

The background of the cover is a photograph of a calm body of water at sunset or sunrise. The sky is a mix of blue, orange, and yellow, with wispy clouds. The water reflects the sky and the clouds. In the distance, there is a dark line of trees and some small structures. In the foreground, there are some reeds or grasses on the left side. A green arrow points from the left towards the title.

# FFY 2019 Annual Report

DEPARTMENT OF ENVIRONMENTAL  
MANAGEMENT

Office of Water Quality, Nonpoint Source  
Program

State of Indiana

# Table of Contents

Table of Figures .....	ii
Table of Tables.....	ii
Introduction to the Nonpoint Source Pollution Management Program.....	1
Indiana’s Nonpoint Source Management Plan .....	4
Nonpoint Source Management Goals and Progress.....	5
GOAL 1: UTILIZE PARTNERSHIPS TO LEVERAGE RESOURCES AVAILABLE FOR NONPOINT SOURCE MANAGEMENT .....	5
Indiana Conservation Partnership .....	5
United States Department of Agriculture - Natural Resources Conservation Service .....	7
Indiana Association of Soil and Water Conservation Districts .....	10
Indiana State Department of Agriculture .....	12
Indiana Department of Natural Resources .....	16
Indiana State Revolving Fund Loan Program .....	19
GOAL 2: MONITOR AND ASSESS INDIANA WATERS FOR NONPOINT SOURCE IMPAIRMENTS AND IMPROVEMENTS .....	20
Indiana Department of Environmental Management (IDEM) Water Quality Monitoring .....	20
Additional Water Quality Monitoring .....	22
GOAL 3: DEVELOP AND CONDUCT A STRATEGIC OUTREACH AND EDUCATION PROGRAM .....	27
Watershed Specialists.....	27
Indiana Watershed Leadership Academy .....	28
Indiana Conservation Partnership Training and Certification Program .....	28
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.....	29
§319 Grant Program .....	29
Best Management Practices and Pollutant Load Reductions .....	33
Nonpoint Source Success Story .....	38
§205(j) Grant Program.....	39
Integrating the Nonpoint Source Pollution Program with the 303(d) Vision .....	40
GOAL 5: PROTECT SENSITIVE, VULNERABLE, AND HIGH QUALITY WATERS OF THE STATE SO THAT THEY MAY CONTINUE TO MEET THEIR DESIGNATED USES .....	41
Adaptive Management .....	42
Appendix A Reportable Activities.....	43
Appendix B Nonpoint Source Pollution Priority Watersheds.....	63
Appendix C Open or Pending §319 Projects.....	64
Appendix D Indiana Map of §205(j) and §319 projects.....	65
Appendix E FFY 2019 Closed §319 projects .....	66
Appendix F Open or Pending §205(j) Projects .....	70

# Table of Figures

FIGURE 1 INDIANA 8-DIGIT HUC WATERSHEDS.....	2
FIGURE 2 IDEM'S 9-YEAR ROTATING BASIN MONITORING AND ASSESSMENT APPROACH .....	20
FIGURE 3 MAJOR INDIANA BASINS .....	36
FIGURE 4 LOAD REDUCTIONS BY BASIN.....	37
FIGURE 5 BMPS IMPLEMENTED IN BY BASIN.....	37
FIGURE 6 THE UNNAMED TRIBUTAY OF THE SOUTH FORK WILDCAT CREEK .....	38
FIGURE 7 INDIANA'S TMDL PRIORITY FRAMEWORK .....	40

# Table of Tables

TABLE 1 BMPS IMPLEMENTED IN INDIANA FFY 2017 - 2019 .....	34
TABLE 2 REPORTED ESTIMATED LOAD REDUCTIONS FOR BMPS IMPLEMENTED FFY 2017-2019.....	35
TABLE 3 CUMULATIVE TOTAL ESTIMATED LOAD REDUCTIONS IN INDIANA .....	35
TABLE 4 REVISIONS TO REPORTABLE ACTIVITIES FOR 2019 (UPDATES IN BOLD).....	42

## Cover Photo

- Eagle Creek Reservoir at Eagle Creek Park in Indianapolis, Marion County

# Introduction to the Nonpoint Source Pollution Management Program

Nonpoint source water pollution does not originate at single point sources, such as industrial or municipal wastewater discharge pipes, but comes 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 (nutrients), bacteria, and pesticides. These pollutants are then carried, often untreated, to the nearest stream or lake through surface water runoff or storm sewers. Pollutants may also infiltrate into ground water. Untreated runoff is a significant source of water pollution in Indiana, and sediment, nutrients, and bacteria are the leading pollutants of concern. The [2018 Indiana Integrated Water Monitoring and Assessment Report](#) states that potential sources impacting Indiana waters include nonpoint sources that affect 16,099 miles of streams, while unknown sources affect 10,332 miles of streams. While some nonpoint source 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 §319 Nonpoint Source Pollution Management Program to control nonpoint sources of water pollution. Section 319(h) provides the U.S. Environmental Protection Agency (U.S. EPA) with the authority to grant federal dollars to states to mitigate and prevent nonpoint source pollution in accordance with the state's approved Nonpoint Source Pollution Management Program. In Indiana, the [Indiana State Nonpoint Source Management Plan](#) guides the usage of CWA §319 funds, which are administered by the Indiana Department of Environmental Management (IDEM), Office of Water Quality (OWQ), Watershed Assessment and Planning Branch.

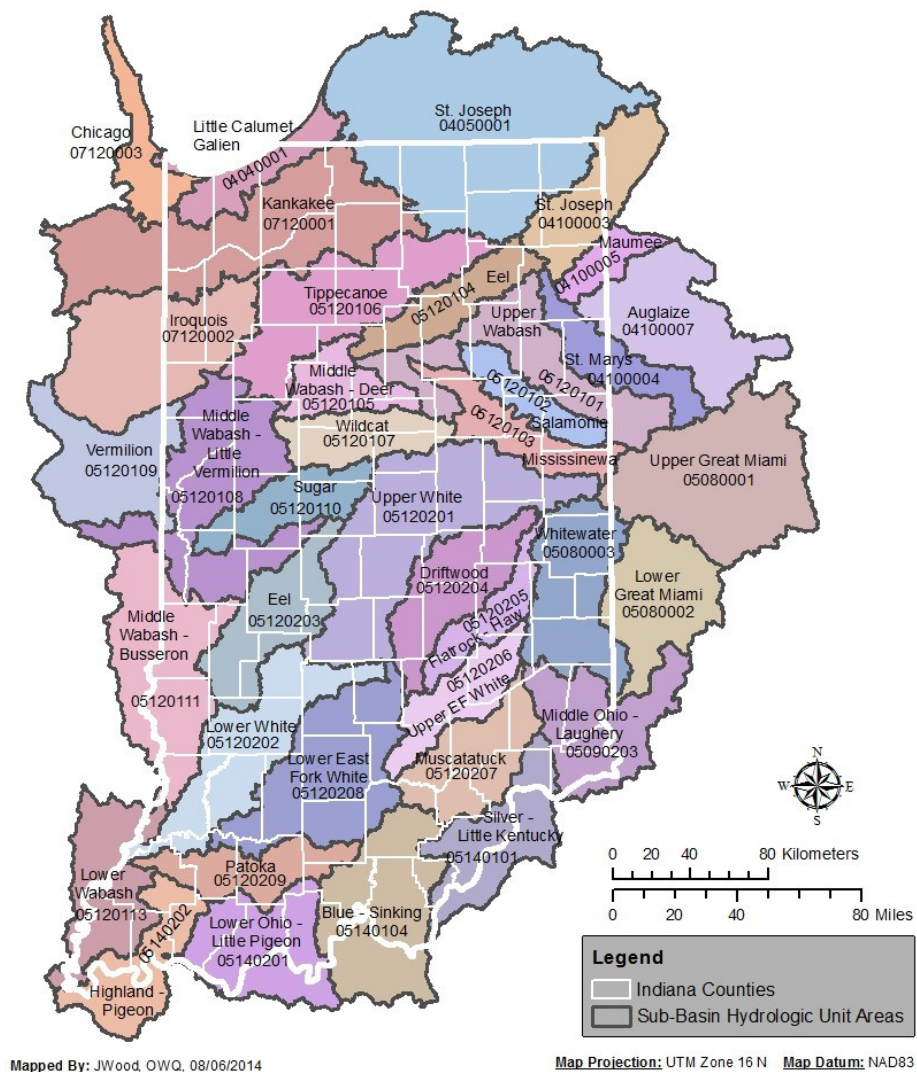
Environmental problems, such as nonpoint source pollution, often cut across environmental media (land, air, and water), land use types, and political jurisdictions. Consequently, environmental mitigation and protection require a comprehensive and collaborative approach that works with a multitude of programs, agencies, and concerned citizens. A watershed approach provides a framework for coordinating and integrating these programs and resources. This approach directs the focus on water quality to 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, the smaller the watershed level). Indiana has thirty-eight 8-digit HUC watersheds (Figure 1). Each of these may be subdivided into smaller 10-digit and 12-digit HUC watersheds. By examining water quality issues on a watershed basis, problems can be observed in relationship to their sources so that 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
- Coordinating 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.**

The 2019 Nonpoint Source Program Annual Report describes Indiana’s progress towards meeting the goals, objectives, and milestones of the [\*State Nonpoint Source Pollution Management Plan\*](#) during the federal fiscal year (FFY) 2019 (October 1, 2018 through September 30, 2019), as well as the efforts and achievements of the many agencies, groups, and individuals<sup>1</sup> working at the state and local level to address nonpoint source pollution in Indiana. It also describes how §319 grant funds were utilized to help accomplish these goals.

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<sup>1</sup> Partner updates will reflect the same reporting period unless otherwise noted.

# Indiana's Nonpoint Source Management Plan

The Indiana State Nonpoint Source Management Plan ("Plan") guides the usage of CWA Section 319 funds received by IDEM from U.S. EPA. The Plan outlines and drives IDEM's Nonpoint Source Program efforts, while seeking to credit and provide synergy with other state, local, and federal nonpoint source efforts in Indiana.

Current U.S. EPA policy requires states to update their Plans every five years. Indiana completed an update of its Plan in 2019. The 2019 revision of the Plan is the most recent in a series of Plans that were completed in 2014, 2008, and 1999. For the 2019 edition, Indiana chose to provide its revised Plan in the form of an addendum to its [2014-2018 Plan](#). This 2019 Plan will be reviewed annually by program staff to assess its continued validity. The next full revision of this program plan will be completed in FFY 2023.

IDEM's approved [2019 Indiana State Nonpoint Source Management Plan](#) is a vision and mission-driven strategy to address nonpoint source 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 Nonpoint Source Pollution Management Plan's](#) five goals relate to: utilizing partnerships to define and address nonpoint source pollution issues; monitoring the status of those issues; providing outreach and education to citizens of the state to raise awareness of nonpoint source pollution issues; remediating the causes and sources of nonpoint source pollution; and protecting areas already meeting water quality standards and those areas threatened by nonpoint source pollution. The 2019 update of the Plan was approved by the U.S. EPA on May 22, 2019 and will cover FFYs 2019-2023. This 2019 NPS Annual Report will reflect the goals and objectives of the 2019 revision of the Plan.

# 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 Nonpoint Source Pollution Program's success. Coordinating with these partners optimizes the funds, staff, physical resources, and political capital available to work on nonpoint source pollution issues. IDEM's Nonpoint Source Pollution Program utilizes multiple partnerships to reach diverse stakeholder groups and further nonpoint source pollution management goals in Indiana. Some of these partners and their achievements from this year are highlighted below. A full accounting of progress made during FFY 2019 toward the objectives of Goal 1 outlined in [Indiana's State Nonpoint Source Pollution Management Plan](#) can be found in Appendix A.

### Indiana Conservation Partnership

The Indiana Conservation Partnership (ICP) is comprised of eight Indiana agencies and organizations<sup>2</sup> who share a common goal of promoting conservation. To that end, the mission of the Indiana Conservation Partnership is to provide technical, financial, and educational assistance needed to implement economically and environmentally compatible land and water stewardship decisions, practices, and technologies. The ICP's soil health and nutrient management philosophies underpin its conservation initiatives in addressing the state's primary natural resource concerns. The principles of soil health are to minimize disturbance, optimize soil cover, optimize biodiversity, and provide continuous living roots. Nutrient management is best described by the "4 Rs"—applying the right nutrient source at the right rate at the right time in the right place. Each ICP initiative has at least an element of it rooted in promoting the soil health philosophy and most have a direct effect on nonpoint source pollution management in Indiana. Indiana is unique in conducting tillage and cover crop transects every fall/winter and every other spring. Some of the other initiatives/programs include supporting the Indiana Ag Nutrient Alliance in achieving its goals such as holding a bi-annual research forum to share the latest findings in soil health and other water quality topics; supporting edge-of-field monitoring projects; and utilizing the ICP training subcommittee to evaluate ICP training needs and ensure needed training is offered.

Many of these agencies also provide funding on a continuing or limited basis to address nonpoint source pollution in Indiana. In 2018, the ICP coordinated on submitting new proposals for watershed projects beyond the 319 Nonpoint Source Program, including the Regional Conservation Partnership Program, National Water Quality Initiative, Mississippi River Basin Initiative, projects in the Western Lake Erie Basin, Clean Water Indiana and Lake and River Enhancement projects. From these projects, nearly 12,000 water quality improvement practices were installed to keep sediment and nutrients on fields and out of Indiana's waters accounting for the following load reductions:

- 889,770 tons of sediment
- 1.8 million pounds of nitrogen
- 923,100 pounds of phosphorus

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<sup>2</sup> IDEM, the Indiana State Department of Agriculture (ISDA), the State Soil Conservation Board, the Indiana Department of Natural Resources (IDNR), the Indiana Association of Soil and Water Conservation Districts (IASWCD), Purdue University Extension, the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS), and the USDA-Farm Service Agency (FSA).

Additionally, the ICP maintains a map of all funded watershed projects to identify gaps in relation to resource concerns.

#### *Indiana's State Nutrient Reduction Strategy*

The latest version of [Indiana's State Nutrient Reduction Strategy](#) (SNRS) was submitted to U.S. EPA in November of 2018. The SNRS is the product of an inclusive effort of the ICP under the leadership of the ISDA and IDEM to capture statewide present and future endeavors in Indiana which positively affect the state's waters. Additionally, the SNRS gauges the progress of conservation, water quality improvement, and soil health practice adoption in Indiana. The SNRS represents Indiana's commitment to reduce nutrient runoff into waters from point sources and nonpoint sources alike. The objectives of this strategy include:

1. Acknowledgment of the challenges facing the improvement of Indiana's impaired waters.
2. Involvement and engagement of stakeholders in the state's efforts to reduce nutrient loads.
3. Prioritization of HUC 8 watersheds and first-round HUC 12 watersheds.
4. Discussion of water quality monitoring and regulatory control of point sources.
5. The inventory and utilization of resources to achieve their highest impact on nutrient reduction.
6. Encouragement of voluntary incentive-based conservation through the many state and federal water quality related programs.
7. Illustration of the means by which the state will provide reports and accountability of assisted conservation practices reported by staff in the Indiana Conservation Partnership.

#### *Indiana's Domestic Action Plan for the Western Lake Erie Basin*

[Indiana's Great Lakes Water Quality Agreement \(GLWQA\) Domestic Action Plan \(DAP\)](#) to reduce phosphorous to the Western Lake Erie Basin (WLEB) was released February 28, 2018. It is the product of a dedicated Advisory Committee comprised of representatives from different stakeholder sectors and led by IDEM. Founded on the principle of adaptive management, the DAP is a dynamic document acknowledging that phosphorous loading in particular, and nutrient pollution in general, is a complex problem caused by point and nonpoint sources across all sectors, which requires a multi-dimensional solution.

The DAP emphasizes using existing programs and optimizing partnerships, effecting the most change with the least cost, prioritizing resources to areas with the most phosphorus export and/or reduction potential, seeking to engage citizens who are not participating in conservation efforts, making use of social indicators to guide actions, and employing adaptive management. Indiana's goal is to meet the spring-time phosphorus targets for the Maumee River as it flows across the border into Ohio. The DAP includes an Action/Milestone table that enumerates the current and planned activities to address the issues outlined in the DAP.

After its release in 2018, the DAP Advisory Committee met once by conference call and three times in person for presentations on the WLEB Story Map, Erie Stat, the Fort Wayne Tunnel Project, Indiana's Stream and Wetland Mitigation Program, the WLEB Report Card process, and to provide updates on the various projects noted in the Action/Milestone Table. The Advisory Committee made a field visit to an emergency manure storage lagoon in Adams County that is an important component in the strategy to reduce nutrients to the St. Marys River.

## **United States Department of Agriculture - Natural Resources Conservation Service<sup>3</sup>**

The Natural Resources Conservation Service (NRCS) mission statement is “Helping People Help the Land.” The agency 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 their land. This includes private landowners and government agencies 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 geographical areas of concern. NRCS’ standards and specifications are utilized for many of the cost-share practices implemented through \$319 grants, and NRCS Farm Bill conservation programs are utilized as one funding source for implementing local watershed management plans.

For FFY 2018, NRCS programs in Indiana that support nonpoint source 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 almost \$1.4 million in CSP funding in FFY 2018. A total of 177 new contracts and 32 renewals received funding to treat 127,126 acres of cropland, pasture, and forest.

### Emergency Watershed Protection

The Emergency Watershed Protection (EWP) program 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. Two EWP contracts for over \$200,000 were completed in FFY 2018.

### Environmental Quality Incentives Program

Indiana received over \$20.9 million in Environmental Quality Incentives Program (EQIP) funding in FFY 2018. A total of 1,023 contracts were entered into that will address natural resource concerns on 135,009 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 State Specialty Crop.

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<sup>3</sup> NRCS releases each fiscal year’s report in the subsequent calendar year. Thus, NRCS released FFY 2018 reports in 2019 and therefore, this section of the report shares activities that took place in FFY 2018.

### Agricultural Conservation Easements Program

The Agricultural Conservation Easement Program (ACEP) provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. Under the Agricultural Land Easements (ALE) component, NRCS helps Indian tribes, state and local governments, and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements (WRE) component, NRCS helps to restore, protect, and enhance enrolled wetlands. The Agricultural Conservation Easements Program consolidates three former programs - Wetland Reserve Program, Grassland Reserve Program, and Farm and Ranchland Protection Program. During FFY 2018, NRCS helped Indiana landowners protect and restore 1,759 acres of wetlands and spent over \$8.5 million under WRE. One Agricultural Land Easement was secured on 177 acres for \$172,000.

### Regional Conservation Partnership Program

The Regional Conservation Partnership Program (RCPP) promotes coordination between NRCS and its partners to deliver conservation assistance to producers and landowners. NRCS provides assistance to producers through partnership agreements and through program contracts or easement agreements. Collectively, RCPP projects included 35 contracts for over \$770,000 on over 7,500 acres in FFY 2018.

For FFY 2018, NRCS funded the following projects that affect Indiana:

1. University of Notre Dame's "Preventing Nutrient Loss from Indiana Farms: Watershed-Scale Pairing of Cover Crops and the Two-Stage Ditch" project – The project will assist with adoption of cover crops on 85 percent of cropland, and two-stage ditches along the majority of channelized ditches, in two targeted 12-digit watersheds – the Shatto Ditch watershed (HUC 051201060401) and Kirkpatrick Ditch (HUC 071200020403). Through water quality monitoring, the project will quantify the soil and water quality/quantity benefits from the implementation of these practices in the watersheds. Based on preliminary research, 40 to 45 percent reductions in nutrient loss are achievable with this approach, which will be monitored at the watershed scale. A key component of the project is to accurately document the effect of these practices on environmental conditions (water and soil quality) and estimate the full costs and benefits for both public and private interests. In addition, the data will support modeling efforts that will allow for broader conclusions regarding the effectiveness of these conservation practices, regionally and beyond.
2. Tri-State Western Lake Erie Basin Phosphorus Reduction Initiative – A diverse team of partners will use a targeted approach to identify high-priority subwatersheds for phosphorus reduction and increase farmer access to public and private technical assistance—including demonstrations of innovative practices for which NRCS does not have approved standards—in Michigan, Ohio, and Indiana. Identified actions are coordinated with the Ohio Phosphorus Task Force Report and will move Lake Erie towards goals developed in the Great Lakes Water Quality Agreement Annex 4 Nutrient Strategies. The partners will gauge success and monitor results using project-wide water quality monitoring and watershed modeling conducted by national experts from multiple scientific entities and institutions.
3. Michigan/Indiana St. Joseph River (Lake Michigan) Conservation Partnership – Increasing ground water withdrawals and sediment and nutrient loading present problems for which the partnership strives to find solutions that are economically beneficial for the farmers and have multiple conservation benefits. These benefits include optimizing ground water use, improving infiltration, and reducing nutrients and sediment while also improving wildlife and fisheries habitat. Innovative methods to target high-priority areas and appropriate conservation practices

will take an already developed watershed management plan to the next level. Monitoring will be used to adaptively manage this project at various levels, from the field-scale to the entire watershed. Partners have a strong history of working with both NRCS and producers.

4. Big Pine Watershed – The Big Pine Watershed Partnership will engage the power of the supply chain and the trust of agronomy retailers to further conservation in Indiana’s Big Pine watershed through the targeted implementation of nutrient and sediment reducing practices to achieve watershed water quality objectives. The Nature Conservancy, Benton County SWCD, Warren County SWCD, White County SWCD, and the Conservation Technology Information Center (CTIC) are proud to partner with Ceres Solutions, Winfield, and Land O’Lakes to scale targeted conservation in Indiana’s Big Pine watershed. The Big Pine watershed, located in west-central Indiana, is a tributary of the Wabash River and part of the Mississippi River drainage.
5. Soil Health on Reclaimed Mine Lands – The partners will work with farmers, landowners, and mine operators to implement a suite of soil health practices on reclaimed mine lands in order to improve the health of the soil, reduce the amount of sediment laden runoff reaching our streams and rivers, and improve wildlife habitat. The project will focus on the roughly 175,000 acres of reclaimed mine lands that are cropped in the Indiana counties of Vigo, Clay, Sullivan, Greene, Knox, Daviess, Gibson, Pike, Dubois, Warrick, and Spencer.
6. Improving Working Lands for Monarch Butterflies Partnership – This statewide project will restore, manage, and conserve wildlife habitat for monarch butterflies on agricultural and tribal lands using four main strategies: conservation planning and assessment; habitat improvement and best management practices; building an adequate seed supply for milkweed and nectar plants; and, enhancing organizational coordination and capacity. This project will contribute to national goals in terms of habitat and increasing the number of monarch butterflies.
7. Southern Indiana Young Forest Initiative – This project was established by 11 partner organizations with a history of conservation leadership in the state and will address a lack of early successional habitat and corresponding declines in at-risk wildlife species. The Initiative will focus on 43 counties in southern Indiana that contain the majority of forested land and provide the best opportunities for incorporating early successional forest regeneration into a predominantly hardwood forest landscape characterized by advanced forest succession. Partners will promote and use best management practices (BMPs), ranging from species-specific silvicultural guidelines to generalized private landowner management recommendations, that benefit young forest indicator species like the American Woodcock and the Ruffed Grouse. The project intends to work in similar fashion to successful young forest initiatives on the east coast and in Wisconsin and lays the groundwork for the establishment of an Ohio Valley Young Forest Initiative.
8. Grasslands and Gamebirds Initiative - Thirty-two partner conservation organizations have come together to address inadequate wildlife habitat by developing grassland and pollinator habitat. The primary goal of the initiative is to develop and manage grassland and pollinator habitat needed by “at risk” bird species. Other goals are to improve soil health and water quality, and to allow hunting access to the habitat established through this initiative. The Initiative focuses on five regions located strategically throughout Indiana, in the Mississippi River Basin, that contain both the greatest need for grassland habitats as well as the most potential to improve grassland habitats and populations of birds species that depend upon them. The initiative will create at least 2,000 acres of grassland habitat on private lands.

