluation is conducted during development of many watershed-based plans and all Total Maximum Daily Loads (TMDLs) and implementation plans.
4.11.1	Use modeling when appropriate to provide assistance in the watershed planning process to site-specific areas of concern and for selection of the proper BMPs which will best address the problem in the most cost-effective manner.	Modeling will be utilized when appropriate and reviewed/evaluated yearly.	Yes	Computer modeling for best management practice selection or evaluation is conducted during development of many watershed-based plans and all Total Maximum Daily Loads (TMDLs) and implementation plans.
4.11.2	Use modeling when appropriate to project success of BMPs in completed projects towards the reduction of NPS pollutants. Use generated data to support and show statewide achievements toward pollutant reduction and water quality improvement when adequate field assessment and monitoring time is not available.	Modeling will be utilized when appropriate and reviewed/evaluated yearly.	Yes	The Region 5 Load Estimation Spreadsheet Model (Microsoft Excel) is used to estimate the pollutant load reduction achieved by all BMPs completed and funded under Section 319. BMP specific pollutant load reduction estimates are tracked through the Resource Management Mapping Service. Project specific pollutant load reductions are tracked through the Grants Reporting and Tracking System (GRTS).
4.12	Identification and implementation of pesticide use alternatives are fundamental to the prevention of NPS contamination of ground and surface waters due to agricultural production practices.	Evaluate and establish program directives yearly based on progress.	Yes	IDA- Sustainable Agriculture Program, Land Grant University- eOrganic Website, Pest Management Bulletin, Demo Plots. Illinois EPA- Wellhead Protection Program.
4.12.1	Investigations should be carried out to identify alternative practices that help minimize surface runoff and leaching of pesticides.	Evaluate and establish program directives yearly based on progress.	Yes	Assessment of BMPs Effectiveness on Water Quality and Agronomic Production in Lake Springfield.
4.13	The Illinois EPA, being designated as the state water quality management planning agency, is responsible for water quality monitoring, progress accountability and direction, and implementation of the water quality related elements of the agricultural NPS control program.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Guidelines and standard operation procedures for data collection are outlined in the Illinois Water Monitoring 2007-2012. Illinois EPA continues to fund an IDA liason and holds a seat on the State NRCS Technical Committee.
4.13.1	Continue implementation of Section 319 of the Clean Water Act, focusing on the importance of controlling NPS pollution.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Since 2001, 67 Section 319 projects have been funded for implementation of BMPs, watershed planning, education, and monitoring in predominately agricultural watersheds.
4.13.2	Promote programs and policies that emphasize water quality initiatives and the cultivation of NPS pollution control strategies for the protection and improvement of water quality.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The State has applied for and received designation for Kaskasia River Basin Conservation Reserve Enhancement Program (CREP).

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
4.14	New and existing information/education activities continue to be conducted by groups such as the NRCS, FSA, and CES to increase awareness of the 1985 and 1990 Food Security Act (Farm Bill). The NRCS in conjunction with other agencies is currently promoting a campaign called "Gaining Ground in Illinois." This campaign is a cooperative effort of the agricultural and environmental sectors to promote, educate, and implement residue management practices as outlined in the 1990 Farm Bill and the goals of "T by 2000" in Illinois.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	NRCS field offices , SWCDs, IDNR, Land Grant University, and Illinois EPA, promote residue management through programs such as EQIP, CRP, CREP, Section 319, ESC, SSRP, and the Sustainable Agriculture Program. IDA continues to do yearly surveys to determine % of agriculture land meeting "T".
4.14.1	Continue to develop and disseminate information/education programs and projects that provide an awareness of NPS pollution problems and solutions.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	State Agencies, producer groups, and other environmental groups continue to disseminate information at agriculte field days and shows such as the Farm Progress Show.
4.A	By January 1, 2015, all initial TMDL implementation plans will be completed and, at a minimum, implementation actions will have begun. All implementation actions will be completed consistent with the schedules contained in the implementation plans. This shall be done to assure that agricultural nonpoint source pollution is eliminated as a source of impairment for all surface waters not meeting water quality standards and designated uses. This goal will be periodically reviewed and revised to reflect revisions in TMDL regulations and related program requirements.	Year 2015		Illinois EPA continues to develop TMDLs, Load Reduction Strategies (LRS) and Implementation Plans, including Watershedbased Plans. The Waste Load Allocations for the TMDLs are being implemented upon Permit Renewals as called for in the Implementation Plans. However, many of the Load Allocations continue to "wait" for interested parties to implement.
4.B	The total cropland protected to “T” will reach ninety percent by the year 2007.	Year 2007	Partial	In 2007, the transect survey conducted showed 86 percent of all cropland acres in the state were at or below the tolerable soil loss level (T).
4.C	The number of people participating in education and information activities conducted by county agencies and farm organizations will increase by 20 percent from 1998 to the year 2003.	From 1998 until 2003	Partial	Undetermined but new initiatives such as CREP and MRBI have increased interaction of the public with agencies and organizations. Data on the number of people participating at such events is not consistently collected and cataloged. So an accurate measure of percent change is not possible. Although increased participation is still a desirable outcome of the NPS program this goal of a measurable increase has been abandoned in favor of other relevant milestones (F1, F2, F3) that can be more effectively quantified.
4.D	The number of CRP acres will increase by five percent from 1997 to the year 2005.	From 1997 until 2005	Yes	In 1997, CRP acres totaled 725,000. In 2007, CRP and CREP acres totaled 790,616. 9.1% increase.
4.E	Ten (10) Phase 1 and Phase 2 State Clean Lakes Projects will be implemented from 1997 to the year 2010.	From 1997 until 2010	Yes	Fifty (50) Phase 1 or Phase 2 State Clean Lakes Projects were implemented from 1997 to the year 2010. This includes twenty-six (26) Phase 1 projects and twenty-four (24) Phase 2 projects.
4.F	A database will be developed to track present and historical BMP implementation (date, type, location, effectiveness, etc.) by state and federal agencies in priority areas by the year 2005 and statewide by the year 2010.	From 2005 until 2010	Yes	BMPs implemented through the NPS Pollution Control Financial Assistance Program (319), Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG), and Illinois Department of Agriculture Streambank Stabilization and Restoration Program are tracked through the Resource Management Mapping Service. BMPs implemented through 319 and IGIG are also tracked through the Grants Reporting and Tracking System (GRTS). A database structure has been provided through RMMS to house data on such BMPs implemented by other agencies and the Illinois EPA continues to explore opportunities of obtaining such data from those other agencies for entry into RMMS.
4.G	The total cropland planted using conservation tillage will increase by five percent from 1997 to the year 2005	From 1997 until 2005	Yes	In 1997, 43.7% of total cropland planted using conservation tillage, and in 2006 the percentage increased 5.8% to 49.5%.
4.H	Funding for state programs involving the implementation of agricultural nonpoint source pollution control BMPs will maintain current levels from 1997 to the year 2005.	From 1997 until 2005	Yes	ICLP, PLWIP, & LEAP established and funded by State (1997-2010) to replace Federal CLP. IDA continues to receive funding for ESC, SSRP, and Sustainable Agriculture Program. IDNR began funding the State CREP program in 1997 and is currently active.
5.0 Construction				
5.1	Construction site erosion can be a significant source of sediment and other NPS pollutants to the waters of Illinois. Planning and application of appropriate BMPs on-site can reduce construction pollution and in turn, water quality degradation.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Illinois EPA has engaged in several activities that meet this Goal. Outside of the 319 Grant Program IEPA has set up a a Construction Site Inspection Program, partnering with Soil and Water Conservation Districts, primarily in urban areas. SWCD staff act as on-site inspectors and educators for the counties involved. This program began in 2004 and continues to flourish. A Green Infrastructure Study, 2009 also looks at current practices and suggests the next steps for construction site runoff control, this include developing a performance standard(s) for Illinois. Through 319 this goal has been met by the following projects: Northern Illinois Community Assistance Office Phase 1 and 2 (2002, 2007); Protecting Water Quality in Urban Center of Illinois (2004); Community Assistance and Watershed Office (2005); NRCS Urban Office Technical Assistance (2005); Illinois LICA 2007 and 2008 Conservation Expos (2007); and Illinois Urban Manual Update and NPS Program Assistance (2008).

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
5.11	Create projects and/or programs to educate the public and private sector concerning the potential NPS impacts of construction site development on water quality and to implement available BMPs to prevent these impacts.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Illinois EPA has engaged in several activities that meet this Goal. Outside of the 319 Grant Program IEPA has set up a a Construction Site Inspection Program, partnering with Soil and Water Conservation Districts, primarily in urban areas. SWCD staff act as on-site inspectors and educators for the counties involved. This program began in 2004 and continues to flourish. A Green Infrastructure Study, 2009 also looks at current practices and suggests the next steps for construction site runoff control, this include developing a performance standard(s) for Illinois. Through 319 this goal has been met by the following projects: Northern Illinois Community Assistance Office Phase 1 and 2 (2002, 2007); Protecting Water Quality in Urban Center of Illinois (2004); Community Assistance and Watershed Office (2005); NRCS Urban Office Technical Assistance (2005); Illinois LICA 2007 and 2008 Conservation Expos (2007); and Illinois Urban Manual Update and NPS Program Assistance (2008).
5.12	Create projects and/or programs that encourage networks between local governments to create and/or update construction guidelines, ordinances, and mechanisms which encourage the development of construction erosion control plans and the implementation of permanent runoff control measures.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Illinois EPA has engaged in several activities that meet this Objective. Outside of the 319 Grant Program IEPA has set up a a Construction Site Inspection Program, partnering with Soil and Water Conservation Districts, primarily in urban areas. SWCD staff act as on-site inspectors and educators for the counties involved. This program began in 2004 and continues to flourish. A Green Infrastructure Study, 2009 also looks at current practices and suggests the next steps for construction site runoff control, this include developing a performance standard(s) for Illinois.
5.13	Develop projects and/or programs that encourage land use planners and developers involvement in the creation of local ordinances to protect and improve local water resources and community investments.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Green Infrastructure Study of 2009 specifically discusses local involvement in developing programs and ordinances for stormwater control. All of the Watershed Plans developed under the 319 Grant Program discuss land use activities, particularly the urban areas make specfic recommendations on future land uses for critical areas within the watershed. Other 319 projects meeting this Objective include: Northern Illinois Community Assistance Office Phase 1 and 2 (2002, 2007); Protecting Water Quality in Urban Center of Illinois (2004); Community Assistance and Watershed Office (2005); and NRCS Urban Office Technical Assistance (2005)
5.14	Create projects and/or programs that encourage the development of technical and administrative guidance tools to assist responsible units of government in the selection of structural and nonstructural BMPs for NPS pollution control and water quality improvements.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The On-site Inspection Program with SWCD Offices gives local assitance to help governments, contractors and developers select proper BMPs for specfic sites, this program began in 2004. 319 Grant projects that meet this Objective include: A Sustainable Community Based Approach to Reducing NPS Pollution (2003); Northeastern Ill. Stream Restoration Inventory (2003); Technical Assistance for Green Infrastructure Projects (2005); Illinois LICA 2007 and 2008 Expos Conservation Expos (2007); Protecting Water Quality in Urban Centers Phase 1 and 2 (2002, 2007); Low Impact Techniques in Madison County Illinois (2007); Libertyville Facilty BMP Demonstration Project (2007); Illinois Urban Manual Update and NPS Program Assistance (2008); and several other smaller BMP demonstration projects.
5.2	State and Federal law require that Illinois EPA actions (i.e., permit and/or loan issuance) be consistent with the Illinois Water Quality Management Plan (WQMP). The WQMP addresses point and NPS pollution sources, maintenance of stream uses and water quality standards, protection of groundwater resources, and control of hydrologic modifications. Applications to amend the WQMP are required to address both direct and indirect environmental impacts of the proposed revision.	Evaluate and establish program directives yearly to remain consistent with the WQMP.	Yes	This Goal is met through application to the Agency for a Permit (new or renewal), Loan or other actions that must be consistant with the WQMP and the Agency's actions with the application. The Agency will use the Anti-degratdation process, the alternatives analysis and plan reveiws to determine constitancy. Once the action is approved it becomes part of the WQMP through the Annual Burea of Water Hearing.
5.21	When appropriate, conditional approval of WQMP amendment requests will be granted upon documentation that the applicant has taken all reasonable measures to avoid or mitigate negative environmental impacts associated with soil erosion and sedimentation that may result from the proposed amendment.	Evaluate and establish program directives yearly to remain consistent with the WQMP.	Yes	Although rare this if an applicant has met the reasonable measures conditional approval will be made. The Agency would prefer to not allow conditional approval and grant the Permit or Loan once all conditions are met.
5.A	By January 1, 2015, all initial TMDL implementation plans will be completed and, at a minimum, implementation actions will have begun. All implementation actions will be completed consistent with the schedules contained in the implementation plans. This shall be done to assure that construction erosion nonpoint source pollution is eliminated as a source of impairment for all surface waters not meeting water quality standards and designated uses. This goal will be periodically reviewed and revised to reflect revisions in TMDL regulations and related program requirements.	Year 2015	Partial	Illinois EPA continues to develop TMDLs, Load Reduction Strategies (LRS) and Implementation Plans, including Watershedbased Plans. The Waste Load Allocations for the TMDLs are being implemented upon Permit Renewals as called for in the Implementation Plans. However, many of the Load Allocations continue to "wait" for interested parties to implement. Beginning in 2014 all TMDLs initiated will be required to develope an approvable Watershed Based Plan as part of the TMDL.
5.B	The number of municipalities in priority areas having construction erosion control ordinances consistent with the model ordinance recommended by the Illinois EPA will increase by five percent from 2000 to the year 2005.	From 2000 until 2005	Yes	This Outcome has been fully met by Phase II of the Stormwater Program, all MS4 communities now have construction site ordinances as part of their MS4 Permit.
5.C	The Illinois EPA will evaluate all regulated construction related activities for consistency with both design guidance and protection of water quality through enforcement of standards and anti-degradation.	Ongoing	Yes	Illinois EPA through the Anti-degradation program, the Permit program, our Field Operations Section and the On-Site Inspection Program with SWCD Offices meet this Outcome.

