

Fish Creek Watershed

319 Planning Project Final Report

2023-2025



ARN: #69065

Project Sponsor:

Owen Co. SWCD

Report Period: January 18, 2023-
January 17, 2025

Report Completed by:

Laura Demarest,

319 Watershed Coordinator

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INTRODUCTION and OVERVIEW

The Fish Creek Watershed (FCW) 319 Planning project officially began on 1/18/23 and ended on 1/17/25. The purpose of the project was to form an Advisory Committee, conduct baseline monitoring, and create a comprehensive Watershed Management Plan for the Fish Creek watershed project area.

The FCW 319 Planning grant was primarily managed by Watershed Coordinator, Laura Demarest, with the financial oversight of the Owen County SWCD Board and SWCD Director, Tammy Bingham.

PROJECT GOALS AND OBJECTIVES

The application for funding included generalized goals, which were adapted into ‘Tasks’ for the Grant Agreement and can be found summarized below. The Grant Application also included several ‘Outcomes and Measures of Success’, which will also be discussed further. Within the scope of each Task were several objectives to be completed to satisfy the overall goals of the FCW 319 Planning project. The completion of these tasks will be presented at length in the next section of this report. The requirements of each Task were summarized as follows:

Task A (Watershed Management Plan Development): *The Grantee shall produce a watershed management plan (WMP) for the Fish Creek watershed, Hydrologic Unit Code (HUC) [0512020202]. The watershed plan shall include all elements listed in the State’s Watershed Management Plan Checklist (updated 2009). The WMP must be designed to achieve the reduction in pollutant loads called for in the nonpoint source West Fork White River TMDL. The Grantee shall submit drafts of the WMP to the State for review and comment in accordance with the schedule set out in Exhibit C. The State will consider the Grantee’s submittal of any draft WMP to be substantially performed only if that draft WMP contains all applicable elements listed in the State’s WMP checklist. The State may retain up to 10% of the Grant amount each time the Grantee does not submit the WMP (draft or final) within the timeframe specified in Exhibit C. The Grantee shall submit the Watershed Management Plan Checklist with each draft WMP indicating where in the plan each checklist element may be found. The Grantee shall provide no less than one (1) editable electronic copy of each draft WMP to the State. The Grantee shall provide one (1) hard copy and (1) compact disc (CD) of the final WMP to the State. The Grantee shall also make copies available to local libraries, local officials, land use planners in the watershed, and others upon request. The Grantee shall develop a steering committee of local stakeholders to guide the development of the watershed management plan. This committee shall meet no less than quarterly. Steering committee meetings shall be advertised in the local media and open to the public. All Geographic Information System data created or modified by the Grantee for delivery to the State shall meet the Indiana State Agencies Arc/Info Data Collection Standards except for metadata. Metadata shall meet the Federal Geographic Data Committee (FGDC) standard called the Content Standard for Digital Geospatial Metadata. Any deviation from either standard must have prior written approval from IDEM. All Global Positioning System data collected by the Grantee for delivery to the State shall include IDEM’s Method Accuracy Description Codes. Any deviation from this requirement must have prior written approval from IDEM. The Grantee shall submit a copy of GIS layers to the State.*

- Conduct quarterly Steering Committee meetings for a total of eight (8).
- Complete the Fish Creek Watershed Management Plan

Task B (Water Monitoring): *The Grantee shall develop a Quality Assurance Project Plan (QAPP) for the monitoring activities and submit it to the State for approval at least one (1) month prior to initiating monitoring activities. The Grantee shall conduct all monitoring activities and submit all data in accordance with the approved QAPP. The Grantee shall conduct a monitoring program in Fish Creek and major tributaries to establish baseline water quality and assist in the development of the WMP. The exact locations of the monitoring sites shall be specified in the QAPP to be approved by the State. Stream monitoring shall be conducted at no fewer than eleven (11) sites for no less than one (1) year. Parameters to be tested no less than monthly shall include pH, temperature, dissolved oxygen, nitrate+nitrite, total nitrogen, ammonia nitrogen, total and dissolved phosphorus, turbidity, conductivity, total suspended solids, discharge, and E. coli. The Grantee shall conduct stream macroinvertebrate sampling no fewer than one (1) time at all sites in the watershed, preferably during July through October, and analyze the collected community using the State’s macroinvertebrate Index of Biotic Integrity (mIBI). The Grantee shall conduct a habitat assessment during the biological sampling activities using the State’s Qualitative Habitat Evaluation Index (QHEI).*

