



2021

# FFY 2021 Annual Report

INDIANA DEPARTMENT OF ENVIRONMENTAL  
MANAGEMENT

Office of Water Quality, Nonpoint Source Program

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# 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 [2020 Indiana Integrated Water Monitoring and Assessment Report](#) states that potential sources impacting Indiana waters include nonpoint sources that affect 13,906 miles of streams, while unknown sources affect 11,617 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.

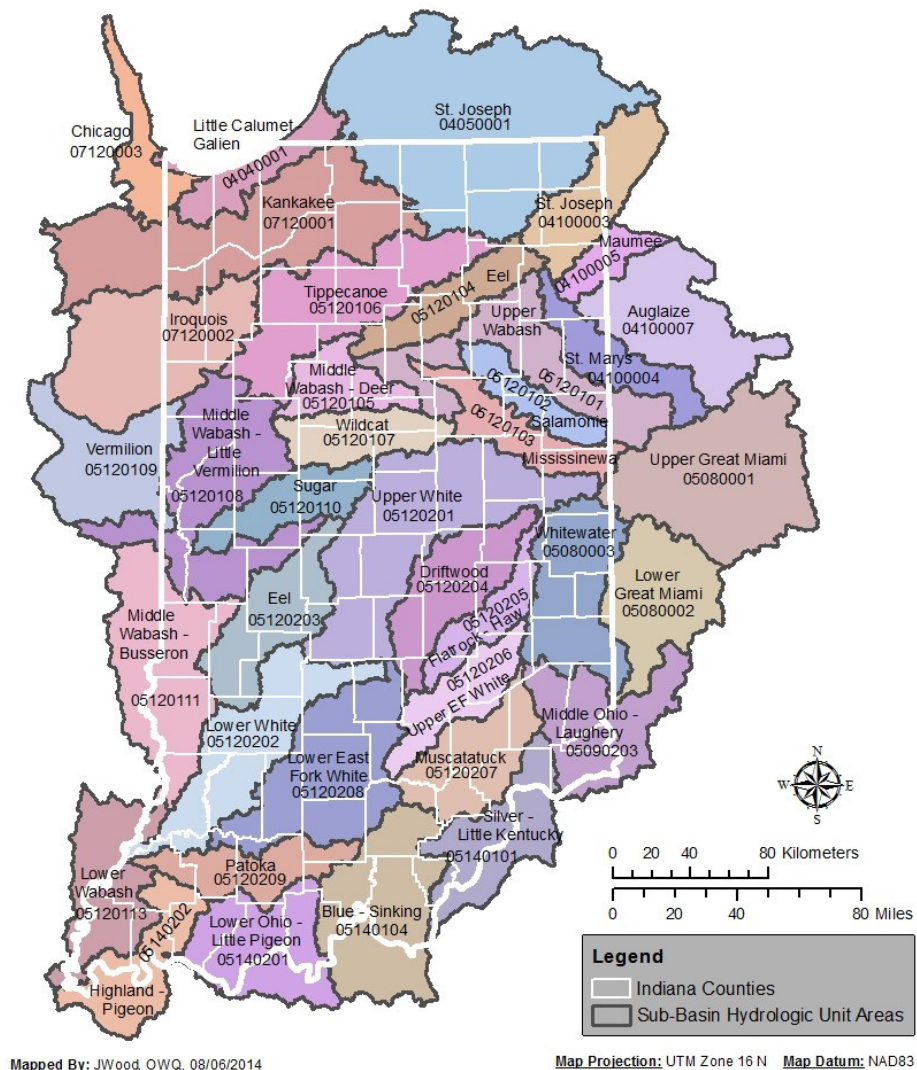


Figure 1. Indiana 8-digit HUC Watersheds.

The 2021 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) 2021 (October 1, 2020 through September 30, 2021), 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 2021 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 2021 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 2020 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, which is now on a five-year revision schedule, was updated in February, 2021.

### 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. 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.

Significant actions have been taken to address nutrient inputs from both urban and rural landscapes, including point and nonpoint sources, and to restore more natural hydrology and ecological functions. Implementation of long-term control plans for combined sewer overflow communities, such as the deep tunnel project in Fort Wayne, coupled with sewer extensions to areas with failing septic systems in Adams County, for example, will greatly reduce sewage and its nutrients from entering the waterways. Native plantings and riparian buffers along the Maumee River will enhance natural hydrology and curtail soil erosion.

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

For more than 80 years, USDA's Natural Resources Conservation Service (NRCS) has worked with farmers and landowners to help them manage natural resource concerns on their land and improve the health of their communities.

NRCS helps landowners develop conservation plans and provides technical assistance for natural resource management, including the installation of conservation practices and systems that meet technical standards and specifications. NRCS also provides financial assistance through Farm Bill programs and targeted initiatives that work with partners on protecting critical natural resources in geographical areas of concern. NRCS' standards and specifications are utilized for many of the cost-share practices implemented through §319 grants, and NRCS Farm Bill conservation programs are utilized as one funding source for implementing local watershed management plans.

Despite the multitude of challenges 2020 presented, that work continued thanks to the extraordinary

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<sup>3</sup> NRCS releases each fiscal year's report in the subsequent calendar year. Thus, NRCS released FFY 2020 reports in 2021 and therefore, this section of the report shares activities that took place in FFY 2020.

effort of our statewide staff. Even as our workforce was forced to work remotely for most of the year due to the COVID-19 pandemic, they continued to impact and help farmers and landowners throughout the state of Indiana. More than 1,000 contracts were signed for our technical and financial assistance programs putting more than \$40 million of assistance into Indiana in order to protect and improve our soil, water, forestry, energy, and wildlife resources.

For Federal Fiscal Year (FFY) 2020, NRCS programs in Indiana that support NPS pollution reduction/amelioration efforts included:

### **Agriculture 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 2020, NRCS helped Indiana landowners protect and restore 2,231 acres of wetlands.

### **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 \$8.1 million in CSP funding in FFY 2020. A total of 122 new contracts received funding to treat 74,117 acres of cropland, pasture, and forest.

### **Environmental Quality Incentives Program**

Indiana received more than \$25.4 million in EQIP funding in FFY 2020. A total of 958 contracts were entered into that will address natural resource concerns on 146,607 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. 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 2020, this project had 27 contracts which encompassed 5,116 acres and allocated \$359,733.
2. Historically Underserved Farmers: This fund category is for applicants defined as socially disadvantaged, veteran, limited resource or beginning farmer. In FFY 2020, this project had 56 contracts which encompassed 3,243 acres and allocated nearly \$1.6 million.
3. Mississippi River Healthy Basin initiative: Through MRBI, NRCS and its 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 Mississippi River Basin. In FFY 2020, this project had two contracts which encompassed 107 acres and allocated \$5,529.

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 2020, this project had 10 contracts which encompassed 85 acres and allocated \$106,867.
5. National Water Quality Initiative: NWQI is a joint initiative between NRCS and the Environmental Protection Agency (EPA) to address agricultural sources of water pollution, specifically nutrients, sediment and pathogens in priority watersheds, with a special component for source water protection. This strategic approach leverages funds and provides streamlined assistance to help individual agricultural producers take needed actions in impaired watersheds. In FFY 2020, this project had 12 contracts which encompassed 4,268 acres and allocated \$602,251.
6. 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 2020, this project had seven contracts which encompassed 208 acres and allocated \$54,155.
7. 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 2020, this project had nine contracts which encompassed 1,831 acres and allocated \$193,961.
8. Specialty Crop: NRCS offers technical and financial assistance to specialty crop growers to enhance water, soil, air and other natural resources. In FFY 2020, this project had 34 contracts which encompassed 207 acres and allocated \$295,213.
9. 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 2020, this project had 23 contracts which encompassed 3,548 acres and allocated \$715,747.
10. 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 2020, this project had 96 contracts which encompassed 2,113 acres and allocated \$1.6 million.

### **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 42 contracts for \$609,435 on 5,530 acres in FFY 2020.

For FFY 2020, NRCS funded the following projects that affected Indiana:

1. 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 2020, this project had 11 contracts which encompassed 767 acres and allocated \$81,358.
2. 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 2020, this project had two contracts which encompassed 105 acres and allocated \$21,727.
3. 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 2020, this project had nine contracts which encompassed 1,641 acres and allocated \$131,205.
4. 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 2020, this project had six contracts which encompassed 573 acres and allocated \$207,226.
5. 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 2020, this project had 14 contracts which encompassed 2,445 acres and allocated \$167,919.

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 880 unique individuals have participated in one or more of the training sessions. Due to the COVID pandemic, 2020 trainings quickly pivoted to a virtual format. Certain trainings, such as the Core Soil Health Series, will continue to be held virtually, as content can readily be delivered in that platform, and enrollment in Core trainings have quintupled since 2019 because of their ease of access. Other trainings that require a more hands-on approach will be held either hybrid or in-person to ensure attendees time and travel is used most efficiently.

Soil Health Outreach includes support of locally led partnerships' efforts to promote soil health practice adoption, including technical, logistical, and promotional support of field days, workshops, and other events. This support also includes the practical application of conservation social science in the management of these diverse groups of partners, the targeting of influential audiences and decision makers, and the crafting of messaging for target demographics that is both factual and resonant. In 2020, although CCSI only participated in 2 in-person events after mid-March, the quick pivot to virtual formats still allowed the program to reach some 4,650 attendees. Since 2011, CCSI has materially participated in over 660 events reaching approximately 40,600 attendees, including nearly 3,000 in the first two quarters of 2021.

With CCSI's adaptation to a virtual format, "Virtual Farm and Shop Visits" were added to outreach efforts. Farmers and specialists from across the U.S. are shipped equipment needed to broadcast live from their farm fields and shops. The live format has allowed attendees from across the globe to ask their questions live of featured experts. In addition, processed videos are shared via the CCSI YouTube channel and are also embedded in the program's website. Since officially launching in January 2021, over 600 people have attended an event "live" and over 1000 have viewed the videos later.

The "Virtual Field Day Kits" used for virtual shop and farm visits have also been made available to Indiana partners. These kits include Bluetooth headsets and lapel mics, tripods, and smartphone/tablet adapters. As Indiana begins to resume in-person events, partners are beginning to explore the potential of hybridizing them by livestreaming for individual who may live farther away.

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. Since it's inception, episodes of the podcast have been downloaded nearly 10,000 times.

Also, in 2020, CCSI developed a series of scalable graphics representing common cover crops and their rooting structure. Available free for non-commercial uses, these graphics have been downloaded over 480 times from the CCSI website alone, including downloads from every continent except Antarctica. In addition, the national Sustainable Agriculture Research and Education program is developing publications using the imagery.

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

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. In 2020, an Indiana American Water environmental grant was procured to provide updated signage and seating in an expanded area of the exhibit. What was once an adjoining exhibit space has become available, and by expanding into this area, the PWQ will be using a USDA NRCS soil health trailer and partnership staff to give live demonstrations regarding the benefits to soil of conservation cropping systems.

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 2020, grants to six Indiana



districts and the IASWCD/CCSI to help boost technical assistance for agriculture and conservation implementation in Indiana.

### **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 conservation practices using 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 program and install water quality and erosion prevention practices on environmentally sensitive land

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<sup>4</sup> ISDA releases each fiscal year's report in the subsequent calendar year. Thus, ISDA released FFY 2020 reports in 2021 and therefore, this section of the report shares activities that took place in FFY 2020.

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 16, 2021 includes 20,809 acres of conservation practices installed utilizing \$9.4 million state dollars and protecting over 948 miles along Indiana's rivers, lakes, and streams. 7,996 acres are protected through bottomland timber establishments in the floodplain, and 5,508 acres are protected through wetland restorations. Enrollment in the CREP Program is over 21,820 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. For state fiscal year 2021, 13 applications submitted by SWCDs were funded, totaling \$819,651 and impacting 28 SWCDs. There were also two non-SWCD led projects that were awarded funding totaling \$156,000 to the Southern Indiana Cooperative Invasives Management and the Indiana Association of Soil and Water Conservation Districts. Applications for the 2021 CWI Grant cycle will be accepted through September 9, 2021.

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 each year- 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 what 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. For the next 8 years, it expanded to include many areas of the state and the program had enrolled over 1,000 fields in more than 60 counties in Indiana. In 2018, there were 33 groups statewide including approximately 400 producers, 1,080 fields, and about 75,000 acres. In 2019, the program went through some major changes as explained above.

### *Cover Crop Premium Discount Program*

The [Cover Crop Premium Discount Program](#) was launched in 2020 in partnership between ISDA, The Nature Conservancy, and the USDA Risk Management Agency. The goal of the program is to expand cover crop use among farmers in the Upper White watershed in Randolph, Madison, Delaware, Henry, Hamilton, and Tipton counties. The focus is to target first time cover crops users but others are eligible as well. Eligible growers can receive a \$5.00/acre premium discount on the following year's crop insurance invoice for verified acres.

### *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. 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. This will allow for more accurate reductions to be tracked and better assess the progress being made on improving water quality.

The [\*Indiana Science Assessment\*](#) strategy was developed and finalized in September of 2019 by 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. The purpose of the Science Assessment is to determine water quality trends in Indiana, as well as to improve the current method that Indiana uses to calculate reductions in sediment, nitrogen, and phosphorus loads from conservation practice implementation.