IDEM’s Nonpoint Source Pollution Program was involved with each of these projects during development or the application process for the award.

### Mississippi River Basin Initiative

Through the Mississippi River Basin Healthy Watersheds Initiative (MRBI), NRCS and its 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 targeted watersheds in the Mississippi River Basin. Targeted watersheds must be identified on the State's list of 8-digit watershed priorities in the State Nutrient Reduction Strategy. IDEM cross-referenced eligible watersheds with approved watershed management plans and active watershed efforts to provide the Indiana State Technical Committee (ISTC) with a list of candidate watersheds with the capacity to implement the program and demonstrate success. The ISTC utilized that list, alongside information from other partners, to choose seven 12-digit watersheds: Big Pine Creek Headwaters, Cicero Creek Headwaters, Little Wea Creek, Busseron Creek, Fish Creek, Big Pine Creek – Brumm and Darby, and Plummer Creek. In FFY 2018, 19 targeted MRBI contracts provided almost \$440,000 to landowners and treated 2,787 acres of land.

### Great Lakes Restoration Initiative

America's Great Lakes hold 21 percent of the world's fresh surface water, providing habitat for a variety of fish and wildlife and drinking water for more than 40 million people. Recreational and commercial fishing are one of the region's major industries, and the lakes facilitate transportation and commerce in the eight states that border the lakes. But the lakes suffer from pollution, caused by urban runoff and sprawl, sewage disposal, agriculture, industry, and other sources. This pollution damages the aquatic ecosystems and poses risks to human health. In recent times, algal blooms in Lake Erie underscored the importance of continued conservation efforts in the region. Launched in 2010, the Great Lakes Restoration Initiative (GLRI) helps NRCS accelerate conservation efforts on private lands located in targeted watersheds throughout the region. Through GLRI, NRCS works with farmers and landowners to combat invasive species, protect watersheds and shorelines from nonpoint source pollution, and restore wetlands and other habitat areas. Indiana received over \$580,000 in GLRI funding in FFY 2018. A total of 27 contracts were entered into that will address natural resource concerns on 7,834 acres of land over the life of the contracts.

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

The mission of the Indiana Association of Soil and Water Conservation Districts (IASWCD) 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 address nonpoint source pollution.

### Conservation Cropping Systems Initiative

One of IASWCD's statewide programs, the Indiana 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 works with ICP partners as well as numerous NGOs, commodity groups, and representatives of agriculture retail to provide education on, and promote adoption of, soil health practices on Indiana cropland. These improvements to soil health can result 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.

Developed in partnership with technical experts from USDA-NRCS, Purdue University, and expert farmers, CCSI's Soil Health Training Curriculum for ICP staff is based on farmer-tested management practices and peer-reviewed agronomic and social science. This statewide training provides a foundation

for the consistent, science-based, farmer-proven soil health messaging to farmers, agriculture professionals, and partner organizations. Between 2011 and 2018, over 750 unique individuals have participated in one or more of the training sessions.

Soil Health Outreach includes support of locally-led partnerships' efforts to promote soil health practice adoption, including technical, logistical, and promotional support of field days, workshops, and other events. This support also includes the practical application of conservation social science in the management of these diverse groups of partners, the targeting of influential audiences and decision makers, and the crafting of messaging for target demographics that is both factual and resonant. In 2018, CCSI materially participated in 70 events, reaching approximately 7,000 people. Events included:

- A series of 3 workshops, reaching 400+ attendees, 80% from Amish/Mennonite Communities.
- National Future Farmers of America (FFA) Convention - in partnership with Indiana Soil Health Teams, USDA-NRCS, National FFA, and Wrangler. Soil Health demos were given to 2366 attendees from 42 states.
- Big Pine Watershed event drawing 200+ attendees and recognition from state and national leaders, and international business leaders. (Benton and Warren Counties).
- Soil Health for Organic Transition – 80+ attendees, most new to soil health events.
- Fulton-Pulaski Cover Crop and Live Grazing Field Day – 80+ for an evening field day, including a pre-event mini-workshop for nearby lake association board members.

The fact that cover crops are now the third most commonly grown crop in Indiana is an indicator of the success of CCSI's unique collaborative partnership. The program's successes along with the practical application of conservation social science were highlighted in a poster session for the North Central Region One Water Action Forum (Indianapolis) and a presentation at the National Nonpoint Source Training Conference (Colorado Springs) in 2018.

#### Other NPS-Related Projects

The IASWCD also provides conference scholarships to its annual conference to qualifying SWCD supervisors. Ten SWCD supervisor scholarships were awarded for the 2019 Annual Conference. This provides opportunities for additional supervisors to learn about the wise use and management of Indiana's natural resources, including NPS pollution prevention, and to bring this information back to their districts.

The IASWCD provides significant resources to the Pathway to Water Quality 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 soil and water resources. The Pathway to Water Quality exhibit contains practical displays and information for anyone who uses the land. The Pathway to Water Quality exhibit is managed and maintained by the ICP. The IASWCD, through a 319 grant, provides a Pathway to Water Quality Coordinator to oversee the project and committee (about \$12,000 total). At the start of 2019, the current grant ended. With participation from all ICP partners, the IASWCD was able to apply for \$15,000 in additional 319 funds, with a match of \$60,000 from all other ICP Partners. Additional funds have been spent on upgrades to the exhibit such as pervious pavement, a green roof gazebo, and a septic system display. IDEM participates on the Pathway to Water Quality Advisory committee and helps staff the exhibit during the Indiana State Fair each year.

The IASWCD *Conservation INsight*, a biweekly electronic publication, communicates issues, events and resources in watershed management statewide. The *Conservation INsight* 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. Additional awards, 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 INsight*, offer additional opportunities to increase public awareness and support successful nonpoint pollution reduction practices.

The IASWCD provides support to Women4theLand (W4L) – Women's Conservation Circles by participation on the W4L Steering Committee. W4L is a partnership of agricultural and natural resource conservation agencies and organizations working together to provide information, networking, education, and resources to Indiana women landowners and farmers. IASWCD helps promote and develop W4L statewide events.

The IASWCD Funding Resources web page can be accessed through the [IASWCD website](#). 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 IASWCD is a member of the [National Association of Conservation Districts](#) (NACD), whose mission is to serve conservation districts by providing national leadership and a unified voice for natural resource conservation. The NACD, in partnership with USDA's NRCS, awarded in early 2019 grants to two Indiana districts (Washington County SWCD and Allen County SWCD) to help boost technical assistance for agriculture and conservation implementation in those counties.

## **Indiana State Department of Agriculture**

The [Indiana State Department of Agriculture \(ISDA\)-Division of Soil Conservation](#) (Division) works alongside the [State Soil Conservation Board](#) (SSCB) 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 SWCDs, and promoting the opportunities and benefits associated with caring for soil and water resources.

The Division employs Resource Specialists throughout the state to directly assist landowners with the planning and implementation of conservation practices addressing specific soil and water resource concerns. Resource Specialists work with regional Conservation Delivery Teams 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 Resource Specialists also work with the SWCDs to help them carry out Clean Water Indiana (CWI) programs and assist with educational events for youth, adults, and farmers/landowners.

The Division also employs District Support Specialists (DSSs) to work cooperatively throughout the state with the local SWCDs to develop conservation priorities, goals, and business plans, as well as assist in the design of programs on the husbandry and management of soil and water resources that reach landowners and the general public. They prepare and conduct trainings for SWCD supervisors and staff, assist SWCDs in expanding their capacity to fulfill their role in their communities, provide facilitation for strategic planning and similar sessions, and provide information, guidance, and direct on-site assistance to SWCDs in carrying out their legal and operational responsibilities. The DSSs also

provide guidance and assistance to the districts in applying for competitive CWI grants for implementing multi-district sediment and nutrient reduction projects.

#### Conservation Reserve Enhancement Program

The [Conservation Reserve Enhancement Program](#) (CREP) is designed to help alleviate some of the concerns of high nonpoint source sediment, nutrient, pesticide, and herbicide losses from agricultural lands by restoring buffers and wetlands to improve water quality, as well as protect land from frequent flooding and excessive erosion by planting hardwood trees in floodplain areas along rivers and streams. This program is possible through an agreement between the State of Indiana and the USDA-Farm Services Agency. Program participants receive both state and federal incentives to voluntarily enroll in the program and install water quality and erosion prevention practices on environmentally sensitive land directly adjacent to eligible surface waters or land located in the floodplain. ISDA administers the CREP program on behalf of the state.

The program was first announced in 2005, covering three watersheds in Indiana with an acreage enrollment goal of 7,000 acres. The program expanded in August 2010 to include 11 priority watersheds touching 65 counties with an acreage enrollment goal of 26,250 acres. The CREP watersheds include Highland-Pigeon, Lower Wabash, Lower East Fork White, Lower White, Middle Wabash-Busseron, Middle Wabash-Deer, Middle Wabash-Little Vermillion, Tippecanoe, Upper East Fork White, Upper Wabash, and the Upper White.

Eligible buffer practices through CREP must be adjacent to a water body and include:

- Native Grasses.
- Hardwood Tree Planting.
- Wildlife Habitat.
- Riparian Forest Buffers.

CREP progress as of July 9, 2019 includes over 15,263 acres of conservation practices installed utilizing \$6.39 million state dollars and protecting over 720 miles along Indiana's rivers, lakes, and streams. Six thousand two hundred sixty-six (6,266) acres are protected through bottomland timber establishments in the floodplain, and 3,376 acres are protected through wetland restorations. Enrollment in CREP is over 17,843 total acres. For every state dollar that is spent on CREP practices, the federal match is approximately \$5-\$13 depending on the practice.

#### Clean Water Indiana Program

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

The CWI program is responsible for providing local matching funds as well as grants for sediment and nutrient reduction projects for Indiana's SWCDs. In 2019, 21 proposals were funded, totaling \$1,116,025 and impacting 33 SWCDs. Applications for the 2020 CWI Grant cycle will be accepted through September 16, 2019.

In 2018, ISDA and the SSCB received applications for three non-SWCD led projects and awarded funding totaling \$129,450 to the Southern Indiana Cooperative Invasives' Management program and the Indiana Association of Soil and Water Conservation Districts.

CWI also contributes critical state matching funds for Indiana's CREP, and supports other statewide initiatives such as the Indiana [Conservation Cropping Systems Initiative](#) (CCSI). CCSI provides the soil health trainings that are the core of soil health messaging by Indiana Conservation Partnership staff. Trainings in 2018 included 16 events with over 400 attendees. CCSI training has enabled the ICP to build teams of professionals who are able to provide consistent, science-based and farmer-proven soil health messaging to Indiana farmers and landowners statewide. Rather than focusing solely on financial assistance, trained staff focus upon successful adoption of practices. Combined with CCSI's recruitment of experienced farmers to serve as advisors and mentors, the effects of this training is reflected in the adoption of practices without programmatic financial assistance. For the past 4 years, approximately 1,000,000 of Indiana's 12,000,000 acres of cropland was seeded to cover crops - with only 1 in 5 acres receiving cost-share.

In addition, CCSI provides assistance to local level partnerships by helping them develop and present their own field days geared to specific audiences. Since its inception in 2009, CCSI has participated in education events in 84 of Indiana's 92 counties, and has reached over 25,500 attendees.

#### Infield Advantage

[Infield Advantage](#) (INFA) is a proactive, collaborative opportunity for farmers to collect and understand personalized, on-farm data to optimize their management practices to improve their bottom line and benefit the environment. Current projects include: nutrient management, for either corn or soybeans; the impact of cover crops, both late season seeding or in-season inter-seeding; and manure management. For example, participating farmers use precision agriculture tools, protocols, and technologies, such as aerial imagery and the corn stalk nitrate test to conduct in-depth nitrogen analysis on their own farms and to determine nitrogen use efficiency in each field that they enroll. This concept is considered a form of adaptive management and generally results in changes that increase profitability for the producer and ultimately has a positive impact on water quality. This adaptive management process has shown most growers can reduce their nitrogen rates by one-third while maintaining or increasing profitability. INFA is funded through the Indiana Corn Marketing Council and the Indiana Soybean Alliance with checkoff funds, and is being offered at no additional charge to producers.

INFA started in 2010 as a pilot project in Jasper County in northwest Indiana, and included 15 producers, 39 fields and 2,700 acres. It has expanded over the last 8 years and is now available in over 60 counties in Indiana. Producers enroll in the program on an annual basis. In 2018, there were 33 groups including approximately 400 producers, approximately 1,080 fields, and about 75,000 acres. So far in 2019, there are approximately 11 groups, 60 producers, and 150 fields that have enrolled in the program, and more are expected. In 2019, the unusually low enrollment is attributed to weather causing an unpredictable growing season with extremely wet conditions.

#### Nutrient Load Reduction Modeling and Mapping

In 2013, the ICP began using the EPA Region 5 Sediment and Nutrient Load Reduction Model to determine the impact on Indiana's water quality achieved by conservation best management practices (BMPs) implemented on agricultural land. It is part of a collective effort to generate a comprehensive statewide picture of installed voluntary conservation practices that are implemented through assistance from all ICP staff. The model is used to analyze the sediment and nutrient load reductions achieved by conservation practices funded by state programs such as the CWI, CREP, IDNR's Lake and River Enhancement Program, as well as federally funded programs such as § 319 administered by IDEM and the USDA's Farm Bill Programs like EQIP and CRP. The ICP utilizes the end products of this process to help measure load reduction trends by watershed for each calendar year and in cumulative years, and serves as a tangible component of the [Indiana State Nutrient Reduction Strategy](#). Annual

Accomplishment Reports that are generated as a result of this process can be found at <http://www.in.gov/isda/2991.htm>.

The Region 5 model is used to determine nitrogen and phosphorus load reductions that are tied directly to sediment. As a result, nutrients that are dissolved and carried by runoff waters are not accounted for in the model. In particular, total dissolved phosphorus is a parameter of interest that is not captured by the model. In addition, there are several practices that can't be run through the model because the practice itself does not impact sediment (e.g., nutrient management). The ICP would like to strengthen and improve this existing method of capturing nutrient load reductions so that dissolved nutrients and other practices not tied to sediment may be captured. In November of 2018, Indiana held a workshop entitled "Nutrient Reduction Estimation Framework" to coordinate the discussion on improving this method of nutrient load reduction estimation and tracking. The workshop had several goals, and it was agreed upon that Indiana needs a science assessment to:

- 1) Determine historic and ongoing nutrient loads leaving the state by basin, which can be used to set goals and provide an additional method for assessing progress.
- 2) Determine a load reduction method based on observed reductions.
- 3) Provide agreed-upon reduction estimates that could be used beyond the state's Nutrient Reduction Strategy.
- 4) Provide a foundation for speaking with one voice about conservation practices and priorities.
- 5) Determine the efficiency of various conservation practices on the reduction of nitrogen and phosphorus loads to improve water quality.

Further work will continue over the next two years among the Indiana Conservation Partnership Staff, researchers, university studies, and other conservation agencies to help in this effort of developing an Indiana Science Assessment.

#### Cover Crop and Tillage Transects

To measure the impacts and trend of conservation tillage, Indiana began conducting a Tillage Transect survey in the spring of 1990, which is a predetermined route and set of points-on-the-ground survey, that measures the amount of residue left on the ground after planting. The ICP introduced a cover crop assessment to the spring survey in 2011 to better tell the story of Indiana's conservation efforts. In 2014, a fall tillage and cover crop survey began to better assess the use of cover crops and the practice of conservation tillage in the fall after harvest. For more information, visit the [Cover Crop and Tillage Transect Data](#) page on the ISDA website.

#### GIS Basin Story Maps of the Ten Major River and Lake Basins in Indiana

The purpose of the GIS Basin Story Map applications is to showcase Indiana's efforts to enhance water quality within the ten major river and lake basins in Indiana, as well as educate landowners, both rural and urban, about local, state and federal cost-share programs, educational opportunities, and rural and urban conservation practices. The story maps feature interactive maps which allow users to click on watersheds, water monitoring locations along with links to water quality data, and educational sites to view detailed information about each basin. There is also information about local watershed groups and organizations, the number of conservation practices in specific subwatersheds, nutrient load reductions from BMPs, and links to active grants. The development and purpose of the GIS story maps has made [Indiana's Nutrient Reduction Strategy](#) more interactive.

## Indiana Department of Natural Resources

The Indiana Department of Natural Resources (IDNR) supports several programs that impact nonpoint source pollution in the state. These programs include the Lake and River Enhancement Program, the Indiana Lake Michigan Coastal Program, and the Healthy Rivers Initiative.

### Lake and River Enhancement Program

The Department's role in Lake and River Enhancement (LARE) is set forth in Indiana Code (IC 6-6-11). The Division of Fish and Wildlife administers the LARE program through financial grants awarded by the Director of IDNR to sponsors to reduce sediment and nutrient inflow to Indiana's lakes and rivers, and to enhance aquatic habitat.

The funding for LARE comes from the lake and river enhancement fee annually paid by boat owners when registering their boats with the Bureau of Motor Vehicles; thus, the LARE program strives to insure the continued viability of Indiana's publicly accessible lakes and streams for multiple uses, including recreational opportunities. The IDNR Division of Law Enforcement receives a portion of the funds to provide grants to conduct aquatic safety programs and maritime patrols.

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. In March of 2019, \$1,216,580 in 46 grants was awarded to address control of invasive aquatic species, logjam removal from rivers, and sediment removal from publicly accessible lakes.

In July of 2019, 24 grants totaling \$1,164,100 were awarded for new biological, diagnostic, design and construction projects on lakes and rivers as well as several new and continuing Watershed Land Treatment projects with county Soil and Water Conservation Districts. These latter efforts depend on partnering with willing land users to put in place various measures to address nonpoint source pollution. Such measures include the installation of filter strips, water and sediment control measures, and other practices to reduce erosion and sedimentation in specific targeted watersheds.

Several LARE-funded projects feature active measures to improve aquatic habitat, including streambank stabilization with bioengineered practices, low-head dam removal, and various in-stream measures to benefit fish and other aquatic organisms. The stabilization of shorelines on natural lakes is also addressed in several projects. The end results of these efforts include enhanced recreational opportunities for those who use the water for boating, fishing, and paddling activities. They can also result in increased economic value for businesses, communities, and individuals who live on, or use these waterbodies.

### Indiana Lake Michigan Coastal Program<sup>4</sup>

The purpose of the Indiana Lake Michigan Coastal Program (LMCP), funded primarily through the National Oceanic and Atmospheric Administration (NOAA), is to enhance the state's role in planning for and managing natural and cultural resources in the coastal region and to 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 who provides technical assistance, education and outreach, and coordinates efforts toward the achievement of management measures that combat sources of nonpoint source 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

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<sup>4</sup> Indiana Lake Michigan Coastal Program reporting period is July 1, 2018 – June 30, 2019.

region. Project categories include land acquisition (e.g., riparian corridors), low cost construction (e.g., natural area restoration and BMP installation), education and outreach, and planning/coordination/management (e.g., land use planning and ordinance development). In the 2018 grant cycle project applications were received and grants awarded to coastal communities and organizations that will result in nonpoint source pollution runoff reduction and water quality improvements. Examples include a street “Green Gateway” in the City of Gary, a lakeshore access and restoration project in Long Beach, a tributary stream assessment, a riparian corridor restoration planning project, land assessments and plans for restoration of conservation properties, molecular source tracking of septic pollution, and a citizen-informed urban forestry plan. The annual Request for Proposals for the LMCP Grant cycle is issued in July of each year.

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 Nonpoint Source Pollution Control Program to address water quality impairment of coastal waters. The purpose of the program is to develop and implement management measures for nonpoint source pollution to restore and protect coastal waters. The IDNR LMCP and IDEM §319 Program staff work together to coordinate with other state and federal agencies such as state and local health departments, other IDNR Divisions, NRCS, local SWCDs, and not-for-profit organizations 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.

Only one 6217 Coastal Nonpoint Pollution Control Program measure, Operating Onsite Disposal Systems, remains unapproved. To meet this measure the state must ensure that operating septic systems within the Coastal Region are inspected at a frequency adequate to ascertain whether septic systems are failing. A key part of the strategy to develop an approvable measure is embodied in a Section 319 grant that was awarded to the LMCP. Implementation of this grant began in May 2018. There are three critical elements of this strategy: 1) understanding the number and locations of septic systems in the Coastal Region (i.e., mapping); 2) collecting data to quantify the impact of septic systems on Coastal Region surface waters (i.e. *E. coli* and molecular source tracking efforts); and 3) providing effective, targeted outreach and education for homeowners with septic systems, realtors involved in transfers of homes with septic systems, septic professionals that service and inspect septic systems, and decision-makers that may be involved in the development and passage of septic system inspection ordinances needed to meet the remaining measure. The mapping task of the 319 grant was completed in December 2018. As part of the Outreach task, in collaboration with the Indiana State Department of Health and Greater Northwest Indiana Association of Realtors, one half-day realtor workshop (*On-site Sewage Systems: The Infrastructure Asset that Nobody Boasts About*) was offered in June 2018 and drew 19 participants; however, no additional workshop was held during the 2018 fiscal year due to personnel limitations. In collaboration with partners, the LMCP Special Projects Coordinator is implementing the molecular source tracking and neighborhood-based outreach and education tasks. The LMCP is partnering with Indiana University Northwest to collect *E. coli* samples up and downstream from suspected contamination sites throughout the watershed. These samples will be analyzed for presence of human gut bacteria markers using molecular source tracking techniques. Clean Water Ambassadors have been identified from 20 potential neighborhoods and have all attended a training session, led by the LMCP and partner Save the Dunes, where they learned about septic maintenance, water quality, and were provided educational materials to distribute to their neighbors. These Clean Water Ambassadors are distributing these materials to their neighbors by hosting four outreach events each until April 2020.

The LMCP’s Special Projects Coordinator presented at the 2019 Annual Great Lakes Coastal Zone Management Conference (June 2019) to share information about the septic system-focused “Good

Neighbor” outreach program for homeowners. The LMCP continues to lead the Northwest Indiana Septic System Coordination Work Group bimonthly meetings to discuss septic nonpoint source pollution issues and solutions in northwest Indiana. Following the publication of a press release, the Special Projects Coordinator conducted a phone interview with Adams Radio Group (May 2019) regarding the Clean Water Ambassador Program and ties between water quality and septic maintenance. The Coordinator also participated in a live-streamed radio show with the LaPorte Unity Foundation on WIMS radio regarding water quality and septic maintenance (May 2019).

