

Appendix 8. Implementation Tracking Plan

This appendix contains the Implementation Tracking plan prepared by Tetra Tech for Ohio EPA.

Implementation Tracking Plan for the Maumee Watershed Nutrient TMDL



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EXECUTIVE SUMMARY

The Ohio Environmental Protection Agency (Ohio EPA) is developing a total maximum daily load (TMDL) for the Maumee River watershed to address nutrient-loading that impairs the Western Basin of Lake Erie. To facilitate adaptive management of TMDL implementation, Ohio EPA needs a plan to track project implementation across the Maumee River watershed for projects and best management practices (BMPs) that reduce nonpoint source (NPS) loading of phosphorus.

Tracking data vary across funding programs, with more data at a finer resolution available for state funding programs compared to federal funding programs. Available tracking data are summarized as follows:

- **Federal agricultural programs:** Programs administered by the Farm Service Agency and Natural Resources Conservation Service are awarded annually. Project-specific data are protected from disclosure; data are only available at a coarse scale. Tracking data include practice code, acreage, and date.
- **Federal NPS programs:** Programs administered by the U.S. Environmental Protection Agency are awarded annually. Project-specific data, including fine-scale spatial data and load reduction estimates, are publicly available for Section 319 grants. Great Lakes Restoration Initiative data may also include fine-scale spatial data but often exclude key project-specific data (e.g., acreages) for multi-state grants. Additionally, much of the useful project-specific information are contained within a narrative project description. Finally, project-specific data are protected from disclosure when Great Lakes Restoration Initiative funding is awarded through the Farm Service Agency or Natural Resources Conservation Service.
- **H2Ohio:** Ohio EPA and the Ohio departments of Agriculture and Natural Resources award contracts and grants annually. Project-specific data are available for wetlands at a fine-scale, while location information for agricultural BMPs is limited to townships, counties, and subwatersheds. Tracking data for agricultural BMPs include practice code, acreage, and date; tracking data for wetlands include date, geographic coordinates, and acreage.
- **State programs:** The Lake Erie Protection Fund, administered by the Ohio Lake Erie Commission, rarely awards grants for projects or agricultural BMPs that reduce significant loads of nutrients. The Water Resources Restoration Sponsor Program and Clean Ohio Green Space Conservation Program can fund wetland restoration projects; projects in these programs will need to be reviewed manually, though limited numbers of projects will be applicable.

Several legacy programs administered by the Ohio Department of Agriculture included agricultural BMPs designed to reduce nutrient losses in the Maumee River watershed. These programs are closed. Tracking data are the same as for H2Ohio.

The key datasets for tracking implementation to reduce nonpoint source phosphorus loads in the Maumee River watershed are the federal agricultural programs and H2Ohio. These programs fund hundreds of projects each year that can significantly reduce phosphorus loading. The other programs mostly fund projects that do not significantly impact nutrient-loading.

The implementation tracking plan provides the procedures for Ohio EPA to acquire data from the funding programs. Many programs post data online within interactive portals. However, in most cases, Ohio EPA can contact the agencies that administer the funding programs to obtain more data, often at finer resolutions.

Each funding program has its own dataset, with its own specific fields and format. Several programs use practice codes unique to each BMP, and the practice codes vary between funding programs. Combining the relevant data from each funding program into one master dataset would require significant data processing to identify and populate key fields in the appropriate format and to standardize practice codes.

A single master spreadsheet designed to contain all relevant tracking data is not feasible. Instead, a workbook can be designed that contains worksheets for each individual program. This structure eliminates the need to pre-process all the individual programs' data and eliminates the need to standardize practices. With the structure of this workbook, Ohio EPA may want to separately summarize each program's data in the agency's future biennial reporting.

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
BMP	best management practice
CRP	Conservation Reserve Program
CREP	Conservation Reserve Enhancement Program
DEFA	Division of Environmental & Financial Assistance (Ohio EPA)
EQIP	Environmental Quality Incentive Program
FOIA	Freedom of Information Act
FSA	Farm Service Agency (U.S. Department of Agriculture)
GLRI	Great Lakes Restoration Initiative
GRTS	Grant Reporting and Tracking System
HAB	harmful algal bloom
HUC	hydrologic unit code
LEPF	Lake Erie Protection Fund
n.d.	no date
NRAC	Natural Resource Assistance Council
NRCS	Natural Resources Conservation Service (U.S. Department of Agriculture)
NPS	nonpoint source
ODA	Ohio Department of Agriculture
ODNR	Ohio Department of Natural Resources
Ohio EPA	Ohio Environmental Protection Agency
OLEC	Ohio Lake Erie Commission
RCPP	Regional Conservation Partnership Program
VNMP	voluntary nutrient management plan
U.S. EPA	U.S. Environmental Protection Agency
WLEB	Western Lake Erie Basin
WPCLF	Water Pollution Control Loan Fund
WQIP	Water Quality Incentive Program
WRRSP	Water Resources Restoration Sponsor Program

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- Farm Service Agency
- Natural Resources Conservation Service
- Ohio Department of Agriculture
- Ohio Department of Natural Resources
- Ohio Environmental Protection Agency
- Ohio Lake Erie Commission
- Ohio Public Works Commission
- Tetra Tech, Inc.
- U.S. Environmental Protection Agency, Regions 5

1.0 INTRODUCTION

The Ohio Environmental Protection Agency (Ohio EPA) is developing a total maximum daily load (TMDL) for the Maumee River watershed to address nutrient-loading that impairs the Western Basin of Lake Erie (hydrologic unit code [HUC] 041000)¹. To facilitate adaptive management of TMDL implementation, Ohio EPA needs a plan to track project implementation across the Maumee River watershed². Different funding programs, managed by different entities, track and report project data at multiple spatial and temporal scales. TMDL implementation tracking must account for data availability (including privacy limitations) and the different scales and resolutions of available data.

