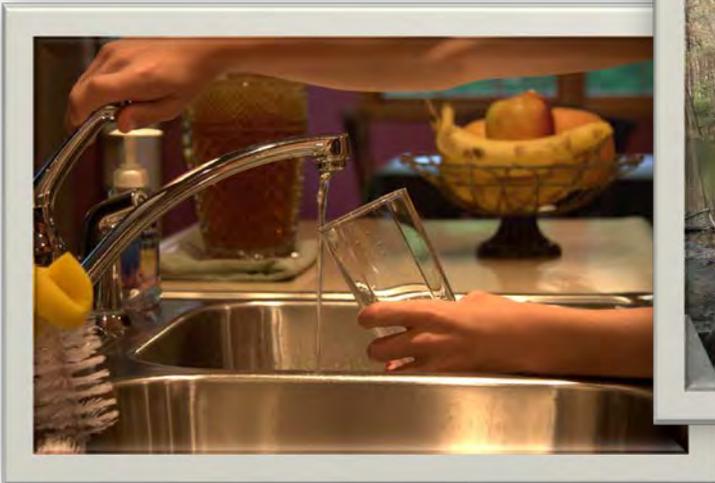




# INDIANA NONPOINT SOURCE PROGRAM



## FFY 2014 Annual Report

*Indiana Department of Environmental Management  
Office of Water Quality  
September 15, 2014*

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# Introduction to the NPS Management Program

Nonpoint source (NPS) water pollution is so named because the pollutants do not originate at single point sources, such as industrial or municipal wastewater discharge pipes, but come from many diverse sources in the environment. When it rains or snow melts, water runs off streets, parking lots, lawns, and agricultural fields and carries with it pollutants such as motor oil, sediment, fertilizer, bacteria and pesticides. These pollutants are then carried, untreated, to the nearest stream or lake through surface water runoff or storm sewers; or they infiltrate into groundwater. Bacteria, nutrients, and sediment are the leading pollutants of concern. Nonpoint source pollution remains the largest source of water quality problems in Indiana. Information from the [2014 Indiana Integrated Water Monitoring and Assessment Report](#) shows that NPS pollution is a significant source of impairment in Indiana waterbodies. While some NPS pollution is naturally occurring, most of it is a result of human activities.

The federal Clean Water Act (CWA) was amended in 1987 to establish the Section 319 NPS Management Program to control nonpoint sources of water pollution. Section 319(h) provides U.S. EPA (EPA) with the authority to grant federal dollars to states to mitigate and prevent NPS pollution in accordance with the state's approved NPS management program. In Indiana, the [Indiana State Nonpoint Source Management Plan](#) (State NPS Management Plan) guides the usage of CWA Section 319 funds, which are administered by the Indiana Department of Environmental Management (IDEM), Office of Water Quality (OWQ), Watershed Assessment and Planning Branch.

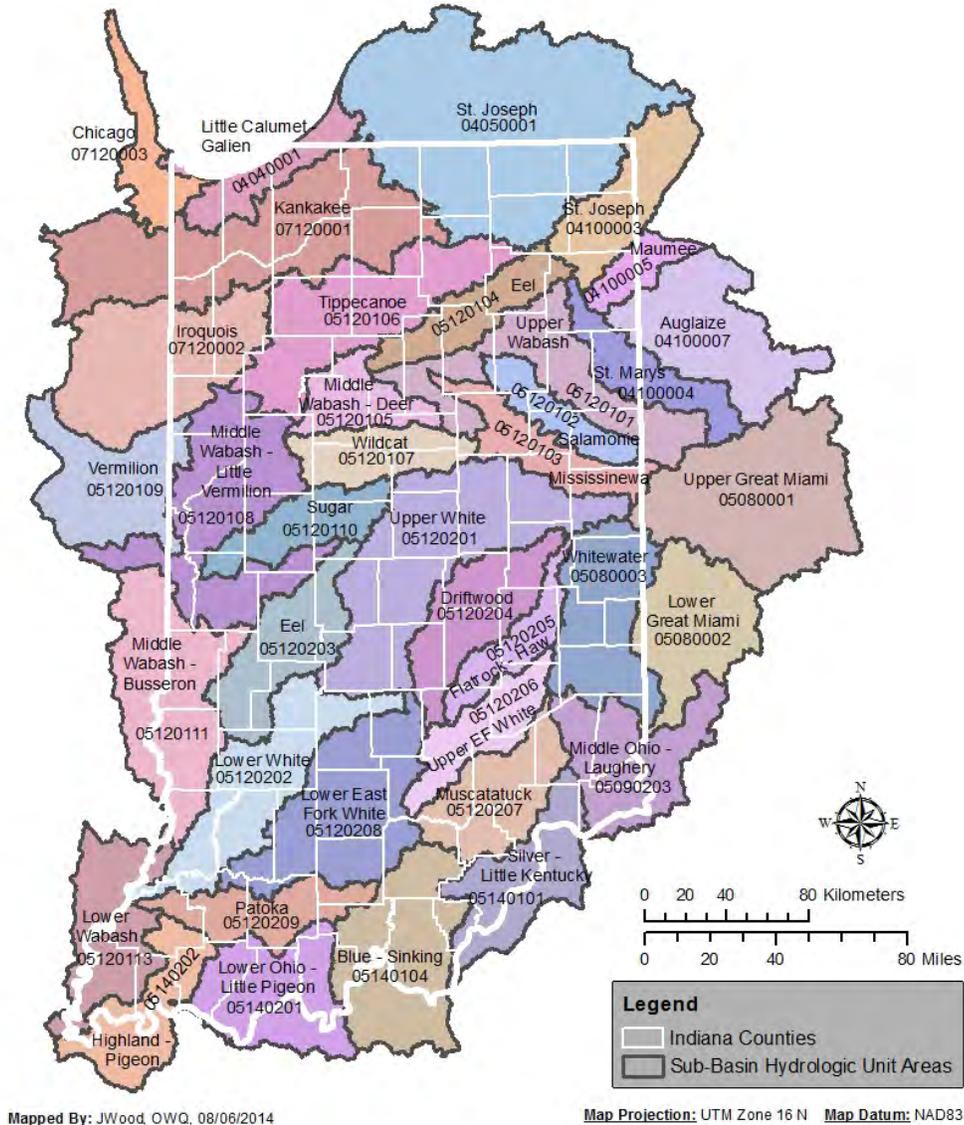
Environmental problems, such as NPS pollution, often cut across media and political jurisdictions. Consequently, environmental mitigation and protection require a comprehensive and collaborative approach that works with a multitude of programs, agencies, and concerned citizens. The watershed approach provides a framework for coordinating and integrating these programs and resources. This approach directs the focus on water quality in a geographic area delineated by a watershed. A watershed is an area of land that drains to a particular waterway, such as a stream, lake, river, or wetland. Watersheds are delineated by the U.S. Geological Survey (USGS) using a national standard hierarchical system based on surface hydrologic features, and are classified into hydrologic units identified by a unique Hydrologic Unit Code (HUC). The HUC consists of two to twelve digits based on the level of classification (the longer the HUC code the smaller the watershed level). Indiana has thirty-eight 8-digit HUC watersheds (Figure 1). By examining water quality issues on a watershed basis, problems can be observed in relationship to their sources so that the causes can be addressed in the most effective manner. The Watershed Approach is based on four basic principles:

1. Geographic focus based on hydrological rather than political boundaries
2. Water quality objectives based on scientific data
3. Coordinated priorities and integrated solutions
4. Diverse, well-integrated partnerships

IDEM's ongoing effort to implement the watershed approach includes:

- Ensuring that internal resources continue to be focused on addressing the most significant water quality issues facing Indiana by conducting a periodic review of OWQ activities and making any necessary adjustments;

- Improving internal coordination between water quality assessment and watershed planning and implementation programs to facilitate an integrated watershed management approach to restoring impaired waterways; and
- Improving coordination with local watershed groups, community groups, and other state and federal agencies to better leverage efforts in ways that will achieve greater improvements in water quality.



**Figure 1 Indiana 8-digit HUC Watersheds**

This 2014 Nonpoint Source Program Annual Report describes Indiana’s progress towards meeting the goals, objectives, and milestones of the updated State NPS Management Plan, as well as the efforts and achievements of the many agencies, groups and individuals working at the state and local level to address NPS pollution in Indiana.

# Indiana's Nonpoint Source Management Plan

Section 319(b) of the CWA requires states to develop a NPS Management Program to control NPS pollution and guide the usage of CWA Section 319 funds. The NPS Management Program must be approved by EPA (and updated every 5 years) before Section 319 funds may be granted. EPA reiterated in its revised [Nonpoint Source Program and Grants Guidelines for States and Territories](#), issued in 2013, that updating NPS Management Programs helps states to identify strategic priorities, develop goals and milestones, work more effectively to address water quality problems, and engage partners to address statewide NPS priorities.

IDEM began updating the 2008 Indiana NPS Management Plan in August 2012. NPS Program staff met with other state and federal agencies to discuss aspects of the plan that coincided with their programs, and gathered public input on strengths, weaknesses, opportunities and threats to the program. The updated [Indiana State Nonpoint Source Management Plan](#) (2014 update) has been approved by EPA and is a vision and mission-driven strategy to address NPS pollution in Indiana. All goals, objectives, milestones, and measures of success are based upon the following two statements:

**Program Vision:**

*The vision of Indiana's Nonpoint Source Program is to restore waters impaired by nonpoint source pollution and maintain water quality in healthy watersheds through locally led partnerships.*

**Mission:**

*To work with our partners to make measurable improvements in, and prevent degradation of, water quality by addressing nonpoint source pollution through education, planning, and implementation.*

The State NPS Management Plan describes Indiana's strategies for reducing and preventing NPS pollution through program implementation. The Plan's five goals are to: form and utilize partnerships to define and address NPS issues; monitor the status of those issues; provide outreach and education to citizens of the state to raise awareness of NPS issues; remediate the causes and sources of NPS; and protect areas already meeting water quality standards and those areas threatened by NPS pollution. The following sections of this document describe how Indiana is working to meet these goals.

# Nonpoint Source Management Goals and Progress

## **GOAL 1: Utilize Partnerships to Leverage Resources Available for Nonpoint Source Management**

Cooperation with state, federal, local, and private partners is critical to Indiana's NPS Program's success. Coordinating with these partners increases the funds, staff, physical resources, and political capital available to work on NPS issues. IDEM's NPS Program utilizes multiple partnerships to reach diverse stakeholder groups and further NPS management goals in Indiana. Some of these partners and their achievements this year are highlighted below. A full accounting of progress made this year toward the objectives of Goal 1 in the State NPS Management Plan can be found in Appendix A.

### **Indiana Conservation Partnership**

IDEM is one of eight agencies and organizations comprising the Indiana Conservation Partnership (ICP). Along with the Indiana State Department of Agriculture (ISDA), United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS), USDA-Farm Service Agency (FSA), Purdue University Extension, the Indiana Association of Soil and Water Conservation Districts (IASWCD), the State Soil Conservation Board, and the Indiana Department of Natural Resources (IDNR), IDEM works toward the conservation and/or protection of Indiana's soil and water resources. Several initiatives have a direct effect on NPS management in Indiana including the Conservation Cropping Systems Initiative (education on the use of a system of practices, including cover crops, nutrient and pest management, continuous no-till/strip-till, and precision farming, to promote soil health); the ICP Training and Certification Program, discussed under Goal 3; Indiana's Nutrient Reduction Strategy, discussed below; Indiana's Rapid Watershed Assessments; and a multitude of local watershed efforts. Many of these agencies also provide funding on a continuing or limited basis to address NPS pollution in Indiana, such as NRCS's Regional Conservation Partnership Program and ISDA's Clean Water Indiana (CWI) program.

The ICP is the entity preparing Indiana's State Nutrient Reduction Strategy (Strategy), with the ISDA taking the lead. This comprehensive state plan addresses point and nonpoint sources, including urban and rural sources. The Strategy includes components such as:

- Updated ICP workload map and description in the strategy detailing Farm Bill, CWI and 319 conservation in Indiana;
- Summary and rough outline for use of EPA's Region 5 Model to estimate reductions of ALL applicable Farm Bill conservation practices from NRCS data;
- State agency support and participation in proposals and projects for the NRCS Regional Conservation Partnership Program; and
- Exploration of a new initiative in the Kankakee River Basin based on cooperation of local, public, private, state/federal agencies and university partners to promote conservation cropping and wetland restoration in the KRB.

The Strategy was submitted to EPA in 2013. The ISDA, in cooperation with the ICP, is currently addressing EPA's comments on the document. The revised final Strategy is expected to be submitted by the end of 2014. Since the Strategy is a living document, annual updates will be submitted with any changes that occur as programs/initiatives/resources change over time. Once the Strategy has been approved by EPA, the NPS program will review the priorities of the Strategy and, when possible, import objectives of NPS-related importance into the State NPS Management Plan.

### **Natural Resources Conservation Service**

The NRCS mission statement is "Helping People Help the Land." Through financial and technical assistance, NRCS works with private landowners towards productive agriculture and a high-quality environment. The guiding principles of NRCS work are service, partnership, and technical excellence. NRCS' primary customers are people who make decisions about natural resource use and management on non-federal land. This includes governments with a responsibility for natural resource use and management.

NRCS assists landowners in Indiana to develop conservation plans and provides technical assistance for natural resource management, including helping to install conservation practices and systems that meet technical standards and specifications. NRCS also provides financial assistance through incentive programs, easement programs, grants, and stewardship payments. NRCS utilizes targeted initiatives to work with partners on protecting critical natural resources in areas of concern. NRCS' standards and specifications are utilized for many of the cost-share practices implemented through Section 319 grants, and NRCS Farm Bill conservation programs are utilized as one funding source for implementing local watershed management plans.

For Federal Fiscal Year 2013<sup>1</sup>, NRCS programs in Indiana that support NPS pollution reduction/amelioration efforts included:

#### **Conservation Stewardship Program**

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. Indiana received over \$7.6 million in CSP funding in FFY 2013. A total of 55 new contacts received funding to treat nearly 40,725 acres of cropland, pasture and forest.

#### **Emergency Watershed Protection**

The Emergency Watershed Protection Program (EWP) responds to emergencies created by natural disasters and is designed to help people and conserve natural resources by relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. One EWP contact for approximately \$217,000 was completed in FFY 2013.

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<sup>1</sup> Final program numbers for FFY 2014 are not available until after October.

### Environmental Quality Incentives Program

Indiana received over \$27.8 million in EQIP funding in FFY 2013. A total of 972 contracts were entered into that will address natural resource concerns on 189,136 acres of land over the life of the contracts. These contracts provided financial assistance to help plan and implement conservation practices that address natural resource concerns and for opportunities to improve soil, water, plant, animal, air and related resources on agricultural land and non-industrial private forestland. EQIP offered several targeted initiatives that provided funding to specific geographic areas and/or resource concerns. These included the On-Farm Energy Initiative, Organic Initiative and Seasonal High Tunnel Initiative.

### Emergency Watershed Protection - Floodplain Easement

The Emergency Watershed Protection - Floodplain Easement Program (EWP-FPE) provides an alternative measure to traditional EWP recovery, where it is determined that acquiring an easement in lieu of recovery measures is the more economical and prudent approach to reducing a threat to life or property. In FFY 2013, four contracts were signed, providing easements for 278 acres.

### Healthy Forests Reserve Program

The Healthy Forests Reserve Program (HFRP) is a voluntary conservation easement program that emphasizes support for restoring, enhancing and protecting forestland resources on private lands. In FFY 2013, a total of 272 acres were enrolled in four contracts providing approximately \$568,500 in financial assistance.

### Wetlands Reserve Program

The Wetlands Reserve Program (WRP) is a voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property. During FFY 2013, NRCS helped Indiana landowners protect and restore 653 acres of wetlands under WRP. Approximately \$4.6 million was brought to Indiana for the protection of wetlands in Indiana.

### Agricultural Water Enhancement Program

The Agricultural Water Enhancement Program (AWEP) is a voluntary conservation initiative. AWEP provides financial and technical assistance to agricultural producers to implement agricultural water enhancement activities on agricultural land to conserve surface and ground water and improve water quality. Indiana NRCS allocated over \$834,000 to AWEP in FFY 2013, treating 7,433 acres of farmland.

### Cooperative Conservation Partnership Initiative

The CCPI is a voluntary conservation initiative that targets Farm Bill funding to specific geographic areas and/or resource concerns through a competitive proposal process. In FFY 2013, CCPI provided landowners \$172,922 in financial assistance for conservation practices on 2,084 acres of land focused on water quality issues and forest management.

### Mississippi River Basin Initiative

Through the Mississippi River Basin Healthy Watersheds Initiative (MRBI), NRCS and our partners work with producers and landowners to put in voluntary conservation practices that improve water quality, restore wetlands, enhance wildlife habitat, and sustain agricultural profitability in the Mississippi River Basin. There were 43 targeted MRBI contracts in Indiana in FFY 2013 that provided over \$2,307,509 to landowners and treated 13,864 acres of land.

### Western Lake Erie Basin Initiative

The goal of the Western Lake Erie Basin Initiative (WLEB) is to contribute to a reduction of phosphorus loading to Lake Erie. In FFY 2013, WLEB contributed \$269,588 to conservation efforts in Indiana to improve 3,893 acres of land in the Western Lake Erie Basin watershed.

### National Water Quality Initiative

The NRCS and the EPA collaborated in FFY 2012 on a national effort to increase agricultural BMPs in critical watersheds. This effort was called the National Water Quality Initiative (NWQI). Five percent of each state's Environmental Quality Incentives Program (EQIP) funds were to be dedicated to one to three priority 12-digit watersheds with a goal of showing water quality improvement. In Indiana, NRCS coordinated with IDEM to choose three watersheds that met the following criteria: watershed is impaired (listed on the 2008 303(d) list) for pollutants associated with agricultural run-off; largely agricultural in land use; identified as critical areas in IDEM-approved watershed management plans; has a currently-active locally-led watershed group; there is a perceived willingness of producers to implement BMPs through EQIP; and there is a strong monitoring program in place to measure change. In addition, the NRCS State Technical Committee added a criterion for "drinking water source." The three 12-digit HUC watersheds chosen were Silver Creek (HUC 051201040501), Ell Creek (HUC 051202090405) and Eagle Creek (HUC 051202011108). These three watersheds have persisted as a part of the NWQI since FFY 2012. In FFY 2013, NWQI contributed \$766,345 to conservation efforts in Indiana to treat 4,303 acres of land.

Under the national schema for the NWQI, monitoring for change at the stream/watershed level falls to the state water quality agencies. In FFY 2014, IDEM partnered with the USGS, the Marion County Health Department, the Center for Earth and Environmental Science at Indiana University-Purdue University Indianapolis, and farmers to initiate monitoring at multiple scales on School Branch in Eagle Creek watershed (HUC 051202011108). IDEM began monitoring at its fixed station sites on School Branch in April 2014.

In addition, the IDEM NPS program has provided implementation funding for Silver Creek and Ell Creek watersheds through the Section 319 grant program. Both of these watersheds are part of larger implementation efforts on a multiple 10-digit scale.

### **Indiana Association of Soil and Water Conservation Districts**

The mission of the Indiana Association of Soil and Water Conservation Districts is to enable the conservation of the natural resources of Indiana. The IASWCD promotes the wise use of Indiana's natural resources by providing information and outreach in support of statewide efforts to develop and enhance Indiana's watershed programs that help address NPS pollution.