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

Component 1: Determine historic and ongoing nutrients loads leaving, and at a few key sites, entering the state, and also by watershed basins used in the *State Nutrient Reduction Strategy*.

Through this component, water quality monitoring data at key locations around the state have been identified, analyzed, and used to determine the trend of nutrient loads leaving that state at the pour points on the state borders, and at pour points within the major river basins in the state. Data is being analyzed using the USGS Weighted Regressions on Time, Discharge, and Season (WRTDS). Analysis has been conducted and a report on the results of the analysis will be available later in 2021. Partners and stakeholders within the state that are a part of the sub-committee for Component 1 include staff from the Indiana State Department of Agriculture, the Indiana Department of Environmental Management, the United States Geological Survey, and the Indiana Chapter of The Nature Conservancy.

Component 2: Improve the method to quantify nutrient reductions from conservation practices, including dissolved nutrients, and determine efficiency of practices in reducing loads.

ISDA was awarded a grant from EPA through the Gulf of Mexico Hypoxia Task Force to help advance the

state's nutrient reduction strategy, which is being used to help carry out Component #2. A Research Associate was hired and began work at Purdue University in January of 2021 to compile, review, and analyze research to identify or develop a standardized tool for calculating nutrient load reductions from conservation practices, and be used in determining the percent efficiency of certain conservation practices on reducing the nitrogen and phosphorus loads. A science committee made up of researchers and experts from Indiana universities and colleges, and research organizations like USDA, Agricultural Research Service (ARS) and the USGS, was formed to provide experience and insight on nutrient processes and the effects of conservation practices. This component will also include a collective list and consistent definitions of conservation practices.

The Science Assessment Core Team determined a list of 10 practices that will be part of Phase 1/Year 1 (2021) of the project, and began discussion on the next list of practices for Phase 2/Year 2 (2022).

The first ten practices will be:

Soil Health

1. No-Till
2. Reduced Tillage
3. Cover Crops

Nutrient Management

4. Nitrogen Rate
5. Phosphorus Rate (based on soil test P)
6. Nitrogen Timing
7. Subsurface P application

Edge-of-Field

8. Drainage Water Management
9. Filter Strips/Riparian Buffers
10. Grassed Waterways

Following the completion of the Indiana Science Assessment, the list of practices and their associated load reductions and percent efficiencies will be reviewed each year to improve accuracy of the Science Assessment as more research and data are known.

*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 2021 spring transect results, Indiana farmers set a conservation record by planting an estimated 1.5 million acres of overwinter living covers, the largest amount ever recorded by the ICP survey. Overwintering living covers (i.e. – cover crops and small grains, like wheat) are known for their environmental benefits. They are typically planted in the fall after harvest and keep living roots in the ground throughout the winter helping to increase organic matter in the soil, improve soil health, and help filter water off of the farm.

Although the conservation transect doesn't differentiate between cover crops and small grains, Indiana

farmers typically plant fewer than 200,000 acres of small grains annually, so cover crops vastly dominate the 1.5 million estimated acres. With the exception of corn and soybeans, cover crops are planted on more acres than any other commodity crop in Indiana.

As a result of the cover crops planted this past year, it is estimated that 1.6 million tons of sediment was prevented from entering Indiana's waterways, which is enough sediment to fill more than 453 Olympic-size swimming pools, along with an estimated 4.1 million pounds of nitrogen and 2 million pounds of phosphorus.

The conservation survey also showed that 62% of farmed acres were not tilled and 18% had employed reduced tillage after the 2020 harvest.

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/divisions/soil-conservation/cover-crop-and-tillage-transect-data/>.

#### *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, and are updated each year with relevant information.

### **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 FFY 2021, \$1,590,770 in 41 grants was awarded to address control of invasive aquatic species, logjam removal from rivers, and sediment removal from publicly accessible lakes.

Several LARE-funded projects feature active measures to improve aquatic habitat, including streambank stabilization with bioengineered practices, stabilization of shorelines on natural lakes, low-head dam removal, and various in-stream measures to benefit fish and other aquatic organisms. LARE projects also feature installation of filter strips, water and sediment control measures, and other practices to reduce erosion and sedimentation in targeted watersheds.

The end results of LARE-funded projects include healthier ecosystems and enhanced recreational opportunities for boating, fishing, and paddling activities. They can also result in increased economic value for businesses, communities, and individuals living near LARE-funded project sites.

#### 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).

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) remained to be approved. 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. Indiana submitted its FINAL 6217 OSDS Measure program to NOAA and EPA in September 2020 and received preliminary approval in March 2021. Components of the submission include partnering with Purdue University Illinois Indiana SeaGrant in the creation of education modules and ordinance assistance, realtor associations for training and material dissemination, and partner agencies for targeted legislative action. It is also proposed that a tracking database will be developed with the Indiana Onsite Wastewater Professionals Association (IOWPA).

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

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<sup>5</sup> Indiana Lake Michigan Coastal Program reporting period is July 1, 2020 – June 30, 2021.

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 partnered with Indiana University Northwest to collect *E. coli* samples up and downstream from suspected contamination sites throughout the watershed. These samples were analyzed for presence of human gut bacteria markers using Molecular Source Tracking techniques. A final report is underway and will be available in the Fall of 2021.

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

In September 2020, the LMCP, in conjunction with the NW Indiana Septic System Coordination Work Group, promoted the annual EPA SepticSmart Week with a proclamation of Septic Smart Week by the Indiana Governor.

#### 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, and/or 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>**

In addition to providing low interest loans to Indiana communities for projects that improve wastewater and drinking water infrastructure, the Indiana State Revolving Fund (SRF) Loan Program finances projects that abate or prevent NPS pollution of Indiana's waters 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:

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<sup>6</sup> The State Revolving Fund Loan Program reporting period is the state fiscal year: July 1, 2020 - June 30, 2021.

- 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.

This reporting period, State Fiscal Year 2021 (July 1, 2020 - June 30, 2021), the SRF Program loaned \$21.5 million to four communities for projects to reduce NPS pollution by extending sanitary sewers to areas with septic systems, thereby eliminating this potential source of pollution. Approximately 612 septic systems will be eliminated through these projects. The program also completed financing for \$2.59 million with one community to improve a stormwater management system. Throughout the life of the SRF NPS Program, \$386 million has been disbursed for NPS purposes. Approximately 17,870 septic systems have been removed from service, eleven Brownfield sites have been remediated, and eight 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 abatement 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 follows 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 2021 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 began anew in 2020 with monitoring in the West Fork White River (Figure 2).

In 2021, IDEM is sampling probabilistically in the Patoka River (HUC 05120209). 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)).

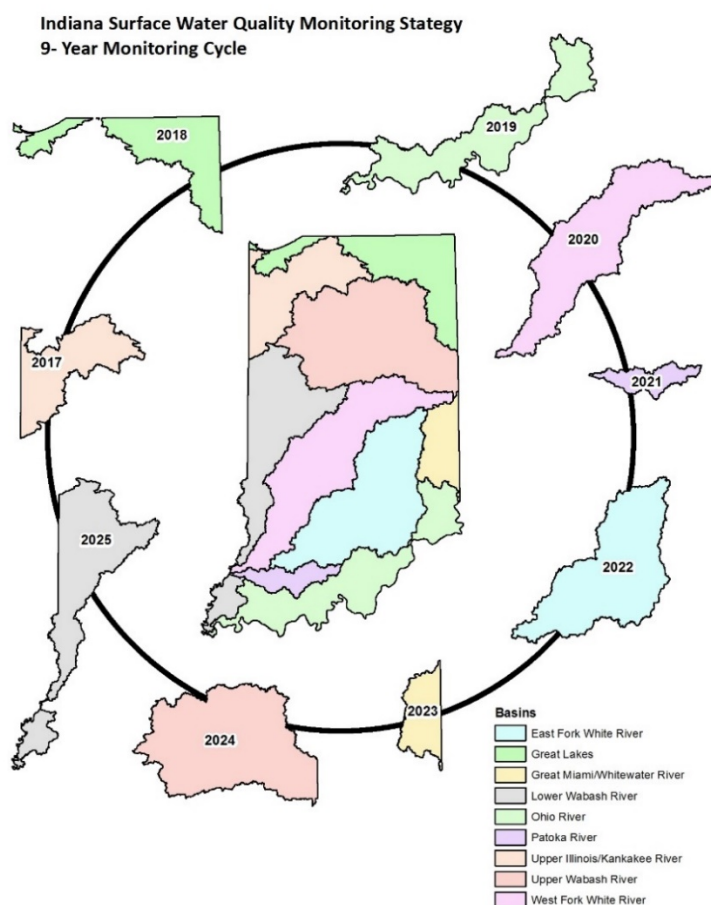


Figure 2. IDEM's 9-Year Rotating Basin Monitoring and Assessment Approach.

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: watershed characterization monitoring and performance measure monitoring (monitoring for success, measured under the U.S. EPA's WQ-10(a) measure).

#### Watershed Characterization Studies

For its watershed characterization studies, the Office of Water Quality uses a modified geometric site selection process 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 2021.

Vernon Fork-Muscatatuck River (HUC 0512020707) -- Water quality monitoring in the Vernon Fork-Muscatatuck River watershed began in November 2020 and will continue through October 2021. Twenty-three sites in total were monitored for the above water quality parameters following a modified geometric design and targeted site selection. Seven pour point sites were sampled monthly throughout the entire sampling period and all sites were sampled monthly during the recreational season (April – October).

Black Creek (HUC 0512020206) – Water quality monitoring in the Black Creek watershed will begin in November 2021 and is to be completed by October 2022. A complete comprehensive sampling program in the watershed will be based on current impairments. Twenty-three sites in total will be monitored monthly for the above water quality parameters following a modified geometric design and targeted site selection. Point pour 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 resulting from nonpoint source pollution grant projects was initiated in 2009. Watersheds impaired by nonpoint sources that have received

nonpoint source funding to prevent and reduce nonpoint source pollution and that meet threshold criteria are targeted for performance monitoring. Threshold criteria can include number of practices installed, load reductions estimated, time lag for best management practice effectiveness concluded, and group monitoring indicating improvement. Monitoring for success continued this period in the Vestal Branch – Indian Creek (051401010201), Prairie Creek (051201070305), Big Pine Creek Ditch – Big Pine Creek (051201080402), Lafferty Ditch – Eel River (051202030805), Thunderbird Pond – Turman Creek (051201111201), and Town of Dodds Bridge – Turman Creek (051201111203). Samples are still being processed and IDEM reserves judgment as to whether any of the sampling in these watersheds demonstrates improvement. Success stories reported in FFY 2021 are reported under Goal 4 and can be found starting on page 38 of this document. Load reductions from BMPs are found in Table 2 on page 31 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 groundwater occurs in the form of arsenic V, likely due to the strong reducing conditions in the groundwater. 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. Beginning in 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. A total of 246 sites GWMN sites were resampled in 2020, and additional 125 sites are expected to be resampled in 2021. 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 groundwater in Indiana.

### **Additional Water Quality Monitoring**

Entities other than IDEM conduct 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. In FFY 2021, despite COVID shutdowns and precautions, 14 HRW workshops were held and 101 stream sites were sampled by volunteers.

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 eight equipment grant kits this year. 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. There were 28 refill requests during this federal fiscal year.

#### 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 2023, 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 monitors two fixed station sites on School Branch monthly, an effort that began in April 2014 and continued through FFY 2021. 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 application development and testing of the “QAPP Tool” was completed as of June 30, 2021, and IDEM is now in the process of uploading instructional content and technical assistance materials provided by an earlier (FFY 2013) CWA Supplemental 106 project. 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 QAPP Tool, data collectors can develop a QAPP that contains all the informational requirements in U.S. EPA’s QA-G5 Guidance for Quality Assurance Project Plans. For Indiana users, the QAPP Tool significantly streamlines the development of QAPPs required for Nonpoint Source (NPS) Program projects and encouraged for anyone submitting secondary data through IDEM’s External Data Framework (EDF). For the NPS program, the tool also facilitates and streamlines the QAPP review and approval process. Here’s a list of some of the key features and benefits the QAPP Tool provides:

- Users can develop their QAPP online in a self-paced, guided process through a series of online forms. Users can save work in progress and download/print their finalized QAPP as a PDF.
- While developing their QAPP, users can access learning and other support materials in a variety of formats (video, downloadable documents, links to outside sources, etc.), tailored to their unique needs and the section they are working on.
- Users can upload additional materials if needed to append to their QAPP.
- When users have questions, they can interact directly with OWQ staff from within the tool using the Inquiry function. With this function, users can submit their questions within a given section of the QAPP, which triggers an email notification to OWQ staff that assistance is needed. Likewise, OWQ staff can respond to the inquiry within the admin area of the tool and upload or provide links to any additional technical assistance materials the user might need. This allows OWQ staff to provide highly targeted technical, yet streamlined, assistance to individual users.
- Users also have the ability to validate their QAPP prior to submitting it for review and approval (if required). The validation process checks to make sure all the required sections of the QAPP are complete and highlights those that are not.
- Users can also submit the finalized QAPP to OWQ for review and approval (if required) directly within the tool. Submittal of a finalized QAPP triggers an email to the OWQ staff member responsible for reviewing it. Once approved, the final OWQ approver can sign the approval page directly in the app.
- Completed QAPPs (as well as QAPPs in progress) are accessible at any time by both the users that authored them and OWQ staff and can be revised at any time and resubmitted for re-approval if required.
- The QAPP Tool allows anyone interested in documenting the quality of the data they are collecting to develop a QAPP. While the “marketing” of this tool will be targeted toward organizations interested in sharing their data with IDEM, there are no barriers to its use by anyone in Indiana or elsewhere who are required to or have an interest in developing a QAPP.