This TMDL implementation tracking plan presents pertinent funding programs that finance projects and best management practices (BMPs) to reduce nonpoint source (NPS) phosphorus loading in the Maumee River watershed and presents recommended procedures for Ohio EPA to compile appropriate data from each program.

¹ Three Lake Erie assessment units are impaired by nutrient loading originating from the Maumee River watershed. The *Lake Erie Islands Shoreline* (OHLE041202000101) and *Lake Erie Western Basin Shoreline* (OHLE041202000201) are impaired for their aquatic life use (exceptional warmwater habitat) due to nutrients, their public drinking water supply use by algae, and their recreation use (bathing waters) by algae. The *Lake Erie Western Basin Open Water* (OHLE041202000301) is impaired for its public drinking water supply use by algae and its recreation use (bathing waters) by algae.

² The Maumee River watershed is composed of seven subbasins: *St. Joseph* (HUC 04100003), *St. Marys* (HUC 04100004), *Upper Maumee* (HUC 04100005), *Tiffin* (HUC 04100006), *Auglaize* (HUC 04100007), *Blanchard* (HUC 04100008), and *Lower Maumee* (HUC 04100009).

1.1 FUNDING PROGRAMS

Ohio EPA identified pertinent funding programs that can finance NPS phosphorus reduction projects in the Maumee River watershed (Table 1). Federal funding programs that target agricultural operations are administered by the Farm Service Administration (FSA) and Natural Resources Conservation Service (NRCS), while federal programs that target preservation, restoration, and enhancement of streams and riparian corridors are typically administered by the U.S. Environmental Protection Agency (U.S. EPA). Other federal programs, administered by other federal agencies, also fund project that can reduce NPS nutrient loads. The Conservation Reserve Program (CRP) and Environmental Quality Incentives Program (EQIP) are the focus of this implementation tracking plan because these programs fund a large number of projects annually that can significantly reduce phosphorus loading in the Maumee River watershed.

State funding programs for NPS phosphorus reduction are typically administered by the Ohio Department of Agriculture (ODA), Ohio Department of Natural Resources (ODNR), Ohio EPA, or Ohio Lake Erie Commission (OLEC). ODA, ODNR, and Ohio EPA jointly administer H2Ohio, which is Ohio’s single largest program that targets nutrient load reductions. As such, H2Ohio is the focus of this implementation tracking plan.

Table 1. Funding programs

Funding Program	Program Administrator
Clean Ohio Green Space Conservation Program	Ohio EPA
Conservation Reserve Program Conservation Reserve Enhancement Program	FSA
Environmental Quality Incentives Program	NRCS
Great Lakes Restoration Initiative	U.S. EPA
H2Ohio	ODA, ODNR, & Ohio EPA
Lake Erie Protection Fund	OLEC
Legacy programs (e.g., Senate Bill 299)	ODA
Regional Conservation Partnership Program	NRCS
Section 319 of the Clean Water Act	U.S. EPA
Water Resources Restoration Sponsor Program	Ohio EPA

Note: **Bolded** funding programs are the focus of this implementation tracking plan.

CRP, EQIP, and H2Ohio are the focus of this implementation tracking plan and are further discussed in Section 2.0. The other funding programs are further discussed in Section 3.0. Both sections are composed of subsections for each funding program. Each subsection presents a summary of the funding program, a description of the nutrient reduction practices that the program can finance, a synopsis of the types of publicly available data that the program tracks, and a summary of the steps Ohio EPA will need to take to obtain and tracking funding program data.

1.2 IMPLEMENTATION TRACKING PLAN

To report on TMDL implementation progress each biennium and to report on historic progress, Ohio EPA will need to compile data from multiple federal and state funding programs and then process that data into a usable format.

In many cases, Ohio EPA will need to submit data requests to federal and state agencies to obtain implementation tracking data. Table 2 (next page) presents points of contacts (at the time this report was prepared) for acquiring data from the federal and state funding programs.

In some cases, Ohio EPA will need to specify the spatial- and temporal-scales in the data requests.

- **Spatial:** For certain data requests, Ohio EPA will need to specify the seven HUC8 subbasins (see below), 194 HUC12 subwatersheds (Appendix D), or 14 counties (see below) in the Maumee River watershed.
 - **HU8 subbasins:** *St. Joseph* (HUC 04100003), *St. Marys* (HUC 04100004), *Upper Maumee* (HUC 04100005), *Tiffin* (HUC 04100006), *Auglaize* (HUC 04100007), *Blanchard* (HUC 04100008), and *Lower Maumee* (HUC 04100009).
 - **Counties:** Allen, Auglaize, Defiance, Fulton, Hancock, Hardin, Henry, Lucas, Mercer, Paulding, Putnam, Van Wert, Williams, and Wood.
- **Temporal:** Ohio EPA will need to specify the biennium of the biennial report (e.g., 2023-2024) or the historic period for cumulative analyses (e.g., 2008-2022).

An important challenge with tracking implementation is that federal funding program data is typically protected from disclosure for programs administered by agencies in the U.S. Department of Agriculture. Section 1619 of the Food, Conservation, and Energy Act of 2008 (the “Farm Bill”) prohibits disclosure of certain categories of data provided by producers to programs and agencies in the U.S. Department of Agriculture. While the Freedom of Information Act (FOIA) requires full or partial disclosure of recorded information held by federal agencies of the executive branch, FOIA includes several exemptions to disclosure. One such exemption applies to information prohibited from disclosure by federal law and this exemption applies to the Farm Bill.

