

**FFY 2020**

# **INDIANA NONPOINT SOURCE PROGRAM ANNUAL REPORT**



**Indiana Department of Environmental Management**  
Office of Water Quality

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### Cover Photo

- Indiana Dunes State Park, Lake 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, most 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 land area). 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.

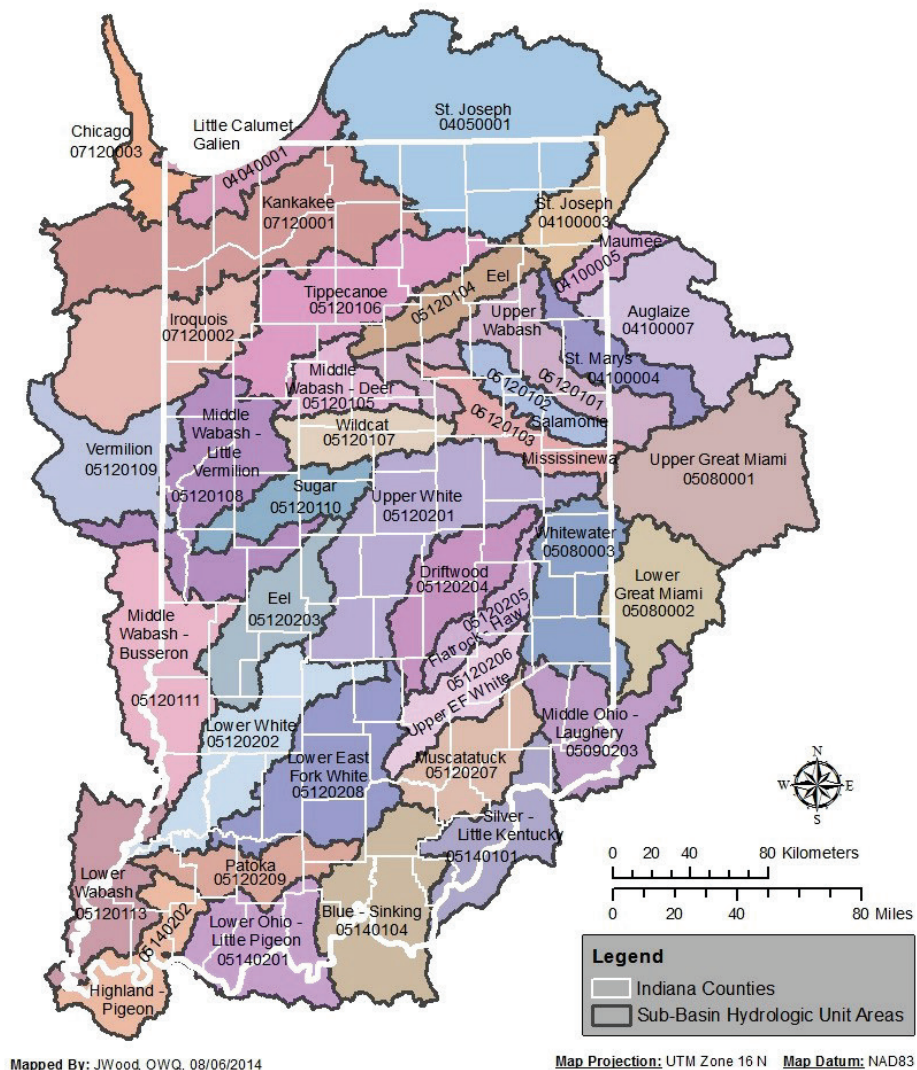


Figure 1. Indiana 8-digit HUC Watersheds.

The 2020 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) 2020 (October 1, 2019 through September 30, 2020), 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 2020 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 natural resource 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.

The ICP prepares an annual work plan that defines objectives for up to four conservation focus areas and includes the actions, responsible entities and deadlines for achieving them. Additionally, the ICP meets bimonthly for partner updates and to collaborate, where possible, to optimize its resources for achieving water quality objectives. Particular emphasis is on delivering technical training to ICP staff and coordinating the various cost-share and grant programs.

Using the U.S.EPA Region 5 Model, the ICP has committed to report load reductions of sediment, nitrogen, and phosphorus achieved by the practices installed through the cost-share programs administered by the partner agencies. Cumulative load reductions for calendar years 2013 through 2019 follow:

- Sediment- 1,667,979 tons
- Nitrogen- 3,518,499 pounds
- Phosphorus- 1,737,256 pounds

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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).



### Indiana's State Nutrient Reduction Strategy

Although originally developed as a result of the Hypoxia Task Force Action Plan for the Gulf of Mexico, Indiana's State Nutrient Reduction Strategy (SNRS) encompasses all waters of the state that drain to the Mississippi River, including the Wabash, White and Kankakee River systems, as well as those draining to Lake Michigan and to Lake Erie. Indiana surface and ground waters are adversely affected by excessive nutrients that come from many different sources. The resulting negative economic impacts include increasing the cost of treating public water supplies as well as reducing the recreational use of our treasured lakes, reservoirs and streams.

The SNRS is on a two-year revision schedule and will be updated in 2020. The 2018 version may be found at:

[https://www.in.gov/isda/files/Indiana%20State%20Nutrient%20Reduction%20Strategy\\_Version%205%20Final.pdf](https://www.in.gov/isda/files/Indiana%20State%20Nutrient%20Reduction%20Strategy_Version%205%20Final.pdf)

### 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 and may be found at <http://www.in.gov/isda/3432.htm>. 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.

Over the last two years, significant actions have been taken that include expanding the United States Geological Survey (USGS) auto-sampler monitoring network, extending sewers to unincorporated areas in Adams County, examining data comparability between two sites on the Maumee River (one on the border inside Indiana and the other downstream in Ohio as part of the Adaptive Management Plan), and further implementation of combined sewer overflow communities' long-term control plans.

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

The 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

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<sup>3</sup> NRCS releases each fiscal year's report in the subsequent calendar year. Thus, NRCS released FFY 2019 reports in 2020 and therefore, this section of the report shares activities that took place in FFY 2019.

\$319 grants, and NRCS Farm Bill conservation programs are utilized as one funding source for implementing local watershed management plans.

For Federal Fiscal Year (FFY) 2019, NRCS programs in Indiana that support NPS pollution reduction/amelioration efforts included:

### **Conservation Stewardship Program**

The Conservation Stewardship Program (CSP) is a voluntary conservation program that encourages producers to address resource concerns in a comprehensive manner by undertaking additional conservation activities and improving, maintaining, and managing existing conservation activities. Indiana received \$4.9 million in CSP funding in FFY 2019. A total of 163 new contracts received funding to treat 45,452 acres of cropland, pasture and forest.

### **Environmental Quality Incentives Program**

Indiana received over \$23.5 million in EQIP funding in FFY 2019. A total of 1,503 contracts were entered into that will address natural resource concerns on 227,996 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 national initiatives that provided funding to specific geographic areas and/or resource concerns.

1. Disaster Recovery: From floods to drought, fire or hurricanes, NRCS provides disaster recovery assistance to farmers, landowners and communities through a variety of USDA programs. Indiana landowners were able to utilize 2019 EQIP Disaster Recovery for prevented planting acres on farmland that was impacted by the 2019 spring floods. In FFY 2019 this project had 315 contracts which encompassed 58,636 acres and allocated \$1.6 million.
2. Great Lakes Restoration Initiative (GLRI): NRCS and partners work with producers and landowners to implement voluntary conservation practices that improve water quality, restore wetlands, enhance wildlife habitat and sustain agricultural profitability in the Great Lakes. In FFY 2019 this project had 152 contracts which encompassed 30,615 acres and allocated \$1.4 million.
3. Historically Underserved Farmers: This fund category is for applicants defined as socially disadvantaged, veteran, limited resource or beginning farmer. In FFY 2019 this project had 57 contracts which encompassed 3,993 acres and allocated over \$3.8 million.
4. Monarch Butterfly Habitat Development Initiative: The Monarch Butterfly Habitat Development Project is a multi-state effort focused on increasing monarch habitat on private lands through plantings of milkweed and nectaring forms as well as managing pesticide use in proximity to monarch habitat. In FFY 2019 this project had nine contracts which encompassed 91 acres and allocated \$40,372.
5. On-Farm Energy Initiative: NRCS provides agricultural producers with technical and financial assistance that quantifies how energy can be used more efficiently to reduce input costs, increase productivity and reduce air pollutants and greenhouse gas emissions. This initiative only offers assistance for 128 Conservation Activity Plans-Ag Energy Management Plans and certain energy

conservation practices. In FFY 2019 this project had five contracts which encompassed 553 acres and allocated \$23,056.

6. Organic Initiative: NRCS provides financial payments and technical assistance to help producers implement conservation measures in keeping with organic production. Beginning, limited resource, and socially disadvantaged producers may obtain additional assistance. In FFY 2019 this project had seven contracts which encompassed 219 acres and allocated \$37,215.
7. Specialty Crop: NRCS offers technical and financial assistance to specialty crop growers to enhance water, soil, air and other natural resources. FFY 2019 this project had 52 contracts which encompassed 238 acres and allocated \$435,058.
8. Western Lake Erie Basin Initiative (WLEB): NRCS and partners work with producers and landowners to implement voluntary conservation practices that improve water quality, restore wetlands, enhance wildlife habitat and sustain agricultural profitability in the Western Lake Erie basin. In FFY 2019 this project had 32 contracts which encompassed 8,498 acres and allocated \$749,980
9. Working Lands for Wildlife Initiative: The goal of this initiative is to convert tall fescue and other non-native forages to native grasses and forbs and develop prescribed grazing plans to address the habitat needs of bobwhite quail and associated grassland/shrub land species. This category is available statewide on land which overlaps one of the Indiana DNR C.O.R.R.I.D.O.R.S. priority areas. In FFY 2019 this project had 180 contracts which encompassed 8,111 acres and allocated \$3.2 million.

#### 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 Wetlands Reserve Easements (WRE) component, NRCS helps to restore, protect and enhance enrolled wetlands. During FFY 2019, NRCS helped Indiana landowners protect and restore 2,649 acres of wetlands.

#### 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 95 contracts for over \$1.3 million on 12,498 acres in FFY 2019.

For FFY 2019, NRCS funded the following projects that affected 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 assists 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). In FFY 2019 this project had one contract which encompassed 500 acres and allocated \$42,285.
2. Tri-State Western Lake Erie Basin Phosphorus Reduction Initiative – A diverse team of partners use

a targeted approach to identify high-priority sub-watersheds for phosphorus reduction and increase farmer access to public and private technical assistance—including demonstrations of innovative practices that NRCS does not have approved standard for—in Michigan, Ohio, and Indiana. In FFY 2019 this project had 35 contracts which encompassed 7,484 acres and allocated \$623,681.

3. Big Pine Watershed- The Big Pine Watershed Partnership engages 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. In FFY 2019 this project had 11 contracts which encompassed 2,371 acres and allocated \$156,278.
4. Soil Health on Reclaimed Mine Lands- The partners 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. In FFY 2019 this project had four contracts which encompassed 1,055 acres and allocated \$85,159.
5. Improving Working Lands for Monarch Butterflies Partnership – This project restores, manages and conserves 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. In FFY 2019 this project had four contracts which encompassed 60 acres and allocated \$84,755.
6. Southern Indiana Young Forest Initiative – This project was established by 11 partner organizations and focuses 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 promote and use Best Management Practices, ranging from species-specific silvicultural guidelines to generalized private landowner management recommendations that benefit young forest indicator species like American Woodcock and Ruffed Grouse. In FFY 2019 this project had three contracts which encompassed 229 acres and allocated \$93,817.
7. 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. In FFY 2019 this project had 37 contracts which encompassed 798 acres and allocated \$237,615.

IDEM’s NPS Program was involved with each of these groups during the project development or the application process for the award.



## 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 help address NPS pollution.

The Conservation Cropping Systems Initiative (CCSI) is a program of the Indiana Conservation Partnership (ICP). With oversight from ICP representatives and administrative responsibility from the IASWCD, 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 state-wide training provides a foundation for the consistent, science-based, farmer-proven soil health messaging to farmers, agriculture professionals, and partner organizations. Approximately 800 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. Since 2011, CCSI has materially participated in nearly 600 events reaching over 33,000 attendees. In 2019 alone, CCSI participated in over 100 events, reaching 4300 individuals. In addition to traditional farmer-facing field days and workshops, outreach included:

- A booth at the National Association of County Agricultural Agents – sharing information on how to perform soil health demonstrations to Extension Educators from across the country.
- Soil Health demonstrations at the Indiana Farm Bureau Convention with two soil health farming experts explaining their cropping systems to booth visitors.
- A breakout session with the Indiana Conservation Partnership and the Indiana Ag Nutrient Alliance at the Sustainable Ag Summit
- An invited speaker at the American Society of Agronomy – Crop Science Society of America – Soil Science Society of America Conference in San Antonio

Because of the COVID-19 pandemic, CCSI has been pivoting towards virtual outreach and education events. Through use of web-based platforms such as Zoom, outreach and education is continuing through webinars and virtual roundtables. Procurement of "Virtual Field Day Kits" enables CCSI to ship Bluetooth mics and headsets, tripods, and smartphone/tablet adapters to remote locations, allowing speakers to use the power of current technologies to broadcast from fields and farm shops – effectively showcasing best management practices and equipment through live demonstrations.

CCSI is also providing virtual event support to groups like Women4theLand, the Tri-State Advanced Soil Health Systems training, the Hoosier Chapter of the Soil and Water Conservation Society and others so they, too, can continue their education and outreach efforts. CCSI staff are reaching out to watershed groups and SWCDs to provide support in their own outreach and education efforts.

Since 2018, in partnership with Hoosier Ag Today, CCSI has been producing Soil Health Podcasts which also give rise to radio spots on the HAT network across Indiana and Michigan.

More information about the program and its activities may be found on its website [ccsin.org](http://ccsin.org).