In September 2018 the LMCP, in conjunction with the NW Indiana Septic System Coordination Work Group, promoted the annual EPA SepticSmart Week in the Indiana Coastal Region through press releases, website updates, radio interviews, tabling events with Septic Smart educational materials, a presentation at the IDNR Division of Nature Preserves annual conference and Coastal Advisory Board meeting, and coordination of resolutions and proclamation of SepticSmart Week by local organizations and the Indiana Governor. Several communities passed SepticSmart Week resolutions and the Governor’s Proclamation of SepticSmart Week for 2018.

In June of each year the LMCP and partners celebrate Coastal Awareness Month by developing a wide variety of events highlighting the natural, cultural, and historic resources of the Indiana Coastal region. In June of 2019 the LMCP more than doubled the number of Coastal Awareness events relative to years past. There were 84 events that took place and many focused on the importance of water quality protection and restoration in the Lake Michigan Watershed.

#### Healthy Rivers Initiative (HRI)

The Healthy Rivers Initiative, led by the IDNR, 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 in Indiana.

These projects involve the protection, restoration, and enhancement of riparian and aquatic habitats and the species that use them, particularly threatened or 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.

Since HRI was launched in June of 2010, 37,673 acres of land are now permanently protected, over halfway to the goal of 70,000 protected acres. Eleven thousand nine hundred fifty-six (11,956) acres have been acquired by IDNR in the Wabash River and Sugar Creek Conservation Areas, with 4,052 acres enrolled in NRCS Wetlands Reserve Easement program that are not owned by IDNR, to complement the existing 12,723 acres of state-owned land. In the Austin Bottoms Conservation Area along the Muscatatuck River, 4,405 acres have been acquired in addition to 2,048 acres enrolled in Wetlands Reserve Easement Program that are not owned by IDNR, complementing the existing 2,489 acres of state-owned land. To date, a total of 13,663 new acres are now open to the public for hunting, fishing, trapping, boating, and birdwatching through HRI.

## Indiana State Revolving Fund Loan Program<sup>5</sup>

The Indiana State Revolving Fund Loan Program finances projects that abate or prevent nonpoint source pollution of Indiana's waters. The State Revolving Fund Program has traditionally provided low interest loans to Indiana communities for projects that improve wastewater and drinking water infrastructure. The program was expanded in 2004 to fund projects that meet the objectives in the State Nonpoint Source Pollution Management Plan. The money loaned to these nonpoint source pollution projects is documented as match, when applicable, for the state §319 Grant Program. Eligible nonpoint source pollution 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 or connection to sewer
- Brownfield remediation
- Conservation easements
- Agricultural and waste management BMPs

This reporting period, State Fiscal Year 2019, the State Revolving Fund Program loaned \$31 million to six communities for projects to reduce nonpoint source pollution by extending sanitary sewers to areas with septic systems, thereby eliminating this potential source of pollution. Approximately 1,500 septic systems will be eliminated through these projects. Throughout the life of the State Revolving Fund Nonpoint Source Pollution Program, \$287.4 million has been loaned for nonpoint source pollution purposes. Approximately 17,000 septic systems have been removed from service, eight Brownfield sites have been remediated, and five communities completed storm water infrastructure projects.

The Nonpoint Source Pollution Program has also made a specific effort to coordinate with the Clean Water State Revolving Fund Program to link loan applicants with local watershed groups. Each quarter, when the Clean Water State Revolving Fund's Project Priority List is made available, the nonpoint source pollution program identifies those applications that fall within an area covered by a watershed management plan (WMP) or a Total Maximum Daily Load (TMDL) report. The Nonpoint Source Pollution Program then determines, with the help of Clean Water State Revolving Fund staff, whether or not those applicants have taken advantage of the 0.5% interest break available for projects that include a nonpoint source pollution or green infrastructure 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. Interest rates are adjusted quarterly on the first of January, April, July, and October.

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<sup>5</sup> The State Revolving Fund Loan Program reporting period is the state fiscal year: July 1, 2018 - June 30, 2019.  
Indiana Nonpoint Source Program FFY 2019 Annual Report  
September 30, 2019

## 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 nonpoint source pollution problem and gains made in water quality through nonpoint source pollution actions. In order to grasp the extent and impacts of nonpoint source 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 2017-2021](#). Assessment of the data obtained through monitoring followed protocols outlined in the [2018 Consolidated Assessment and Listing Methodology](#). Highlights of significant progress in monitoring and assessment of Indiana's waters for nonpoint source pollution during FFY 2019 are included below. A full accounting of progress made this year toward the objectives of Goal 2 in the [State Nonpoint Source Pollution Management Plan](#) can be found in Appendix A.

### IDEM Water Quality Monitoring

Using a random, stratified design, the Office of Water Quality 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 which will be complete at the end of 2019 monitoring season with the Lower Ohio River Basin. This rotation will repeat beginning in 2020 with monitoring in the West Fork White River (Figure 2).

In 2019, IDEM sampled probabilistically in the Ohio River Basin (HUCs 05090203, 05140101, 05140104, 05140201, and 05140202). The results of this monitoring effort will be used to:

1. Provide data on which to base statistical comprehensive assessments of state waters (305(b)).
2. Provide data on which site-specific assessments can be made for the waterbodies' attainment of Indiana's designated uses (303(d)).

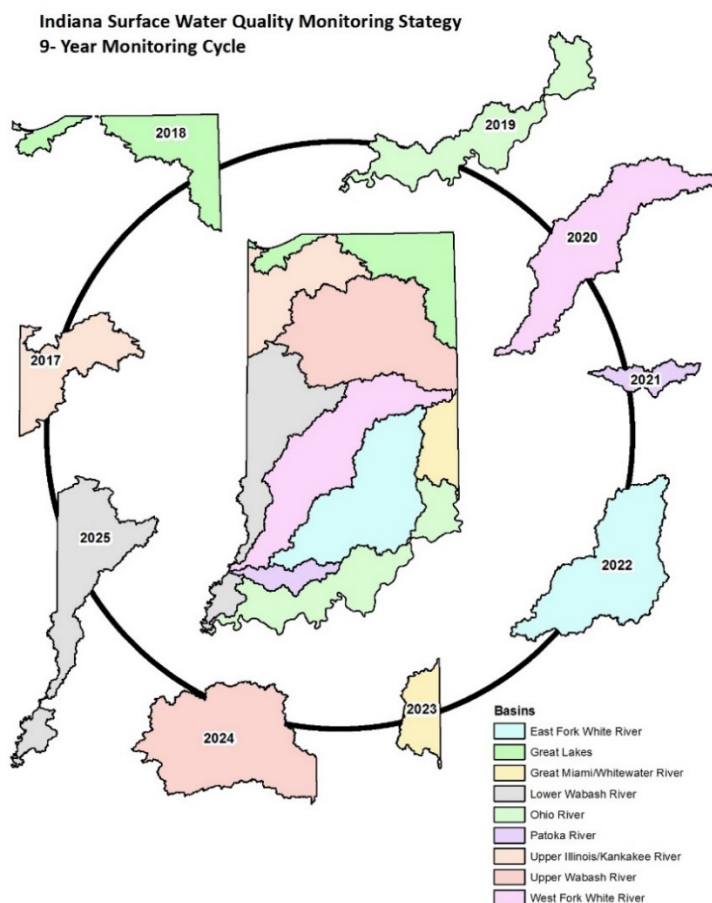


Figure 2. IDEM's 9-Year Rotating Basin Monitoring and Assessment Approach.

3. Identify impairments for which TMDLs should be created for nonpoint source pollution and point sources.
4. Provide baseline data for watershed management decisions, where possible.

IDEM's nonpoint source pollution monitoring also includes two types of targeted monitoring: performance measure monitoring (monitoring for success, measured under the U.S. EPA's WQ-10(a) measure) and watershed characterization monitoring.

#### Watershed Characterization Studies

For its watershed characterization studies, the Office of Water Quality uses a modified geometric site selection process in order to get the necessary spatial representation of the entire study area. Sites within a watershed are selected based on a geometric progression of drainage areas starting with the area at the mouth of the mainstem stream and working upstream through the tributaries to the headwaters (sites  $\geq 5$  square miles). Monitoring sites are then located at the nearest bridge with additional sites located at pour points and, to the extent possible, sites of concern to the stakeholders.

Study areas are selected based upon TMDL development needs and where there is a local group ready to complete watershed planning and begin implementation. Physical, chemical and bacteriological data are collected monthly for twelve months at the pour points and for the rest of the sites, April through October, which constitutes the recreation season. Biological data are collected once per year at each of the sites. These data are used to identify the sources and extent of impairment for TMDL development and for local watershed groups to designate critical areas and management decisions for their watershed management plans. The rigor of this monitoring design supports future performance measures monitoring to determine if improvements in water quality have occurred due to management and BMP implementation.

Following is an update of all ongoing watershed characterization studies and studies closed in FFY 2019.

Laughery Creek (HUC 0509020306) – Water quality monitoring in the Laughery Creek watershed began in November 2018 and is to be completed by October 2019. Twenty-four sites are being monitored monthly for the above water quality parameters following a modified geometric design and targeted site selection.

Maria Creek (HUC 0512011118) – tentatively, eighteen sites are scheduled to be monitored following the watershed characterization protocols outlined above. Monitoring is scheduled to begin in November of 2019 and conclude in October 2020.

#### Performance Measures/Monitoring for Success (Success Stories/WQ-10(a))

Part of U.S. EPA's strategy for showing improvement in nonpoint source pollution impairment is through Success Story submissions by the states. In order to show improvement, states must show that one or more of the waterbody/impairment causes primarily caused by nonpoint source pollution and identified on any state 303(d) list are removed.

Targeted monitoring to measure water quality improvement as a result of nonpoint source pollution grant projects was initiated in 2009. Watersheds impaired by nonpoint sources that have received nonpoint source funding to prevent and reduce nonpoint source pollution and that meet threshold criteria are targeted for performance monitoring. Threshold criteria can include number of practices installed, load reductions estimated, time lag for best management practice effectiveness concluded, and group monitoring indicating improvement. Monitoring for success continued this period in the Little Deer Creek (051201050503), Hogan Creek (050902030402 and 050902030403), South Fork Wildcat Creek-Kilmore Creek (051201070302, 051201070302, 051201070303), Flat Creek (051202090501,

051202090502, 051202090503), and Big Creek (051202070101, 051202070102, and 051202070104) watersheds. Samples are still being processed and IDEM reserves judgment as to whether any of the sampling in these watersheds demonstrates improvement.

Success stories reported in FFY 2019 are reported under Goal 4 and can be found starting on page 38 of this document. Load reductions from BMPs are found in Table 2 on page 35 of this document.

### Ground Water Monitoring

Ground water monitoring continued during the 2019 field season. After spending 2017 revising sampling methods, the 2018 Ground Water Monitoring Network (GWMN) sampling season focused upon determining the occurrence of naturally occurring arsenic found statewide. Across the State of Indiana, the results from previous sampling as part of the GWMN showed arsenic at concentrations ranging from non-detect to levels well above the maximum contaminant level (MCL) of 10 parts per billion (ppb) in over 11% of residential wells sampled. For the 2018 sampling season, IDEM Ground Water Section staff revisited sampled residential wells that had reported levels of  $\frac{1}{2}$  the MCL of 5 ppb and greater to gain a better understanding of the statewide distribution of arsenic. In all, 231 samples were collected during 2018. The focus of the resampling determined the specific concentration of two forms of arsenic, arsenic III and arsenic V. The samples collected in 2018 showed that the majority of arsenic present in Indiana ground water occurs in the form of arsenic V, likely due to the strong reducing conditions in the ground water. By knowing the ratio of arsenic III to arsenic V, IDEM can better assess the mobility of arsenic based on geological and geochemical conditions across the state and make better predictions of areas that may be affected by high levels of arsenic. Likewise, arsenic speciation is intended to assist residents in choosing appropriate treatment options for arsenic removal. In addition to arsenic speciation, wells tested during the 2018 field season were analyzed for general chemical parameters, including metals, anions/cations, nitrate, ammonia, and alkalinity. A subset of the samples was also analyzed for fungicides that are applied to corn and soybeans to prevent the rust fungus. Ultimately, this type of sampling can provide the information needed to characterize causes, sources, and magnitude of nonpoint source pollution in ground water. For the 2019 sampling season, IDEM is following up on the 2018 results to study the geologic and geochemical factors that can affect the horizontal and vertical variability of arsenic within an aquifer. Several small areas of private wells (less than 1 square mile) with known arsenic issues are targeted for intensive sampling. The results of this study may allow IDEM to issue recommendations for well screen placement to minimize the amount of arsenic in the well and assist in the creation of a map of arsenic in ground water in Indiana.

### **Additional Water Quality Monitoring**

Entities other than IDEM are conducting water quality monitoring programs around the state that are important to the Nonpoint Source Pollution Program. Many §319 projects conduct monitoring as part of their work to reduce nonpoint source pollution. These monitoring efforts and the subsequent data generated are shared and used by IDEM and others for many different purposes.

### Hoosier Riverwatch Volunteer Monitoring Program

Hoosier Riverwatch (HRW), a program of IDEM's Watershed Assessment and Planning Branch, is a volunteer water quality monitoring initiative designed 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 2019, HRW supported 24 (21 basic and 3 advanced *E.coli*) local workshops so far this year, as well as targeted training events to STEM (science, technology, engineering, and mathematics) teachers. Approximately 222 water quality monitoring volunteers have been trained in Indiana this federal fiscal year.

The program has distributed 4 equipment kits this season to a county agency, a state agency office in Indianapolis, a local wildlife park, and a zoological society. The fiscal year started with 39 instructors and ended with 34 available for leading workshops in the state, taking into account several who have retired, had a job change or moved away. Headquarter staff also provided supplemental equipment and supplies for outreach and/or sampling blitz events involving watershed groups such as Indianapolis' ROW (Reconnecting Our Waterways) collaborative group and The Watershed Foundation (a multi-county watershed group working to protect an area of natural lakes in Indiana). The HRW Program also maintains about two dozen loaner trunks across the state, with equipment needed to monitor water quality. These trunks may be borrowed by trained HRW volunteers for varying lengths of time.

The Hoosier Riverwatch Volunteer Stream Monitoring Internet Database was developed in the summer of 2000, about 4 years after the HRW Program became fully staffed. The online database was upgraded in 2016 (using §319 funds to contract with the developer) to update coding and allow the database to continue to function online. HRW monitoring groups utilize the database to enter data collected from their habitat, chemical, biological, and flow sampling. Only volunteers who have completed a HRW training workshop may enter data. Anyone can view and download stream data entered into the database. This provides a unique opportunity for volunteers to share data, not only with one another, but also with others interested in the quality of Indiana's rivers and streams. This federal fiscal year, according to the data entered into the online database by volunteers, approximately 84 stream sites were sampled during 365 days of sampling activities across the state. It is interesting to note that sampling occurred in the 2018 calendar year right up to New Year's Eve and resumed again on 1/2/19. Therefore there appeared to be no cessation of sampling in Indiana this year due to winter; however there might have been a reduction of sampling due to high water in spring of 2019. The majority of the sites recorded here are sampled once/year as part of an ongoing effort to monitor. Twenty-three sites were sampled twice this FFY, eight were sampled thrice, two sampled four times, one sampled five, and one site has been sampled 11 out of 12 months. Eleven sites were registered and sampled for the first time this year. Two sites were revisited again after a 4-5-year absence, two more following a 7-8-year absence, three after a 9-10-year absence, four sites after a 12-13-year absence, and two following an 18-year absence. The interest in all of these sites is heartening!

#### Indiana Clean Lakes Program

The School of Public and Environmental Affairs (SPEA) at Indiana University (IU) has been working with IDEM to use §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 land disturbing activities, suburbanization of lakeshores, boating impacts, and septic system discharges. These activities can result in erosion, sedimentation, and excessive nutrient concentrations reaching lakes. This can lead to accelerated eutrophication and related undesirable effects including nuisance algae, excessive plant growth, murky water, odor, and fish kills.

Indiana's CLP is coordinated by IU-SPEA staff and students. The current grant agreement, which is in effect from May 2019 through April 2021, includes the following components:

- Annual sampling of 80 lakes and reservoirs (selected via a randomized approach) at one site for a variety of parameters.
- Training and support of a corps of volunteer lake monitors to collect water transparency data using a Secchi disk. A select volunteer group also collects chlorophyll-a and total phosphorus data. Volunteers are also trained to identify aquatic macrophytes and aquatic invasive species, including zebra mussels.
- Education and outreach through the production and distribution of the newsletter, *Water Column*; maintenance of the Indiana Clean Lakes Program website; preparation of brochures and fact sheets; and participation in the annual Indiana Lake Management Conference.
- Providing technical assistance and expertise on lake-related issues.

Section 314 of the CWA charges IDEM with responsibility for assessing and reporting the trophic status and trend in trophic condition of Indiana's public lakes. The State of Indiana began assessment of lake nutrient levels and effects in the early 1970s. Continued monitoring is necessary to:

- Report the status of lake eutrophication levels to the U.S. EPA in the State's Integrated Water Quality Monitoring and Assessment Reports.
- Determine and track trends in eutrophication levels of lakes and reservoirs to inform restoration priorities and activities.
- Provide data needed to support development of nutrient water quality criteria, as required by U.S. EPA.
- Provide data needed to determine if lakes and reservoirs are meeting water quality criteria and supporting the beneficial uses designated in Indiana's water quality standards.

Over the years, the Indiana CLP has continually provided IDEM a wealth of data for its CWA §314 and 305(b) assessments and for the development of its 303(d) List of Impaired Waters, which identifies waterbodies in need of restoration. These data are not only used to make waterbody-specific assessment and listing decisions, but the data set as a whole provided the foundation for the development of IDEM's assessment methodology for lakes and reservoirs. The Indiana CLP data, collected over more than three decades, have also been analyzed extensively by IDEM for the purposes of considering numeric nutrient water quality criteria for lakes and reservoirs. Although this work continues, the data set provided by the program and IDEM's analyses have helped inform the Agency's current approach to reducing nutrient loading to Indiana lakes and reservoirs.

#### Monitoring for the National Water Quality Initiative

IDEM is currently working with several partners to monitor at various scales in the School Branch watershed, part of the Eagle Creek watershed (HUC 051202011108), in Hendricks County, Indiana. This watershed is the focus of a collaborative, public-private partnership tied to the national initiative for agricultural conservation cropping systems. IDEM has provided the USGS with §319 grant funds to investigate three reaches of School Branch to determine if differences in physical, chemical, and biological indicators of stream water quality and quantity are related to long-term agricultural conservation cropping systems in the watershed. USGS has been funded for six years with §319 funds to

collect and interpret scientific data about water quality and water quantity in the School Branch watershed (the project began on January 11, 2016 and will end on May 29, 2022). The USGS operates three monitoring stations to continuously measure stream discharge. At one of these stations, real-time water-quality sensors and representative sampling are used to measure continuous and synoptic concentrations and loads of nitrogen, phosphorus, and suspended sediment in stream water. Continuous ground water levels and synoptic ground water quality are also measured. Chemical indicators of water quality and hydrologic data are used to understand the sources and transport of nitrogen, phosphorus, and sediment in the watershed. Biological inventories are used as additional indicators of water quality. A tile drain synoptic study is also being completed. Data from the study will be communicated by the USGS through internet webpages, presentations, and publications.

In addition, IDEM monitored two fixed station sites on School Branch monthly, an effort that began in April 2014 and continued through FFY 2019. IDEM and USGS data (as well as data collected by other project partners) will be evaluated to determine whether goals of the project have been met.

#### 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.

In 2015, OWQ began roll out of the External Data Framework to provide a systematic, transparent, and voluntary process for external organizations to submit their water quality data for consideration in various OWQ programs. The External Data Framework 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.

[The External Data Framework website](#) is now active and available to the public. The website provides general information on the External Data Framework along with a frequently asked questions (FAQ) page, data solicitation schedules and timelines, and a technical assistance page. OWQ has also developed a number of presentations and other outreach materials to promote participation in the External Data Framework. The website offers two guidance documents: The [General Guidance for the Office of Water Quality External Data Framework](#), which provides an overview of the External Data Framework and addresses some of the more common questions regarding its structure, policies, and participation; and the [Technical Guidance for the Office of Water Quality External Data Framework](#), which provides more specific information regarding the requirements and recommendations of the External Data Framework that external organizations can use to develop their monitoring plans, improve the quality of the data they collect, and determine whether data sets they obtain from others are suitable for use in their projects.

OWQ's External Data Framework website also includes a page that describes three options for data submittal through OWQ's Secondary Data Portal. All participants in the External Data Framework will enter the system through a single Secondary Data Portal where they may select to 1) enter their data online via user-friendly forms into a database that will produce a Microsoft (MS) Excel file formatted for upload into OWQ's Assessment Information Management System (AIMS) database, 2) use a MS Excel template provided by OWQ that can directly upload into AIMS, or 3) request the development of an

electronic data interchange that will automatically feed their data into OWQ's AIMS database. Once data are in the AIMS database, they will be reviewed and ranked based on their data quality and made available to OWQ staff for use in their programs and by request to the public.

Data may be submitted to the External Data Framework at any time for consideration by the OWQ for potential use in its programs. OWQ programs can access data submitted through the External Data Framework at different times depending on their varying needs. Two OWQ programs – the Integrated Reporting and TMDL Programs – have more specific timelines in which they review the data submitted through the External Data Framework. Regardless of when they are submitted, all data sets are reviewed by OWQ and evaluated for their potential use by OWQ programs. These data and their associated quality assurance information can be accessed by other programs within IDEM or the public by request to the Secondary Data Coordinator.

The OWQ secured funding through CWA Supplemental 106 (also called "Monitoring Initiative Funds") to develop an online tool to help improve the data quality documentation that External Data Framework participants provide with their data submittals. This tool will facilitate the design of water quality monitoring projects and the development of associated quality assurance project plans (QAPP) by participants in the External Data Framework. The content needed for this technical assistance was developed with CWA Supplemental 106 funds in 2013. In addition to the development of technical assistance content, the contractor for the 2013 project provided a matrix to help IDEM choose the best platforms and software to use in delivering content to participants in a cost-effective way. IDEM has determined that this content will be best delivered online through an interactive interface that will benefit both OWQ and External Data Framework participants.

With the proposed system, External Data Framework participants will be able to:

- Fill out OWQ's QAPP template online through a self-paced, guided process through a series of online forms.
- Access learning and other support materials in a variety of formats (video, downloadable documents, links to outside sources, etc.), tailored to their unique needs for a given section of the QAPP.
- Upload additional materials if needed to append to their QAPP.
- Print their completed QAPP and/or deliver it to an OWQ employee to facilitate review of data they submit through the External Data Framework.