Table 2. Points of contact for implementation tracking data

Agency	Funding Programs	Agency Address	Point of Contact (as of December 2022)
FSA	CRP, CREP	200 North High Street, Suite 540, Columbus, OH 43215	Hayes Hubbes hayes.hubbs@usda.gov 614-255-2532
NRCS	EQIP	200 North High Street, Suite 522, Columbus, OH 43215	Jeremy Keller jeremy.keller@usda.gov 614-255-2508
	RCPD	200 North High Street, Suite 522 Columbus, Ohio 43215	Cheryl Rice cheryl.rice@usda.gov 614-255-2565
ODA	H2Ohio	Division of Soil & Water Conservation 8995 East Main Street, Building 21 Reynoldsburg, OH 43068-3399	Kip Studer kip.studer@agri.ohio.gov 419-429-8389
ODNR	H2Ohio	Division of Water Resources 2045 Morse Road, B-3 Columbus, OH 43229	Eric Saas eric.saas@dnr.ohio.gov 614-265-6738
OLEC	LEPF, GLRI	<i>none</i> ^a	Lynn Garrity lynn.garrity@lakeerie.ohio.gov 614-506-0619
Ohio EPA	WRRSP	Division of Environmental & Technical Assistance P.O. Box 1049 Columbus, Ohio 43216-1049	Steve Malone steven.malone@epa.ohio.gov 614-644-3663

Agency	Funding Programs	Agency Address	Point of Contact (as of December 2022)
Ohio Public Works Commission	Clean Ohio Green Space Conservation Program	<i>none</i>	<i>varies by district</i> (for district contacts, see https://pwc.ohio.gov/District)
U.S. EPA	Section 319	Region 5, Water Division, Watersheds & Wetlands Branch, 77 West Jackson Boulevard, WW-16J Chicago, IL 60604	Stephen Feely feely.stephen@epa.gov 312-886-5867

CRP = Conservation Reserve Program; CREP = Conservation Reserve Enhancement Program; EQIP = Environmental Quality Incentives Program; FSA = Farm Service Agency; GLRI = Great Lakes Restoration Initiative; LEPF = Lake Erie Protection Fund; NRCS = Natural Resources Conservation Service; ODA = Ohio Department of Agriculture; ODNR = Ohio Department of Natural Resources; OLEC = Ohio Lake Erie Commission.

a. OLEC staff all work remotely. OLEC’s mailing address is that of Ohio EPA’s Northwest District Office: 347 North Dunbridge Road, Bowling Green, Ohio 43402.

2.0 TARGETED FUNDING PROGRAMS

Tracking implementation for the Maumee Watershed Nutrient TMDL will focus on three major funding programs: the Conservation Reserve Program (CRP; Section 2.1), the Environmental Quality Incentives Program (EQIP; Section 2.1.3.1), and H2Ohio (Section 2.3).

2.1 CONSERVATION RESERVE PROGRAM

CRP provides annual rental payments to enrolled farmers that remove environmentally sensitive land from agricultural production and plant resource-conserving plant species. “The long-term goal of the program is to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat” (FSA, n.d.).

FSA administers CRP, while technical assistance for enrolled farmers is provided by NRCS, state forest agencies, and local soil and water conservation districts.

General CRP is competitive with an enrollment period. Continuous CRP, which targets environmentally sensitive land, has a continuous, rolling enrollment period, and applications that meet criteria are automatically approved if program space is available.

The Conservation Reserve Enhancement Program (CREP) is part of CRP. With CREP, states, federally recognized tribes, and other entities can partner with FSA (FSA, 2022); individual contracts can include location-specific incentives. CREP is not available in all states but is available in Ohio.

The Clean Lakes, Estuaries, And Rivers (CLEAR30) initiative is a pilot program with 30-year contracts. Land with specific practices³ already enrolled in CRP or CREP can re-enroll these practices to reduce sediment and nutrient loading and reduce harmful algal blooms (HABs)

CRP and CREP

Eligible Land: Varies by program. Generally, agricultural land in commodity production.

Application Period: Varies by program.

- *General CRP:* Enrollment period.
- *Continuous CRP:* Rolling.
- *CREP:* Rolling

Grant Award Type: Varies by program.

- *General CRP:* Competitive.
- *Continuous CRP:* Noncompetitive.
- *CREP:* Noncompetitive.

Contract Term Length: 10 to 15 years.

³ Eleven practices are eligible: CP-8A (grass waterways), CP-15A (contour strips), CP-15B (contour strips on terraces), CP-21 (filter strips), CP-21B (denitrifying bioreactor on filter strip), CP-23 (wetland restoration), CP-23A (wetland restoration, non-floodplain), CP-29 (marginal pastureland wildlife habitat buffer), CP-30 (marginal pastureland wetland buffer), CP-31 (bottomland timber establishment on wetlands), and CP-37 (duck nesting habitat).

2.1.1 Nutrient Reduction Practices

About 30 practices are in CRP (FSA, n.d.); see Appendix A for a list of all CRP practices. Ohio EPA only considers 11 of the CRP practices to appreciably affect nutrient loading:

- Contour grass strips (CP-15A)
- Establishment of permanent introduced grasses and legumes (CP-1) or native grasses (CP-2)
- Farmable Wetland Program constructed wetlands (CP-39)
- Farmable Wetland Program flooded prairie wetlands (CP-41)
- Filter strip (CP-21)
- Grass waterways (CP-8A)
- Marginal pastureland wetland buffer (CP-30)
- Prairie strips (CP-43)
- Riparian buffer (CP-22)
- Wetland restoration on floodplains (CP-23) or non-floodplains (CP-23A)

Several practices are part of the Farmable Wetlands Program that is administered by FSA as part of CRP. This program seeks to restore previously farmed wetlands and wetland buffers.