The IASWCD provides conference scholarships to qualifying SWCD supervisors. Ten SWCD supervisor scholarships were awarded for the 2020 Annual Conference; thus, providing 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 (PWQ) Exhibit; a popular fixture at the Indiana State Fairgrounds since 1993. The exhibit is an excellent watershed demonstration site, showing how proper management practices at home, on the farm and in business can protect our soil and water resources. The PWQ exhibit contains practical displays and information for anyone who uses the land. The PWQ exhibit is managed and maintained by the ICP. The IASWCD, through a 319 grant, USDA NRCS contribution, and matching state grants and private donations, provides a PWQ Coordinator to oversee the project and committee (\$15,000 per year). With participation from all ICP partners, in 2019 the IASWCD was able to apply for \$16,000 in additional 319 funds over four years, 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 PWQ 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. 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. Women4theLand 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<sup>4</sup>**

The [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 Soil and Water Conservation Districts (SWCDs), and promoting the opportunities and benefits associated with caring for our soil and water resources.

The Division employs Resource Specialists (RSs) 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 (CDT) 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 RSs also assist with the implementation of IDEM 319 dollars for watershed projects.

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 that reach landowners and the general public on the husbandry and management of soil and water resources. 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.

The Division also employs Program Managers to help carry out the Division's many programs and initiatives, such as the Conservation Reserve Enhancement Program, the Clean Water Indiana program, the INField Advantage program, tracking Nutrient and Sediment Load Reductions on conservation practices, Data Analysis, the *Indiana State Nutrient Reduction Strategy*, and the Cover Crop and Tillage Transects.

#### **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 Service Agency (FSA). Program participants receive both state and federal incentives to voluntarily enroll in the

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<sup>4</sup> ISDA releases each fiscal year's report in the subsequent calendar year. Thus, ISDA released FFY 2019 reports in 2020 and therefore, this section of the report shares activities that took place in FFY 2019.

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 covers 11 priority watersheds touching 65 counties with an acreage enrollment goal of 26,250 acres. The CREP watersheds include the 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 practices through CREP include wetland restorations and bottomland timber establishments in the floodplain, as well as buffer practices that must be adjacent to a water body and include:

- Native Grasses
- Hardwood Tree Planting
- Wildlife Habitat
- Riparian Forest Buffers
- Filter Strips

CREP Progress as of July 9, 2020 includes 18,211 acres of conservation practices installed utilizing \$7.78 million state dollars and protecting over 837 miles along Indiana's rivers, lakes, and streams. 7,332 acres are protected through bottomland timber establishments in the floodplain, and 4,421 acres are protected through wetland restorations. Enrollment in the CREP Program is over 20,664 acres. For every state dollar that is spent on CREP practices, the federal match is approximately \$4-\$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 of Soil Conservation 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 2020, 25 proposals were funded, totaling \$1,011,211.50 and impacting 39 SWCDs. Applications for the 2021 CWI Grant cycle will be accepted through September 11, 2020.

In 2019, the SSCB received applications for two non-SWCD led projects and awarded funding totaling \$98,500 to the Southern Indiana Cooperative Invasives Management 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). The mission of CCSI is to improve the soil health on Indiana's cropland. The initiative does that by providing soil health trainings that are the core of soil health messaging by Indiana Conservation Partnership (ICP) staff. 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 are reflected in the adoption of practices without programmatic financial assistance. For the past 5 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 over 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.

In 2019, the program received a CIG grant from the NRCS which allowed for a more conservation focused approach than was previously possible. The program is working with various partners in the agricultural field throughout Indiana to promote practices to broader audiences and provide more knowledge of the conservation work to its participants. The program itself is comprised of split-field trials surrounding cover crop impacts, nitrogen management, and tillage practice impacts. Participating farmers use precision agriculture tools, protocols, and technologies such as aerial imagery, soil testing, and agronomic benching software to track changes. It also allows participating growers to better comprehend how conservation practices make an impact environmentally and economically on their operations. Participants will also receive soil sampling and soil health assessments for the field(s) they enroll into the program, which with results from the trials, will be used to analyze overall impact of the program.

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. 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.

### *Nutrient Load Reduction Modeling and Mapping*

The Indiana Conservation Partnership (ICP) is 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 the 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 through § 319 administered by IDEM and the USDA's Farm Bill Programs like EQIP and CRP. Through this process of data collection and analysis, we can see the collective impact of the number of conservation practices that are implemented annually across several programs. 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 \(SNRS\)\*](#).

Load reductions estimated by the model for Indiana each year are published in annual accomplishments reports, including watershed maps showing the nitrogen, phosphorus, and sediment reductions. These annual reports can be found on ISDA's website at <http://www.in.gov/isda/2991.htm>. The estimates, paired with monitoring by state and federal partner agencies, as well as continued assessments of Indiana's CWA 303(d) list of impaired waters, will inform watershed prioritization and conservation resource management for the ICP's efforts and Indiana's SNRS.

### Indiana Science Assessment

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; therefore the dissolved nutrients such as nitrate and dissolved phosphorus are missing from estimates using this model. Also, there are several practices that cannot be run through the model due to the practice not being tied to sediment, such as 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 can be captured.

Following the "Nutrient Reduction Estimation Framework" workshop that was held in November of 2018, Indiana determined that a Science Assessment was needed. In 2019 and early 2020, much effort has been invested to move the Indiana Science Assessment forward. A Core Team of representatives from different conservation agencies around the state, including ISDA, NRCS, the Indiana Chapter of The Nature Conservancy (TNC), the Indiana Agriculture Nutrient Alliance (IANA), IDEM, and the Purdue University College of Ag was formed and has worked together to determine the scope of and components needed within the Assessment.

The Indiana Science Assessment has two components that will move the State Nutrient Reduction Strategy forward.

1. Component 1: Determine historic and ongoing nutrients loads, both within the watershed basins defined in the *State Nutrient Reduction Strategy* and leaving the state. Through this component, water quality monitoring data around the state is identified, analyzed and used to determine the trend of nutrient loads at the pour points of major basins within and leaving the State.
2. Component 2: Improve method to quantify nutrient reductions from conservation practices, including dissolved nutrients, and determine efficiency of practices in reducing loads. To help carry out this component, the Core Team will be hiring a research associate to compile and analyze research that will be used to develop a standardized tool for calculating nutrient load reductions, and be used in determining the percent efficiency of certain conservation practices on reducing the nitrogen and phosphorus loads. Indiana received a grant from EPA through the Gulf of Mexico Hypoxia Task Force to help advance our nutrient reduction strategy, and which is being used to hire the research associate who will work out of Purdue University. The Core Team is currently in the process of advertising for and hiring the research associate.

### Cover Crop and Tillage Transects

The tillage transect is a visual cropland survey conducted each fall and spring following planting in each county by Indiana Conservation Partnership (ICP) personnel and Earth Team volunteers. Using a

predetermined route, staff look at farm fields in their county collecting data on tillage methods, plant cover, residue, etc., in order to tell the story of conservation efforts in Indiana. The survey uses GPS technology and provides a statistically reliable method for estimating farm management and related annual trends.

According to the 2019 transect results, Indiana farmers planted 950,000 acres of cover crops in 2019. Cover crops are known for their environmental benefits and, with the exception of corn and soybeans, are planted on more acres than any other commodity crop in Indiana. They are typically planted in the fall after harvest and help to keep roots in the ground throughout the winter, which improves soil health and helps filter water off of the farm.

Due to the late spring planting in 2019 and the subsequent delayed harvest, some cover crops were not able to be planted due to time constraints and unfavorable weather.

As a result of the cover crops planted last year, it is estimated that 1.2 million tons of sediment was prevented from entering Indiana's waterways, along with 3 million pounds of nitrogen and 1.5 million pounds of phosphorus. That's enough sediment to fill more than 350 Olympic-size swimming pools.

In 2019, 71% of Indiana's corn acres were no-till or strip till acres. For Indiana's 2019 soybean crop, 76% of soybean acres had residues and soils undisturbed which allowed the soil to hold vital nutrients.

The tillage transect in Indiana counties has been conducted since 1990. To see trends in the use of no-till and conservation tillage, as well as trends in cover crops since 2011, visit the ISDA website at <https://www.in.gov/isda/2383.htm>.

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

ISDA houses on its website a GIS Basin Story Map of each of the ten (10) 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 GIS story maps have made Indiana's nutrient reduction strategy more interactive. <http://www.in.gov/isda/2991.htm>. These story maps are updated each year with relevant information and plans for next year include adding information on point source reductions and maybe groundwater information as well.

### **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 9-31-3-9 and IC 14-22-3.5). The Division of Fish & Wildlife administers the LARE program through financial grants

awarded by the Director of Indiana Department of Natural Resources (DNR) 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 DNR 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 2020, \$1,243,450 in 59 grants was awarded to address control of invasive aquatic species, logjam removal from rivers, and sediment removal from publicly accessible lakes.

Summer grants for new biological, diagnostic, design and construction projects on lakes and rivers are still being ranked and evaluated for the potential for funding. These latter efforts depend on partnering with willing land users to put in place various measures to address non-point 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 water bodies.

#### Indiana Lake Michigan Coastal Program<sup>5</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 DNR 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 NPS pollution.

The LMCP makes available approximately \$600,000 annually through the Coastal Grants Program for projects to protect and restore natural, cultural, and historic resources in Indiana's Lake Michigan coastal region. Project categories include land acquisition (example: riparian corridors), low cost construction (example: natural area restoration and BMP installation), education and outreach, and planning/coordination/management (example: land use planning and ordinance development). For the 2019 grant cycle the LMCP awarded grants to coastal communities and organizations that will result in NPS runoff reduction and water quality improvements.

The Town of Dyer Stormwater Management Board

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<sup>5</sup> Indiana Lake Michigan Coastal Program reporting period is July 1, 2018 – June 30, 2019.



The project will transform 300 linear feet of distressed, near vertical and slumping streambank into a 2-stage ditch profile with bio-engineered streambank stabilization measures, an extended bench with new habitat and a sediment deposition area, and 1.8 acre-feet of new off-line flood storage area.

#### School City of Hobart

The shoreline along Lake George at the property owned by The School City of Hobart is suffering from moderate to severe erosion. The bank will require different forms of erosion control based upon the height of the bank and the severity of the erosion. The erosion is contributing to sediment runoff into Lake George and has created an unsafe and unstable shoreline. Part of the shoreline was stabilized more than 10 years ago in the area along the School City of Hobart's Administration Building. This project will continue northward approximately 1,400 lineal feet.

As part of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), Congress created a stand-alone provision, Section 6217, which requires that states and territories with approved coastal zone management programs develop a Coastal NPS Pollution Control Program to address water quality impairment of coastal waters. The purpose of the program is to develop and implement management measures for NPS pollution to restore and protect coastal waters. The DNR LMCP and IDEM §319 Program staff work together to coordinate with other state and federal agencies such as state and local health departments, DNR, 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 (OSDS), 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 awarded to the LMCP. 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 our remaining measure. 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. Due to COVID-19 delays this Task will be completed in 2021. As far as education and outreach, Clean Water Ambassadors were identified from 20 potential neighborhoods and attended a training session, led by the LMCP and partner Save the Dunes, where they learned about septic maintenance and water quality. They were given educational materials to distribute to their neighbors. The Clean Water Ambassadors hosted four outreach events.

Indiana submitted a draft 6217 OSDS Measure program to NOAA and EPA in September 2019, received comments and resubmitted in June 2020. A final program submission is due August 2020.

The LMCP continues to lead the NW Indiana Septic System Coordination Work Group bimonthly meetings to discuss septic nonpoint source pollution issues and solutions in NW Indiana.

In September 2019 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 DNR Division of Nature Preserves annual conference and Coastal Advisory Board

meeting, and coordination of resolutions and proclamation of Septic Smart Week by local organizations and the Indiana Governor. Several communities passed SepticSmart week resolutions and the Governor's Proclamation of Septic Smart Week for 2019.

#### Healthy Rivers Initiative (HRI)

The Healthy Rivers Initiative, led by the DNR, 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 DNR, U.S. Fish & Wildlife Service, Natural Resources Conservation Service, 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, 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. 11,956 acres have been acquired by DNR in the Wabash River and Sugar Creek Conservation Areas, with 4,052 acres enrolled in NRCS Wetlands Reserve Easements that are not owned by DNR, 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; 2,048 acres enrolled in WRE that are not owned by DNR, 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>6</sup>**

The Indiana State Revolving Fund (SRF) Loan Program finances projects that abate or prevent NPS pollution of Indiana's waters. The SRF Program has traditionally provided low interest loans to Indiana communities for projects that improve wastewater and drinking water infrastructure. The program was expanded in 2004 to fund projects that meet the objectives in the State NPS Management Plan. The money loaned to these NPS projects is documented as match, when applicable, for the state §319 Grant Program. Eligible NPS projects must provide water quality benefits to their respective communities and may include one or more of the following:

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

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<sup>6</sup> The State Revolving Fund Loan Program reporting period is the state fiscal year: July 1, 2019 - June 30, 2020.

This reporting period, State Fiscal Year 2020 (July 1, 2019 - June 30, 2020), the SRF Program loaned \$22.2 million to seven communities for projects to reduce NPS pollution by extending sanitary sewers to areas with septic systems and eliminating one failing wetland system, thereby eliminating this potential source of pollution. Approximately 670 septic systems will be eliminated through this project. The program also completed two financings totaling \$43.4 million with two communities to improve stormwater management systems. Additionally, a previously closed project was amended to include two additional brownfield sites. Throughout the life of the SRF NPS Program, \$333 million has been disbursed for NPS purposes. Approximately 17,600 septic systems have been removed from service, eleven Brownfield sites have been remediated, and seven projects were completed to improve storm water infrastructure.

The NPS Program has also made a specific effort to coordinate with the Clean Water SRF (CWSRF) Program to link loan applicants with local watershed groups. Each quarter, when the CWSRF's Project Priority List is made available, the NPS 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 NPS program then determines, with the help of CWSRF staff, whether or not those applicants have taken advantage of the 0.5% interest break available for projects that include a NPS 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.

## 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 [Indiana's 2020 Consolidated Assessment and Listing Methodology \(CALM\)](#). Highlights of significant progress in monitoring and assessment of Indiana's waters for nonpoint source pollution during FFY 2020 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 probabilistic monitoring is conducted in one of nine basins each year. This resulted in a statistically comprehensive and updated data set for the entire state which was 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 2020, IDEM is sampling probabilistically in the West Fork White River (HUCs05120201, and 05120202). 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)).