Indiana's Conservation Cropping Systems Initiative (CCSI) is a collaboration between the ICP organizations, the agriculture industry and Indiana farmers. With oversight from ICP representatives and administrative responsibility from the IASWCD, the CCSI promotes a systematic conservation approach to production agriculture through field days, seminars and one-on-one consulting. The systems approach to better soil health coupled with an innovative method for educating farmers, positively and directly improves soil structure, resulting in improved water infiltration, less runoff, decreased erosion and reduced incidence of flooding – all impacting the sustainability and productivity of Indiana's soil and water quality. The program has grown to provide high level technical training for ICP staff and farmers so they can help provide technical assistance to others. Soil health measurements and economic case studies are also being conducted.

Through the Annual Conference of the IASWCD, relevant sessions directly and indirectly address NPS pollution. The technical, capacity building, outreach and education and conservation implementation session tracks provide a wide variety of topics. Expert presenters and facilitators share their expertise and knowledge during this two and a half day event with designated sessions offering Continuing Education Units (CEUs). Additionally, this annual event provides attendees with the opportunity to connect with other like-minded colleagues and hear inspirational speakers.

The IASWCD provides conference scholarships to qualifying SWCD Supervisors. Nine SWCD Supervisor scholarships were awarded for the 2014 Annual Conference; thus, providing further opportunities for education for the wise use and management of Indiana's natural resources.

The IASWCD provides significant resources to the ever popular Pathway to Water Quality (PWQ) Exhibit; a popular fixture at the Indiana State Fairgrounds since 1993. The exhibit is an excellent watershed demonstration site, showing how proper management practices at home, on the farm and in business can protect our soil and water resources. The PWQ exhibit contains practical displays and information for anyone who uses the land. The PWQ exhibit is managed and maintained by the ICP.

The IASWCD *Conservation Update*, a biweekly electronic publication, communicates issues, events and resources in watershed management statewide. The *Conservation Update* is an excellent tool to acknowledge successful watershed practices through the Annual River Friendly Farmer Awards and the District Showcase Awards. The Indiana State Fair Farmer's Day provides an excellent setting for the award presentations. The Indiana Conservation Farmer of the Year and Friend of Conservation awards are presented annually during the Annual Conference of Indiana Soil and Water Conservation Districts. Acknowledgment through these venues, local and statewide media and the *Conservation Update*, offers additional opportunities to increase public awareness and supports successful nonpoint pollution reduction practices.

The *Development eLetter* is a monthly development resource provided to SWCDs, watershed groups and conservation partners. Funding sources are researched and disseminated through this electronic publication, providing up-to-date funding opportunities and educational resources for Indiana's SWCDs and watershed groups.

The IASWCD Funding Resources web page can be accessed through the IASWCD web site and the *Development eLetter* serves as an additional link to this resource. The web page is updated on a continual basis and provides pertinent development and education resources for Indiana's watershed groups, SWCDs and conservation partners. The web page features funding and grant information;

organizational and professional development opportunities and a calendar of events. The Funding Resources web page can be accessed from the [IASWCD web site](#).

### **Indiana State Department of Agriculture**

The ISDA - Division of Soil Conservation (Division) works along with the State Soil Conservation Board (SSBC) to enhance the stewardship of Indiana's soil and water resources. This is done by providing face-to-face, on-the-land technical and financial assistance for implementing conservation practices, supporting Indiana's 92 Soil and Water Conservation Districts, and promoting the opportunities and benefits associated with caring for our soil and water resources.

The Division employs Resource Specialists to directly assist landowners with the planning and implementation of conservation practices addressing specific soil and water resource concerns. Resource Specialists work in regional Conservation Implementation Teams (CIT) alongside staff from the NRCS and SWCDs. The ISDA Resource Specialists assist with the planning, survey, design, and construction of thousands of practices annually. The common practices that these professionals work on include but are not limited to - filter strips, grassed waterways, forested and grassed buffers, water and sediment control basins, wetland restorations, and livestock watering systems.

The Division also employs District Support Specialists, through the SSCB Clean Water Indiana Fund, to work directly with the local SWCDs to develop conservation priorities, goals, and plans for their respective territories. The District Support Specialists prepare and conduct trainings for SWCD supervisors and staff. They are also a resource for SWCDs in carrying out their legal and operational responsibilities.

### **Conservation Reserved Enhancement Program (CREP)**

CREP provides both state and federal incentives to landowners who are willing to install water quality and erosion prevention practices directly adjacent to eligible surface waters. This program is possible through an agreement between the State of Indiana and the United States Department of Agriculture. The program expanded in August 2010 from the original three watersheds--Pigeon-Highland, Tippecanoe, and Upper White River—to 11 watersheds. The expanded CREP area now includes Lower Wabash, Lower White, Lower East Fork White, Upper East Fork White, Middle Wabash-Busseron, Middle Wabash-Little Vermillion, Middle Wabash-Deer, and Upper Wabash Watersheds. The eleven targeted watersheds include 26,250 eligible acres. To date, over 9,000 acres of conservation practices have been enrolled or installed along Indiana's rivers, lakes, streams and wetlands under the Conservation Reserve Enhancement Program.

### **Clean Water Indiana Program**

The Clean Water Indiana Program (CWI) was established by the Indiana Legislature to provide financial assistance to landowners and conservation groups. The financial assistance supports the implementation of conservation practices which will reduce nonpoint sources of water pollution through education, technical assistance, training, and cost sharing programs. The CWI fund is administered by the Division under direction of the SSCB.

The CWI Program is responsible for providing local matching funds as well as grants for sediment and nutrient reduction projects through Indiana's Soil and Water Conservation Districts. CWI also

contributes critical state matching funds for Indiana's Conservation Reserve Enhancement Program, an initiative which utilizes federal funds to encourage landowners to conserve environmentally sensitive land. Furthermore, the CWI Program has supported the CCSI which focuses on management systems approach to crop production which results in improved soil and water quality as well as profitability on Indiana cropland.

In 2013, the SSCB awarded over \$540,000 to 10 lead Indiana SWCDs who are partnering with 29 SWCDs to execute multi-district, multi-year watershed based grants. The projects will address at least two of the State priorities, as identified in the SSCB business plan adopted in 2010, including soil quality degradation, water quality impairments, and other soil and water related natural resources concerns. For 2014, the SSCB has voted to fund multi-year, multi-district, watershed based grants similar to the 2012 Clean Water Indiana program.

In 2010, 2011 and 2012, the SSCB allotted CWI funds for the CCSI, along with NRCS. The intent of CCSI is to promote a systematic approach to production agriculture focusing on continuous no-till/strip-till, cover crops, precision farming, nutrient and pest management, and conservation buffers resulting in improved soil quality, water quality, and profitability on Indiana cropland. Through this program, agronomy professionals provide very specific education and technical assistance to agricultural producers and our partners directed at production efficiency and nutrient/sediment runoff reduction. To date, over 250 field days and workshops have been held, reaching over 15,000 people through CCSI, over 190 agency employees and 52 industry staff have received CCSI trainings, and recent CCSI surveys estimate that nearly 1 million of Indiana's 12 million acres in cropland are covered by one or more cover crops.

2013 annual nutrient and sediment load reductions from CWI-funded conservation practices are: 127,331 tons of sediment statewide, 265,177 pounds of nitrogen statewide, and 133,967 pounds of phosphorus statewide.

#### Indiana On-Farm Network

Participating farmers use precision agriculture tools, protocols, and technologies to conduct in depth Nitrogen analysis on their own farms. This concept is considered adaptive management and generally results in changes that increase profitability of the producer and ultimately has a positive impact on water quality. This program was developed to address key challenges in advancing water quality goals in the state related to production agriculture. The adaptive management process has shown most growers can reduce their nitrogen rates by one-third while maintaining or increasing profitability. ISDA currently has established 24 groups, evaluating a total of approximately 654 fields with tools such as: Guided Corn Stalk Nitrate Testing, Geo-referenced Aerial Imagery, collaborative peer-to-peer learning, and Replicated Strip Trials. The Nitrogen data are reported back to farmers as their individual farm data and as aggregate results. Aggregate results are used publically for educational purposes. Field history information is collected from every participating farmer – previous crop, manure history, manure applications, commercial N applications (including timing of application, form, and rate) and tillage. This information is combined with analysis of results from on farm evaluation plots comparing different management practices (timing, form, application rate, etc). All data collected through OFN is anonymous. Reports can never be linked to a name or specific location.

## ISDA Technical Assistance for Agriculture Project

A persistent obstacle to the installation of NPS mitigating practices in Indiana has been a lack of field technical staff to “sell” and design best management practices for agricultural land. In response to this need, in 2010, IDEM funded a proposal from the ISDA to hire and train three technical staff to serve in watersheds in the Wabash Basin with known water quality issues to provide technical assistance and help implement BMPs through both state and federal agricultural programs aimed at reducing sediment and nutrient runoff to Indiana’s surface waters. Since the project began in July 2011, “technicians” have been trained by ISDA, NRCS, and through attendance at education events, trainings, field days and workshops. The technicians now assist the NRCS and SWCD staff with landowner customer service and conservation program signups, and provide technical assistance on BMP design and implementation. Much of the funding to-date for these BMPs has come from Clean Water Indiana Program and Conservation Reserve Program funds.

This fiscal year, the technicians have helped install 9.6 acres of conservation cover, 4,209.7 acres of cover crop, 43,574 feet of grassed waterway, and 45 acres of tree establishment for a total estimated load reduction of 6,598 tons of sediment per year, 7,798 pounds of phosphorus per year, and 15,597 pounds of nitrogen per year in the Mississinewa, Salamonie, Upper Eel, Upper Wabash, and Upper Tippecanoe watersheds.

## **Indiana Department of Natural Resources, Lake and River Enhancement Program**

The legislation establishing the Lake and River Enhancement (LARE) program in IDNR Division of Fish and Wildlife charges the Department with the responsibility to "Administer a lake and river enhancement program to do the following: (A) Control sediment and associated nutrient inflow into lakes and rivers, and (B) Accomplish actions that will forestall or reverse the impact of that inflow and enhance the continued use of Indiana's lakes and rivers." An amendment in the 2011 General Assembly added use of LARE funds to remove logjams or obstructions in rivers. The first grant awards for logjam removal were made in March of 2012 and were increased in 2013 and 2014.

The importance of conserving natural resources, including wildlife, protecting the water quality of lakes and rivers, and protecting high water quality resources are recognized as important goals. They are addressed with grants for projects to protect and enhance aquatic habitat for fish and wildlife. The effort to insure the continued viability of Indiana's publicly accessible lakes and streams for multiple uses, including recreational opportunities, is important since funding comes directly from boat-owners in Indiana. A lake and river enhancement fee annually assessed by the Indiana Bureau of Motor Vehicles (BMV) is collected when boats are registered. These funds are used for the LARE program as well as IDNR Division of Law Enforcement for aquatic safety programs and maritime patrols.

To accomplish the goals of the LARE program, grants have been made available for technical and financial assistance to local and county agencies and non-governmental entities (such as a lake or homeowner association) for qualifying projects since 1989. LARE-funded projects that reduce sedimentation and nutrient runoff include the installation of grass cover, filter strips, and stream bank or shoreline stabilization structures. In March of 2014 over \$1.2 million dollars in grants were awarded to address control of invasive aquatic species, sediment removal from publicly accessible lakes, and logjam removal from rivers. In July of 2014, over \$994,000 was granted for new biological, diagnostic, design and construction projects on lakes and rivers as well as several new and continuing Watershed Land Treatment (WLT) projects with SWCDs. These latter efforts involve land users working to put in

place various measures to address NPS pollution. The projects that reduce sediment and nutrients from leaving the land and traveling into lakes and rivers promote improved water quality. Many projects include active measures to improve aquatic habitat. Additionally, many of the efforts result in enhanced opportunities for boating, fishing, and other recreational pursuits, and tend to promote increased economic value for businesses, communities, and individuals who live on or use these water bodies.

### **Indiana Department of Natural Resources, Healthy Rivers Initiative (HRI)**

The Healthy Rivers Initiative is the largest conservation initiative to be undertaken in Indiana. The initiative includes a partnership of resource agencies and organizations who are working with willing landowners to permanently protect 43,000 acres located in the floodplain of the Wabash River and Sugar Creek in west-central Indiana and another 26,000 acres of the Muscatatuck River bottomlands in southeast Indiana. HRI partners include the IDNR, U.S. Fish & Wildlife Service, NRCS, and The Nature Conservancy of Indiana.

These projects involve the protection, restoration and enhancement of riparian and aquatic habitats and the species that use them, particularly threatened, endangered, migratory birds and waterfowl. This initiative will also be beneficial to the public and surrounding communities by providing flood protection to riparian landowners, increasing public access to recreational opportunities, and leaving a legacy for future generations by providing a major conservation destination for tourists.

At the conclusion of the first four years of the HRI, in June of 2014, 31,359 acres of land are permanently protected, with 8,208 acres acquired by DNR in the Wabash River Project Area, 2,612 acres enrolled in the USDA Wetlands Reserve Program (WRP) that are not owned by DNR to complement the existing 12,723 acres of state-owned land. In the Muscatatuck Project Area, 3,608 acres were acquired; 1,719 acres were enrolled in the WRP that are not owned by DNR, complementing the existing 2,489 acres of state-owned land. To date, a total of 8,242 acres are now open to the public for hunting, fishing, trapping, boating, and birdwatching.

### **Indiana State Revolving Fund Loan Program**

The Indiana State Revolving Fund (SRF) Loan Program finances projects that abate or prevent NPS pollution of Indiana's waters. The SRF Program has traditionally provided low interest loans to Indiana communities for projects that improve wastewater and drinking water infrastructure. The Program has been expanded to fund projects that meet the objectives in the State NPS Management Plan. The money loaned to these NPS projects also is documented as match, when applicable, for the state Section 319 Grant Program. Eligible NPS projects must provide water quality benefits to their respective communities and may include one or more of the following:

- Wetland restoration/protection;
- Erosion control measures;
- Ground water remediation;
- Storm water BMPs;
- Source water and wellhead protection;
- Failing septic system - repair, replacement and connection to sewer;
- Brownfield remediation;
- Conservation easements; and

- Agricultural and waste management BMPs.

This reporting period, the SRF Program loaned \$2.6 million to one community on a project to reduce NPS pollution by extending sanitary sewers to areas with septic systems, thereby eliminating this potential source of pollution. In this state fiscal year (7/1/2013 – 6/30/2014) 155 septic systems were eliminated. Throughout the life of the SRF NPS Program, \$214 million has been loaned for NPS purposes. Approximately 12,000 septic systems have been removed from service and seven Brownfield sites have been remediated.

The NPS Program has also made a specific effort to coordinate with the Wastewater SRF (WWSRF) Program to link loan applicants with local watershed groups. Each quarter, when the WWSRF's Priority Project List is made available, the NPS program identifies those applications that fall within an area covered by a WMP or TMDL report. The NPS program then determines, with the help of WWSRF staff, whether or not those applicants have taken advantage of the 0.5% interest break available for projects that include a NPS or green project. If no such project has been identified, and a WMP includes a project that may help the applicant qualify for the reduced interest rate, the application is flagged for contact. In FFY 2014, one community was contacted about the opportunity to work with their local watershed group to install a nonpoint project at virtually no cost to the applicant. As of the writing of this report, the community and watershed group are negotiating the potential project and its inclusion in the WWSRF loan agreement.

### **Indiana Lake Michigan Coastal Program**

The purpose of the Indiana Lake Michigan Coastal Program (LMCP) is to enhance the state's role in planning for and managing natural and cultural resources in the coastal region and support partnerships between federal, state, and local agencies and organizations. The IDNR is the lead agency implementing the LMCP and the program houses a full-time Coastal Special Projects Coordinator (formerly Coastal NPS Coordinator) who provides technical assistance, education and outreach, and coordinates efforts toward the achievement of management measures that combat sources of NPS pollution.

The LMCP makes available approximately \$600,000 annually through the Coastal Grants Program for projects to protect and restore natural, cultural, and historic resources in Indiana's Lake Michigan coastal region. Project categories include land acquisition (example: riparian corridors), low cost construction (example: natural area restoration and BMP installation), education and outreach, and planning/coordination/management (example: land use planning and ordinance development). In the 2013/2014 grant cycle project applications were received and grants awarded to communities, universities, and schools that will result in NPS runoff reduction and water quality improvements consisting of BMPs to prevent sediment and pollutant discharges, low-impact development practices to maximize storm water infiltration and use of native plants, wetland protection practices, and studies to identify contaminate load reductions by rain gardens. The RFP for the 2015 LMCP Grant cycle was issued in July of 2014.

As part of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), Congress created a stand-alone provision, Section 6217, which requires that states and territories with approved coastal zone management programs develop a Coastal NPS Pollution Control Program to address water quality impairment of coastal waters. The purpose of the program is to develop and implement management measures for NPS pollution to restore and protect coastal waters. The DNR LMCP and IDEM Section 319 Program staff work together to coordinate with other state and federal NPS agencies to meet the

requirements of this program. The LMCP Special Projects Coordinator is responsible for 6217 development and implementation through collaboration with federal, state, and local partners.

In December of 2013, the LMCP submitted supporting documentation developed with the assistance of IDEM 319 staff and other state agencies to the National Oceanic and Atmospheric Administration (NOAA) and EPA for approval of several 6217 Nonpoint Source Management Measures. NOAA/EPA responded with Interim Decisions that Indiana had satisfied additional conditions for Agriculture, Wetlands, Critical Areas, and Monitoring. A meeting of the LMCP, IDEM 319 staff, NOAA, and U.S. EPA took place in Valparaiso in early April and served to clarify expectations on additional measures. The LMCP will continue to work with federal and state partners to gain final approval for the Indiana Coastal NPS Pollution Control Program.

As part of Coastal NPS Program implementation, the LMCP partners with the IDEM Office of Pollution Prevention and Technical Assistance to manage the Indiana Clean Marina Program. This is a voluntary, incentive based program that encourages marinas and recreational boaters to implement environmentally sound practices to protect Indiana's inland and coastal waterways. Since the program's inception in 2009, four Coastal area marinas have been designated officially as Clean Marinas: Hammond Marina, Trail Creek/Sprague Point Marina, Washington Park Marina, and Portage, Marina. In support of the Clean Marina program in 2013/2014 the LMCP distributed Clean Marina and Clean Boater educational materials at marina and boating public events throughout the year.

In 2013- 2014, LMCP continued its partnership with the Indiana State Department of Health (ISDH), IDEM, and local Health Departments and watershed groups to promote the utilization of the state's online septic system tracking database and the adoption of best practices to support operating and inspection programs in the Coastal region. LMCP convenes an Onsite Septic Work Group which meets monthly with Federal, State, and Local governments in addition to interested stakeholders to develop a coordinated approach to eliminating the impacts of poorly maintained and failing septic systems on coastal water quality.

In support of the LMCP, IDEM has undertaken the task of completing several TMDLs and watershed management plans in the Coastal Zone. The Salt Creek Integrated Pilot project began as an effort to coordinate the work of TMDL and NPS in a single 10-digit HUC. The project began in 2010 and a TMDL was completed and approved in 2012. A WMP is also underway in the watershed. The Deep River TMDL/WMP project is also ongoing in the Coastal Zone. This project received IDEM monitoring in order to prepare the TMDL, which was submitted to EPA on 8/29/14. In addition, the calculations of the TMDL will be imported into the WMP so that stakeholders have a "jump start" on their plan and its implementation. Implementation of the 2007-approved Trail Creek WMP began in 2013 and is scheduled to be completed in 2016. Finally, a WMP project is in progress for the East Branch of the Little Calumet River. This project is anticipated to be complete in 2015.