2.1.2 Project Data

CRP and CREP data are protected from certain disclosures by the Farm Bill. Project-specific and contract-specific data are not available online. Limited data can be requested from FSA through the state FSA representatives. Data can also be requested through the FOIA process.

FSA maintains CRP data by county. To protect privacy, FSA can only release aggregated information for various geographies; for example, annual summations of acreages by practice code for a county or HUC12. To report CRP data by HUC12, FSA staff must manually compile the data. FSA can export a dataset of active contracts ; however, FSA does not maintain historic data in a publicly releasable format.

2.1.3 Implementation Tracking for the Maumee Watershed Nutrient TMDL

2.1.3.1 Current Data (Active Contracts)

Ohio EPA will need to contact the state FSA representative (Table 2) to obtain CRP and CREP data. The data request should specify the 14 counties within the Maumee River watershed, the 12 practice codes for BMPs that can reduce phosphorus loading (CP-1, CP-2, CP-8A, CP-15A, CP-21, CP-30, CP-22, CP-23, CP-23A, CP-39, CP-41, and CP-43), and the timeframes for the data. While FSA can manually compile data for a HUC12 subwatershed, compiling the data for the 194 HUC12 subwatersheds in the Maumee River watershed is beyond the state FSA representative's abilities.

FSA will provide county summaries composed of the sums of areas for each practice code in each county for active contracts.

2.1.3.2 Historic Data (Completed Contracts)

Historic CRP and CREP data are not readily available for state FSA representatives to query. FSA can only report summaries of current CRP contracts. Data for past contracts are not stored in a publicly releasable format.

A FOIA request may be able to provide some CRP and CREP data. See Appendix E for information about submitting a FOIA request and example language.

2.1.3.3 Recommendation

To build a long-term record of CRP and CREP activity in the Maumee River watershed, Ohio EPA should consider contacting the state FSA representative (Table 2) annually to obtain data for the 14 counties in the Maumee River watershed.

2.2 ENVIRONMENTAL QUALITY INCENTIVES PROGRAM

NRCS provides technical and financial assistance through EQIP to agricultural producers (including crop and livestock production) to address natural resources concerns and provide environmental benefits, including improving water quality (NRCS, n.d.). EQIP provides grant awardees with payments for management, structural, or vegetative practices.

2.2.1 Nutrient Reduction Practices

Ohio's Field Office Technical Guide (NRCS, 2020) contains 129 practices; see Appendix B for the full list, including practice lifespan. Based on best professional judgement, 44 of the practices can be used to appreciably reduce nutrient losses.

2.2.2 Project Data

EQIP data are protected from certain disclosures by the Farm Bill. Project-specific and contract-specific data are not available online. Limited data can be viewed and downloaded from online dashboards. Data can also be requested through the FOIA process.

NRCS publishes the several dashboards of agency programs online (<https://www.farmers.gov/data/financial-assistance/overview>). Using these dashboards, users can view the number of EQIP contracts, acres, and contract obligations. The dashboards have filters for state, county or congressional district, fiscal year (2014 through 2021), and contract status (active, cancelled, completed, terminated, total). Summary data in these dashboards can be downloaded (comma separated value).

In 2012-2014, Ohio EPA obtained EQIP summaries (total measurement by practice code) for HUC8, HUC10, and HUC12 watersheds by making a FOIA request to NRCS.

Environmental Quality Incentives Program

Eligible Land: Active production. Cropland, pastureland, rangeland, non-industrial private forest land, and other farms and ranches.

Application Period: Annual, rolling.

Grant Award Type: Competitive.

Contract Term Length: Up to 10 years.

Ohio EPA obtained EQIP data by HUC12 subwatershed several years ago from the Hypoxia Task Force. This EQIP data export contained 16 fields: State code

- | | | |
|-----------------------|-------------------|------------------|
| ▪ State name | ▪ Contract status | ▪ Date certified |
| ▪ County code | ▪ Planned year | ▪ Payment |
| ▪ County name | ▪ Planned amount | ▪ Practice code |
| ▪ Program code | ▪ Practice unit | ▪ Practice name |
| ▪ Federal fiscal year | ▪ Item status | ▪ HUC12 |

NRCS only provided records with a contract status of ‘Active’ or ‘Completed,’ an item status of ‘Certified,’ and years applied of ‘2017’ or ‘2018’. During this time, cover crops were the most frequently implemented practice (746 contracts of 5,333 contracts; 13%) and the most funded practice (\$4.3M of \$21M; 20%).

2.2.3 Implementation Tracking for the Maumee Watershed Nutrient TMDL

Ohio EPA will need to submit a FOIA request for current and historic EQIP data at the HUC10 watershed or HUC12 subwatershed scale. Information about submitting a FOIA request and example language are presented in Appendix E. The state NRCS GIS contact (Table 2) may be able to aid with developing a FOIA request.

Ohio EPA may be able to directly request HUC8 subbasin scale EQIP data directly from the NRCS GIS contact (Table 2).

2.3 H2OHIO

H2Ohio (<https://h2.ohio.gov/>) is a collaborative water quality initiative that comprehensively and strategically addresses water issues throughout the state of Ohio (H2Ohio, n.d.). H2Ohio targets four priorities: reducing phosphorus, creating wetlands, addressing failing septic systems, and preventing lead contamination. State agencies and commissions collaborate with grower/farming organizations, conservation organizations, universities/researchers, federal and local government entities, and the private sector.



The initiative focuses on several water issues, including HABs in Lake Erie caused by phosphorus runoff. To reduce phosphorus loading to Lake Erie, ODA, ODNR, and Ohio EPA are working to reduce phosphorus losses from agricultural operations to waterways and to capture in-stream phosphorus.