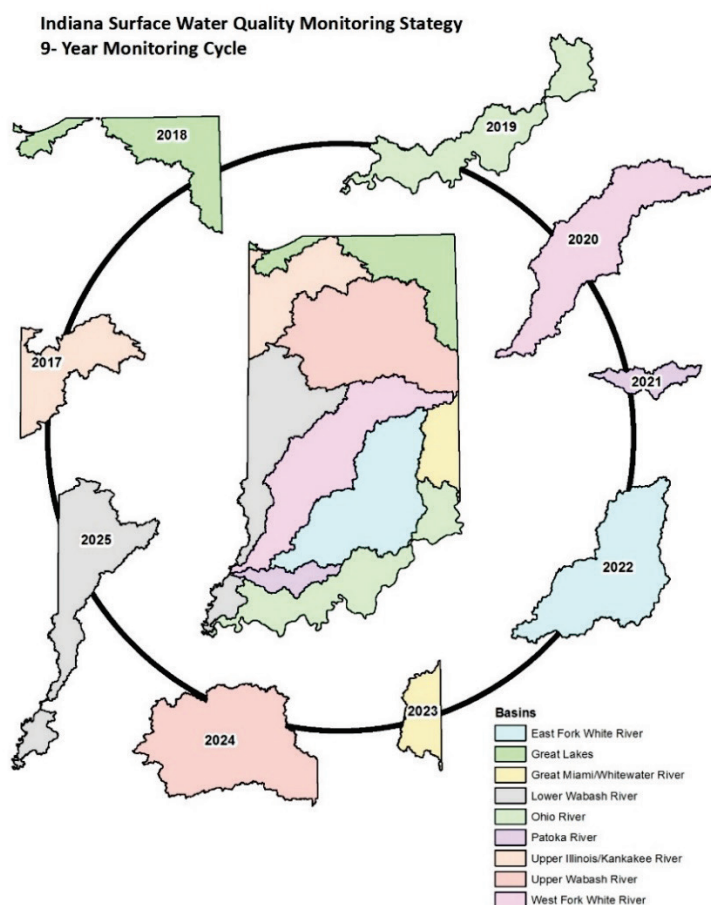


Figure 2. IDEM's 9-Year Rotating Basin Monitoring and Assessment Approach.

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 2020.

Laughery Creek (HUC 0509020306) -- Water quality monitoring in the Laughery Creek watershed began in November 2018 and completed in October 2019. Twenty-four sites in total were monitored for the above water quality parameters following a modified geometric design and targeted site selection. Eight pour point sites were sampled monthly throughout the entire sampling period and all sites were sampled monthly during the recreational season (April – October).

Maria Creek (HUC 0512011118) -- Water quality monitoring in the Maria Creek watershed began in November 2019 and is to be completed by October 2020. Eighteen sites in total will be monitored monthly for the above water quality parameters following a modified geometric design and targeted site selection. Six pour point sites will be sampled monthly throughout the entire sampling period and all sites will be sampled monthly during the recreational season (April – October).

#### 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 was cancelled for the 2020 sampling season due to COVID-19 related complications.

Success stories reported in FFY 2020 are reported under Goal 4 and can be found starting on page 31 of this document. Load reductions from BMPs are found in Table 2 on page 37 of this document.

### Ground Water Monitoring

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. In 2018, 231 of the sites that previously showed arsenic levels of  $\frac{1}{2}$  the MCL of 5 ppb and greater were resampled to determine 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. The 2018 sampling event confirmed that arsenic concentrations show high spatial variability in most regions of the State. As a follow up, in 2019, a small residential neighborhood in Nappanee in Elkhart County was intensively sampled to assess the variability of arsenic. Arsenic concentrations ranged from 13 to 140 ug/L over the 23-acre neighborhood, despite a similar geology across the study area. Statistical analysis of the full GWMN dataset showed that well depth and construction could account for small variations in arsenic levels across Indiana, but well depths alone could not explain the full variability of the arsenic levels observed in the Nappanee study area. Additional small scale studies are planned to further assess the spatial variability. Additionally, for the 2020 sampling season, a portion of the sites previously sampled for the GWMN will be resampled to address cation-anion charge balance issues observed in the previous sampling. Addressing these issues will allow geochemical modeling of the GWMN dataset to begin in order to evaluate the geochemistry of the aquifers of Indiana and evaluate the conditions under which arsenic is mobilized. 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 stream water quality monitoring initiative. It is designed to increase public awareness of stream water quality issues by training citizen volunteers to monitor wadeable streams near their homes, schools, and communities in Indiana. 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 choices and the resulting water quality of nearby streams.
- Train citizens on the basic principles of stream water quality monitoring.
- Promote opportunities for involvement in water quality issues at the local watershed level.
- 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 training and equipping certified volunteer instructors, who in turn lead workshops to train volunteer monitors. HRW provides monitoring equipment to eligible groups and loaner equipment to eligible individuals. HRW also manages an online database as a repository of data collected by volunteers and distributes water quality news to volunteers and stakeholders.

Prior to the COVID-19 pandemic impacts, HRW instructors held five (5) workshops in October 2019 (four basic and one advanced) and had ten (nine basic, one advanced) already scheduled for a great start to 2020. The shutdown of public and group gatherings in March led to the cancellation or postponement of six workshops from April to July. However, two workshops were conducted in June 2020. One was a previously scheduled workshop in Fort Wayne. Another, targeted to STEM (Science, Technology, Engineering and Mathematics) educators, popped up in Warsaw. It is uncertain whether or not the two workshops scheduled for September will occur, as Hoosiers wait to see what new 'spin on life' this novel coronavirus throws our way. Still, plans are underway for volunteers in the Fort Wayne area to be offered an advanced *E. coli* workshop yet this year.

So, despite COVID shutdowns and precautions, seventy-seven (77) new volunteers were trained in Indiana during this period. Workshop participants hailed from the seven counties where the workshops were held, as well as twelve surrounding counties and the state of Michigan. The newly trained include interested citizens, public/private/homeschool teachers, university students and faculty, natural resource professionals, and members of various environmental groups. Plans to train new instructors during 2020 were placed on hold this year and are expected to be picked up again sometime in 2021.

HRW 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. In addition, HRW staff awarded three equipment grant kits this year: one to a school and two to environmental groups. Requests to refill expendable/expired supplies and/or lost or broken equipment are also filled on an as needed basis. These can be received from three sources: trainers preparing for workshops, those who maintain or house loaner trunks, and groups who have been awarded an equipment grant kit and have either been putting data into the database or submitting it to IDEM's NPS staff. A cursory look at the approximate 37 refill requests handled so far this year revealed that well over 500 pounds (more than \$3,206-worth) of manuals, posters, durable equipment and consumable supplies have been shipped out to date. Groups supported by this effort include six Soil and Water Conservation District offices, five environmental groups, two school/homeschool groups, one lake association, one church group, and one national wildlife refuge. Another popular item requested is the macroinvertebrate poster created for HRW in its early stages. Requests this year have come in from a field office of the Oregon Department of Fish and Wildlife, as well as a fish and wildlife educator in the State of Maryland. Lastly, approximately \$243-worth of supplies, books, equipment, et cetera were distributed to HRW trainers who attended the Instructor Retreat held in Indianapolis on March 6 of this year.

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 73 stream sites have been sampled to date despite the constraints imposed by social distancing. It is interesting to note the sudden decline of data collection/entry during the spring of this year. But being shut inside seemed to make our hardest volunteer monitors anxious to resume their sampling routines in June with the relaxing of travel and other restrictions.

IDEM's Media and Communication Services staff succeeded in turning HRW ideas into reality this spring with the creation of our first public service announcement. Agency staff are merely waiting for a green light to release it onto social and other media outlets. This green light will come in the form of an all-clear on the COVID front so that staff, instructors, database, and volunteers can fully rise to the occasion of meeting the needs of additional citizens who will show an interest in protecting Indiana's wadeable streams.

### 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 30, 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 2020 are:

- Assisted approximately 96 active and developing watershed projects.
- Participated in the planning and conducting of the 2020 IASWCD Annual Conference, including moderating several sessions. Planning has begun for the 2021 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. The Indiana State Fair was cancelled for FFY2020.



- 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 15 years, 437 people have participated in the Academy through which they have learned skills in organization and communication, watershed technology, geographic information systems, policy, watershed science, and leadership. Thirty-four participants attended the IWLA in 2020. A January face-to-face meeting was held; however, the next two traditionally face-to-face meetings were conducted virtually with video-conferencing software due to the COVID-19 outbreak and subsequent ban on gatherings. The 2021 IWLA class is currently planned to proceed, but the format remains undetermined. Past classes met in January, March and May for face-to-face sessions, with the remainder of the course conducted online or through email/forum exchanges. However, with the uncertainty of COVID-19, it is currently undecided if classes will be virtual or face-to-face. The steering committee will be meeting several additional times to make a decision.

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 2020, the steering committee met once to discuss the success and future of the Academy. 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 NPS staff 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 2020, the ICP TCP anticipates the following trainings:

- Four- Soils Testing & Interpreting Results
- One- Tree Identification
- One- Shrub Identification

## **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: the CWA §319(h) and §205(j) programs. 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 37). 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 2020 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 2020 Indiana received \$3,677,000 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 2020 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 2020) 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 2018 [§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 2020) 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 2020) map for the Protection Watersheds.
- D. Implement a WMP that meets the [IDEM 2009 Watershed Management Plan Checklist](#).

### 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 nine projects funded in FFY 2020 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 45 open or pending §319 projects, of which 30 are implementing watershed management plans and installing BMPs in critical areas of the watershed. Table 1 (page 36) 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 37), 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 (2016-2020) 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 southwest 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 final reports, watershed management plan, and TMDL documents.

### **Plummer Creek Watershed Project**

The Plummer Creek watershed is the largest 10-digit watershed in Greene County and covers 110,946 acres in Eastern Greene County and 13,038 in Monroe and 433 in Owen counties in southwest Indiana. Approximately 72.6%, or 80,493.9 acres, of the land use in the Plummer Creek watershed is forested. The remaining land use for the Plummer Creek watershed consisted of 15.8% (17,593.2 ac) agricultural, 3.3% (3,605.8 ac) urban and developed lands, and 7.67% (8,508.3 ac) green space and residential areas classified as grassland/herbaceous. There are no urban areas in the watershed, and almost all watershed residents use septic systems.

The Plummer Creek Watershed Project is the first watershed where IDEM implemented a geometric watershed characterization process to get baseline data for planning. It also showcases a voluntary, nonpoint source approach to implementing a TMDL. IDEM wrote a TMDL, provided grant funding for a watershed management plan (WMP), and funded the subsequent implementation.

#### *Accomplishments*

Although the Plummer Creek project continues to be successful in working towards their implementation and load reductions goals, they have demonstrated successful voluntary implementation of a TMDL, hosted a pilot watershed characterization program, and a successful round of implementation.

The Plummer Creek TMDL was approved in June of 2006 and addressed *E. coli* impairments on 35.34 miles of streams. There are no urban centers, regional sewer districts, or NPDES permitted facilities within the watershed. There are 3 CAFOs registered in the watershed. The TMDL analysis revealed septic systems and agricultural run off as a significant source of the *E. coli* in the watershed. With some sampling sites showing increased *E. coli* loading at low flows, and others showing loading across low and high discharges.

In 2011 IDEM conducted a pilot watershed survey to evaluate the efficacy of a geometric and intensive pollution survey design to better delineate aquatic life impairments and determine the associated stressors in support of baseline watershed management. In April 2012, an intense survey of *E. coli* was conducted by testing sites once a week for five weeks. During that same intense sampling, all other chemical and physical parameters were tested by IDEM to gain insight into the conditions within the watershed and supplement water quality testing for the production of a watershed management plan and to determine baseline quality. Additionally, IDEM tested dissolved oxygen, 5-day biochemical oxygen demand, ammonia nitrogen, pH, temperature, turbidity, total dissolved solids, total phosphorous, total suspended solids, specific conductivity, nitrate nitrogen, and *E. coli*. plus, total kjeldahl nitrogen (TKN) on a monthly basis from 2011-2012. Habitat and biological data were also collected as part of this baseline study.

Following the pilot watershed survey, the Plummer Creek Watershed Management Plan was written utilizing IDEM data and approved in 2014. The Plummer Creek WMP focuses on addressing the public concern regarding the development of new interstate I69 as a top priority and as well as identifying land use practices that are directly impacting on the Total Maximum Daily Load (TMDL). The TMDL identified septic systems and agricultural wash-off as contributing factors to the *E. coli* loading in Plummer Creek.

The first round of implementation finished successfully in 2019 with all cost-share funds spent and the match requirement exceeded. Mostly agriculture related BMPs were installed including HUAPs, nutrient management, cover crops, prescribed grazing and WASCOBs. In total 2,011.1 tons per year of sediment, 27,256.57 pounds per year nitrogen, and 4,590.69 pounds per year of phosphorous were prevented from entering waterways. The group continues to promote conservation practices to producers in the watershed via field days, workshops, tours, and media communications. The group received a second round of implementation funding in FFY2018 and continue to implement the watershed management plan.

#### *Funding and Partnerships*

Primary partnerships from the project include Monroe and Owen County SWCDs, Purdue Extension, and the Monroe and Green County Highway Departments. Baxter donated \$5,000 for water quality testing.

#### *More Information*

For more information on the Plummer Creek Implementation project, please visit their website: <http://watershed-alliance.org/index.php/plummer-creek-watershed-project-greene-county/>

### **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 \$673,882 reported through July 16, 2020, 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 2019 and 2018 watershed groups utilized approximately \$1,158,233 and \$1,326,880 respectively.



Table 1 BMPs Implemented in Indiana FFY 2018 – 2020

BMP	Approximate Number FFY 2018	Approximate Number FFY 2019	Approximate Number FFY 2020
Cover Crop (acres)	31,918	22,229	14,134
Fence (feet)	21,799	20,746	10,847
Grassed Waterway (sq. feet)	109,715	130,680	284,555
Heavy Use Area Protection (sq. feet)	92,812	90,271	43,286
Nutrient Management (acres)	7,028	3,031	156
Pasture and Hay Planting (acres)	327	341	461
Residue Management, No-Till (acres)	1,553	7,035	4,774
Tree and Shrub Establishment (acres)	27	4	300
Watering Facility (each)	26	15	5
Rain Barrels (each)	0	0	6
Rain Gardens (sq. feet)	468	400	692
Septic System Removal (each)*	246	1,520	**

\* 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 2020 will be reported after October 1, 2020.

Additional BMPs implemented this year include: access roads, grade stabilization structures, prescribed grazing, stream crossing, and waste storage facilities. 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.