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
5.D	The Illinois EPA, in cooperation with NRCS, will update and maintain The Urban Manual Technical Guide for use in Illinois EPA's wastewater construction permit applications, and as general guidance in the design of urban nonpoint runoff controls. Internet access of designs will be available and updated as needed.	Ongoing	Yes	Although NRCS is no longer a partner in this process the manual continues to be updated, both new and revised standards are continually being added (Illinois Urban Manual Update and NPS Program Assistance, 2008). The web access to the Manual has been well recieved by users. http://aiswcd.org/IUM
5.E	Upon finalization of stormwater regulations, the Illinois EPA, in cooperation with other federal and state organizations, will coordinate discussions, meetings, or hearings, as appropriate, with the general public to discuss compliance strategies.	Ongoing	Yes	Permit staff have held many discussions, meetings and panels in order to reach as many affected parties as possible. These include meeting with municipalities, attending state organizaation/association conferences and attending workshops.
6.0 Urban Runoff				
6.1	To assist communities in the coordination of stormwater management activities, comprehensive documents should be developed outlining the recommended BMP standards and specifications for use in highly developed urban areas or on construction sites in urban or developing areas.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois Urban Manual: A Technical Manual Designed for Urban Ecosystem Protection and Enhancement was updated in 2002 by NRCS in Illinois with assistance from the Illinois EPA to provide field personnel with an interdisciplinary guide for planning, design, implementation, and maintenance of urban BMPs. In 2008, the Association of Illinois Soil and Water Conservation Districts (AISWCD) assumed "ownership" of the Illinois Urban Manual from NRCS and, under contract to the Illinois EPA, took on a leadership role for systematically updating the nonpoint source pollution control practice standards contained in the Illinois Urban Manual. In 2011, the Illinois EPA expects to provide additional 319 assistance to the AISWCD for continued update of the Illinois Urban Manual along with the development of a pocket field manual for the inspection of soil erosion and sedimentation control practices, training sessions and streaming video tutorials on green infrastructure practices for stormwater management, and presentations describing recent updates to the Illinois Urban Manual.
6.11	Develop materials that promote stormwater runoff management to reduce NPS pollutant loading and off-site damages to downstream areas.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	In late 2003 an effort was initiated to update and convert the Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois (commonly known as the Native Plant Guide) to a digital format and make it available on the Internet on the Illinois NRCS website. In 2010, the University of Illinois – Chicago, in partnership with the Illinois EPA, completed The Illinois Green Infrastructure Study, an assessment of effective best management practices, green infrastructure standards, and institutional and policy frameworks. This study and the recommendations of the Illinois EPA were provided to the Governor and Illinois General Assembly. With FFY05 Section 319 funding, the Center for Neighborhood Technology developed two web-based models and a valuation model that encourage the strategic use of green infrastructure to reduce costs for stormwater management and improve water quality. USEPA also published the Stormwater Best Management Practice Design Guide in 2004 and National Management Measures to Control Nonpoint Source Pollution from Urban Areas in 2005.
6.12	Develop comprehensive documents outlining the recommended BMP standards and specifications for use on construction sites in urban and developing areas.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois Urban Manual: A Technical Manual Designed for Urban Ecosystem Protection and Enhancement was updated in 2002 by NRCS in Illinois with assistance from the Illinois EPA to provide field personnel with an interdisciplinary guide for planning, design, implementation, and maintenance of urban BMPs. In 2008, the Association of Illinois Soil and Water Conservation Districts (AISWCD) assumed "ownership" of the Illinois Urban Manual from NRCS and, under contract to the Illinois EPA, took on a leadership role for systematically updating the nonpoint source pollution control practice standards contained in the Illinois Urban Manual. In 2011, the Illinois EPA expects to provide additional 319 assistance to the AISWCD for continued update of the Illinois Urban Manual along with the development of a pocket field manual for the inspection of soil erosion and sedimentation control practices, training sessions and streaming video tutorials on green infrastructure practices for stormwater management, and presentations describing recent updates to the Illinois Urban Manual.
6.13	Create programs or projects that promote local development of watershed protection programs, which manage development through the use of comprehensive planning to protect areas that are ecologically sensitive, provide water quality benefits, or are prone to erosion.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Under sections 319 and 604(b) of the Clean Water Act, funding is used to develop watershed-based plans and Total Maximum Daily Loads (TMDLs) and TMDL implementation plans. Since 2001, 29 watershed-based plans have been completed and 9 are currently under development. Illinois Clean Lakes Program (ICLP) funding is used to develop Phase 1 diagnostic/feasibility studies. Since 2001, 11 diagnostic/feasibility studies were initiated.

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
6.14	Develop technical and administrative guidance tools to assist responsible units of government and agencies in the selection and implementation of BMPs and administrative mechanisms for controlling NPS pollution from on-site disposal systems.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois Department of Public Health has produced several fact sheets on private sewage systems. In 2002, USEPA published the A Homeowner's Guide to Septic Systems, which provides information about septic system maintenance. Illinois EPA continues to make its Lake Notes fact sheet on Septic Systems available online or as a pdf file. The University of Illinois at Urbana-Champaign Cooperative Extension Service continues to make publication Septic Systems: Operation and Maintenance of On-Site Sewage Disposal Systems available online.
6.2	The use of pesticides and nutrients can contribute NPS pollutants to receiving waters via stormwater runoff. Improper application of these materials in urban areas where increased stormwater runoff occurs can lead to water quality degradation.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Agree	This Goal is really a statement of fact and therefore not a measurable goal
6.21	Develop programs and initiatives that evaluate the effects of urban pesticide/nutrient usage on water quality and to utilize the collected information to develop pesticide/nutrient management programs and BMPs. Implement these programs so that stormwater runoff and NPS pollutant loads are reduced.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA monitors nutrients in surface waters through its Ambient Water Quality Monitoring Network (AWQMN), Ambient Lake Monitoring Program (ALMP), and Illinois Clean Lakes Program Phase I diagnostic/feasibility studies. Illinois EPA also operates a Pesticide Monitoring Subnetwork (PMN). Monitoring data is used to identify appropriate pesticide/nutrient management programs and practices in watershed-based plans, Total Maximum Daily Loads (TMDLs) and implementation plans, Phase 1 diagnostic/feasibility studies. Pesticide/nutrient management programs and practices identified in watershed-based plans, Total Maximum Daily Loads (TMDLs) and implementation plans, Phase 1 diagnostic/feasibility studies have been implemented with funding under Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), and NPS Pollution Control Financial Assistance Program (319).
6.22	Promote the development and implementation of State and local watershed management programs to reduce runoff NPS pollutant concentrations and volumes from existing development.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The development and implementation of watershed-based plans, Total Maximum Daily Loads (TMDLs) and TMDL implementation plans, and Phase 1 diagnostic/feasibility studies have been achieved through the Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), NPS Pollution Control Financial Assistance Program (319), Streambank Stabilization and Restoration Program (SSRP), Soil and Water Conservation District Grants, and Ecosystems Program.
6.3	Establishment of Illinois public law assigning responsibility and authority to county level government (PA85-905: Lake, Kane, DuPage, and Will counties) to develop stormwater management plans. Give authority to levy taxes and fees to help implement the proposed plans, which can benefit local communities through the coordination of planning efforts.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Public Act 85-905 was signed into Illinois law giving McHenry, Lake, Kane, DuPage, and Will counties in northeastern Illinois the power to create stormwater management planning committees to prepare countywide and watershed level stormwater management plans and to levy taxes and fees to implement proposed plans.
6.31	Develop legislation or other program authorization to assist counties throughout the State to prepare stormwater management plans, which include watershed areas that may lie outside of their jurisdictional area, to attain water quality improvement as well as control flooding.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Public Act 86-1463 extended the stormwater planning authority into Cook County. In 2004, Public Act 93-1049 consolidated stormwater management in Cook County under the direction of the MWRDGC and provided a funding authority. In 2005, Public Act 94-067 established countywide stormwater authority in nine additional counties in northeastern and southwestern Illinois (Boone, DeKalb, Grundy, Kankakee, Kendal, LaSalle, Madison, Monroe, and St. Clair.
6.32	Develop programs and/or projects that strengthen and implement existing stormwater management plans and ordinances to protect both ground and surface water from NPS pollution.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Existing stormwater management plans are strengthened through Section 319 funded watershed-based plans, Total Maximum Daily Loads (TMDLs) and TMDL implementation plans, and Phase 1 diagnostic/feasibility studies and implemented through the Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), NPS Pollution Control Financial Assistance Program (319), Streambank Stabilization and Restoration Program (SSRP), Soil and Water Conservation District Grants, and Ecosystems Program.
6.4	State and Federal law require that Illinois EPA actions (i.e., permit and/or loan issuance) be consistent with the WQMP. The WQMP addresses point and NPS pollution sources, maintenance of stream uses and water quality standards, protection of groundwater resources, and control of hydrologic modifications. Applications to amend the WQMP are required to address both direct and indirect environmental impacts of the proposed revision.	Evaluate and establish program directives yearly to remain consistent with the WQMP.	Yes	The Illinois EPA reviews domestic wastewater treatment NPDES permit and State Revolving Fund loan applications for consistency with the Illinois Water Quality Management Plan (WQMP). Facilities plans, new or revised NPDES permits, and facility planning area boundary modification requests address direct and indirect environmental effects.

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6.41	When appropriate, provide conditional approval of WQMP amendment requests, upon documentation that the applicant has taken all reasonable measures to avoid or mitigate negative environmental impacts associated with urban runoff that may result from the proposed amendment.	Evaluate and establish program directives yearly to remain consistent with the WQMP.	Yes	The Illinois EPA considers whether or not applicants have taken all reasonable measures to avoid or mitigate negative environmental impacts associated with urban runoff that may result from the proposed WQMP amendment. Assuring that wastewater treatment meets antidegradation criteria and load reductions required by TMDLs occurs during the permitting process. Since 2001, the NPDES stormwater permit requirements have been expanded to cover a broader range of activities and provide more uniform protection against urban runoff and have largely replaced this objective since the Illinois EPA can readily enforce NPDES stormwater permits whereas there is little opportunity for such enforcement by the Illinois EPA of local ordinances enacted as a condition for approval of an facility planning area modification.
6.5	The use of impervious materials reduces water infiltration, increases stormwater runoff, and increases the potential for NPS pollution to impact state water resources. The long-term protection of state water resources in urban and developing areas will be dependent upon the local communities understanding of the correlation between urban development, stormwater runoff, and water quality deterioration.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Programs used to educate target audiences on the correlation between urban development, stormwater runoff, and water quality deterioration include the Illinois Clean Lakes Program (ICLP) and NPS Pollution Control Financial Assistance Program (319), Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG). Such education efforts have also been implemented with funding under Section 604(4) of the Clean Water Act.
6.51	Develop statewide programs and projects that are designed to educate community planners, developers, local, state and federal officials, and/or citizens of urban and developing areas concerning the impacts of stormwater runoff on local water quality and the alternatives and BMPs to reduce stormwater runoff. Include in these programs and projects, technical and/or financial assistance to promote, design, implement, and maintain the alternatives and BMPs identified to reduce stormwater runoff.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Programs established to educate target audiences on stormwater impacts and management practices or to provide technical and financial assistance for the design, implementation, and maintenance of stormwater management practices include: Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), NPS Pollution Control Financial Assistance Program (319), Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG), Streambank Stabilization and Restoration Program (SSRP), Soil and Water Conservation District Grants, and Ecosystems Program
6.52	Develop programs and projects that identify, research, implement, and evaluate structural and/or nonstructural alternatives to the use of impervious materials in urban and developing areas.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Since 2001, projects have been funded under the NPS Pollution Control Financial Assistance Program (319) that will result is the implementation of 3.64 acres of porous pavement and 0.25 acres of green roof. Alternatives to the use of impervious materials in urban and developing areas will also be eligible for funding under the new Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG). In 2010, the University of Illinois – Chicago, in partnership with the Illinois EPA, completed The Illinois Green Infrastructure Study, an assessment of effective best management practices, green infrastructure standards, and institutional and policy frameworks. This study and the recommendations of the Illinois EPA were provided to the Governor and Illinois General Assembly. In 2009 the Illinois EPA began reserving 20 percent of the federal capitalization amount under the Water Pollution Control Loan Program (WPCLP) to provide support for projects or project components focused on “green infrastructure, water or energy efficiency improvements or other environmentally innovative activities,” which could include the use of alternatives to impervious materials.
6.53	Develop and implement pollution prevention and education programs to reduce NPS pollutants from urban activities.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	In 2010, the University of Illinois – Chicago, in partnership with the Illinois EPA, completed The Illinois Green Infrastructure Study, an assessment of effective best management practices, green infrastructure standards, and institutional and policy frameworks. This study and the recommendations of the Illinois EPA were provided to the Governor and Illinois General Assembly. The Illinois EPA and the Association of Illinois Soil & Water Conservation Districts have established a program for the continued update of the Illinois Urban Manual. Projects providing education and technical assistance on stormwater management to statewide or specific local audiences have been funded under the NPS Pollution Control Financial Assistance Program (319).
6.A	By January 1, 2015, all initial TMDL implementation plans will be completed and, at a minimum, implementation actions will have begun. All implementation actions will be completed consistent with the schedules contained in the implementation plans. This shall be done to assure that stormwater nonpoint source pollution is eliminated as a source of impairment for all surface waters not meeting water quality standards and designated uses. This goal will be periodically reviewed and revised to reflect revisions in TMDL regulations and related program requirements.	Year 2015	Partial	Illinois EPA continues to develop TMDLs, Load Reduction Strategies (LRS) and Implementation Plans, including Watershedbased Plans. The Waste Load Allocations for the TMDLs are being implemented upon Permit Renewals as called for in the Implementation Plans. However, many of the Load Allocations continue to "wait" for interested parties to implement. Beginning in 2014 all TMDLs initiated will be required to develope an approvable Watershed Based Plan as part of the TMDL.
6.B	The number of municipalities in priority areas having urban stormwater management ordinances consistent with the model ordinance recommended by the Illinois EPA will increase by five percent from 2000 to the year 2005.	From 2000 until 2005	Yes	This Outcome has been fully met by Phase II of the Stormwater Program, all MS4 communities now have stormwater management ordinances as part of their MS4 Permit.