Having data of known quality is the key to our ability to confidently use secondary data. However,

developing a QAPP to document the quality of data being collected has been a very arduous process for OWQ's NPS program projects and EDF participants. While the key requirements of a QAPP have not changed, the QAPP Tool makes meeting them much easier with an online tool developed with the delivery of technical expertise and ease of use in mind. It is OWQ's hope that this tool will not only improve the ability to serve its own programs but will also prove beneficial to any organization with an interest in improving the quality of the data they collect through better documentation.

## 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 this past year, IDEM's Nonpoint Source Pollution Program continued to update its website to provide current 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.

### Web-based Products

This year saw the completion of two web-based outreach and education tools from the NPS and TMDL programs: the [TMDL-NPS Story Map](#) and the [WMP and TMDL Report Search](#) (WATRS) Tool. The TMDL-NPS Story Map provides an explanation to the public on how the products that they see from IDEM's Clean Water Act programs work together to create the conditions that will result in clean waters. It begins at a baseline of waters in need of assessment, then progresses through what is done when an impairment is found, including creation of a TMDL and/or a WMP, and funding with NPS funds or permitting as necessary, then reassessment to evaluate the success of restoration actions. It is the hope that this story map will provide a clear link between IDEM's separate programmatic elements and will present a seamless clean water policy for Indiana.

In an effort to make a clear and direct link between the WMPs and TMDLs written for the watersheds around Indiana and the watersheds to which they pertain, the Nonpoint Source and TMDL programs at IDEM worked together to create the WATRS Tool. The WATRS Tool is an ArcGIS-based spatial search tool created for the user to find WMPs or TMDLs in the area of interest based upon address, waterbody name, or HUC. The map is also zoomable, allowing for visual identification of the area of interest using underlying reference features. The tool launches from both the Watershed Management Plan and Total Maximum Daily Load Reports pages to help users visually identify where these plans are located in the state and if they relate to the waterbody(ies) of interest. The need for a spatially-referenced list of WMPs and TMDLs has



long been an identified need for the website, but the resources to make it happen have been in place until now.

### **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 2021 are:

- Assisted approximately 114 active and developing watershed projects.
- Participated in the planning and conducting of the 2021 IASWCD Annual Conference, including moderating several sessions. Planning has begun for the 2022 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 and gained 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.
- 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 16 years, 469 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. The 2021 IWLA academy was held virtually with thirty-two participants in attendance. The virtual workshop format included 10 workshops held every 2 weeks and were three hours in length followed by a virtual graduation ceremony in May.

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 two of the January workshops. In 2021, the steering committee met once to discuss the success and future of the Academy. Nonpoint Source Pollution staff also participated in one workshop 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. The IWLA is funded in part through a FFY 2017 \$319 grant which ends on January 8, 2022. This project was chosen to be funded again through the FFY 2021 \$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 2021, the ICP TCP anticipates the following trainings:

- Nutrient Management Planning workshop series October 2020
- Wetland Restoration Planning and Design workshop series February 2021\*
- Backyard Habitat Planning and Technical Assistance March 2021\*
- Identification of Trees in Indiana March 2021\*
- Identification of Shrubs in Indiana March 2021\*

\*Recordings are available here: <http://icp.iaswcd.org/resources/training-opportunities/>

In-person trainings are being considered for 2021, as follow up to virtual sessions. Focus would include wetlands, tree ID, and shrub ID trainings.

## **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 35). The WPRS also administers the TMDL program and the 303(d) Vision, and efforts are underway to revisit and integrate both the Nonpoint Source and TMDL program priorities. More information about the §319 and §205(j) grant programs and the TMDL program may be found on [IDEM’s website](#). A full accounting of progress made in FFY 2021 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 2021 Indiana anticipates receiving \$3,820,000 in §319 funds that will be used for Nonpoint Source Pollution Program support (technical staff and administration) and nonpoint source pollution projects. It may be important to note that as of the writing of this report, though FFY 2021 funds have been allocated, they have not yet been received. As a result of non-federal partnerships discussed under Goal 1, the Maintenance of Effort (MOE) level requirement under §319(h)(9) will be 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 2021 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 2021) 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 2020 [§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 2021) map for the Source 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 2021) map for the Protection Priority 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.

Ten projects allocated for funding in FFY 2021 address one or more of the Nonpoint Source Pollution Program priorities. These projects will be developing or implementing WMPs in watersheds with impaired waterbodies. The remainder of the projects allocated for funding in FFY 2021 were program support or outreach and education projects. Currently, there are 44 open or pending §319 projects, of which 31 are implementing watershed management plans and installing BMPs in critical areas of the watershed. Table 1 (page 34) lists some of these BMPs. These implementation projects are doing "on-the-ground" work in their watersheds that leads to nonpoint source pollutant load reductions (as shown in Table 2, page 35), and improved water quality. A list of all §319 projects open or pending during this fiscal year is located in Appendix C. A map showing the watersheds throughout Indiana where water quality improvement projects (both §205(j) and §319, planning and implementation) are currently underway, ready to begin, or recently completed (2016-2021) 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.

### **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 \$856,989 reported through July 14, 2021 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 2020 watershed groups utilized approximately \$1,191,662 and \$930,737 respectively.

Table 1 BMPs Implemented in Indiana FFY 2019 – 2021

BMP	Approximate Number FFY 2019	Approximate Number FFY 2020	Approximate Number FFY 2021
Cover Crop (acres)	22,229	17,172	24,961
Fence (feet)	20,746	20,157	16,676
Grassed Waterway (sq. feet)	130,680	378,728	153,331
Heavy Use Area Protection (sq. feet)	90,271	87,776	68,653
Nutrient Management (acres)	3,031	300	6,862
Pasture and Hay Planting (acres)	341	636	99
Residue Management, No-Till (acres)	7,035	5,459	3,096
Tree and Shrub Establishment (acres)	4	387	0
Watering Facility (each)	15	13	8
Rain Barrels (each)	0	7	0
Rain Gardens (sq. feet)	400	735	367
Septic System Removal (each)*	1,520	732	**

\* 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 2021 will be reported after October 1, 2021.

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 plans, 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 2019-2021

Nonpoint Source Pollutant	Estimated Reduction FFY 2019	Estimated Reduction FFY 2020	Estimated Reduction FFY 2021
Sediment (tons/yr.)	123,910	102,805	98,548
Phosphorus (lbs. /yr.)	187,328	156,042	174,291
Nitrogen (lbs. /yr.)	441,549	309,832	386,945
Biological Oxygen Demand (lbs. /yr.)*	17	143	24
Chemical Oxygen Demand (lbs. /yr.)	163	1,009	238
Ammonia (lbs. /yr.)*	95,364	0	0
Suspended Solids (lbs. /yr.)	228,873	1,511	1010
Pathogens/Coliform (CFU)*	3.9582E+11	1.324E+18	†
TKN (lbs. / yr.)	0	7	0

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

† *E. coli* reductions are based on totals from the Indiana Conservation Partnership, which are not available at this time.

Cumulative total estimated load reductions reported in Indiana from §319 projects since FFY 2000 through July 14, 2021 are shown in Table 3.

<sup>7</sup> FFY 2021 Load Reductions are estimated on BMPs reported from October 1, 2020 through July 14, 2021. Estimated totals for FFY 2021 will be recalculated in the FFY 2022 Annual Report.

Table 3 Cumulative Total Estimated Load Reductions in Indiana.

Nonpoint Source Pollutant	Total Estimated Reduction
Sediment (tons/yr.)	1,239,910
Phosphorus (lbs. /yr.)	1,787,937
Nitrogen (lbs. /yr.)	3,529,705

#### BMPs and Load Reductions in FFY 2021

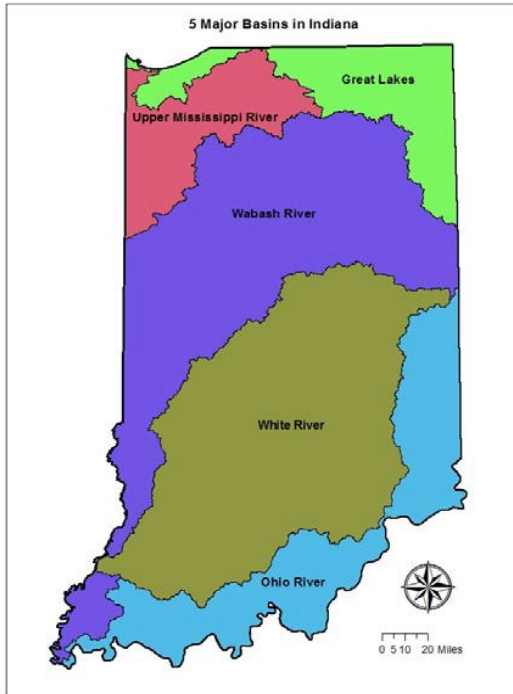


Figure 3. Major Indiana Basins

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. Eight percent of Indiana 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 2021 in each of the five basins (Figures 4 and 5).

There is one project working in the Great Lakes Basin, however no BMPs were implemented in 2021.

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 hypoxic 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.

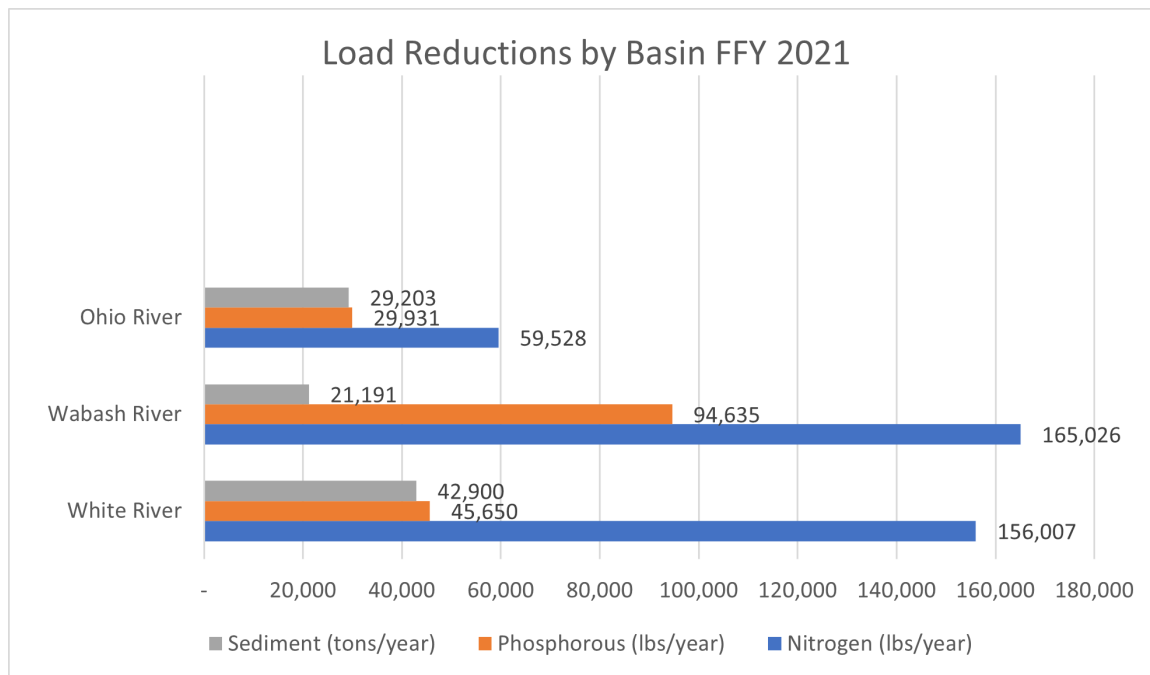
There were no implementation projects in the Upper Mississippi River Basin in 2021.

Fifteen projects working in the Wabash River Basin this year reduced nutrient loads to the river as



shown below. The estimated load reductions achieved include 21,191 tons of sediment, 94,635 pounds of phosphorous, and 165,026 pounds of nitrogen.