## GOAL 2: Monitor and Assess Indiana waters for Nonpoint Source Impairments and Improvements

Without monitoring and assessment, it would be difficult to quantify the magnitude of the NPS pollution problem and gains made in water quality through NPS actions. In order to grasp the extent and impacts of NPS pollution in the state, IDEM uses several water quality monitoring approaches, including targeted and probabilistic monitoring designs, as outlined in the *Indiana Water Quality Monitoring Strategy 2011-2019*. Assessment of the data obtained through monitoring follows protocols outlined in the *2014 Consolidated Assessment and Listing Methodology*. Highlights of significant progress in monitoring and assessment of Indiana's waters for NPS during FFY 2014 are included below. A full accounting of progress made this year toward the objectives of Goal 2 in the State NPS Management Plan can be found in Appendix A.

### IDEM Water Quality Monitoring

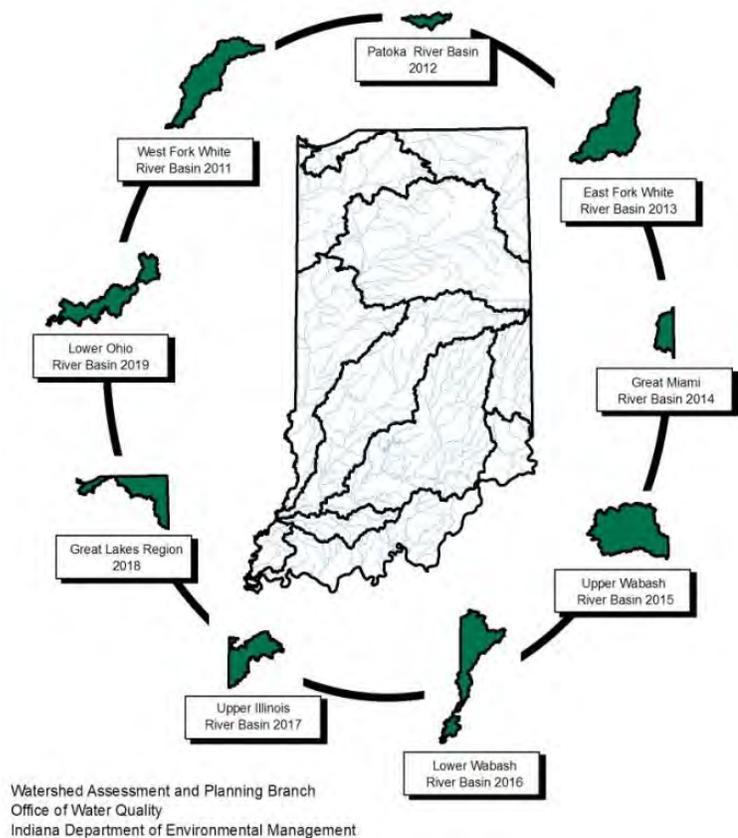
The OWQ conducts water quality monitoring and assessments each year to determine statistically the degree to which waters within a given basin support aquatic life, human health, and recreational uses. Water quality monitoring is conducted in a different basin each year using a probabilistic approach. In 2011, IDEM implemented a new water quality monitoring strategy in which monitoring is conducted in one of nine basins each year. This will result in a statistically comprehensive and updated data set for the entire state in 2019.

IDEM's NPS monitoring includes two types of targeted monitoring: performance measures monitoring (monitoring for success, measured under the EPA's SP-12 and WQ-10 measures) and baseline watershed characterization monitoring.

#### Targeted Monitoring for Success (MeasureW/SP-12 and Success Stories/WQ-10)

Part of the EPA's strategy for showing improvement in NPS pollution impairment is through Measure W and Success Stories' submissions by the states. In order to show improvement, states must show that:

- 1) One or more of the waterbody/impairment causes identified in 2002 are removed, as reflected in EPA-approved state



*Figure 2 IDEM's 9-year rotating basin monitoring and assessment approach.*

assessments, for at least 40% of the impaired water bodies or impaired stream miles/lake acres in the watershed; OR

- 2) There is a significant watershed-wide improvement, as demonstrated by valid scientific information, in one or more water quality parameters or related indicators associated with impairments.

Targeted monitoring to measure water quality improvement as a result of NPS grant projects was initiated in 2009. Monitoring for success continued this period in the Hogan Creek (HUC 050902030402) and Tanners Creek (HUCs 050902030303 and 050902030304) watersheds. Samples are still being processed and IDEM reserves judgment as to whether any of the sampling in these watersheds showed improvement. Though IDEM has traditionally used delistings (Option 1 above) as the mechanism for demonstrating water quality improvement to EPA, in 2014 Indiana reported incremental improvements made in the Little Elkhart River watershed as a result of best management practices funded by Section 319 grants in conjunction with other state and federal grants.

#### Baseline Monitoring/Watershed Characterization Studies

Two conditions led to the decision by IDEM to conduct baseline watershed characterization studies in a limited number of watersheds each year. First, many watershed groups in Indiana lack the expertise to set up and use equipment to conduct a monitoring program that will provide complete baseline data for their watershed management plans. Secondly, in order to meet the data quality objective of delisting, IDEM needs to have a scientifically-defensible baseline to compare with follow-up monitoring. Monitoring began in 2011 in the Plummer Creek watershed and has continued to the present for other watersheds. In FFY 2014, it was further decided that all baseline projects would be conducted for the combined purposes of monitoring in order to prepare TMDLs and provide sufficient baseline monitoring to measure change after the preparation and implementation of a watershed management plan. Thus, the name of these studies has been changed to “Watershed Characterization” studies. The following is a status update of all ongoing watershed characterization studies and studies closed in FFY 2014.

Indian-Kentuck (HUC 0514010102) – Data collection followed the modified geometric design reported in the FFY 2012 NPS Annual Report and was completed in May 2013. Assessment of the data took place in December 2013 with local watershed leaders in attendance.

Deep River (HUC 0404000105) –Data collection began in April 2013, followed the modified geometric design reported in the FFY 2013 Annual Report, and concluded in March 2014. Assessment of the data was completed on April 24, 2014 with local stakeholders in attendance.

Southern Whitewater River (HUCs 0508000305, 0508000306, 0508000308) – 33 sites were selected for water quality monitoring following a modified geometric design and targeted site selection as described in the [2013 Sampling and Analysis Workplan for Baseline Monitoring of the Southern Whitewater River Watershed](#). Parameters sampled included *E. coli*, alkalinity (as CaCO<sub>3</sub>), total solids, total suspended solids, sulfate, chloride, hardness (as CaCO<sub>3</sub>), ammonia nitrogen, total Kjeldahl nitrogen, nitrate + nitrite, total phosphorus, total organic carbon, chemical oxygen demand, dissolved oxygen, temperature, pH, conductivity, turbidity, stream flow, fish community, macroinvertebrate community, and habitat-related parameters (e.g. embeddedness, canopy cover). Data collection began in November 2013 and is scheduled to conclude in October 2014.

Upper Mississinewa River (HUCs 0512010302, 0512010303, 0512010304) – 35 sites were selected for water quality monitoring following a modified geometric design and targeted site selection as described in the [2014 Sampling and Analysis Workplan for Baseline Monitoring of the Upper Mississinewa River Watershed](#). Parameters sampled included total phosphorus, nitrate + nitrite, alkalinity (as CaCO<sub>3</sub>), total solids, total suspended solids, total dissolved solids, sulfate, chloride, hardness (as CaCO<sub>3</sub>), ammonia nitrogen, total Kjeldahl nitrogen, total organic carbon, chemical oxygen demand, dissolved oxygen, pH, specific conductance, dissolved oxygen percent saturation, temperature, turbidity, stream flow, *E. coli*, fish community, macroinvertebrate community, and habitat-related parameters (e.g. embeddedness, canopy cover). Data collection began in April 2014 and is scheduled to conclude in March 2015.

#### Monitoring for the National Water Quality Initiative

Two fixed station monthly monitoring sites on School Branch in Eagle Creek watershed (HUC 051202011108) began in April 2014.

#### Ground Water Monitoring

Ground water monitoring continued during the 2014 field season. Three-hundred wells were sampled for over 400 point and NPS parameters, including nitrate and pesticide break-down products. Continued annual sampling will give IDEM an opportunity to explore trend analysis, seasonal variations, and the relationship between sensitivity and hydrogeological setting. Ultimately, this type of sampling can provide the information needed to characterize causes, sources, and magnitude of NPS pollution in ground water.

#### **Additional Water Quality Monitoring**

Water quality monitoring is not just conducted by IDEM. Other monitoring activities are being conducted around the state and are also important to the NPS Program. Many Section 319 projects conduct monitoring as part of their work to reduce NPS pollution. These monitoring efforts and the subsequent data generated are shared and used by IDEM and others for many different purposes. The Hoosier Riverwatch Volunteer Monitoring Program and the Indiana Clean Lakes Program are the biggest surface water monitoring programs focused on NPS pollution assessment outside of IDEM.

#### Hoosier Riverwatch Volunteer Monitoring Program

[Hoosier Riverwatch](#) (HRW), a program of IDEM's Watershed Assessment and Planning Branch, is a water quality monitoring initiative to increase public awareness of water quality issues and concerns by training volunteers to monitor stream water quality. The mission of HRW is "To involve the citizens of Indiana in becoming active stewards of Indiana's water resources through watershed education, water monitoring, and clean-up activities." This mission is accomplished through the following goals:

- Educate citizens on watersheds and the relationship between land use and water quality.
- Train citizens on the basic principles of water quality monitoring.
- Promote opportunities for involvement in water quality issues.
- Provide water quality information to individuals or groups working to protect water resources.
- Support volunteer efforts through technical assistance, monitoring equipment, networking opportunities, and educational materials.

HRW accomplishes its mission through providing monitoring equipment, supporting workshops to train volunteers, distributing water quality news to volunteers and stakeholders, and managing an online database as a repository of data collected by volunteers. In FFY 2014, Hoosier Riverwatch supported 21 local workshops, educated and trained 150 water quality monitoring volunteers throughout Indiana and distributed 5 equipment packages to a variety of schools and non-profit organizations.

The Hoosier Riverwatch Volunteer Stream Monitoring Internet Database was developed when the HRW program began at the Indiana Department of Natural Resources in the summer of 2000. Indiana volunteer stream monitoring groups enter data collected during habitat, chemical, and biological sampling into this statewide database. Only volunteers who have completed a HRW training workshop may enter data. Volunteers and the general public can view and download all stream data entered into the database by HRW volunteers. This provides a unique opportunity for volunteers to share data, not only with one another, but also with anyone interested in the quality of Indiana's rivers and streams. Approximately 745 data records were entered into the online database by volunteers this year.

The HRW database framework has not been updated since it was developed in 2000. In FFY 2014, IDEM allocated Section 319 funds to upgrade the database and make it more user friendly. The proposed project is a large overhaul of the HRW data entry website with the future goal to have infrastructure based on PHP (Hypertext Preprocessor) instead of ASP (Active Server Page); allow more flexibility for users to enter data easily on tablets or cell phones; allow the general public an easier time gathering information from the website; and allow users' data to be uploaded to IDEM's Assessment Information Management System (AIMS). The project is expected to be complete next year.

#### Indiana Clean Lakes Program

The School of Public and Environmental Affairs (SPEA) at Indiana University (IU) has been working with IDEM through Section 319 funds to administer the Indiana Clean Lakes Program (CLP) since 1989. The Indiana CLP is a comprehensive, statewide public lake management program that includes public information and education, technical assistance, volunteer lake monitoring, and lake water quality assessment.

Indiana has over 1,400 lakes, reservoirs, and ponds; many of which are under pressure from human activities like poorly managed agriculture, suburbanization of lakeshores, boating impacts, and septic system discharges. These activities can result in excessive nutrient concentrations reaching lakes which, in turn, can lead to accelerated eutrophication and related undesirable effects including nuisance algae, excessive plant growth, murky water, odor, and fish kills.

Section 314 of the CWA charges IDEM with responsibility for monitoring, assessing, and reporting the trophic state and trends in trophic conditions of Indiana's lakes. Continued assessment of lake nutrient levels and effects, as begun by the state in the early 1970s, is needed in order to do the following: 1) report the status of lake eutrophication levels to the EPA in the state's 305(b) water quality reports and 303(d) listing of impaired waterbodies; 2) ascertain and track any trends in lake eutrophication levels for state and EPA use; 3) collect any data needed to continue to develop state nutrient criteria, as mandated by EPA; and 4) collect data needed to determine if lakes and reservoirs are meeting state water quality standards.

Indiana's CLP, coordinated by IU-SPEA staff and students, includes the following components:

- Annual sampling of lakes and reservoirs to meet numbers 1 and 2 above;

- Training and support of a corps of volunteer lake monitors;
- Education and outreach through the production and distribution of the quarterly newsletter, *Water Column*; maintenance of [a website](#); preparation of brochures and fact sheets; and participation in the annual Indiana Lake Management Conference; and
- Providing technical assistance and expertise on lake-related issues.

IU-SPEA completed the last full Section 319 grant project in January 2012 to collect and analyze water samples from lakes and reservoirs in Indiana from the 1999 through the 2011 summer sampling seasons. The *Indiana Lake Water Quality Assessment Report* and the *Indiana Volunteer Monitoring Report* from this project may be found on their web site at <http://www.indiana.edu/~clp/PUBreports.php>. IU-SPEA continues to collect lake data under a Section 319 grant that runs through 2015. Since 2010, data are being collected using a random sampling design (from a set of Indiana public lakes and reservoirs with boat access and a surface area greater than five acres) as opposed to a targeted design which was used in the past. This change was made to provide a more statistically valid assessment of Indiana lakes and reservoirs. By doing this, the biannual 305(b) report to EPA will more accurately reflect the status of Indiana's publicly-accessible lakes and reservoirs, without geographical bias.

IU-SPEA expanded the Volunteer Monitoring Program in 2012 to include aquatic invasive species (AIS) monitoring. This AIS program will help the state with spread prevention and early detection. Zebra mussels will be added to the program for monitoring and reporting starting in 2014. The program also includes multiple workshops each year to build the understanding of important zones of the lake that provide essential habitat and ecosystem services for the lake. Volunteers that participate in the workshops and expand their monitoring efforts become even better lake stewards. This program has been very well received and has improved with each workshop.

#### Additional External Monitoring and the External Data Framework

IDEM recognizes that numerous universities, municipalities, watershed groups and grassroots organizations throughout the state participate in water monitoring activities. There are also regulated facilities that conduct monitoring above and beyond their permit requirements. Section 303(d) of the CWA requires that states consider all existing and readily available water quality data and related information in developing their 303(d) List of Impaired Waters. IDEM is required to actively solicit this information from external organizations for potential use in its 305(b) water quality assessments. Water quality data and information received from external organizations are reviewed for their usability in making assessments.

Through past solicitations, OWQ determined that some of the water quality data gathered from external organizations for 305(b) and 303(d) processes may also benefit other programs. In 2006, OWQ began development of the External Data Framework (EDF) to provide a systematic, transparent and voluntary process for external organizations to submit their water quality data for consideration in various OWQ programs. The EDF describes OWQ policy regarding the agency use of external data, the guidelines for submitting data and the technical assistance necessary to facilitate greater collaboration between OWQ and external parties.

In December 2013, IDEM completed a project, contracted with CWA Supplemental 106 funds, to develop technical assistance content for EDF participants. The project provides content that will help participants design their monitoring projects and will guide them through the development of a quality assurance project plan to document the quality of the data they collect. As part of this project, the

contractor also provided a matrix to help IDEM choose the best platforms and software to use in delivering content to participants in a cost-effective way. It is anticipated that the content will be delivered online through a new web site that IDEM will develop for the EDF. IDEM will continue to focus its limited staff resources on developing the necessary acceptance criteria and guidance documents for the EDF. The web site for the EDF including the pages needed for the delivery of the technical assistance content will be developed once these key operational components are finalized.

IDEM also recently drafted Level 3 acceptance criteria for external data, which will allow IDEM to determine the usability of data submitted through the EDF for agency decision-making processes such as CWA 305(b) assessments, 303(d) listing, and TMDL load development. IDEM is now in the process of drafting acceptance criteria for Level 2 of the EDF, which provides requirements for non-regulatory decision making processes within IDEM and recommendations regarding the level of data quality appropriate for a variety of non-agency uses, such as watershed management planning and implementation monitoring. IDEM is exploring ways to integrate the HRW program with the EDF, including through the HRW database upgrades. It is anticipated that the improvements to the HRW database will make data entry easier for EDF participants and will facilitate IDEM's review of their data.

### **Current Assessment of Indiana's Surface Waters**

After IDEM completes an assessment of the data collected within a given basin, waters that do not fully support one or more of their designated uses are placed on [Indiana's 303\(d\) List of Impaired Waters](#). This list is developed every two years as part of the state's Integrated Water Monitoring and Assessment Report. As of the 2014 [Integrated Water Quality Monitoring and Assessment Report](#) that IDEM submitted to U.S. EPA on April 1, 2014, Indiana has monitored 58%<sup>2</sup> of its streams to determine whether they are capable of supporting a well balanced warm water aquatic community. Of the streams monitored, 71% were supporting their designated aquatic life use, and 29% were found to be impaired. Indiana has monitored 47%<sup>2</sup> of its streams for recreational uses. Of the streams monitored, 27% were found to support full-body contact recreational uses, while 73% were found to be impaired.

The sources of water pollution in Indiana are location dependent and involve both point and nonpoint sources. Many of the problems caused by point source pollution have been and continue to be addressed through regulatory programs such as the National Pollutant Discharge Elimination System permit program. Reducing NPS pollution requires a multi-faceted approach including education and outreach, watershed planning, and implementation of best management practices to restore waterbodies identified on Indiana's 303(d) List of Impaired Waters.

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<sup>2</sup> The number of miles monitored has decreased as a function of IDEM's "resetting the clock" with regard to the values we report for the total number of stream miles in the state. This value has and continues to fluctuate as a function of our reach indexing work. For the next State of the Environment Report, we have determined that at high resolution, the correct total miles for the state will be 63,130. This number is larger than those we have used in past reports. Using this number in our calculations of total miles assessed has the effect of reducing that number.

### **GOAL 3: Develop and Conduct a Strategic Outreach and Education Program**

There is a huge need to provide outreach and education to citizens of the state to raise awareness of NPS issues. Many citizens still don't have the basic knowledge or understanding of NPS pollution, living in a watershed, or behaviors that lead to water quality impairments. Without this understanding, they are unlikely to change their behavior or support NPS reduction efforts. The opportunity to work with partners on unified messaging regarding NPS pollution is vast. IDEM realizes that any NPS messaging campaign undertaken by the agency should be consistent with partners across the state.

In the past year, the NPS Program has begun to coordinate with partners on creating statewide educational messages on septic systems, hydromodification, and sediment and nutrient issues in the state, and promoting success stories for work done to remediate NPS pollution from these challenging sources. Discussions to date have been with the Indiana State Department of Health (ISDH) and Rural Wastewater Task Force on septic systems; IDNR on dam removal and floodplain management; Purdue University on how to enroll more County Surveyors into the Indiana Watershed Leadership Academy; IDEM Ground Water Section and the Alliance for Indiana Rural Water on nutrient and sediment concerns in drinking water; and the IDEM Wetland program, consultants and IDNR on updates to the Indiana Wetland Conservation Plan and the upcoming Indiana In-Lieu Fee Program for stream and wetland mitigation.

IDEM's NPS Program continues to update its website as a means to educate citizens on NPS pollution; provide grantees with information and guidance to successfully complete their NPS grant projects; share information about NPS grant projects and their successes; and communicate with stakeholders and partners on NPS efforts. IDEM has also continued to provide technical and/or financial support to education/outreach and training initiatives such as the Indiana Watershed Leadership Academy (IWLA) sponsored by Purdue University, the ICP's Training and Certification Program, and citizen monitoring training through Hoosier Riverwatch and the Indiana Clean Lakes Program. IDEM NPS staff continue to engage interested groups and communities, through direct contacts, conference attendance, involvement in statewide and regional committees, and webinar and other training opportunities. A full accounting of progress made this year toward the objectives of Goal 3 in the State NPS Management Plan can be found in Appendix A.