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6.C	A database will be developed to track present and historical BMP implementation (date, type, location, effectiveness, etc.) by state and federal agencies in priority areas by the year 2005 and statewide by the year 2010.	From 2005 until 2010	Yes	BMPs implemented through the NPS Pollution Control Financial Assistance Program (319), Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG), and Illinois Department of Agriculture Streambank Stabilization and Restoration Program are tracked through the Resource Management Mapping Service. BMPs implemented through 319 and IGIG are also tracked through the Grants Reporting and Tracking System (GRTS). A database structure has been provided through RMMS to house data on such BMPs implemented by other agencies and the Illinois EPA continues to explore opportunities of obtaining such data from those other agencies for entry into RMMS.
7.0 Hydrologic Modification				
7.1	Encourage programs and projects that work with local, state, and federal agencies and local land improvement contractors to modify planning and project implementation to maintain or improve existing water quality and to reduce flood potential and other negative effects of hydrologic modification.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Aerial GPS Video Mapping Assessment of Stream Channel (2002) was conducted on 23 selected TMDL watersheds. Illinois Buffer Partnership (2001), IL Land Improvement Contractors Association (LICA) Conservation Expos (2007), Kickapoo Creek Restoration (2007, 2009), IL Council on BMPs.
7.11	Encourage the creation of projects and/or programs that expand and enhance documentation concerning the influence of hydrologic modification on ground and surface water levels. Document the influence of fluctuating water levels on vegetation, including the existing riparian zone.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Northeastern IL Stream Restoration Inventory (2003) created recommendations for stream restorations through workshops and educational DVD.
7.12	Develop projects and programs that provide technical and/or financial assistance to plan, design, implement, maintain, and improve BMPs for water quality protection.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Since 2001, 42 hydrologic modification implementation Section 319 projects have been funded on 34 waterbodies. 4 hydrologic studies and 1 planning effort have been performed. IDA administers a Streambank Stabilization and Restoration Program (SSRP).
7.2	Hydrologic modification has been utilized across the state in urban and rural areas to benefit the land-user. Many of these modifications, however, have also created adverse effects on water quality.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Illinois EPA continues to identify causes and sources of use impairments associated with Hydrologic Modification through the Surface Water Monitoring Section
7.21	Create projects and/or programs to inform and educate the land-user, general public, local, state, and federal government concerning the impacts of hydrologic modification on the modified portion and the area downstream.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Geomorphic and In-Channel Habitat Assessment of South Kickapoo Creek (2006, 2007).
7.22	Create projects and/or programs to increase use of BMPs to reduce negative impacts of hydrologic modification while researching and developing additional BMPs for use in both urban and rural areas.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Transitional Wetland Breakwaters continue to be evaluated for lake shoreline stabilization for effectiveness and habitat enhancement. Highland Silver (2008), Clinton Lake (2008), Lake Sara (2009,2010), Cedar Lake (2010).
7.23	Create projects and/or programs that re-establish the original streambed meanders and riparian zones to promote improved water quality and to support designated water body uses. Document the process and findings of these actions and make this information available to the public.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Kickapoo Creek Corridor Restoration (2007, 2009) and associated National Monitoring Project (2006, 2010), In-Stream Restoration and Monitoring of Kickapoo Creek Near Charleston, IL (2009), Springbrook Creek Stream Meandering (2003), Brewster Creek Dam Removal and Monitoring (2001), West Branch of the DuPage River Improvement Project (2009), funded by Section 319).
7.3	State and Federal law require that Illinois EPA actions (i.e., permit and/or loan issuance) be consistent with the WQMP. The WQMP addresses point and NPS pollution sources, maintenance of stream uses and water quality standards, protection of groundwater resources, and control of hydrologic modifications. Applications to amend the WQMP are required to address both direct and indirect environmental impacts of the proposed revision.	Evaluate and establish program directives yearly to remain consistent with the WQMP.	Yes	This Goal is met through application to the Agency for a Permit (new or renewal), Loan or other actions that must be consistant with the WQMP and the Agency's actions with the application. The Agency will use the Anti-degratdation process, the alternatives analysis and plan reveiws to determine constitancy. Once the action is approved it becomes part of the WQMP through the Annual Burea of Water Hearing.
7.31	When appropriate, provide conditional approval of WQMP amendment requests upon documentation that the applicant has taken all reasonable measures to avoid or mitigate negative environmental impacts associated with urban runoff, which may result from the proposed amendment.	Evaluate and establish program directives yearly to remain consistent with the WQMP.	Yes	Although rare, if an applicant has met the reasonable measures conditional approval will be made. The Agency would prefer to not allow conditional approval and grant the Permit or Loan once all conditions are met.
7.A	By January 1, 2015, all initial TMDL implementation plans will be completed and, at a minimum, implementation actions will have begun. All implementation actions will be completed consistent with the schedules contained in the implementation plans. This shall be done to assure that hydrologic modification nonpoint source pollution is eliminated as a source of impairment for all surface waters not meeting water quality standards and designated uses. This goal will be periodically reviewed and revised to reflect revisions in TMDL regulations and related program requirements..	Year 2015	Partial	Illinois EPA continues to develop TMDLs, Load Reduction Strategies (LRS) and Implementation Plans, including Watershedbased Plans. The Waste Load Allocations for the TMDLs are being implemented upon Permit Renewals as called for in the Implementation Plans. However, many of the Load Allocations continue to "wait" for interested parties to implement. Beginning in 2014 all TMDLs initiated will be required to develope an approvable Watershed Based Plan as part of the TMDL.

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7.B	A database will be developed to track present and historical BMP implementation (date, type, location, effectiveness, etc.) by state and federal agencies in priority areas by the year 2005 and statewide by the year 2010.	From 2005 until 2010	Yes	BMPs implemented through the NPS Pollution Control Financial Assistance Program (319), Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG), and Illinois Department of Agriculture Streambank Stabilization and Restoration Program are tracked through the Resource Management Mapping Service. BMPs implemented through 319 and IGIG are also tracked through the Grants Reporting and Tracking System (GRTS). A database structure has been provided through RMMS to house data on such BMPs implemented by other agencies and the Illinois EPA continues to explore opportunities of obtaining such data from those other agencies for entry into RMMS.
8.0 Toxicants				
8.1	Contact with toxicants can have an adverse effect on the health of the public and aquatic and terrestrial ecosystems. Protection of water resources from toxic contamination continues to increase the economic burden of the citizens of Illinois.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Illinois EPA Section 319 resources were used to assist the following projects in a watershed that was impaired due to legacy sources of toxicants; Waukegan River Watershed Initiative (2002), Waukegan River Restoration Project (2004), Waukegan River Water Quality Monitoring Proposal - Phase 1 (2006), Waukegan River Watershed Planning Initiative (2007)
8.11	Create projects and/or programs to advance interaction between public and private sectors concerning the reduction or elimination of toxic chemicals from, or to Illinois water resources.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	NPDES Permit requirements for major municipal and select industrial dischargers requires both biomonitoring and metals monitoring on a semi-annual bases. The Illinois EPA partners with other state agencies to address toxicants in the "Fish Contaminant Monitoring Program (FCMP)." Pollutants causing advisories in Illinois fish include pesticides and other compounds such as chlordane and PCBs (polychlorinated biphenols commonly used in electrical transformers), as well as mercury.
8.12	Promote projects and/or programs that encourage research and development, and implementation of alternative non-toxic materials for use throughout Illinois.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA Office of Pollution Prevention (OPP) supports programs that encourage industries, governments and institutions to consider the use of alternative non-toxic materials. One of OPP outreach program is Citizens' Information Center - Green Tips website that promotes the purchase and use of non-toxic household cleaning products. The information can be viewed at: http://www.epa.state.il.us/citizens/green-tips.html
8.13	Promote projects and/or programs that encourage public and private sectors to create additional BMPs for chemical container and packaging control and for the disposal of excess materials.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois Department of Agriculture (IDOA) provides a service to help producers use pesticides responsibly in assisting by designing collection sites in which chemical containers can be collected and depose of properly. The Illinois EPA Office of Pollution Prevention (OPP) provides outreach programs that encourage industries, governments and institutions to reuse containers of raw materials usage in Illinois to reduce the amount of packaging materials entering our landfills. OPP Customer P2 outreach presents ways that each of us can help reduce or prevent the pollution and provide an update list of Less-Toxic Household Products - Alternative Products List that can be viewed at: http://www.epa.state.il.us/p2/less-toxic-products.html
8.14	Create projects and/or programs that help identify and implement opportunities for NPS pollution prevention in the administration and enforcement of federal and state environmental statutes and regulations.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Through the development of Watershed-based Plans and Total Maximum Daily Load (TMDL) attainment strategies, the Illinois EPA identifies specific opportunities, entities, and partnership arrangements that should be utilized at the individual watershed level for data collection, planning, BMP implementation, education, evaluation and assessment, enforcement, etc. to address toxicants from nonpoint sources. The Illinois Department of Agriculture (IDOA) implements education and training programs aimed at helping commercial and private applicators comply with the Illinois Pesticide Act and other applicable regulations. The IDOA operates a program to investigate complaints concerning the possible misuse of pesticides. The Illinois EPA operates a program to investigate complaints concerning actions that may have resulted in possible water quality standards violations, which may include contamination by pesticides and other toxicants.
8.15	Create projects and/or programs to increase the public and private sectors participation in a toxicant risk reduction process (i.e., permit limits, cleanup objectives, health advisories).	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA NPDES Permit contains permit limits for dischargers to monitor and reduce toxicants prior to discharge. In the process of the Illinois EPA issuance of the an NPDES permit, a period of time is required for public review and a comment period for the draft permit.
8.16	Create projects and/or programs to reduce exposure to high-risk chemicals by integrated, focused, and coordinated efforts to educate, manage, and regulate activities involving priority substances such as lead, chlorinated dioxins, and PCBs.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA Bureau of Land (BOL) provides a broad variety of solid and hazardous waste management and cleanup programs. One of these programs is a Brownfields program that oversees remediation of industrial areas and clean-ups of toxicant materials for the protection of surface and groundwater resources in the State of Illinois.

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8.17	Create projects and/or programs that encourage and implement the use of technology, such as computerized expert systems, which enable the quick preparation of thorough and comprehensive toxic reduction plans throughout the State.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois Emergency Management Agency (IEMA) is primarily responsible to prepare the State of Illinois for natural, manmade or technological disasters, hazards, or acts of terrorism. IEMA assists local governments with multi-hazard emergency operations plans and maintains the Illinois Emergency Operations Plan (IEOP). Under the IEOP, the Illinois EPA is designated as the primary agency in Illinois' response during a release or imminent release of oil and hazardous materials caused by manmade or natural disasters.
8.18	Create projects and/or programs that increase local collection and disposal systems for used packaging, containers, and excess chemicals	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA Bureau of Land (BOL) facilitates collection programs that provides the public the opportunities to properly dispose of household wastes at scheduled events throughout the year at various locations throughout the state.
8.19	Create programs and/or projects that produce regional drop-off centers, guidelines and standards for operating such centers, and criteria for participating in regional center activities, which help reduce toxics in the environment.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA's Bureau of Land (BOL) sponsors collection programs that provides the public opportunities to properly dispose of household wastes. BOL coordinates one-day household hazardous waste collections each year in the spring and fall at various locations throughout the state. The BOL also supports the Electronic Waste Recycling program (Public Act 95-0959 – Electronic Products Recycling & Reuse Act) in which the law establishes a statewide system for recycling and/or reusing computers, monitors, televisions, and printers discarded from residences by requiring electronic manufacturers to participate in the management of discarded and unwanted electronic products that may contain toxic materials.
8.2	NPS pollution control to reduce the amount of pollutants reaching the waterbody to be effective, and improve water quality long-term, must also address the pollutants already located within the water column and bottom sediments.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Through the development of Watershed-based Plans and Total Maximum Daily Load (TMDL) attainment strategies, the Illinois EPA identifies specific opportunities, entities, and partnership arrangements that should be utilized at the individual watershed level for data collection, planning, BMP implementation, education, evaluation and assessment, enforcement, etc. to address toxicants from nonpoint sources.
8.21	Create projects and/or programs to implement and assess effectiveness of a variety of BMPs designed to break down, remove, or reduce existing in-place contaminants; create systems to reduce or remove toxicants from the waterbody and/or watershed runoff before they impact local water quality.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA is member of the Lake Michigan Management Committee which directs the Lake Michigan Lakewide Management Plan (LaMP). The LaMP is designed to reduce loadings of Critical Pollutants in order to restore 14 designated beneficial uses (see Appendix G, Section G.2.4) and prevent increases in pollutant loadings in areas where the Specific Objectives of the Agreement are not exceeded.
8.22	Continue monitoring, education, and information, including biomonitoring procedures, so that the public and private sectors involvement in the assessment and monitoring of the local resources will increase.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Watershed-based Plans and Total Maximum Daily Loads (TMDL) contain monitoring, education and information to assess and monitor local resources are elements of the of the nine minimum elements that are required for watershed-based planning initiatives required under Section 319 funding resources.
8.23	Create projects and/or programs to educate the general public on toxicants, the effects of toxics, and to create rules and regulations to protect Illinois water resources and terrestrial and aquatic ecosystems from toxic contamination and effects.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois Bureau of Land (BOL) facilitates collection programs provide the public opportunities to properly dispose of household wastes at scheduled events throughout the year at various locations through the state. Information is distributed during these events to educate the public about toxicants and the effect of toxics through improper disposal. The Illinois Pollution Control Board have developed narrative water quality standards (35 IAC 302.210 and in Subpart F for General Use Waters and at 302.540 and elsewhere in Subpart E for Lake Michigan Basin Waters) which allows the Illinois EPA to derive numeric water quality criteria values to protect Illinois water resources and terrestrial and aquatic ecosystems for pollutants that include toxicants.
8.24	Create projects and/or programs that inventory, monitor, and evaluate the extent and magnitude of in-place toxicants; identify and evaluate BMPs that reduce the amount of in-place toxicants, resuspension of in-place toxicants, and can remove toxics from the waterbody in an environmentally sound manner.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Through the development of Watershed-based Plans and Total Maximum Daily Load (TMDL) strategies, the Illinois EPA identifies specific opportunities, entities, and partnership arrangements that should be utilized at the individual watershed level for data collection, planning, BMP implementation, education, evaluation and assessment, enforcement, etc. to address toxicants from nonpoint sources. Beginning in 1995, the Illinois EPA operated a Pesticide Monitoring Subnetwork (Part of the Ambient Water Quality Monitoring Network (AWQMN) consisting of 213 fixed stations to support surface water chemistry data needs) to expand screening for toxic organic substances. Fifteen common herbicides and organophosphate insecticides currently used in agricultural production practices are included for water column analysis. The Pesticide Monitoring Subnetwork consisted of 30 AWQMN stations located across the state. Unfortunately, due to budget reductions, this Subnetwork no longer exists.