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.

Table 2 Reported Estimated Load Reductions for BMPs Implemented FFY 2018-2020

Nonpoint Source Pollutant	Estimated Reduction FFY 2018	Estimated Reduction FFY 2019	Estimated Reduction FFY 2020
Sediment (tons/yr.)	153,250	123,910	86,581
Phosphorus (lbs. /yr.)	151,124	187,328	100,531
Nitrogen (lbs. /yr.)	388,735	441,549	196,885
Biological Oxygen Demand (lbs. /yr.)*	79,607	17	130
Chemical Oxygen Demand (lbs. /yr.)	165	163	1,007
Ammonia (lbs. /yr.)*	17,007	95,364	0
Suspended Solids (lbs. /yr.)	40,819	228,873	1,511
Pathogens/Coliform (CFU)*	7.059E+10	3.9582E+11	**
TKN (lbs. / yr.)	0	0	7

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

\*\* Totals for FFY 2020 will be reported after October 1, 2020.

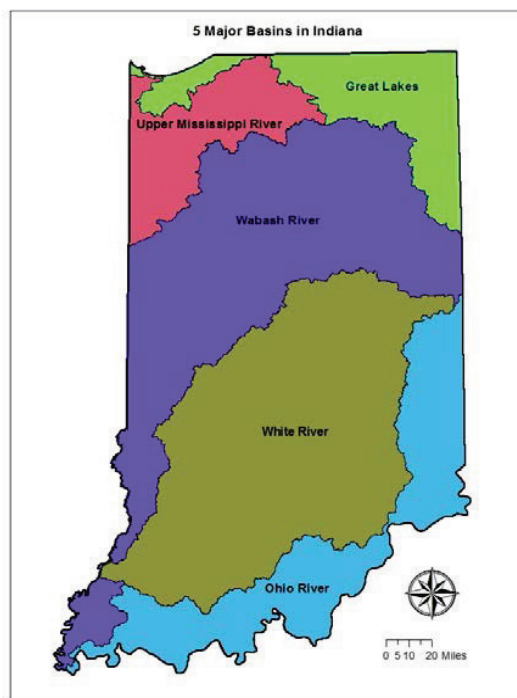
Cumulative total estimated load reductions reported in Indiana from §319 projects since FFY 2000 through July 16, 2019 are shown in Table 3.

Table 3 Cumulative Total Estimated Load Reductions in Indiana.

Nonpoint Source Pollutant	Total Estimated Reduction
Sediment (tons/yr.)	1,125,612
Phosphorus (lbs. /yr.)	1,628,577
Nitrogen (lbs. /yr.)	3,190,479

<sup>7</sup> FFY 2020 Load Reductions are estimated on BMPs reported through July 16, 2020. Estimated totals for FFY 2020 will be recalculated in the FFY 2021 Annual Report.

## BMPs and Load Reductions in FFY 2020



**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 2020 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 two projects working there this fiscal year. As seen from the chart below (Figure 4), five BMPs were installed achieving a

reduction of 1,481 tons of sediment, 1,866 pounds of phosphorous, and 3,730 pounds of nitrogen.

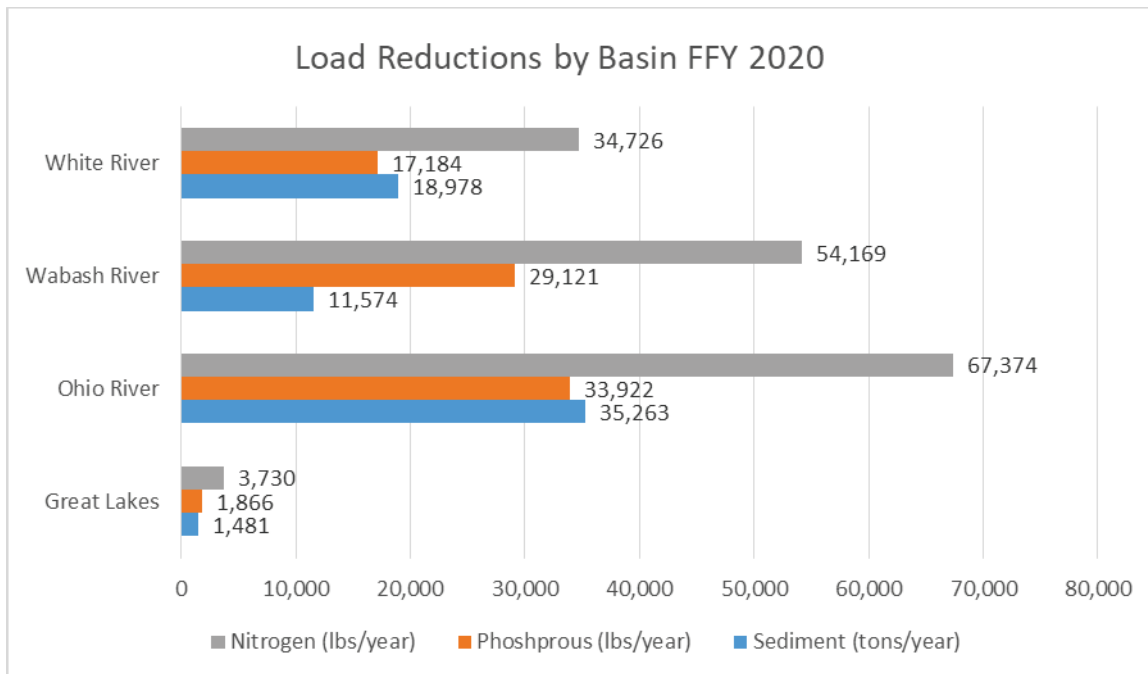
Any nutrient reduction to the Great Lakes is important because excess nutrients can result in algal blooms. Because of the recent problems resulting from large algal blooms in Lake Erie, phosphorus reduction to the lake has become a focus at the state and national level. Indiana has been engaged at the 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.

There were no projects in the Upper Mississippi River Basin in 2020.

Ten projects working in the Wabash River Basin this year reduced nutrient loads to the river as shown below. The estimated load reductions achieved include 11,574 tons of sediment, 29,121 pounds of phosphorous, and 54,169 pounds of nitrogen.

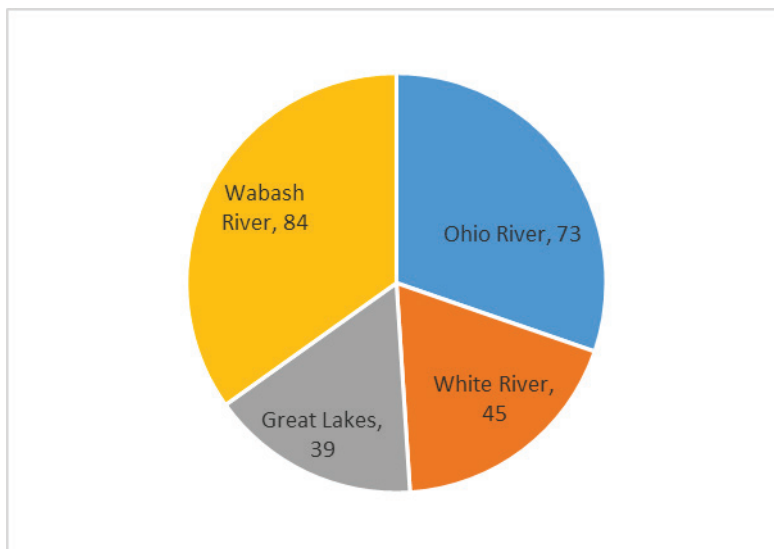
Four projects in the White River Basin worked to reduce nitrogen, phosphorus, and sediment in the watershed. The estimated load reductions are 18,978 tons of sediment, 17,184 pounds of phosphorous, and 34,726 pounds of nitrogen.



**Figure 4. Load Reductions by Basin FFY 2020.**

Six projects worked in the Ohio River Basin to reduce nitrogen, phosphorus, and sediment. These reductions came primarily from implementation of cover crops and residue management BMPs. These BMPs have estimated reductions of 35,263 tons of sediment, 33,922 pounds of phosphorous, and 67,374 pounds of nitrogen.

Combined, the projects in areas that ultimately drain to the Gulf of Mexico had estimated load reductions of 67,296 tons of sediment, 82,093 pounds of Phosphorous, and 159,999 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 and reported on the Unnamed Tributary of South Fork Wildcat Creek as a success story under WQ-10(a) in the Annual Report. Indiana also submitted the Boyles Ditch success story, which is relayed below.

### Aquatic Life Use Restored in Boyles Ditch

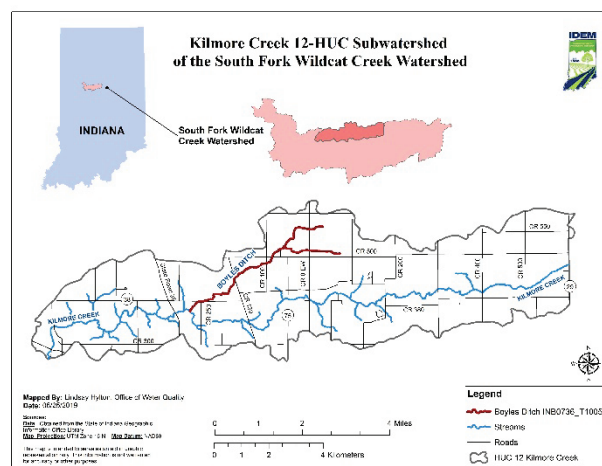
#### *Waterbody Improved*

Boyles Ditch is a roughly 6-mile-long tributary of Kilmore Creek within the larger South Fork Wildcat Creek (SFWC) watershed. The Indiana Department of Environmental Management (IDEM) listed Boyles Ditch on its 2006 Clean Water Act (CWA) section 303(d) list of impaired waters due to high levels of *Escherichia coli* and impaired biotic communities (IBC). Agricultural activities related to crop cultivation and livestock-rearing contributed nonpoint source pollution to a stream already lacking in quality aquatic habitat. Over the years, project partners developed two watershed management plans (WMPs) and implemented agricultural and conservation best management practices (BMPs) to improve the water quality of the SFWC watershed. The Boyles Ditch tributary now supports its aquatic life use; therefore, IDEM will propose to remove the IBC impairment from this segment in 2020.

#### *Problem*

Boyles Ditch is surrounded almost entirely by cultivated crops. While the main stem of Kilmore Creek contains a substantial amount of forested stream buffer, the Boyles Ditch segment remains largely unbuffered. According to the 2012 SFWC WMP, roughly 14 of the 21.5 miles of waterways in the Kilmore Creek subwatershed are listed as impaired, including all of Boyles Ditch and downstream portions of Kilmore Creek. A volunteer windshield inventory conducted during WMP development noted sites with active erosion, livestock with access to waterways, and areas of trash dumping.

In 2004 IDEM conducted a biological study on the SFWC watershed. The three sampling sites on Boyles Ditch had failing index of biotic integrity (IBI) scores (i.e., scores less than 36 in Indiana), which indicates that the stream is not supporting a well-balanced aquatic community. The fish community data collected at these three sites showed IBI scores on Boyles Ditch ranging from 12 to 34. This caused IDEM to list the stream on its 2006 CWA section 303(d) list of impaired waters for IBC. To address this and other existing impairments, IDEM developed a total maximum daily load (TMDL) for *E. coli*, total suspended solids, total phosphorus and nitrate-nitrite in 2008 for the SFWC watershed.



**Figure 6. Kilmore Creek of the South Fork-Wildcat Creek Watershed**

### *Project Highlights*

For over two decades stakeholders have been working to improve the SFWC watershed. With funding provided by the Indiana Association of Soil and Water Conservation Districts (IASWCD), the Wildcat Creek Watershed Network (now known as the Wildcat Creek Watershed Alliance) hired an executive director to develop a long-term strategic plan for the Wildcat Creek watershed to serve as the foundation for future planning and implementation efforts. In 2005 the Clinton County Soil and Water Conservation District (SWCD) received a CWA section 319 grant to create the SFWC–Blinn Ditch and Kilmore Creek–Boyles Ditch WMP, which was approved in 2008. In 2005–2012 watershed partners conducted education and outreach through stakeholder meetings, public workshops, field days, newsletters, and community cleanups. Workshop topics included the use of cover crops, proper septic system management, and soil health maintenance. In 2009 the SWCD received a CWA section 205(j) grant to prepare a new nine-element watershed plan for SFWC, with implementation starting in 2012. Landowners added roof/covers (2), installed heavy use area protection (0.5 acres [ac]), and constructed facilities for animal mortality (3) composting (1), watering (8), and waste storage (1). They added a pumping plant, pipeline (3,560 feet [ft]), access roads (1,710 ft) and fencing (6,500 ft). They also applied a range of other BMPs.

### *Results*

IDEM conducted follow-up monitoring on Boyles Ditch in 2017, which showed that the fish IBI score improved to 54, a significant increase from the score of 34 seen in 2004 and well above the minimum IBI score of 36 needed to indicate support. Additionally, the Qualitative Habitat Evaluation Index (QHEI) score was 69 in 2017, up from 47 in 2004 (QHEI scores below 51 indicates poor habitat). On the basis of these data, IDEM is proposing to remove the IBC impairment from this segment on its impaired waters list in 2020.

### *Partners and Funding*

Various partners implemented projects in the SFWC watershed. In the late 1990s, IASWCD undertook efforts to provide strategic planning and technical assistance to the larger Wildcat Creek watershed using \$189,500 in CWA section 319 funding. In 2005, the SWCD received \$96,100 in CWA section 319 funds to write the SFWC–Blinn Ditch and Kilmore Creek–Boyles Ditch WMP; in 2006, the Wildcat Creek Watershed Alliance assumed implementation of the Wildcat Creek WMP using \$150,000 in CWA section 319 funding. The U.S. Department of Agriculture's (USDA's) Natural Resources Conservation Service provided additional funding and technical assistance through programs in the Kilmore Creek subwatershed in 2004–2017, totaling \$7,017,438. The USDA Farm Services Agency's Conservation Reserve Program (CRP) provided \$6,185 in funding for various conservation practices and floodplain restoration. Between 2001 and 2017, the SWCD used funding sources (\$754,628 from 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 for BMPs. Lastly, the SWCD used \$337 in local funds to decommission a well.