#### **Watershed Specialists**

The Watershed Specialists work with watershed-based efforts throughout the state, providing financial, organizational and technical assistance to local watershed groups, while also continuing to serve as grant Project Managers. Key accomplishments for FFY 2014 are:

- Assisted approximately 88 active and developing watershed projects, 46 of which were Section 319/205j grant funded.
- Participated in the planning and conducting of the 2014 IASWCD Annual Conference. Planning has begun for the 2015 IASWCD Conference, which will include a presentation by IDEM on the updated State NPS Management Plan and integration with the National 303(d) program vision.
- Assisted Purdue University with the [Indiana Watershed Leadership Academy](#) by participating in its steering committee, reviewing participant assignments and providing feedback to participants, and attending their graduation to evaluate their class projects presented that day.

- Assisted Purdue’s webinar speakers by previewing webinar presentations several days beforehand and providing feedback to improve them before they are presented live.
- Worked with others in the Watershed Assessment and Planning Branch to develop watershed characterization studies and SP-12 targeted monitoring sites.
- Worked with other agencies in the ICP to continue developing a Training and Certification program for partner employees, including training in the design and implementation of best management practices for water quality improvement and a possible watershed coordinator certification program.
- Continued promoting the Mitigation Matchmaker website developed by INDOT, IDNR, and IDEM.
- Worked closely with the IDNR Lake Michigan Coastal Program, NPS Coordinator to address all outstanding elements of the LMCP’s Coastal NPS Management Plan.
- Worked closely with local groups and agency counterparts in Ohio and Michigan to develop watershed management plans for multi-state watersheds that meet checklists for all states.
- Continued to participate in the ICP’s Pathway to Water Quality advisory committee to improve this Indiana State Fair exhibit that reaches tens of thousands of Hoosiers each year. Also staffed the exhibit during the State Fair.
- All NPS and TMDL staff participated in coordination meetings for several objectives under the State NPS Management Plan and 303d vision, including the updates to the Indiana Wetlands Conservation Plan, SRF NPS loans for WMP action items, 303d/NPS priority revisions, ISDH onsite wastewater systems, and IDEM Ground Water source water protection.

### **Indiana Watershed Leadership Academy**

IDEM is continuing to partner with Purdue University using Section 319 funds to conduct the [Indiana Watershed Leadership Program](#) to meet the needs of watershed coordinators, agency staff, and others that want to become more effective watershed leaders. Leading the development of a scientifically-sound watershed management plan that actively involves, engages, and is supported by the community requires people who have broad skills, and know how to employ diverse tools and strategies related to watershed management.

In the past nine years, 264 people have participated in the Academy, through which they have learned skills in organization and communication, watershed technology, geographic information systems, policy, watershed science, and leadership. Thirty-seven participants attended the IWLA in 2014.

### **Indiana Conservation Partnership Training and Certification Program**

Since September 2009, IDEM has participated with other members of the ICP in developing a Training and Certification Program (TCP) to meet staff training and certification needs across the Partnership. A 205j grant funding a coordinator for the ICP TCP expired in January 2014. Even so, the ICP TCP has been able to continue operating as a volunteer planning team, utilizing monies provided by the Indiana State Soil Conservation Board to continue high-quality trainings in the state. In FFY 2014, the ICP TCP held four nutrient management trainings, four rain garden trainings featuring nation-wide speaker Rusty Schmidt, and a “Conservation in the City” tour held during the NACD Soil Health Forum in Indianapolis. Also planned are six more rain garden workshops, three “Conservation Selling Skills” workshops, a statewide EPA Region V Load Reduction model training (in conjunction with Purdue University’s Indiana Watersheds Webinar Series), and a Certified Erosion, Sediment, and Storm Water Inspector (CESSWI)

and Certified Professional in Erosion and Sediment Control (CPESC) training to prepare employees to take the nationally-recognized EnviroCert tests for these certifications. Individual partners also held cover crop and soil health trainings.

A Partnership-wide survey was conducted in April 2011 to determine training needs across the partnership. This original survey was updated and redistributed in 2014. These surveys will continue to guide the ICP's Training and Certification Program.

### **Nonpoint Source Reduction Efforts Recognized**

Individuals and watershed groups in Indiana work hard to improve water quality in their watersheds and educate others about NPS pollution. It takes the efforts of many people, many of them volunteers, to achieve the goals of the group and their watershed management plan. Most of the time, these efforts go unrecognized. Sometimes, however, an individual or a group will receive recognition for their efforts and achievements. Recognizing these people not only acknowledges the importance of their work and a job well done, it also educates others about NPS and watershed issues and encourages them to contribute to the cause. This year, several groups and individuals were recognized by various organizations for their efforts at reducing NPS pollution.

- The ***Clear Choices, Clean Water*** campaign (which has received Section 319 funds in the past) received a **2013 Public Education/Outreach Award** by the **North American Lakes Management Society** for its novel approach to increase awareness (and action) about decisions homeowners make and the impact these decisions have on our lakes and streams, and the resulting measureable outcomes. In the three years since the launch of the campaign, more than 17,000 people made over 24,630 total visits to the website (<http://www.clearchoicescleanwater.org/>). More than 2,160 pledges to make Clear Choices were made. Cumulatively, these pledges amount to the following reductions in pollution and improvements to water quality: 737,200 pounds of phosphorus runoff per year eliminated, 363,000,000 pounds of algae each year prevented from growing, 3.75 trillion fecal coliform bacteria (from 605 dogs) saved from local waters, and 715,200 pounds of sediment impeded.<sup>3</sup>
- **Chuck Brinkman**, who serves on the board of directors and is chair of the watershed committee for the Tippecanoe Watershed Foundation, received an **Environmental Enhancement Award** from the **Kosciusko County Soil and Water Conservation District** for his energy in protecting all natural resources, including promoting no-till and cover crops locally and lobbying at the statehouse for clean water.
- The **Tippecanoe Watershed Foundation** and its Healthy Shorelines Initiative was awarded the **2014 Outstanding Implementation Project** by the **Indiana Lakes Management Society**. The Initiative serves to improve the quality and health of shorelines and lakes in the Upper Tippecanoe River Watershed.
- **Annie Skinner** was named the **Volunteer of the Year** by the **Indiana Lakes Management Society** for her passion for the quality of Clear Lake (Steuben County). Annie works tirelessly to educate, encourage interest, and provide information to the lakes community.
- The **LaGrange County Lakes Council** was awarded the **Outstanding Group** by the **Indiana Lakes Management Society** for their commitment to “promote, protect and preserve the quality of the lakes and watersheds of LaGrange County Indiana.”

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<sup>3</sup> North American Lake Management Society. 2013. LAKELINE. Volume 33, No. 4 / Winter 2013. Symposium Highlights. Technical Merit Award for Public Education/Outreach Efforts.

- **Clinton County SWCD/South Fork Wildcat Watershed group** was recognized by the **IDEM NPS Program** for its efforts to improve biotic communities on Jenkins Ditch.

## **GOAL 4: Improve Indiana’s Water Quality, Including Surface and Ground Water, by Reducing Nonpoint Source Pollutants such as Nutrients, Sediment, and Bacteria; Restoring Aquatic Habitats; and Establishing Flow Regimes That Mimic Natural Conditions**

The heart of Indiana’s NPS Program is its effort to restore waterbodies polluted by NPS pollution. A primary focus of IDEM’s NPS Program is on-the-ground work to reduce NPS pollution and improve water quality. The Watershed Planning and Restoration Section (WPRS) administers two federal pass-through grant programs aimed at improving water quality in the state: Section 319(h) and Section 205(j). Funding from these grants is predominantly used for the development and implementation of comprehensive WMPs that guide efforts to restore water quality on waterways impaired for NPS pollution. This has resulted in measurable improvements, especially in terms of estimated pollutant load reductions and stakeholder involvement. More work remains to be done, however, to fully restore and protect water quality. The WPRS also administers the TMDL program and the new 303(d) Vision, and efforts are underway to revisit and integrate both the NPS and TMDL program priorities. More information about the Section 319 and Section 205(j) grant programs and the TMDL program may be found on [IDEM’s website](#). A full accounting of progress made this year toward the objectives of Goal 4 in the State NPS Management Plan can be found in Appendix A.

### **Section 319 Grant Program**

The Section 319 Grant Program is a major resource for reducing NPS pollution in Indiana. This fiscal year Indiana received \$3,408,000 in Section 319 funds, which are being used for NPS Program support (technical staff and administration) and eight NPS projects. These federal grant funds require a 40% non-federal match. Match for IDEM’s staffing and program support activities is provided by the Indiana SRF Loan Programs administered by the Indiana Finance Authority. The SRF Loan Programs provide low-interest loans, funded by federal capitalization grants, to Indiana communities for projects that improve wastewater and drinking water infrastructure, including NPS projects that are tied to a wastewater loan. The federal funds loaned by the state and subsequently repaid by the borrower to the state are considered state funds. These funds are “recycled” to provide loans for other projects, and can be used as match for the NPS Program. Most of the SRF projects used for NPS Program match involve extending sewers to areas with failing and aging septic systems. Removing these septic systems eliminates NPS pollutants in the watershed including pathogens and nutrients. Since extending sewers is considered a point source activity, only the homeowners’ cost to decommission the septic tank and hook up to the lateral is documented as match. Match for NPS projects is provided by the project sponsor and its partners.

### **Section 319 Funding Priorities**

In 2013 EPA issued new guidelines for the NPS Program starting in FFY 2014. The guidelines provide updated program direction, an increased emphasis on watershed project implementation in watersheds with impaired waters, and increased accountability measures. One of the most significant changes that came from the new guidelines is the stronger emphasis on using Section 319 funds to restore NPS impaired waters through implementation of watershed-based (i.e., watershed management) plans. States must now use at least 50% of their annual appropriation of Section 319 funds (now called watershed project funds) to implement WMPs in watersheds containing one or more impaired waters. States may use a limited amount of these funds to protect identified unimpaired/high quality waters if

doing so is identified as a priority in the updated State NPS Management Plan. Protecting sensitive, vulnerable, and high quality waters of the state is Goal 5 of Indiana's updated State NPS Management Plan.

Each year IDEM solicits applications for projects that will reduce NPS pollution in Indiana's lakes, rivers, and streams. In an effort to more efficiently meet our NPS Program goals, coordinate with the TMDL Program and its efforts to identify and reduce NPS pollution, and focus more of the Section 319 funds on impaired waters, IDEM identifies priority projects for Section 319 funds each year. Below are the five priorities for FFY 2014 funds.

1. In order to continue to make measurable improvements in water quality in Indiana, and to prioritize watersheds for actions focused on reducing nutrient loading to the Gulf of Mexico in coordination with the Indiana Conservation Partnership, IDEM's NPS Program is focusing funding watershed management plan implementation projects addressing nutrients in the following watersheds:
  - East Fork White River Basin (HUCs 05120204-Driftwood, 05-Flatrock Haw, 06-Upper East Fork White, 07-Muscatatuck, 08-Lower East Fork White)
  - Wabash River Basin (HUCs 05120101-Upper Wabash, 02-Salamonie, 03-Mississinewa, 04-Upper Eel, 05-Middle Wabash-Deer, 06-Tippecanoe, 07-Wildcat, 08-Middle Wabash-Little Vermillion, 09-Vermillion, 10-Sugar, 11-Middle Wabash-Busseron, 13-Lower Wabash)
2. In order to support the conditionally approved Lake Michigan Coastal Plan until it is finalized and meets the requirements of the Coastal Zone Act Reauthorization Amendments (CZARA), IDEM's NPS Program is focusing funding in the following watershed:
  - Watershed planning and/or implementation in the Coastal Zone Program area (Little Calumet-Galien Basin – HUC4040001)
3. Watershed planning and/or implementation in watersheds with one or more impaired waterbodies that have an approved TMDL.
4. Watershed planning and/or implementation in watersheds that include waterbodies in Category 5A or 4A of Indiana's Draft 2012 Integrated Water Monitoring and Assessment Report.
5. Implementation of watershed management plans that have met, or will soon meet, IDEM's Watershed Management Plan 2003 or 2009 Checklist.

For FFY 2015 funds, solicited in June 2014, the Coastal Zone priority was dropped since IDEM met the average annual \$100,000 obligation by funding a multi-year, \$455,000 project in 2013. It is anticipated that the funding priorities will change again for FFY 2016 as the new NPS and TMDL program priorities are fleshed out in the coming months.

### Section 319 Grant Projects

Grant applications are submitted by project sponsors, reviewed by a committee, and selected for funding based on the NPS Program's priorities and the quality of the proposal and project. Projects are administered through grant agreements that spell out the tasks, schedule and budget for the project. Projects are normally two to three years long and work to reduce NPS pollution and improve water quality in the watershed through development of watershed management plans that meet [IDEM's WMP Checklist](#) (and EPA's required nine elements); implementation of approved WMPs via a cost-share program to implement BMPs in critical areas that address the water quality concerns outlined in the

WMP; and education and outreach designed to bring about behavioral changes and encourage BMP implementation. IDEM Project Managers work closely with the project sponsors to help ensure that the project runs smoothly and the tasks of the grant agreement are fulfilled. Site visits are conducted at least quarterly to touch base with the project, provide guidance and technical assistance as needed, tour the watersheds and see the BMP installations, and work with the grantee on any issues that arise to ensure a successful project close-out.

Five of the eight projects funded this year address one or more of the NPS Program priorities. These projects will be implementing WMPs in watersheds with impaired waterbodies. The other three projects are providing NPS Program support, watershed education and training, and lake water quality assessments. Most of the projects will begin this fall or early next year. Currently, there are forty-two open or pending Section 319 projects, of which thirty are implementing watershed management plans and installing BMPs in critical areas of the watershed. These thirty projects are doing “on-the-ground” work in their watersheds that leads to NPS pollutant load reductions (as shown in Table 2), and improved water quality. A list of all Section 319 projects open or pending during this fiscal year is located in Appendix B. A map showing the watersheds where water quality improvement projects are currently underway, ready to begin, or recently completed in the state (2009-2014) is located in Appendix C.

Specific project information for all Section 319 projects is entered and maintained in EPA’s Grant Reporting and Tracking System (GRTS) database. Projects used as match for the NPS Program are also entered here. GRTS enables EPA and states to demonstrate the accomplishments achieved with the use of 319(h) grant funds. The data is also used by EPA to respond to inquiries received from Congressional committees, the White House, and various constituent groups. Project information in GRTS includes the project schedule, budget, description, type of BMPs implemented, location of BMPs, estimated pollutant load reductions, and progress reports. Final reports and deliverables for all projects are also entered into GRTS. The public may view this information on the [GRTS Home Page](#). Four Section 319 projects closed this fiscal year and are summarized in Appendix D.

The NPS Program is continually working to update and improve guidance for grantees to help them as they work towards implementing their NPS grant project. Most information needed can be found on the IDEM web site; much of it in the [NPS Grants Compendium](#), which is comprised of all the guidance, instructions and requirements for Section 319/205(j) grantees. This year the NPS Program began work on two guidance documents to help grantees with the process of updating their WMPs and determining critical areas in a WMP. The guidance documents have been drafted and will be finalized this fall.

### **Section 205(j) Grant Program**

The Section 205(j) Grant Program is dedicated to water quality management planning. Funds are used to determine the nature, extent, and causes of point and NPS pollution problems and to develop plans to resolve these problems. There is no match required for these funds. This year IDEM received \$341,000 in FFY 2014 funds and an additional regional allocation of \$131,600 added to the FFY 2013 Section 205(j) funds. These funds will be used for four projects: three watershed management plan development projects and one internal database support project. A list of all 205(j) projects open or pending during this fiscal year is in Appendix E of this report.

## **Integrating the NPS Program with the 303(d) Vision**

In 2014, IDEM began working on the new “Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program”, which reads:

*The Clean Water Act Section 303(d) Program provides for effective integration of implementation efforts to restore and protect the nation’s aquatic resources, where the nation’s waters are assessed, restoration and protection objectives are systematically prioritized, and Total Maximum Daily Loads and alternative approaches are adaptively implemented to achieve water quality goals with the collaboration of States, Federal agencies, tribes, stakeholders, and the public.*

The goals and timeline for the new vision are:

2014 – Engagement

2016 – Prioritization, Protection, Integration

2018 – Alternatives

2020 – Assessment (Site-specific)

2022 – Evaluate accomplishments of the Vision and Goals

The State NPS Management Plan includes objectives to engage with partners to leverage funding, technical assistance and educational efforts, which also align with the goals of the new 303(d) Vision for determining where to prioritize restoration and protection efforts and which programs may achieve restoration and protection as alternatives to developing a TMDL. The WPRS at IDEM, as noted under Goal 3 above, has been engaging several partners this year to discuss challenging sources of NPS, and to learn of their program priorities in order to leverage and begin revising the NPS and TMDL program priorities. Several smaller project teams have been established in the WPRS to start working on specific objectives with partners (septic team, hydromodification team, program priority team), and once some initial information is compiled and criteria laid out for determining restoration and protection priorities as well as alternatives to TMDLs, these teams will engage other IDEM program partners and external partners, stakeholders and the public in 2015 to fine tune the priorities and alternatives. There is an existing IDEM OWQ Nutrient work group that has been active for the past 2-3 years on developing numeric nutrient criteria, and which has been serving as a forum to discuss the larger NPS nutrient issues relating to assessments, 303(d) listings, TMDLs, NPDES permits and NPS efforts. Finally, the ICP has also been working specifically on nutrient issues for several years, and is finalizing the State Nutrient Reduction Strategy. IDEM staff has been able to share and coordinate information and efforts between both the OWQ Nutrient work group and ICP to fulfill the nutrient objectives in the State NPS Management Plan and to discuss setting priorities for TMDLs and alternatives.

## **Best Management Practices and Pollutant Load Reductions**

Best management practices are structural, nonstructural and managerial techniques that are recognized to be the most effective and practical means to control NPS pollutants, yet are compatible with the productive use of the resource to which they are applied. BMPs are used in both urban and agricultural areas. A project that is implementing a WMP will administer a cost-share program to help landowners implement needed BMPs in critical areas to reach the overall WMP goals. If the planning process was successful, landowners will be aware of the water quality problems in the watershed and the ways to reduce the NPS pollution and will be ready to participate in the cost-share program.

When applicable and appropriate, IDEM encourages grantees to consider BMPs that will provide positive impacts to meet multiple objectives. For example, in the waters of the Coastal Zone, restoration activities undertaken with Section 319 funds will also be in accordance with the CZARA Section 6217(g) measures. IDEM is currently modeling this “bigger bang for the buck” concept through its TMDL/NPS Program. TMDLs are being written on the TMDL-WMP template that allows watershed groups to easily incorporate TMDL data into their WMPs and streamline the watershed planning process. In addition, IDEM is starting to encourage a systems approach to implementing BMPs. During a project’s cost-share program development, IDEM will encourage the project to work with landowners and to prioritize cost-share recipients with cropland in identified critical areas that implement a conservation cropping system (such as a nutrient management conservation system or a conservation cropping system for soil health and water quality) rather than a single BMP.

This FFY watershed groups continued working to implement WMPs and utilized over one million dollars to install BMPs in critical areas of Indiana’s watersheds. Table 1 shows BMPs implemented this FFY compared with the last two fiscal years. The number of acres of cover crops has continued to rise since FFY 2011, due in part to IDEM changing the cover crop policy to reduce the five year maintenance commitment to one year, as well as increased focus on this BMP within the agricultural community.