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8.3	The USEPA is in the process of developing and implementing a Lakewide Management Plan (LAMP) for Lake Michigan in accordance with Annex 2 of the Great Lakes Water Quality Agreement, Section 118 of the Clean Water Act, and the Great Lakes Critical Programs Act of 1990. The LAMP is an interagency, multi-media program designed to identify and reduce loadings of critical pollutants to the Lake Michigan ecosystem and restore ecosystem functions.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA is an active stakeholder in the Lake Michigan Lakewide Management Plan (LaMP) updates. This document is intended to provide a status report on the health of the Lake Michigan ecosystem and a summary of the activities related to the Lake Michigan LaMP that have occurred during the last two years. The last update to the LaMP was completed in 2008.
8.31	Develop projects and programs that initiate and expedite the monitoring and investigation of existing and potential NPS pollution to Lake Michigan. Locate and/or develop programs that provide technical and/or financial assistance to educate, in addition to, design, implementation, and/or maintenance of BMPs to reduce or eliminate the identified NPS pollution.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	In Lake Michigan LaMP 2008 update, NPS pollution issues are outlined on pages 7-9 and 7-10. The Great Lakes Regional Collaboration (GLRC) is leading collaborative activities of federal, local, and state agencies, the tribes, elected officials, industry, and non-governmental groups demonstrate a unified effort to reach our goals through eight strategy teams. One of these teams is a Nonpoint Source Strategy Team that will review NPS goals and objectives.
8.32	Develop projects and programs that assist in the promotion of NPS pollution prevention for all sources of toxicants in all media in the Great Lake basin.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	In the Lake Michigan LaMP Update 2008, proposed NPS pollution prevention action items are presented in the Lake Michigan Areas of Concern Summary Matrix - LaMP 2008 Update contained in Chapter 7.
8.33	Implement projects that improve coordination between new and existing programs that relate to, or provide benefits of toxicant control in the Great Lakes basin.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	In the 2000 Lake Michigan Lakewide Management Plant (LaMP), the Toxic Reduction Subcommittee was developed and charged with investigating pollutant load reductions and determining appropriate mitigation. In the LaMP 2006 Update, the suggestions from the TRS was for watershed planning activities that will address toxicant controls.
9.0 Resource Extraction				
9.1	Mining activities in Illinois have had adverse effects on the environment. Many areas are experiencing problems from abandoned sites where little or no reclamation efforts were conducted. Both active and abandoned mines can cause ground and surface water NPS pollution problems in Illinois.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Extraction.Illinois EPA continues to identify causes and sources of use impairments associated with Resource Extration through the Surface Water Monitoring Section
9.11	Create projects and/or programs that encourage resource planning by public and private sectors to address areas impacted by mining NPS pollution. Encourage new land uses for mined land that will protect and/or improve the resource base, while continuing support of the local economy to ensure long-term protection of the local resources.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	IDNR - Office of Mines and Mineral continues as the designated State agency in implementing of the Surface Mining Control and Reclamation Act (SMCRA).
9.12	Create projects and/or programs that provide additional technical and financial assistance for the reclamation of mined lands and areas impacted through the mining process that are not currently available under existing water quality programs. Encourage programs that complement or supplement existing programs through coordination of existing resources and guidelines.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	IDNR accepts land under its control and applies funds under the Abandoned Mine Land (AML) fund to reclaim them.
9.13	Create projects and/or programs that assess mining impacts on ground and surface water and the potential BMPs have for improvement of water quality.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Palzo Surface Mine Project (Section 319, 1999) continues to monitor groundwater ph levels of remediation efforts.
9.14	Create projects and/or programs that encourage the mining industry to plan, design, and implement BMPs for the re-mining process in order to protect or enhance water quality while minimizing economic commitments of the local community.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	IDA ensurs that all farmland impacted by coal mining activities is reclaimed to its pre-mining productivity.
9.15	Create comprehensive projects to address resource extraction, refuse handling, and disposal practices.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Illinois EPA issues permits with respect to water quality and hydrology under state environmental regulations.
9.16	Develop projects and/or programs that assess and evaluate NPS pollution impacts from mining activities, which are not currently being addressed by other state and federal programs.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois Coal Association coordinates the relations between the mining industry and the various State agencies.
9.17	Develop, design, implement, and demonstrate BMPs to reduce and/or eliminate NPS pollution that is occurring due to current or post mining activities.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Palzo Surface Mine Project (Section 319, 1999) remediation efforts on an abandoned mine with acid mine drainage.
9.A	By January 1, 2015, all initial TMDL implementation plans will be completed and, at a minimum, implementation actions will have begun. All implementation actions will be completed consistent with the schedules contained in the implementation plans. This shall be done to assure that resource extraction nonpoint source pollution is eliminated as a source of impairment for all surface waters not meeting water quality standards and designated uses. This goal will be periodically reviewed and revised to reflect revisions in TMDL regulations and related program requirements.	Year 2015		Illinois EPA continues to develop TMDLs, Load Reduction Strategies (LRS) and Implementation Plans, including Watershedbased Plans. The Waste Load Allocations for the TMDLs are being implemented upon Permit Renewals as called for in the Implementation Plans. However, many of the Load Allocations continue to "wait" for interested parties to implement.

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9.B	The percentage of lake acres needing additional corrective action for resource extraction to meet Clean Water Act goals and objectives will remain constant through the year 2000 relative to 1997 levels.	Ongoing	Yes	The 1998 305(b) reports 6,768 acres impacted by "resource extraction/explor/develop" while the 2010 Draft Integrated report identifies 250 acres impacted by "impacts from abandoned mine lands" a 96.3% reduction.
10.0 Groundwater				
10.1	Past groundwater monitoring activities conducted by the Illinois EPA have identified wells contaminated by agrichemicals that are attributed to agrichemical storage facilities located within close proximity (50 - 700 feet) of the wellhead.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	All CWS wells with agrichemical storage facilities located within 1,000 ft. have been sampled for SOC/nitrate. Regulations and secondary containment requirements established for these facilities have reduced the occurrence of contaminated wells.
10.11	Create projects and/or programs to increase the number of groundwater wells sampled, which are located near agrichemical storage facilities to examine whether a statewide problem exists.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	All new and existing CWS wells with agrichemical storage facilities located within 1,000 ft. have been sampled for SOC/nitrate. In addition, numerious research projects to evaluate agrichemical impacts to groundwater resources have been implemented, including: Pilot Study, Agicultural Chemicals in Rural Private wells; Pesticide Contamination Guidlines; Preferntial Transport of Agrchemicals to Groundwater; and Agricultural Chemical Contamination of Shallow Bored and Dug Wells. For more on these projects see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1992-1993/groundwaterprotection1993v2.pdf Also see, http://www.epa.state.il.us/water/groundwater/publications/herbicides-in-source-water-report.pdf
10.12	Create programs to educate and inform the general public about the various ways in which NPS pollution problems in shallow, rural wells and in groundwater can be reduced.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Special studies and/or cooperatives have been conducted to evaluate the impacts of NPS pollution problems in shallow, rural groundwater wells. These are well documented in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1992-1993/groundwaterprotection1993v2.pdf
10.13	Prevention programs should be implemented to provide protection of water resources against potential pesticide and nitrate contamination.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Regulations and secondary containment requirements established for the proper storage and handeling practices at these facilities should reduce the occurrence of pesticide and nitrate contaminated wells. For a description of these regulations and the cooperative groundwater protection program including the Agrichemical Facility Response Action Program (AFRAP) see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1994-1995/groundwater-protection-1996.pdf
10.14	Promote projects and/or programs that increase the number of investigations, which assist in the identification of alternative best management practices that help minimize surface runoff and leaching of pesticides.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA worked to integrate source water (e.g., ground and surface sources of drinking water supply) factors into a Targeted Watershed Program. Analysis of this data appears to indicate a strong relationship between areas with a high potential for aquifer recharge, detection of pesticides and/or nitrate in groundwater, no known potential point sources of agricultural contamination, and overlying or up-gradient watersheds that have been prioritized due to nonpoint sources of agricultural contamination. A summary of this effort can be found in the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1994-1995/groundwater-protection-1996.pdf
10.15	Develop projects and programs that investigate and/or develop guidance regarding the prevention of groundwater contamination by urban and/or rural surface water.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA worked to integrate source water (e.g., ground and surface sources of drinking water supply) factors into a Targeted Watershed Program. Priority watersheds are those have a CWS surface water intake which currently have SDWA MCL violations; groundwater sources with SDWA monitoring detections over a Groundwater Standard for Atrazine, and ambient monitoring network detections over the Groundwater Standard for nitrate. A summary of this effort can be found in the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1994-1995/groundwater-protection-1996.pdf
10.2	The Illinois Groundwater Protection Act mandates the development of a groundwater data collection and automation program, the purpose of which is to collect all groundwater information, store it in one location, and make it available to all state agencies, organizations, and to the general public.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	A significant amount of groundwater information, including source water assessments, CWS compliance monitoring data, and groundwater remediation efforts are available to the public via the Illinois EPA web site, see: http://www.epa.state.il.us/
10.21	Establish projects and/or programs of basic and applied research including the monitoring of community and non-community wells.	Evaluate and revise program directives biannually based on progress.	Yes	Programs of basic and applied research including the monitoring of community and non-community wells occur on a continuing basis . These efforts are well documented in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html
10.22	Establish a statewide groundwater assessment to enhance the State's database concerning groundwater resources.	Evaluate and revise program directives biannually based on progress.	Yes	The Source Water Assessment Program ArcIMS Mapping Tool is a secure web site that can be used to provide an overall groundwater resource assessment for the state, see: http://www.epa.state.il.us/water/groundwater/source-water-assessment/

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10.23	Maintain statewide and county vulnerability maps, which assess the potential for groundwater contamination by agrichemicals.	Evaluate and revise program directives biannually based on progress.	Yes	Statewide Potential for Aquifer Recharge and geologic vulnerability maps are available via the Source Water Assessment Program ArcIMS Mapping Tool (see link, above), which can be utilized to assess the potential for groundwater contamination by agrichemicals.
10.24	Continue the development and implementation of the ambient community water supply groundwater monitoring network for pesticides to support efforts and accelerate implementation of a State Pesticide Management Plan.	Evaluate and revise program directives biannually based on progress.	Yes	A subset of community water supply wells are monitored biennially thru the Ambient Groundwater Monitoring Network for pesticides to support efforts and accelerate implementation of a State Generic Pesticide Management Plan.
10.25	Continue the development and implementation of projects for monitoring and assessing agrichemical impacts on rural private wells.	Evaluate and revise program directives biannually based on progress.	Yes	Special studies and/or cooperatives have been conducted to assess agrichemical impacts on rural private wells. Illinois Department of Agriculture (IDOA) continues to implement the State Generic Pesticide Management Plan, including a dedicated monitoring network. These projects are documented in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html
10.26	The Pesticide Subcommittee of the ICCG should continue maintenance of the Generic Management Plan for Pesticides in Groundwater. This Plan should be maintained in a manner consistent with U.S. EPA Pesticides and Groundwater Strategy, and implemented, so as to ensure compliance with the IPCB's Groundwater Standards.	Evaluate and revise program directives biannually based on progress.	Yes	The IDOA continues to implement the State Generic Pesticide Management Plan, including a dedicated monitoring network. Development and implementation of the State Generic Pesticide Management Plan is documented in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html
10.27	Share geographic information system coverages in electronic format and continue to automate the groundwater resource database for Illinois.	Evaluate and revise program directives biannually based on progress.	Yes	A significant number of geographic information system coverage's have been shared and are made available via the Source Water Assessment Program ArcIMS Mapping Tool. This is a secure web site that can be used to provide an overall groundwater resource database for the state, see: http://www.epa.state.il.us/water/groundwater/source-water-assessment/
10.28	Continue to utilize innovative and cost-effective methods to implement statewide groundwater quality monitoring.	Evaluate and revise program directives biannually based on progress.	Yes	Illinois EPA tested all wells in the CWS Network for triazine and alachlor using immunoassay- screening methods. However, in the 1998 monitoring cycle, Illinois EPA discontinued the use of immunoassay and randomly selected 50 percent of the network wells to become a Pesticide Monitoring Subnetwork. The Illinois EPA determined that the primary purposes of the CWS Network could still be realized by reducing the monitoring frequency of the CWS Network to a biennial basis. The purpose of this rotating monitoring network is to maximize resources and increase groundwater quality monitoring coverage at CWS wells.
10.3	The Illinois Groundwater Protection Act mandates that the IDPH develop a permit program that allows for review of plans, specifications, and other information prior to the drilling of non-community water supply wells.	Program coordination to occur on a yearly basis.	Yes	IDPH continues to review plans, specifications, and issue construction permits for non-community water supply wells. During 2008 and 2009, IDPH issued 122 and 89 permits, respectively, for the construction, modification or an extension of an existing NCPWS.
10.31	Establish maximum contaminant levels for pollutants in non-community wells; require the maintenance of records; and submit water samples for analysis to ensure the quality of potable water.	Program coordination to occur on a yearly basis.	Yes	The IDPH continues to inspect and monitor non-community water supply wells. As part of these evaluations, IDPH continually evaluates them for water quality concerns and potential sources of contamination within their respective WHPA. To date, the IDPH has authority over 3,975 NCPWSs of which 402 are classified as non-transient. While monitoring requirements varies (transient or non-transient), all of these systems are routinely evaluated for bacterial and nitrate contamination. Furthermore, non-transient NCPWSs, like schools and workplaces, must monitor for an additional 70 contaminants including VOCs, synthetic organic compounds, and inorganic chemicals.
10.4	The Groundwater Protection Act mandates that the Illinois EPA and IDNR develop a groundwater protection planning program which designates priority groundwater protection planning regions.	Program coordination to occur on a yearly basis.	Yes	The Illinois EPA has designated four priority groundwater protection planning regions. The Northern and Central Priority Region's were established in 1991, followed thereafter by the Southern Groundwater Protection Committee in 1992. The Northeastern Groundwater Protection Planning Committee was initially appointed in 1995 and later amended to include DuPage County in 2001.
10.41	Develop regional plans for each designated priority groundwater protection region.	Program coordination to occur on a yearly basis.	Yes	Although each region has specific priorities and areas of concern, their general mission statements all have common goals and objectives. The regional groundwater protection process has resulted in successful local coordination and outreach efforts that have benefited both private citizens and businesses in these high priority areas of the state (e.g., pollution prevention interns, Groundwater Protection Field Days, well sealing demonstrations).
10.42	Implement and integrate the WHPP elements into protecting regional groundwater sources for community water supply wells.	Program coordination to occur on a yearly basis.	Yes	The regional groundwater committees have adopted specific mission goals and objective statements to advocate groundwater protection practices and procedures to municipal, county, state, and other local units of government within their respective regions. Many of their activities and accomplishments are described in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html