### **§205(j) Grant Program**

The §205(j) Grant Program is dedicated to water quality management planning and monitoring. 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. IDEM received \$387,000 in FFY 2019 funds. These funds were used for one watershed management plan development project with Allen County SWCD on the Flatrock-Auglaize River, a project with ORSANCO

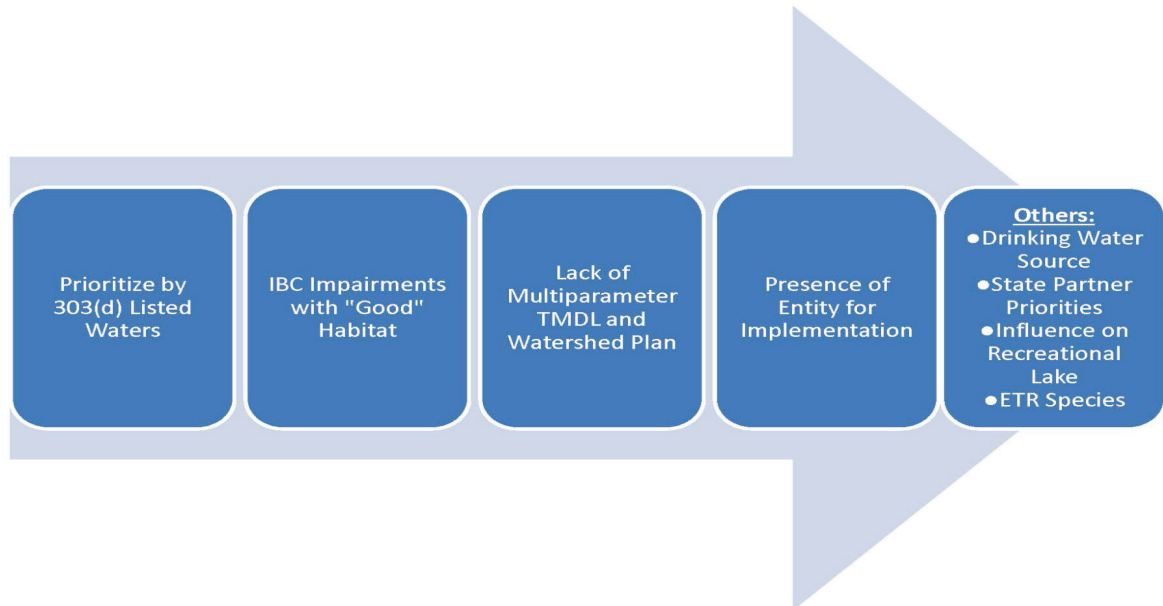


for the continued operation of two continuous monitors on the Ohio River, and a project with United States Geological Survey to install and operate a streamflow gage on the Kankakee River at Shelby. IDEM anticipates receiving \$387,000 in FFY 2020 funds. These funds will be used for two watershed management plan development projects with Delaware County SWCD on the Upper White River and Lawrence County Lower Salt Creek. One monitoring project with ORSANCO for the continued operation of two continuous monitors on the Ohio River will also be funded. 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 2020, 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 2020, 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. Eight applications addressed these watersheds and five were proposed to U.S. EPA for funding under the §319(h) grant program.

# Adaptive Management

Due to the occurrence of a global pandemic in early 2020, IDEM, along with state agencies around the country, found itself making unprecedented decisions to allow flexibility for its NPS grantees and to utilize limited resources on the most pressing projects. Project-related adaptive-management strategies utilized include taking outreach and education to a virtual format, suspension of sampling events, postponing due dates for watershed management plan drafts, and adding time to grant agreements to allow more time for BMP installations. Additionally, in order to provide relief to its citizens, the state of Indiana deferred state income tax payments into state fiscal year 2021, creating a shortfall of funding for state activities. The state enacted several cost-saving measures for the end of state fiscal year 2020, including canceling several Information Services (IS) contracts and stopping work on several IS projects. One of those projects was the NPS Data Management System. It was determined by Senior staff that, due to a lack of resources, the NPS Data Management System would not move forward and the FFY 2016 funds should be reallocated to other projects. Therefore, Objective 4.3 should be removed from the State Nonpoint Source Pollution Management Plan.

Table 4. Revisions to Reportable Activities for 2020.

Obj. #	MM	Objective	FFY Start	FFY End	Rationale for Change
4.3	c	Develop database. <b>NPS and IDEM staff worked diligently on this project for most of FFY2019 and 2020. A contractor was hired to develop the database, however due to unforeseeable events this project was postponed indefinitely. Budget constraints and uncertainty going forward called for the cancellation of contactors working for the State. NPS staff met 7/30/20 to discuss the reallocation of the remaining funds.</b>	<del>2019</del>	<del>2021</del>	A state budgetary emergency has required state agencies to move forward only on “essential” IS projects. This project is not considered essential and will not be developed in the foreseeable future.

## APPENDIX A

### Reportable Activities for 2020

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
1.1	a	Nonpoint source pollution Northwest watershed specialist will assist the LMCP with on-site disposal systems measures as needed/requested. <b>Progress: In FFY 2020, IDEM NPS took a more active role in assisting with completing work on the OSDS measure. The Section Chief, NW IN WSS, and NPS Specialist attended regular coordination calls with IDNR to identify action items and report on progress made. In addition, SC participated in conference call with IDNR 9/25/19. WSS participated in meetings with LMCP 1/28/20, 4/30/20, 5/7/20, 5/14/20, 5/19/20, 6/8/20, 7/2/20, 7/21/20 and 7/30/20. WSS participated in the 2020 Lake Michigan LAMP Priorities conference call 3/30/20. NPS staff attended the Indiana Onsite Wastewater Professionals Association board meeting with Coastal Program staff 6/11/20. WSS met ISDH on LMCP OSDS measure 5/15/20. Section Chief reached out to ISDH, IOWPA and IDEM management, and legislative liaison regarding coastal needs 5/2020. NPS and INDNR staff met with Porter County Health Department 5/27/20.</b>	2019	2020		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>Progress: WSS participated in meetings with LMCP 2/3/20, 4/22/20, 4/30/20, 5/7/20, 5/11/20, 5/7/20, 5/15/20, 5/19/20, 6/1/20, 6/8/20, 7/2/20 and 7/21/20.</b>	2019	2020	ongoing	Ongoing – significant progress
1.2	a	Provide implementation support for the Coastal Zone TMDLs. <b>Progress: The NW WSS has attended meetings to provide assistance regarding Deep River and Trail Creek, both of which have TMDLs.</b>	2019	2023	ongoing	Ongoing – Complete for 2020
1.2	b	Provide implementation support for the Coastal Zone WMPs. <b>Progress: The NW WSS has attended meetings to provide assistance regarding Deep River and Trail Creek, both of which have WMPs.</b>	2019	2023	ongoing	Ongoing – Complete for 2020
1.3	a	Northwest watershed specialist will continue to participate in relevant meetings regarding the CNPCP. <b>Progress: NPS staff participated in Coastal States Organization Nonpoint Source workgroup calls on 10/29/19, 11/18/20, 3/9/20, 3/25/20, and 5/11/20.</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 2020. There are also no ongoing WMP efforts in the Coastal Zone.</b>	2019	2023	ongoing	Ongoing- No need for this FFY

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
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
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 has been passed along include Indiana CRP State Acres for Wildlife SAFE Proposal and Funding Opportunity for agreements for Soil Science Collaborative Research Proposals.</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>Branch Chief participated in the ICP meetings 9/10/19, 11/12/19, 1/28/20, 3/3/20, 5/12/20, and 7/14/20.</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 along include, SE WSS provided watershed planning and potential funding regarding West Boggs Lake group 1/6/20. SE WSS forwarded funding opportunity emails to targeted groups 4/2020.</b>	2019	2023	ongoing	Ongoing – significant progress
1.4	d	Include program information in relevant TMDLs as methods for implementation. <b>Progress: The Lower East Fork White River TMDL (approved Dec. 19, 2019) includes a description of the above programs as means to implement nonpoint source programs starting on page 146.</b>	2019	2023	ongoing	Ongoing – significant progress
1.4	e	Coordinate with ICP partners on meetings and workshops. <b>Branch Chief participated in the ICP meetings 9,10/19, 11/12/19, 1/28/20, 3/3/20, 5/12/20 and 7/14/20. Branch Chief participated in the ICP Leaders Annual Workplan Development meeting 1/21/20 and a leadership meeting 3/3/20.</b>	2019	2023	ongoing	Ongoing – significant progress
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>Branch Chief participated in the ICP meetings 9,10/19, 11/12/19, 1/28/20, 3/3/20, 5/12/20 and 7/14/20. Branch Chief participated in the ICP Leaders Annual Workplan Development meeting 1/21/20 and a leadership meeting 3/3/20.</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	2019	2023	ongoing	Ongoing – significant progress

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		319 Annual Report. <b>Progress: The watershed specialists provided technical assistance to at least 96 distinct groups in FFY 2020. Site visit reports are on-file with related project documents. Examples include: NE WSS collected requested information on Atwood Lake and forwarded it to LaGrange SWCD 7/22/20.</b>				
1.7		Continue to align the TMDL and WMP planning process with the TMDL vision. <b>Progress: The TMDL program continued to follow the framework it established in 2015 to determine where TMDLs would be calculated. The program continued to work on partnerships with local groups for TMDL project planning. Staff attended a grant kick-off meeting held by Pike County for the Lower East Fork White River WMP project on 5/5/19. They provided an update on the TMDL project and discussed recent monitoring results. TMDL staff, with assistance from Pike County, held a public meeting on 11/12/19 where they presented information on the Lower East Fork White River draft TMDL report which was later approved on 12/19/19. Pike County will use the information in the TMDL report to develop a WMP for the watershed. Upcoming and current TMDL projects have been chosen which align with local stakeholder interest for pursuing WMP development. The Laughery Creek watershed TMDL is scheduled for submittal in FY 2020 with WMP development by Historic Hoosier Hills RC&amp;D to follow. TMDL staff met with Sullivan County to discuss the watershed characterization and TMDL development process for Maria Creek on 6/20/19. Members of the board provided insights on monitoring stations in the watershed. The Maria Creek watershed TMDL is scheduled for submittal in FY 2021 with WMP by Sullivan County to follow. TMDL staff met with Jennings County to discuss the watershed characterization and TMDL development process on 1/31/20. Members of the board provided insights on monitoring stations in the watershed. The Vernon Fork-Muscatatuck River watershed TMDL is scheduled for submittal in FY 2022 with WMP by Jennings County to follow. Staff continue to use this selection criteria for the next watershed project whose TMDL will be scheduled for submittal in FY 2023.</b>	2019	2023	ongoing	Ongoing – significant progress
1.7	a	Lower East Fork White River TMDL. <b>Progress: The public meeting on the TMDL draft was held in Jasper Indiana on 11/12/19. It went on 30-day comment period from 11/8/19 through 12/8/19 and was approved on 12/19/19.</b>	2019	2020	ongoing	Complete
1.7	b	Laughery Creek TMDL. <b>Progress: Water quality monitoring in the Laughery Creek watershed began in November 2018 and completed in October 2019. Twenty-four sites in total were monitored for the above water quality parameters following a modified geometric design and targeted site selection. Eight pour point sites were sampled monthly throughout the entire sampling period and all sites were sampled monthly during the recreational season (April – October 2019). A virtual public meeting was held July 15, 2020.</b>	2019	2020	ongoing	Ongoing – significant progress

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
1.7	c	Maria Creek TMDL. <b>Progress: Water quality monitoring in the Maria Creek watershed began in November 2019 and is to be completed by October 2020. Eighteen sites in total will be monitored monthly for the above water quality parameters following a modified geometric design and targeted site selection. Six pour point sites will be sampled monthly throughout the entire sampling period and all sites will be sampled monthly during the recreational season (April – October). A public kickoff meeting for the TMDL was held 12/10/19 at the Sullivan County Fairgrounds.</b>	2020	2023	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: In FFY 2020, Indiana only had 1 NWQI watershed project: the School Branch monitoring project. IDEM staff have been highly involved in this project. The School Branch monitoring project continues to receive \$319 funding support (more below).</b>	2019	2023	ongoing	Ongoing – significant progress
1.8	a	Continue support of the School Branch Project. <b>Progress: This project currently had 2 \$319 grants supporting it -the first Phase project opened on January 11, 2016 and closed on January 10, 2020. The second Phase project opened on May 30, 2019 and is set to close on May 29, 2022. Both 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 9/10/19, 11/12/19,1/28/20, 3/3/20, 5/12/20, and 7/14/20.</b>	2019	2023	annually	Complete for 2020
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 managing Indiana’s Annex 4 Domestic Action Plan. Annex 4/DAP meetings/conference calls in FFY 2020 were held on 10/16 &amp; 17/19, 11/14 &amp; 15/19, 4/21/19, 4/22/20, 5/14/20, and 6/11/20. The Watershed Assessment and Planning Branch Chief (BC) attended a WLEB Stakeholder meeting held by NRCS 9/3/19. BC attended the ErieStat Steering Committee meeting 3/13/20 and 6/5/20. BC participated in ErieStat and Annex 4 webinar 11/15/19.. Branch Chief attended a WLEB meeting 12/20/19. BC participated in the WLEB Partnership meeting 3/10/20. BC, NPS Section Chief and WSS participated in the WLEB Advisory meetings 4/21/20, 4/22/20, 5/14/20, and 6/11/20.</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</b>	2019	2023	ongoing	Complete for 2020



Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>priorities into the solicitation. In FFY 2020, no additional priorities were added to the solicitation or project plan as a result of reviewing these documents.</b>				
1.10		Dedicate an average of \$100,000 in 319 funds to the Coastal Zone (Little Calumet-Galien watershed, HUC 04040001) annually until all of the remaining conditions of the LMCP CNPCP are met. <b>Progress: 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. NPS staff discussed potential projects to be funded on 9/26/19. An additional project, using \$100,000 of FFY 2020 \$319 funds, was awarded but is currently on hold as local conditions have changed and the most appropriate way to spend those funds is still being determined.</b>	2019	until full approval	annually	Complete for 2020
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 compiled a report in 12/2019 requested by CWSRF staff that summarized what SRF projects have been applied to 319 match over the years and the amount from each. Senior Project Manager sent CWSRF staff descriptions of all projects recommended for FFY 2020 funding on 7/9/20. 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
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 State Revolving Fund 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	Complete for 2020
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 2020.</b>	2019	2023	annually	Complete for 2020
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</b>	2019	2023	ongoing	Ongoing – Complete for 2020