**Table 1 BMPs Implemented in Indiana FFY 2012 - 2014**

<b>BMP</b>	<b>Approximate Number FFY 2012</b>	<b>Approximate Number FFY 2013</b>	<b>Approximate Number FFY 2014</b>
Cover Crop (acres)	10,147	12,905	17,617
Denitrifying Bioreactor (each)	0	2	0
Fence (feet)	42,472	78,119	32,787
Grassed Waterway (feet)	2,721	75,473	46,974
Heavy Use Area Protection (sq feet)	49,059	71,044	100,387
Nutrient Management (acres)	3,300	2,382	4,042
Pasture and Hay Planting (acres)	214	379	753
Pest Management (acres)	0	2,631	6
Residue Management, No-Till (acres)	1,643	3,833	1,169
Streambank/Shoreline Protection (feet)	608	579	814
Tree and Shrub Establishment (acres)	-	-	87
Two Stage Ditch (feet)	2,700	10,038	10,240
Waste Utilization (acres)	0	0	60
Watering Facility (each)	9	12	8
Wetland Enhancement/Restoration (acres)	8	34	12
Porous Pavement (sq feet)	5,000	1,150	7,140
Rain Barrels (each)	14	42	28
Rain Gardens (sq feet)	3,218	52,810	4,133
Septic System Removal (each)*	-	-	467

\*Septic systems eliminated as a result of an SRF project used as match for the NPS Program.

Additional BMPs implemented this year include animal trails and walkways, conservation cover, critical area planting, grade stabilization structure, grassed swale, pipeline, pond, riparian herbaceous cover, roof runoff structure, stream crossing, water and sediment control basin, and water well for livestock

watering. Comprehensive Nutrient Management Plans were written to cover 103 acres. The number of BMPs implemented in a given year varies depending on many factors including the weather, the focus of current NPS projects' implementation efforts based on their watershed management plan, the change in focus and availability of other federal and state programs' grant funds, and changes in BMP promotion and recommendations in the agricultural community.

One important indicator of NPS program and project success is the quantity of pollutants that has been prevented from entering waterbodies as a result of BMPs implemented. Pollutant load reductions, in most cases, are estimated using the [Region 5 Load Estimation Model](#). This simple Excel model provides a general estimate of pollutant reductions (sediment, phosphorus, and nitrogen) at the source level from structural and agricultural field practices and urban BMPs. Reductions achieved through practices related to nutrients (not tied to sediment), bacteriological, and pesticide management are not captured through this estimation method. Another model or method for estimating these load reductions must be used. In addition to the Region 5 Model, the [Spreadsheet Tool for the Estimation of Pollutant Load](#) (STEPL) model also is available and is used by some groups in Indiana. This model calculates nutrient and sediment loads by land use type and aggregated by watershed. In a few cases, reporting pollutant load reductions may not be feasible because of the type of BMP installed.

Estimated load reduction data for each BMP implemented as a result of the project (including BMPs not funded with Section 319 funds) is submitted by the project sponsor with their invoice and entered by the IDEM Project Manager into an Access database at IDEM and the EPA GRTS database. Estimated load reductions vary depending on factors including the type of BMP implemented, the number of acres treated, land use, soil type, and in some cases, rainfall amounts. Urban BMPs generally provide lower estimated load reductions than agricultural BMPs.

Reported estimated load reductions for BMPs implemented this FFY, including the NPS SRF match project, compared with the last two years are shown in Table 2. All load reduction data was obtained from IDEM's Access database.

**Table 2 Reported Estimated Load Reductions for BMPs Implemented FFY 2012-2014**

<b>Nonpoint Source Pollutant</b>	<b>Estimated Reduction FFY 2012</b>	<b>Estimated Reduction FFY 2013</b>	<b>Estimated Reduction FFY 2014</b>
Sediment (tons/yr)	47,616	54,507	56,938
Phosphorus (lbs/yr)	94,980	92,360	65,398
Nitrogen (lbs/yr)	141,709	170,376	175,956
Biological Oxygen Demand (lbs/yr)	29,542	5,143	38,819
Chemical Oxygen Demand (lbs/yr)	2,709	5,390	64
Ammonia (lbs/yr)*	-	-	3731
Suspended Solids (lbs/yr)	35,122	44,192	40,000
Pathogens/Coliform (CFU)*	-	-	1.55E+10
Lead (lbs/yr)	10	16	0
Zinc (lbs/yr)	14	21	0
Copper (lbs/yr)	1	1	0

\*Estimated using a modified STEPL model and the OH Septic Load Reduction Spreadsheet

Cumulative total estimated load reductions reported in Indiana from Section 319 projects since FFY 2000 are shown in Table 3.

**Table 3 Cumulative Total Estimated Load Reductions in Indiana**

<b>Nonpoint Source Pollutant</b>	<b>Total Estimated Reduction</b>
Sediment (tons/yr)	451,859
Phosphorus (lbs/yr)	711,059
Nitrogen (lbs/yr)	1,295,692

### **Nonpoint Source Success Story**

Section 319 NPS Success Stories are stories about NPS-impaired waterbodies where restoration efforts have led to documented water quality improvements. Many stories are about waterbodies that have achieved water quality standards for one or more pollutants and/or designated uses after having been previously included on the state’s 303(d) list of impaired waters. The Jenkins Ditch success story was submitted to EPA as an Indiana NPS success story in 2013. Below is the excerpt from the EPA website.

#### Jenkins Ditch - Implementing Best Management Practices and Conducting Education and Outreach Restores Ditch

(Taken from the EPA web site [http://water.epa.gov/polwaste/nps/success319/in\\_jenkins.cfm](http://water.epa.gov/polwaste/nps/success319/in_jenkins.cfm))

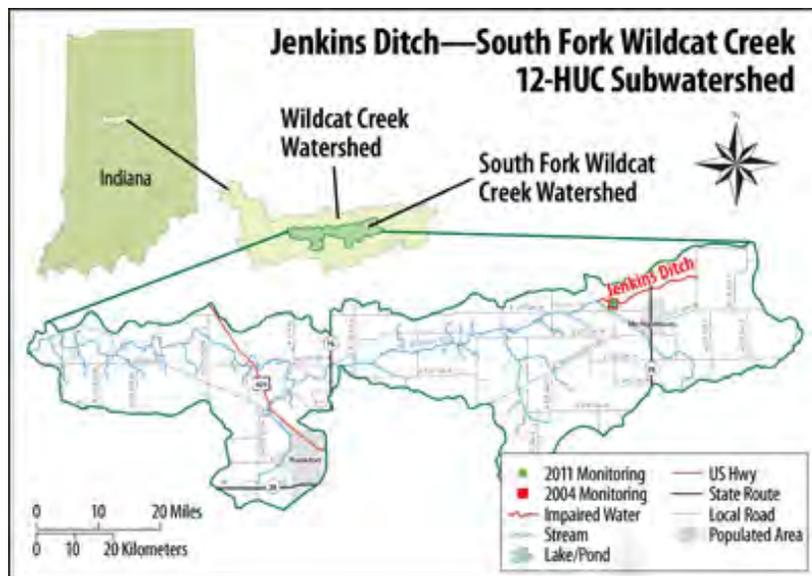
#### Waterbody Improved

Agricultural activities related to crop cultivation and hydrological modification contributed nonpoint source pollution to Jenkins Ditch, causing the waterbody to fail to support its aquatic life designated use. As a result, the Indiana Department of Environmental Management (IDEM) added Jenkins Ditch (a 2.13-mile segment) to Indiana's CWA section 303(d) list of impaired waters in 2006 for poor fish community biological integrity. Stakeholders implemented BMPs in the watershed and conducted education and outreach activities to raise community awareness, resulting in improved water quality. The waterbody now supports its aquatic life designated use. As a result, IDEM removed Jenkins Ditch from Indiana's list of impaired waters in 2012.

#### Problem

Jenkins Ditch is a 2.13-mile-long headwater tributary of the Jenkins Ditch–South Fork Wildcat Creek (SFWC) subwatershed in Clinton County, Indiana. It is in the eastern portion of the SFWC watershed and is classified as a legal drain. The SFWC watershed covers approximately 250 square miles, including more than 60 miles of streams (Figure 3). About 36 miles of these streams are listed as Outstanding Rivers by the Indiana Natural Resource Commission. Row-crop agriculture (mostly corn and soybeans) accounts for 78 percent of the land use in the Jenkins Ditch–SFWC subwatershed. Some of the natural SFWC headwaters, including Jenkins Ditch, have been classified as open drainage channels and have been modified through channelization and dredging to help drain agricultural areas. In the past, crop-related agricultural activities and hydrological modification contributed sediment and other nonpoint source pollutants to Jenkins Ditch.

The biological integrity of a stream is measured using the Index of Biotic Integrity (IBI), a tool used to assess the effect of anthropogenic disturbances on a stream based on its biota. In Indiana, streams that have IBI scores of equal to or greater than 36 are considered to be supportive of the biological integrity, as derived from the state's narrative water quality standard. Biological fish community data collected by IDEM in 2004 showed that Jenkins Ditch received an IBI score of 30, indicating that it failed to support its aquatic life designated use. Consequently, in 2006 IDEM added the entire 2.13-mile segment of Jenkins Ditch (assessment unit INB0742\_T1001) to Indiana's CWA section 303(d) list of impaired waters for poor biological integrity for fish communities. In 2008 IDEM developed a TMDL for *Escherichia coli*, total suspended solids, and nitrate-nitrite in the SFWC subwatershed.



**Figure 3** Map of Jenkins Ditch-South Fork Wildcat Creek subwatershed with IDEM sampling sites

### Project Highlights

Landowners have implemented BMPs on more than 20 percent of the land area of the Jenkins Ditch–SFWC subwatershed. The BMPs include conservation crop rotation, residue and tillage management, pest and nutrient management plans, waste management practices, filter and buffer strips, and habitat management practices. From 1999 to 2003, the IASWCD used grants to fund two technical assistant positions to help reduce the backlog of conservation practices within the larger Wildcat Creek watershed. The technical assistants helped landowners design, survey, and implement conservation practices, placing priority on practices that could address the identified water quality concerns. Using funds provided through the IASWCD, the Wildcat Creek Watershed Network (now known as the Wildcat Creek Watershed Alliance) hired an executive director/watershed coordinator to develop a long-term strategic plan for the larger Wildcat Creek watershed, which includes SFWC and Jenkins Ditch. Although these grant-funded activities occurred before Jenkins Creek was officially listed as impaired, they built the foundations for future planning and implementation efforts that improved Jenkins Ditch.

From 2005 to 2012, watershed partners conducted education and outreach through stakeholder meetings, public workshops, field days, newsletters, and community cleanups to raise awareness and prompt behavior changes in community members within the entire SFWC watershed community. Workshop topics included information on BMPs such as the use of cover crops, proper septic system management, and soil health maintenance.

## Results

Biological fish community data collected by IDEM in 2011 indicated that water quality in Jenkins Ditch has improved, thanks to watershed restoration efforts. Jenkins Ditch earned an IBI score of 38, meeting Indiana's water quality standards. Jenkins Ditch now fully supports its aquatic life designated use. On the basis of these data, IDEM removed Jenkins Ditch from Indiana's list of impaired waters in 2012.

## Partners and Funding

Among the many partners involved in these activities were the Clinton, Howard, Tipton, and Tippecanoe County Soil and Water Conservation Districts; the Greater Wabash River Resource Conservation and Development Council; Purdue Cooperative Extension; Hoosier Riverwatch; and the NRCS.

Partners used \$729,000 in CWA section 319 funds to implement restoration projects throughout the SFWC watershed. Another \$462,000 in CWA section 319 matching funds supported the work of a variety of project partners: (1) The Clinton County SWCD served as a project leader, facilitating water quality data management, developing watershed management plans, and organizing education and outreach events (efforts that were also supported by \$116,700 in CWA section 205 matching funds); (2) Commonwealth Biomonitoring performed chemical and biological watershed monitoring from 2010 to 2011; (3) local participants in cost-share programs implemented and installed various water quality conservation practices; (4) IASWCD provided two technical assistants in 1999 to focus on conservation practices that address water quality concerns within the greater Wildcat Creek watershed; and (5) members of the Wildcat Creek Watershed Alliance developed the *Wildcat Creek Long-term Strategic Plan*. Partners used another \$113,000 in CWA section 205 funds to develop a watershed management plan for critical areas throughout the SFWC watershed.

IDEM also used CWA section 106 funding to conduct field sampling in 2004 and 2011. USDA's Farm Service Agency provided at least \$1.11 million in Conservation Reserve Program and Conservation Reserve Enhancement Program funds to implement BMPs in Clinton County. NRCS provided at least \$1.54 million in Conservation Stewardship Program, Environmental Quality Incentives Program, and Wildlife Habitat Incentive Program funds to install an animal mortality facility structure, enroll 371 acres in comprehensive nutrient management programs, plant 32 acres in pasture/hay, and install 2,500 feet of fencing in the Jenkins Ditch area.

## **GOAL 5: Protect Sensitive, Vulnerable, and High Quality Waters of the State So That They May Continue To Meet Their Designated Uses**

Prior to FFY 2013, IDEM's NPS Program emphasized the restoration of impaired waters, while the issue of protecting sensitive, threatened, or high-quality waters was largely unrecognized. With the passage and EPA approval of state antidegradation rules (327 IAC 2-1.3) in 2012, it is only fitting that these waters be considered in the NPS Program. While the main priority of Indiana's NPS Program must remain the restoration of impaired waters, there remains room to consider projects for which protection is an objective. For the purposes of this goal, the NPS Program considers "sensitive, vulnerable and high quality waters" to include water quality assessment Category 1 waters, watersheds including karst landscapes, outstanding state resource waters (OSRWs – which include national resource waters), drinking water source waters, cold/coolwater/salmonid waters, and waterbodies harboring endangered species.

Work on this goal is not scheduled until FFY 2015, though some groundwork has been laid through conversations with permitting, monitoring, and wetlands staff within IDEM, and staff within the IDNR Lake Michigan Coastal Program and the In-Lieu Fee Program.

# Adaptive Management

The State NPS Management Plan stated that IDEM will work with EPA to correct any deficiencies that might become apparent in the program through the NPS Annual Report. Since the completion of the State NPS Management Plan earlier this year, several errors, omissions, or the need for simple changes have come to light. Table 4 outlines changes (in bold) that should be made to eight objectives of the State NPS Management Plan, with justification.

Table 4. Revisions to Reportable Activities for 2014 (updates in **bold**)

Obj. #	MM	Objective	FFY Start	FFY End	Rationale for Change
1.2	a	Complete ongoing <del>TMDLs and</del> WMPs in the Coastal Zone: <i>East Branch Little Calumet River</i>	2012	<b>2015</b>	“TMDL” copied to table in error. It is correct in the Goals and Action Register sections. The grant sponsor of this project has undergone staffing changes and was granted an extension to complete the project. The new project is scheduled to be completed by the end of 2015.
1.3	a	Restore and protect water quality in critical areas of coastal WMPs: <i>Trail Creek</i>	2013	<b>2016</b>	The end date was recorded in error. The project was originally set to complete in 2016.
2.10	a	Complete Hoosier Riverwatch QAPP template	2014	<b>2015</b>	With the movement of the Hoosier Riverwatch program into IDEM, and the decision to integrate data generated from it into the External Data Framework, the template has transitioned into an External Data Quality Documentation template, instead of a strictly Hoosier Riverwatch template, and additional work needs to be done to complete it. This template will document the information needed for Level 1 and 2 data and will follow U.S. EPA’s QAPP guidance.
2.11	a	Complete acceptance criteria for External Data Framework	2014	<b>2015</b>	Competing priorities have kept this objective from being complete by the end of FFY2014, but work has once again commenced and it is anticipated to be complete by the end of FFY 2015.
2.11	b	Complete the development of technical assistance materials for the EDF and web site development to support its implementation.	2014	<b>2015</b>	This work was contracted out. The contractor, DJ Case & Associates, presented their technical assistance materials for the EDF on 2/28/14. These materials included content for future webpages and a decision matrix on how to implement technical assistance on the web. Currently, IDEM lacks the resources (financial and personnel) to build the actual pages. In addition, IDEM believes that the completion of acceptance criteria for all levels should take place prior to implementation of training components. It is anticipated that this work will be completed in FFY 2015.
2.11	c	Begin accepting, reviewing and ranking water quality	2014	<b>2015</b>	Changes in staff have resulted in a delay in completing this objective.

Obj. #	MM	Objective	FFY Start	FFY End	Rationale for Change
		data provided by external organizations and, if appropriate, using the data to make 305(b)/303(d) water quality assessment and listing decisions.			IDEM intends to solicit for external data to incorporate into the 2016 303(d) cycle. This solicitation will take place after Jan 1, 2015.
4.1	b	Prioritize TMDLs for the next five years to give watershed groups an idea of where TMDLs will be pursued.	2014	<b>2016</b>	Prioritization of TMDLs is in progress. Since the State NPS Management Plan was written, processes at the national level have affected completion of this objective. A visioning process for 303(d) began at the national level that has progressed to encompass both the state TMDL and NPS programs. As a result, IDEM has been participating in national and regional calls to determine how to set priorities within its programs to align with the national vision. U.S. EPA HQ has stated that the timing of the TMDL visioning process did not match well the timing of the due dates for State NPS Management Plans and implied that there would be flexibility in objectives where states were working to integrate TMDL and NPS. This objective will not be complete until FFY 2016.
4.10	a	Investigate and adopt a standard method to estimate <i>E. coli</i> reductions.	2014	<b>2018</b>	Indiana continues to struggle with this objective. At the FFY 2014 Grants Tracking and Reporting System conference, the topic of tracking and reporting <i>E. coli</i> reductions was broached and Indiana has continued to ask for assistance from Region V. The last word on this has been that Region V is working to update the STEP-L and Region V models to include <i>E. coli</i> . Until further assistance is received from Region V, Indiana will likely not be able to move forward on this issue.