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10.43	Develop and implement source protection criteria to use in the planning, construction, and location of new community water supplies.	Program coordination to occur on a yearly basis.	Yes	The Illinois EPA recently modified the construction and operating permit applications for new CWS wells to require enhanced potential source identification and hydrogeologic information to assist in the delineation of WHPAs. In addition, all new CWS wells must submit water samples for analysis of contaminates with a groundwater standard to ensure the quality of potable water.
10.44	Prioritize well protection efforts within the groundwater protection planning regions.	Program coordination to occur on a yearly basis.	Yes	With assistance from the Illinois EPA, regional groundwater committee members work with county, municipal, and other special units of local government to implement groundwater protection tools such as local zoning, maximum setback zones, technology control regulations, and defining recharge areas.
10.45	Work with groundwater protection planning committees to implement programs and to assist with targeting local contacts and interest groups.	Program coordination to occur on a yearly basis.	Yes	The regional groundwater committees have adopted specific mission goals and objective statements to advocate groundwater protection practices and procedures to municipal, county, state, and other local units of government within their respective regions. Many of their activities and accomplishments are described in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html
10.46	Assist with conducting and supporting both new and follow-up efforts of encouraging local groundwater protection programs.	Program coordination to occur on a yearly basis.	Yes	The regional groundwater committees have adopted specific mission goals and objective statements to advocate groundwater protection practices and procedures to municipal, county, state, and other local units of government within their respective regions. Many of their activities and accomplishments are described in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html
10.5	The Illinois Groundwater Protection Act mandates that the Illinois EPA in consultation with the ICCG propose regulations to the IPCB establishing comprehensive groundwater quality standards.	Program coordination to occur on a yearly basis.	Yes	The Illinois EPA in consultation with the ICCG proposed regulations to the IPCB establishing comprehensive groundwater quality standards for 52 chemical substances on November 7, 1991. Most recently, Illinois EPA proposed to the Board on February 19, 2008, amendments to the GWQS (Docket R2008-018). This proposal recommended groundwater standards for 39 new contaminants.
10.51	Develop programs to protect groundwater from contaminants that are known to cause, or suspected of causing, cancer, birth defects, or other adverse effects on human health according to nationally accepted guidelines.	Program coordination to occur on a yearly basis.	Yes	The Illinois EPA devloped groundwater quality standards beginning in 1991 for contaminants that are known to cause, or suspected of causing, cancer, birth defects, or other adverse effects on human health according to nationally accepted guidelines. A current list of Groundwater Quality Standards (Subtitle F, Chapter I, Part 620) can be found at: http://www.ipcb.state.il.us/SLR/IPCBandIEPAEnvironmentalRegulations-Title35.asp
10.52	Develop, coordinate, and conduct an educational program for groundwater protection.	Program coordination to occur on a yearly basis.	Yes	Groundwater education and outreach programs are documented in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html
10.53	Encourage projects and/or programs that identify and implement pesticide use alternatives, which prevent NPS contamination of ground and surface waters.	Program coordination to occur on a yearly basis.	Yes	The Illinois EPA secured CWA Section 319 funding to develop nonpoint source management programs with the Madison County SWCD to provide incentives for the development and implementation of agricultural BMPs for land owners farming in CWS well recharge areas of the cities of Edwardsville, Troy and Roxana. A summary of these projects can be found in Chapter VI, Section 5 of: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1998-1999/groundwater-protection-1998-1999.pdf
10.54	Develop projects and/or programs to educate the general public, businesses, groundwater professionals and practitioners, the agricultural community, teachers, governmental officials, private well owners, association representatives, and legislators about groundwater protection. Through these programs, address hydrogeologic principles, groundwater protection issues, NPS pollution, Illinois groundwater policy, potential NPS contamination sources, potential water quality problems, well protection measures and the need for periodic well tests. Implement an annual work plan involving key state agencies and organizations. Cooperate with local and regional organizations to coordinate groundwater education programs and to expedite the exchange of technical information.	Program coordination to occur on a yearly basis.	Yes	The Education Subcommittee of the ICCG conducts and coordinates a statewide groundwater education program. An annual workplan is developed by involving key state agencies and organizations and is summarized in the Groundwater Education Chapter of the IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html
10.54.1	Coordinate and conduct a statewide education program with an annual evaluation and work plan involving local, regional, and state organizations and agencies, which emphasizes the integration of groundwater protection into State and local agency programs.	Program coordination to occur on a yearly basis.	Yes	Groundwater education and outreach programs are documented in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html
10.54.2	Provide support to regional groundwater protection communities with special education programs based on regional needs.	Program coordination to occur on a yearly basis.	Yes	Groundwater education and outreach programs are documented in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
10.54.3	Through educational institutions and organizations, curriculum projects, and teacher workshops, integrate groundwater principles and groundwater protection into the curriculum for grades 3-12.	Program coordination to occur on a yearly basis.	Yes	Approximately 700 teachers were trained by the Illinois Middel School Groundwater Project and over 800 copies of "Buried Treasure: Education Activity Guides" were distributed to teachers through workshops. A summary of this program can be found in Section 3 (pages 15-16) of the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1998-1999/groundwater-protection-1998-1999.pdf
10.54.4	As groundwater recharge maps become available for community water supplies, provide educational assistance in developing community wellhead protection education programs.	Program coordination to occur on a yearly basis.	Yes	With assistance from the Illinois Rural Water Association and the Community Groundwater Education Collaboration, community-based packets were developed and distributed to local governoring boards highlighting WHPA maps and suggested outreach efforts. A summary of this program can be found in Section 4 (page 16) of the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1998-1999/groundwater-protection-1998-1999.pdf
10.54.5	Maintain an easily readable and useful newsletter and closely related electronic bulletin board for communication with newsletter editors, communicators, water professionals, committee persons, educators, and agency representatives with groundwater protection interests.	Program coordination to occur on a yearly basis.	Yes	The Groundwater Gazette was been reduced from a monthly newsletter to quarterly due to reduced budget for groundwater education in 1997 within DNR. The Gazette was mailed to about 800 persons and was on the Internet. Articles have focused on agency and association initiatives for groundwater protection. Due to the elination of the Groundwater Education Program Coordinator within DNR, this publication ceased production.
10.54.6	Provide private well owners with educational programs involving licensed water well contractors, local health departments, and other organizations that address well abandonment, disinfection, testing, operation and maintenance methods.	Program coordination to occur on a yearly basis.	Yes	Working through SWCD's and with support from Illinois EPA, the IDOA has secured and promoted the 116 page manual HomeACRE, which provides a voluntary evaluation of home health and environment. Thousands of copies have been distributed through workshops and other events. Field events on host farms and water testing kits are often incorporated into these events.
10.54.7	Investigate educational funding to expand the Illinois Middle School Groundwater Education Project to new state selected regional groundwater planning areas.	Program coordination to occur on a yearly basis.	Yes	Although various funding proposals were turned down, the regional groundwater committees have supported and secured support for the continuation of this program. When W. K. Kellogg Grant funding was available, four or more counties and 250 teachers were addressed each year, but now with very limited funding, one or two counties and 75 teachers per year (1997-1998) are provided this service.
10.54.8	In cooperation with the IDPH, provide statewide education seminars on the implementation of the technology control and groundwater standards regulations.	Program coordination to occur on a yearly basis.	Yes	The IDPH and the Illinois Association of Groundwater Professionals cosponsored 10 water well construction and groundwater protection seminars throughout the state during 1995-96 for local health department and IDPH water program staff and licensed water well contractors. At one of these educational workshops, Illinois EPA explained the groundwater technology control regulations. IDPH plans to offer eight groundwater educational workshops during the next two years (2000-2001). A summary of this effort can be found in Section 9 (pages 33-34) of the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1998-1999/groundwater-protection-1998-1999.pdf
10.55	Review and coordinate the State's policies, laws, and procedures for groundwater protection. The ICCG will report biennially to the Governor and General Assembly on groundwater quality, quantity, and the State's enforcement efforts.	Program coordination to occur on a yearly basis.	Yes	The ICCG continues to meet a minimum of 3-4 times a year since they were established in September 21, 1987. The ICCG/Groundwater Advisory Council has reported biennially to the Governor and General Assembly on groundwater quality, quantity, and the State's enforcement efforts as documented in IGPA Biennial Reports, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/index.html
10.55.1	Continue to implement and integrate the groundwater quality standards into environmental programs of responsible State agencies.	Program coordination to occur on a yearly basis.	Yes	The state agencies and departments associated with implementing this effort are the Illinois EPA, IDPH, IDOA, Illinois Department of Nuclear Safety (IDNS), and DNR. Within the Illinois EPA, both the Bureau of Water and Land have incorporated groundwater quality standards into environmental programs. A summary of this effort can be found in Chapter 6, Section 1 (pages 53-54) of the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1994-1995/groundwater-protection-1996.pdf
10.55.2	Continue to update and amend the groundwater standards to parallel the drinking water standards adopted by U.S. EPA.	Program coordination to occur on a yearly basis.	Yes	The Illinois EPA in consultation with the ICCG proposed regulations to the IPCB establishing comprehensive groundwater quality standards for 52 chemical substances on November 7, 1991. Most recently, Illinois EPA proposed to the Board on February 19, 2008, amendments to the GWQS (Docket R2008-018). This proposal recommended groundwater standards for 39 new contaminants.

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
10.55.3	Continue to implement preventative notice and response programs and integrate with environmental programs.	Program coordination to occur on a yearly basis.	Yes	The primary state agencies associated with implementing this effort are the Illinois EPA, IDPH, IDOA, and DNR. Within the Illinois EPA, both the Bureau of Water (BOW) and Land have incorporated preventative notice and response programs into their regulatory programs. A summary of this effort can be found on pages 50-51 of the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1992-1993/groundwaterprotection1993v2.pdf
10.55.4	Continue to implement the technology control regulations and establish a database for tracking and evaluating compliance data.	Program coordination to occur on a yearly basis.	Yes	The Illinois EPA completed the entry of data from the Well Site Survey Reports into the CDBS durring 1996-97. Approximately 8,500 sites are associated with community wells. Many of the sites in CDBS are not regulated, but because of their proximity to community wells many sites have been recorded. Those sites that may have one or more regulated units are being prioritized for compliance determinations. A summary of this effort can be found in Chapter 5, Section 4 (page 46) of the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1996-1997/groundwater-protection-1996-1997.pdf
10.55.5	Prioritize the evaluation of activities located proximate to community water supplies where local groundwater protection management efforts are completed or in progress.	Program coordination to occur on a yearly basis.	Yes	As of 2001 a total of 273 CWS wells , representing 89 community water systems that have adopted maximum setback zones, have been given priority for review to find sites that may be subject to the technology control regulations (35 IAC 615/616). The sites selected for this round of assessment were only the ones that store fertilizer, pesticides, deicing agents or road oil. These types of sites were selected because the materials stored make them subject to regulation. A summary of this effort can be found in Chapter 5, Section 7 (page 39) of the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/2000-2001/groundwater-protection-2000-2001.pdf
10.55.6	Prioritize evaluation and compliance determinations for activities referred by permit programs.	Program coordination to occur on a yearly basis.	Yes	Within the Illinois EPA BOW, the Groundwater Section, Permit Sections and Compliance Section have developed standard operating procedures applicable to permitted facilities. The goal is to develop procedures that will provide prompt review of monitoring results and assure continued compliance with groundwater standards. These procedures should reduce the number of facilities that are out of compliance upon permit review and therefore in need of corrective actions.
10.55.7	Integrate the WHPP with vulnerability waiver assessments under the SDWA.	Program coordination to occur on a yearly basis.	Yes	The intent of this program is to accelerate the adoption of local recharge area protection programs and to assure compliance with the SDWA Phase II, IIb and V monitoring requirements. Monitoring waivers are being used as an incentive mechanism for encouraging the establishment of local source water protection and prevention programs. The progress and participation on this groundwater protection goal has been highly effective to date. A summary of this effort can be found on pages 60-61 of the IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1996-1997/groundwater-protection-1996-1997.pdf
10.56	Continue to implement and improve overall groundwater quality indicators.	Program coordination to occur on a yearly basis.	Yes	Illinois EPA worked with the USGS to conduct field observations of samplers and a quality-assurance review of our sampling program, including calibration of water quality meters, as part of the USGS National Field Quality-Assurance (blindsample) program. In 2005, field personnel and their equipment were tested with ninety percent of the results satisfactory. Unsatisfactory results were primarily due to older equipment, which has since been replaced. In addition, latex gloves have been incorporated into the sampling procedure based on recommendations from past quality-assurance reviews. As resources allow, it is anticipated that this quality-assurance review will continue.
10.6	The Illinois Groundwater Protection Act establishes a community water supply well site survey program to be conducted by the Illinois EPA, which will provide an inventory of potential sources, routes of contamination, and activities within established setback zones.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA completed the wells site survey program durring 1994-95. Approximately 8,500 potential contamination sites are associated with community wells. Many of the sites in our database (CDBS) are not regulated, but because of their proximity to community wells many sites have been recorded, see, http://www.epa.state.il.us/water/groundwater/surveys-assessments.html
10.61	Inventory all community groundwater supplies in the State for potential sources and routes of contamination.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA completed the wells site survey program durring 1994-95. Approximately 8,500 potential contamination sites are associated with community wells. Many of the sites in our database (CDBS) are not regulated, but because of their proximity to community wells many sites have been recorded, see: http://www.epa.state.il.us/water/groundwater/surveys-assessments.html

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
10.7	The Illinois Groundwater Protection Act authorizes counties and municipalities, if they so desire, to conduct more comprehensive evaluations regarding the need for groundwater protection. In addition, an equivalent program is available to communities of less than 5,000 people or counties of less than 25,000 people, to conduct a hazard review to evaluate the level of groundwater protection needed. These actions help establish coordinated programs between water supply protection and community development.	Assistance is an ongoing initiative and will be evaluated yearly.	Yes	The Illinois EPA completed a pilot Groundwater Protection Needs Assessment for the City of Pekin, IL. In 1992. In addition, three other pilot Groundwater Protection Needs Assessments were completed for Pleasant Valley PWD, the Village of Cary, and the City of Woodstock. Based on these pilot efforts, a Guidance document for conducting Needs Assessments was published to assist other CWS in these efforts, see: http://www.epa.state.il.us/water/groundwater/publications/needs-assessment.pdf An equivant program for smaller CWS are known as Hazard Reviews and are completed by the Illinois EPA upon request. A total of 7 Hazard Reviews were completed by the 1994 reporting period, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1992-1993/groundwaterprotection1993v2.pdf also see, http://www.epa.state.il.us/water/groundwater/surveys-assessments.html
10.71	Provide technical assistance to counties or municipalities that desire to create a groundwater protection needs assessment.	Assistance is an ongoing initiative and will be evaluated yearly.	Yes	The Illinois EPA completed a pilot Groundwater Protection Needs Assessment for the City of Pekin, IL. In 1992. In addition, three other pilot Groundwater Protection Needs Assessments were completed for Pleasant Valley PWD, the Village of Cary, and the City of Woodstock. Based on these pilot efforts, a Guidance document for conducting Needs Assessments was published in 1995 to assist other CWS in these efforts, see: http://www.epa.state.il.us/water/groundwater/publications/needs-assessment.pdf
10.72	Sponsor groundwater protection needs assessment workshops.	Assistance is an ongoing initiative and will be evaluated yearly.	Yes	The Groundwater Advisory Council sponsored a Policy Forum on Regional Groundwater Protection Programs in April 1994. Illinois EPA also participated in a total of three IRWA training workshops. A summary of the four pilot Groundwater Protection Needs Assessments were presented at these events.
10.73	Use education/awareness programs, such as Illinois Farmasyst, in areas where SWCD/NRCS programs can enhance pollution prevention and BMP application through funding, such as CRP and CPP.	Assistance is an ongoing initiative and will be evaluated yearly.	Yes	Within the 1996-97 reporting year, a total of seven groundwater protection field days, six Farm-A-Syst pilot demonstrations and two pollution prevention workshops were held in cooporation with the Groundwater Protection planning committees, Several of the these Farm-A-Syst events were held at participating farmsteads where demonstrations on proper well maintenance, chemical storage, and livestock waste management procedures were highlighted. For more see: http ://www.epa.state.il.us/water/groundwater/groundwater-protection/1996-1997/groundwater-protection-1996-1997.pdf
10.8	The Illinois EPA established a statewide groundwater monitoring network pursuant to P.A. 83-1268. The network is composed of community water supply wells. The sampling and analysis program was initiated in 1985 and includes the first comprehensive analysis for volatile organic chemicals (i.e., solvents), inorganic compounds (i.e., heavy metals), and pesticide compounds.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA initiated an Ambient Groundwater Monitoring Network in 1992 and includes 353 CWS wells that are sampled for IOC, VOC and SOC. The wells were randomly selected with assisstance of the USGS. The design of this network is described in detail in the 1996 IGPA Biennial Report, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1994-1995/groundwater-protection-1996.pdf also see, http://www.epa.state.il.us/water/groundwater/ambient-monitoring.html
10.81	Create projects and/or programs that demonstrate groundwater protection through management (including sealing) of abandoned wells and improvements to active wells.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	With assisstance from the regional groundwater protection planning commmitees, numerous field days and workshops have been held to promote groundwater protection and management programs. Many of these events included on-site well sealing demonsrtations. The Illinois Association of Groundwater Professionals published the Water Well Disinfection Procedures Manual in 1997, documenting a number of possible methods of disinfecting wells and advocates utilizing the services of a licensed water well professional in inspecting and correcting problem water wells. For more on these efforts, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/2000-2001/groundwater-protection-2000-2001.pdf
10.82	Create projects and/or programs that help local governments to locate and treat abandoned and contaminated wells and to protect present and future water supplies.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Regional Groundwater Committee field day and workshops generally focus on projects and/or programs that help local governments to locate and treat abandoned and contaminated wells and to protect present and future water supplies. Several committees offer well-sealing assistance programs to provide low-cost well bentonite to private well owners. In addition, IDNR and Illinois EPA published "Groundwater Protection by Local Government document", see: http://www.epa.state.il.us/water/groundwater/publications/local-government.html also see, http://www.epa.state.il.us/water/groundwater/publications/needs-assessment.pdf