Benefits for OWQ's internal External Data Framework processes include:

- The ability to deliver a large variety of technical assistance, tailored to individual user needs in a very streamlined way.
- The ability to check on the status of any QAPP in the system and to access the QAPP live on their computers to provide direct, real-time support to specific users when needed.
- The ability to offer highly targeted technical, yet streamlined, assistance to individual users via a "Help" section that will allow OWQ staff to embed responses to their questions within the sections of the QAPP to which they pertain.

### GOAL 3: DEVELOP AND CONDUCT A STRATEGIC OUTREACH AND EDUCATION PROGRAM

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

In the past, IDEM's Nonpoint Source Pollution Program refreshed its website to include updated information as a means to educate citizens on nonpoint source pollution; provide grantees with information and guidance to successfully complete their nonpoint source pollution grant projects; share information about nonpoint source pollution grant projects and their successes; and communicate with stakeholders and partners on nonpoint source pollution 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 nonpoint source pollution staff continues to engage interested groups and communities, through direct contact, 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 Nonpoint Source Pollution Management Plan](#) can be found in Appendix A.

#### Watershed Specialists

The Watershed Specialists support 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 2019 are:

- Assisted approximately 82 active and developing watershed projects.
- Participated in the planning and conducting of the 2019 IASWCD Annual Conference, including moderating several sessions. Planning has begun for the 2020 IASWCD Conference.
- Assisted Purdue University with the Indiana Watershed Leadership Academy by meeting the participants and explaining the Watershed Specialists' role.
- Worked with others in the Watershed Assessment and Planning Branch to develop watershed characterization studies and WQ-10(a) targeted monitoring sites.
- Continued to work with the IDNR Lake Michigan Coastal Program, Nonpoint Source Pollution Coordinator to gain approval on the final outstanding element of the LMCP's Coastal Nonpoint Source Pollution Management Plan.
- Continued to participate in the ICP's Pathway to Water Quality advisory committee to improve the Indiana State Fair exhibit that reaches tens of thousands of Hoosiers each year. Also staffed the exhibit during the State Fair.
- Provided extensive support to the committee, led by IDEM, that is dedicated to implementing the Domestic Action Plan for Indiana under Annex 4 of the Great Lakes Water Quality Agreement.
- Coordinated actions between the watershed characterization/TMDL project staff and the nonpoint source program.

## **Indiana Watershed Leadership Academy**

IDEM is continuing to partner with Purdue University to conduct the Indiana Watershed Leadership Academy (IWLA) to meet the needs of watershed coordinators, agency staff, and others who 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 14 years, 403 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. Forty-two participants attended the IWLA in 2019. Applications are currently being accepted for the 2020 IWLA class.

The IDEM Nonpoint Source Pollution Program participates in the IWLA in several ways. The IDEM Senior Project Manager is on the steering committee for the Academy and served as a Team Lead during the January workshop. In 2019, the steering committee met once to discuss the success and future of the Academy. Staff from the Nonpoint Source Pollution Program reviewed student assignments and provided feedback. Nonpoint Source Pollution staff also attended one face-to-face session as a group to introduce IDEM's Nonpoint Source Pollution Program (particularly the Watershed Specialists) to, and network with, potential new contacts. The Senior Project Manager attended graduation and facilitated a small group activity to discuss how to make Academy projects useful to other watershed leaders in the state. The IWLA is funded in part through a FFY 2017 \$319 grant.

## **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. The ICP TCP operates as a volunteer planning team. In FFY 2019, the ICP TCP held/scheduled the following trainings:

- July 2019 – Southwest Pollinators Training.
- August 2019 – Northeast Pollinators Training.
- September 2019 – Six, Soil Testing and Interpretation Results Trainings.

A partnership-wide survey was conducted in 2017 to determine training needs across the ICP. These periodic surveys will continue to guide the ICP's Training and Certification Program.

## **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 Nonpoint Source Pollution Program is its effort to restore waterbodies impaired by nonpoint source pollution. A primary focus of IDEM’s Nonpoint Source Pollution Program is on-the-ground work to reduce nonpoint source pollution and improve water quality. The Watershed Planning and Restoration Section (WPRS), which houses the Nonpoint Source Pollution Program, administers two federal pass-through grant programs aimed at improving water quality in the state: CWA §319(h) and §205(j). Section 319(h) funding is predominantly used for the development and implementation of comprehensive WMPs that guide efforts to restore water quality on waterways impaired for nonpoint source pollution. Section 205(j) funding is used for the development of comprehensive WMPs along with monitoring projects to better assess water quality in Indiana. This has resulted in measurable improvements, especially in terms of estimated pollutant load reductions (see Table 2 on page 35). The WPRS also administers the TMDL program and the 303(d) Vision, and efforts are underway to revisit and integrate both the Nonpoint Source and TMDL program priorities. More information about the §319 and §205(j) grant programs and the TMDL program may be found on [IDEM’s website](#). A full accounting of progress made in FFY 2019 toward the objectives of Goal 4 in the [State Nonpoint Source Pollution Management Plan](#) can be found in Appendix A.

### **Section 319 Grant Program**

The §319 Grant Program is a major resource for reducing nonpoint source pollution in Indiana. In FFY 2019 Indiana received \$3,528,000 in §319 funds that will be used for Nonpoint Source Pollution Program support (technical staff and administration) and nonpoint source pollution projects. As a result of non-federal partnerships discussed under Goal 1, the Maintenance of Effort (MOE) level requirement under §319(h)(9) has been met this year.

Federal §319 grant funds require a 40% non-federal match. Match for Indiana’s nonpoint source pollution projects is provided by the project sponsor and its partners. Match for IDEM’s staffing and program support activities is provided by the Indiana State Revolving Fund Loan Programs administered by the Indiana Finance Authority. The State Revolving Fund Loan Programs provide low-interest loans, funded by federal capitalization grants, to Indiana communities for projects that improve wastewater and drinking water infrastructure, including nonpoint source pollution 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 Nonpoint Source Pollution Program. To date, all of the State Revolving Fund projects used for Nonpoint Source Pollution Program match involve extending sewers to areas with failing and aging septic systems. Removing these septic systems eliminates nonpoint source pollutants 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.

#### Section 319 Funding Priorities

U.S. EPA guidance requires states to use at least 50% of their annual appropriation of §319 funds (called watershed project funds) to implement watershed-based (i.e., watershed management) plans

in watersheds containing one or more impaired waters. States may use a limited amount of these project funds to protect identified unimpaired/high quality waters if doing so is identified as a priority in the updated [State Nonpoint Source Pollution Management Plan](#). Protecting sensitive, vulnerable, and high quality waters of the state is Goal 5 of Indiana's updated [State Nonpoint Source Pollution Management Plan](#). The other 50% (or less) of the total appropriation may be used for other activities that support the goals of the Nonpoint Source Pollution Management Program including education, watershed planning, and program support.

Each year, IDEM solicits applications for projects that will reduce nonpoint source pollution in Indiana's rivers, streams, and lakes and meet the state's Nonpoint Source Pollution Program goals. In an effort to more efficiently meet goals and focus §319 funds on restoration activities that will make measurable improvements in water quality and protect water quality designated uses (recreation, aquatic life, and public water supply), IDEM established the following four priorities for FFY 2019 funds. Projects focusing on these priorities through planning and implementation activities were considered a priority for funding:

- A. Develop a WMP or implement an IDEM-approved WMP that will reduce nutrient loads within the following 8-digit HUC watersheds (prioritized in [Indiana's State Nutrient Reduction Strategy](#)). See Appendix B for the Nonpoint Source Pollution Priority Watersheds (FFY 2019) map for these HUC8 Priorities.
  - 1. Upper Wabash (05120101).
  - 2. Middle Wabash-Deer (05120105).
  - 3. Middle Wabash-Little Vermillion (05120108).
  - 4. Middle Wabash Busseron (05120111).
  - 5. Lower Wabash (05120113).
  - 6. Upper White (05120201).
  - 7. Lower White (05120202).
  - 8. Maumee River (04100003, 04100004, 04100005, 04100007).
- B. Develop a WMP or implement an IDEM-approved WMP that includes a 10-digit HUC watershed with a surface water drinking water intake and waters identified in Category 4A and 5A of the Draft 2016<sup>6</sup> [§303\(d\) List of Impaired Waterbodies](#). This priority is derived from Goal 5, Objective 5.2 of the *Indiana State Nonpoint Source Management Plan*. See the Nonpoint Source Pollution Priority Watersheds (FFY 2019) map for the Drinking Water Priority watersheds.
- C. Develop a WMP or implement an IDEM-approved WMP that includes a 10-digit HUC watershed that impacts outstanding state resource waters and/or waters with endangered, threatened, or rare species. This priority derives from Goal 5, Objective 5.5 of the *Indiana State Nonpoint Source Management Plan*. See the Nonpoint Source Pollution Priority Watersheds (FFY 2019) map for the Protection Watersheds.
- D. Implement a WMP that meets the [IDEM 2009 Watershed Management Plan Checklist](#).

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<sup>6</sup> Note that the solicitation for FFY 2019 §319 funds was announced before a finalized 2018 [§303\(d\) List of Impaired Waterbodies](#) had been developed.

### Section 319 Grant Projects

Grant applications are submitted each year by project sponsors, reviewed by a committee of WPRS staff, and selected for funding based on the Nonpoint Source Pollution 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 nonpoint source pollution and improve water quality in the watershed through development of watershed management plans that meet IDEM's WMP Checklist (and U.S. EPA's required 9 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 or Watershed Specialists 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.

All eight projects funded in FFY 2019 address one or more of the Nonpoint Source Pollution Program priorities. These projects will be developing or implementing WMPs in watersheds with impaired waterbodies. Currently, there are 37 open or pending §319 projects, of which 29 are implementing watershed management plans and installing BMPs in critical areas of the watershed. Table 1 (page 34) lists some of these BMPs. These implementation projects are doing "on-the-ground" work in their watersheds that leads to nonpoint source pollutant load reductions (as shown in Table 2, page 35), and improved water quality. A list of all §319 projects open or pending during this fiscal year is located in Appendix C. A map showing the watersheds throughout Indiana where water quality improvement projects (both §205(j) and §319, planning and implementation) are currently underway, ready to begin, or recently completed (2015-2019) is located in Appendix D.

Project information for all §319 projects is entered and maintained in U.S. EPA's Grant Reporting and Tracking System (GRTS) database. State Revolving Fund or other projects used as match for the Nonpoint Source Pollution Program are also entered. GRTS enables U.S. EPA and states to demonstrate the accomplishments achieved with the use of §319(h) grant funds. The data are also used by U.S. 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. Section 319 projects that closed this fiscal year are summarized in Appendix E, along with a description of compliance with the Programmatic §319 Grant Conditions.

The Nonpoint Source Pollution Program is continually working to update and improve guidance for grantees to help them as they work towards implementing their nonpoint source pollution grant project. Most information needed can be found on the [IDEM website](#); much of it in the [Nonpoint Source Pollution Grants Compendium](#), which is comprised of all the guidance, instructions, and requirements for §319/205(j) grantees.

### Project Highlights

The project highlighted here is an example of a successful nonpoint source pollution project working in the northwest part of the state to improve water quality through watershed planning,

implementation of BMPs, and education/outreach. The information below was taken primarily from the quarterly progress reports and watershed management plan. This project was recently approved for an extension and is scheduled to close April 2020.

### **Big Pine Creek Watershed Implementation Project**

The Big Pine watershed covers 209,709 acres and is predominantly used for growing row crops. Over 80% of the land in the watershed is in row crop agriculture, primarily corn and soybeans. To make this land more productive for farming, streams have been ditched, fields tilled, and nearly all of the wetlands drained to quickly remove water from the land. This has drastically altered the hydrology of the streams and rivers, creating “flashy” ecological systems. The lack of natural hydrology in managed waterways not only degrades in-stream habitat, but it decreases natural water storage capacity and filtration of nutrients, bacteria, sediment, and other contaminants. Only about 7% of the land in the watershed remains forested, largely in areas along the Big Pine and on steeply sloped ravines in Warren County. Highly erodible soils cover 4% of the watershed, and potentially highly erodible soils cover 29%. Virtually the entire watershed (99.7%) is covered by soils considered very limited for septic use. Fencerows, pastures, and natural areas have been cleared as more demand is placed on each acre of farm land. Irrigation systems have begun to dot the landscape, ultimately affecting groundwater levels.

Benton County Soil & Water Conservation District has taken on water quality issues in the watershed by promoting and implementing a cost-share program. To date, the watershed project has decreased the amount of nitrogen by 4,084 pounds per year, phosphorus by 2,043 pounds per year, and sediment by 1,534 tons per year. These reductions have been achieved by implementing practices like cover crops, no-till practices, and equipment modifications in critical areas. The group continues to promote conservation practices to producers in the watershed via field days, workshops, tours, and media communications.

As part of the education process Benton County SWCD has contracted with Commonwealth Biomonitoring to monitor water quality trends in the Big Pine and Mud Pine watersheds. This information has been requested by numerous stakeholders within the watershed. Benton County is contributing this monitoring as match for the \$319 project. Monitoring will include water chemistry (TSS, nitrate-nitrogen, total phosphorus, *E.coli* and flow) at 10 sites twice per year (base and storm flow) for three years. Biological monitoring of fish and invertebrates will be done once in the first year between July and October at all 10 sites. This will provide more current data at strategically located sites, a marked improvement over the current estimates and generalizations from historic water quality data. This data will be used to determine if the BMPs installed are having the desired effects on surface water quality.

### *Accomplishments*

Although the Big Pine Watershed project continues to be successful in working towards their implementation and load reductions goals, they have demonstrated success above and beyond the typical project in their partnership development. The Benton County Big Pine Watershed Project has been working with the Alliance for Sustainable Agriculture on their Field to Market's Fieldprint Calculator. They are the only Soil and Water Conservation District in the country that is currently partnered with the Alliance for Sustainable Agriculture. Because of this partnership, the Big Pine Watershed Project was awarded \$70,000 from Coca-Cola to continue implementation efforts in the watershed. The Big Pine Creek Watershed also works with realtors in the watershed in a unique partnership. Realtors provide contact information of buyers and sellers of land in the watershed to

the watershed project, so that the coordinator can contract them directly if they are eligible for 319 cost share funds.

The Big Pine Watershed Project also developed partnerships with Farm Bureau, The Nature Conservancy (TNC), Women4TheLand, and private seed distributors. Hosting a slew of events from Farm to Table Field Days where local producers are thanked for their conservation efforts, to being a tour stop on a national conservation tour, the Benton County Watershed Project continues to develop exceptional partnerships to engage stakeholders from the public, non-profit, private, and corporate partnerships not just in their watershed, but on a national level.

Benton County SWCD to date has had 10 participants install BMPs utilizing their \$319 cost-share program. BMPs installed include 578 acres of cover crops, 455 acres with residue management, and 220 acres with conservation crop rotation. Total load reductions from the project to date are estimated to be:

Sediment	1,534 tons/yr.
Nitrogen	2,043 lbs/yr.
Phosphorus	4,084 lbs/yr.

Benton County SWCD has surpassed the education and outreach goals in this grant by hosting thirteen community events, eight workshops, seven field days, and four stream clean-up events.

#### *Funding and Partnerships*

Partnerships in the project included the White and Warren County SWCDs, The Nature Conservancy, CTIC, Niches Land Trust, The Friends of Big Pine Creek, NRCS, and ISDA. Commonwealth Biomonitoring provided \$2,000 in-kind match for water quality testing.

#### *More Information*

For more information on the Big Pine Creek Implementation project, please visit the Benton County SWCD website at <https://www.bentoncounty.in.gov>.

### **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 nonpoint source pollutants that 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 administers 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 nonpoint source 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 \$319 funds will also be in accordance with the CZARA §6217(g) measures. IDEM is currently modeling this “bigger bang for the buck” concept through its TMDL/Nonpoint Source Pollution Program. TMDLs are being written on the TMDL-WMP template that allows watershed groups to incorporate TMDL data into their WMPs and streamline the watershed planning process. In addition, IDEM is encouraging a systems approach to implementing BMPs. During a project’s initial application and/or cost-share program development, IDEM encourages the project to work with landowners and prioritize cost-share recipients 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 federal fiscal year watershed groups continued working to implement WMPs and utilized approximately \$475,728 reported through July 16, 2019, to install BMPs in critical areas of Indiana's watersheds. Table 1 lists some of the BMPs implemented this federal fiscal year compared with the last two fiscal years based on data from IDEM's Project Tracking Access database. In federal fiscal years 2018 and 2017 watershed groups utilized approximately \$1,289,409 and \$896,090 respectively.

Table 1 BMPs Implemented in Indiana FFY 2017 – 2019

BMP	Approximate Number FFY 2017	Approximate Number FFY 2018	Approximate Number FFY 2019
Cover Crop (acres)	27,575	26,427	18,913
Fence (feet)	13,968	16,389	11,160
Grassed Waterway (sq. feet)	2,573	1,256	108,900
Heavy Use Area Protection (sq. feet)	43,918	80,384	77,969
Nutrient Management (acres)	4,108	6,232	366
Pasture and Hay Planting (acres)	21	253	121
Residue Management, No-Till (acres)	515	0	0
Tree and Shrub Establishment (acres)	17	27	>1
Two Stage Ditch (feet)	2,868	0	0
Watering Facility (each)	9	20	14
Rain Barrels (each)	5	0	0
Rain Gardens (sq. feet)	392	467	400
Septic System Removal (each)*	173	128	**

\* Septic systems eliminated as a result of State Revolving Fund project(s) used as match for the Nonpoint Source Pollution Program.

\*\* Septic system removals totals for FFY 2019 will be reported after October 1, 2019.

Additional BMPs implemented this year include: access road, critical area planting, grade stabilization structure, grassed swales, mulching, roof runoff structure, and water and sediment control basins. The number of BMPs implemented in a given year varies depending on many factors including the weather, the focus of current nonpoint source pollution projects' implementation efforts based on their watershed management plan, the change in focus and availability of other federal and state program grant funds, and changes in BMP promotion and recommendations in the agricultural community. It should be noted that excessive rainfall in the spring of 2019 precluded quite a bit of construction and agricultural work this year.

One important indicator of Nonpoint Source Pollution Program and project success is the quantity of pollutants that were 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 uses simple algorithms to calculate nutrient and sediment loads from different

land uses and the load reductions that would result from the implementation of various BMPs. For each watershed, the annual nutrient loading is calculated based on the runoff volume and the pollutant concentrations in the runoff water based on factors such as the land use distribution and management practices.

Estimated load reduction data for each BMP implemented as a result of the project (including BMPs not funded with §319 funds and used as match) is submitted by the project sponsor with their invoice and entered by the IDEM project manager into an Access database at IDEM and the U.S. 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 fiscal year compared with the last two years are shown in Table 2. It should be noted that the spring of 2019 was a very wet spring and producers had a difficult time working in their fields.

Table 2 Reported Estimated Load Reductions for BMPs Implemented FFY 2017-2019

Nonpoint Source Pollutant	Estimated Reduction FFY 2017	Estimated Reduction FFY 2018	Estimated Reduction FFY 2019 <sup>7</sup>
Sediment (tons/yr.)	97,747	153,250	62,630
Phosphorus (lbs. /yr.)	108,7624	140,684	63,478
Nitrogen (lbs. /yr.)	304,818	352,684	140,106
Biological Oxygen Demand (lbs. /yr.)	12,358	48,702	17
Chemical Oxygen Demand (lbs. /yr.)	253	165	163
Ammonia (lbs. /yr.)*	2631.7	10,404	0
Suspended Solids (lbs. /yr.)	7,311	24,970	0
Pathogens/Coliform (CFU)*	1.09E+10	4.32E+10	0
TKN (lbs. / yr.)	2	0	0

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

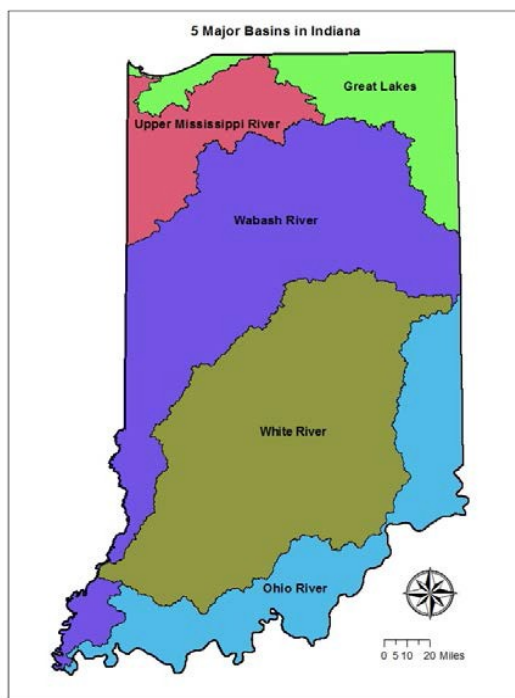
Cumulative total estimated load reductions reported in Indiana from §319 projects since FFY 2000 through July 16, 2019 are shown in Table 3.

Table 3 Cumulative Total Estimated Load Reductions in Indiana.

Nonpoint Source Pollutant	Total Estimated Reduction
Sediment (tons/yr.)	998,713
Phosphorus (lbs. /yr.)	1,393,447
Nitrogen (lbs. /yr.)	2,656,316

<sup>7</sup> FFY 2019 Load Reductions are estimated on BMPs reported through July 16, 2019. Estimated totals for FFY 2019 will be recalculated in the FFY 2020 Annual Report.

## BMPs and Load Reductions in FFY 2019



**Figure 3. Major Indiana Basins**

In an effort to show the work that is being done in the different basins of the state and help target future resources, the load reductions achieved have been broken down and shown within the following five major basins: Great Lakes, Upper Mississippi River, Wabash River, White River, and Ohio River (Figure 3).

Approximately 82% of Indiana (including the Wabash River and White River basins) drains to the Ohio River which ultimately flows into the Mississippi River and the Gulf of Mexico. 8% drains (through Illinois) to the Upper Mississippi River and approximately 10% of Indiana drains to the Great Lakes (Lake Michigan and Lake Erie). The charts on the following pages show the number of best management practices installed and the load reductions achieved in FFY 2019 in each of the five basins (Figures 4 and 5).

The BMPs implemented and load reductions achieved in the Great Lakes basin are the result of one project working there this fiscal year. As seen from the chart below (Figure 4), three BMPs were installed achieving

a reduction of 13 tons of sediment, six pounds of phosphorous, and 13 pounds of nitrogen.