2.3.1 Nutrient Reduction Practices - Agriculture

For H2Ohio, ODA (<https://h2.ohio.gov/agriculture/>) focuses on phosphorus losses from agricultural operations that include runoff and tile-drainage from crop fields. Through H2Ohio, after a voluntary nutrient management plan (VNMP) is completed, ODA will fund six agronomic practices to reduce nutrient losses from crop fields:

- Voluntary nutrient management plan
 - Development
 - Implementation
- Variable rate technology phosphorus application
- Subsurface phosphorus fertilizer placement
- Manure incorporation
 - Poultry dry
 - All Other
- Conservation crop rotation
 - Small grains
 - Forage crop
- Overwintering cover crop
- Drainage water management structure
 - With main
 - Without main
 - Implement and manage

Farmers must first develop a VNMP and submit the plan for review and approval to their local SWCD before the farmers can apply for funding for the other six practices. After the VNMP is approved, farmers can apply for funding for the other six practices for four years. ODA has established operation and management criteria for each practice.

H2Ohio - Agriculture

Eligible Land: Existing cropland with approved voluntary nutrient management plan.

Application Period: Grant application period each year.

Grant Award Type: Automatic (until all program funds are expended)

Contract Term Length: 1-3 years.

2.3.2 Nutrient Reduction Practices - Wetlands

In the Western Lake Erie Basin (WLEB), ODNR focuses on wetland restoration and floodplain reconnection or enhancement to capture phosphorus. ODNR considers other benefits (e.g., wildlife habitat) but the primary objective of the wetland projects is to address nutrients (i.e., every ODNR-H2Ohio project is foremost a natural-infrastructure based water quality project⁴).

ODNR will also fund forested riparian buffers (CP-22), wetland restoration (CP-23A), and wetland floodplain restoration (CP-23) in the WLEB through H2Ohio's Water Quality Incentives Program (WQIP). The three practices must be admitted into the Lake Erie CREP to be eligible for WQIP. ODNR will also fund certain riparian reforestation through WQIP even when the areas are not within the Lake Erie CREP. Finally, ODNR will fund two stage ditches at its discretion.

H2Ohio - Wetlands (ODNR)

Eligible Land: Pre-existing hydric soils, high nutrient loading from upstream sources, and high interaction with surface flow or tile-drain flow.

Application Period: Annual, rolling.

Grant Award Type: Discretionary.

Contract Term Length: Varies by grant. Typically, 30 years (<\$250K) or permanent (>\$250K). WQIP is 14.5 years.

2.3.3 Project Data

H2Ohio data are available at *Data Ohio* (<https://data.ohio.gov/wps/portal/gov/data/home>):

- **H2Ohio Agricultural Best Management Practices⁵:** A statewide map with VNMP completion symbology, a table of BMPs with statewide summary statistics, and a table of BMPs by county with summary statistics. Results can be filtered by the Maumee River watershed.
- **H2Ohio Map of Wetlands Projects⁶:** A statewide map and table with several filters, including Maumee River watershed. Each project has its own webpage that includes a project description, project size, and project partners.
- **H2Ohio Voluntary Nutrient Management Plans⁷:** A statewide map of HUC8 watershed symbology and table of HUC8 watersheds with VNMP summary statistics. Results can be filtered by the Maumee watershed; for this map, the Maumee watershed is an amalgamation of HUC8 watersheds that contain portions of the 14 counties that are in Ohio's portion of the Maumee River watershed.

The H2Ohio dashboard is dynamic. ODA, ODNR, and Ohio EPA upload data into the H2Ohio Dashboard monthly.

⁴ Eric Sass, H2Ohio Program Manager, ODNR, electronic communication, October 13, 2022.

⁵ <https://data.ohio.gov/wps/portal/gov/data/view/h2ohio-oda-overview>

⁶ <https://data.ohio.gov/wps/portal/gov/data/view/h2ohio-odnr-projects-map>

⁷ <https://data.ohio.gov/wps/portal/gov/data/view/h2ohio-oda-vnmp>

ODA reports the following data for each ODA H2Ohio project:

- Soil and Waters Conservation District
- State Senate and House districts
- HUC8, HUC10, HUC12 watersheds
- Program name
- Project category
- Project number, name
- BMP name
- Status
- Crop year
- Installed date
- Cost share enrollment date
- Cost share amount appropriated
- Cost share amount paid
- Cost share payment date
- Cost share paid
- Enrolled instances, acres, feet
- Actual instances, acres, feet

ODNR reports the following data for each ODNR H2Ohio project:

- Project number, name
- County
- HUC8
- Upstream drainage area
- Proportion of drainage area treated
- Acreage of drainage area treated
- Acquisition acreage
- Total project acreage
- Restored wetland acres
- Phosphorus reduction: low, hybrid high
- Funding phase, source
- ODNR division, staff lead
- LEARN staff lead
- Cost
- Fiscal and calendar year obligation
- Non-federal match use
- Planned completion date, year
- Contract status
- Collaborator, contact information

2.3.4 Implementation Tracking for the Maumee Watershed Nutrient TMDL

While the H2Ohio dashboard provides maps and tables, considerable effort would be needed to compile the data that Ohio EPA wants to track. Instead, Ohio EPA will need to contact its sister agencies to obtain the data that the sister agencies input into the H2Ohio dashboard.

Ohio EPA will need to contact ODA (Table 2) to obtain H2Ohio data agricultural BMPs data. ODA will provide a spreadsheet of individual contracts; Ohio EPA will need to process these data. First, Ohio EPA will need to remove contracts from outside the Maumee River watershed. This can be done by deleting records for any HUC8 subbasin that is not within the Maumee River watershed that is composed of seven subbasins: 04100003, 04100004, 04100005, 04100006, 04100007, 04100008, and 04100009.