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
10.A	For groundwater used by community water supply wells withdrawing water from unconfined aquifers, a declining trend or no increases in groundwater exceedences will occur through the year 2005.	Year 2005	Partial	While overall groundwater quality protection indicators show that the implementation of the IGPA continues to be adequate, several recommendations for improvement exist. In particular, develop a strategy to address the increasing trend of VOC contamination in CWS wells. Analyses of groundwater data collected from 1990 to the present shows a statistically significant increasing trend of community water supply wells with volatile organic compound detections per year. More importantly, this data show an increasing trend of groundwater degradation. An analysis of these data show total xylenes and 1,1,1-trichloroethane as the most common VOCs detected.
10.B	The percentage of groundwater recharge areas (acres) with protection programs established or under development will increase 15 percent between 1995 and the year 2000.	From 1995 until 2000	Yes	The Illinois EPA has established a goal of increasing the percentage of groundwater recharge areas (acres) with protection programs established or under development to a level of 45% by the year 2005. Illinois EPA has made considerable progress in meeting these groundwater protection goals through such initiatives as the groundwater standards, Regional Groundwater Protection Planning Programs, and the SDWA Monitoring Waiver Program, see: http://www.epa.state.il.us/water/groundwater/groundwater-protection/1998-1999/groundwater-protection-1998-1999.pdf
10.C	More sites monitoring shallow groundwater units will show improvement than will show degradation by 2005.	Year 2005	Partial	Analyses of groundwater data collected from 1990 to the present shows a statistically significant increasing trend of community water supply wells with volatile organic compound detections per year. More importantly, this data show an increasing trend of groundwater degradation.
10.D	Decreasing trend in significant releases to shallow groundwater at regulated non-LUST facilities over the next five years.	Year 2006	Partial	Coordination between Illinois EPA's Bureau of Water and Bureau of Land remediation programs continue through the establishment of the Groundwater Contamination Response Strategy and Right To Know Law. Illinois EPA's Bureau of Land Site Remediation Referral Group has been doing additional field work to determine sources of contamination.
10.E	Sign-up of lands in set aside programs will increase with efforts from SWCDs utilizing county maps of vulnerable areas created by the Illinois EPA.	Ongoing	Yes	Significant coordination between the Illinois EPA and USDA/NRCS have occurred since the 12th CRP signup period (June 15-26, 1992) had 22 CRP bids for wellhead protection accepted. With assistance of the IRWA Source Water Technician staff, Illinois EPA has provided GIS coverages of CWS delineated wellhead protection areas to USDA/NRCS to further promote this effort. However, due to confidentiality restrictions we are unable to document the realtive success of this program.
11.0 Wetlands				
11.1	Wetlands are a valuable resource in Illinois. The benefits that they can provide include: flood storage and conveyance, sediment control, wildlife habitat, recreation, and water quality improvement.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	This is a goal statement. The value of wetlands is reiterated in the updated NPS Program. Funding for wetland restoration projects has been made available under Section 319 and IGIG. To further address this goal, the following milestone is included in the updated NPS Program, "Wetland protection will be incorporated into watershed-based plans. The NPS components of Illinois EPA-approved watershed-based plans will be incorporated by reference into the NPS Program and implementation of watershed-based plans will be tracked through RMMS." (E2)
11.11	Develop projects and/or programs that promote better private and public wetland stewardship through progressive educational programs, wetland standards and specification guidelines, and financial incentives to owners to continue the protection and creation of wetland acres in Illinois.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	The Illinois EPA has provided resources to Section 319 NPS projects to inform and educate the public about the importance of wetlands as it relates to reducing NPS and improve water quality. Such programs include, Bringing Wetlands to Life (2005), Low Impact Development Techniques in Madison County, Illinois (2007), Roosevelt Park Stormwater BMPs and Education (2009), American Bottom Wetland Interpretive Site & Educational Campaign (2010)

Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
11.12	Develop voluntary programs that encourage public and private sectors to work together on wetlands to meet local community goals through outreach education, monitoring, information, demonstration, technical assistance, and positive incentives.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Partial	The Illinois EPA provides Section 319 resources to assist in the administration of the USDA/FSA Conservation Resource Enhancement Program (CREP) (1997, 1999, 2002, 2010) in which one of element is Wetland Reserve Program (WRP). The objective of the WRP is to protect, restore, and enhance wetlands and their functions on private property through conservation easements and agreements. The Illinois EPA partnered with other state agencies to develop a comprehensive wetland monitoring and assessment program in 2005 (Wetland Monitoring and Assessment Program for the State of Illinois - 2007). Funding for wetland restoration projects has been made available under Section 319 and IGIG. To further address this need, the following milestone is included in the updated NPS Program, "Wetland protection will be incorporated into watershed-based plans. The NPS components of Illinois EPA-approved watershed-based plans will be incorporated by reference into the NPS Program and implementation of watershed-based plans will be tracked through RMMS." (E2)
11.13	Develop and implement appropriate programs and/or policies that meet the needs of both the public and private sectors regarding wetland creation and protection to improve water quality in Illinois.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Partial	Illinois EPA is one of the state agencies who participates in the Agency Action Plan for the Interagency Wetland Policy Act of 1989 which was enacted to ensure that there is no overall net loss in Illinois existing wetland areas. Funding for wetland restoration projects has been made available under Section 319 and IGIG. To further address this need, the following milestone is included in the updated NPS Program, "Wetland protection will be incorporated into watershed-based plans. The NPS components of Illinois EPA-approved watershed-based plans will be incorporated by reference into the NPS Program and implementation of watershed-based plans will be tracked through RMMS." (E2)
11.14	Develop, gather, and distribute wetland related technical resource information and procedures on the protection, management, enhancement, and creation of wetlands in Illinois.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Partial	Illinois EPA provided Section 319 funding resources to Illinois State Geological Survey (ISGS) for the development of an Initial Site Evaluation (ISE) procedure (2003) used to rapidly evaluate likely success of wetland restoration or creation at proposed wetland compensation sites.
11.15	Promote voluntary projects and/or programs to increase public awareness of wetlands and their benefits through education, demonstrations, and wetland monitoring. Planning, design, and implementation of BMPs for wetland NPS control projects should be evaluated and compared across a large cross section of restoration sites. This will allow identification of common characteristics, which contribute to project success, regardless of its geographic location or type.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Partial	The Illinois EPA has provided resources to Section 319 projects that have developed educational outreaches to the public to inform and educate the public about the importance of wetlands as it relates to reduce NPS and improve water quality. Such programs would include, Bringing Wetlands to Life (2005), Low Impact Development Techniques in Madison County, Illinois (2007), Roosevelt Park Stormwater BMPs and Education (2009), American Bottom Wetland Interpretive Site & Educational Campaign (2010) . To further address this need, the following milestone is included in the updated NPS Program, "Wetland protection will be incorporated into watershed-based plans. The NPS components of Illinois EPA-approved watershed-based plans will be incorporated by reference into the NPS Program and implementation of watershed-based plans will be tracked through RMMS." (E2)
11.16	Develop projects and/or programs to increase the use of restored and created wetlands as BMPs to protect public water supplies through the removal of contaminants (such as heavy metals, nitrates, and phosphates), and to assist in the control of shoreline stabilization and erosion control.	These efforts are addressed on an ongoing basis and will be reviewed and evaluated yearly.	Yes	Illinois has provided Section 319 resources to the Governor Bond Lake TMDL Implementation Plan Execution -Phase 1 (2001) and Governor Bond Lake TMDL Implementation Plan Execution -Phase 2 (2003) that constructed stormwater wetlands to absorb and remove contaminants to protect water supplies customers for the City of Greenville residents.
11.2	State and Federal law require that Illinois EPA actions (i.e., permit and/or loan issuance) be consistent with the WQMP. The WQMP addresses point and NPS pollution sources, maintenance of stream uses and water quality standards, protection of groundwater resources, and control of hydrologic modifications. Applications to amend the WQMP are required to address both direct and indirect environmental impacts of the proposed revision.	Evaluate and establish program directives yearly to remain consistent with the WQMP.	Yes	This Goal is met through application to the Agency for a Permit (new or renewal), Loan or other actions that must be consistent with the WQMP and the Agency's actions with the application. The Agency will use the Anti-degratdation process, the alternatives analysis and plan reviews to determine constitancy. Once the action is approved it becomes part of the WQMP through the Annual Bureau of Water Hearing.
11.21	When appropriate, provide conditional approval of WQMP amendment requests upon documentation that the applicant has taken all reasonable measures to avoid or mitigate negative environmental impacts associated with urban runoff, which may result from the proposed amendment.	Evaluate and establish program directives yearly to remain consistent with the WQMP.	Yes	Although rare this if an applicant has met the reasonable measures conditional approval will be made. The Agency would prefer to not allow conditional approval and grant the Permit or Loan once all conditions are met.

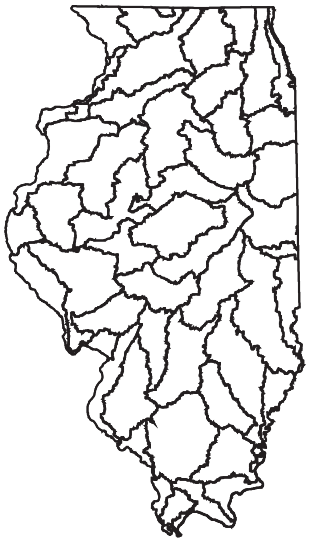
Sections	Goals\Objectives\Outcomes	Timetable	Met?	How Met
11.A	There will be no overall net loss of wetlands or their functional value from 1997 levels.	Ongoing	Partial	The State of Illinois does not currently track wetland acreage loss . The lead state agency (Illinois DNR) does not track the loss of wetlands in Illinois. The Illinois EPA is a participating state agency in the Agency Action Plan for the Interagency Wetland Policy Act of 1989 in which the intent of this act is to ensure that there is no overall net loss in Illinois existing wetland acres or their functional values resulting for State-supporting activities. To further address this need, the updated NPS Program includes the following milestone, "Investigate the possibility of incorporating a statewide wetlands net gain/loss as a data layer to RMMS by 2016." (E1)
11.B	A database will be developed to track present and historical BMP implementation (date, type, location, effectiveness, etc.) by state and federal agencies in priority areas by the year 2005 and statewide by the year 2010.	From 2005 until 2010	Yes	BMPs implemented through the NPS Pollution Control Financial Assistance Program (319), Illinois Clean Lakes Program (ICLP), Priority Lake and Watershed Implementation Program (PLWIP), and Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG) are tracked through the Resource Management Mapping Service. BMPs implemented through 319 are also tracked through the Grants Reporting and Tracking System (GRTS).
11.C	The creation of wetlands, utilizing Section 319 funds, for purposes of pollution control, will increase by 10% in urban areas.	Ongoing	Yes	Prior to July 2001, a total of 109.53 acres of wetlands were restored and 4 urban stormwater wetlands constructed with funding under the NPS Pollution Control Financial Assistance Program (319). Since July 2001, 319 funding has been approved for 625.1 acres of wetland restoration and construction of 32 urban stormwater wetlands. This represents a 570% increase in wetland restoration and a 800% increase in urban stormwater wetland construction with Section 319 funding

Appendix 1 – Priority Watershed Rotation – 2014 - 2018

Nonpoint Source Pollution Control Priority Watersheds

March 21, 2013

The draft 2011 Illinois' Nonpoint Source Management Program (Program) outlines a systematic approach to work with federal, state, and local partners to implement nonpoint source (NPS) pollution control programs and projects in Illinois. This includes the Section 319 Nonpoint Source Pollution Control Financial Assistance Program.



The Program follows the monitoring schedule outlined in the Illinois EPA Surface Water Monitoring Strategy (Strategy). The Strategy divides Illinois into 51 basins; a subset (8 – 11) of these basins are monitored each year; with all 51 basins monitored by the end of the five-year schedule.

Approximately two years after a basin is monitored, it will be a priority for planning (development or update of a watershed-based plan (WBP), Total Maximum Daily Load (TMDL), or Load Reduction Strategy (LRS)). Approximately two years later, the watershed will be a priority for plan implementation. This schedule allows the use of the most up-to-date water quality monitoring results to guide the planning efforts to best address NPS pollution control issues.

Waterbody segments, with the exception of mainstem waters, that are not attaining their designated water quality uses due to NPS pollution impairments are the priority waterbodies within the priority basins. The mainstem waterbodies will be upgraded in priority once NPS components of a WBP, TMDL, or LRS implementation plan for their headwater areas have been developed and implemented.