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>applicants. Since no potential projects were identified this fiscal year, no additional contacts/fact sheets were provided to CWSRF applicants.</b>				
	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. In FFY 2019, SRF replaced 663 septic units in 4 loans. Numbers for the remainder of FY 2020 septic removals will not be available until October 2020 or later.</b>	2019	2023	ongoing	Ongoing – Complete for 2020
1.12		Work with partners to model, assess, and prioritize critical watersheds in the state. <b>Progress: TMDL staff attended Science Assessment Component 1 sub-committee meeting at TNC 2/24/20. NPS and TMDL staff have been working with ISDA staff to learn modeling tools that will assist in the process of prioritizing critical watersheds in the state.</b>	2019	2023	ongoing	Ongoing – significant progress
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 96 distinct groups in FFY 2020. The NPS staff 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. SC responded to a proposal to work with CCSI, FEMA, and other partners in the Cicero Creek watershed. 1/24/20 several NPS staff moderated multiple sessions at the IASWCD Annual Conference. Section Chief communicated with Indiana Lake Michigan LAMP/Grand Calumet RAP Program regarding partnering with on a networking type event for Lake Michigan watershed groups 11/22/19.</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 2020 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 WQX (STORET) on a routine basis. <b>Progress: The AIMS connection to provide water chemistry data to WQX is currently broken and being worked on. The data will be uploaded once the contractor for the database fixes the issue.</b>	2019	2023	ongoing	Ongoing – some progress

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
2.3		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: Laughery Creek TMDL assessments were completed on February 5, 2020 and a member of the Historic Hoosier Hills RC&amp;D was in attendance.</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 2020, this meeting took place on 2/20/2019.</b>	2019	2023	annually	Complete for 2020
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 2020 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	annually	Ongoing – significant progress
2.6	a	Lower East Fork White River TMDL and WMP. <b>Progress: The public meeting on the TMDL draft was held in Jasper Indiana on 11/12/19. It went on 30-day comment period from 11/8/19 through 12/8/19 and was approved on 12/19/19. Development of the WMP is being supported by a FFY 2020 \$ 319 grant that has not yet begun.</b>	2019	WMP-2021	ongoing	Ongoing – significant progress
2.6	b	Laughery Creek TMDL and WMP. <b>Progress: A Water Monitoring Demonstration Day was held October 23, 2019. The TMDL public meeting was held virtually on July 15, 2020. The 30-day public comment period for the draft TMDL lasted from July 8, 2020 through August 8, 2020. Development of the WMP is being supported by a FFY 2020 \$ 319 grant that began on 12/15/2019.</b>	2019	TMDL-2020 WMP-2022	ongoing	Ongoing – significant progress
2.6	c	Maria Creek TMDL and WMP. <b>Progress: Water quality monitoring in the Maria Creek watershed began in November 2019 and is to be completed by October 2020. Eighteen sites in total will be monitored monthly for the above water quality parameters following a modified geometric design and targeted site selection. Six pour point sites will be sampled monthly throughout the entire sampling period and all sites will be sampled monthly during the recreational season (April – October). A public kickoff meeting for the TMDL was held 12/10/19 at the Sullivan County Fairgrounds. A Water Monitoring Demonstration Field Day is tentatively scheduled for October 14, 2020. The WMP project was selected for 319 funding from FFY 2020 and has not yet been executed.</b>	2020	TMDL-2021 WMP-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
2.7		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	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 73 stream sites have been sampled to date despite the uncertain times and social distancing/travel constraints. This explains the sudden drop off of data collection/entry during spring of this year. Despite COVID shutdowns and precautions, seventy-seven (77) new volunteers were trained in Indiana during this period. Workshop participants hailed from the seven counties where the workshops were held, as well as twelve surrounding counties and the state of Michigan. The newly trained include interested citizens, public/private/homeschool teachers, university students and faculty, natural resource professionals, and members of various environmental groups. Plans to train new instructors during 2020 were placed on hold this year and are expected to be picked up again sometime in 2021.</b>	2019	2023	ongoing	Complete for 2020
2.8	a	Complete Hoosier Riverwatch QAPP template. <b>Progress: A Supplemental 106 grant was secured to complete work on this project. Work was nearing completion when the COVID crisis struck and this project was put on hold as IDEM re-evaluated all Information Services projects. This project will proceed within the next few months.</b>	2020	2020		Some progress
2.8	b	Provide support for 20 Hoosier Riverwatch workshops (volunteer trainings) and maintain current loaner/teaching trunks. <b>Progress: Fifteen workshops were slated for 2019, 7 have occurred and two are scheduled for September. Six were cancelled or postponed due to COVID.</b>	2019	2023	annually	Some progress
2.8	c	Provide support for maintenance and upgrades of the Hoosier Riverwatch water quality monitoring database and associated websites. <b>Progress: IDEM provided an additional \$10,000 to the current grant contract in order to complete needed enhancements to the database.</b>	2019	2023	ongoing	Ongoing – significant progress
2.9		Accept external data through the External Data Framework. <b>Progress: IDEM has reviewed all data submitted through the EDF to date. IDEM has postponed the active solicitation of additional data until it completes a needed update of the PHP coding that powers its online database and Secondary Data Portal through which participants (and eventually NPS projects) will submit their data to IDEM electronically. This work is underway and is expected to be complete by the end of 2020 at which time, promotion of the EDF may continue.</b>	2019	2023	ongoing	Ongoing – some progress

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
2.9	a	Use the External Data Framework to accept external data for various uses including nonpoint source pollution assessment, planning and de-listing. <b>Progress: The ability for IDEM to use external data submitted through the EDF (once the issues hampering electronic submittals are resolved) will be determined on a case-by-case basis. This is consistent with the function of the EDF, which is designed to streamline the submittal of water quality data from external sources and then reviewing and ranking them based on their level of data quality. Since it is the data quality that determines the uses for which the data are reliable, that will vary from data set to data set. The EDF is inclusive by nature, providing three tiers of potential uses, which provides a place for most any data set. The highest quality data sets, those which meet our Tier 3 data quality criteria, can and will be used in assessment and listing/delisting decisions. For most other uses, particularly those lacking potential regulatory impacts, the data quality criteria are somewhat less stringent. Tier 2 data allows much more flexibility with regard to the types of data that can be used for nonpoint source assessment and watershed planning while still ensuring a level of data quality commensurate with those uses. IDEM is also seeking new ways to provide technical assistance to EDF participants and NPS projects alike in designing their water quality monitoring study to achieve better data quality and to more easily document their data quality.</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. The 2019 Success Story segment reported on was Boyles Ditch to demonstrate water quality improvements in FFY 2019. On 3/3/20 NPS and IDEM staff met to discuss delisting of the 2020 Success Story and it was decided that Little Hogan Creek would be submitted.</b>	2019	2023	ongoing	Complete for 2020
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: At this point, no information received through the EDF or grantee monitoring indicates that additional monitoring for improvement due to nonpoint source practice implementation should take place.</b>	2019	2023	annually	Complete for 2020
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: Performance monitoring was cancelled in 2020 due to COVID.</b>	2019	2023	annually	In-complete for 2020

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
2.11		Continue the <a href="#">Ground Water Monitoring</a> Network (GWMN). <b>Progress: Smaller-scale studies of previously-monitored sites are planned for 2020 to assess arsenic speciation and cation-anion charge balance issues.</b>	2019	2023	ongoing	Ongoing – some 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. Progress: The two programs plan to meet in 2021 to discuss further.</b>	TBD	TBD	ongoing	Ongoing – some progress
2.12	b	Gather data for completing the analysis and reporting mechanism. <b>Progress: Progress: The two programs plan to meet in 2021 to discuss further.</b>	2019	2023	ongoing	Ongoing – no progress
2.12	c	Determine the frequency of future groundwater analyses and reporting. <b>Progress: The two programs plan to meet in 2021 to discuss further.</b>	2020	2020	ongoing	Ongoing – no progress

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: NPS staff collaborated 4/15/20 on incorporating more online outreach materials. WSS worked on the development of a Karst Septic System Maintenance brochure in May 2020. Staff will continue to meet and audit materials.</b>	2020	2021	one-time	One-time – some progress
3.1	b	Meet with IDEM Media and Communication Services (MACS) to develop outreach material designs and techniques. <b>Progress: NW WSS worked with Indiana Master Watershed Steward Program and MACS to place IDEM logo placement on brochure.</b>	2019	2020	ongoing	Ongoing – some progress
3.1	c	Determine annual use of outreach and education materials. <b>Progress: NPS education and outreach began discussing updating materials in March 2020. NPS education and outreach committee met on 4/23/20 to discuss outreach materials update. WSS worked on the development of a Karst Septic System Maintenance brochure. Staff revised the NPS Funding Matrix and it was posted on the IDEM webpage 5/12/20.</b>	2019	2020	ongoing	Ongoing – some progress
3.2		Continue meetings with partners to discuss strategic messaging for the state on septic system care. <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

3.2	a	Work with partners to determine the best methods for septic messaging. <b>Progress: NPS staff is very involved with the LMCP OSDS program's messaging and tools for septic system care in the following ways: SC participated in conference call with IDNR 9/25/19. WSS participated in meetings with LMCP 1/28/20, 4/30/20, 5/7/20, 5/14/20, 5/19/20, 6/8/20, 7/2/20, 7/21/20 and 7/30/20.</b>	2019	2020	ongoing	Ongoing – significant progress
3.2	b	Work with partners to identify the target audience and deploy education methods. <b>Progress: SC discussed with INOT March 2020, placement of watershed signs along the state highways. The application has been denied as of now but may be reassessed in the future.</b>	2020	2023	ongoing	Ongoing – some progress
3.2	c	Reconvene IDEM's internal septic subcommittee on septic care and meet regularly. <b>Progress: NPS staff on this committee is very involved with the LMCP OSDS program been involved with the best messaging and tools for septic system care and provided updates at monthly NPS staff meetings.</b>	2019	2023	ongoing	Ongoing – some progress
3.2	d	Publicize success stories. <b>Progress: IDEM was not made aware of any septic success stories in FFY 2020</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: SC and NW WSS participated in the bi-monthly Rural Wastewater Task Force (RWWTF) meetings held 11/15/19, 1/6/20, 3/12/20, and 4/9/20. NW WSS attended IOWPA board meetings 5/26/20, 6/1/20, 6/11/20, and 7/8/20. NW WSS participated in the Urban Water Partnership meeting 7/9/20 and the Kankakee River-Yellow River Basin Development Commission meetings 2/5/20 and 4/9/20.</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. NPS staff attend 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>	2019	2023	ongoing	Ongoing – significant progress
3.2	g	Translate lessons learned from Northwest Indiana, statewide. <b>Progress: Ongoing discussions with a statewide nonprofit would allow some of the OSDS activities taking place in NW IN to be expanded statewide, should plans come to fruition. The NW IN WSS is now the NPS representative on the Rural Wastewater Task Force, the statewide analog to the northwest Indiana Septic System Workgroup. In this role, she will be able to share lessons learned with this group to broaden the impact of methodologies piloted in NW IN.</b>	2020	2023	ongoing	Ongoing – significant progress
3.2	h	Develop and maintain septic outreach HUB on IDEM's website (ITOSS), POS materials and other. <b>Progress: Development of materials related to septic systems for the IDEM website began this year with the NW and Central WSS's final projects for the IWLA.</b>	2019	2023	ongoing	Ongoing – some 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 became the PWQ chair and attended steering committee meetings 12/4/19, 1/29/20, 3/4/20, 4/8/20, 5/6/20, and 6/3/20. She participated in workdays 11/6/19, 12/4/19, 5/6/20 and 7/1/20. In May 2020 she inquired with WAPB staff on the possibility of a macroinvertebrates and other materials for the education area.</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, AFSM). <b>Progress: NE WSS attended the Collamer Lowhead Dam removal on Eel River 1/9/20. NE WSS attended meeting with partners 2/3/20 to discuss the potential removal of 2 dams in Logansport. NE WSS attended a Silver Jackets webinar 4/27/20. NE WSS attended a Silver Jackets meeting 3/19/20, 4/16/20, 5/21/20, 6/18/20, and 7/16/20 and requested to be on the low-head dam initiative and fluvial erosion hazards subcommittees.</b>	2019	2023	ongoing	Ongoing – significant progress
3.3	b	Assist IDEM Wetlands Program with meeting goals and objectives of the State Wetland Plan. <b>Progress: NE WSS reached out to Wetlands Program 5/8/20 offering assistance with the Plan.</b>	2019	2023	ongoing	Ongoing – some progress
3.3	c	Assist Indiana Department of Natural Resources meet Goals and Objectives with their Stream Mitigation Program. <b>Progress: IDEM staff and DNR met 3/11/20 to discuss partnership with the Indiana Stream &amp; Wetland Mitigation Program. NE WSS reached out to DNR 6/16/20 to offer help with the IN SWMP promotion.</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: NE WSS attended the Collamer Lowhead Dam removal on Eel River 1/9/20. NE WSS attended meeting with partners 2/3/20 to discuss the potential removal of 2 dams in Logansport. NE WSS attended a Silver Jackets webinar 4/27/20. NE WSS attended a Silver Jackets meeting 3/19/20, 4/16/20, 5/21/20, 6/18/20, and 7/16/20 and requested to be on the low-head dam initiative and fluvial erosion hazards subcommittees.</b>	2019	2023	ongoing	Ongoing – significant progress
3.3	e	Reconvene IDEM's internal hydromodification subcommittee on state issues and initiatives and meet regularly. <b>Progress: The NE WSS has been appointed the head of this committee and discusses any updates and progress at monthly staff meetings when appropriate. She has attended the Collamer Lowhead Dam removal on Eel River 1/9/20. NE WSS attended meeting with partners 2/3/20 to discuss the potential removal of 2 dams in Logansport. NE WSS attended a Silver Jackets webinar 4/27/20. NE WSS attended a Silver Jackets meeting 3/19/20, 4/16/20, 5/21/20, 6/18/20, and 7/16/20 and requested to be on the low-head dam initiative and fluvial erosion hazards subcommittees.</b>	2019	2023	ongoing	Ongoing – significant progress
3.4	a	Meet with partners to discuss issues regarding sediment and nutrient pollution (ICP partners, USGS). <b>Progress: The IDEM internal sediment and nutrient committee attended the Great Lakes Water Quality Agreement Nutrients Annex Webinar: Update on Nutrient Reduction</b>	2019	2023	ongoing	Ongoing – significant progress