- Develop an approved Quality Assurance Project Plan
- Conduct monthly baseline water sampling on a minimum of 11 sites for 12 months
- Submit data to IDEM in ARUT spreadsheet

Task C (Education and Outreach): *The Grantee shall conduct an education and outreach program designed to bring about behavioral changes that will lead to non-point source pollution in the watershed. The Grantee shall at a minimum:*

- Update website or social media accounts monthly for a total of twenty-four (24) updates to provide information to stakeholders regarding BMPs, upcoming meetings and events, and project progress.
- Develop and distribute one (1) Fish Creek 319 educational brochure to encourage stakeholders to engage with the project and promote conservation.
- Submit content to local media six (6) times to encourage Advisory Committee participation, share events, and publicize the project.
- Engage in a minimum of six (6) community events such as fairs, farmers markets, Private Applicators Recertification Project (PARP) events, and grazing clinics to promote the project.
- Conduct two (2) water quality events or soil health field days to showcase conservation through agricultural BMPs. Topics may include but are not limited to: MyPath Water Day, karst conservation, septic system maintenance, optimizing cover crops, precision agricultural tools
- Host one public meeting per year for a total of two (2) to summarize data collected, inform the public about project milestones, highlight successes, and garner stakeholder interest. Track attendance at events.
- Provide two (2) updates to governing bodies in person such as County Council, County Commissioners, Drainage Boards, and Partner SWCDs
- Maintain a filterable database of volunteers, partners, and contracts and sort into groups pertaining to potential volunteer/partner/stakeholder.

Task D (Reporting): *The Grantee shall prepare and submit an electronic copy of a progress report to the State with each invoice, on at least a quarterly basis. A total of no fewer than seven (7) quarterly progress reports shall be prepared and submitted by the Grantee to the State. The Grantee shall prepare and submit one (1) electronic copy and one (1) hard copy of a final written summary project report to the State by the close of this project, including an electronic copy of all products produced as a result of this project.*

- Prepare and submit a progress report to the State with each invoice package at least quarterly (a total of 7).
- Submit documentation and the final report to the State as a hard copy and via USB.

EVALUATION OF GOAL ACHIEVEMENT

Overall, the FCW 319 Planning project proved to be a success, assembling a highly engaged and diverse Advisory Committee and creating a comprehensive Watershed Management Plan using collected data from baseline monitoring, stakeholder input, modeling, and collected local data. The success of the project can be validated by assessing the completion of the items listed in each of the previously outlined Tasks.

Favorable trends in stakeholder interest and participation continued throughout the duration of the project. The power of local word-of-mouth has been a vital key to success for this program and has proven more effective for generating interest than any sort of public advertising efforts.

When considering the short and long-term goals stated in the newly created FCW Watershed Management Plan, it is premature to assess progress towards completion, however a series of “Project Outcomes” and “Measures of Success” was outlined in the FCW 319 Planning grant application (presented below). Each “Measure of Success” below will receive a check mark to indicate if it was completed during the project timeline. Additional discussion may be included, as necessary.

Project Outcomes and Measures of Success:

- ✓ **Complete an approved Watershed Management Plan for the Fish Creek Watershed**
The WMP was completed and approved by IDEM following the conclusion of the FCW 319 grant, in the spring of 2025. The WMP and supporting data is publicly available online at <https://watershed-alliance.org/fish-creek-watershed-fcw/> and a printed copy is available at the Owen Co. SWCD office.

- ✓ **Compile a Fish Creek “Interest List” for future BMP Implementation**
An ‘Interest List’ for cost-share in the Fish Creek watershed was compiled over the course of the 2-year planning grant that includes 25 producers and an estimated \$386,000 value of conservation practices.
- ✓ **Promote the Fish Creek watershed project through Education & Outreach activities**
 - ✓ *Host 2 field days/events*
 - ✓ *Engage in 6 community events*
 - ✓ *Provide 2 updates at public stakeholder meetings*
 - ✓ *Issue progress reports to governing organizations twice*
 - ✓ *Submit content to local media 6 times*
 - ✓ *Create and distribute 1 Fish Creek project brochure*
 - ✓ *Generate monthly social media/website updates*
 - ✓ *Maintain a contact database for the project*
 - ✓ *Track attendance at all events*

COMPLETION OF TASKS

One straightforward way to quantify the success of the FCW Planning grant project is to review the completion of the objectives outlined in each Task. More complex topics will be further discussed and analyzed as necessary. Supporting documentation can be found in the Final Report USB Appendices.

Task A: Watershed Management Plan Development

- Create an approved Watershed Management Plan for the Fish Creek Watershed.