# Appendix A

## Reportable Activities for 2014

Goal 1: Utilize partnerships to leverage resources available for NPS management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
1.1		Assist Indiana Department of Natural Resources, Lake Michigan Coastal Program to obtain full approval of all outstanding measures on the LMCP CNPC plan. <b>Progress: Provided updated critical coastal areas language via email 12/10/2013. LMCP submitted updated program documentation to EPA/NOAA on 12/19/2013. Meeting with DNR on 1/17/14. Meeting with DNR, EPA, NOAA on 4/4/14 to discuss next steps, esp. linkage b/t implementing and reporting agencies and monitoring/tracking issues.</b>	2014	2018	ongoing	✓
1.1	a	NPS NW WSS will assist the LMCP with on-site disposal systems measures as needed/requested. <b>Progress: The Northwest IN WSS has been attending the quarterly Septic System Workgroup meetings in 2014 and has provided data as requested to help with the unsewered mapping project that the Illinois-Indiana Sea grant is working on to help with this project.</b>	2014	2018	ongoing	✓
1.1	b	IDEM NPS will host a coordination meeting with U.S. EPA Region V, LMCP, and IDEM NPS to discuss the “linkage” requirement of 6217. <b>Progress: This meeting took place on April 4, 2014 at IDEM’s Northwest Regional Office with EPA, DNR, IDEM, NOAA in attendance.</b>	2014	2015	one-time	✓
1.2	a	Complete ongoing TMDLs and WMPs in the Coastal Zone: <i>East Branch Little Calumet River</i> . (Note: there is no TMDL for EBLC – mistake in compiling table – correctly noted in Action Register). <b>Progress: Organizational issues and staff turnover at the sponsor level have put this project behind schedule. This group has been approved an extension for their contract, which will end July 2015.</b>	2012	<del>2014</del> 2015	ongoing	✓
1.2	b	Complete ongoing TMDLs and WMPs in the Coastal Zone: <i>Deep River</i> . <b>Progress: Deep River is a TMDL/Baseline project (with IDEM performing sampling for the TMDL and WMP), with the intention of being able to return to the monitored sites after implementation to show improvement. IDEM sampling began April 2013 and was completed 3/19/14. A reassessment meeting with local partners involved took place on 4/24/14. TMDL public kick-off meetings were held 3/13/13; interim public meeting was held 12/5/13; and the final TMDL public meeting on 6/14/14. The final TMDL was submitted to U.S. EPA on 8/29/14. Planning/implementation grant term 1/1/2014 – 12/31/2017, with the WMP scheduled to be complete by the end of FFY 2015.</b>	2013	2015	ongoing	✓
1.2	c	Complete ongoing TMDLs and WMPs in the Coastal Zone: <i>Salt Creek</i> . <b>Progress: The TMDL was complete and approved 09/07/2012 and has been posted on IDEM’s website. The</b>	2010	2018	ongoing	✓

Goal 1: Utilize partnerships to leverage resources available for NPS management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/ Progress Made
		<b>WMP project was closed out early due to local sponsor organizational issues and staff turnover. Completion of this project has been turned over to U.S. EPA. The IDEM NW IN WSS will continue to meet with the group as requested and IDEM will review the final WMP against its current WMP checklist when it is received from the group.</b>				
1.3	a	Restore and protect water quality in critical areas of coastal WMPs: <i>Trail Creek</i> . <b>Progress: A 319 implementation grant was awarded to Trail Creek using FFY 2012 funds for the term 2/12/2013-2/11/2016.</b>	2013	<del>2014</del> 2016	ongoing	✓
1.4		Support the Conservation Reserve Enhancement Program (CREP), Mississippi River Basin Initiative (MRBI), Great Lakes Restoration Initiative (GLRI), Lake and River Enhancement (LARE), Clean Water Indiana (CWI), and other Indiana Conservation Partnership (ICP) and statewide initiatives as they become available by:	2014	2018	ongoing	✓
1.4	a	Forwarding solicitation or information as it becomes available. <b>Progress: The WSS share funding opportunities with groups and stakeholders in their regions as notices become available.</b>	2014	2018	ongoing	✓
1.4	b	Participating in ICP planning meetings to determine priorities for funding/initiatives that align with WMP critical areas, water quality, and/or TMDL priority areas (every other month). <b>Progress: IDEM management attended ICP leadership meetings on 2/18/14 and 4/22/14.</b>	2014	2018	ongoing	✓
1.4	c	By promoting the programs through the watershed specialists (WSS) and work with watershed groups to identify/recommend projects that would fit well under the priorities for each funding source. <b>Progress: As opportunities become available, the WSS work with local groups to match funding priorities to local project needs. (examples include working with two separate groups on Regional Conservation Partnership Program projects and finding funding for a storm water BMP pilot project)</b>	2014	2018	ongoing	✓
1.4	d	By including them in relevant TMDLs as methods for implementation. <b>Progress: included in Section 9 of Lower Big Blue River TMDL (submitted 6/12/2014) and Deep River TMDL (submitted 8/29/14).</b>	2014	2018	ongoing	✓
1.4	e	By funding ISDA technicians to design and implement BMPs in select watersheds (ARN 1-66). <b>Progress: The MOU with ISDA to fund three technicians to plan/install BMPs in three target watersheds remained in effect for all of FFY 2014. Site visits on 1/15/14, 6/13/14. The practices worked on by these technicians resulted in a total estimated load reduction of 6,598 tons of sediment per year, 7,798 pounds of phosphorus per year, and 15,597 pounds of nitrogen per year in the Mississinewa, Salamonie, Upper Eel, Upper Wabash, and Upper Tippecanoe watersheds.</b>	2013	2015	ongoing	✓
1.5		Utilize the ICP as an advisory group for priority state NPS policies and updates by participating in bimonthly leadership meetings. <b>Progress: IDEM management attended ICP leadership</b>	2014	2018	ongoing	✓

Goal 1: Utilize partnerships to leverage resources available for NPS management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/ Progress Made
		<b>meetings on 2/18/14 and 4/22/14.</b>				
1.6		Continue to provide technical assistance to local watershed groups through the WSS or project manager as documented through quarterly site visit reports and the Section 319 Annual Report. <b>Progress: WSS provided technical assistance to at least 88 distinct groups in FFY 2014. Site visit reports are on-file with related project documents.</b>	2014	2018	ongoing	✓
1.7		Utilize the TMDL-WMP template for 2014 TMDLs and beyond. <b>Progress: Lower Big Blue was written on template and submitted on (6/12/2014). Deep River written on the template and was submitted 8/29/14.</b>	2014	2018	ongoing	✓
1.8		Continue to partner with the IN-USDA-NRCS on the National Water Quality Initiative (NWQI) for as long as the Initiative remains a national priority. <b>Progress: School Branch in the Eagle Creek watershed is being monitored at multiple levels by various partnership agencies (IUPUI is doing edge-of-field monitoring at Starkey property; IDEM is doing fixed station monitoring above and below Starkey; and USGS is putting in a sentry gage for watershed monitoring. There will also be ground water monitoring). IDEM monitoring staff met with NRCS several times in FFY 2014 as noted in objective 1.8.b.</b>	2014	2018	ongoing	✓
1.8	b	Coordinate with NRCS on at least an annual basis to share in the decision-making on next steps for the Initiative (annually). <b>Progress: IDEM targeted monitoring chief met with NRCS to discuss NWQI on 3/7/2014, 4/8/2014, 4/11/2014, and 4/16/2014.</b>	2014	2018	annually	✓
1.8	c	Fund Silver Creek (051201040501) implementation as a critical area of the larger Middle Eel watershed through their section 319 grant (ARN 3-4). <b>Progress: IDEM-NPS obligated \$500,000 in FFY 2012 funds to the Middle Eel implementation project, with an initial \$250,000 in direct cost-share assistance. (as of 6/30/2014 they had all but \$26,200 allocated, which are being allocated toward cover crops in Beargrass Cr). Of those cost-share funds allocated, \$9,450 went towards 88 acres no-till in the Silver Creek watershed.</b>	2012	2016	ongoing	✓
1.8	d	Provide implementation funding for the Middle Patoka River watershed, thereby indirectly providing outreach and education to Ell Creek (051202090405), which, though not a critical area as defined in the Middle Patoka WMP, will receive benefits from the 319 grant (ARN 3-31) <b>Progress: Ell Creek IS a critical area for the Middle Patoka plan. However, no practices were funded there with 319; even so, because Ell Crk was a critical area, there was some promotion of BMPs in the watershed.</b>	2013	2016	ongoing	✓
1.9		Support implementation of the State Nutrient Reduction Strategy once approved. <b>Progress: Work on the strategy continues. ISDA is Indiana's lead agency on the Strategy and anticipates resubmitting the Strategy by the end of FFY 2014. It is anticipated that this version will be approved by EPA.</b>	2014	2018	ongoing	✓
1.9	a	Review priorities of both documents and import objectives of NPS-related importance to the state NPS management plan. <b>Progress: Since the Strategy has not yet been approved by</b>	2014	2014	one-time	✓

Goal 1: Utilize partnerships to leverage resources available for NPS management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/ Progress Made
		<b>U.S. EPA, no work has been done to import objectives into the State NPS Management Plan.</b>				
1.10		Dedicate an average of \$100,000 in 319 funds to the Coastal Zone (Little Calumet-Galien watershed, HUC 04040001) annually until all of the remaining conditions of the LMCP CNPCP are met. <b>Progress: In FFY 2013, \$455,550 in funding was allocated to the Deep River project within the coastal zone. This commitment has been met through 2017.</b>	2014	until full approval	ongoing	✓
1.11		Coordinate with CWSRF to link loan applicants and local watershed groups. <b>Progress: NPS met with CWSRF on 3/26/14 to review procedures moving forward. After reviewing the applications that came in during April, one unclosed SRF application (City of Bluffton) has a local WMP – the WSS is working with SRF, the City, and the watershed group to provide potential NPS project options for inclusion in the loan. A conference call was conducted between NPS and CWSRF regarding 1st quarter 2015 PPL on 7/22/14. The programs are still working out how coordination will proceed and which loans on this list would best benefit from an NPS project.</b>	2014	2018	ongoing	✓
1.11	a	IDEM NPS will cross-reference the monthly SRF project status report with active 319 projects and/or other known watershed efforts to identify watershed opportunities and meet quarterly (March, June, September, December) with CWSRF Loan Program to communicate those that may benefit from SRF funding. <b>Progress: NPS coordinated with CWSRF Program staff on 2014 third and fourth quarter applications to the program and the status of projects that have been prioritized for funding. NPS staff also obtained the CWSRF 1st quarter 2015 PPL and cross-referenced with WMPs/TMDLs, loan closing date, and whether or not a green or NPS project had been added to the loan in order to discern which projects to work with. As of the writing of this report, no specific projects have been targeted from the 1st quarter 2015 list.</b>	2014	2018	ongoing	✓
1.11	b	Annually, the NPS program will notify the CWSRF and DWSRF program of the 319 projects that are approved for funding, upon notice from EPA. <b>Progress: IDEM NP forwarded a list of 2014 awarded projects to the CWSRF program on 6/20/2014.</b>	2014	2018	annually	✓
1.11	c	Where there are potential projects, the appropriate NPS staff participates with the CWSRF staff in the community orientation or planning meeting. A fact sheet describing the potential NPS project(s) opportunity is included in the SRF packet to the community, and the NPS staff promotes the potential project(s), provides contacts for technical assistance, and provides information on other funding sources active in the watershed (such as NRCS, Clean Water Indiana, 319, 205(j) etc.) <b>Progress: Draft fact sheet prepared and sent to SRF for comment on June 2, and has since been posted to IDEM’s website. The WSS contacted the local watershed group to determine whether there was an opportunity to add a NPS project to the CWSRF loan and initiate conversations with the Mayor of Bluffton. This project is</b>	2014	2018	ongoing	✓

Goal 1: Utilize partnerships to leverage resources available for NPS management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
		<b>still in negotiation.</b>				
1.13		Utilize IDEM WSS to assist partners with NPS planning and implementation activities. <b>Progress: IDEM WSS have been working with at least 88 distinct groups on watershed planning and implementation activities.</b>	2014	2018	ongoing	✓

Goal 2: Monitor and assess Indiana waters for NPS impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
2.1		Require the use of the Environmental Monitoring for Watershed Groups handbook for 319 grantees. <b>Progress: All 319 grantees are required to monitor the core parameters from the Environmental Monitoring for Watershed Groups as a part of their grant agreements.</b>	2014	2018	annually	✓
2.2		Coordinate with NRCS to develop a sampling regime for NWQI projects. <b>Progress: IDEM targeted monitoring chief met with NRCS to discuss NWQI on 3/7/2014, 4/8/2014, 4/11/2014, and 4/16/2014. The agreed-upon sampling regime includes ground water, edge-of-field, stream level, and watershed-level monitoring.</b>	2014	2015	one-time	✓
2.3		Import 319 grantee data meeting appropriate data quality criteria into NPS-AIMS or the Hoosier Riverwatch Database to be uploaded into STORET on a routine basis. <b>Progress: A contract for the continued maintenance and upgrades of the AIMS database is moving through IDEM's internal processes (ARN 4-213). For each grantee project that will have data imported into AIMS, IDEM site numbers must be assigned and communicated to grantees. This has been completed for nineteen projects. However, data will not be entered until after the data has been collected, approximately 2-3 years after the project has begun. The data results in both AIMS and HRW database will be sent routinely to EPA for storage and public access. Two past projects (Dunes Creek implementation and Mill Creek-Blue River) have been uploaded to STORET/WQX.</b>	2014	2018	ongoing	✓
2.4		Invite the participation of local project leaders when conducting 305(b) CWA assessments on baseline monitoring data. <b>Progress: Assessments on Indian-Kentuck watershed with local watershed leaders in attendance occurred on 12/16/2013. Assessments on Deep River data with local leaders in attendance occurred on 4/24/2014.</b>	2014	2018	ongoing	✓
2.5		Evaluate results of the monitoring program and make adaptive management decisions on an annual basis. <b>Progress: Annual monitoring review and update mtgs held 2/24/14, 3/5/14, 4/17/14. These review meetings will continue fall 2014.</b>	2014	2018	annual	✓
2.7		Continue to fund the Clean Lakes Program (volunteer and professional) data collection for use in Clean Water Act 305(b) and 314 assessments and 303(d) listings. <b>Progress: A FFY 2011 grant</b>	2014	2018	ongoing	✓

Goal 2: Monitor and assess Indiana waters for NPS impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/ Progress Made
		<b>was awarded to continue this program through the 2012, 2013, 2014, 2015 sampling seasons. A 319 proposal was submitted for FFY 2014 to continue to fund the program through the 2018 sampling season. In the 2014 sampling season, 80 lakes will be sampled for assessment.</b>				
2.8		Direct IDEM resources to perform baseline characterization monitoring of at least one watershed annually to support TMDL and watershed planning efforts. <b>Progress: Monitoring on the Deep River TMDL/WMP project began in April 2013 and ended 3/19/14. Southern Whitewater River baseline monitoring project began 11/13/2013 and has continued monthly. The Upper Mississinewa River watershed TMDL/WMP sampling began 4/14/14 and has continued monthly.</b>	2013	2018	annually	✓
2.10	a	Complete Hoosier Riverwatch QAPP template. <b>Progress: A rough draft of the template has been completed. However, with the movement of the Hoosier Riverwatch program to IDEM, and the decision to integrate data generated from it into the External Data Framework, the template has transitioned into an External Data Quality Documentation template, instead of a strictly Hoosier Riverwatch template, and additional work needs to be done to complete it. This template will document the information needed for Level 1 data and will follow U.S. EPA's QAPP guidance.</b>	2014	<del>2014</del> 2015	one-time	✓
2.10	b	Provide support for 20 Hoosier Riverwatch workshops (volunteer trainings) and maintain current loaner/teaching trunks. <b>Progress: In FFY 2014, Hoosier Riverwatch will have held 21 volunteer trainings. In addition, a joint training was conducted last fall at the main office location. This training was conducted by the program Coordinator jointly with a handful of IDEM stream biologists, who assisted participants in identifying macroinvertebrates. During the reporting period 8 requests for new stream monitoring kits were filled. In addition, numerous requests for refills of expired supplies &amp;/or replacement color comparators were filled for the more active volunteer monitors. The Riverwatch program also maintains 21 loaner trunk locations around the state. Trunks contain all the supplies needed for a volunteer monitor to conduct stream sampling events. Volunteers who represent a non-profit organization can apply to receive and maintain their own individual monitoring kits. Volunteers who do not represent an organization can sign out and utilize loaner trunks in order to conduct their sampling. One trained citizen volunteer monitor checked out the loaner trunk in the Marion County (headquarter) office during this time frame. Records are not available regarding the signing out and use of the other loaner trunks.</b>	2014	2018	annually	✓
2.10	c	Provide support for maintenance and upgrades of the Hoosier Riverwatch water quality monitoring database and associated websites. <b>Progress: Contracts are now in place for both the upgrade and the maintenance of the Hoosier Riverwatch online database. The database is a portal where citizen volunteer water monitors can enter their own data as it's collected.</b>	2014	2018	ongoing	✓

Goal 2: Monitor and assess Indiana waters for NPS impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/ Progress Made
		<b>The maintenance contract was executed in September 2013; while the upgrade contract was executed at the end of July 2014. Upgrades to be made include stream-lining the entering of data in areas where it bogs down, as well as adding a portal for additional external data providers, per guidelines being developed to meet IDEM's Office of Water Quality and U.S.EPA's needs. The online database currently houses over 18,000 data records; including stream chemistry, macroinvertebrates, flow and habitat assessment data. IDEM staff have conducted 3 rounds of QA/QC checks on the data entered into the database during this time frame.</b>				
2.11	a	Complete acceptance criteria for External Data Framework. <b>Progress: IDEM's External Data Framework outlines data quality objectives for data at three known quality levels, loosely based on the Certified Laboratory Protocol tiered approach. For IDEM's EDF, these levels are Level 1, Level 2, and Level 3. Level 3 acceptance criteria have been defined. A draft of the Level 2 criteria has been produced and meetings to refine Level 2 criteria took place on 7/22/14 and 8/19/14. It is anticipated that acceptance criteria for all three data quality levels will be complete during FFY 2015.</b>	2014	<del>2014</del> 2015	one-time	✓
2.11	b	Complete the development of technical assistance materials for the EDF and web site development to support its implementation. <b>Progress: DJ Case &amp; Associates presented their technical assistance materials for the EDF to IDEM staff on 2/28/14. These materials included content for future webpages and a decision matrix on how to implement technical assistance on the web. Currently, IDEM lacks the resources (financial and personnel) to build the actual pages. In addition, IDEM believes that the completion of acceptance criteria for all levels should take place prior to implementation of training components. It is anticipated that this work will be completed in 2015.</b>	2014	<del>2014</del> 2015	one-time	✓
2.11	c	Begin accepting, reviewing and ranking water quality data provided by external organizations and, if appropriate, using the data to make 305(b)/303(d) water quality assessment and listing decisions. <b>Progress: This item cannot be completed until all levels of the EDF are defined. IDEM intends to solicit for external data to incorporate into the 2016 303(d) cycle. This solicitation will take place after Jan 1, 2015.</b>	2014	<del>2014</del> 2015	one-time	✓
2.12	a	Evaluate water quality data submitted through the EDF process, as well as grantee monitoring, to identify watersheds that should be surveyed for possible NPS water quality improvements. <b>Progress: IDEM intends to solicit for external data to incorporate into the 2016 303(d) cycle. This solicitation will take place after Jan 1, 2015, after all acceptance criteria for the EDF have been defined.</b>	2014	2018	annually	✓
2.12	b	Use additional resources (e.g., staff, funds, and technical support) to monitor water quality in watersheds where NPS restoration activities have occurred. The monitoring data will be compared to baseline information, if available, to gauge the efficacy of the work. <b>Progress: In FFY 2013,</b>	2014	2018	annually	✓

Goal 2: Monitor and assess Indiana waters for NPS impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
		<b>Blue River and Upper Tippecanoe were monitored for improvements. In FFY 2014, Hogan and Tanners Creek are being monitored for improvements. Improvements found will be submitted to U.S. EPA as part of the SP-12 and WQ-10 reporting process.</b>				
2.13		Continue the Ground water Monitoring Network (GWMN). <b>Progress: Approximately 300 wells will be monitored through the GWMN in 2014.</b>	2013	2018	ongoing	✓
2.14	a	Meet with IDEM-GW staff to discuss level of analysis of ground water data occurring and needed to characterize causes, sources, and magnitude of NPS in ground water. <b>Progress: Meetings with GW staff took place on 4/3/14 and 6/5/14. We discussed the need for a statistical approach to collection of groundwater such that causes, sources, and magnitude of NPS in GW can be determined. Currently GW is collected at 300 locations each sampling season, which for the most part, change from year to year. This sampling regime will be ongoing for approximately 2-3 years until a statistical representation is reached, then it will develop into a fixed station network. At that time, IDEM will be able to determine causes, sources, and magnitude of NPS in particular geological settings of Indiana. Nitrates will be a target parameter.</b>	2014	2014	one-time	✓
2.14	b	Gather data and develop a timeline for completing the ground water data analysis and reporting mechanism. <b>Progress: This issue was discussed at 6/5/14 meeting with GW section. Reports are prepared annually, completed by Aug of the year preceding the sampling. A larger analysis of the dataset will take place after the statistical sampling has been completed. The Indiana Geological Survey is currently completing a vulnerability analysis of the geologic settings of Indiana, using supplemental 106 and state money. IDEM anticipates completion of that analysis Oct 2015.</b>	2014	2015	ongoing	✓