		Efforts in Lake Erie 10/15/19, the Western Lake Erie Report Card Webinar in the WLEB webinar 12/19/19, the WLEB meeting held at Manchester University on 12/20/19, Western Lake Erie Basin Domestic Action Plan (WLEB DAP) Advisory Committee 7/31/20. NPS staff participate in the monthly Conservation Cropping Systems Initiative (CCSI) conference calls.				
3.4	b	Publicize success stories. <b>Progress: in FFY 2020, there were no sediment and nutrient success stories to publicize. Due to the COVID-19 crisis, no sediment and nutrient success stories were developed to publicize in FFY 2020.</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 has not 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. In addition, these strategies are supported by 319 grant projects, including the FFY 2016 St. Marys Initiative project.</b>	2019	2023	ongoing	Ongoing – significant progress
3.4	d	Support implementation of the <i>Indiana Annex 4 DAP</i> education/outreach goals. <b>Progress: IDEM staff was heavily involved in developing the Annex 4 Domestic Action Plan. Annex 4/DAP meetings/conference calls were held on 10/16 &amp; 17/19, 11/14 &amp; 15/19, 3/10/20, 4/21 &amp; 22/20, 6/11/20, and 7/31/20. 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 quarterly. <b>Progress: The subcommittee met 12/2/19, 12/20/19, and 2/5/20, participated in partner events 10/15/19, 7/31/20 and gave updates as needed at the monthly NPS staff meetings.</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: Seven workshops have been completed, two were scheduled as of June 15, 2020 and another is in the planning stage. Six workshops were cancelled due to COVID.</b>	2019	2023	ongoing	Ongoing – some progress
3.6	a	Produce 5 "Success Stories" (U.S. EPA WQ-10a Strategic Measure) by 2023 and publicize within Indiana. <b>Progress: In FFY 2020, Indiana's Little Hogan Creek Success Story was published.</b>	2019	2023	annually	Complete for 2020
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 2020.</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 Central and NW WSS worked on the development of a Karst Septic System Maintenance brochure.</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 became the PWQ chair and attended steering committee meetings 12/4/19, 1/29/20, 3/4/20, 4/8/20, 5/6/20, and 6/3/20. She participated in workdays 11/6/19, 12/4/19, 5/6/20 and 7/1/20. In May 2020 she inquired with WAPB staff on the possibility of a macroinvertebrates and other materials for the education area.</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 7/20/20. Senior Project Manager participated as a Team Lead for Session 1 on 1/8 – 1/9/20 and NP staff participated with presentations and networking. NPS staff participated in the IWLA graduation ceremony June 30, 2020.</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: NPS staff participated in the Conservation Cropping Systems Initiative (CCSI) Regional conference monthly conference calls. NW WSS participated in the Kankakee River Basin- Yellow River Basin Development Commission meeting 2/5/20 and 4/9/20.</b>	2019	2023	ongoing	Ongoing – significant progress
3.7	d	Provide regular communication to regional groups of nonpoint source pollution watershed efforts. <b>Progress: Watershed Specialist communicate with groups in their regions on an as-needed basis. For example, on 10/15/19 NPS specialist met with regional representatives regarding volunteer opportunities in the White River watershed.</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 – significant progress
3.8	a	Support partners for the state initiatives on septic system care. <b>Progress: NPS staff is very involved with the LMCP OSDS program messaging and tools for septic system care in the following ways: SC participated in conference call with IDNR 9/25/19. WSS participated in meetings with LMCP 1/28/20, 4/30/20, 5/7/20, 5/14/20, 5/19/20, 6/8/20, 7/2/20, 7/21/20 and 7/30/20. NPS staff attended the Indiana Onsite Wastewater Professionals Association board meeting with Coastal Program staff 6/11/20. WSS met ISDH on LMCP OSDS measure 5/15/20. Section Chief reached out to ISDH, IOWPA and IDEM management, and legislative liaison regarding coastal needs 5/2020.</b>	2019	2023	ongoing	Ongoing – significant progress
3.8	b	Support partners for the state initiatives on hydromodification. <b>Progress: NE WSS attended the Collamer Lowhead Dam removal on Eel River 1/9/20. NE WSS attended meeting with partners 2/3/20 to discuss the potential removal of 2 dams in Logansport. NE WSS attended a Silver Jackets webinar 4/27/20. NE WSS attended a Silver Jackets meeting 3/19/20, 4/16/20, 5/21/20, 6/18/20, and 7/16/20 and requested to be on the low-head dam initiative and fluvial erosion hazards subcommittees.</b>	2019	2023	ongoing	Ongoing – significant progress

3.8	c	Support partners for the state initiatives on sediment and nutrient pollution. <b>Progress: NPS staff forward relevant trainings to watershed groups in their regions. For example, NE WSS forwarded a cover crop and soil health training to the NE watershed groups on 5/6/20.</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 Leader for participants. In both roles, she provides guidance and support as needed. Also, the WSS and Section Chief attend one of the face-to-face meetings and present on the Clean Water Act and the NPS program’s role in improving water quality. In FFY 2020, the Academy had 34 participants.</b>	2019	2023	ongoing	Ongoing – significant progress
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: The ICP Training and Certification Program continues to meet with support from IDEM WSS.</b>	2019	2023	ongoing	Ongoing –

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 the NPS 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>Progress: In FFY 2020, monitoring for the Laughrey Creek TMDL occurred on 10/7/19 and 10/8/2019. On 10/23/19 TMDL and NPS staff attended the Laughrey Creek Water Monitoring Demonstration Day and a draft public meeting was held July 15, 2020. This TMDL is anticipated to be submitted to EPA by the end of the FFY. The North Laughrey Creek WMP project sponsored by Historic Hoosier Hills RC&amp;D began on 12/15/2019. Monitoring for the Maria Creek TMDL took place on 11/18/19, 1/15/20, 2/10/20, 3/9/20,</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
		<b>6/15/20, 6/16/20, 6/22/20, and 6/23/20. The Sullivan County SWCD applied for, and was awarded, a 319 grant to write a WMP to implement the Maria Creek TMDL using FFY 2020 funds. TMDL and NPS staff met to discuss the potential Vernon Fork TMDL project in a Site Selection Meeting that took place on 1/16/20. An initial meeting to discuss the potential TMDL and WMP project took place with TMDL, NPS staff and Jennings County SWCD on 1/31/20. IDEM held a Characterization meeting for Vernon Fork 2/26/20.</b>				
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
4.3	c	Develop database. <b>Progress: NPS and IDEM staff worked diligently on this project for most of FFY2019 and 2020. A contractor was hired to develop the database, however due to unforeseeable events this project was postponed indefinitely. Budget constraints and uncertainty going forward called for the cancellation of contractors working for the State. NPS staff met 7/30/20 to discuss the reallocation of the remaining funds.</b>	2019	2021	one-time	See Adaptive Management
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: In FFY 2020 seven WMP implementation projects were funded. Six implementation-only projects were chosen to receive funding and were proposed to U.S. EPA, including Region of the Great Bend, South Fork Blue River, Big Pine, Walnut Creek-Tippecanoe River, Deer Creek-Sugar Creek, Otter Creek. One combination grant of planning and implementation, Maria &amp; No Business Creek, was also proposed for funding.</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 2020.</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 2020
4.7		Coordinate with IDNR Stream Mitigation Program. <b>Progress: NE WSS reached out to Wetlands Program 5/8/20 and offered assistance in implementing the State Wetland Plan goals.</b>	2019	2023	ongoing	Ongoing – some 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
4.8		Update IDEM 2009 WMP Checklist. <b>Progress: Work on the checklist paused for several months due to staff turnover. It is currently being edited and reviewed and the deadline for comments from NPS staff is December 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: Little Hogan Creek Success Story was submitted for WQ-10a in FFY 2020.</b>	2019	2023	annually	Complete for 2020
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 2020 solicitation was published on April 1, 2019. Twenty notices of intent to apply were received on or before June 1, 2019. Full proposals were due September 1, 2019 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 three monitoring proposals to be funded by CWA §205j monies.</b>	2019	2023	annually	Complete for 2020
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 2020 is available in Table 1 and on page 36 of this report.</b>	2019	2023	annually	Complete for 2020
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 2020 is available in Table 1 and on page 36 of this report.</b>	2019	2023	annually	Complete for 2020
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 2020 is available in Table 1 and on page 36 of this report.</b>	2019	2023	annually	Complete for 2020
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 2020 is available in Table 1 and on page 36 of this report.</b>	2019	2023	annually	Complete for 2020
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 2020 is available in Table 1 and on page 36 of this report.</b>	2019	2023	annually	Complete for 2020

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

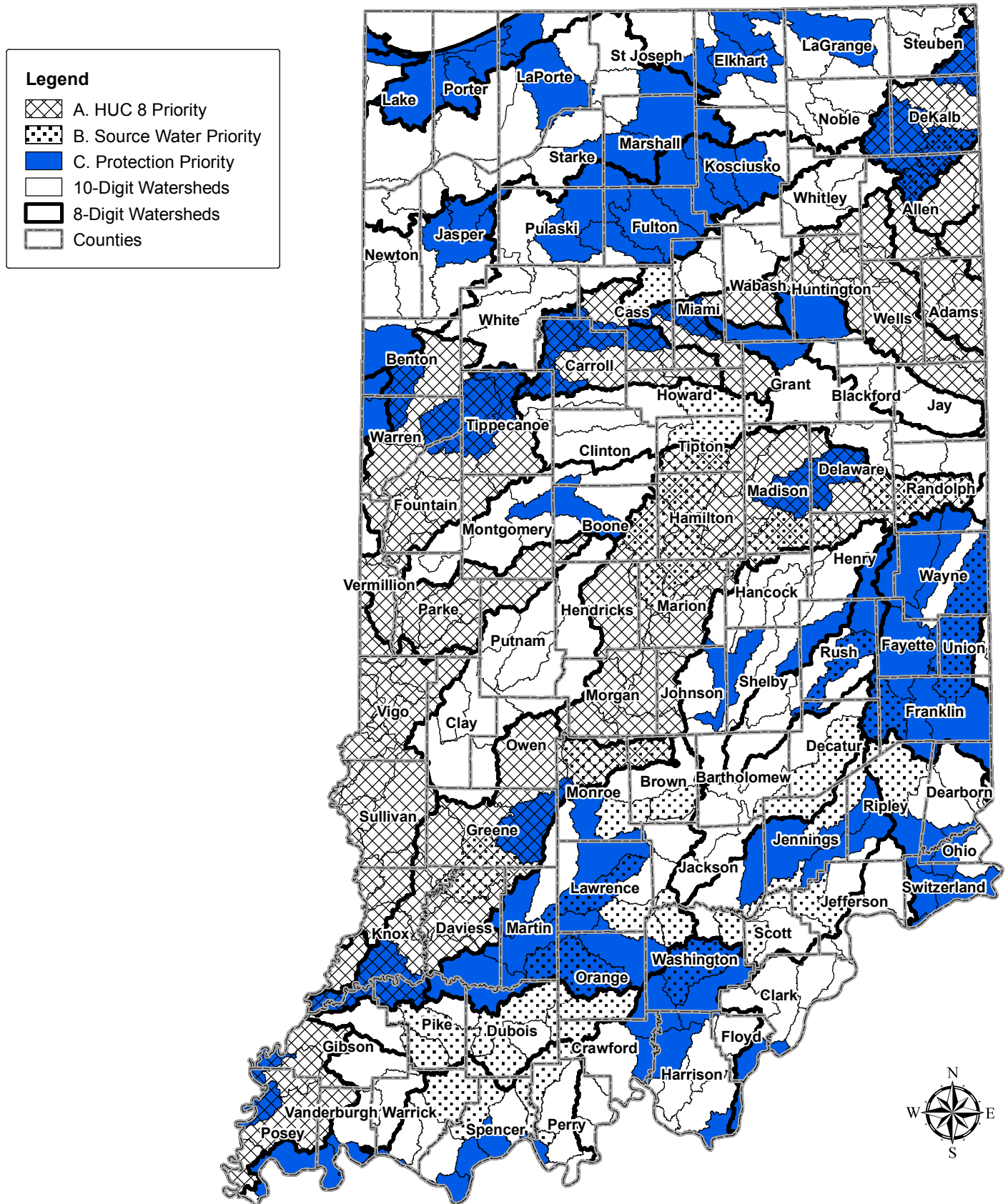
5.1		Continue to encourage watershed planning activities in watersheds with Category 1 waters. <b>Progress: Category 1 waters in Indiana include waters that are habitats for endangered, rare, and threatened species and waters used as source waters. In FFY 2020, the §319 solicitation included priorities 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 2020 and 2021 solicitations. Branch Chief attended the Source Water Managers Meeting 10/1/19. Source waters are also a priority of the Indiana Conservation Partnership.</b>	2019	2023	annually	Complete for 2020
5.3		Participate as requested in Phase II wellhead protection planning. <b>Progress: Most communities have completed Phase II wellhead protection planning. As public water supplies request to coordinate with local watershed groups on subsequent planning activities, watershed specialists can make those connections. No requests were made this fiscal year.</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 2020 and 2021 solicitations.</b>	2019	2023	annually	Complete for 2020
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 FFY 2020.</b>	2019	2023	annually	Complete for 2020 – 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> <li>• Increase acres of riparian buffers</li> <li>• Reduce stream bank erosion</li> </ul>	2019	2023	Ongoing	Ongoing – significant progress

5.7		Support implementation of the State Wetland Plans Goals and Objectives that aligns 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> <b>NE WSS began communicating in April 2020 with IDEM wetlands Program on how NPS can get involved in the plan.</b>	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>IDEM’s Ground Water Section no longer participates in private well decommissioning. When wells in need of decommissioning come to the attention of NPS staff, they will work with DWSRF or DNR, depending upon the user of the well. No wells in need of decommissioning came to the attention of NPS staff in FFY2020.</b>	2019	2023	ongoing	Ongoing – no need for this FFY