Ohio EPA will need to contact ODNR (Table 2) to obtain H2Ohio data for wetlands and forested riparian buffers. ODNR will provide a spreadsheet for individual wetland. Data can be summarized by HUC12 using a pivot table.

3.0 ADDITIONAL FUNDING PROGRAMS

While implementation tracking will focus on CRP, EQIP, and H2Ohio, Ohio EPA can also track implementation for several additional federal and state programs that can fund projects to reduce nutrient loading in the Maumee River watershed. These additional federal and state programs often do not specifically focus on nutrient-loading or water quality. However, some projects may reduce nutrient loading and may warrant inclusion in future biennial reporting.

3.1 CLEAN OHIO GREEN SPACE CONSERVATION PROGRAM



The Clean Ohio Green Space Conservation Program (hereafter, Clean Ohio) protects open space and riparian corridors in perpetuity. Projects must include property acquisition. Depending on the quality of the property, grants may focus on restoration or enhancement.

The Ohio Public Works Commission administers Clean Ohio. Grant funding can be provided for up to 75% of project costs. Eligible project costs are preservation, protection, or restoration activities that target the natural environment (e.g., vegetation, wildlife).

Project applications are reviewed by Natural Resource Assistance Council (NRACs). Ohio's 88 counties are distributed to 19 NRAC districts. The Maumee River watershed is within four NRAC districts: #5, #12, #13, and #16. Each NRAC may use its own application scoring methodology.

3.1.1 Nutrient Reduction Practices

The NRACs award Clean Ohio projects to preserve open space and riparian corridors; the program does not target projects that can reduce nutrient loading. While reducing nutrient loading is not a criterion for scoring applications, the NRACs do have some discretion to consider water quality benefits when evaluating applications.

For the purposes of tracking implementation for the Maumee Watershed Nutrient TMDL, Clean Ohio projects in the Maumee River watershed that restore or reestablish wetlands and riparian corridors may be relevant.

3.1.2 Project Data

The Ohio Public Works Commission publishes a table of all completed Clean Ohio projects online⁸. The table is sorted by county and includes the applicant's name, project name, area of acquired property, and 1-2 sentence project description. The Commission itself tracks information not relevant to the Maumee Watershed Nutrient TMDL; for example, project financials.

The Commission also maintains a database that can be accessed through an online portal: <https://ohio-das.force.com/pwc/s/>. This portal is an interactive version of the table described in the previous paragraph. The hyperlinks set to the project codes will open a new web page with more information about the grant.

⁸

https://pwc.ohio.gov/Portals/0/Documents/Green%20Space%20Report%20December%202020%20for%20Web.pdf?ver=vcbU_uviXj69folBspff1A%3d%3d.

Much of the additional information is related to the grant and financing. Additional project description narrative is also provided. However, no field for watershed is presented nor does any field indicate whether the project addresses nutrients.

To obtain information about the watershed a project is within and whether a project addresses nutrients will likely require Ohio EPA to contact the grant recipient.

3.1.3 Implementation Tracking for the Maumee Watershed Nutrient TMDL

Ohio EPA will need to download and review the *Acreage Report*. Projects in each of the 14 counties will need to be reviewed to determine if any projects involve wetlands that are within the Maumee River watershed. If any project looks relevant, Ohio EPA can view additional project information in the online Workwise portal. From there, Ohio EPA can identify grant recipients to contact for project-specific information.

A cursory review of the Clean Ohio dataset indicates that several wetland projects are in many of the counties in the Maumee River watershed. Few such projects mention nutrients, while several such projects mention habitat protection or restoration. Ohio EPA will need to decide if these projects are relevant.

3.2 GREAT LAKES RESTORATION INITIATIVE



GLRI provides funding to 16 federal agencies to strategically protect and restore the Great Lakes. “GLRI was launched in 2010 as a non-regulatory program to accelerate efforts to protect and restore the largest system of fresh surface water in the world, and to provide additional resources to make

progress toward the most critical long-term goals for this important ecosystem” (U.S. EPA, 2019).

Congress appropriates funding to U.S. EPA that then distributes funding to other federal agencies, states, tribes, local governments, universities, and nongovernmental organizations. U.S. EPA can transfer funds between federal agencies or issue grants.

GLRI funds programs and projects that are consistent with the goals and objectives of the most recent GLRI Action Plan. The *GLRI Action Plan III* prioritizes five focus areas (U.S. EPA, 2019):

- Toxic Substances and Areas of Concern
- Invasive Species
- Nonpoint Source Pollution Impacts on Nearshore Health
- Habitats and Species
- Foundations for Future Restoration Actions

3.2.1 Nutrient Reduction Practices

GLRI grants fund research, demonstration projects, and on-the-ground implementation; GLRI also provides funding to state agencies. GLRI funding is also used by other federal agencies to fund some of their programs (e.g., NRCS to fund EQIP).

The most relevant projects will be in Focus Area #3: *Nonpoint Sources*. Many of the awarded grants in Ohio are not related to nutrient loading (e.g., invasive species management, public beach bacteria monitoring, raccoon predation at turtle nests, ballast water treatment). However, a limited number of Ohio awards do reduce nutrient loading (e.g., nutrient management planning in the Blanchard River watershed, wetland construction in the Powell Creek watershed).