Goal 3: Develop and conduct a strategic outreach and education program						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
3.1	a-b	Initiate meetings with partners to discuss IDEM's goal of strategic messaging for the state on septic system care: Work with partners to define the purpose of the outreach program. Work with partners to identify the target audience. <b>Progress: Bonny met with the Rural Wastewater Task Force on 4/10/14 to update them on NPS plan revision/new goals for outreach/ed in particular and seeking/reporting on wq success stories. An internal IDEM committee met on 5/29/14 and has been discussing setting up a website on this issue. The Northwest IN WSS has been attending the quarterly Septic System Workgroup meetings in 2014. One idea that has come out of the Septic System Workgroup meetings is posting the LaPorte County</b>	2014	2015	several meetings over the course of year	✓

Goal 3: Develop and conduct a strategic outreach and education program						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/ Progress Made
		septic ordinance as a “case study” on the aforementioned statewide website. A meeting with the Indiana State Department of Health is scheduled for 8/26/2014 to further discuss this issue.				
3.1	d	Publicize septic system care/repair/replacement water-quality success stories through multiple media applications. <b>Progress: See Objective 3.1.a-b for information on a potential story to be publicized. Septic Smart Week is September 22-26, 2014 and we’ve agreed to work with the Lake Michigan Coastal Program in promoting septic awareness during this week. The Metcalf Ditch Success Story has a septic bent to it and is also posted to our website.</b>	2014	2018	ongoing	✓
3.1	e	Support technical events (such as IEHA annual conference), to exchange information between government partners, watershed groups, and citizens. <b>Progress: Staff attended and spoke at several technical events in FFY 2014, including the Indiana Society of Mining and Reclamation (ISMR) conference and technology transfer, the Local Technical Assistance Program conference (by Purdue to educate contractors, cities, towns/street dept staff, surveyors, local leaders about drainage issues), the 2014 Source Water Forum, 2014 ILMS Conference , Alliance of Indiana Rural Water Spring Conference , Vigo County Contractor meeting , and the 2014 MS4 Annual meeting.</b>	2014	2018	ongoing	✓
3.1	f	Assist in providing outreach on septic systems in the Lake Michigan Coastal Zone. <b>Progress: NW IN WSS has participated in the Coastal Septic Workgroup in FFY 2014 and heard from LaPorte Co HD on modified septic ordinance. Also continued to brainstorm solution to septic problem in 3-county meeting.</b>	2014	2018	ongoing	✓
3.1	f.i	Market on-site disposal system inspections at property transfer to lending institutions in the Coastal Zone. <b>Progress: this topic remains of interest to the Coastal Septic Workgroup and was the topic of discussion in several forums (including a Coastal States Organization call).</b>	2014	2015	ongoing	✓
3.1	f.ii	Work with partners to develop and/or promote existing Septic Awareness Campaign regarding septic impacts. Items may include developing Public Service Announcements regarding the importance of proper on-site disposal system maintenance. <b>Progress: IDEM NPS has agreed to promote Septic Smart Week which takes place September 22-26, 2014.</b>	2014	2014	one-time	✓
3.1	f.iii	Promote the use of the Revolving Loan Fund for Septic upgrades and repairs. <b>Progress: IDEM NPS continues to work with the CWSRF at the state level to leverage watershed plans and septic repairs. As the opportunity arises, individual WSS promote the use of CWSRF to leverage septic repairs. While 2 projects in NWIN have been identified as potential candidates for this objective, further work on coordinating them with watershed groups will need to wait until the completion of their watershed management plans (in 2015).</b>	2014	2018	annually	✓
3.2	a-b	Initiate meetings with partners to discuss IDEM’s goal of strategic messaging for the state on hydromodification. Work with partners to define the purpose of the outreach program. Work with	2014	2014	several meetings over	✓

Goal 3: Develop and conduct a strategic outreach and education program						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/ Progress Made
		partners to identify the target audience. <b>Progress: Staff attended Wetland Program Development mtgs on 2/6/14, 2/28/14, 7/30/14 and explained that the State NPS management plan includes objective to work with partners on a common message. Staff attended Operation Stay Afloat meeting and continued communication with Department of Natural Resources (DNR) on flooding, dams and other hydromodifications permitted through DNR Division of Water. Staff provided info to the DNR in-lieu-fee program coordinator regarding locations of WMPs and groups in order to facilitate priority area selection and attended in-lieu fee program development meeting 8/6/14.</b>			the course of year	
3.2	d	Publicize hydromodification/stream restoration success stories through multiple media applications. <b>Progress: Indiana's Jenkins Ditch stream restoration Success Story was posted to U.S. EPA's website Mar 12. The NW IN WSS presented a NPS sign as an award to the SWCD South Fork Wildcat grant sponsor at their annual meeting Mar 12. In addition, the success story was added to IDEM website (<a href="http://www.in.gov/idem/nps/3036.htm">http://www.in.gov/idem/nps/3036.htm</a>) Mar 19 and IDEM sent out a press release on 4/2/14. The local paper (The Frankfort Times) picked up the story and printed an article on the success on 4/14/14.</b>	2014	2018	ongoing	✓
3.2	e	Continue outreach to the community of County Surveyors to become involved in water quality improvement through the IWLA, the Indiana Association of County Surveyors, local watershed groups, and county contacts. <b>Progress: TMDL staff presented at a joint Indiana Association of Floodplain and Stormwater Managers, IN Association of County Surveyors, and IN Society of Professional Land Surveyors Stormwater Drainage Conference on 2/13 to discuss stormwater TMDLs and wasteload allocations and load allocations. NPS staff also held a conference call with Purdue IWLA staff on 4/30/14 to discuss how to draw in more Surveyors to the IWLA. Purdue has discussed this issue with one of their surveyor participants, but no firm plans to draw more Surveyors into IWLA have been made.</b>	2014	2018	ongoing	✓
3.3	a-b	Initiate meetings with partners to discuss IDEM's goal of strategic messaging for the state on sediment and nutrient pollution. Work with partners to define the purpose of the outreach program. Work with partners to identify the target audience. <b>Progress: NPS Chief attended meeting with Indiana Ag Commodities group on 11/26/13 to discuss this topic. At this time, Clear Choices, Clean Water campaign is main forum for urban/residential nutrient sources.</b>	2014	2014	several meetings over the course of year	✓
3.3	d	Publicize success stories through multiple media applications. <b>Progress: Indiana's Jenkins Ditch stream restoration Success Story was posted to U.S. EPA's website Mar 12. The NW IN WSS presented a NPS sign as an award to the SWCD South Fork Wildcat grant sponsor at their annual meeting Mar 12. In addition, the success story was added to IDEM website (<a href="http://www.in.gov/idem/nps/3036.htm">http://www.in.gov/idem/nps/3036.htm</a>) Mar 19 and IDEM sent out a press release on 4/2/14. The local paper (The Frankfort Times) picked up the story and printed an article on the success on 4/14/14.</b>	2014	2018	ongoing	✓

Goal 3: Develop and conduct a strategic outreach and education program						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/ Progress Made
3.4		At least annually review print and electronic materials for updates and republish as needed. <b>Progress: Web pages and other electronic resources are updated on an as-needed basis. Twice per year IDEM staff reviews web materials for broken links and accuracy. 319 Solicitation and application packet information was revised for the FFY 2015 Request for proposals.</b>	2014	2018	annually	✓
3.5		Continue to provide citizen monitoring training through Hoosier Riverwatch and the Clean Lakes Program. <b>Progress: In FFY 2014, Hoosier Riverwatch trained 129 persons in 18 workshops so far. Three more workshops will take place before the end of the FFY. The Clean Lakes Program trained 59 people through the aquatic invasive workshops and the Secchi monitoring.</b>	2014	2018	ongoing	
3.6	a	Produce 5 “Success Stories” (EPA WQ-10 Strategic Measure) by 2017 and publicize widely within Indiana. <b>Progress: Indiana’s Jenkins Ditch stream restoration Success Story was posted to U.S. EPA’s website Mar 12. The NW IN WSS presented a NPS sign as an award to the SWCD South Fork Wildcat grant sponsor at their annual meeting Mar 12. In addition, the success story was added to IDEM website (<a href="http://www.in.gov/idem/nps/3036.htm">http://www.in.gov/idem/nps/3036.htm</a>) Mar 19 and IDEM sent out a press release on 4/2/14. The local paper (The Frankfort Times) picked up the story and printed an article on the success on 4/14/14. In 2014, IDEM NPS submitted the Little Elkhart River as a Measure W (SP-12) and a Success Story (WQ-10). Further discussion with U.S. EPA Region V is needed to determine whether or not this watershed qualifies for either measure.</b>	2014	2017	ongoing	✓
3.6	b	Publicize any awards given to watershed groups related to their water quality efforts in Indiana. <b>Progress: Watershed groups and individuals who have received awards for their water quality efforts in Indiana are listed on pages 24-25 of the Indiana NPS Program’s FFY 2014 Annual Report. This report will be posted online.</b>	2014	2018	ongoing	✓
3.7	a	Utilize social media to provide up-to-the minute information to followers of IDEM’s social media outlets. <b>Progress: IDEM NPS has not had reason/opportunity to use social media in FFY 2014.</b>	2014	2018	ongoing	✓
3.7	b	Continue to participate in the Pathway to Water Quality at the Indiana State Fairgrounds. <b>Progress: The IDEM SE IN WSS remains on the Pathway steering committee and attended monthly steering committee meetings in FFY 2014. The SE IN WSS also researched potential funding sources for extending the pervious pavement throughout the exhibit and participated in multiple workdays to prepare the exhibit for visitors. Several IDEM staff (including NPS staff) volunteered to work at the exhibit during the Indiana State Fair (August 1-17, 2014).</b>	2014	2018	ongoing	✓
3.9	a	Continue to provide technical assistance to Purdue University’s Indiana Watershed Leadership Academy. <b>Progress: IDEM NPS continues to hold a seat on the IWLA steering committee</b>	2014	2018	ongoing	✓

Goal 3: Develop and conduct a strategic outreach and education program						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
		<b>and has participated in conference calls and other meetings as requested. NPS staff assisted with assignment reviews and updating of learning modules. Watershed specialists attended graduation on 5/21/14 and assisted participants and Purdue think through some ways that final projects produced by participants could be made more widely available to the Indiana watershed community.</b>				
3.9	b	Continue to support the ICP's Training and Certification Program on watershed related issues by sitting on the Technical Research Board and the advisory team. <b>Progress: IDEM NPS holds seats on both the lead program team and the Technical Review Board and attends bimonthly conference calls to continue to move the training program forward. IDEM funded a 2-year project for a coordinator for this group using 205j dollars – that grant was complete in FFY 2014. The coordinator continues to serve the group in a volunteer capacity. IDEM staff solicited locations for advanced rain garden trainings in Indiana and is coordinating with Purdue on a load calculations training for the ICP. IDEM also participated in an updated training needs inventory to help set priorities for this group.</b>	2014	2018	ongoing	✓

Goal 4: Improve Indiana's water quality, including surface and ground water, by reducing NPS pollutants such as nutrients, sediment, and bacteria; restoring aquatic habitats; and establishing flow regimes that mimic natural conditions						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
4.1	a	Utilize the TMDL-WMP template for TMDLs sampled for and written in 2014 and beyond so that they are implementable using 319 funds. <b>Progress: Both TMDL reports that will be submitted this FFY (Lower Big Blue River and Deep River) were written on the TMDL-WMP template. In-progress TMDLs are also being written on the template.</b>	2014	2018	ongoing	✓
4.1	b	Prioritize TMDLs for the next five years to give watershed groups an idea of where TMDLs will be pursued. <b>Progress: Prioritization of TMDLs is in progress. Since the State NPS Management Plan was written, processes at the national level have affected completion of this objective. A visioning process for 303(d) began at the nationwide level that has progressed to encompass both the state TMDL and NPS programs. As a result, IDEM has been participating in national and regional calls to determine how to set priorities within its programs to align with the national vision. U.S. EPA HQ has stated that the timing of the TMDL visioning process did not match well the timing of the due dates for State NPS Management Plans and implied that there would be flexibility in objectives where states were working to integrate TMDL and NPS. This objective will not be complete until FFY 2016.</b>	2014	<del>2014</del> 2016	one-time	✓

Goal 4: Improve Indiana's water quality, including surface and ground water, by reducing NPS pollutants such as nutrients, sediment, and bacteria; restoring aquatic habitats; and establishing flow regimes that mimic natural conditions						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
4.1	c	Link TMDLs with baseline water monitoring projects for Section 319 watershed management planning applications. <b>Progress: Deep River, Southern Whitewater River, and Upper Mississinewa River are all being monitored for TMDLs and will receive grant funding to produce WMPs (Deep River and Southern Whitewater River will receive 319 funding, while Upper Mississinewa is funded through 205j).</b>	2014	2018	ongoing	✓
4.2		Develop guidance for updating watershed management plans. <b>Progress: A draft document of this guidance has been produced by NPS staff and is being finalized.</b>	2014	2016	one-time	✓
4.3		Promote integration of WMPs with local comprehensive plans. <b>Progress: Integration of WMPs with local comprehensive plans is being promoted where and when there is opportunity. There has been some success on this to date. For example, in NW IN, relevant portions of NIRPC's 2040 plan is incorporated into all watershed management plans that have been developed since its completion in 2011 (Little Calumet – East Branch, Deep River – Portage Burns, and Salt Creek).</b>	2014	2018	ongoing	✓
4.4	a	Integrate disparate NPS program databases into one centralized integrated Watershed database to assist with tracking and reporting. Develop scope of work for the integrated databases project. <b>Progress: A scope of work for this project was developed and submitted as a National Environmental Information Exchange Network grant to U.S. EPA in FFY 2014. Unfortunately, this project as not selected for funding this round.</b>	2014	2015	ongoing	✓
4.5		Use Section 319 funding to support implementation of WMPs that meet the U.S. EPA'S 9 Key Elements of a Watershed Plan (including staff support and outreach as well as the placement of BMPs in critical areas as identified in the WMPs). <b>Progress: In FFY 2014, there were twenty-six open 319 projects exceeding \$10.3 million to implement WMPs or to create a WMP, then implement it. Nine implementation projects were chosen to receive FFY 2014 funding including Lower Eel River, Hogan Creek, Plummer Creek, Central Muscatatuck, Upper Iroquois, Little Duck and Lilly Creek, Big Walnut Creek, Upper Wabash River, and Whitewater River.</b>	2014	2018	ongoing	✓
4.6		Repair previously-installed BMPs with the caveats outlined in the program policy. <b>Progress: No BMPs required repair during FFY 2014.</b>	2014	2018	ongoing	✓
4.7		Continue to leverage LARE and CWI funds to address erosion, sedimentation and nutrient input concerns as long as the General Assembly continues to approve appropriations. <b>Progress: As the opportunity arises, LARE and CWI projects are being used as match for NPS projects.</b>	2014	2018	ongoing	✓
4.8		Develop guidance for the identification of critical areas. <b>Progress: This guidance is in progress. A draft document has been produced by NPS staff and has been forwarded to U.S. EPA for comment. Additional negotiation is needed before the guidance is finalized.</b>	2014	2014	one-time	✓
4.9		Show partial or total restoration in at least 5 12-digit watersheds (at least 5 SP12 and 5 WQ-10;	2013	2017	ongoing	✓

Goal 4: Improve Indiana's water quality, including surface and ground water, by reducing NPS pollutants such as nutrients, sediment, and bacteria; restoring aquatic habitats; and establishing flow regimes that mimic natural conditions						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
		watersheds identified may count for both measures) in the five-year cycle 2013-2017. <b>Progress: Jenkins Ditch was approved as a Success Story (WQ-10) in 2013. In 2014, IDEM NPS submitted the Little Elkhart River as a Measure W (SP-12) and a Success Story (WQ-10). Further discussion with U.S. EPA Region V is needed to determine whether or not this watershed qualifies for either measure.</b>				
4.10	a	Investigate and adopt a standard method to estimate E. coli reductions. <b>Progress: Indiana continues to struggle with this objective. At the FFY 2014 Grants Tracking and Reporting System conference, the topic of tracking and reporting E. coli reductions was broached and Indiana has continued to ask for assistance from Region V. The last word on this has been that Region V is working to update the STEP-L and Region V models to include E. coli. Until further assistance is received from Region V, Indiana will likely not be able to move forward on this issue.</b>	2014	2014 2018	one-time	✓
4.11		Geolocate all BMPs installed through the Section 319 grant program in order to enhance the BMP GIS layer located in the NPS program. <b>Progress: The backlog of BMPs installed through the 319 program that required geolocation has been nearly eliminated and geolocation of BMPs will be a routine matter once implementation projects have been completed.</b>	2014	2018	ongoing	✓
4.12		Solicit for proposals to use Section 319 funding to support implementation of WMPs that meet the U.S. EPA'S 9 Key Elements of a Watershed Plan (includes staff support as well as BMPs). <b>Progress: The FFY 2014 solicitation for proposals ran from 5/1/13-8/30/13. The FFY 2015 solicitation ran from 4/1/14-9/2/2014.</b>	2014	2018	annually	✓
4.12	a	Provide financial and technical support to install agricultural BMPs in critical areas identified in the plan. <b>Progress: A list of the BMPs installed using Section 319 funding is available on page 31 of this report.</b>	2014	2018	annually	✓
4.12	b	Provide financial and technical support to install urban and/or residential BMPs in critical areas identified in the plan. <b>Progress: A list of the BMPs installed using Section 319 funding is available on page 31 of this report.</b>	2014	2018	annually	✓
4.12	c	Provide financial and technical support to install forestry BMPs in critical areas identified in the plan. <b>Progress: A list of the BMPs installed using Section 319 funding is available on page 31 of this report.</b>	2014	2018	annually	✓
4.12	d	Provide financial and technical support to install abandoned mine BMPs in critical areas identified in the plan. <b>Progress: A list of the BMPs installed using Section 319 funding is available on page 31 of this report.</b>	2014	2018	annually	✓
4.12	e	Provide financial and technical support to install hydrological and aquatic habitat BMPs in critical areas identified in the plan. <b>Progress: A list of the BMPs installed using Section 319 funding is</b>	2014	2018	annually	✓

Goal 4: Improve Indiana's water quality, including surface and ground water, by reducing NPS pollutants such as nutrients, sediment, and bacteria; restoring aquatic habitats; and establishing flow regimes that mimic natural conditions						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
		<b>available on page 31 of this report.</b>				

Goal 5. Protect sensitive, vulnerable, and high quality waters of the state so that they may continue to meet their designated uses.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete/Progress Made
5.3		Participate as requested in Phase II wellhead protection planning. <b>Progress: The IDEM NPS staff met with the IDEM Ground Water staff and discussed this topic twice this FFY. Staff turnover in the Ground Water Section has precluded forward momentum on this project to date.</b>	2014	2018	ongoing	✓