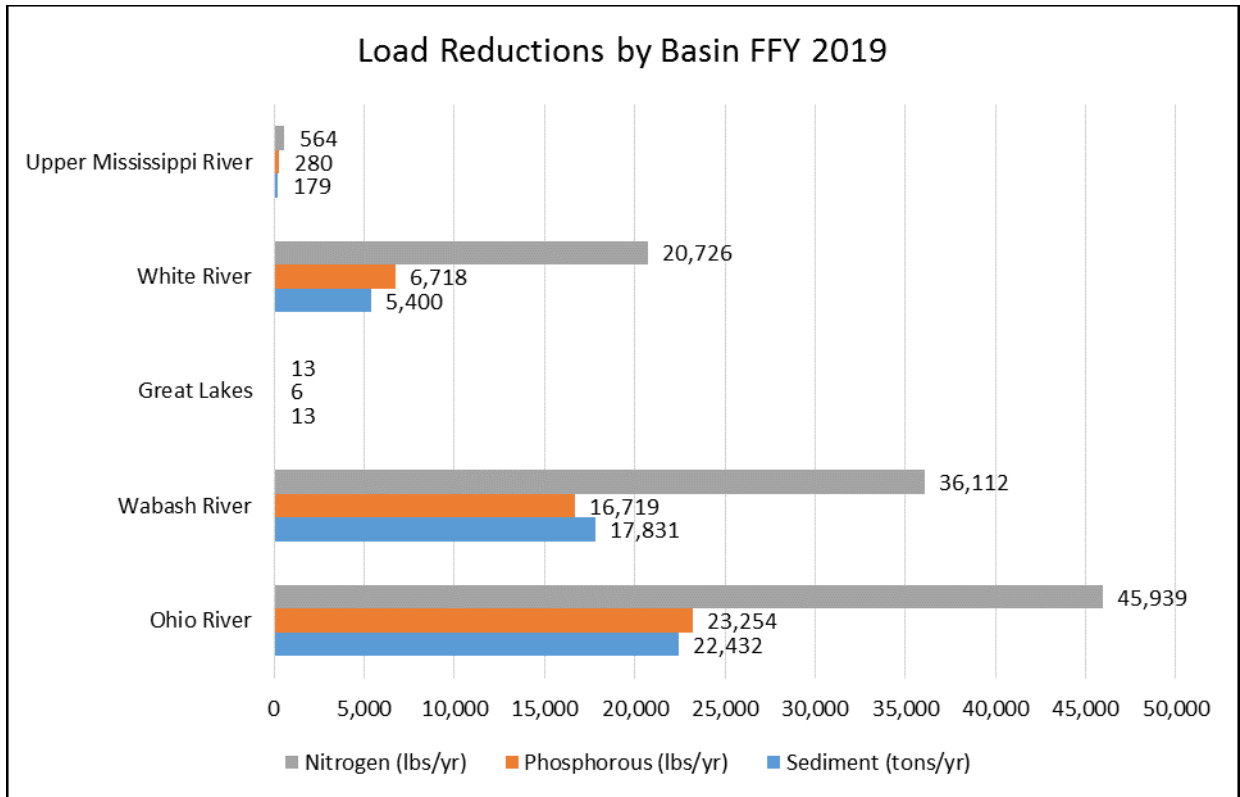
Any nutrient reduction to the Great Lakes is important because excess nutrients can result in algal blooms. Because of the recent problems resulting from large algal blooms in Lake Erie, phosphorus reduction to the lake has become a focus at the state and national level. Indiana has been engaged at the binational level on the Great Lakes Water Quality Agreement Annex 4 Subcommittee since its inception in 2013. Many efforts are currently underway to target harmful algal blooms and reduce the amount of phosphorus entering Lake Erie.

As part of the Mississippi River watershed, Indiana is involved in the Mississippi River/Gulf of Mexico Hypoxia Task Force and the strategy for eliminating the annual dead zone (or hypoxia zone) in the Gulf of Mexico. Nutrient loads from the Mississippi/Atchafalaya River Basin are contributing to eutrophication and harmful algal blooms in the Gulf. The development of [\*Indiana's State Nutrient Reduction Strategy\*](#) will benefit not only our state's local water resources, but ultimately the Gulf of Mexico and the Great Lakes.

One project in the Upper Mississippi River Basin installed four BMPs resulting in an estimated reduction of 179 tons of sediment, 280 pounds of phosphorous, and 564 pounds of nitrogen.

Eight projects working in the Wabash River Basin this year reduced nutrient loads to the river as shown below. The estimated load reductions achieved include 17,831 tons of sediment, 16,719 pounds of phosphorous, and 36,112 pounds of nitrogen.

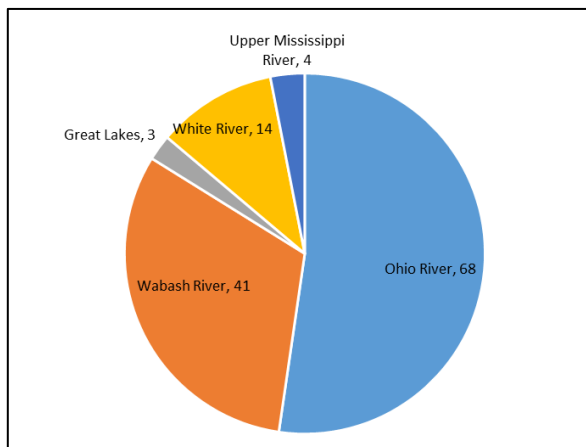
Three projects in the White River Basin worked to reduce nitrogen, phosphorus, and sediment in the watershed. The estimated load reductions are 5,400 tons of sediment, 6,718 pounds of phosphorous, and 20,726 pounds of nitrogen.



**Figure 4. Load Reductions by Basin FFY 2019.**

Six projects worked in the Ohio River Basin to reduce nitrogen, phosphorus, and sediment. These reductions came primarily from implementation of cover crops and livestock-related BMPs. These BMPs have estimated reductions of 22,432 tons of sediment, 23,254 pounds of phosphorous, and 45,939 pounds of nitrogen.

Combined, the projects in areas that ultimately drain to the Gulf of Mexico had estimated load reductions of 45,842 tons of sediment, 46,971 pounds of Phosphorous, and 103,341 pounds of Nitrogen.



**Figure 5: Number of BMPs Implemented in Indiana by Basin.**

## Nonpoint Source Success Story

Section 319 Nonpoint Source Pollution Success Stories are stories about nonpoint source pollution-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.

In 2019, IDEM submitted the Unnamed Tributary of South Fork Wildcat Creek as success stories under WQ-10(a). Indiana will also submit the Boyles Ditch success story by the end of the federal fiscal year.

### Aquatic Life Use Restored in a Tributary to South Fork Wildcat Creek

#### *Waterbody Improved*

Agricultural activities related to crop cultivation and livestock rearing contributed nonpoint source pollution to an unnamed tributary to the South Fork Wildcat Creek (SFWC), which caused the waterbody to fail to support its aquatic life use. As a result, the Indiana Department of Environmental Management (IDEM) added this waterbody to its 2002 Clean Water Act (CWA) section 303(d) impaired waters list for biotic communities. Project partners developed a watershed management plan and implemented best management practices (BMPs) to improve water quality in the stream. The waterbody now supports its aquatic life use. IDEM will propose to remove this waterbody from its list of impaired waters in 2020.

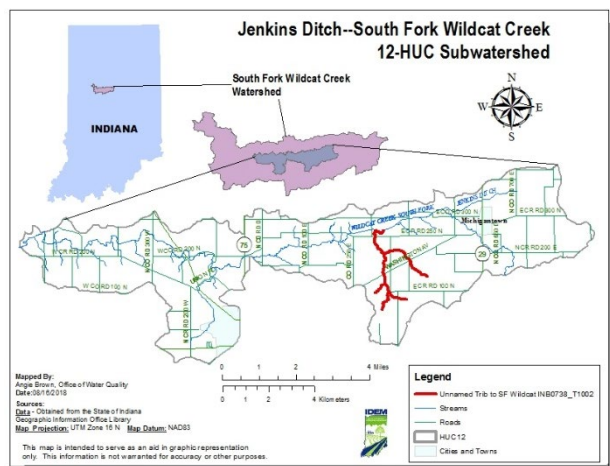
#### *Problem*

This unnamed tributary to the SFWC (assessment unit INB0738\_T1002) is a small headwater stream in the Wildcat Creek watershed in Clinton County, Indiana (Figure 6). It is in the eastern portion of the highly agricultural Jenkins Ditch-SFWC watershed and is predominantly surrounded by cultivated crops. The main stem of the SFWC is forested; however, most of the headwaters of this segment have no riparian buffer.

Water quality sampling performed by IDEM in 1998 revealed a low index of biotic integrity (IBI) score, indicating that the stream was unhealthy. In Indiana, streams that support a well-balanced aquatic community will have an IBI score greater than or equal to 36. Fish community data collected by IDEM in 1998 showed that this tributary to the SFWC scored only a 22. This result caused IDEM to list the stream on its 2002 CWA section 303(d) List of Impaired Waters for impaired biotic communities. To address this and other impairments, IDEM developed a total maximum daily load (TMDL) for *Escherichia coli*, total suspended solids, and nitrate-nitrite in 2008 for the SFWC watershed.

#### *Project Highlights*

Stakeholders have long been interested in improving the health of the SFWC watershed. From 1999 to 2003, the Indiana Association of Soil and Water Conservation Districts (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



**Figure 6. The unnamed tributary of the South Fork Wildcat Creek is in the Jenkins Ditch-South Fork watershed.**

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. This strategic plan formed the foundation of future planning and implementation efforts that helped improve the unnamed tributary.

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. In 2009 Clinton County Soil and Water Conservation District (SWCD) received a CWA section 205(j) grant to prepare a nine-element watershed plan for SFWC. Implementation of the plan began in 2012. So far, landowners have installed a variety of BMPs to improve the health of the SFWC, including cover crops, waste utilization and waste management, well decommissioning, an animal mortality facility, conservation cover, no-till, exclusion fence, pasture and hay plantings, heavy use area protection, stream crossing, nutrient and pesticide management, a watering facility, a manure transfer facility, filter strips and grassed waterways.

### *Results*

IDEM returned to the SFWC tributary for follow-up monitoring in 2017. This monitoring showed an improved IBI score of 46 at the mouth of the stream, which exceeds the minimum IBI of 36 that is needed to indicate support of a well-balanced aquatic community. Habitat showed marked improvements in reduction of silt, as well as deeper pools, less embedded riffles, and a bank that had recovered from severe erosion. On the basis of these data, IDEM will propose to remove the stream from its impaired waters list in 2020.

### *Partners and Funding*

Various partners have implemented several projects in the greater SFWC watershed over the years. In the late 1990s, the IASWCD undertook efforts to provide strategic planning and technical assistance to the larger Wildcat Creek watershed using \$189,500 in CWA section 319 funding. The Wildcat Creek Watershed Alliance took over implementation of the Wildcat Creek Watershed Management Plan in 2006 using \$150,000 in CWA section 319 funds. The U.S. Department of Agriculture's Natural Resources Conservation Service provided further funding and technical assistance through a variety of programs in the Jenkins Ditch–SFWC watershed between 2004 and 2017, totaling \$7,951,224. Between 2001 and 2017, the Clinton County SWCD used a variety of funding sources (including private funds and CWA section 205(j) and 319 funds) to write a nine-element plan specific to the SFWC watershed and to provide cost share on BMP installations in the watershed, at a cost of \$754,628.

### Boyles Ditch

Indiana also submitted a success story for Boyles Ditch in 2019. This story has not been finalized as of the writing of this report, but will appear in next year's Annual Report.

## **§205(j) Grant Program**

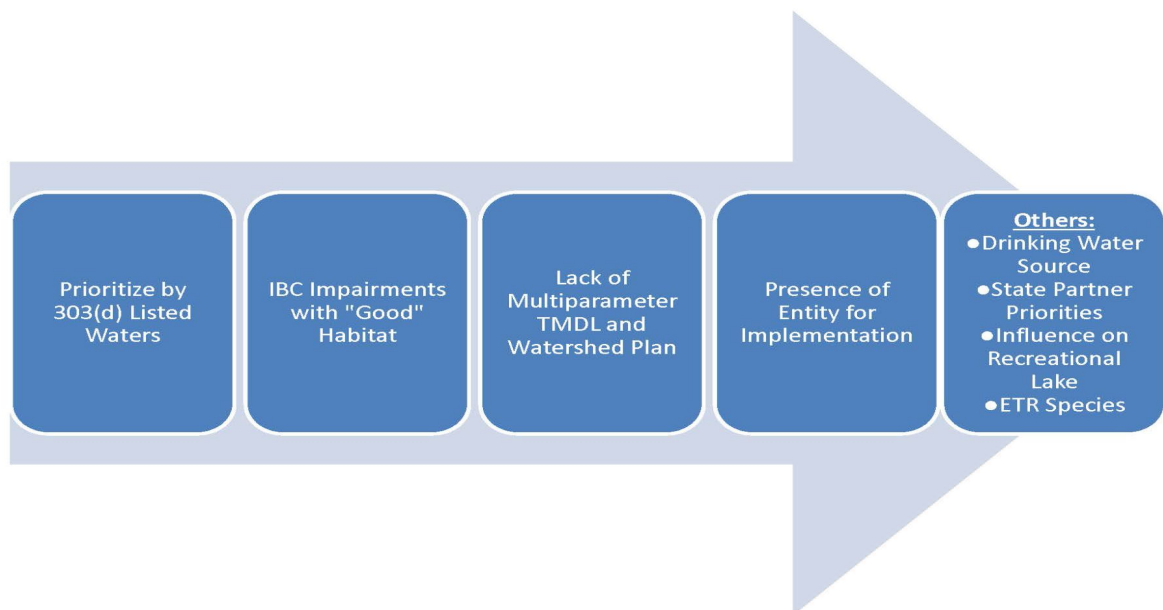
The §205(j) Grant Program is dedicated to water quality management planning. Funds are used to determine the nature, extent, and causes of point and nonpoint source pollution problems and to

develop plans to resolve these problems. There is no match required for these funds. In FFY 2018 IDEM received \$308,516 in funds. These funds were used for one watershed management plan development project: Lower Kankakee River. Two monitoring projects were also funded: installation and operation of two continuous monitors on the Ohio River and monitoring on Nickelson Creek, which is part of a paired watershed study. IDEM anticipates receiving \$387,000 in FFY 2019 funds. These funds will be used for one watershed management plan development project with Allen County SWCD on the Flatrock-Auglaize River, a project with ORSANCO for the continued operation of two continuous monitors on the Ohio River, and a project with United States Geological Survey to install and operate a streamflow gage on the Kankakee River at Shelby. A list of all 205(j) projects open or pending during this fiscal year is in Appendix F of this report.

### **Integrating the Nonpoint Source Pollution Program with the 303(d) Vision**

In FFY 2014, U.S. EPA announced that it was working with states to develop and implement a new framework to achieve the goals of CWA §303(d). This framework is known as the Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act §303(d) Program. In FFY 2015, IDEM Nonpoint Source Pollution Program worked with the TMDL program to identify priorities according to the IDEM's TMDL Program Priority Framework (Figure 7) that would complement Nonpoint Source Pollution Program efforts. In FFY 2019, IDEM TMDL continued to implement the vision by monitoring for watershed characterization in priority 10-digit watersheds, working with local watershed groups to raise awareness of water quality issues, and completing TMDL reports for submission to U.S. EPA.

The Nonpoint Source Pollution Program continues to work with groups following TMDL completion to write 9-Element watershed management plans that can be implemented using §319 funds (examples include Deep River, Southern Whitewater, Mississinewa, South Fork Blue River, Salt Creek, and Lower East Fork White River).



**Figure 7. Indiana's TMDL priority framework under the Vision.**

## **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 Nonpoint Source Pollution Program emphasized the restoration of impaired waters, while the issue of protecting sensitive, threatened, or high-quality waters was largely unrecognized. For the purposes of this goal, the Nonpoint Source Pollution 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), outstanding national resource waters (ONRWs), drinking water source waters, cold/coolwater/salmonid waters, and waterbodies harboring endangered species.

The South Fork Blue River TMDL and WMP project is an example of nonpoint source pollution work being done on vulnerable landscapes. This watershed is in the karst region of southern Indiana – an area rife with sinkholes, springs, caves, and disappearing streams. In this type of geologic system, ground water and surface water are often directly connected, allowing pollutants to bypass the filtering capacity of the soil. This project began with monitoring in preparation for writing the TMDL in November 2014. Since then, the TMDL project and WMP for this watershed have been completed and approved by U.S. EPA. The TMDL and WMP include protection elements for the South Fork Blue River which empties into the Blue River, the last-remaining Indiana refuge of the state-endangered eastern hellbender (*Cryptobranchus alleganiensis*). A FFY 2017 implementation project is ongoing in this watershed and is set to close on 1/24/2021.

Big Pine Creek is another example of a group that is actively pursuing protection strategies. The Big Pine WMP outlines several priority areas for habitat protection in order to maintain high quality, and regionally rare, aquatic communities through additional conservation and restoration in uplands and floodplains near the stream. Though §319 funds have thus far not been used to institute protection measures, the group has nevertheless purchased land for protection and is pursuing funds to install additional vegetative measures that will protect the stream.

In 2019, the IDEM Nonpoint Source Pollution Program encouraged its applicants to work in sensitive, vulnerable, and high quality waters by making these waters a priority of the solicitation. Ninety-eight watersheds were defined under this priority. Nine applications addressed these watersheds and three were proposed to U.S. EPA for funding under the §319(h) grant program.

# Adaptive Management

The [State Nonpoint Source Pollution Management Plan](#) states that IDEM will work with U.S. EPA to correct any deficiencies that might become apparent in the program through the Nonpoint Source Pollution Annual Report. Since the completion of the [State Nonpoint Source Pollution Management Plan](#), several errors, omissions, or the need for simple changes have come to light (Table 4). Revisions to Reportable Activities for 2019 (updates in bold) outlines changes (in bold) that should be made to two objectives of the State Nonpoint Source Pollution Management Plan, with justification.

Table 4. Revisions to Reportable Activities for 2019 (updates in bold)

Obj. #	MM	Objective	FFY Start	FFY End	Rationale for Change
2.12	a	Meet with IDEM groundwater staff to discuss level of analysis occurring and needed to characterize causes, sources, and magnitude of nonpoint source pollution in ground water.	2019	<b>2020</b>	Lack of staff resources has kept this objective from being met in FFY 2019. A meeting will be set up in FFY 2020.
3.1	a	Meet internally with WPR Section to audit education and outreach materials.	2019	<b>2020</b>	Lack of staff resources has kept this objective from being met in FFY 2019. This task has been reprioritized for FFY 2020.
3.1	c	Determine annual use of outreach and education materials.	2019	<b>2020</b>	Lack of staff resources has kept this objective from being met in FFY 2019. An update has been prioritized for FFY 2020.
3.2	h	Develop and maintain septic outreach HUB on IDEMs website (ITOSS), POS materials and other.	2019	2023	Lack of staff resources has kept this objective from progressing in FFY 2019 – additional work is planned for FFY 2020.