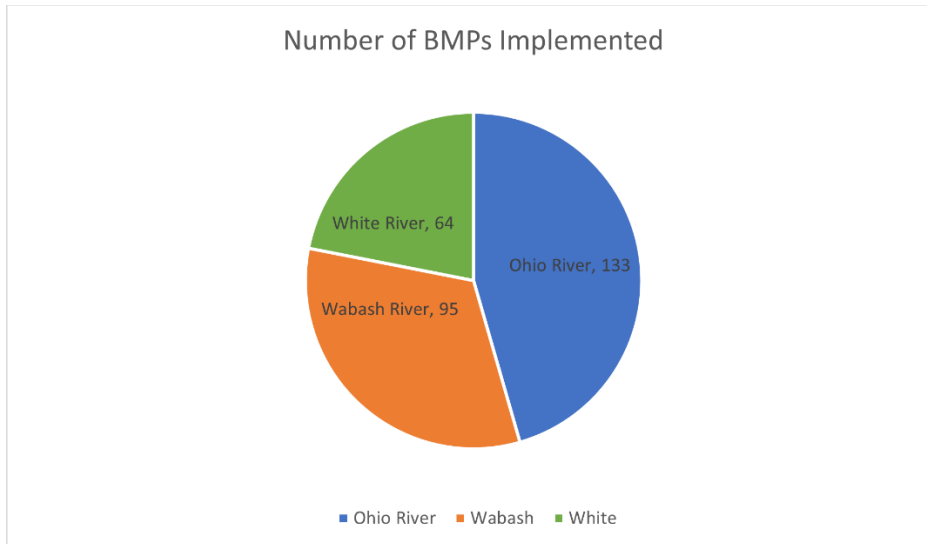
Six projects in the White River Basin worked to reduce nitrogen, phosphorus, and sediment in the watershed. The estimated load reductions are 42,900 tons of sediment, 45,650 pounds of phosphorous, and 156,007 pounds of nitrogen.



**Figure 4. Load Reductions by Basin FFY 2021.**

Ten 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 29,203 tons of sediment, 29,931 pounds of phosphorous, and 59,528 pounds of nitrogen.

Combined, the projects in areas that ultimately drain to the Gulf of Mexico had estimated load reductions of 93,294 tons of sediment, 170,216 pounds of Phosphorous, and 380,561 pounds of Nitrogen.



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

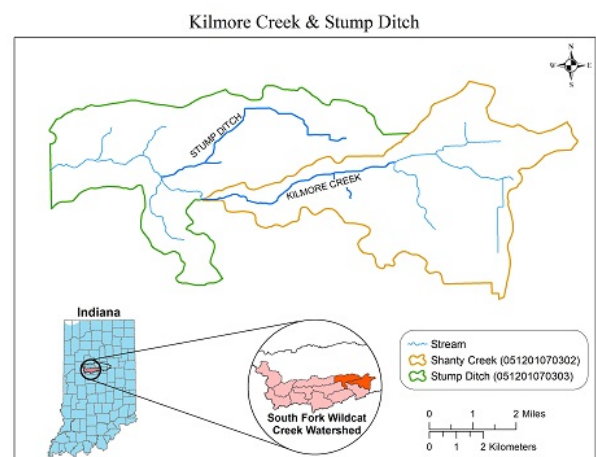
## Nonpoint Source Success Story

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.

### Planning, Partnerships and Implementation Restores Fish Community in Stump Ditch and Kilmore Creek

#### *Waterbody Improved*

Stump Ditch and Kilmore Creek account for approximately 11.6 miles of stream in the South Fork Wildcat Creek (SFWC) watershed in Clinton and Tipton counties, Indiana. The Indiana Department of Environmental Management (IDEM) listed Kilmore Creek and Stump Ditch on its Clean Water Act (CWA) Section 303(d) list of impaired waters in 2006 due to impaired biotic communities. Following years of best management practice (BMP) implementation paired with education and outreach in the watershed, follow up sampling by IDEM in 2019 on Kilmore Creek and Stump Ditch showed that both segments are now fully supportive of aquatic life. IDEM will propose to remove both biotic community impairments from its impaired waters list in 2022.



**Figure 6. Kilmore Creek and Stump Ditch**

### *Problem*

Kilmore Creek (assessment unit INB0732\_03) and Stump Ditch (assessment unit INB0733\_T1003) are within the SFWC watershed in Clinton and Tipton counties in central Indiana (Figure 1). Land use throughout the watershed is primarily cultivated crops (>80%) and includes minor land uses of grasslands and wooded areas that are heavily fragmented.

In 2004, IDEM conducted a biological study on the SFWC watershed. Monitoring sites on Kilmore Creek and Stump Ditch had failing index of biotic integrity (IBI) scores (i.e., scores less than 36), which indicate that the streams were not supporting a well-balanced aquatic community. The fish community scores on Kilmore Creek and Stump Ditch were 34 and 32, respectively. This caused IDEM to list both streams on its 2006 CWA section 303(d) List of Impaired Waters for impaired biotic communities. The impaired reach of Kilmore Creek is at the headwaters of the stream in the Shanty Creek subwatershed. Stump Ditch drains directly into a portion of Kilmore Creek in the subwatershed directly downstream.

### *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. The Clinton County Soil and Water Conservation District received a CWA section 205(j) grant in 2009 to draft an extended nine-element SFWC WMP, which it began implementing in 2012. Along with education and outreach efforts throughout the watershed, landowners implemented a range of BMPs in the Shanty Creek and Stump Ditch subwatersheds such as cover crops (3,220 acres), nutrient and pesticide management (39,567 acres), riparian buffers (9 acres), and 3,780 feet of two-stage ditch on Stump Ditch. The combination of these practices reduced pollutants (e.g., nutrients, sediment) from entering the streams, thereby improving the streams' overall quality and health.

### *Results*

In 2019, IDEM conducted follow-up monitoring that showed an improved fish IBI score of 42 on Kilmore Creek and scores ranging from 36–38 on Stump Ditch. These are notable improvements from the scores of 34 and 32 in 2004 on Kilmore Creek and Stump Ditch, respectively. Additionally, habitat showed improvements (e.g., deeper pools, higher quality riffles) during the timeframe. Habitat scores on both Kilmore Creek and Stump Ditch showed improvements in categories such as less bank erosion, silt cover, and embeddedness in the streams, which indicate less sediment entering from surrounding landscapes. Due to fish IBI scores indicating a well-balanced aquatic community, IDEM is proposing to remove the IBC impairments from these segments on its 2022 impaired waters list.

To address impairments, IDEM developed a total maximum daily load (TMDL) for *Escherichia coli*, total suspended solids, total phosphorus, and nitrate-nitrite in 2008 for the SFWC watershed. The TMDL identified rural runoff as the most significant source of total suspended solids, total phosphorus, and nitrate + nitrite due to the majority of land use being agricultural.

### *Partners and Funding*

The U.S. Department of Agriculture's (USDA) Natural Resource Conservation Service provided technical assistance and funding from various programs for BMP installations in 2004–2019 in the Shanty

Creek and Stump Ditch subwatersheds (totaling \$261,628). Additionally, USDA's Farm Service Agency provided \$16,974 for BMP installations through their Conservation Reserve Program and Conservation Reserve Enhancement Program. The Indiana State Department of Agriculture provided approximately \$415 in funding through Clean Water Indiana for cover crop installations within the Stump Ditch subwatershed during the 2004 to 2019 period. In 2009, Clinton County was awarded \$166,000 from IDEM's 205(j) program to develop a WMP for the SFWC watershed. Additional funding of \$320,950 in 2012 and \$158,000 in 2017 was provided to Clinton County through IDEM's 319 program for implementing the plan. Approximately \$63,403 of this funding was used for BMP installations directly within the Stump Ditch and Shanty Creek subwatersheds in 2013–2015. Finally, Clinton and Tipton counties provided \$34,402 and \$9,912, respectively, for installation of cover crops within their jurisdictions, which includes Kilmore Creek and Stump Ditch.

### **§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 2020 funds. Those funds were 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. IDEM received \$386,729 in FFY 2021 funds. These funds will be used for one watershed management plan development project with Washington County SWCD for Twin Creek-Lick Branch. Two monitoring projects were also funded, one with ORSANCO and one with USGS. A list of all 205(j) projects open or pending during this fiscal year is in Appendix F of this report.

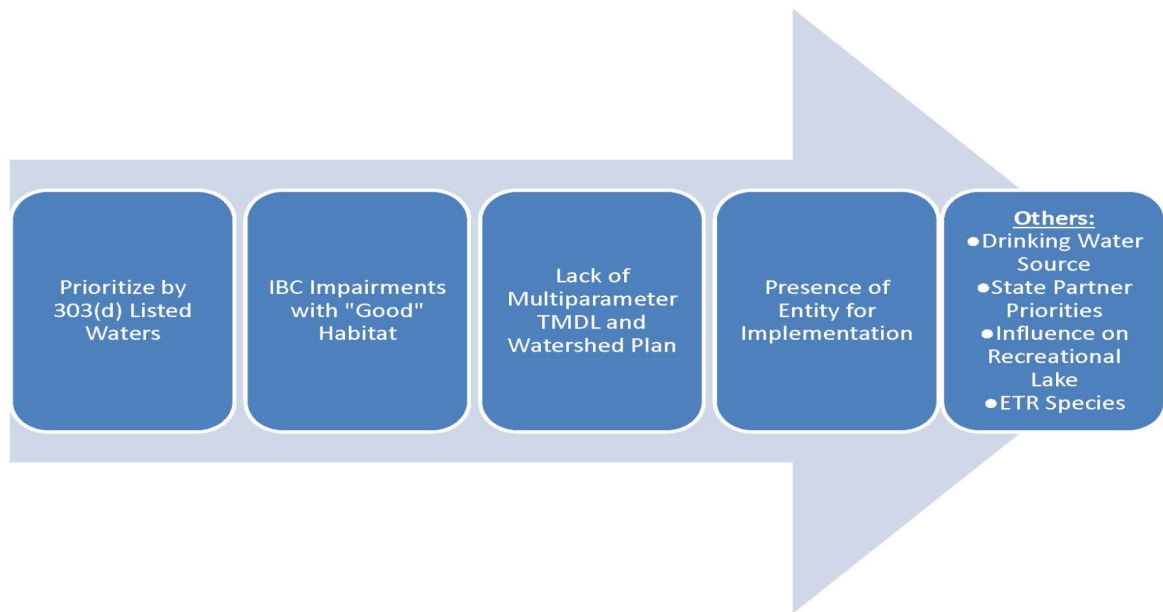
### **Integrating the Nonpoint Source Pollution Program with the 303(d) Vision**

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 2021, 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.

Also in FFY 2021, IDEM TMDL staff worked to revise the list of candidate watersheds for future TMDLs using IDEM's TMDL Program Priority Framework. The framework identifies watersheds that are good candidates for a TMDL based upon ability to meet aquatic life designated use, status as an impaired water, a lack of an existing TMDL or WMP, and stakeholder interest. Additional criteria include whether a watershed contains a surface water intake and/or a public access point, watersheds that are home to endangered or threatened species, or watersheds aligned with other State of Indiana priorities. A tentative list of eligible watersheds has been compiled with prioritization levels identified.

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 2020 implementation project is ongoing in this watershed and is set to close on 3/24/2024.

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. A FFY 2020 implementation project began 11/17/2020.

In 2021, 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. One application, the Twin Creek Lick Branch application, proposed to write a WMP to address a protection watershed and it was funded under the §205(j) grant program.

# Adaptive Management

With the continuation of the global pandemic that began in early 2020, IDEM's NPS program continues to make decisions to allow flexibility for its NPS grantees and to utilize limited resources on the most pressing projects. Project-related adaptive-management strategies utilized this federal fiscal year included allowing outreach and education to go to a virtual format, postponing due dates for watershed management plan drafts, and extending grant agreements to allow more time for BMP installations. IDEM continues to work with U.S. EPA to reprogram administrative funds from previous federal fiscal years, particularly FFY 2016.

Several objectives were underachieved or not achieved this federal fiscal year. In particular, the program expected 20 Hoosier Riverwatch workshops to be held this year but only 14 took place. Due to pandemic safety precautions, Hoosier Riverwatch participation was lower this year than before the pandemic, but the numbers are increasing; thus, IDEM does not propose to change its targets for FFY 2022.

Objective 4.7 would have the NPS program working with the Indiana Stream and Wetland Mitigation Program at Indiana Department of Natural Resources. However, this session a bill was introduced within the Indiana Senate that would dramatically change Indiana's wetlands law, which had a large impact on both IDEM and IDNR's wetlands-related programs. That bill was passed by the Indiana General Assembly. Both previous to and subsequent to passage of the bill (SEA 389), wetlands-based programs were busy with analyses regarding the impacts of the bill on Indiana wetlands, their programs in relationship to Indiana wetlands, and changing procedures in relationship to the new law, which kept the NPS program from pursuing particular coordination with either of the IDEM or IDNR wetlands programs. It is anticipated that this was a temporary condition and our coordination will continue in subsequent federal fiscal years, so no adaptive management is recommended at this time.