The 10 to 12 digit HUCs that contain these impaired waterbody segments are the priority watersheds. A higher priority for assistance will be given to those watersheds that have multiple NPS impaired waterbody segments.

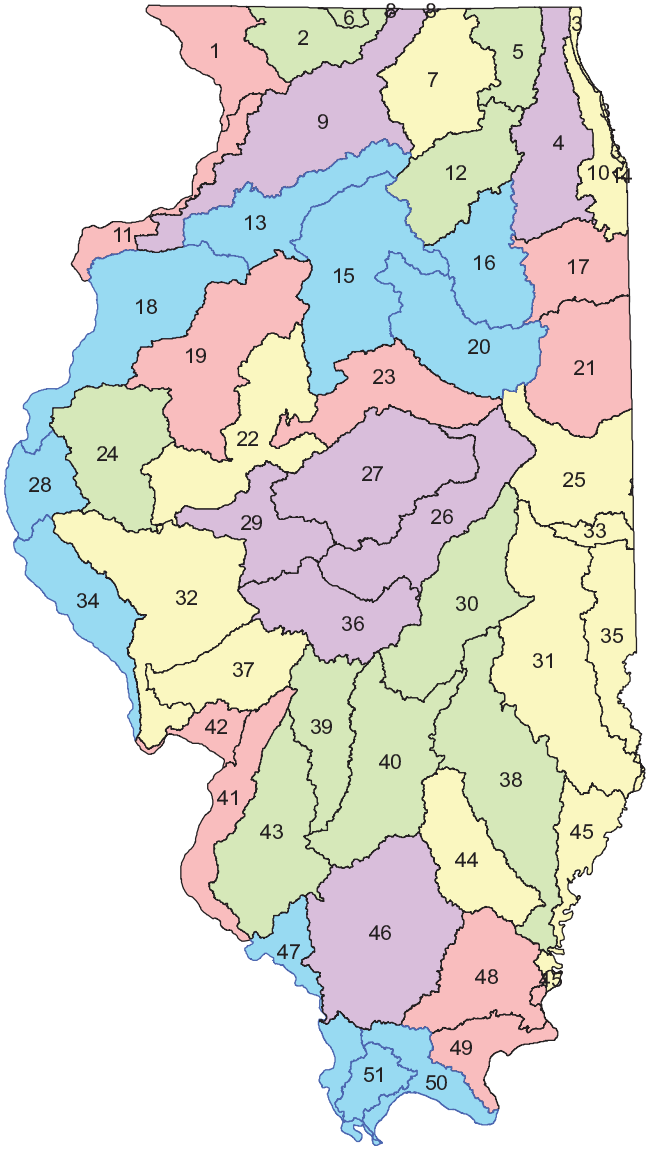
Illinois EPA has also recognized Nutrient Priority Watersheds as a priority for planning and plan implementation every year. The criteria used to identify these watersheds included: guidance from US EPA, existing public water supply impairments, Total Phosphorus and/or Nitrate listed as a cause of impairment, and an approved Total Maximum Daily Load study.

Attached are a set of maps that depict the 5-year priority watershed rotation and the priority watersheds for nutrients.

- The first map summarizes the rotation for planning and plan implementation,
- the next five maps show the priority watersheds for planning and plan implementation for a specific fiscal year, and
- the final map shows the priority watershed for nutrients.

NPS Activities and Section 319 Funding Priorities - 5 Year Rotation

Planning



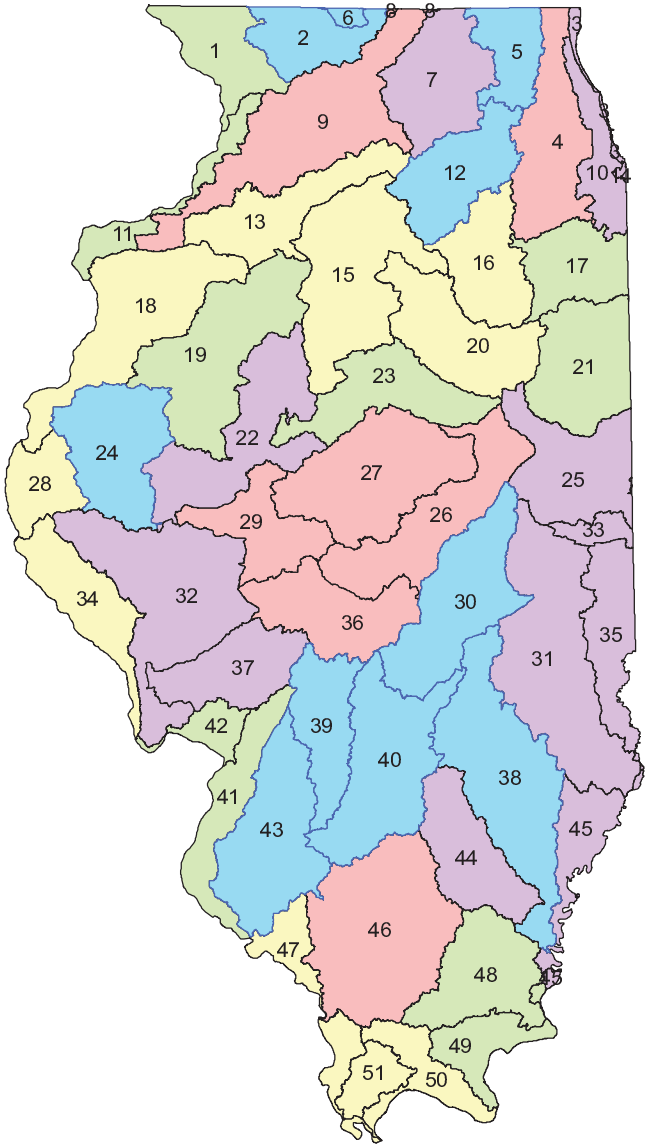
WID	Watershed	HUC_8	FFY Priority Plan	Impleme
1	Apple River/Plum River	07060005	2017	2014
2	Pecatonica River	07090003	2014	2016
3	Lake Michigan Tributaries	04040002	2018	2015
4	Des Plaines River	07120004	2015	2017
5	Upper Fox River	07120006	2014	2016
6	Sugar River	07090004	2014	2016
7	Kishwaukee River	07090006	2018	2015
8	Upper Rock River	07090002	2015	2017
9	Lower Rock River	07090005	2015	2017
10	Chicago/Little Calumet	07120003	2018	2015
11	Mississippi North	07080101	2017	2014
12	Lower Fox River	07120007	2014	2016
13	Green River	07090007	2016	2018
14	Calumet River	04040001	2018	2015
15	Upper Illinois River (DS of Fox R.)	07130001	2016	2018
16	Upper Illinois R. (US of Fox R.)	07120005	2016	2018
17	Kankakee River	07120001	2017	2014
18	Mississippi North Central	07080104	2016	2018
19	Spoon River	07130005	2017	2014
20	Vermilion (Illinois River)	07130002	2016	2018
21	Iroquois River	07120002	2017	2014
22	Middle Illinois River	07130003	2018	2015
23	Mackinaw River	07130004	2017	2014
24	La Moine River	07130010	2014	2016
25	Vermilion (Wabash)	05120109	2018	2015
26	Upper Sangamon River	07130006	2015	2017
27	Salt Creek	07130009	2015	2017
28	Bear Creek	07110001	2016	2018
29	Lower Sangamon River	07130008	2015	2017
30	Upper Kaskaskia River	07140201	2014	2016
31	Embarras River	05120112	2018	2015
32	Lower Illinois River	07130011	2018	2015
33	Little Vermilion (Wabash)	05120108	2018	2015
34	Mississippi Central	07110004	2016	2018
35	Middle Wabash Tributaries	05120111	2018	2015
36	South Fork Sangamon R.	07130007	2015	2017
37	Macoupin Creek	07130012	2018	2015
38	Little Wabash	05120114	2014	2016
39	Shoal Creek	07140203	2014	2016
40	Middle Kaskaskia River	07140202	2014	2016
41	Mississippi South Central	07140101	2017	2014
42	Wood River/Piasa Creek	07110009	2017	2014
43	Lower Kaskaskia River	07140204	2014	2016
44	Skillet Fork	05120115	2018	2015
45	Lower Wabash	05120113	2018	2015
45	Lower Wabash	05140202	2018	2015
46	Big Muddy River	07140106	2015	2017
47	Mississippi South	07140105	2016	2018
48	Saline River	05140204	2017	2014
49	Ohio River Tributaries	05140203	2017	2014
50	Cache River - Ohio Drainage	05140206	2016	2018
51	Cache River - Miss. Drainage	07140108	2016	2018

Legend

FFY - Application Deadline

- FFY 2014 - 8/1/2013
- FFY 2015 - 8/1/2014
- FFY 2016 - 8/1/2015
- FFY 2017 - 8/1/2016
- FFY 2018 - 8/1/2017

Plan Implementation



Illinois EPA
Bureau of Water
Watershed Management Section
Nonpoint Source Unit
Davis - April 2, 2013

NPS Activities and Section 319 Funding Priorities - FFY 2014
Application Deadline - August 1, 2013

FFY 2014 Priority Watersheds

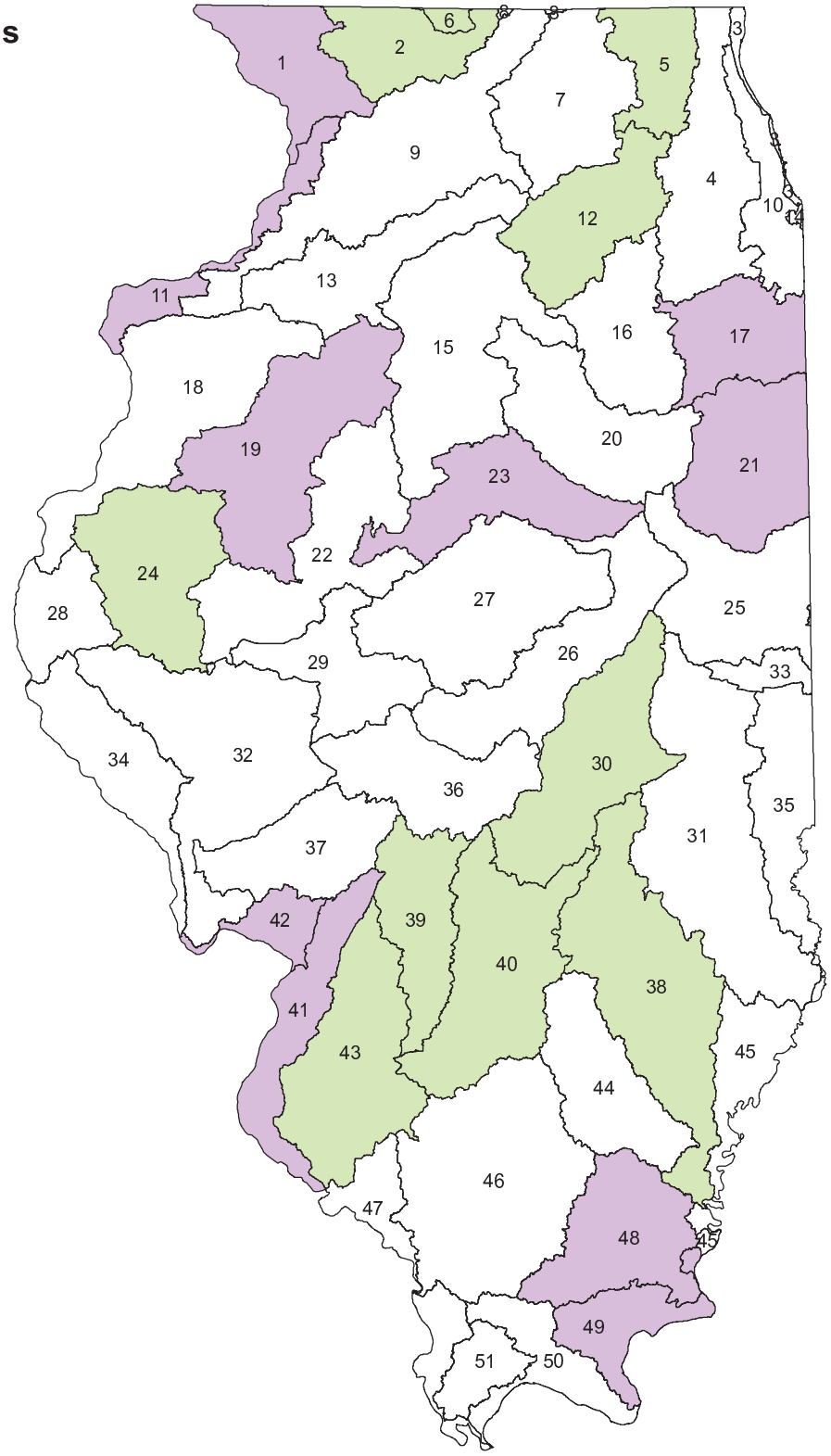
Planning

Implementation

Watershed Boundaries

Illinois EPA
Bureau of Water
Watershed Management Section
Nonpoint Source Unit
Davis - February 2013

WID	Watershed Name	HUC_8
1	Apple River/Plum River	07060005
2	Pecatonica River	07090003
3	Lake Michigan Tributaries	04040002
4	Des Plaines River	07120004
5	Upper Fox River	07120006
6	Sugar River	07090004
7	Kishwaukee River	07090006
8	Upper Rock River	07090002
9	Lower Rock River	07090005
10	Chicago/Little Calumet	07120003
11	Mississippi North	07080101
12	Lower Fox River	07120007
13	Green River	07090007
14	Calumet River	04040001
15	Upper Illinois River (DS of Fox R.)	07130001
16	Upper Illinois R. (US of Fox R.)	07120005
17	Kankakee River	07120001
18	Mississippi North Central	07080104
19	Spoon River	07130005
20	Vermilion (Illinois River)	07130002
21	Iroquois River	07120002
22	Middle Illinois River	07130003
23	Mackinaw River	07130004
24	La Moine River	07130010
25	Vermilion (Wabash)	05120109
26	Upper Sangamon River	07130006
27	Salt Creek	07130009
28	Bear Creek	07110001
29	Lower Sangamon River	07130008
30	Upper Kaskaskia River	07140201
31	Embarras River	05120112
32	Lower Illinois River	07130011
33	Little Vermilion (Wabash)	05120108
34	Mississippi Central	07110004
35	Middle Wabash Tributaries	05120111
36	South Fork Sangamon R.	07130007
37	Macoupin Creek	07130012
38	Little Wabash	05120114
39	Shoal Creek	07140203
40	Middle Kaskaskia River	07140202
41	Mississippi South Central	07140101
42	Wood River/Piasa Creek	07110009
43	Lower Kaskaskia River	07140204
44	Skillet Fork	05120115
45	Lower Wabash	05120113
45	Lower Wabash	05140202
46	Big Muddy River	07140106
47	Mississippi South	07140105
48	Saline River	05140204
49	Ohio River Tributaries	05140203
50	Cache River - Ohio Drainage	05140206
51	Cache River - Miss. Drainage	07140108