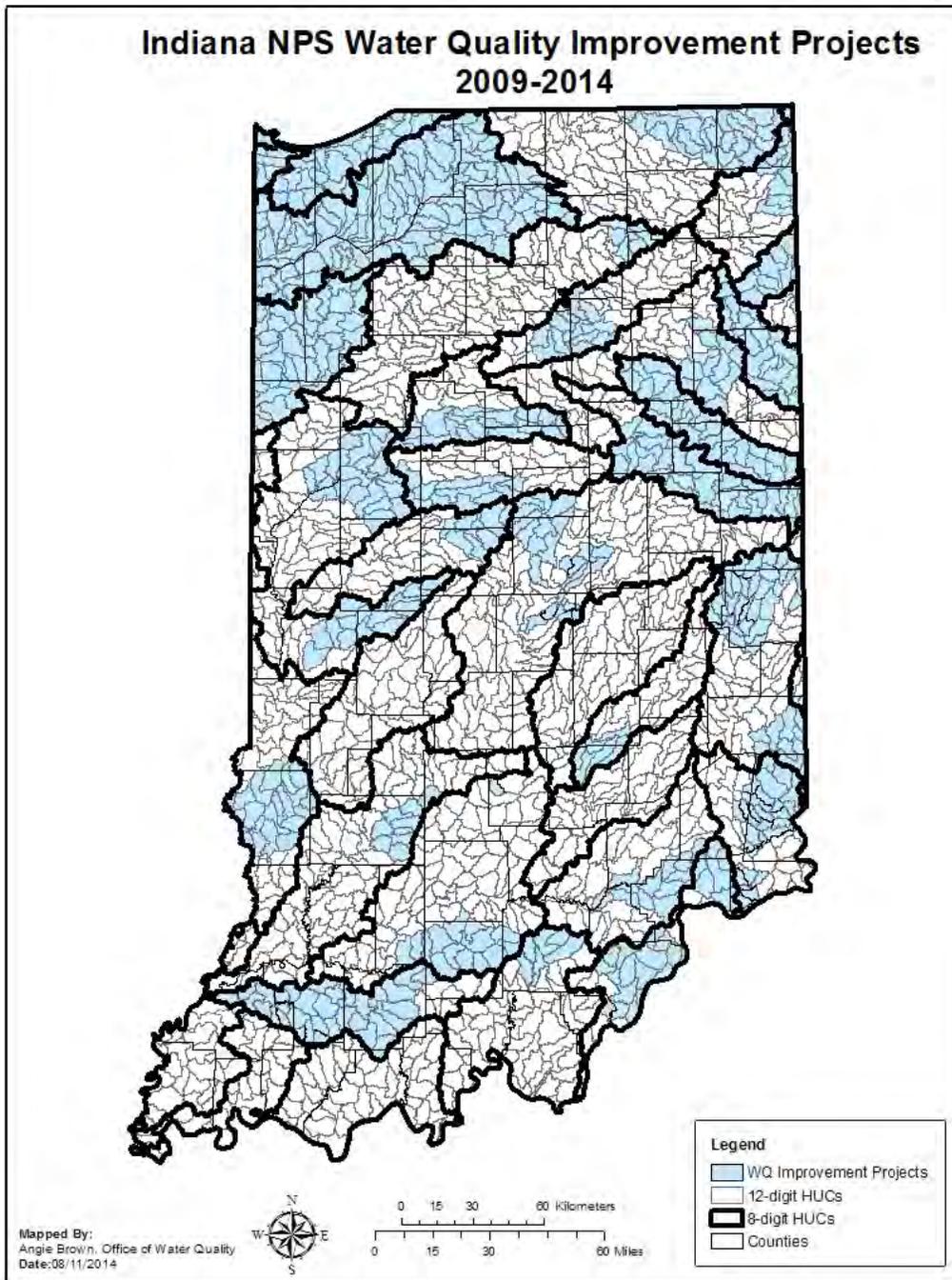
# Appendix B

## Open Section 319 Projects 9/1/13 – 8/31/14

FFY	ARN	Contractor	Project	Status	Start	End	Type
2009							
	2-6	Wabash River Enhancement Corp.	Region of the Great Bend of Wabash WMP Impl	Open	2/14/2012	2/13/2015	Restoration/Impl
	2-7	Bartholomew County SWCD	Flatrock-Haw WMP Implementation	Open	1/3/2012	1/2/2015	Restoration/Impl
	9-274	Allen County SWCD	St. Marys River WMP Implementation	Closed	1/15/2010	1/14/2014	Restoration/Impl
	9-275	Steuben County SWCD	Pigeon Creek WMP Implementation Phase 2	Closed	9/23/2009	9/22/2013	Restoration/Impl
2010							
	10-65	St. Joseph River Watershed	Middle St. Joseph River WMP Development & Impl.	Closed	9/27/2010	3/26/2014	Combo
	10-80	Clark County SWCD	Silver Creek Watershed Improvement Project	Open	10/18/2010	10/17/201	Restoration/Impl
	10-81	Jasper County SWCD	Task G - Upper Iroquois Watershed Initiative	Open	11/8/2010	11/7/2014	Planning
	10-85	Dearborn County SWCD	Hogan Creek Watershed Project	Open	11/16/2010	11/15/201	Restoration/Impl
	10-86	LaGrange County SWCD	Pigeon River WMP Development & Implementation	Open	9/28/2010	9/27/2014	Combo
	1-2	Sullivan County SWCD	Busseron Creek Watershed Implementation	Open	11/24/2010	11/23/201	Restoration/Impl
	1-66	Indiana State Department of	Technical Assistance for Agriculture	Open	7/15/2011	1/17/2015	ProgramSupport
	2-72	Purdue University	Watershed Leadership Academy Con't	Open	2/1/2013	1/31/2015	ProgramSupport
	2-73	Tippecanoe Watershed Foundation	Upper Tippecanoe River-Grassy Creek Implementation	Open	10/22/2012	1/31/2015	Restoration/Impl
2011							
	2-11	Save the Dunes Conservation Fund	Little Calumet River East Branch WMP	Open	1/17/2012	7/16/2015	Planning
	2-13	Greene County SWCD	Plummer Creek WMP	Open	3/1/2012	8/31/2014	Planning
	2-15	Upper White River Watershed	Partners & Projects Protecting the White Implemen	Open	1/30/2012	1/29/2015	Restoration/Impl
	2-16	St. Joseph River Watershed	Upper St. Joe Watershed Project	Open	2/14/2012	1/31/2016	Combo
	2-21	Allen County SWCD	Upper Maumee WMP & Implementation	Open	2/14/2012	1/31/2016	Combo
	2-22	Carroll County SWCD	Deer Creek-Sugar Creek WMP & Implementation	Open	4/13/2012	1/31/2016	Combo
	2-25	Indiana University	Indiana Clean Lakes Program	Open	1/5/2012	1/4/2016	Assessment
	2-8	The Nature Conservancy	Two-Stage Ditch Implementation	Open	1/17/2012	1/15/2015	Restoration/Impl
	3-60	Historic Hoosier Hills	Indian Creek Watershed Project	Open	5/14/2013	1/31/2016	Restoration/Impl
2012							
	3-119	Dearborn County SWCD	Whitewater River WMP	Open	12/9/2013	3/8/2016	Planning
	3-18	Clinton County SWCD	South Fork Wildcat Creek Stewardship Initiative	Open	12/21/2012	12/20/201	Restoration/Impl

	3-31	Alliance of Indiana Rural Water	Middle Patoka River Implementation	Open	1/18/2013	1/17/2016	Restoration/Impl
	3-4	Manchester College	Middle Eel Watershed Initiative Implementation	Open	1/3/2013	1/2/2016	Restoration/Impl
	3-47	LaPorte County SWCD	Trail Creek Cost-Share Program	Open	2/12/2013	2/11/2016	Restoration/Impl
	3-77	Sullivan County SWCD	Turtle Creek-Turman Creek-Kelly Bayou WMP	Open	8/23/2013	1/31/2017	Combo
	3-8	Steuben County SWCD	Pigeon Creek WMP Revision and Implementation	Open	1/17/2013	1/16/2016	Combo
	3-9	Huntington County SWCD	Lower Salamonie River WMP and Implementation	Open	1/18/2013	1/17/2017	Combo
2013							
	3-118	Clark County SWCD	Fourteen Mile Creek/Goose Creek-OH River	Open	10/30/2013	1/29/2016	Planning
	3-120	Washington County SWCD	Mill Creek-Blue River Watershed Implementation	Open	10/10/2013	11/9/2016	Restoration/Impl
	3-122	Jay County Commissioners	Upper Salamonie WMP	Open	11/19/2013	11/18/201	Planning
	3-125	Northwestern Indiana Regional	Deep River-Portage Burns Waterway Watershed Initia	Open	1/1/2014	12/31/201	Combo
	4-159	Gibson County SWCD	Lower Patoka Implementation	Open	12/9/2013	3/8/2017	Restoration/Impl
	4-162	Orange County SWCD	Lost River Watershed Implementation	Open	12/19/2013	12/18/201	Restoration/Impl
	4-163	Wabash River Enhancement Corp.	Region of the Great Bend of the Wabash River Impl.	Open	12/9/2013	12/8/2016	Restoration/Impl
	N-2013	Marshall County SWCD	Headwaters Yellow River WMP	Pending			Planning
2014							
	4-212	EcoLogik, Inc.	Hoosier Riverwatch Database Upgrades	Open	7/28/2014	7/27/2015	ProgramSupport
	4-215	Jasper County SWCD	Upper Iroquios Implementation	Pending			Restoration/Impl
	4-216	Indiana University	Indiana Clean Lakes Program	Pending			Assessment
	5-10	Upper Wabash River Basin	Upper Wabash River Implementation	Pending			Restoration/Impl
	5-3	Dearborn County SWCD	Hogan Creek Implementation	Pending			Restoration/Impl
	5-5	Wayne County SWCD	Whitewater River Initiative	Pending			Restoration/Impl
	5-6	Historic Hoosier Hills	Central Muscatatuck Implementation	Pending			Restoration/Impl
	N14-16	Purdue University	IWLA 2015	Pending			ProgramSupport

# Appendix C



Map Projection: UTM Zone 16 N; Datum: NAD83. Data obtained from the State of Indiana Geographical Information Office Library and the IDEM's Nonpoint Source Program. This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

# Appendix D

## Closed Section 319 Projects and Project Summaries

EDS#	FFY	Project Name
9-274	2009	St. Marys River WMP Implementation
9-275	2009	Pigeon Creek WMP Implementation Phase 2
10-65	2010	Middle St. Joseph River WMP Development and Implementation
2-13	2011	Plummer Creek WMP

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### St. Marys River WMP Implementation

The Allen County SWCD utilized \$382,773 in Section 319 funds and provided a 42% project match to implement the [St. Marys River Watershed Management Plan](#) by developing and implementing a cost-share program for BMPs that addressed the water quality concerns outlined in WMP. Forty-one landowners/producers participated in the cost-share program. Best management conservation practices implemented include cover crops, hay plantings, livestock fencing and watering system, and nutrient management on 6,284 acres of land and along 3,500 feet of streams. Cost-share participants have implemented practices and committed to maintaining them for the life of the practice (1 to 10 years). As a result, practices will prevent 4,108 tons of sediment, 5,789 pounds of phosphorus, and 11,571 pounds of nitrogen from entering the waters of the St. Marys River and its tributaries each year.



The SWCD conducted a water quality monitoring program at twenty sites to determine the effectiveness of the WMP implementation project. The following parameters were measured: air temperature, water temperature, turbidity, dissolved oxygen, total dissolved solids, and pH, E. Coli, atrazine, metalachlor, and alachlor, total phosphorus and nitrate+nitrite as N. Due to the highly variable sampling conditions (extremely wet and extremely dry years), it is difficult to accurately compare parameters from the 2007-2008 and 2012-2013 sampling years. The data did show that several parameters, including pesticides, are still above target concentrations, so more work needs to be done in the watershed.

The SWCD also conducted an education and outreach program designed to bring about behavioral changes and encourage BMP implementation in the watershed including field days to showcase BMPs, workshops to educate the public on water quality concerns and promote water quality conservation practices, brochures describing water quality concerns and conservation practices, newsletters, and press releases to the local media to advertise field days, workshops, and the cost share program. As a way to measure and target their outreach efforts, in 2011 the SWCD developed and distributed a social indicator survey throughout the watershed to understand the awareness, attitudes, capacity, and behaviors of residents of the watershed. The results were compared with a survey done in 2008, with Purdue University, to develop a survey of social indicators. The comparisons showed that between 2008 and 2010, there was a slight increase in the positive perception of water quality in the St. Marys River,

and there was also an increase in knowledge regarding watersheds. The general upward trend in citizen knowledge is at least in part due to the marketing, education and outreach campaign of this and previous grant projects. The ability to continue an outreach campaign is critical to an increase in public awareness.

Conservation partners and the St. Marys River Partnership plan to sustain the momentum started and enhanced through this project and continue outreach and education efforts in the watershed, including outreach to the Amish community.

### **Pigeon Creek WMP Implementation Phase 2**

The Steuben County SWCD utilized \$145,800 in Section 319 funds and provided a 61% project match to develop and implement a cost-share program for agriculture and urban BMPs that address the water quality concerns outlined in the [Pigeon Creek Watershed Management Plan](#). During this project the SWCD also received Watershed Land Treatment grant funds from the IDNR Lake and River Enhancement program and Clean Water Indiana grant funds to install additional agricultural BMPs in the Pigeon Watershed, which complimented the IDEM 319 work in the watershed. The following BMPs were installed in critical areas of the watershed as described in the PCWMP using Section 319 funds:

- 307 feet stream bank stabilization
- 4,295 feet of rotational grazing and exclusion fencing
- 15 acres of hay planted
- 30 acres of trees were planted
- 2.66 acres constructed wetland
- 40 rain barrels installed
- 324 sq. ft. pervious concrete area
- 4,100 sq. ft. Bio-Swale
- 1300 sq. ft. rain garden



*NE Quadrant Rain Garden – City of Angola*

The following BMPs were installed using LARE funds: hayland planting, tree planting, critical area seeding, fence, grassed waterway, rotational grazing, livestock watering facility, and cover crops. Total annual load reductions for this project (using the Region Five Model) are estimated to be 2,070 tons of sediment; 1,973 pounds of phosphorus; 4,052 pounds of nitrogen; and 38,838 pounds of total suspended solids.

The SWCD conducted a monitoring program at fourteen sites to determine the fate and source of pollutants in the watershed and to guide future sampling and/or remediation of point and NPS pollution. During the project, water monitoring samples were collected during two extreme weather scenarios. The first was taken in May 2011, during one of the top five recorded wet springs in history, which accounted for significant water quality exceedances, including the highest recorded E. coli result of 27,500 cfu. The second was taken during one of the top five recorded driest spring and summers in May 2012, which resulted in only two impairments. Both extreme weather events indicate the water quality of the Pigeon Creek watershed varies heavily based on storm water runoff and non-point source pollution. Although improvements to water quality could not be determined based on the Phase 2 water monitoring, it could be determined that the water quality issues in the Pigeon Creek Watershed

primarily occur in the upper sub-watersheds. This is most likely due to the fact that the upper subwatersheds don't have as many lakes and wetlands as the lower subwatersheds, which can provide filtration of pollutants.

The SWCD also conducted an education and outreach program to educate stakeholders on septic system issues, urban and agriculture water quality issues, and best management practices, including: a brochures on septic systems and water quality, presentations to schools and other organizations on water quality issues, public meetings, press releases, newsletters, displays at public events, and signs at highly visible BMP sites throughout the watershed.

Since the completion of the Pigeon Creek WMP in 2006, several changes have taken place within the Watershed, including changes in population, land use, water quality monitoring, and conservation efforts. The SWCD applied for and received additional Section 319 funds to update the WMP in an effort to evaluate changes that have occurred since 2006, including logging the successes in the watershed, and identifying any new critical areas. The revision will incorporate the 2011 IDEM TMDL study for the watershed, IDEM's 2009 revision of the Watershed Management Plan Checklist, and LaGrange County's WMP for the Pigeon River Watershed (HUC 0405000111). In an effort to address the entire Pigeon Creek Watershed, we would like to add the Turkey Creek sub watersheds (HUC 040500011004, 040500011005, and 040500011008), which are currently not a part of the 2006 PCWMP.

### **Middle St. Joseph River WMP Development and Implementation**

The St. Joseph River Watershed Initiative (Initiative) utilized \$304,999 in Section 319 funds and provided a 40% project match to produce and begin implementing a WMP for the Middle St. Joseph River watershed, Hydrologic Unit Code 0410000305. A steering committee of local stakeholders was formed and met quarterly to guide the development of the WMP. A water quality monitoring program was also conducted to help with the development of the WMP. After the [Middle St. Joseph River Watershed Management Plan](#) was approved by IDEM, the Initiative conducted a cost-share program to implement BMPs that addressed the water quality concerns outlined in the Plan. Fifteen landowners/producers participated in the cost-share program and implemented conservation practices on 3,282 acres of farmland. Best management conservation practices implemented include cover crops, grassed waterways and nutrient management. As a result of these BMPs, the Region 5 Model estimates that 2,848 tons of sediment, 3,701 pounds of phosphorus, and 7,391 pounds of nitrogen will be prevented from entering the waters of the St. Joseph River and its tributaries each year.



*Middle St. Joseph River Watershed Project Display*

An education and outreach program was conducted in the watershed to inform stakeholders about the planning process and educate them on water quality and BMPs. Activities included field days, public meetings, a brochure to advertise the cost-share program, fact sheets, newsletters, and an educational display at community events.

The Initiative plans to identify and pursue opportunities to continue implementing the Middle St. Joseph River WMP.

### **Plummer Creek Watershed Management Plan**

The Greene County SWCD is finalizing a WMP for the Plummer Creek watershed, Hydrologic Unit Code (HUC) 0512020203. The grant agreement ends 8/31/14. IDEM conducted baseline watershed characterization monitoring in this watershed to develop a baseline and assist with the development of the WMP. The SWCD also conducted monitoring at certain sites in the watershed. Education and outreach activities during the project included public meetings to gather input from stakeholders on the project and the development of the WMP, field days on best management practices, and newsletters, press releases, and brochures to educate stakeholders about the project and watershed issues.

The Greene County SWCD submitted an application to IDEM for FFY 2015 Section 319 funds to begin implementing the [Plummer Creek Watershed Management Plan](#).

# Appendix E

## Open 205(j) Projects 9/1/13 - 8/31/14

FFY	ARN	Contractor	Project	Status	Start	End	Type
2009							
	10-27	Save the Dunes Conservation Fund	Salt Creek Integrated Pilot	Closed	6/1/2010	2/28/2014	Planning
2010							
	10-81	Jasper County SWCD	Upper Iroquois Watershed Initiative	Open	11/8/2010	11/7/2014	Planning
2011							
	2-14	Marion County SWCD	ICP Technical Training Coordination	Closed	1/24/2012	1/23/2014	ProgramSupport
	2-2	Ohio River Valley Water Sanitation	Lower Wabash River Nutrients Monitoring	Open	1/20/2012	1/19/2015	Assessment
	2-24	enfoTech and Consulting, Inc.	AIMS II Expansion, Enhancements &	Closed	6/6/2012	6/5/2014	ProgramSupport
	2-35	Jefferson County SWCD	Indian-Kentuck Creek WMP	Open	3/13/2012	6/12/2014	Planning
2012							
	3-3	LaGrange County SWCD	Fawn River WMP	Open	1/18/2013	7/17/2015	Planning
	3-5	Upper Wabash River Basin Commission	Upper Wabash River WMP	Open	1/9/2013	4/8/2015	Planning
2013							
	4-179	Delaware Co. SWCD	Mississinewa River WMP	Open	1/30/2014	7/29/2016	Planning
	5-188	Georgia College and State University	Diatom Identification and Enumeration	Pending			ProgramSupport
	5-189	enfoTech and Consulting, Inc.	AIMS II Expansion, Enhancements and	Pending			ProgramSupport
2014							
	4-213	enfoTech and Consulting, Inc.	AIMS II Enhancements & Maintenance	Open	8/11/2014	8/10/2015	ProgramSupport
	5-1	Clinton County SWCD	Browns Wonder-Sugar Creek Watershed	Pending			Planning
	5-180	Washington County SWCD	S.F. Blue River Watershed Project	Pending			Planning