## Appendix A: FFY 2019 Reportable Activities

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
1.1		Assist Indiana Department of Natural Resources, Lake Michigan Coastal Program to obtain full approval of all outstanding measures on the LMCP CNPCP. <b>Progress: The Indiana Lake Michigan Coastal Program has received interim approval for all measures except the measure requiring inspection of existing OSDS. LMCP has received 319 funding to assist with this work and 319 staff continue to communicate with the LMCP to track progress and discuss future plans, and provided feedback on all subcontracts, site visits, and quarterly progress reports.</b>	2019	2020	ongoing	Ongoing – some progress
1.1	a	Nonpoint source pollution Northwest watershed specialist will assist the LMCP with on-site disposal systems measures as needed/requested. <b>Progress: NW WSS participated in Lower Lake Michigan Regional Team Call 10/11/18. NW WSS participated on the DNR Lake MI Costal Program Septic System Coordination Call on 2/28/19 and 4/29/19. NW WSS participated in 319 Grant Advisory Committee Meeting on 5/30/19 and 7/22/19.</b>	2019	2020	ongoing	Ongoing – significant progress
1.1	b	Nonpoint source pollution Northwest watershed specialist will manage and assist IDNR Coastal Program with grant “On Site Disposal System Outreach and Education/Targeted Source Tracking Project” for successful completion beyond the final measure acceptance. <b>NW WSS participated in Septic System Coordination Workgroup Meeting 11/28/18, 2/28/19, 4/29/19. NW WSS participated in the Microbial Source Tracking OSDS QAPP meeting 3/13/19.</b>	2019	2020	ongoing	Ongoing – significant progress
1.2	a	Provide implementation support for the Coastal Zone TMDLs. <b>Progress: The NW WSS is available to provide technical support for WMP implementation in the Coastal Zone. In FFY 2019, there was no request for support.</b>	2019	2023	ongoing	Ongoing – Complete for 2019
1.2	b	Provide implementation support for the Coastal Zone WMPs. <b>Progress: The NW WSS is available to provide technical support for WMP implementation in the Coastal Zone. In FFY 2019, there was no request for support.</b>	2019	2023	ongoing	Ongoing – Complete for 2019
1.3	a	Nonpoint source pollution Northwest watershed specialist will continue to participate in relevant meetings regarding the CNPCP. <b>Progress: Nonpoint Source staff participated in Coastal States Organization Nonpoint Source workgroup calls on 11/19/18 and 7/15/19.</b>	2019	2023	ongoing	Ongoing – significant progress
1.3	b	Integration of CNPCP goals and objectives in new WMP efforts in the Coastal Zone. <b>Progress: No new Coastal Zone WMP efforts began in FFY 2019. There are also no ongoing WMP efforts in the Coastal Zone.</b>	2019	2023	ongoing	Ongoing- No need for this FFY
1.4		Support the Conservation Reserve Enhancement Program (CREP), Resource Conservation Partnership Program (RCPP), 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. <b>Progress: See each sub-objective below for a progress report.</b>	2019	2023	ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
1.4	a	Forward solicitation or information as it becomes available. <b>Progress: The watershed specialists share funding opportunities with groups and stakeholders in their regions as notices become available. Examples of funding that have been passed on include Regional Conservation Partnership Program from the Natural Resources Conservation Service and LARE watershed land treatment and diagnostic studies funding. 10/9/18 provided the LARE program several cost-share program examples so that they can compare their payable rates to other local cost-share rates. 12/18/18 NW WSS forwarded LARE program changes to NW groups.</b>	2019	2023	ongoing	Ongoing – significant progress
1.4	b	Participate 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 11/13/18, 12/13/18, 1/22/19, 3/12/19, 5/14/19, 7/9/19, 9/10/19.</b>	2019	2023	ongoing	Ongoing – significant progress
1.4	c	Promote the programs through the watershed specialists and work with watershed groups to identify/recommend projects that would fit well under the priorities for each funding source. <b>Progress: The watershed specialists share funding opportunities with groups and stakeholders in their regions as notices become available. Examples of funding that have been passed on include, 10/1/18 northeast WSS discussed potential of grant funding, MS4 compliance, and Recycling Grants with the Mayor of Portland. 10/6/18 southwest WSS communicated with local group concerning the possibility of finding funding for a stream gauging and sediment loading study on Big Creek. 1/22/19 SW WSS met with Knox Co SWCD, and Sullivan Co SWCD to discuss Maria Creek and opportunities for Knox County to pursue 319 grants. 2/11/19 southeast WSS forwarded grant opportunity information to contacts in Indiana American Water service areas. 2/13/19 NE WSS communicated with applicable Great Lakes contacts to inform of possible GLC funding available, and available webinar. 2/25/19 NE WSS communicated potential GLC and GLRI funding sources with contacts. 5/19/19 NW WSS communicated funding opportunities from EPA to groups in that region. 5/19/19 SC forwarded funding opportunities to groups in the NE region.</b>	2019	2023	ongoing	Ongoing – significant progress
1.4	d	Include program information in relevant TMDLs as methods for implementation. <b>Progress: Partner funding sources will be presented in the Lower East Fork White River TMDL, anticipated to be submitted to EPA in the fall of 2019.</b>	2019	2023	ongoing	Ongoing – some progress
1.4	e	Coordinate with ICP partners on meetings and workshops. <b>Progress: 10/29/18 Senior Project Manager participated in the ICP annual Plan of work conference call. SC participated in the IASWCD's board meeting as a representative from IDEM, 11/16/18, 12/14/18, 3/8/19, 12/6/18 SW WSS participated on the ICP Conference call. April 2019 Provided a written summary to</b>	2019	2023	ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>the IDEA conference planning committee for a presentation about 319 grants and SWCDs for their conference in October.</b>				
1.5		Utilize the ICP as an advisory group for priority state nonpoint source pollution policies and updates by participating in bimonthly leadership meetings. <b>Progress: IDEM management attended ICP leadership meetings on 11/13/18, 1/22/19, 3/12/19, 5/14/19, 7/9/19, 9/10/19.</b>	2019	2023	ongoing	Ongoing – significant progress
1.6		Continue to provide technical assistance to local watershed groups through the watershed specialist or project manager as documented through quarterly site visit reports and the Section 319 Annual Report. <b>Progress: The watershed specialists provided technical assistance to at least 82 distinct groups in FFY 2019. Site visit reports are on-file with related project documents. Examples include: 10/31/18 Participated in meeting to discuss Lake Maxinkuckee WMP update. 11/19/18 assisted staff person with Columbus City Utilities with questions about the e303d tool and 303(d) listings for the Columbus area. 1/14/19 provided requested fixed station water quality data, information on TMDLs and active watershed projects to Salt-Pipe Creek steering committee member giving a water quality presentation to a master gardeners group in Rush county; arranged for Joanna to create a map of impairments in the southeast territory. 2/18/19 NW WSS participated in the Wolf Lake Advisory Meeting. 2/25/19 discussed potential watershed planning project with Washington County SWCD for Twin Creek – East Fork White River and Lick Branch – East Fork White River watersheds. 3/8/19 southeast WSS communicated with a landowner in Springville (referred by monitoring staff conducting recon) that has water quality and erosion concerns at his property. 4/30/19 NW WSS met with Town of Pottawatomie Park SC May 2019 Provided information on 303(d) impairments, the Lower Big Blue River TMDL, and Little Blue River WMP to a landowner interested in the health of the Little Blue River in their area.</b>	2019	2023	ongoing	Ongoing – significant progress
1.7		Continue to align the TMDL and WMP planning process with the TMDL vision. <b>Progress: The TMDL program continued to work on partnerships with local groups for TMDL project planning. TMDL staff met with Lawrence County on 10/25/18 to present information on the Lower Salt Creek TMDL approved on 9/10/18. Lawrence County showed interest in pursuing WMP development. Upcoming TMDL projects have been chosen which align with local stakeholder interest for pursuing WMP development. The Lower East Fork White River watershed TMDL project is scheduled for submittal in Fall/Winter 2019 with WMP by Pike County to follow. The Laughery Creek watershed TMDL is scheduled for submittal in FY 2020 with WMP development by Historic Hoosier Hills to follow. The Maria Creek watershed TMDL is scheduled for submittal in FY 2021 with WMP by Sullivan County to follow. Staff continue to</b>	2019	2023	ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		use this selection criteria for the next watershed project whose TMDL will be scheduled for submittal in FY 2022.				
1.7	a	Lower East Fork White River TMDL. <b>Progress:</b> The Lower East Fork White River TMDL project is scheduled for submittal in Fall/Winter 2019. Pike County SWCD will utilize the TMDL document in the development of a WMP. TMDL and NPS conducted a field day in the area on 10/23/18 in Jasper, IN to solicit local interest in the project and learn about monitoring results. TMDL staff shared quarterly monitoring data to local groups as available and/or requested.	2019	2020	ongoing	Ongoing – significant progress
1.7	b	Laughery Creek TMDL. <b>Progress:</b> The Laughery Creek watershed TMDL project is scheduled for submittal in FY 2020. The Historic Hoosier Hills watershed group will utilize the TMDL document in the development of a WMP. TMDL and NPS staff held a public kick-off meeting for the Laughery Creek watershed TMDL project on 10/30/18. TMDL staff shared quarterly monitoring data to local groups as available and/or requested.	2019	2020	ongoing	Ongoing – some progress
1.7	c	Maria Creek TMDL. <b>Progress:</b> The Maria Creek watershed TMDL project is scheduled for submittal in FY 2021. The Sullivan County SWCD will utilize the TMDL document in the development of a WMP. TMDL and NPS staff met with Sullivan County SWCD on 2/19/19 to discuss partnership and project timeline(s).	2019	2021	ongoing	Ongoing – some progress
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 and state priority. <b>Progress:</b> In FFY 2019, Indiana only had 2 NWQI watershed projects: the School Branch monitoring project and the Upper Sinking Blue River assessment and implementation project. IDEM staff have been highly involved in both of these projects. The School Branch monitoring project continues to receive \$319 funding support (more below). The southeast WSS has been providing technical support to the Upper Sinking Blue River NWQI “readiness” phase, such as reviewing and commenting on assessment drafts, providing GIS resources and tutorial documents, discussing IDEM’s monitoring commitment level to the Upper Sinking Blue River NWQI project, and providing information on load calculations, load reductions and BMPs installed within the project area to date. The NWQI planning phase is in progress and they anticipate applying for NWQI implementation funds this August. June 2019 6/17/19 SC participated in ACWA call on NWQI updates. In July 2019, NRCS requested proposals to designate new priority watersheds for the Mississippi River Basin and National Water Quality Initiative.	2019	2023	ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
1.8	a	Continue support of the School Branch Project. <b>Progress: This project currently has 2 \$319 grants supporting it – the first Phase project opened on January 11, 2016 and is set to close on January 10, 2020. The second Phase project opened on May 30, 2019 and is set to close on May 29, 2022. Both of these projects are for monitoring support only.</b>	2019	2023	ongoing	Ongoing – significant progress
1.8	b	Coordinate with NRCS on at least an annual basis to share in the decision-making on next steps for the Initiative. <b>Progress: IDEM attends meetings and/or conference calls with NRCS on a regular basis to discuss the NWQI. Meeting and calls this fiscal year were held on 10/16/18, 11/13/18, 1/22/19, 3/12/19, 5/14/19, 7/9/19, and 9/10/19.</b>	2019	2023	annually	Complete for 2019
1.9		Support implementation of the <i>State Nutrient Reduction Strategy</i> and the <i>Indiana GLWQA Annex 4 Domestic Action Plan</i> . <b>Progress: IDEM NPS grant priorities included a priority for reducing loads within the prioritized watersheds in the State Nutrient Reduction Strategy. IDEM NPS staff is heavily involved in developing the Annex 4 Domestic Action Plan. Annex 4/DAP meetings/conference calls in FFY 2019 were held on 10/11/18, 10/23/18, 10/24/18, 11/8/18, 11/9/18, 11/15/18, 12/13/18, 12/14/18, 2/14/19, 3/22/19, 4/9/19, 4/23/19, 4/24/19, 5/30/19, 6/27/19, 7/23/19, and 8/8/19. In FFY 2019, IDEM has recommended for 205(j) funding a WMP project in the Flatrock-Auglaize River. This WMP will complete watershed planning in the Western Lake Erie Basin (for which the DAP was produced).</b>	2019	2023	ongoing	Ongoing – significant progress
1.9	a	Review priorities of both documents and import objectives of nonpoint source pollution -related importance to the state nonpoint source pollution program plan. <b>Progress: these documents are reviewed annually before the annual solicitation is prepared to incorporate important priorities into the solicitation. In FFY 2019, no additional priorities were added to the solicitation or project plan as a result of reviewing these documents.</b>	2019	2023	annually	Complete for 2019
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: NPS is currently funding a project using FFY 2017 319 grant funds to assist the LMCP toward approval on its last remaining management measure, OSDS. No additional projects were identified in FFY 2018 or 2019.</b>	2019	until full approval	annually	Complete for 2019
1.11		Coordinate with CWSRF to link loan applicants and local watershed groups. <b>Progress: NPS staff communicate with CWSRF staff on an as-needed basis. For example, Senior Project Manager forwarded SRF staff the correspondence regarding the ACWA call on best practices guide for their feedback. 11/29/18 SRF staff sent their comments. On 6/19/19 Section Chief forwarded NPS staff and SRF staff the EPA CWSRF Program Bulletin. Senior Project Manager sent CWSRF staff descriptions of all projects recommended for FFY 2019 funding on 7/17/19. CWSRF staff always present a nonpoint source project as an option to loan applicants when it is applicable.</b>	2019	2023	ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
1.11	a	IDEM nonpoint source pollution program will cross-reference the monthly State Revolving Fund 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: IDEM continues to keep tabs on communities that have applied for CWSRF funding. Though NPS and CWSRF staff have found that monthly coordination is too frequent, both programs remain engaged and committed to using all available funding sources to improve water quality.</b>	2019	2023	ongoing	Ongoing – Complete for 2019
1.11	b	Annually, the nonpoint source pollution program will notify the CWSRF and DWSRF program of the 319 projects that are approved for funding, upon notice from U.S. EPA. <b>Progress: The NPS program notified the SRF programs of the 319 projects that were approved for funding for FFY 2018 and 2019.</b>	2019	2023	annually	Complete for 2019
1.11	c	Where there are potential projects, a fact sheet describing the potential nonpoint source pollution project opportunity is included in the State Revolving Fund packet to the community, and the nonpoint source pollution staff promotes the potential nonpoint source pollution project, 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: The Clean Water State Revolving Fund loan program always promotes NPS projects to its applicants. Since no potential projects were identified this fiscal year, no additional contacts/fact sheets were provided to CWSRF applicants.</b>	2019	2023	ongoing	Ongoing – Complete for 2019
	d	The CWSRF program communicates to the nonpoint source pollution program the projects with nonpoint source pollution BMPs funded through CWSRF that were identified in the approved WMPs. Nonpoint source pollution staff ensures that this information is input to GRTS. This information is included in the Annual 319 Report to U.S. EPA. <b>Progress: The majority of CWSRF NPS BMPs are septic system removals. This information is uploaded into GRTS on a regular basis. FFY 2018, SRF replaced 111 septic units in 2 loans. Numbers for the remainder of FY 2019 septic removals will not be available until October 2019 or later.</b>	2019	2023	ongoing	Ongoing – Complete for 2019
1.12		Work with partners to model, assess, and prioritize critical watersheds in the state. <b>Progress: The ICP has agreed to use calendar year 2019 as an opportunity to analyze the most recent nutrient data to update the priorities in the State Nutrient Reduction Strategy. IDEM is currently modeling loads in 8-digit watersheds across the state and will use the results of the analysis to prioritize watersheds for future work.</b>	2019	2023	ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
1.13		Utilize IDEM watershed specialist or project manager to assist partners with nonpoint source pollution planning and implementation activities. <b>Progress: As a whole, the IDEM WSS provided watershed planning and implementation assistance to at least 82 distinct groups in FFY 2019. The NE WSS has been heavily involved in the creation of the Domestic Action Plan for the Western Lake Erie basin and sampling on School Branch for the National Water Quality Initiative. On 10/9/18 NPS staff provided requested information to regional water Extension programs on watershed planning in Indiana. 10/22/18 SW WSS provided Patoka River water quality data to local individual to help determine impacts on a property near the Patoka River National Wildlife Refuge. 11/5/18 SC responded to a proposal to work with CCSI, FEMA, and other partners in the Cicero Creek watershed. 1/24/19 several NPS staff moderated multiple sessions at the IASWCD Annual Conference.</b>	2019	2023	ongoing	Ongoing – significant progress

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
2.1		Require the use of the <i>Environmental Monitoring for Watershed Groups</i> handbook for 319 grantees. <b>Progress: The Handbook is provided to all grantees as guidance during QAPP development and core parameters must be included in the monitoring program. All grant agreements executed in FFY 2019 included the core parameters outlined in the Handbook.</b>	2019	2023	ongoing	Ongoing – significant progress
2.2		Import 319 grantee data meeting appropriate data quality criteria into AIMS or the Hoosier Riverwatch Database to be uploaded into STORET on a routine basis. <b>Progress: No WQX records for NPS projects have been uploaded in FFY 2019. However, data continues to be collected and will be imported to the appropriate database as it is received.</b>	2019	2023	ongoing	Ongoing – some progress
2.3		Invite the participation of local project leaders when conducting 305(b) CWA assessments on watershed characterization monitoring data completed for TMDL and WMP development. <b>Progress: An assessments meeting for the Lower East Fork White River watershed characterization study was conducted on 3/4/19. Martin, Dubois, Pike, and Daviess counties were invited to send any interested personnel to attend and participate in the assessments. Pike County SWCD staff were in attendance and participated in the discussions.</b>	2019	2023	ongoing	Ongoing – some progress
2.4		Evaluate the logistics and results of the monitoring program and make adaptive management decisions on an annual basis. <b>Progress: IDEM annually evaluates the logistics and results of its monitoring program. In FFY 2019, this meeting took place on 2/4/2019.</b>	2019	2023	annually	Complete for 2019

## Appendix A: FFY 2019 Reportable Activities

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
2.5		Continue to fund the Clean Lakes Program (volunteer and professional) data collection for use in CWA 305(b) and 314 assessments and 303(d) listings. <b>Progress: Indiana University continues to sample for the Clean Lakes Program under a FFY 2018 \$319 grant. This grant will fund the program through the 2020 sampling season. In the 2019 sampling season, 80 lakes were sampled for assessment.</b>	2019	2023	ongoing	Ongoing – significant progress
2.6		Direct IDEM resources to perform watershed characterization monitoring of at least one watershed annually to support TMDL and watershed planning efforts. <b>Progress: IDEM continues to meet this objective. See each of the sub-objectives below for more detail.</b>	2019	2023	ongoing	Ongoing – significant progress
2.6	a	Lower East Fork White River TMDL and WMP. <b>Progress: A watershed characterization monitoring project was completed in October 2018 for development of a TMDL. An assessment meeting for the monitoring results was conducted on 3/4/19.</b>	2019	TMDL-2019 WMP-2021	ongoing	Ongoing – significant progress
2.6	b	Laughery Creek TMDL and WMP. <b>Progress: 10/30/18 southeast WSS and TMDL conducted the public kickoff meeting for North Laughery TMDL/watershed characterization project. A watershed monitoring characterization project began in November 2018 and will resume in October 2019.</b>	2019	TMDL-2020 WMP-2022	ongoing	Ongoing – significant progress
2.6	c	Maria Creek TMDL and WMP. <b>Progress: A watershed characterization monitoring project has been initiated internally and will begin sampling in November 2019.</b>	2019	TMDL – 2021 WMP - 2023	ongoing	Ongoing – some progress
2.7		Utilize IDEM resources to monitor the School Branch Watershed for the National Water Quality Initiative (NWQI) as described in the sampling design developed by IDEM and NRCS. <b>Progress: IDEM continues to monitor the School Branch watershed of Eagle Creek through its fixed station monitoring program and through joint funding agreements with the USGS. All of the data collected (including IDEM data) will be evaluated at regular intervals during the study.</b>	2019	2023	ongoing	Ongoing – significant progress
2.8		Continue support of the Hoosier Riverwatch voluntary monitoring program as part of IDEM's monitoring and assessment schemas. <b>Progress: Approximately 84 stream sites were sampled during 365 days of sampling activities across the state. It is interesting to note that sampling occurred in the 2018 calendar year right up to New Year's Eve and resumed again on 1/2/19. Therefore there appeared to be no cessation of sampling in Indiana this year due to winter; however there might have been due to high water in spring of 2019. The majority of the sites recorded here are sampled once/year as part of an ongoing effort to monitor. Twenty-three sites were sampled twice this FFY, eight were sampled thrice, two sampled four times, one</b>	2019	2023	annually	Complete for 2019

## Appendix A: FFY 2019 Reportable Activities

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		sampled five, and one site has been sampled 11 out of 12 months. Eleven sites were registered and sampled for the first time this year. Two sites were revisited again after a 4-5-year absence, two more following a 7-8-year absence, three after a 9-10-year absence, four sites after a 12-13-year absence, and two following an 18-year absence.				
2.8	b	Provide support for 20 Hoosier Riverwatch workshops (volunteer trainings) and maintain current loaner/teaching trunks. <b>Progress: Hoosier Riverwatch supported 24 (21 basic and 3 advanced <i>E. coli</i>) local workshops so far this year, as well as a handful of targeted training events (to STEM teachers).</b>	2019	2023	annually	Complete for 2019
2.8	c	Provide support for maintenance and upgrades of the Hoosier Riverwatch water quality monitoring database and associated websites. <b>Progress: Efforts continue to be successfully made in receiving feedback from users and, when needed, working with the contractor to tweak the coding and functionality of the online database. As time allows, staff are also working with contractor to tweak the administrative side of the database to make our own queries and fixes more efficient and timely.</b>	2019	2023	ongoing	Ongoing – significant progress
2.9		Accept external data through the External Data Framework. <b>Progress: IDEM has received macroinvertebrate data from the Marion County Health Department for sites throughout the county.</b>	2019	2023	ongoing	Ongoing – some progress
2.9	a	Use the External Data Framework to accept external data for various uses including nonpoint source pollution assessment, planning and de-listing. <b>Progress: Macroinvertebrate data from the U.S. Army Corps of Engineers (USACE) has been submitted for a number of tributaries to USACE-managed reservoirs in Indiana. These data were collected in 2016 through USACE's intensive sampling program. While these data are still under review, IDEM anticipates that they will be ranked as Tier 3 data, which will enable IDEM to use them for Clean Water Act 305(b)/303(d) assessment and listing decisions. The data sets IDEM has received from Marion County Health Department through the EDF are still under review to determine their reliability for these uses.</b>	2019	2023	ongoing	Ongoing – significant progress
2.10		Utilize IDEM resources to delist waters, or otherwise demonstrate water quality improvements, where nonpoint source pollution has been abated. <b>Progress: IDEM accomplishes this objective by monitoring annually for water quality improvements due to nonpoint source measures and delisting segments based upon the water quality data and ensuing assessments. On 12/30/18 NPS and IDEM staff met to discuss delisting the 2018 Success Story segment. It was decided that we would report on Boyles Ditch to demonstrate water quality improvements in FFY 2019.</b>	2019	2023	ongoing	Complete for 2019