## APPENDIX A

### Reportable Activities for 2021

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
1.2	a	Provide implementation support for the Coastal Zone TMDLs. <b>Progress: The NW WSS has met with representatives for the Little Calumet, Deep River, and Trail Creek, all of which have a TMDL.</b>	2019	2023	ongoing	Ongoing – Complete for 2021
1.2	b	Provide implementation support for the Coastal Zone WMPs. <b>The NW WSS has met with representatives for the Little Calumet, Deep River, and Trail Creek regarding next steps for the watersheds. Each have a WMP.</b>	2019	2023	ongoing	Ongoing – Complete for 2021
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 8/25/20, 10/27/20, 12/14/20, 1/26/21, 2/8/21, 3/30/21, 4/12/21, 5/25/21, 6/14/21, 6/21/21, 7/27/21. NPS Staff participated in coordination meetings with LMCP on 7/21/20, 7/29/20, 8/14/20, 8/19/20, 8/20/20, 8/25/20, 10/20/20, 12/7/20, 12/14/20, and 1/7/21</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 2021. There are also no ongoing WMP efforts in the Coastal Zone.</b>	2019	2023	ongoing	Ongoing- No need for this FFY
1.4		Support the Conservation Reserve Enhancement Program (CREP), Resource Conservation Partnership Program (RCPP), Great Lakes Restoration Initiative (GLRI), Lake and River Enhancement (LARE), Clean Water Indiana (CWI), and other Indiana Conservation Partnership (ICP) and statewide initiatives as they become available. <b>Progress: See each sub-objective below for a progress report. In July 2020 and April 2021, grant opportunities available from the Ohio River Basin Fish Habitat Partnership were forwarded to partnerships to complete on-the-ground, aquatic habitat protection, restoration, and enhancement projects.</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 include the NRCS Indiana Partnership for Conservation on 11/20/20. Promoted CCSI Root Project on 9/29/20. Promoted ICP Ag Training Workshop on 8/26/20. Promoted RCPP funding on 8/26/20. Promoted Great Lakes Sediment and Nutrient Reduction Program funding on 2/23/21.</b>	2019	2023	ongoing	Ongoing - Significant progress
1.4	b	Participate in ICP planning meetings to determine priorities for funding/initiatives that align with WMP critical areas, water quality, and/or TMDL priority areas (every other month). <b>Progress:</b>	2019	2023	ongoing	Ongoing -



Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>Branch Chief participated in the ICP meetings on 9/8/2020, 11/10/2020, 3/9/21, 5/11/2021, 7/13/21, and 9/14/21. Branch Chief participated in the ICP Leaders Annual Workplan Development meeting 1/19/21.</b>				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, SW WSS spoke with citizen from Lake Hollybrook on potential LARE funding on 8/24/20 on funding available. NE WSS attended a meeting for a group in Huntington County working with EQIP funding. SE WSS communicated with Hidden Valley Lake group on funding 5/3/21. NE WSS presented at Silver Jackets meeting regarding 319 funding on 5/20/21.</b>	2019	2023	ongoing	Ongoing - Significant progress
1.4	d	Include program information in relevant TMDLs as methods for implementation. <b>Progress: The Laughery Creek (approved Sept. 2, 2020) and Maria Creek (approved Sept. 14, 2021) TMDLs include a description of the above programs as means to implement nonpoint source programs in the Reasonable Assurances/Implementation section.</b>	2019	2023	ongoing	Ongoing - Significant progress
1.4	e	Coordinate with ICP partners on meetings and workshops. <b>Progress: Branch Chief participated in the ICP meetings on 9/8/2020, 11/10/2020, 3/9/21, 5/11/2021, 7/13/21, and 9/14/21. Branch Chief participated in the ICP Leaders Annual Workplan Development meeting 1/19/21.</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>Progress: Branch Chief participated in the ICP meetings on 9/8/2020, 11/10/2020, 3/9/21, 5/11/2021, 7/13/21, and 9/14/21. Branch Chief participated in the ICP Leaders Annual Workplan Development meeting 1/19/21.</b>	2019	2023	ongoing	Ongoing - Significant progress
1.6		Continue to provide technical assistance to local watershed groups through the watershed specialist or project manager as documented through quarterly site visit reports and the Section 319 Annual Report. <b>Progress: As a whole, the IDEM WSS provided watershed planning and implementation assistance to at least 114 distinct groups in FFY 2021.</b>	2019	2023	ongoing	Ongoing - Significant progress
1.7		Continue to align the TMDL and WMP planning process with the TMDL vision. <b>Progress: The TMDL program conducted several meetings during this year to revise the criteria for selecting watersheds for TMDL application including 6/23/2021, 2/8/2021, 11/30/2020. The program continued to work on partnerships with local groups for TMDL project planning. Also, in November 2020, IDEM staff reviewed macroinvertebrate and fish community assessment information from the last 10 years to prioritize TMDL project watersheds which showed poor biological communities but good habitat scores.</b>	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
1.7	b	Laughery Creek TMDL. <b>Progress: The public meeting on the draft TMDL report was held virtually on 9/15/20. A 30-day public comment period for the draft final TMDL report lasted from 9/8/20 to 8/8/20 and the final TMDL report was approved by EPA 9/2/20.</b>	2020	2021	ongoing	Complete
1.7	c	Maria Creek TMDL. <b>Progress: A Water Monitoring Demonstration Field Day was held on 10/14/20. When assessments were completed for the watershed characterization study, 14 stream segments where additional impairments were identified, including impairments for E. coli, impaired biotic communities (IBC), and dissolved oxygen (DO). A public notice was posted to the Indiana Register (LSA #21-37). The public comment period ended 5/25/21. The public meeting was held 7/8/21. The TMDL was approved by EPA on 9/14/21.</b>	2020	2022	ongoing	Ongoing - Significant progress
1.7	d	Vernon Creek TMDL. <b>Progress: A virtual public kickoff meeting was held to introduce the project and solicit input on 10/27/20. A watershed characterization monitoring study began in November 2020 and will end in October 2021. TMDL staff attended the Jennings County Fair on 6/14/21 and 6/16/21 as an exhibitor, 119 people visited the exhibit. Public interaction included discussions on current projects and issues in the watershed as well as general education and outreach on nonpoint source pollution.</b>	2021	2022	ongoing	Ongoing - Significant 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 2021, 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 has a \$319 grant 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. In October 2020, IDEM worked with the USGS to assign Biological Condition Gradient rankings (Level 4) to three macroinvertebrate samples collected from the School Branch Project in 2016. Level 4. Moderate changes in structure due to replacement of intermediate sensitive taxa by more tolerant taxa, but reproducing populations of some sensitive taxa are maintained; overall balanced distribution of all expected major groups; ecosystem functions largely maintained through redundant attributes.</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 9/8/2020, 11/10/2020, 1/19/2021, 3/9/2021, 5/11/2021 and 7/13/2021.</b>	2019	2023	annually	Complete for 2021

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
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 2021 were held on July 31, 2020, 9/16/2020, 11/9/2020, 1/21/2021, 3/22/2021, 3/23/2021, 5/11/21 and 7/13/21. Branch Chief participated in the WLEB Partnership meetings 1/25/21 and 6/29/21. Branch Chief participated in the WLEB Stakeholder meetings 10/22/20 and 3/24/21.</b>	2019	2023	ongoing	Ongoing - Significant progress
1.9	a	Review priorities of both documents and import objectives of nonpoint source pollution related importance to the state nonpoint source pollution program plan. <b>Progress: These documents are reviewed annually before the annual solicitation is prepared to incorporate important priorities into the solicitation. In FFY 2021, no additional priorities were added to the solicitation or project plan as a result of reviewing these documents.</b>	2019	2023	ongoing	Ongoing - Complete for 2021
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: LMCP OSDS measure was conditionally approved on 3/26/2021, the current grant has been extended to 2022, and LMCP has submitted a proposal for FFY2021 (using FFY 2018 funds) and are awaiting EPA approval to proceed.</b>	2019	until fully approval	annually	Complete
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 sent CWSRF staff descriptions of all projects recommended for FFY 2021 funding on 8/5/2021. 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 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	Ongoing - Complete for 2021
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</b>	2019	2023	annually	Complete for 2021

Goal 1: Utilize partnerships to leverage resources available for nonpoint source pollution management.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>program notified the SRF programs of the 319 projects that were approved for funding for FFY 2021.</b>				
1.11	c	Where there are potential projects, a fact sheet describing the potential nonpoint source pollution project opportunity is included in the State Revolving Fund packet to the community, and the nonpoint source pollution staff promotes the potential nonpoint source pollution project, provides contacts for technical assistance, and provides information on other funding sources active in the watershed, such as NRCS, Clean Water Indiana, 319, 205(j), etc. <b>Progress: The Clean Water State Revolving Fund loan program always promotes NPS projects to its applicants. Since no potential projects were identified this fiscal year, no additional contacts/fact sheets were provided to CWSRF applicants.</b>	2019	2023	ongoing	Ongoing - Complete for 2021
	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 2021, SRF replaced 612 septic units in 4 loans. Numbers for the remainder of FY 2021 septic removals will not be available until October 2021 or later.</b>	2019	2023	ongoing	Ongoing - Complete for 2021
1.12		Work with partners to model, assess, and prioritize critical watersheds in the state. <b>Progress: IDEM is participating in the State Nutrient Reduction Strategy Science Assessment project to prioritize 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 114 distinct groups in FFY 2021.</b>	2019	2023	ongoing	Ongoing - Significant progress

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	M M	Objective	FFY Start	FFY End	Frequency	Complete
2.1		Require the use of <i>the 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 2021 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 on a routine basis. <b>Progress: IDEM imported 319 grantee data meeting appropriate data quality criteria into AIMS for Lower Big Blue River, Plummer Creek, Otter Creek, Lower Patoka, Lost River, Lower Eel River, Big Walnut Creek, Turtle Creek-Turman Creek-Kelly Bayou, Region of the Great Bend, and Treaty Creek projects.</b>	2019	2023	ongoing	Ongoing - Significant progress
2.3		Invite the participation of local project leaders when conducting 305(b) CWA assessments on watershed characterization monitoring data completed for TMDL and WMP development. <b>Progress: Local project leaders for Maria Creek were invited to participate in the 305(b) CWA assessments which took place on February 1, 2021</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: The contaminants monitoring program is currently evaluating the tasks analyzed on each sample, which will allow IDEM to focus on emerging contaminants of concern. Parameters that bioaccumulate in fish tissues but no longer drive human health fish consumption advisories will be analyzed at a reduced capacity.</b>	2019	2023	annually	Ongoing – significant progress
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 FFY 2018 grant has been extended through FFY2023. This grant will fund the program through the 2023 sampling season. In the 2021 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 TMDL was approved on 12/19/19. The WMP was sent to EPA for review on 3/30/20 and was approved 6/17/21.</b>	2019	WMP-2021	ongoing	Ongoing - Significant progress
2.6	b	Laughery Creek TMDL and WMP. <b>Progress: The TMDL went on public notice July 8, 2020 through August 8, 2020. The final TMDL report was approved by U.S. EPA on September 2, 2020. The WMP project began on 12/15/2019 and is on track to be completed on time.</b>	2019	WMP-2022	ongoing	Ongoing - Significant progress

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	M M	Objective	FFY Start	FFY End	Frequency	Complete
2.6	c	Maria Creek TMDL and WMP. <b>Progress: A Water Monitoring Demonstration Field Day was held on October 14, 2020. The public comment period ended 5/25/21. The public meeting was held 7/8/21. The WMP contract was executed 12/10/20 and is on track to be completed on time.</b>	2020	TMDL-2021 WMP-2023	ongoing	Ongoing - Some progress
2.7		Utilize IDEM resources to monitor the School Branch Watershed for the National Water Quality Initiative (NWQI) as described in the sampling design developed by IDEM and NRCS. <b>Progress: IDEM continues to monitor the School Branch watershed of Eagle Creek through its fixed station monitoring program and through joint funding agreements with the USGS. All of the data collected (including IDEM data) will be evaluated at regular intervals during the study. The report covering the first three years of data is progressing through the USGS publishing process. IDEM taxonomists identified three macroinvertebrate samples collected by USGS for the School Branch Watershed for the National Water Quality Initiative.</b>	2019	2023	ongoing	Ongoing - Significant progress
2.8		Continue support of the Hoosier Riverwatch voluntary monitoring program as part of IDEM's monitoring and assessment schemas. <b>Progress: Approximately 101 stream sites have been sampled in 2021.</b>	2019	2023	ongoing	Ongoing – significant progress
2.8	a	Complete Hoosier Riverwatch QAPP template. <b>Progress: A Supplemental 106 grant was secured to complete work on this project. The project closed 6/30/2021 and was successful. The site went live 7/1/21. The design of the new online QAPP tool has allowed staff to contact QAPP applicants in a closed loop interface. This will greatly improve communication.</b>	2020	2021	one time	Complete
2.8	b	Provide support for 20 Hoosier Riverwatch workshops (volunteer trainings) and maintain current loaner/teaching trunks. <b>Progress: Fourteen, rather than 20, workshops were conducted in 2021 as COVID-19 safety protocols for in-person workshops continued.</b>	2019	2023	annually	Complete
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: See each of the sub-objectives below for more detail.</b>	2019	2023	ongoing	Ongoing - Some progress
2.9	a	Use the External Data Framework to accept external data for various uses including nonpoint source pollution assessment, planning and de-listing. <b>Progress: The ability for IDEM to use external data submitted through the EDF 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</b>	2019	2023	ongoing	Ongoing – significant progress

Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	M M	Objective	FFY Start	FFY End	Frequency	Complete
		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.				
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 2021 Success Story segment reported on was Stump Ditch and Kilmore Creek. It was published to EPA's website on 9/20/21.</b>	2019	2023	ongoing	Ongoing - Complete for 2021
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: IDEM staff evaluated biological data submitted by Lower Big Blue River, Big Walnut Creek, and Treaty Creek through the External Data Framework to help identify watersheds that should be surveyed for possible nonpoint source pollution water quality improvements.</b>	2019	2023	annually	Complete for 2021
2.10	b	Use additional resources (e.g., staff, funds, and technical support) to monitor water quality in watersheds where nonpoint source pollution restoration activities have occurred. The monitoring data will be compared to baseline information, if available, to gauge the efficacy of the work. <b>Progress: In 2021, IDEM sampled the Vestal Branch – Indian Creek (051401010201), Prairie Creek (051201070305), Big Pine Creek Ditch – Big Pine Creek (051201080402), Lafferty Ditch – Eel River (051202030805), Thunderbird Pond – Turman Creek (051201111201), Town of Dodds Bridge – Turman Creek (051201111203). As of the writing of this report, the monitoring season has yet to be completed, so we will report on whether or not any of these watersheds resulted in a delisting in the next NPS Annual Report.</b>	2019	2023	annually	Complete for 2021



Goal 2: Monitor and assess Indiana waters for nonpoint source pollution impairments and improvements.						
Obj. #	M	Objective	FFY Start	FFY End	Frequency	Complete
2.11		Continue the <a href="#">Ground Water Monitoring</a> Network (GWMN). <b>Progress: Approximately 125 sites were resampled in 2021 to allow for geochemical modeling to evaluate the mobility of arsenic in Indiana aquifers.</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: Nonpoint source contamination of groundwater in Indiana was analyzed during FFY2021.</b>	TBD	TBD	complete	Ongoing - Some progress
2.12	b	Gather data for completing the analysis and reporting mechanism. <b>Progress: Statewide groundwater sampling data was taken from the Water Quality Portal. An analytical report was filed internally.</b>	2019	2023	complete	Ongoing - Some progress
2.12	c	Determine the frequency of future groundwater analyses and reporting. <b>Progress: The studies from which data were pulled are ongoing and include the National Water Quality Assessment Program, IDEM Sampling, and USGS Sampling. The analysis can be repeated at intervals as new data are uploaded to the Water Quality Portal.</b>	2021	2021	ongoing	Ongoing - Some progress

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
3.1	b	Meet with IDEM Media and Communication Services (MACS) to develop outreach material designs and techniques. <b>Progress: WPR staff collaborated with IDEM's Media and Communications Services (MACS) on three projects this fiscal year including publishing the WATRs tool, TMDL-WMP Story Map, and the Grassy Creek Project Highlight Video.</b>	2019	2020		Complete
3.1	c	Determine annual use of outreach and education materials. <b>Progress: This year the NPS program focused on web-based tools as face-to-face outreach and education opportunities continue to be sparse due to COVID-19 safety protocols. Two web-based projects, the WATRs tool and the TMDL-WMP Story Map were completed this year. A video project showcasing Indiana's use of social indicators is kicking off at the end of this FFY.</b>	2019	2020	annual	Complete
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	b	Work with partners to identify the target audience and deploy education methods. <b>Progress: The education and outreach portion of the newly approved septic program for the LMCP will emphasize participation across multiple partnership networks. The priority will be wide participation in SepticSmart Week and distribution of SepticSmart materials as well as</b>	2020	2023	ongoing	Ongoing – significant progress



Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>education events for realtors, septic inspectors and installers, and homeowners. September 20-24 was proclaimed Indiana's SepticSmart Week by Indiana's governor.</b>				
3.2	c	Reconvene IDEM's internal septic subcommittee on septic care and meet regularly. <b>Progress: The NW WSS attended the rural wastewater task force meeting on 12/10/2020, the septic system coordination work group meetings on 8/11/2020, 5/27/2021, and continues to work with the LMCP. Septic issues are discussed monthly at WPRS staff meetings.</b>	2019	2023	ongoing	Ongoing – significant progress
3.2	d	Publicize success stories. <b>Progress: IDEM was not made aware of any septic success stories in FFY 2021.</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: IDEM hosted Lake Michigan Watershed Webinars from October 2020 through Feb 2021. IDEM NPS presented on Oct 7. NE WSS served on the 2022 Annual Conference of Indiana SWCDs Planning Committee and attended a planning meeting on 4/30/21. NW WSS participated in the Rural Wastewater Task Force (RWWTF) meetings held 9/10/20, 12/10/20, 1/14/21, 3/11/21, 4/8/21, and 6/10/21.</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: Indiana is currently putting a contract in place to provide funding for staff from the Illinois-Indiana Sea Grant to develop and provide messaging on the importance of inspection and maintenance of septic systems in the Coastal Zone.</b>	2019	2023	ongoing	Ongoing – significant progress
3.2	g	Translate lessons learned from Northwest Indiana, statewide. <b>Progress: Indiana has been holding discussions with the Indiana Onsite Wastewater Professionals Association surrounding the topic of partnering in order to track inspections done in northwest Indiana. Should this partnership take place, then IOWPA's database would track not only northwest Indiana's inspections, but inspections done throughout the state. Other actions in Northwest Indiana are currently in the early stages.</b>	2020	2023	ongoing	Ongoing - Some progress
3.2	h	Develop and maintain septic outreach HUB on IDEM's website (ITOSS), POS materials and other. <b>Progress: Indiana NPS has begun to gather some septic information for its website but has not yet posted it.</b>	2019	2023	ongoing	Ongoing - Little 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 continues to act as PWQ chair and attended steering committee meeting on 7/20/21. The SE WSS participated in PWQ workdays at the exhibit on 8/5/20, 9/2/20, 10/7/20, 11/9/20, 11/19/20, 3/10/21, 4/22/21, 5/5/21, 6/16/21, 7/7/21, 7/14/21, and 7/28/21.</b>	2019	2023	ongoing	Ongoing – significant progress

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
3.2	j	Promote the use of the Revolving Loan Fund for Septic upgrades and repairs. <b>Progress: Watershed specialists 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 Silver Jackets meetings on 7/16/20, 9/10/20, 10/15/20, 12/3/20, 1/21/21, 2/18/21, 3/18/21, 4/15/21, 5/20/21, 6/17/21, 7/15/21. The NE WSS is the project partner for the USACE Indiana Stream Flood Education Project and attends the bi-weekly meetings.</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: The NE WSS is a project partner along with IDEM wetlands program that applied for USACE FY22 FPMS Interagency Nonstructural Flood Risk Management Proposal Project entitled Indiana Wetland Education Program.</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: The NE WSS works with the Stream Mitigation Program staff to assist in finding acreages to benefit both NPS and wetlands needs.</b>	2019	2023	ongoing	Ongoing – little progress.
3.3	d	Support low head dam removal to improve nonpoint source pollution impacts on water resources. <b>Progress: NE WSS sent grant information that would support low head dam removal projects to watershed stakeholders for Section 319 innovation and Ohio River Basin Fish Habitat Partnership. Provided some potential funding opportunities for the Providence Mill Dam, Silver Creek at New Albany, Indian Creek at Corydon, Little Wabash at Huntington, Mississinewa at Marion, and Eel at Logansport. IDEM staff wrote fish survey report for Logansport Dam Removal projects. IDEM supported low head dam removal to improve nonpoint source pollution impacts on water resources by conducting a special project on the Eel River in Logansport. In March 2020, the IDEM OWQ Watershed Assessment and Planning Branch proposed a focused survey for Asian carp in pools of the Eel River. Electrofishing efforts occurred the week of September 1, 2020 at five sites in pools associated with public access beginning at the most downstream reach (Riverside Park, Logansport, IN) just upstream of the 10th Street Dam and extending upstream with the Adamsboro Bridge access, and the Stockdale Dam pool. In addition to the fish community sampling, a Qualitative Habitat Evaluation Index (QHEI) scoring was conducted to document the habitat type(s) that were present at each site sampled. IDEM determined that Asian carp are currently not in the Eel River watershed. During sampling, IDEM experienced several stretches of the Eel River that were shallow. Asian carp do not prefer stream reaches that are less than one meter in depth;</b>	2019	2023	ongoing	Ongoing – significant progress

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>thus, the removal of the two low-head dams in Logansport, Indiana would not result in Asian carp advancing upstream into the Eel River watershed towards the Great Lakes basin.</b>				
3.3	e	Reconvene IDEM's internal hydromodification subcommittee on state issues and initiatives and meet quarterly. <b>Progress: The subcommittee met 1/20/21, 4/23/21 and 7/21/21. The NE WSS also participates in committee meetings with the Silver Jackets. Five dam removals were completed in 2020 and three are scheduled in 2021.</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 Efforts in Lake Erie 1/29/21, the WLEB meeting held on July 31, 2020, 9/16/2020, 11/9/2020, 9/17/2020, 1/21/2021, 3/22/2021, 3/23/2021. NPS staff participate in the monthly Conservation Cropping Systems Initiative (CCSI) conference calls. NE WSS met with Huntington County SWCD for local working group EQIP ranking meeting. Met with State Rep and other IDEM officials multiple times to discuss path moving forward for the Kendalville WWTP.</b>	2019	2023		Ongoing – significant progress
3.4	b	Publicize success stories. <b>Progress: In FFY 2021, there were no sediment and nutrient success stories to publicize.</b>	2019	2023	ongoing	Ongoing – no need for this FFY
3.4	c	Support implementation of the <i>State Nutrient Reduction Strategy</i> education/outreach goals. <b>Progress: The outreach goals in the SNRS are to work with CCAs and private sector to promote agronomic conservation practices and technologies and to promote the 4R Nutrient Stewardship Certification Program. While the NPS program itself 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 9/16/2020, 11/9/2020, 9/17/2020, 1/21/2021, 3/22/2021, 3/23/2021 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: Staff participated in Annex 4/DAP activities to satisfy this goal. Meetings/conference calls in FFY 2021 were held on July 31, 2020, 9/16/2020,</b>	2019	2023	ongoing	Ongoing – some progress

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>11/9/2020, 1/21/2021, 3/22/2021, 3/23/2021, 5/11/21 and 7/13/21. Branch Chief participated in the WLEB Partnership meetings 1/25/21 and 6/29/21. Branch Chief participated in the WLEB Stakeholder meetings 10/22/20 and 3/24/21.</b>				
3.5		Continue to provide citizen monitoring training through Hoosier Riverwatch and the Clean Lakes Program. <b>Progress: Fourteen workshops were conducted in 2021.</b>	2019	2023	ongoing	Ongoing – significant progress
3.6	a	Produce 5 “Success Stories” (U.S. EPA WQ-10a Strategic Measure) by 2023 and publicize within Indiana. <b>Progress: Two Success Stories were submitted for WQ-10a in FFY 2021. Little Deer and Stump Ditch/Kilmore Creek.</b>	2019	2023	annually	Complete for 2021
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 2021.</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).</b>	2019	2023	ongoing	Ongoing – some progress
3.7	a	Continue to participate in the Pathway to Water Quality at the Indiana State Fairgrounds. <b>Progress: SE WSS continues to act as PWQ chair and attended steering committee meeting on 7/20/21. The SE WSS participated in PWQ workdays at the exhibit on 8/5/20, 9/2/20, 10/7/20, 11/9/20, 11/19/20, 3/10/21, 4/22/21, 5/5/21, 6/16/21, 7/7/21, 7/14/21, and 7/28/21. Multiple members of IDEM volunteered at the PWQ during the course of the State Fair and provided outreach on water quality to the public.</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 6/29/2021. Senior Project Manager participated as a Team Lead for Session 1 on 1/6/21 and Session 2 on 1/20/21. NPS staff participated with presentations and networking. NPS staff participated in the IWLA graduation ceremony 5/26/21.</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. NE WSS Participated in Friends of the St. Joseph River, St. Joseph River Basin Commission meetings on</b>	2019	2023	ongoing	Ongoing – significant progress

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
		<b>a regular basis. As well as attended stakeholder meetings for Upper Wabash, Lower Salamonie, Treaty-Creek Wabash, Auglaize, and St. Mary's watersheds.</b>				
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.</b>	2019	2023	ongoing	Ongoing – significant 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: WSS participated in meetings with LMCP 7/2/2020, 7/21/2020, 9/2/2020, 12/7/2020, and 3/17/2021. NPS Staff attended Septic System Coordination Work Group on 8/11/20, 9/2/20, 5/27/2021 and 7/28/21.</b>	2019	2023	ongoing	Ongoing – significant progress
3.8	b	Support partners for the state initiatives on hydromodification. <b>Progress: NE WSS attended Silver Jackets webinar 7/16/20, 9/10/20, 10/15/20, 12/3/20, 1/21/21, 2/18/21, 3/18/21, 4/15/21, 5/20/21, 6/17/21, 7/15/21.</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. St. Mary's Initiative project supports 7 billboards in Adams and Allen County promoting 4R Nutrient Stewardship Program.</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 meetings and present on the Clean Water Act and the NPS program's role in improving water quality. In FFY 2021, the Academy had 32 participants.</b>	2019	2023	ongoing	Ongoing – significant progress