The FCW Watershed Management Plan received IDEM approval during the spring of 2025, following the conclusion of the FCW 319 Planning grant term. The completed FCW WMP and supporting documentation is available for view in its entirety on the watershed-alliance.org website.

Lessons Learned: During the fall of 2024, IDEM issued a new Checklist for WMPs to follow, which meant there were some delays as the transition was made to adhere to these updates. Previously, WMPs were following IDEM’s 2009 Checklist, which the FCW WMP could have opted to follow, though the decision was made to switch to the new 2024 WMP Checklist will help future-proof the plan.

Completing the WMP also took a bit longer than expected because the primary mapping program used by the Watershed Coordinator (ArcMap Desktop) converted to a fully online service (ArcPro) and significant steps had to be taken to gain competence with the new program, which slowed progress for a time when it came to generating adequate maps for use in the WMP.

It is always advisable that future projects do not underestimate the amount of time needed to collect information, review many sources of data, and receive feedback from Advisory Committee members, IDEM, and EPA. There are always unforeseen circumstances and delays so it’s best to plan accordingly and make as much progress as possible early in the grant timeline.

- Establish an Advisory Committee and hold meetings four times per year to collect stakeholder input (8 total).

The FCW Advisory Committee was required to meet four times per year for two years (a total of 8). Applicable supporting documentation for meetings can be found in **Appendix A** on the FCW #69065 Final Report USB.

Meetings were primarily promoted via the Fish Creek Watershed project email list (with over 150 individuals and growing) and advertised various places including the Owen Co. SWCD social media and website, www.watershed-alliance.org website, and various online local news sources and popular social media outlets. On occasion, flyers were also posted in the public library, YMCA, My Path bulletin board, Babbs grocery store, and other high traffic community locations. Meetings were consistently well-attended by a diverse group of participants representing a variety of interest groups and affiliations.

Advisory Committee dates:

4/19/23, 6/21/23, 9/19/23, 1/17/24, 4/16/24, 7/30/24, 10/30/24, 1/7/25 (Zoom)

Task B: Water Monitoring

- Develop an approved Quality Assurance Project Plan

The QAPP was approved on 8/4/23 and can be found in **Appendix B** of the FCW #69065 Final Report USB.

- Conduct monthly baseline water sampling on a minimum of 11 sites for 12 months

Baseline monitoring was conducted monthly for one year on 11 sites from August 2023-July 2024. The monthly sample number occasionally varied due to the addition of duplicate samples or the inability to sample a site due to access concerns, drought, or unfavorable weather conditions. Sampling was generally conducted only by the Watershed Coordinator with occasional assistance from another individual for training purposes or to help with macroinvertebrate collection. A special permit was obtained for water sampling in McCormick's Creek State Park and annual reports were sent.

**Note: Some parameters listed in the #69065 Grant Agreement were included in error; the FCW baseline project did not include sampling for total nitrogen, dissolved phosphorus, or ammonia nitrogen.*

- Submit data to IDEM in ARUT spreadsheet

All data collected was entered into the specified IDEM ARUT Spreadsheet, which can be found in **Appendix B** on the FCW #69065 Final Report USB. Results were also entered into the public Hoosier Riverwatch database and shared with the Advisory Committee and other interested stakeholders.

Task C: Education and Outreach

Conduct an education and outreach program designed to bring about behavioral changes and encourage BMP implementation that will lead to reduced nonpoint source pollution in the watershed.

- Update website or social media accounts monthly for a total of twenty-four (24) updates to provide information to stakeholders regarding BMPs, upcoming meetings and events, and project progress.

The www.watershed-alliance.org website is maintained by the Watershed Coordinator and was updated at least monthly during this project. Social media updates were primarily conducted on “X” (formerly known as Twitter) and on the Owen SWCD Facebook page. Information about the FCW 319 project was also shared on the Owen Co. SWCD website. Between the regular website updates and various social media venues, the requirement of 48 updates was met and exceeded.

- Develop and distribute one (1) Fish Creek 319 educational brochure to encourage stakeholders to engage with the project and promote conservation.

Owen Co. SWCD Director, Tammy Bingham, created a 319 BMP booklet that contains other general information about the FCW 319 project. This booklet was distributed at events and is available at the SWCD office. A copy is included in **Appendix C** for reference.

- Submit content to local media six (6) times to encourage Advisory Committee participation, share events, and publicize the project.