## Appendix A: FFY 2019 Reportable Activities

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
2.10	a	Evaluate water quality data submitted through the External Data Framework process, as well as grantee monitoring, to identify watersheds that should be surveyed for possible nonpoint source pollution water quality improvements. <b>Progress: Macroinvertebrate data from the U.S. Army Corps of Engineers (USACE) has been submitted for a number of tributaries to USACE-managed reservoirs in Indiana. These data were collected in 2016 through USACE's intensive sampling program. While these data are still under review, IDEM anticipates that they will be ranked as Tier 3 data, which will enable IDEM to use them for Clean Water Act 305(b)/303(d) assessment and listing decisions. The data sets IDEM has received from Marion County Health Department through the EDF are still under review to determine their reliability for these uses.</b>	2019	2023	annually	Complete for 2019
2.10	b	Use additional resources (e.g., staff, funds, and technical support) to monitor water quality in watersheds where nonpoint source pollution 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 2019, IDEM sampled the Little Deer Creek (051201050503), Hogan Creek (050902030402 and 050902030403), South Fork Wildcat Creek-Kilmore Creek (051201070302, 051201070302, 051201070303), Flat Creek (051202090501, 051202090502, 051202090503), and Big Creek (051202070101, 051202070102, and 051202070104) watersheds. As of the writing of this report, the monitoring season has yet to be completed, so we will report on whether or not any of these watersheds resulted in a delisting in the next NPS Annual Report.</b>	2019	2023	annually	Complete for 2019
2.11		Continue the <a href="#">Ground Water Monitoring</a> Network (GWMN). <b>Progress: In 2019, 50-60 private wells with known arsenic issues are targeted for intensive sampling.</b>	2019	2023	ongoing	Ongoing – significant progress
2.12		Long-term goal: Analyze the findings of all ground water data taken by the state to characterize the causes, sources, and magnitude of nonpoint source pollution in ground water. <b>Progress: NPS continues to coordinate with Ground Water staff to characterize nonpoint source pollution in groundwater.</b>	TBD	TBD	ongoing	Ongoing – some progress
2.12	a	Meet with IDEM groundwater staff to discuss level of analysis occurring and needed to characterize causes, sources, and magnitude of nonpoint source pollution in ground water. <b>Progress: Lack of staff resources has kept this objective from being met in FFY 2019.</b>	2019	2019	one-time	One-time – no progress
	b	Gather data for completing the analysis and reporting mechanism. <b>Progress: In 2019, 50-60 wells will be sampled for an intensive analysis.</b>	2019	2023	ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
3.1	a	Meet internally with WPR Section to audit education and outreach materials. <b>Progress: No progress was made on this objective in FFY 2019. See adaptive management section.</b>	2019	2019	one-time	One-time – no additional progress
3.1	b	Meet with IDEM Media and Communication Services (MACS) to develop outreach material designs and techniques. <b>Progress: No progress was made on this objective in FFY 2019. This will occur in FFY 2020.</b>	2019	2020	Ongoing	Ongoing – no additional progress
3.1	c	Determine annual use of outreach and education materials. <b>Progress: No progress was made on this objective in FFY 2019. This will occur in FFY 2020.</b>	2019	2020	Ongoing	Ongoing – no additional progress
3.2	a	Work with partners to determine the best methods for septic messaging. <b>Progress: 6/3/19 NW WSS reached out to ISDH regarding collaboration on septic messaging with IDEM. Unfortunately ISDH advised that they will be unable to partner with us do to time constraints.</b>	2019	2020	Ongoing	Ongoing – some progress
3.2	c	Reconvene IDEM's internal septic subcommittee on septic care and meet regularly. <b>Progress: NPS staff met on this topic on 1/3/19, 2/26/19 to discuss how to move forward on this objective.</b>	2019	2023	Ongoing	Ongoing – some progress
3.2	d	Publicize success stories. <b>3/5/19 NW WSS attended the Clinton County SWCD Annual Meeting and presented on their South Fork Wildcat Success Story. The Success Story is also presented in its entirety in this Annual Report and on IDEM's NPS website.</b>	2019	2023	Ongoing	Ongoing – some progress
3.2	e	Support technical events (such as IEHA annual conference) to exchange information between government partners, watershed groups, and citizens. <b>Progress: 9/23-9/26/18 NW WSS and STL participated in IEHA Annual Conference as a vendor - though this occurred outside of the 2019 federal fiscal year, it did not make it into the FFY 2018 NPS Program Report. NPS also participated in the One Water Action Forum (12/11-13) in Indianapolis, NW WSS attended the National Storm Water Solution Conference and Exhibition in Chicago on 11/14, and several IDEM staff (including the NW WSS) traveled to the Northwest Indiana Conservation Happenings on June 12. NPS staff were also participated in a workshop called "Nutrient Reductions from Conservation Practices: A Workshop to Strengthen Indiana's Framework for Load Reduction Estimation" that was organized by Purdue University Extension.</b>	2019	2023	ongoing	Ongoing – significant progress
3.2	f	Assist in providing outreach on septic systems in the Lake Michigan Coastal Zone. <b>Progress: IDEM continues to assist in providing outreach on septic systems in the Lake Michigan Coastal Zone through the Neighborhood Ambassador program in the current §319 grant. NW WSS</b>	2019	2023	Ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>attends their septic system workgroup to assist in brainstorming, tracking methods, and creation of a homeowner packet. IDEM also partners with the Lake Michigan Coastal Program during Septic Smart Week and for various other community events, to increase homeowner awareness about septic maintenance.</b>				
3.2	h	Develop and maintain septic outreach HUB on IDEM's website (ITOSS), POS materials and other. <b>Progress: A staffing shortage has left IDEM NPS unable to complete this task in FFY 2019.</b>	2019	2023	Ongoing	Ongoing- no additional progress
3.2	i	Continue to support Pathway to Water Quality's work, financially and otherwise with the Indiana State Department of Health. <b>Progress: SE WSS attended PWQ steering committee meetings on 10/3/18, 11/13/18, 2/6/19, 3/6/19, 4/10/19, 5/1/19, 6/5/19, 7/10/19 and workdays on 11/13/18, 3/6/19, 4/10/19, 5/1/19, 6/5/19, 7/10/19, 7/24/19 and 7/31/19 and served as the PWQ Coordinator during the State Fair on 8/8/19 and 8/15/19. Several IDEM staff (both from the NPS program and not) volunteered to work the Pathway during the State Fair.</b>	2019	2023	Ongoing	Ongoing – significant progress
3.2	j	Promote the use of the Revolving Loan Fund for Septic upgrades and repairs. <b>Progress: Watershed specialist promote the State Revolving Fund for these types of BMPs whenever possible.</b>	2019	2023	Ongoing	Ongoing – significant progress
3.3	a	Meet with partners to discuss issues regarding hydromodification (IDEM Wetlands, DNR, US Army Corps, Silver Jackets, and AFSM). <b>Progress: A meeting is currently being arranged to talk to IDEM Wetlands program and if there is anything NPS can do to assist. SW WSS is a part of a Silver Jackets group tasked with dealing with lowhead dams.</b>	2019	2023	Ongoing	Ongoing – some progress
3.3	b	Assist IDEM Wetlands Program with meeting goals and objectives of the State Wetland Plan. <b>Progress: Due to a staffing shortage, IDEM NPS has not been able to communicate with IDEM-Wetlands on NPS issues that intersect the State Wetland Plan in FFY 2019. A meeting is being planned to coordinate in FFY 2020.</b>	2019	2023	ongoing	Ongoing- no additional progress
3.3	c	Assist Indiana Department of Natural Resources meet Goals and Objectives with their Stream Mitigation Program. <b>Progress: A meeting is being set up to talk to IDNR about areas in which we can assist them.</b>	2019	2023	Ongoing	Ongoing – some progress
3.3	d	Support low head dam removal to improve nonpoint source pollution impacts on water resources. <b>Progress: IDEM staff participated in site visit 10/5/2018 with OWQ, DNR, and The Nature Conservancy staff to two low head dams on Indian Creek near Corydon that are slated for removal. Funding has been secured through TNC, LARE, and ORBFHP. Group is working on permit applications and hope to start removal in October 2019.</b>	2019	2023	Ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
3.3	e	Reconvene IDEM's internal hydromodification subcommittee on state issues and initiatives and meet regularly. <b>Progress: a staff shortage this FFY year has kept this objective from being fulfilled.</b>	2019	2023	Ongoing	Ongoing- no additional progress
3.4	a	Meet with partners to discuss issues regarding sediment and nutrient pollution (ICP partners, USGS). <b>October 2018, Participated in conference call with planning committee for the Nutrient Reductions from Conservation Practices workshop; provided follow-up information to committee regarding nutrient load reduction estimates for nutrient management/precision ag that watershed groups have used. 11/2/18 Participated in Nutrient Reductions from Conservation Practices: A Workshop to Strengthen Indiana's Framework for Load Reduction Estimation.</b>	2019	2023	Ongoing	Ongoing – significant progress
3.4	b	Publicize success stories. <b>Progress: in FFY 2019, there were no sediment and nutrient success stories to publicize.</b>	2019	2023	Ongoing	Ongoing – no need for this FFY
3.4	c	Support implementation of the <i>State Nutrient Reduction Strategy</i> education/outreach goals. <b>Progress: The outreach goals in the SNRS are to work with CCAs and private sector to promote agronomic conservation practices and technologies and to promote the 4R Nutrient Stewardship Certification Program. While the NPS program itself hasn't implemented those goals, a representative of Indiana's NPS program sits on the ICP leadership team which provides support for both of these strategies as ways to reduce nonpoint source in Indiana.</b>	2019	2023	Ongoing	Ongoing – significant progress
3.4	d	Support implementation of the <i>Indiana Annex 4 DAP</i> education/outreach goals. <b>IDEM staff was heavily involved in developing the Annex 4 Domestic Action Plan. Annex 4/DAP meetings/conference calls were held 10/11/18, 10/23/18, 10/24/18, 11/8/18, 11/9/18, 11/15/18, 12/13/18, 12/14/18, 2/14/19, 3/22/19, 4/23/19, 4/24/19, 5/30/19, 6/27/19, and 7/23/19. NPS staff also provide information on load reductions for 319-assisted conservation practices and funds the Hoosier Riverwatch Program, which is also in the Outreach and education goals of the DAP.</b>	2019	2023	Ongoing	Ongoing – significant progress
3.4	e	Reconvene IDEM's internal sediment and nutrient pollution subcommittee on state issues and initiatives and meet regularly. <b>Progress: IDEM internal subcommittee met 3/19/19 to discuss the how to achieve the goals and priorities of the committee.</b>	2019	2023	Ongoing	Ongoing – some progress
3.5		Continue to provide citizen monitoring training through Hoosier Riverwatch and the Clean Lakes Program. <b>Progress: In FFY 2019, the Hoosier Riverwatch program provided 24 (21 basic and 3 advanced <i>E. coli</i>), as well as a handful of targeted training events to STEM teachers.</b>	2019	2023	Ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>Approximately 222 water quality monitoring volunteers have been trained in Indiana this federal fiscal year. The Clean Lakes Program, under a \$319 grant from IDEM, trained 32 new volunteers to monitor lakes and received 1,493 observations from 87 Indiana lakes.</b>				
3.6	a	Produce 5 "Success Stories" (U.S. EPA WQ-10a Strategic Measure) by 2023 and publicize within Indiana. <b>Progress: In FFY 2019, Indiana's Unnamed Tributary of the South Fork Wildcat Creek Success Story was published (though it was submitted in 2018). The NW WSS publicized this achievement at the Clinton County SWCD annual meeting in March 2019. Also in FFY 2019, Indiana submitted the Boyles Ditch Success Story.</b>	2019	2023	Annually	Complete for 2019
3.6	b	Publicize any awards given to watershed groups related to their water quality efforts in Indiana. <b>Progress: IDEM has not been made aware of any awards given to watershed groups related to their water quality efforts in Indiana in FFY 2019.</b>	2019	2023	Ongoing	Ongoing – no need for this FFY
3.7		Provide cost-effective outreach to audiences in Indiana. <b>Progress: IDEM makes education a priority of its NPS website, with useful information for the well-versed practitioner and the neophyte alike. In addition, various programs have printed materials that can be provided to groups at low cost to the agency (and no cost to the recipient). One example of this is that the SE WSS provided WAPB fact sheets to a Salt-Pipe Creek steering committee member giving a water quality presentation to a master gardeners group in Rush county.</b>	2019	2023	Ongoing	Ongoing – significant progress
3.7	a	Continue to participate in the Pathway to Water Quality at the Indiana State Fairgrounds. <b>Progress: SE WSS attended PWQ steering committee meetings on 10/3/18, 11/13/18, 2/6/19, 3/6/19, 4/10/19, 5/1/19, 6/5/19, 7/10/19 and workdays on 11/13/18, 3/6/19, 4/10/19, 5/1/19, 6/5/19, 7/10/19, 7/24/19 and 7/31/19 and served as the PWQ Coordinator during the State Fair on 8/8/19 and 8/15/19. Several IDEM staff (both Nonpoint source pollution and non-Nonpoint source pollution) volunteered to work the Pathway during the State Fair.</b>	2019	2023	Ongoing	Ongoing – significant progress
3.7	b	Continue to support the Indiana Watershed Leadership Academy with technical support. <b>Progress: The Senior Project Manager continues to be on the IWLA steering committee and provide technical assistance to the IWLA as needed. The Senior Project Manager attended a Steering Committee meeting on 8/20/19. On 11/27/18 The Senior Project Manager participated in IWLA Team Lead conference call. Senior Project Manager participated as a Team Lead for Session 1 on 1/9 – 1/10/19 and NP staff participated with presentations and networking. Senior Project Manager participated in the IWLA graduation ceremony May 22, 2019.</b>	2019	2023	Ongoing	Ongoing – significant progress
3.7	c	Participate in regional meetings as needed to inform watershed interest groups of nonpoint source pollution program information. <b>Progress: SW WSS participated in a SW Regional Coordinators meeting on 6/19/19.</b>	2019	2023	Ongoing	Ongoing – some progress

## Appendix A: FFY 2019 Reportable Activities

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
3.7	d	Provide regular communication to regional groups of nonpoint source pollution watershed efforts. <b>Progress: Watershed Specialists communicate with groups in their regions on an as-needed basis. While more regular communications were anticipated in FFY 2019, a shortage of staff, along with unanticipated internal demands, resulted in a lack of planned regular communications.</b>	2019	2023	Ongoing	Ongoing- no additional progress
3.8		Long-term goal: use 319 funds to leverage for partner-based statewide initiatives including widely disseminated materials such as statewide television/radio commercials/billboards or actionable projects based on above identified workgroups. <b>Progress: See each sub-objective below for a progress report.</b>	2019	2023	Ongoing	Ongoing – some progress
3.8	a	Support partners for the state initiatives on septic system care. <b>Progress: the Indiana State Department of Health was contacted Spring/Summer of 2019 to discuss moving forward on this task. At that time the ISDH was too overloaded with its own work to commit to additional actions with IDEM on this objective.</b>	2019	2023	Ongoing	Ongoing – some progress
3.8	b	Support partners for the state initiatives on hydromodification. <b>Progress: Staff turnover has stalled work on this objective in FFY 2019. A meeting is being scheduled with the IDEM Wetlands group to discuss this objective in more detail, but it may not take place until FFY 2020.</b>	2019	2023	Ongoing	Ongoing- no additional progress
3.8	c	Support partners for the state initiatives on sediment and nutrient pollution. <b>Progress: 11/2/18 participated in Nutrient Reductions from Conservation Practices: A Workshop to Strengthen Indiana's Framework for Load Reduction Estimation. 11/16/18 NW WSS provided requested information to CCSI's Northern Program Manager a list of open projects. 11/30/18 Central WSS met with Marion SWCD to discuss future planning/implementation for Lower Fall Creek Watershed.</b>	2019	2023	ongoing	Ongoing – significant progress
3.9		Continue to build capacity for water quality improvement in the state. <b>Progress: See each sub-objective below for a progress report.</b>	2019	2023	ongoing	Ongoing – significant progress
3.9	a	Continue to educate leaders through Purdue University's Indiana Watershed Leadership Academy. <b>Progress: The IWLA continues to be supported financially and technically by the 319 program. Financially, the IWLA is supported by a FFY 2017 319 grant that began 1/9/2018 and ends 1/8/2022. Major deliverables of the grant include sponsoring the Academy (both face-to-face and distance learning portions), providing guidance and materials for useful group projects, an evaluation of the program, and upgrades of lesson modules. Technically, the Senior Project Manager sits on the steering committee for the IWLA and serves as a Team</b>	2019	2023	ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>Leader for participants. In both of these roles, she provides guidance and support as needed. Also, the WSS and Section Chief attend one of the face-to-faces and present on the Clean Water Act and the NPS program's role in improving water quality. In FFY 2019, the Academy had 40 participants.</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 staff participated on conference calls 10/29/18, 12/6/18.</b>	2019	2023	ongoing	Ongoing – significant progress

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.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
4.1	a	Utilize the TMDL-WMP template for TMDLs sampled for and written so that they provide the best detail for the development of 9-Element WMPs that are implementable using 319 funds. <b>Progress: The TMDL program continued to utilize their template in developing TMDLs for WMP development. Staff continue to make modifications to the template to align with IDEM's WMP checklist. TMDL staff have participated in internal discussions relating to our checklist.</b>	2019	2023	ongoing	Ongoing – significant progress
4.1	b	Link TMDLs with watershed characterization monitoring projects for Section 319 watershed management planning applications. <b>In FFY 2019, monitoring for the Lower East Fork White River TMDL occurred on 10/1, 10/2, 10/8, 10/9, 10/15, 10/16/2018. On 10/25/18, TMDL and NPS staff attended Lawrence County SWCD board meeting staff to discuss Lower Salt Creek TMDL data and 319 grants/watershed planning; provided follow-up information on example 319 applications and WMPs. Monitoring for the Laughery Creek TMDL watershed characterization took place on 11/26/18, 12/17/18, 1/15/19, 2/18/19, 3/11/19, 4/1-2/19, 5/13-14/19, 6/17-18-19, 7/8-9/19, 7/15-17/19, 7/22-23/19, 7/29-30/19, 8/5-6/19 &amp; 9/9-10/19. On 10/31/18, TMDL and NPS staff attended a public kickoff meeting for North Laughery TMDL/watershed characterization project. The NPS program also provided information on TMDL priority watersheds/potential watershed characterization study areas in the southeast to ISDA April 8.</b>	2019	2023	ongoing	Ongoing – significant progress
4.2		Promote integration of WMPs with local comprehensive plans. <b>Progress: This is done on an as-needed basis.</b>	2019	2023	ongoing	Ongoing – no need for this FFY

## Appendix A: FFY 2019 Reportable Activities

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.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
4.3	a	Develop scope of work for the integrated databases project. <b>Progress: From late Spring through early summer, the NPS program underwent a LEAN event to precisely define its needs so an RFP could be developed for this project.</b>	2019	2019	one-time	Ongoing – significant progress
4.3	b	Hire contractor to work on the project. <b>Progress: While at the writing of this report a contractor has not been selected for the project, we are well on our way to finalizing the RFP so that we can choose a contractor.</b>	2019	2019	one-time	Ongoing – some progress
4.3	c	Develop database. <b>Progress: No work has been completed for this sub-objective in FFY 2019.</b>	2019	2021	One-time	Ongoing – no progress
4.4		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: FFY 2019a total of eight projects were funded. Six implementation projects were chosen to receive funding and were proposed to U.S. EPA, including Turtle, Turman Creek and Kelley Bayou Implementation II (TTK), Salt-Pipe Creek, Whitewater River Watershed, Browns Wonder-Sugar Creek, Lost River Watershed, Indian-Kentuck and one combination grant of planning and implementation, North Laughrey Creek and one planning project, Lake Monroe WMP.</b>	2019	2023	ongoing	Ongoing – significant progress
4.5		Repair previously-installed BMPs with the caveats outlined in the program policy. <b>Progress: No BMPs required repair during FFY 2019.</b>	2019	2023	ongoing	Ongoing – no need for this FFY
4.6		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 used as match for nonpoint source pollution projects.</b>	2019	2023	annually	Complete for 2019
4.7		Coordinate with IDNR Stream Mitigation Program. <b>Progress: No coordination was necessary in FFY 2019.</b>	2019	2023	ongoing	Ongoing – no need for this FFY
4.8		Update IDEM 2009 WMP Checklist. <b>IDEM staff met 4/17/19 and 6/25/19. The outline of the checklist has been created. NW WSS is currently working on the document and it is projected to be completed by FFY 2020.</b>	2019	2020	one-time	Ongoing – some progress
4.9		Show restoration in at least 5 assessment units (at least 5 WQ-10) in the five-year cycle 2019-2023. <b>Progress: Boyles Ditch Success Story was submitted in FFY 2019.</b>	2019	2023	annually	Complete for 2019

## Appendix A: FFY 2019 Reportable Activities

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.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
4.10		Continue to geolocate all BMPs installed through the Section 319 grant program in order to enhance the BMP GIS layer located in the nonpoint source pollution program. <b>Progress: BMPs are mapped upon receipt of the invoice and location information from the local project.</b>	2019	2023	ongoing	Ongoing – significant progress
4.11		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 2019 solicitation was published on April 1, 2018. Twenty-three notices of intent to apply were received on or before June 1, 2018. Full proposals were due September 1, 2018 and 18 applications were received and reviewed by Nonpoint source pollution staff. Eight proposals were forwarded to EPA for funding consideration, with an additional planning proposal requested and two monitoring proposals to be funded by CWA §205j monies.</b>	2019	2023	annually	Complete for 2019
4.11	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 §319 funding during FFY 2019 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2019
4.11	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 §319 funding during FFY 2019 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2019
4.11	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 §319 funding during FFY 2019 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2019
4.11	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 §319 funding during FFY 2019 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2019
4.11	e	Provide financial and technical support to install hydrological and aquatic habitat BMPs in critical areas identified in the plan, including dam removal. <b>Progress: A list of the BMPs installed using §319 funding during FFY 2019 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2019

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

## Appendix A: FFY 2019 Reportable Activities

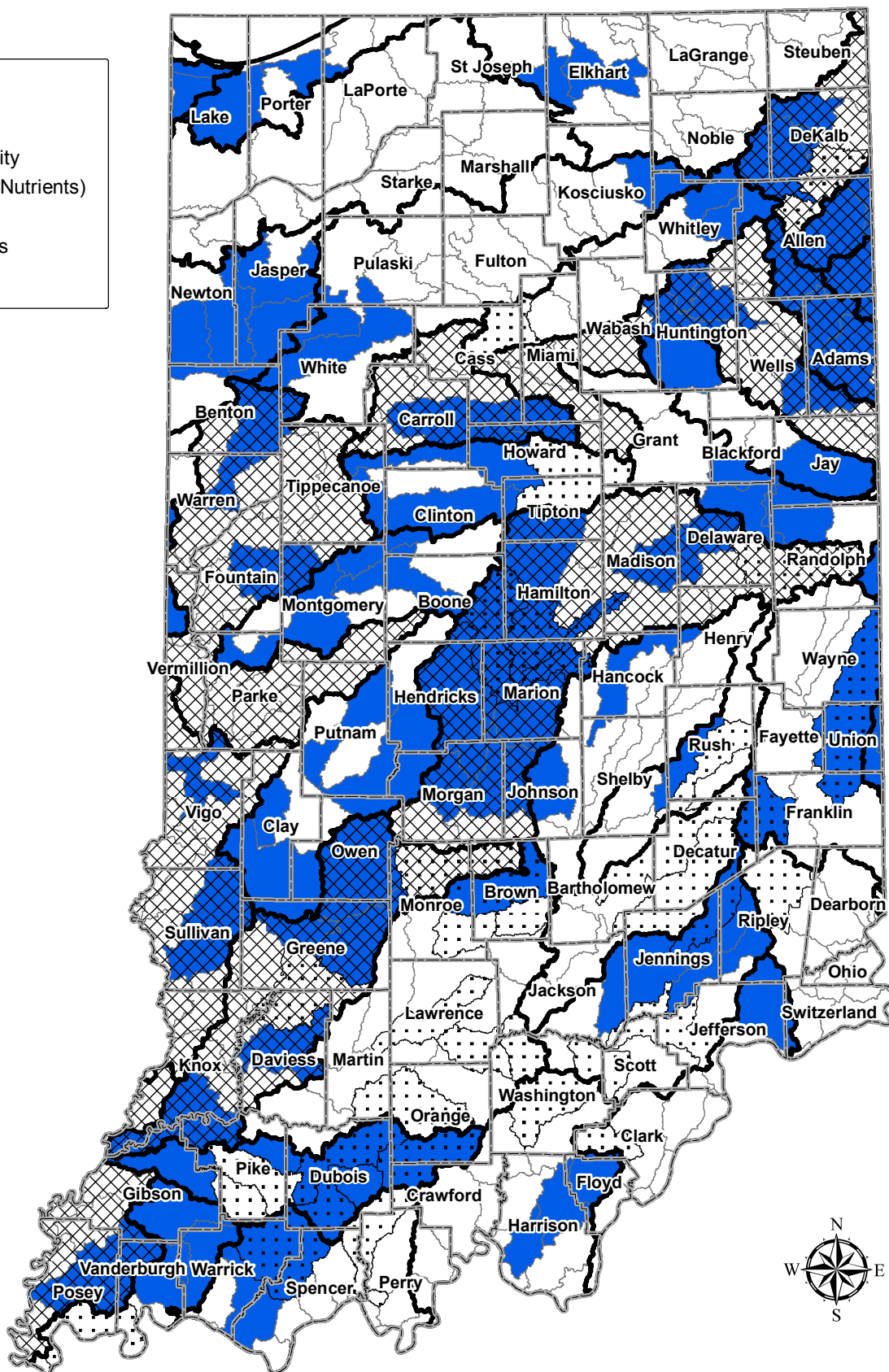
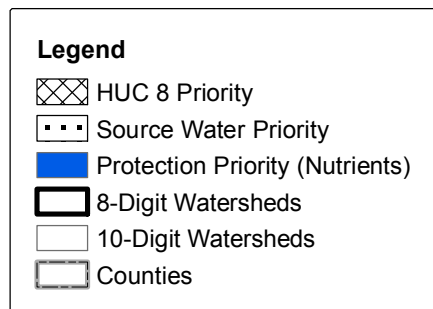
5.1		Continue to encourage watershed planning activities in watersheds with Category 1 waters. <b>Progress: Category 1 waters in Indiana include waters that are habitats for endangered, rare, and threatened species and waters used as source waters. In FFY 2019, the §319 solicitation included priorities for developing a WMP for a 10-digit HUC watershed that 1) has a surface water drinking water intake and waters identified as impaired or 2) impacts outstanding state resource waters and/or waters with endangered, threatened, or rare species.</b>	2019	2023	ongoing	Ongoing – some progress
5.2		Prioritize for planning watersheds with source water intakes. <b>Progress: NPS projects in watersheds with a surface drinking water intake were prioritized in the FFY 2019 and 2020 solicitations. Participated in meeting 2/5/19 with NPS, Ground Water and Indiana American Water staff to discuss source water protection efforts; sent maps of existing WMPs and 319/205j projects from the June 2018 grants workshop to Katie Jamriska (IAW).</b>	2019	2023	annually	Complete for 2019
5.3		Participate as requested in Phase II wellhead protection planning. <b>Progress: No request was made for NPS assistance in this endeavor from the Ground Water Section.</b>	2019	2023	ongoing	Ongoing – no need for this FFY
5.4		Develop priorities for plans and implementation in watersheds that impact Outstanding State Resource Waters (OSRWs) and waters important for aquatic habitat. <b>Progress: NPS projects in watersheds that impact OSRWs and waters important to endangered, threatened, or rare species were prioritized in the FFY 2019 and 2020 solicitations.</b>	2019	2019	annually	Complete for 2019
5.5		Fund 319-eligible protection strategies identified in critical areas of IDEM-approved 9-Elements watershed management plans proposed by Section 319 grant applicants whose implementation applications rank high enough for funding. <b>Progress: No protection strategies were funded in 2019.</b>	2019	2023	annually	Complete for 2019 – No need in this FFY
5.6		Support implementation of Statewide Wildlife Action Plans Goals and Objectives that align with nonpoint source pollution protection. <b>Progress: The SWAP lists many conservation actions for identified “Species of Greatest Conservation Need.” Multiple action items can be addressed through NPS grant projects, including</b> <ul style="list-style-type: none"> <li>• Reduce nutrient and toxin loads</li> <li>• Develop and promote farming technologies and practices that have conservation benefits</li> <li>• Enhance public, stakeholder, and landowner education and awareness</li> <li>• Reduce sediment and nutrient loads</li> <li>• Reduce point and non-point source pollution</li> <li>• Protect and restore riparian buffer zones</li> <li>• Remove dams</li> <li>• Implement agricultural best management practices to improve water quality</li> <li>• Reduce flashiness in watersheds</li> <li>• Develop alliances and partnerships</li> </ul>	2019	2023	ongoing	Ongoing – significant progress