Goal 3: Develop and conduct a strategic outreach and education program.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
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: Monitoring for the Maria Creek TMDL took place on 7/7/2020, 8/18/2020, 9/15/2020, 10/13/2020, and 2/1/2021. 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. Monitoring for the Vernon Fork TMDL took place on 11/16/2020, 12/15/2020, 1/11/2021, 3/8/2021, 4/12-13/2021, 5/11-12/2021, and 6/8-9/2021. Sampling site recon for the Black Creek TMDL occurred on 2/22/2021 and 3/23/2021. A meeting for the Lake Manitou TMDL was held on 6/1/21.</b>	2019	2023	ongoing	Ongoing – significant progress
4.2		Promote integration of WMPs with local comprehensive plans. <b>Progress: This is done on an as-needed basis.</b>	2019	2023	ongoing	Ongoing – no need for this FFY
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 2021 seven WMP implementation projects were chosen to receive funding and were proposed to U.S. EPA, including Treaty Creek, Headwaters Yellow River, Lower Eel River, Lower Big Blue River, Upper Wabash River, South Fork Wildcat Creek, Big Walnut.</b>	2019	2023	ongoing	Ongoing – significant progress



Goal 4: Improve Indiana's water quality, including surface and ground water, by reducing nonpoint source pollutants such as nutrients, sediment, and bacteria; restoring aquatic habitats; and establishing flow regimes that mimic natural conditions.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
4.5		Repair previously-installed BMPs with the caveats outlined in the program policy. <b>Progress: No BMPs required repair during FFY 2021.</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 2021
4.7		Coordinate with IDNR Stream Mitigation Program. <b>Progress: Due to the impacts of Senate Bill 389 on the Stream Mitigation Program, the Nonpoint Source program did not pursue any special coordination efforts with them this year.</b>	2019	2023	ongoing	Ongoing – no progress
4.8		Update IDEM 2009 WMP Checklist. <b>Progress: Work on the checklist paused for several months. It is currently being edited and reviewed and is expected to be completed and sent to EPA for review by 12/31/2021. NPS staff met on 2/22/21, 5/19/21, 6/14/21 and 7/8/21.</b>	2019	2021	one-time	Ongoing – 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: Two Success Stories were submitted for WQ-10a in FFY 2021. Little Deer and Stump Ditch/Kilmore Creek.</b>	2019	2023	annually	Complete for 2021
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 2021 solicitation was published on April 1, 2020. Eighteen notices of intent to apply were received on or before June 1, 2020. Full proposals were due September 1, 2020 and 16 applications were received and reviewed by Nonpoint source pollution staff. Fourteen proposals were forwarded to EPA for funding consideration, with an additional planning proposal requested and two monitoring proposals to be funded by CWA §205j monies.</b>	2019	2023	annually	Complete for 2021
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 2021 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2021
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 2021 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2021

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
4.11	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 2021 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2021
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 2021 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2021
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 2021 is available in Table 1 and on page 34 of this report.</b>	2019	2023	annually	Complete for 2021

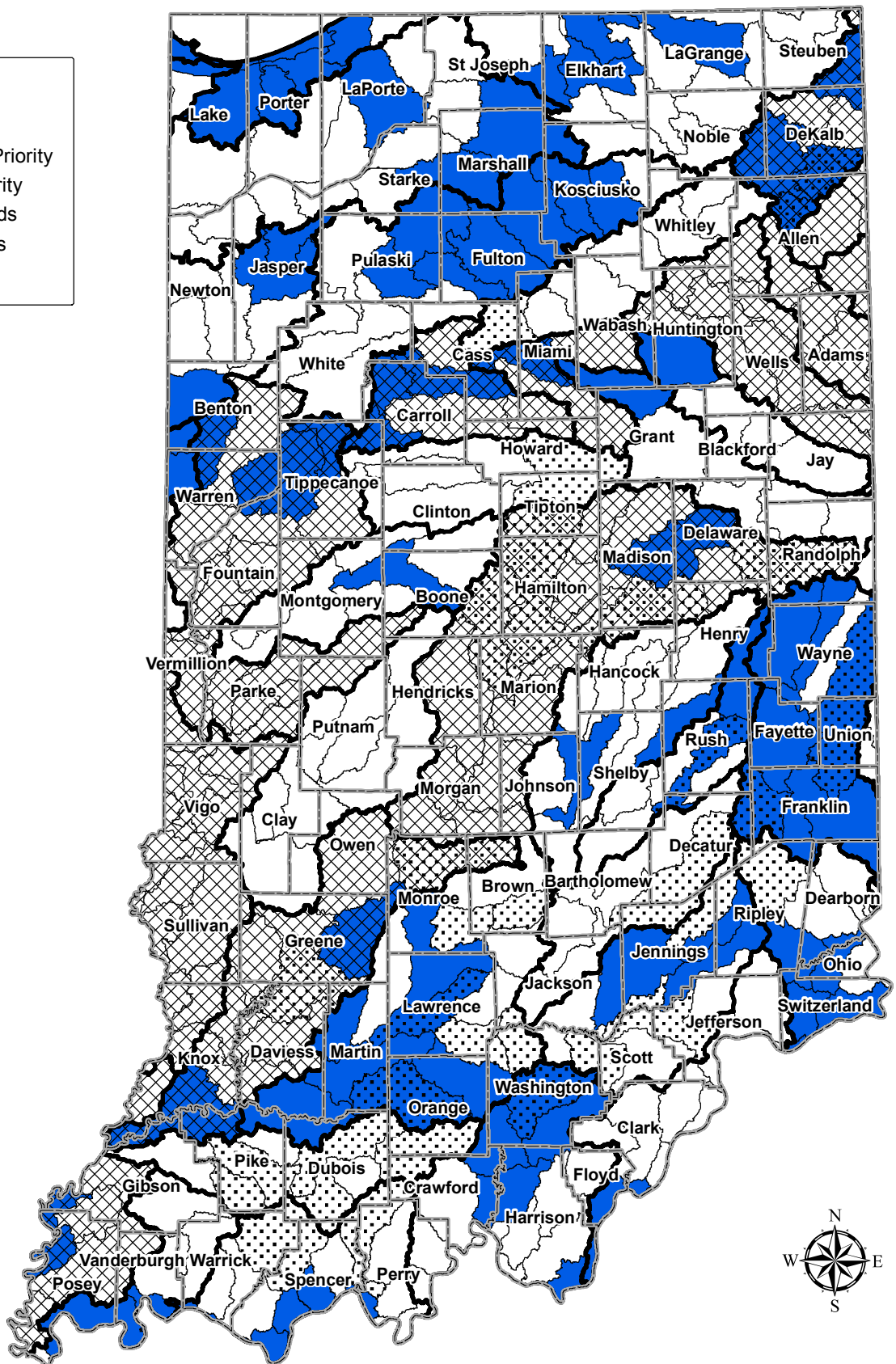
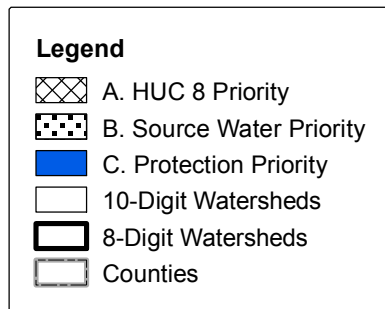
Goal 5. Protect sensitive, vulnerable, and high quality waters of the state so that they may continue to meet their designated uses.						
Obj. #	MM	Objective	FFY Start	FFY End	Frequency	Complete
5.1		Continue to encourage watershed planning activities in watersheds with Category 1 waters. <b>Progress: Category 1 waters in Indiana include waters that are habitats for endangered, rare, and threatened species and waters used as source waters. In FFY 2021, 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 2021 and 2022 solicitations. Source waters are also a priority of the Indiana Conservation Partnership.</b>	2019	2023	annually	Complete For 2021
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
5.5		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 2021</b>	2019	2023	annually	Complete for 2021 – No need in 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</b>	2019	2023	annually	Complete for 2021



		watersheds that impact OSRWs and waters important to endangered, threatened, or rare species were prioritized in the FFY 2021 and 2022 solicitations.				
5.6		<p>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></p> <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> <p><b>The NE WSS attended an Indiana Hellbenders Partner meeting on 11/18/20.</b></p>	2019	2023	ongoing	Ongoing – significant progress
5.7		<p>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></p> <ul style="list-style-type: none"> <li>• Expand wetland awareness</li> <li>• Promote wetland conservation</li> <li>• Encourage wetland restoration</li> </ul>	2019	2023	ongoing	Ongoing – progress
5.8		<p>Work with IDEM’s Ground Water section and watershed groups, as well as CWSRF and DWSRF, to identify wells in need of proper decommissioning. <b>Progress: 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 FFY2021.</b></p>	2019	2023	ongoing	Ongoing – no need for this FFY

Indiana State Nonpoint Source Pollution Management Plan 2021 Action Register

# APPENDIX B Section 319 Priority Watersheds (FFY 2021)



0 15 30 60 Kilometers

0 20 40 80 Miles

**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:** 03/31/2020



# Appendix C

## Open and Pending 319 Projects 10/1/20 - 9/30/21

FFY	ARN/ Contract	Contractor	Project	Status	Start	End	Type
<b>2016</b>							
	19146	Purdue University	St. Mary's Initiative	Open	6/6/2017	12/5/2021	Assessment
<b>2017</b>							
	24998	Clinton County SWCD	South Fork Wildcat Creek Stewardship Initiative Phase 2	Open	11/14/2017	2/4/2022	Restoration/Implementation
	23710	Dearborn County SWCD	Hogan Creek Watershed	Open	2/15/2018	2/14/2022	Restoration/Implementation
	23633	Historic Hoosier Hills RC&D	Central Muscatatuck Watershed	Open	12/15/2017	12/14/2021	Restoration/Implementation
	26374	Indiana Lake Michigan Coastal Program	On Site Disposal System Outreach and Education/Targeted Source Track	Open	5/2/2018	5/1/2022	Restoration/Implementation
	23109	Purdue University	Indiana Watershed Leadership Academy	Open	1/9/2018	1/8/2022	Program Support
<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
	31746	Indiana University	Clean Lakes Program	Open	5/1/2019	4/30/2023	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	12/31/2021	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>							
	47519	Sullivan County SWCD	Maria & No Business Creek Watershed Management Plan	Open	12/10/2020	12/9/2024	Planning
	50141	Wabash River Enhancement Corp	Region of the Great Bend of the Wabash River Implementation	Open	1/27/2021	1/26/2023	Restoration/Implementation
	48881	Washington County SWCD	South Fork-Blue River Implementation	Open	1/25/2021	3/24/2024	Restoration/Implementation
	49760	Benton County SWCD	Big Pine Creek Watershed Implementation	Open	11/17/2020	11/16/2023	Restoration/Implementation
	48941	The Watershed Foundation	Walnut Creek-Tippecanoe River Implementation	Open	3/10/2021	3/9/2024	Restoration/Implementation
	48894	Ouabache Land Conservancy	Otter Creek Implementation	Open	1/7/2021	1/6/2024	Restoration/Implementation
	48870	Carroll County SWCD	Deer Creek-Sugar Creek Implementation	Open	12/2/2020	12/1/2023	Restoration/Implementation
	47568	Gibson County SWCD	Highland Pigeon Watershed Management Plan	Open	11/16/2020	11/15/2022	Planning
	49762	Vanderburgh County SWCD	Lower Pigeon Creek Watershed Management Plan	Open	2/16/2021	2/15/2023	Planning
<b>2021</b>							
		Knox County SWCD	Snap Creek-Kelso Creek WMP	Pending			Planning
		Montgomery County SWCD	Upper Sugar Creek WMP	Pending			Planning
		Putnam County SWCD	Big Walnut Watershed Alliance Implementation	Pending			Restoration/Implementation
		Elkhart River Restoration Association, Inc.	Upper Elkhart River WMP	Pending			Planning
		Wabash River Defenders	Treaty Creek-Wabash River	Pending			Restoration/Implementation
		Marshall County SWCD	Headwaters Yellow River	Pending			Restoration/Implementation