3.2.2 Project Data

U.S. EPA publishes a database of all GLRI awards on the *Projects* section of the GLRI website (<https://www.glri.us/>). A downloadable Excel® includes following information:

- Funder
- Year
- GLRI amount
- Project type
- Project title
- Recipient name
- Description
- Focus area
- Start and end dates
- Affected states
- Location (latitude/longitude)

The GLRI dataset does not include the measurements (e.g., area) of a project within a specific measurement field; measurements can be included in the *Description* field, which is a narrative project description. Additionally, some projects are listed with multiple states, and it may not be possible to determine which areas in Ohio were affected.

OLEC regularly downloads the Excel® published by U.S. EPA, synthesizes the information for projects in Ohio, and then compiles additional information for certain awards⁹.

The Great Lakes Commission awards grants through the *Great Lakes Sediment and Nutrient Reduction Program*, which has been funded by GLRI since 2010. This program “provides grants to local and state units of government and nonprofit organizations to install erosion and sediment control practices in the Great Lakes

Great Lakes Restoration Initiative

Eligible Land: Areas within the eight Great Lakes states.

Application Period: Grant applications and sub-grant applications vary by agency.

Grant Award Type: Competitive.

Contract Term Length: Varies. 95% of grants are 1-10 years.

⁹ Lynn Garrity, Program Administrator, OLEC, electronic communication, October 26, 2022.

basin” (Great Lakes Commission, n.d.). The Great Lakes Commission publishes factsheets on each award (<https://www.glc.org/work/sediment/archive>); additionally, ODA tracks these awards in their databases.

3.2.3 Implementation Tracking for the Maumee Watershed Nutrient TMDL

3.2.3.1 Current and Historic Data (Active and Completed Grants)

Ohio EPA can contact OLEC (Table 2) to obtain OLEC’s copy of the GLRI database, which OLEC processed to only include projects within Ohio. This dataset will require additional processing. The dataset does not include any geographic information except state, nor does the dataset identify which projects are associated with phosphorus loading. OLEC’s GLRI dataset will need to be manually reviewed to determine if individual awards are pertinent to implementation tracking for the Maumee Watershed Nutrient TMDL.

Ohio EPA will need to copy/paste relevant information from OLEC’s GLRI spreadsheet into a new spreadsheet.

For the *Great Lakes Sediment and Nutrient Reduction Program*, both the Great Lakes Commission and ODA track program data. As the ODA data are in a more useful format, Ohio EPA will need to contact ODA (Table 2) to obtain these data.

3.2.3.2 Recommendation

As an alternative, Ohio EPA could develop and maintain its own GLRI database. Ohio EPA Division of Surface Water Nonpoint Source Section could contact grant award recipients for pertinent information and record such information in a spreadsheet. The pertinent data should include grant award ID, year, and recipient; HUC12; project or BMP type and measurements (e.g., acres); and phosphorus load reduced.

3.3 LAKE ERIE PROTECTION FUND



The Lake Erie Protection Fund (LEPF) supports research and projects to protect, preserve, and restore Lake Erie and its watershed. OLEC administers the LEPF. Grants

are awarded to address “nutrient reduction, beneficial use of dredged material, water quality protection, fisheries management, wetlands restoration, watershed planning, invasive species, algal bloom research, Lake Erie ecological shifts, and environmental measurements” (Ohio Lake Erie Commission, 2022). Grant awards must be consistent with the *Lake Erie Protection and Restoration Plan 2020* and address at least one strategic objective in this plan. Grant applications should also identify other

Lake Erie Protection Fund

Eligible Land: Government and non-profit entities in Ohio within the Lake Erie watershed.

Application Period: Grant application period each year.

Grant Award Type: Competitive.

Contract Term Length: 1 year. Extensions conditionally available.

plans that the project is identified in (e.g., Ohio Domestic Action Plan, Nonpoint Source Implementation Strategies, Ohio Area of Concern management action lists).

3.3.1 Nutrient Reduction Practices

OLEC awards LEPF grants for 13 types¹⁰ of projects, including nonpoint source pollution. Until recently, OLEC limited grant awards to \$15,000; today, grants awards can be up to \$50,000. Applicants often propose to use LEPF grants as add-ons for larger grants (e.g., design, sampling)¹¹.

Since 2004, many of the nonpoint source pollution projects have involved research, demonstration projects, modeling, and plan development throughout Ohio's Lake Erie watershed. Very few projects would directly result in nutrient load reductions in the Maumee River watershed.

3.3.2 Project Data

OLEC tracks LEPF and GLRI grants in a proprietary Access® database that is designed for administrative and fiscal information. OLEC tracks the project type and county

3.3.3 Implementation Tracking for the Maumee Watershed Nutrient TMDL

Ohio EPA will need to contact OLEC (Table 2) to obtain LEPF data. As LEPF grants rarely involve projects to significantly reduce phosphorus loading, Ohio EPA should speak with OLEC to determine if any pertinent projects are worth including.

A cursory review of the LEPF dataset indicates that the following awards for NPS and habitat/species projects may be pertinent to site-scale phosphorus load reduction; note that only five projects were identified over a period-of-record that spans 12 years:

- *Middle Bass Preserve Habitat Restoration* (#395, 2010, habitat & species)
- *Roadside Ditch Sediment Control Project* (#415, 2011, NPS)
- *Submerged Aquatic Vegetation in Maumee Bay* (#490, 2019, habitat & species)
- *BMP Development for Swan Creek Watershed: Pilot* (#518, 2017, NPS)
- *Maumee River Stabilization and Riparian Restoration - Phase 2* (#579, 2022, NPS)

Ohio EPA will need to input relevant information from OLEC's LEPF database into a new spreadsheet.

¹⁰ OLEC identified 14 project types for tracking: Areas of Concern, biological, climate change, coastal health, fishing, GLRI, habitat and species, indicators and information, invasive species, nonpoint source pollution, sustainable development, tourism, toxic pollutants, and water withdrawals.