- Indiana State Nonpoint Source Pollution Management Plan 2020 Action Register



# Section 319 Priority Watersheds (FFY 2020)



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

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

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

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





## Appendix C

### Open and Pending 319 Projects 10/1/19 - 9/30/20

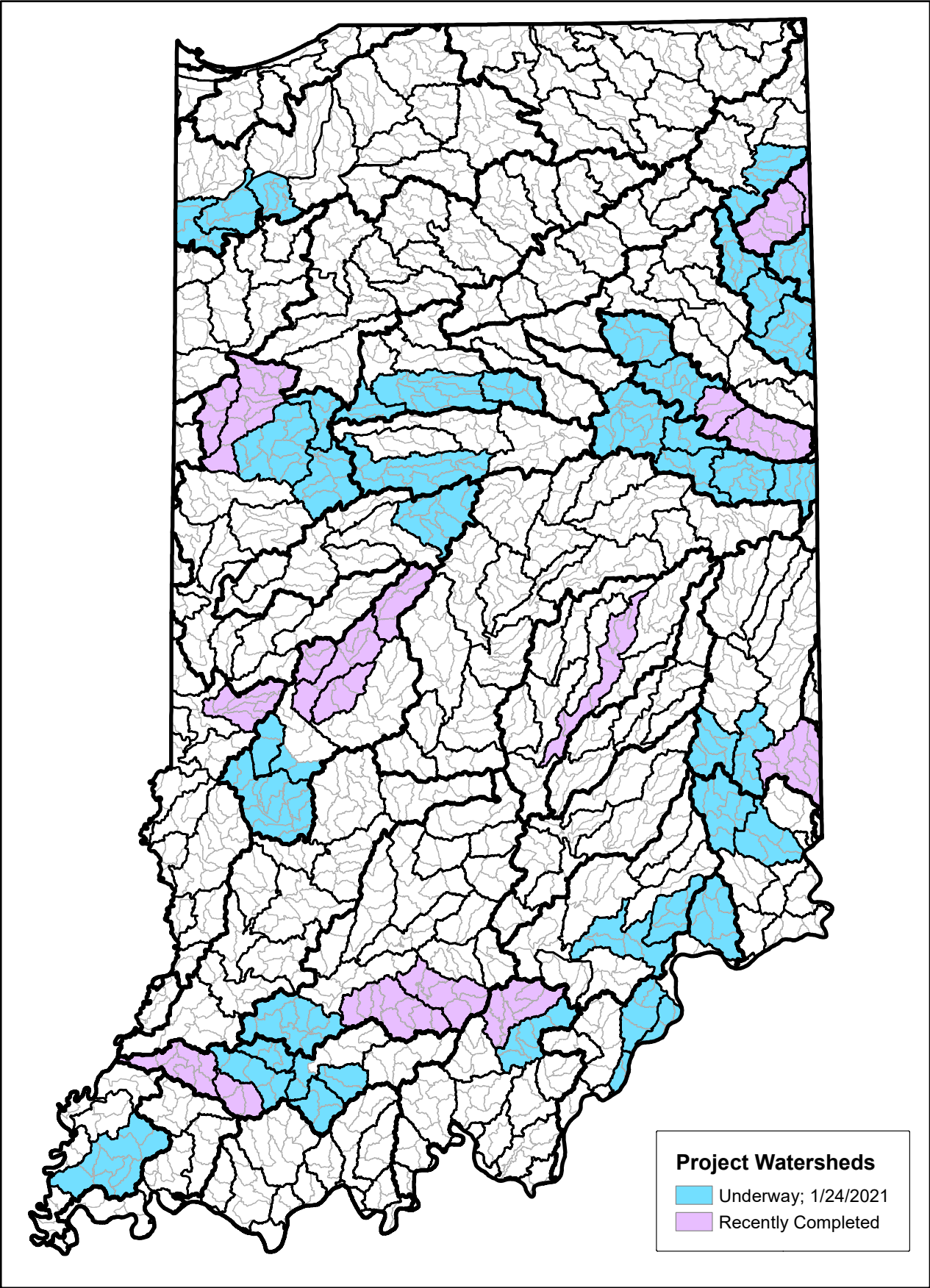
FFY	ARN/ Contract	Contractor	Project	Status	Start	End	Type
<b>2016</b>							
	19146	Purdue University	St. Mary's Initiative	Open	6/6/2017	6/5/2021	Assessment
	19223	Benton County SWCD	Big Pine Creek Watershed Implementation	Open	5/1/2017	11/17/2020	Restoration/Implementation
	6-240	Dearborn County SWCD	Whitewater River WMP Implementation	Open	11/10/2016	11/9/2020	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>							
	37186	Dearborn County SWCD	Whitewater River Watershed	Open	2/1/2020	4/30/2023	Restoration/Implementation
	41471	Sullivan County SWCD	Turtle Creek, Turman Creek, Kelley Bayou Implementation Phase 2	Open	5/12/2020	5/11/2023	Restoration/Implementation
	37162	Decatur County SWCD	Salt-Pipe Implementation	Open	11/1/2019	1/31/2023	Restoration/Implementation
	37187	Historic Hoosier Hills	Indian Kentuck Watershed Implementation	Open	3/25/2020	3/24/2023	Restoration/Implementation
	37361	Orange County SWCD	Lost River Watershed Implementation	Open	12/19/2019	12/18/2022	Restoration/Implementation
	37907	Clinton County SWCD	Browns Wonder-Sugar Creek Implementation	Open	10/28/2019	10/27/2022	Restoration/Implementation
	37151	Historic Hoosier Hills	North Laughrey Creek Implementation	Open	12/15/2019	12/14/2023	Restoration/Implementation
	37065	Friends of Lake Monroe	Lake Monroe Watershed Plan Development	Open	10/24/2019	1/23/2022	Planning
<b>2020</b>							
		Sullivan County SWCD	Maria & No Business Creek Watershed Management Plan	pending			Planning
		Wabash River Enhancement Corp	Region of the Great Bend of the Wabash River Implementation	pending			Restoration/Implementation
		Washington County SWCD	South Fork-Blue River Implementation	pending			Restoration/Implementation
		Benton County SWCD	Big Pine Creek Watershed Implementation	pending			Restoration/Implementation
		The Watershed Foundation	Walnut Creek-Tippecanoe River Implementation	pending			Restoration/Implementation

Appendix C

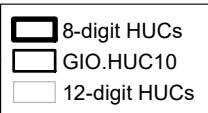
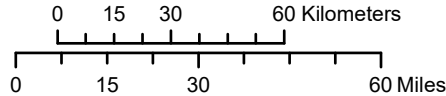
Open and Pending 319 Projects 10/1/19 - 9/30/20

Ouabache Land Conservancy	Otter Creek Implementation	pending	Restoration/Implementation
Carroll County SWCD	Deer Creek-Sugar Creek Implementation	pending	Restoration/Implementation
Gibson County SWCD	Highland Pigeon Watershed Management Plan	pending	Planning
Vanderburgh County SWCD	Lower Pigeon Creek Watershed Management Plan	pending	Planning

# Indiana NPS Projects Through 2020



Mapped By:  
Joanna Wood, OWQ  
Date: 07/01/2020



# Appendix E

## Project Summaries for Closed §319 Projects

### FFY 2016

#### **Lost River Watershed Implementation (ARN# 6-242)**

Orange County SWCD will implement the Lost River Watershed Management Plan (WMP). They will develop and promote a cost-share program to implement best management practices (BMPs) such as cover crops, forage and biomass plantings, nutrient management, residue management, water and sediment control basins, filter strips, riparian buffers, rain gardens and others that address water quality concerns. The SWCD will conduct an education and outreach program designed to bring about behavioral changes that will lead to reduced nonpoint source pollution in the watershed. They will conduct field days or workshops, clean-ups, and meetings of the previously formed Implementation Board. The SWCD will develop and distribute brochures, factsheets, and flyers and will produce articles and press releases. The SWCD will conduct presentations at SWCD Annual Meetings and at events such as Farm Fair (Martin County), Barnyard Carnival (Orange County) or Earth Day/Arbor Day (Washington County).

#### **Treaty Creek-Wabash River WMP (Contract#21440)**

The Wabash River Defenders will produce a watershed management plan (WMP) for the Treaty Creek-Wabash River watershed, Hydrologic Unit Code (HUC) 0512010114. The watershed plan shall include all elements listed in the State's *Watershed Management Plan Checklist* (updated 2009). The WMP must be designed to achieve the reduction in pollutant loads called for in the nonpoint source Wabash River TMDL. They will develop a steering committee of local stakeholders to guide the development of the watershed management plan. The Wabash River Defenders will conduct an education and outreach program designed to bring about behavioral changes that will lead to reduced nonpoint source pollution in the watershed. Their outreach program will include development and distribution of a watershed planning brochure, and quarterly newsletters. They will hold annual community events along with public stakeholder meetings. The Wabash River Defenders will conduct a Hoosier Riverwatch training session. They will conduct a monitoring program to collect data for the evaluation of water quality within the watershed. Water sampling will be completed at a minimum of ten (10) sites at least one (1) time for macroinvertebrates and fish, preferably July through October. Stream reaches which could house the state endangered redbreasted dace will be cataloged as part of the fish sampling. The State's macroinvertebrate Index of Biotic Integrity (mIBI) and the fish Index of Biotic Integrity (IBI) shall be utilized to analyze the collected communities. A habitat assessment shall be conducted during the biological sampling activities utilizing the Qualitative Habitat Evaluation Index (QHEI). The Wabash River Defenders will also conduct a volunteer monitoring program to educate and engage stakeholders using Hoosier Riverwatch protocols monitoring for temperature, dissolved oxygen, Biological Oxygen Demand (BOD), pH, nutrients, turbidity, bacteria (E. coli and general coliforms), and biological monitoring.

#### **Middle Patoka River WMP Implementation (ARN# 6-244)**

Pike County SWCD will implement the Middle Patoka River Watershed Source Water Protection Plan (WMP). They will develop and promote a cost-share program to implement Best Management Practices

## **Appendix E**

(BMPs) such as cover crops, no-till, nutrient management, forage and biomass planting, critical area planting, livestock exclusion, alternative watering systems, heavy use area protection, roof runoff management, field borders, riparian buffers, rain gardens, porous pavement and others that address the water quality concerns outlined in the WMP. The SWCD will conduct an education and outreach program designed to bring about behavioral changes that will lead to reduced nonpoint source pollution in the watershed. They will conduct quarterly steering committee meetings. They will conduct workshops or field days, and a public clean-up event. Pike County SWCD will conduct a yearly public tour of the local drinking water plant. They will develop flyers or brochures, news releases or fact sheets and will promote watershed activities at community events with a portable display.

### **Upper Salamonie River WMP Implementation (Contract# 18273)**

Jay County Commissioners will implement the Upper Salamonie River Watershed Management Plan (WMP). They will develop and promote a cost-share program for the implementation of best management practices (BMPs) by contacting landowners in the area that would benefit from the use of conservation practices. Jay County Commissioners will develop a Quality Assurance Plan for the monitoring activities and conduct a volunteer monitoring program using the Hoosier Riverwatch methods. Jay County Commissioners will also implement an education and outreach program designed to bring behavioral changes and encourage BMP implementation. This will include three field days focused on conservation practices, press releases, Facebook page, and a public education booth and complete a water quality monitoring program.

### **Super Gage Kankakee at Shelby (Contract#31042)**

This project provided continuous water-quality monitoring gage, Kankakee River at Shelby, IN (USGS05518000), for 1 year. The water-quality gage deploys sensors to report real-time continuous values of nitrate, phosphate, turbidity, water temperature, pH, dissolved oxygen, and specific conductance. Water-quality samples were collected to verify mathematical models which computed real-time, continuous suspended sediment, total nitrogen, and total phosphorus concentrations and instantaneous and daily loads. This project also sought to better understand the total sediment load of the Kankakee River at Shelby by collecting concurrent measurements of suspended sediment and bedload sediment.

### **FFY 2015**

#### **School Branch NWQI Study (EDS# A305-6-5)**

The United States Geological Survey (Survey) will collect and interpret scientific data about water quality and water quantity in the School Branch watershed in Hendricks County, Indiana as part of the National Water Quality Initiative. The Survey will operate one water-quality monitoring gage on School Branch at CR 750 N that will provide continuous data for nitrate, phosphate, turbidity, pH, temperature, dissolved oxygen, and specific conductance; three streamflow gages on School Branch at Maloney Road, at CR 750 N, and at Noble Drive that will provide continuous data on water quantity represented by stream stage and stream discharge; and four monitoring wells near School Branch at CR 750 N that will provide continuous data on depth to groundwater and groundwater temperature. The Survey will maintain a web page to display continuous data from the School Branch gages and wells for stream stage and

## Appendix E

discharge, continuous water quality, and groundwater depth and temperature, and maintain a School Branch project web page to communicate information about the study. The Survey will participate in public and technical forums to present the results of the School Branch monitoring. The Survey will publish a Scientific-Investigations Report to describe the methods and data from this project.

### **Indian-Kentuck Implementation (EDS# A305-6-1)**

The Historic Hoosier Hills RC&D (HHH) will develop and implement a cost-share program for BMPs such as conservation tillage, cover crops, pasture/hayland improvement, livestock exclusion, riparian buffers and others that address the water quality concerns outlined in the Indian Kentuck WMP. The HHH will conduct an education and outreach program to educate stakeholders on water quality and BMPs including steering committee meetings, public meetings, field tours/days, workshops, brochures, river clean-ups, and posting information about the project and educational materials on the Historic Hoosier Hills RC&D watershed web site.

### **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 10/1/19- 9/30/20

FFY	ARN/ Contract	Contractor	Project	Status	Start	End	Type
2017	25874	Huntington County SWCD	Upper Wabash River Phase 3 WMP	Open	4/25/2018	4/24/2021	Planning
2018	30926	ORSANCO	Installation and Operation of Two Continuous Monitors on the Ohio River	Open	3/18/2019	3/17/2020	Assessment
2019	31203	Jasper County SWCD	Lower Kankakee River Watershed Management Plan	Open	3/18/2019	3/31/2021	Planning
		Allen County SWCD	Flatrock-Auglaize River WMP	Open	11/26/2019	11/25/2021	Planning
		USGS	Kankakee Gauge at Shelby	Open	3/18/2019	3/31/2021	Assessment
2020		Lawrence County SWCD	Lower Salt Creek WMP	pending			Planning
		ORSANCO	Continuous Monitors on Ohio River III	pending			Assessment
		Delaware County	Upper White River WMP	pending			Planning