## Appendix A: FFY 2019 Reportable Activities

		<ul style="list-style-type: none"> <li>• Increase acres of riparian buffers</li> <li>• Reduce stream bank erosion.</li> </ul>				
5.7		Support implementation of the State Wetland Plan's Goals and Objectives that align with nonpoint source pollution protection. <b>Progress: The State Wetland Plan contains several goals that can be addressed through NPS grant projects, including:</b> <ul style="list-style-type: none"> <li>• Expand wetland awareness</li> <li>• Promote wetland conservation</li> <li>• Encourage wetland restoration</li> </ul>	2019	2023	ongoing	Ongoing – progress
5.8		Work with IDEM's Ground Water section and watershed groups, as well as CWSRF and DWSRF, to identify wells in need of proper decommission. <b>Progress: No wells in need of proper decommission were identified in FFY 2019.</b>	2019	2023	ongoing	Ongoing – no need for this FFY

[Indiana State Nonpoint Source Pollution Management Plan 2019 Action Register](#)

# Appendix B Section 319 Priority Watersheds (FFY 2019)



0 20 40 80 Kilometers

0 20 40 80 Miles

**Data Sources:** - Obtained from the State of Indiana Geographic Information Office Library

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83

**Mapped By:** Joanna Wood, Office of Water Quality **Date:** 03/27/2019



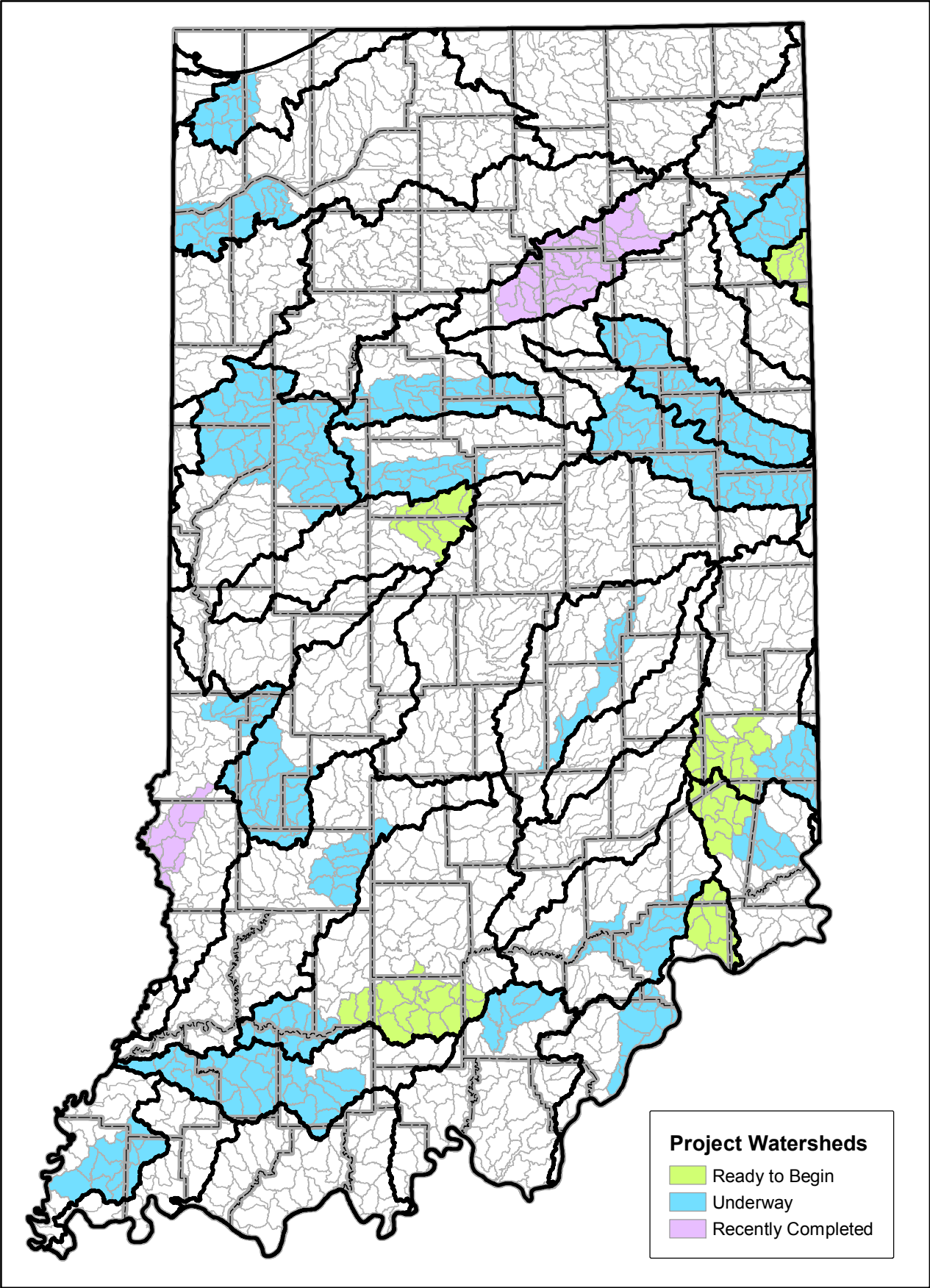
## Appendix C

### Open and Pending 319 Projects 10/1/18 - 9/30/19

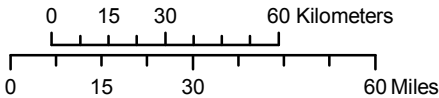
FFY	ARN/ Contract	Contractor	Project	Status	Start	End	Type
<b>2015</b>							
	21611	U.S. Geological Survey	School Branch NWQI Study	Open	1/11/2016	1/10/2020	Assessment
	6-1	Historic Hoosier Hills	Indian-Kentuck Implementation	Open	1/11/2016	10/10/2019	Restoration/Implementation
<b>2016</b>							
	6-245	Wabash River Defenders	Treaty Creek-Wabash River Planning	Open	9/18/2017	3/17/2020	Planning
	19146	Purdue University	St. Mary's Initiative	Open	6/6/2017	6/5/2021	Assessment
	18273	Jay County Commissioners	Upper Salamonie River WMP Implementation	Open	2/27/2017	2/26/2020	Restoration/Implementation
	19223	Benton County SWCD	Big Pine Creek Watershed Implementation	Open	5/1/2017	12/31/2019	Restoration/Implementation
	6-240	Dearborn County SWCD	Whitewater River WMP Implementation	Open	11/10/2016	2/9/2020	Restoration/Implementation
	6-242	Orange County SWCD	Lost River Watershed Implementation	Open	12/19/2016	12/18/2019	Restoration/Implementation
	20403	Pike County SWCD	Middle Patoka River Source Water Protection Plan	Open	8/7/2017	8/6/2020	Restoration/Implementation
	6-247	Washington County SWCD	Mill Creek-Blue River WMP Implementation	Open	12/6/2016	2/5/2020	Restoration/Implementation
<b>2017</b>							
	25136	Carroll County SWCD	Deer Creek-Sugar Creek Implementation	Open	3/26/2018	3/25/2021	Restoration/Implementation
	25438	Clay County SWCD	Lower Eel River Watershed Implementation Project	Open	4/9/2018	4/8/2021	Restoration/Implementation
	24998	Clinton County SWCD	South Fork Wildcat Creek Stewardship Initiative Phase 2	Open	11/14/2017	11/13/2020	Restoration/Implementation
	23710	Dearborn County SWCD	Hogan Creek Watershed	Open	2/15/2018	5/14/2021	Restoration/Implementation
	25901	Delaware County SWCD	Upper Mississinewa River Watershed Project Implementation	Open	5/3/2018	5/2/2021	Restoration/Implementation
	23633	Historic Hoosier Hills RC&D	Central Muscatatuck Watershed	Open	12/15/2017	6/14/2021	Restoration/Implementation
	24671	Huntington County SWCD	Lower Salamonie River Watershed Implementation Project	Open	2/19/2018	2/18/2021	Restoration/Implementation
	26374	Indiana Lake Michigan Coastal Program	On Site Disposal System Outreach and Education/Targeted Source Track	Open	5/2/2018	5/1/2020	Restoration/Implementation
	23109	Purdue University	Indiana Watershed Leadership Academy	Open	1/9/2018	1/8/2022	Program Support
	22502	Washington County SWCD	South Fork-Blue River Watershed Project	Open	11/14/2017	11/13/2020	Restoration/Implementation
<b>2018</b>							
	29443	Clark County SWCD	Fourteen Mile Creek/Goose Creek-OH River Watershed Improvement Project	Open	12/28/2018	12/27/2021	Restoration/Implementation
	30680	Greene County SWCD	Plummer Creek Implementation Phase 2	Open	3/18/2019	3/17/2022	Restoration/Implementation
	30630	Pike County SWCD	Lower East Fork White WMP & Implementation	Open	1/23/2019	7/22/2022	Combo
	30631	Posey County	Big Creek Implementation	Open	1/24/2019	1/23/2022	Restoration/Implementation
	29917	USGS	Investigation of Water Quality in the School Branch Watershed	Open	5/31/2019	5/30/2022	Assessment
	31213	Wabash River Enhancement Corp	Region of the Great Bend of the Wabash River Implementation	Open	3/25/2019	3/24/2021	Restoration/Implementation
	31746	Indiana University	Clean Lakes Program	Open	5/1/2019	4/30/2021	Assessment
	31042	USGS	Kankakee at Shelby Super Gauge	Open	5/17/2019	5/16/2020	Assessment
	32071	St. Joseph River Watershed initiative Partnership, Inc	Lower St. Joseph River/ Bear Creek Water Quality Improvement and Education Project	Open	4/23/2019	4/22/2021	Restoration/Implementation
<b>2019</b>							
		Dearborn County SWCD	Whitewater River Watershed	Pending			Restoration/Implementation
		Sullivan County SWCD	Turtle Creek, Turman Creek, Kelley Bayou Implementation Phase 2	Pending			Restoration/Implementation
		Decatur County SWCD	Salt-Pipe Implementation	Pending			Restoration/Implementation
		Historic Hoosier Hills	Indian Kentuck Watershed Implementation	Pending			Restoration/Implementation
		Orange County SWCD	Lost River Watershed Implementation	Pending			Restoration/Implementation
		Clinton County SWCD	Browns Wonder-Sugar Creek Implementation	Pending			Restoration/Implementation
		Historic Hoosier Hills	North Laughrey Creek Implementation	Pending			Restoration/Implementation
		Friends of Lake Monroe	Lake Monroe Watershed Plan Development	Pending			Planning

Appendix D

# Indiana NPS Projects Through 2019



**Mapped By:**  
Joanna Wood, Office of Water Quality  
**Date:**09/12/2019



## **Appendix E**

### **Project Summaries for Closed §319 Projects**

#### **FFY 2017**

##### **Deep River-Portage Burns Waterway Watershed Initiative (ARN# 25594)**

The Northwestern Indiana Regional Planning Commission (NIRPC) developed and implemented a cost-share program for BMPs such as low impact development and stormwater retrofits, two stage ditches, wetland restoration, and others that addressed the water quality concerns outlined in the Deep River – Portage Burns Waterway WMP. NIRPC implemented one agricultural BMP and one urban BMP as demonstration projects to educate the public on improving water quality through BMPs. NIRPC conducted a volunteer monitoring program based on Hoosier Riverwatch methods and identified potential problems and increased public involvement. An education and outreach program was conducted that included e-newsletters sent to watershed stakeholders, press releases sent to the local media, public service announcement to local radio station(s), newspaper articles sent to local media, a watershed brochure, watershed signs to increase watershed awareness, workshops to educate stakeholders on BMPs that reduce pollutant loading from urban and/or agricultural areas, field days that promoted agricultural conservation practices, and Fall Festivals that raised awareness about the project and share project accomplishments.

#### **FFY 2016**

##### **Otter Creek Watershed Management Plan (ARN# 21678)**

The Ouabache Land Conservancy produced a WMP for the headwaters of the Otter Creek watershed, HUC 0512011104. In 2013, IDEM compiled a TMDL study for E.coli in the Otter Creek watershed. This collected data includes load reduction information, recommended BMPs and conservation practices, along with a detailed breakdown of land use and potential pollutant sources in each of the 6 subwatersheds that comprise the Otter Creek watershed. The IDEM TMDL study was closely followed when it came to determining critical areas and long-term goals for the watershed. An Education and Outreach program was developed by the Steering Committee that augmented the planning efforts in the Otter Creek Watershed. The Steering Committee identified special areas of interest and resource concerns that warranted further effort in order to increase stakeholder awareness and stewardship. A variety of dissemination methods was utilized including: printed media updates, newspaper advertisements, and updates to local governing bodies, brochures, social media, fliers, email updates, and other relevant forms of communication. Media releases were performed at least quarterly. The group developed and released a quarterly newsletter along with 400 brochures that were distributed at local events, workshops, and through partner agencies and offices.

#### **FFY 2015**

##### **Big Creek Watershed Management Plan Implementation (EDS# 6-8)**

The Posey County SWCD developed, promoted, and implemented a cost-share program for BMPs such as cover crops, filter strips, conservation tillage and others that address the water quality concerns outlined in the Big Creek Watershed Management Plan. The District provided technical assistance to landowners to facilitate BMP implementation. The District conducted an education and outreach

## **Appendix E**

program including mailings, workshops, signage, workshops, press releases and newsletters that educated stakeholders about nonpoint source pollution, the cost share program, and benefits of BMPs.

### **Middle Eel-Beargrass Creek Implementation (EDS# 6-4)**

Manchester University developed, promoted, and implemented a cost-share program for BMPs such as nutrient management, cover crops, livestock stream exclusion, and others addressed the water quality concerns outlined in the Middle Eel River Watershed Management Plan. The University conducted an education and outreach program that included brochures, public meetings, newsletters, news releases, and field days. They also conducted a monitoring program in the watershed and determined trends in water quality by maintaining two gage stations on the mainstem of Beargrass Creek by collecting six samples daily at the gage stations during May through June, annually.

### **Plummer Creek Implementation (EDS# 6-226)**

The Greene County SWCD developed, promoted, and implemented a cost-share program to implement BMPs such as cover crops, filter strips, conservation tillage, livestock exclusion and others that addressed the water quality concerns outlined in the Plummer Creek WMP. The Grantee conducted a volunteer monitoring program using Hoosier Riverwatch and professional methods to compare with data from the Plummer Creek WMP for the purpose of trend monitoring. The District also conducted an education and outreach program that included, stakeholder meetings, newsletters, field days, tours or workshops to educate landowners about nonpoint source pollution and BMPs, a webpage, flyers and brochures about the cost share program, BMPs and septic system maintenance, and stream or cleanups.

### **TTK Implementation (EDS# 6-224)**

The Sullivan County SWCD developed, promoted, and implemented a cost-share program to implement BMPs such as cover crops, filter strips, conservation tillage, livestock exclusion and others that addressed the water quality concerns outlined in the Turtle Creek, Turman Creek, Kelley Bayou (TTK) WMP. The District conducted quarterly monitoring at 20 sites using Hoosier Riverwatch methods for the purpose of trend monitoring. The District also conducted an education and outreach program including public meetings, newsletters, news releases, field days or workshops that educated stakeholders on the cost-share program and BMPs available, a website ([www.watershed-alliance.org](http://www.watershed-alliance.org)), and promotional signs throughout the watershed to raise awareness about the TTK project and to highlight BMPs.

### **Lower Eel River WMP Implementation (ARN# 25871)**

The Clay County SWCD developed, promoted, and implemented a cost-share program to implement BMPs such as cover crops, filter strips, conservation tillage, and others that addressed the water quality concerns outlined in the Lower Eel River WMP. The Grantee also conducted a volunteer monitoring program using Hoosier Riverwatch methods to compare with data from the Lower Eel River WMP for the purpose of trend monitoring. The monitoring was conducted quarterly for two years at the same locations and for the same parameters as monitored in the WMP. The Grantee also conducted Hoosier Riverwatch training for volunteers before the monitoring activities began. Clay County SWCS also conducted an education and outreach program that included stakeholder meetings, quarterly steering committee meetings, brochures, newsletters, news releases, and field days or workshops that educated

## **Appendix E**

stakeholders on the cost-share program and BMPs available and educated students on nonpoint source pollution in the watershed.

### **Upper Tippi-Walnut Creek WMP (EDS# A305-6-7)**

The Tippecanoe Watershed Foundation (TWF) produced a watershed management plan (WMP) for the Tippecanoe – Walnut Creek watershed, Hydrologic Unit Code (HUC) 0512010602. A steering committee of local stakeholders guided the development of the WMP. The TWF conducted a monitoring program that established baseline water quality that helped identify sources of impairment, and determine the priority areas for implementation. The TWF also conducted an education and outreach program that included public meetings, brochures, press releases, a website for the project, newsletter articles, Hoosier Riverwatch workshops, and field days/workshops that educated stakeholders about water quality and nonpoint source pollution.

### **Pathway to Water Quality (EDS# A305-6-184)**

The Indiana Association of Soil and Water Conservation Districts (IASWCD) renovated and maintained the Pathway to Water Quality (PWQ) exhibit on the Indiana State Fairgrounds. The IASWCD also provided education and outreach to visitors on water quality and nonpoint source pollution during the Indiana State Fair and during Global Learning Initiative tours. The IASWCD continued to maintain existing features at the PWQ exhibit and installed new features such as pervious concrete, a green roof, and new signage. The IASWCD also developed and distributed news releases, post project updates to Facebook or Twitter, published articles about the exhibit, and posted PWQ information and volunteer opportunities on the IASWCD web site.

### **FFY 2014**

#### **Upper Iroquois Implementation (EDS# A305-4-215)**

The Jasper County SWCD developed, promoted, and implemented a cost-share program to implement BMPs such as cover crops, filter strips, conservation tillage, and others that addressed the water quality concerns outlined in the Upper Iroquois River Watershed Management Plan (WMP). The BMPs were implemented only in critical areas as described in the Upper Iroquois River WMP. The SWCD conducted a monitoring program based on Hoosier Riverwatch methods and tracked progress toward meeting the load reduction goals, specifically where targeted BMPs and education efforts were occurring within the critical areas. The Jasper County SWCD also conducted an education and outreach program that included newsletters, news releases to the local media, articles to partner newsletters, workshops and field days, public meetings, and maintained the Upper Iroquois Watershed Initiative website.

#### **Indiana Clean Lakes Program (EDS# A305-4-216)**

Indiana University continued to conduct assessments of no less than 80 Indiana lakes and reservoirs annually to determine water quality and track trends in lake eutrophication levels. Indiana University also trained and supported a corps of volunteer lake monitors; and conducted an education and outreach program that focused on lake and watershed nonpoint source pollution issues. The education and outreach efforts included publishing and distributing the quarterly Water Column newsletter, maintaining and updating the Indiana Clean Lakes Program (CLP) web site and Facebook page to inform the public about lake and watershed issues in Indiana and to post CLP activities and announcements.

## Appendix E

### Phosphorus Risk Reduction Pilot Project Upper Maumee (EDS# A305-6-9)

The Allen County SWCD developed and implemented a Phosphorus Risk Reduction Pilot Program in the Upper Maumee watershed and implemented agricultural BMPs such as filter strips, cover crops, nutrient management, residue management, drainage water management and others that addressed the phosphorus water quality concerns outlined in the Upper Maumee River WMP. The Program implemented in the following critical area subwatersheds: Black Creek, Marsh Ditch, Six-Mile Creek, Trier Ditch, and Bottern Ditch. Reimbursement of BMPs were based on producers that minimized the risk of phosphorus runoff from their farm field(s) from an existing baseline P-Index score (using the Ohio NRCS Phosphorus-Index Scoring System) of “medium”, “high” or “very high”, to a “low” P-Index score. The SWCD formed an advisory committee of project partners that guided the development and implementation of the Phosphorus Risk Reduction Pilot Program. The Program was promoted through the quarterly Allen County SWCD newsletter, partner publications, and promotion at agricultural community events in the critical subwatersheds.

### Programmatic §319 Grant Conditions Met

- ✓ Progress reports and the Final Report entered in GRTS for all projects
- ✓ All mandated elements entered in GRTS for all projects
- ✓ QAPPs completed and approved prior to reimbursement for all projects collecting data  
All water quality monitoring data collected will be entered into STORET. Progress on this condition may be found in Appendix A, Goal 2, Objective 2.

## Appendix F

### Open and Pending 205(j) Projects 10/1/18- 9/30/19

FFY	ARN/ Contract	Contractor	Project	Status	Start	End	Type
2016	31725	Shelby County SWCD	Big Blue River Watershed	Open	12/7/2016	3/6/2020	Planning
2017	22460	Decatur County SWCD	Salt-Pipe Creek	Open	10/20/2017	10/19/2019	Planning
	25874	Huntington County SWCD	Upper Wabash River Phase 3 WMP	Open	4/25/2018	4/24/2021	Planning
	25604	Putnam County SWCD	Big Walnut Watershed Plan Re-Write	Open	4/26/2018	4/25/2020	Planning
2018	30926	ORSANCO	Installation and Operation of Two Continuous Monitors on the Ohio River	Open	3/18/2019	3/17/2020	Assessment
	31203	Jasper County SWCD	Lower Kankakee River Watershed Management Plan	Open	3/18/2019	3/31/2021	Planning
2019		Allen County SWCD	Flatrock-Auglaize River WMP	Pending			Planning
		ORSANCO	Continued Operation of Two Continuous Monitors on the Ohio River	Pending			Assessment
		USGS	Kankakee Gauge at Shelby	Pending			Assessment