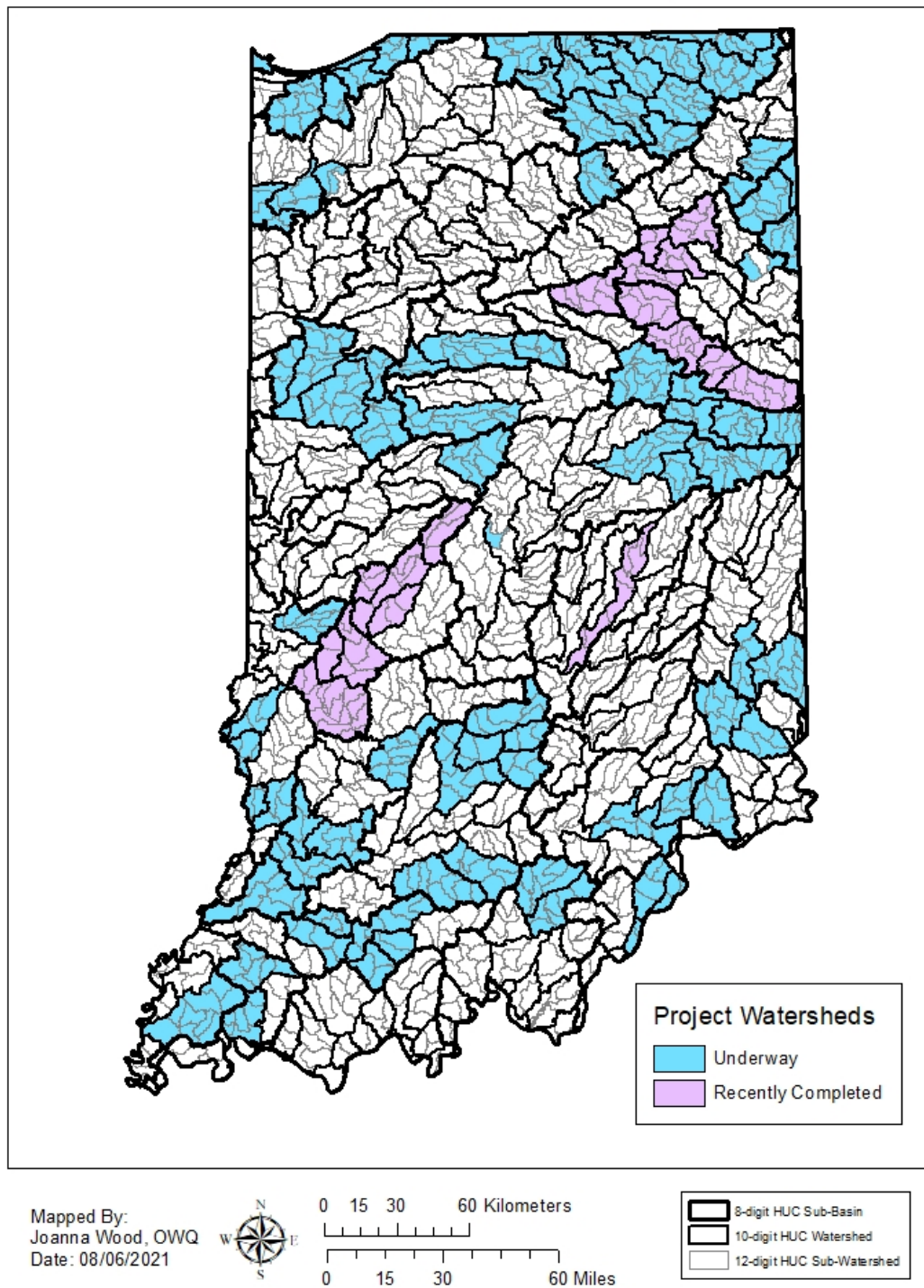
Appendix C

Open and Pending 319 Projects 10/1/20 - 9/30/21

Huntington County SWCD	Upper Wabash River Phase 3	Pending	Restoration/Implementation
Clinton County SWCD	South Fork Wildcat Creek Phase 3	Pending	Restoration/Implementation
Clay County SWCD	Lower Eel River Watershed	Pending	Restoration/Implementation
Shelby County SWCD	Lower Big Blue River Watershed	Pending	Restoration/Implementation

## APPENDIX D

### Indiana NPS Projects Through 2021



## **Appendix E**

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

#### **FFY 2018**

##### **Region of the Great Bend of the Wabash River Implementation (Contract# 31213)**

This is a continuation of Wabash River Enhancement Corp's (WREC) FY 2016 grant 6-246. The Grantee will continue to implement the cost-share program to promote the implementation of best management practices (BMPs) such as cover crops, denitrifying bioreactors, stormwater runoff control, and others that address the water quality concerns outlined in the Region of the Great Bend Wabash River Watershed Management Plan (WMP). WREC will provide technical assistance to landowners to facilitate BMP implementation through the coordinator's activities such as conducting urban landowner and farm site visits, assisting with conservation planning and BMP selection, and inspecting installed BMPs to ensure that they meet design specifications. They will also promote other conservation programs such as the Conservation Reserve Program (CRP), Environmental Quality Incentive Program (EQIP), Classified Forest Program, and the Clean Water Indiana Program. WREC will conduct a monitoring program for educational purposes and to monitor water quality trends in the Region of the Great Bend River Wabash watershed. They will sample chemical parameters at stream sites throughout the watershed hosting at least one spring and one fall Wabash Sampling Blitz per year. WREC will conduct an education and outreach program. They will hold education and outreach, steering and agricultural and urban committee meetings. Submit press releases, update Facebook and newsletters. They will also assist with planning the Wabash Riverfest, host field days and hold two Green Practices Tours.

#### **FFY 2017**

##### **Deer Creek-Sugar Creek Implementation (Contract# 25136)**

Carroll County Soil & Water Conservation District will implement on the ground conservation and education and outreach efforts to meet goals listed in the Deer Creek-Sugar Creek Watershed Management Plan. These goals include short-term, 10 year goals of reducing nitrate-nitrogen loading from 2 million lbs/yr to 190,000 lbs/yr (91%), total suspended solids from 24 million lbs/yr to 3 million lbs/yr (88%), and total phosphorus as a by-product of nitrogen and sediment reduction within high priority watersheds. These watersheds include Sugar (HUC 051201050601) and Little Deer Creeks (HUC 051201950503 and 051201050501). Additionally, within 20 years, E. coli concentrations will exceed the stated standard in only 20% of collected samples and all assessed streams will meet their aquatic life use designation. Finally, within the next five years Carroll County SWCD will raise community awareness of water quality issues related to nutrient loading and aquatic habitat alteration.

##### **Lower Eel River Implementation (Contract# 25438)**

Clay County Soil and Water Conservation District (SWCD) will review and revise the current cost-share program. The plan will promote the implementation of best management practices (BMPs) in the critical areas that are identified in the Lower Eel River Watershed Management Plan (WMP). The Clay County SWCD Staff and/or volunteers will conduct an unfunded water quality monitoring program in the Lower Eel River Watershed (LERW) to track water quality trends using the Hoosier Riverwatch methods. The

## Appendix E

Clay County SWCD will develop and conduct an educational and outreach program which includes, field days or workshops. The SWCD will develop and distribute press releases to distribute to watershed residents to promote cost-share programs, field days, BMPs, and any other watershed activities or information. They will hold steering committee meetings, develop and distribute an annual septic care and maintenance “How-to” postcard or hold a septic workshop. Develop and distribute flyers, newsletters, or brochures.

### **Upper Mississinewa River Watershed Project Implementation (Contract# 25901)**

Delaware County Soil and Water Conservation District (SWCD) will develop and promote the Upper Mississinewa Watershed Cost-share Program (UMRWP) to implement best management practices (BMPs) such as soil health systems (cover crops, no-till, and nutrient management), pasture/hayland plantings, livestock exclusions, alternative watering systems, HUAPs, roof runoff systems, riparian buffers, and others that address natural resource concerns identified in the Upper Mississinewa Watershed Management Plan. The bmp's will be implemented in the listed critical areas for excess nutrients, E. Coli, and sedimentation in the watershed management in high priority subwatersheds. The Delaware SWCD will develop and conduct an educational and outreach program which includes, field days or workshops for urban/suburban and rural/agriculture residents, and septic system field days. The SWCD will develop and distribute public awareness tools such as flyers, pamphlets, newsletters, press releases, and fact sheets to distribute to watershed residents to promote cost-share programs, field days, BMPs, and any other watershed activities or information. They will hold steering committee meetings, and river clean-up events. The SWCD will create a video demonstrating Hoosier Riverwatch Sampling methods. Hold annual UMRW meetings, meet with local health department officials and collaborate on educational initiatives. The SWCD will collaborate with Water Quality Indiana (a project of Ball State University), and/or Delaware County GIS, and Hoosier Riverwatch in developing a volunteer based water quality monitoring program.

### **Lower Salamonie River Implementation (Contract# 24671)**

Huntington County Soil and Water Conservation District (SWCD) will review and revise the current cost-share program. The plan will promote the implementation of best management practices (BMPs) in the critical areas that are identified in the Lower Salamonie River Watershed Management Plan (WMP). The Huntington County SWCD Staff and/or volunteers will conduct a water quality monitoring program in the Lower Salamonie River Watershed (LSRW) to track trends in changes to the levels of sediment and nutrients in the rivers and streams. Sampling events will be conducted 7 times a year at 13 sites and parameters tested will include: Dissolved Oxygen, E. coli, pH, Biochemical Oxygen Demand, Turbidity, Nitrate-Nitrite Nitrogen, Total Phosphorous, Flow, and Temperature. Macroinvertebrate counts and habitat evaluations will be conducted one time a year using the Hoosier Riverwatch methods. The data collected during the water monitoring program will provide information about trends in nutrient loads and the nutrient load reduction goal levels being met. The Huntington County SWCD will develop and conduct an educational and outreach program which includes, field days or workshops. The SWCD will develop and distribute press releases to distribute to watershed residents to promote cost-share programs, field days, BMPs, and any other watershed activities or information. They will hold steering committee meetings.

### **South Fork-Blue River Watershed (Contract# 22502)**



## Appendix E

Washington County Soil and Water Conservation District (SWCD) will develop and promote the South Fork-Blue River Cost-share Program to implement best management practices (BMPs) in critical areas identified in the SFBR WMP. BMPs include cover crops, forage and biomass planting, access road, critical area planting, grassed waterways, rock lined waterways, fencing, pipeline, filter strips, waste storage facilities, HUAPs and others that address water quality concerns that have been identified in the South Fork-Blue River Watershed Management Plan. The cost-share program efforts also include the promotion of other conservation programs such as Classified Forest, Conservation Reserve Program, Environmental Quality Incentive Program, Lake and River Enhancement and Clean Water Indiana Program. Washington County SWCD will develop and conduct an educational outreach program that will bring about positive behavioral changes that will lead to reduced nonpoint source pollution in the watershed including conduct field days/workshops, create and distribute flyers/brochures/factsheets, newsletters, press releases, conduct a septic workshop. They will hold steering committee meetings, clean-up events and promote septic education by sponsoring a booth at the Home and Garden Show.

### **FFY 2016**

#### **Big Pine Creek Watershed Implementation (Contract# 19223)**

Benton County SWCD will develop and promote a cost-share program to implement best management practices (BMPs) such as cover crops, conservation tillage, nutrient management and others that address the water quality concerns outlined in the Big Pine Creek Watershed Management Plan (WMP). Benton County SWCD will conduct a monitoring program for educational purposes and to monitor water quality trends in the Big Pine Creek watershed. They will sample chemical parameters at sites throughout the watershed capturing at least one storm event and one base flow per year. Monitoring parameters will include total suspended solids, nitrate-nitrogen, total phosphorus, E. coli, stream flow, dissolved oxygen, pH, and water temperature. They will also conduct stream macroinvertebrate and fish sampling and analyze the collected community using the State's Index of Biotic Integrity (IBI) and macroinvertebrate Index of Biotic Integrity (mIBI). Benton County SWCD will conduct a habitat assessment during the biological sampling activities using the State's Qualitative Habitat Evaluation Index (QHEI). Benton County SWCD will also conduct an education and outreach program that will include holding steering meetings, quarterly mailings, press releases, update website and hold workshops and field days.

#### **Whitewater River WMP Implementation (ARN# 6-240)**

Dearborn County SWCD will develop and promote a cost-share program to implement best management practices (BMPs) such as cover crops, no-till, nutrient management, pasture/hayland improvements, livestock exclusion, and others that address the water quality concerns in the Whitewater River WMP. The SWCD will conduct an education and outreach program that will lead to reduced nonpoint source pollution in the watershed. They will conduct field days or workshops, clean-ups, and develop and distribute flyers, pamphlets, newsletters, news releases or fact sheets. The SWCD will develop and provide "Friends of the Whitewater River" signs to all cost-share program participants willing to display the signs for public outreach and awareness of the cost-share program.

#### **Mill Creek-Blue River WMP Implementation (ARN# 6-247)**



## Appendix E

Washington County SWCD will implement the Mill Creek-Blue River Watershed Management Plan (WMP). They will develop and promote a cost-share program to implement Best Management Practices (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 field days, workshops, and clean-up events. They will develop flyers or brochures, news releases or fact sheets and will promote watershed activities at public meetings and events. The SWCD will continue the existing volunteer monitoring program to educate and collect trend data using Hoosier Riverwatch methods and will host a Hoosier Riverwatch training for new volunteers.

### 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 10/1/20- 9/30/21

FFY	ARN/ Contract	Contractor	Project	Status	Start	End	Type
2018							
	31203	Jasper County SWCD	Lower Kankakee River Watershed Management Plan	Open	3/18/2019	3/31/2022	Planning
2019							
	38657	Allen County SWCD	Flatrock-Auglaize River WMP	Open	11/26/2019	11/25/2021	Planning
	38879	USGS	Kankakee Gauge at Shelby	Open	3/18/2019	3/31/2021	Assessment
2020							
	47451	Lawrence County SWCD	Lower Salt Creek WMP	Open	12/2/2020	12/1/2022	Planning
	47412	ORSANCO	Continuous Monitors on Ohio River III	Open	7/1/2021	6/30/2022	Assessment
	48449	Delaware County	Upper White River WMP	Open	12/2/2020	12/1/2023	Planning
2021							
		USGS	Nutrient Supergage and HABs at New Harmony	pending			Assessment
		Washington SWCD	Twin Creek-Lick Branch WMP	pending			Planning
		ORSANCO	Continuous Operation of Two Continuous Monitors on the Ohio River	pending			Assessment