NPS Activities and Section 319 Funding Priorities - FFY 2015
Application Deadline - August 1, 2014

FFY 2015 Priority Watersheds

Planning

Implementation

Watershed Boundaries

Illinois EPA
Bureau of Water
Watershed Management Section
Nonpoint Source Unit
Davis - February 2013

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6	Sugar River	07090004
7	Kishwaukee River	07090006
8	Upper Rock River	07090002
9	Lower Rock River	07090005
10	Chicago/Little Calumet	07120003
11	Mississippi North	07080101
12	Lower Fox River	07120007
13	Green River	07090007
14	Calumet River	04040001
15	Upper Illinois River (DS of Fox R.)	07130001
16	Upper Illinois R. (US of Fox R.)	07120005
17	Kankakee River	07120001
18	Mississippi North Central	07080104
19	Spoon River	07130005
20	Vermilion (Illinois River)	07130002
21	Iroquois River	07120002
22	Middle Illinois River	07130003
23	Mackinaw River	07130004
24	La Moine River	07130010
25	Vermilion (Wabash)	05120109
26	Upper Sangamon River	07130006
27	Salt Creek	07130009
28	Bear Creek	07110001
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31	Embarras River	05120112
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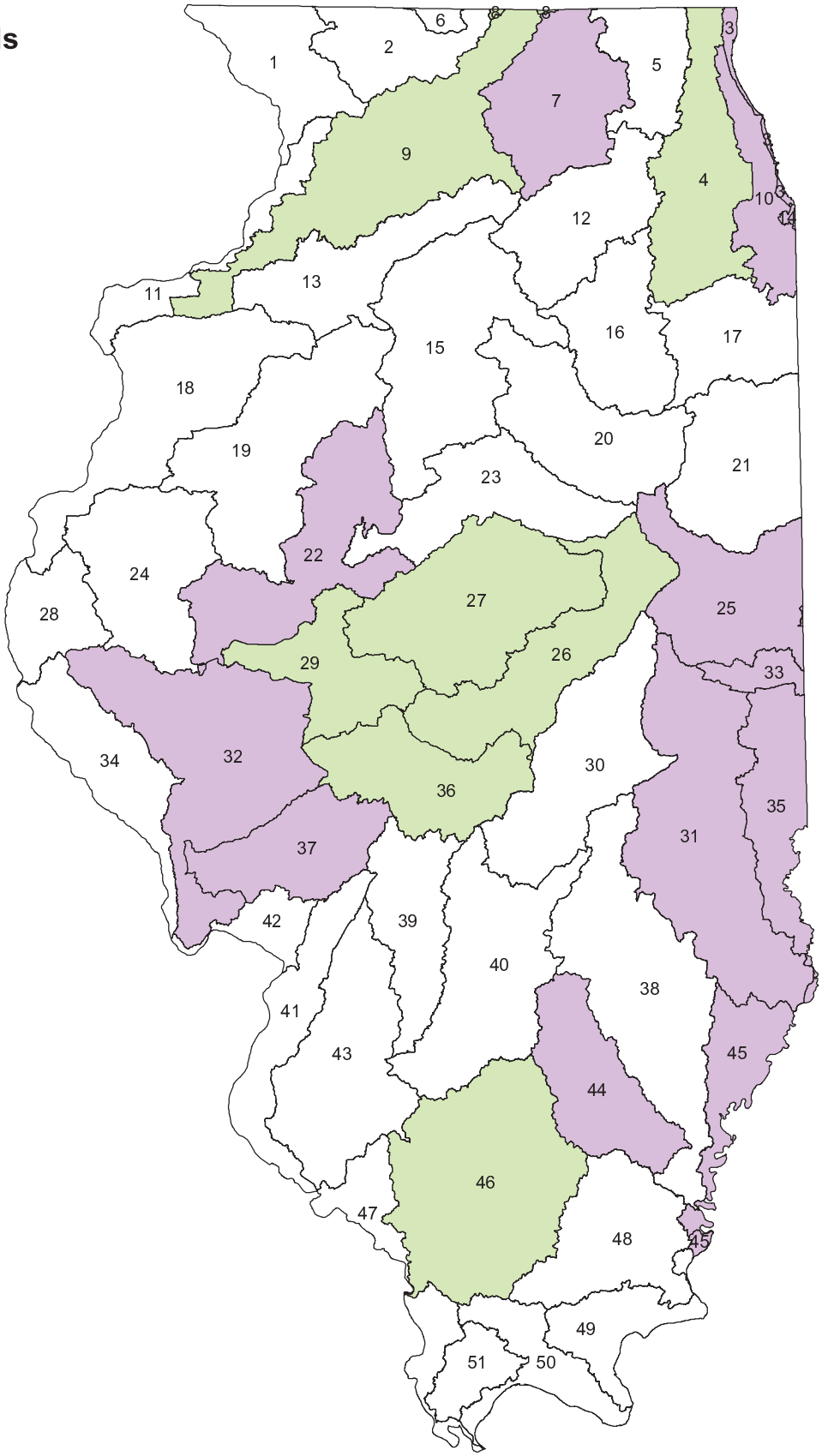
44	Skillet Fork	05120115
45	Lower Wabash	05120113
45	Lower Wabash	05140202
46	Big Muddy River	07140106
47	Mississippi South	07140105
48	Saline River	05140204
49	Ohio River Tributaries	05140203
50	Cache River - Ohio Drainage	05140206
51	Cache River - Miss. Drainage	07140108



NPS Activites and Section 319 Funding Priorities - FFY 2016
Application Deadline - August 1, 2015

FFY 2016 Priority Watersheds

Planning

Implementation

Watershed Boundaries

Illinois EPA
Bureau of Water
Watershed Management Section
Nonpoint Source Unit
Davis - February 2013

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16	Upper Illinois R. (US of Fox R.)	07120005
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18	Mississippi North Central	07080104
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45	Lower Wabash	05140202
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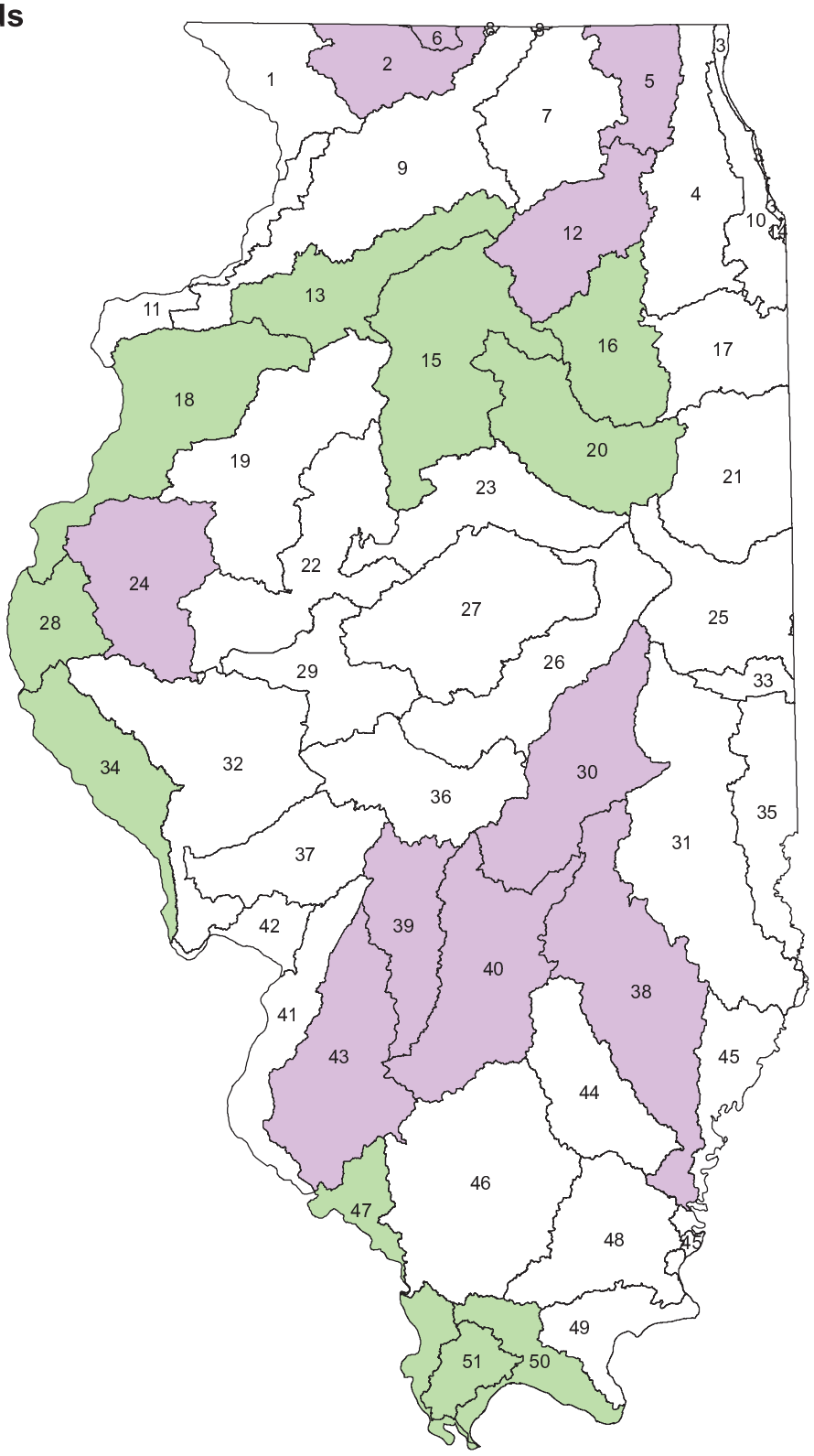
47	Mississippi South	07140105
48	Saline River	05140204
49	Ohio River Tributaries	05140203
50	Cache River - Ohio Drainage	05140206
51	Cache River - Miss. Drainage	07140108



NPS Activities and Section 319 Funding Priorities - FFY 2017
Application Deadline - August 1, 2016

FFY 2017 Priority Watersheds

Planning

Implementation

Watershed Boundaries

Illinois EPA
Bureau of Water
Watershed Management Section
Nonpoint Source Unit
Davis - February 2013

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47	Mississippi South	07140105
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49	Ohio River Tributaries	05140203
50	Cache River - Ohio Drainage	05140206
51	Cache River - Miss. Drainage	07140108

NPS Activities and Section 319 Funding Priorities - FFY 2018
Application Deadline - August 1, 2017

FFY 2018 Priority Watersheds

Planning

Implementation

Watershed Boundaries

Illinois EPA
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Nonpoint Source Unit
Davis - February 2013

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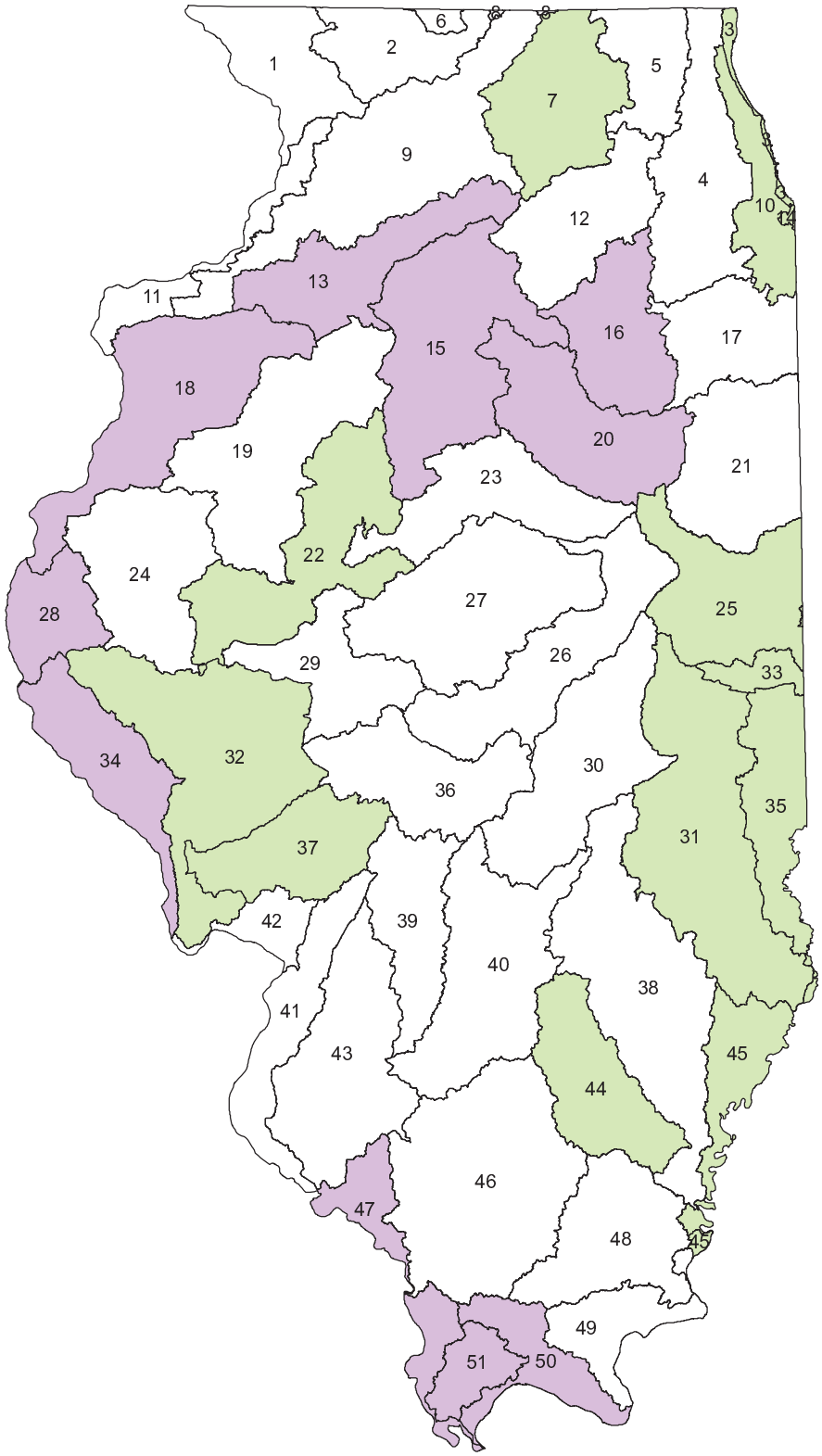

Priority Watersheds for Nutrient Reduction

Priority Nutrient Watersheds

- Lake Bloomington
- Lake Vermilion
- Mauvaise Terre
- Salt Fork Vermilion
- Sangamon R. / Lake Decatur
- Vermilion River

Illinois EPA
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