Media Content: Limestone Post – online ad 4/2022, *The Bloomingtonian* – article 4/4/2022, CBS4 Online Community Calendar – April 2023, June 2023 – Limestone Post, online ad, June 2024 – *The Bloomingtonian*, Jan 2025 – Limestone Post online ad

Lessons Learned: Media outlets in rural communities have decreased considerably in recent years and are basically non-existent in some project areas. Owen County did not have a newspaper when the Fish Creek 319 project commenced so creative solutions had to be found for public advertising that were not cost-prohibitive. On occasion, *The Bloomingtonian* or the *Limestone Post* free online community calendar was used, but often meetings were advertised by posting flyers around town or word-of-mouth. As a result, there was an excess of advertising funding leftover at the end of the grant that was used instead for office supplies and equipment.

- Engage in a minimum of six (6) community events such as fairs, farmers markets, Private Applicators Recertification Program (PARP) events, and grazing clinics to promote the project.

Attendance for all events was tracked and these details and any related information for each event can be found in the QPRs in **Appendix D** on the FCW Final Report USB.

Event Summary: 2023 Owen Co. 4-H Fair booth, Owen County Farmer’s Market booth July 2023, Owen SWCD Arbor Day event April 2024, Owen County Fair booth – July 2024, Owen Co. Farmer’s Market booth August 2024, Indiana Master Naturalist Water Quality presentation – October 2024

- Conduct two (2) water quality events or soil health field days to showcase conservation through agricultural BMPs. Topics may include but are not limited to: MyPath Water Day, karst conservation, septic system maintenance, optimizing cover crops, precision agricultural tools.

These events took considerably more time to plan and execute than FCW promotion at community events as described in the previous task. Water Day (Sept 2023 and Oct 2024) is a significant community event held each fall and coordinated primarily by the Owen Co. SWCD.

Attendance was tracked and these details and any related information for each event can be found in the QPRs in **Appendix D** on the FCW Final Report USB.

- Host one public meeting per year for a total of two (2) to summarize data collected, inform the public about project milestones, highlight successes, and garner stakeholder interest. Track attendance at events.

SWCD Annual Business meetings (March 2023, February 2024) served this function, where approximately 80-100 stakeholders were in attendance each year. These meetings were publicly advertised and provided an opportunity to share 319 updates along with an annual report.

- Provide two (2) updates to governing bodies in person such as County Council, County Commissioners, Drainage Boards, and partner SWCDs.

Owen Co. SWCD Director, Tammy Bingham, provided updates on the FCW 319 project to the County Council during budget hearings (March 2024 and August 2024).

- Maintain a filterable database of volunteers, partners, and contacts and sort into groups pertaining to potential volunteer/partner/stakeholder.

This task was accomplished on an ongoing basis throughout the project timeline as new contacts were added and categorized. The list is maintained via Google Contacts and easily exported as a .csv file that can be used to share with others or for mass emails. This is free and easy to use for the Watershed Coordinator.

Task D: Reporting

- Prepare and submit a progress report to the State with each invoice package at least quarterly.

A total of eight (8) Quarterly Progress Reports were submitted during the FCW 319 Planning project, meeting the Task D requirement. Copies of all Quarterly Progress Reports can be found in **Appendix D** on the FCW Final Report USB. Dates for reporting periods are listed below:

- January 18th, 2023-May 5th, 2023
- May 6th, 2023-August 31st, 2023
- September 1st, 2023-November 30th, 2023
- December 1st, 2023-April 17th, 2024
- April 18th, 2024-July 31st, 2024
- August 1st, 2024-October 17th, 2024
- October 18th, 2024-January 17th, 2025

Submit two electronic copies of a final report to the State.

The FCW 319 Planning project Final Report and all supporting documentation was submitted to the State as a USB provided to the Watershed Specialist and will be archived in a shared Google Drive for at least the next three years. All hard copy information will be retained as long as necessary at the Owen SWCD Office along with a dedicated USB with collected project documentation. A copy of the Final Report will also be posted for public view on the www.watershed-alliance.org website for as long as the Fish Creek Watershed project remains active.

Discussion of Monitoring Results

When the FCW project commenced in 2023, one of the first orders of business was to begin collecting baseline data that would serve in developing the Fish Creek Watershed Management Plan. Previously, water monitoring had been conducted in the Fish Creek watershed, but most available data was significantly aged, and it was often hard to ascertain collection methods or obtain complete sets. Therefore, it was necessary to collect new data so load estimations could be calculated for a downstream ‘pour point’ in each HUC12 subwatershed.

After carefully considering the 319 funding budget for monitoring, eleven sites were chosen throughout the Fish Creek HUC10 watershed to monitor monthly for one year. 319-funded lab testing (NO₂ + NO₃, Total Phosphorus, E.coli, Total Suspended Solids) was conducted by Dillman Labs in Bloomington. Hoosier Riverwatch methods were used for additional parameters: pH, Dissolved Oxygen, Flow, Turbidity, color, odor, and photo documentation. A QHEI score was collected for each site and a macroinvertebrate assay was conducted in the fall of 2023. *(Note: Some parameters listed in the #69065 Grant Agreement were included in error; the FCW baseline project did not include sampling for total nitrogen, dissolved phosphorus, or ammonia nitrogen.)*

During the FCW Planning 319 project, a total of 127 samples were collected for lab analysis of E.coli, TSS, NO₂/NO₃, and Total Phosphorus. Each watershed’s pollutant loads were calculated (as documented in the FCW WMP) to determine critical areas. All collected data can be found in **Appendix B** on the FCW Final Report USB as well as detailed and discussed at length in the FCW Watershed Management Plan. In addition, all collected baseline data was entered into the Hoosier Riverwatch database for public reference.

Water monitoring provides a great way to ‘ground truth’ assumptions about water quality but is limited in many ways due to constraints from budget, time, personnel, and weather. Data from water monitoring was also compared with modeling data from the online Model My Watershed tool and load reduction goals were generated from ‘worst-case scenario’ numbers which typically came from the MMW tool that is based off 30 years of rainfall data,

slopes, soil types, and land use. After the next several years of implementation efforts, success monitoring may be conducted in this watershed by IDEM and will hopefully indicate measurable water quality improvements.

Public Participation and Partnerships

The FCW 319 Planning program celebrated a successful outcome chiefly because of the dedication and commitment of those involved. The project was widely promoted through avid word-of-mouth and local connections. It was ultimately guided by decisions of the Owen County SWCD Board.

Several key partners were especially involved during this project including NRCS, ISDA, Purdue Extension, The Nature Conservancy, Owen County Community Foundation, neighboring SWCDs, DNR, Hoosier Energy, and the Spencer Public Library. NRCS District Conservationists (Rachel Farrow – 2023-2024, Erin Basiger - 2024 to present) were instrumental in providing information and insight about local practices and areas in need of BMPs. Billy Pigg and Dale Walker (retired 2024) with ISDA facilitated tillage transects and provided information from windshield surveys and local knowledge. Promotion for the FCW 319 project was largely carried out by Owen Co. SWCD Director, Tammy Bingham and Amy Arnold, Owen Co. SWCD staff via social media, website updates, local events, posting flyers, and enthusiastic word-of-mouth.

One major credit to the FCW Planning program is the fact that the match requirement was not only fulfilled but exceeded! Indeed, the match requirement was \$76,633.00 and the final total reached \$188,883.15 exceeding the goal by \$42,250.15! This is a true testament to the commitment of local stakeholders and dedicated partners! The total value of this 319 grant from January 2023-2025 equals \$303,833.15 (total funding and accrued match/in-kind).

Successes, Challenges, and Lessons Learned

In summary, the FCW 319 Planning project demonstrated many positive outcomes, including:

- Exceeded match requirement by \$42,250.15
- Healthy attendance and strong level of engagement at Advisory Committee meeting
- High level of participation from stakeholders due to avid word-of-mouth promotion
- Pursued and acquired a new three year FCW Implementation 319 grant which will bring a total value of \$583,333.33 (\$350,000 319 funding + \$233.333.33 match/in-kind) starting in early 2026.

However, all roads to success often have several ‘bumps’ along the way. Below are some challenges the FCW 319 Planning project experienced and learned from:

- Media resources and newspaper were completely lacking in Owen County in 2023, making the ‘kick-off’ grant promotion initially somewhat difficult with few advertising options.
- The Fish Creek watershed has a very diverse group of stakeholders and much time was spent explaining what the 319 project is and what it is not, especially in regards to enforcement of local environmental policies, lobbying, and matters that do not strictly concern nonpoint source water quality.
- During the development of the WMP, the primary mapping program used by the Watershed Coordinator (ArcMap Desktop) converted to a fully online service (ArcPro) and significant steps had to be taken to gain competence with the new program, which slowed WMP progress for a time.

Future Activity

Even though 319 grant funding in the FCW watershed has concluded until the next stage of Implementation starts in early 2026, the Owen County SWCD Board and staff will continue to facilitate federal, state, and local conservation programs that enable local landowners to treat resource concerns. They will also pursue various types of conservation grant funding when possible. Until then, conservation education, outreach, and program matchmaking will continue as long as there is local need and interest.