¹¹ Sandra Kosek-Sills, Environmental Specialist, OLEC, electronic communication, October 24, 2022.

3.4 LEGACY STATE PROGRAMS

ODA and ODNR¹² formerly managed five voluntary, cost-share programs that awarded contracts to landowners for agricultural BMPs. These programs are no longer accepting new contracts and no new data will become available.

- **GLRI-NRP** (2015-2019) was a GLRI grant for \$5,940,000 to help address recent HABs in the western basin of Lake Erie. This program aimed to reduce phosphorus loading, including dissolved reactive phosphorus loading, from agricultural landscapes in the Maumee River to watershed that are transported to Lake Erie.
- **Lake Erie NRP** (2014-2018) was a voluntary program that reimbursed farmers to plant cover crops or install drainage management devices, such as controlled drainage structures or blind tile inlets, to reduce runoff carrying nutrient loads. The program spent \$1.25 million for planting cover crops on up to 25,000 acres, as well as installing more than 300 water control structures.
- **Ohio Clean Lakes** (2012-2014) was an initiative of ODNR, ODA, and Ohio EPA to address nutrient reductions and water quality issues in the WLEB.
- **Senate Bill 299** (2019-2020) appropriated funds for the Soil and Water Phosphorus Program that directed funding to the WLEB for specific agricultural BMPs that target total phosphorus and dissolved reactive phosphorus.
- **WLEB-NRP** (2012-2017) was a voluntary program, sponsored by ODNR, to implement practices to improve water quality in the WLEB. The program spent \$1.5 million on such practices as soil testing, variable rate phosphorus application and incorporation, and cover crops.

3.4.1 Nutrient Reduction Practices

ODA and ODNR awarded contracts for the following 15 BMPs under the legacy programs (Table 3).

¹² From 2012, ODNR's Division of Soil & Water Resources managed the cost-share programs. On January 1, 2016, this division was moved to ODA and renamed the Division of Soil & Water Conservation.

Table 3. Legacy state program agricultural BMPs

Practice	GLRI-NRP	Lake Erie NRP	Ohio Clean Lakes	Senate Bill 299	WLEB-NRP
Animal waste storage	X	--	--	--	--
Blind inlet	--	X	--	--	--
Conservation cover	--	X	--	X	--
Conservation crop rotation	--	--	--	X	--
Cover crop	X	X	X	X	X
Drainage water management	X	X	X	--	X
Fertilizer placement	X	--	--	--	X
Inventory and evaluation	--	--	--	--	X
Residue management	X	--	X	--	X
Soil testing	X	--	X	--	X
Variable rate phosphorus application	X	X	--	--	X
VNMP implementation	--	--	X	--	--

3.4.2 Project Data

ODA stores historic contracts data in its Soils and Water Information Management System database. ODA reports the following for each legacy contract:

- Soil and Waters Conservation District
- State Senate and House districts
- HUC8, HUC10, HUC12 watersheds
- Township
- Program name (i.e., “Program Type”)
- Project category (i.e., “Event Type”)
- BMP name
- Unit
- Status
- Installed date
- Actual instances, acres, feet

ODA can provide these historic data in an Excel spreadsheet.

3.4.3 Implementation Tracking for the Maumee Watershed Nutrient TMDL

Ohio EPA will need to contact ODA (Table 2) to obtain historic agricultural BMPs data for GLRI-NRP, Lake Erie NRP, Ohio Clean Lakes, Senate Bill 299, and WLEB-NRP. Data for these programs are stored the Soils and Water Information Management System database, not the Beehive database than ODA uses to store current H2Ohio data.

ODA will provide a spreadsheet of individual contracts for legacy programs; Ohio EPA will need to process these historic data. Ohio EPA can follow the same process discussed in Section 2.3.4.

3.5 REGIONAL CONSERVATION PARTNERSHIP PROGRAM

The Regional Conservation Partnership Program (RCPP) uses public-private partnerships to fund conservation approaches to natural resources issues associated with agricultural lands. Eligible partners work with NRCS and landowners to identify conservation approaches. Typical conservation approaches include land management, improvement, and restoration; land rentals; and easements.

NRCS allocates half of the RCPP funding to projects in eight critical conservation areas designated by the Secretary of Agriculture; the other half of funding is direct to projects located anywhere within the United States. With RCPP Classic, NRCS uses existing contracts and easements with landowners (e.g., EQIP contracts), while collaborating with the eligible partner for technical assistance. The eligible partners must secure matching funding, at least equal to RCPP funding provided by NRCS for RCPP Classic. With RCPP Grants (also known as Alternative Funding Arrangements), eligible partners must identify and directly contract with landowners; the eligible partner and other entities must also provide technical assistance (in lieu of NRCS providing technical assistance).

RCPP projects are typically for multiple landowners, as individual landowners can apply for financing through other funding mechanisms (e.g., CRP, EQIP).

3.5.1 Nutrient Reduction Practices

RCPP awards can address many types of natural resources issues, including projects that reduce nutrient loading in agricultural runoff.

3.5.2 Project Data

RCPP data are protected from certain disclosures by the Farm Bill. Project-specific and contract-specific data are not available online. Limited data can be viewed and downloaded from online dashboards. Data can also be requested through the FOIA process.

RCPP Classic data are tracked the same as EQIP data in NRCS's national planning database. RCPP Grants data are tracked by the lead partners, are not included in NRCS's national planning database, and lead partners cannot release data without NRCS approval¹³.

Regional Conservation Partnership Program

Eligible Land: Agricultural or nonindustrial private forest land. Public lands and other lands at the discretion of NRCS.

Application Period: Grant application period each year. RCPP Classic and RCPP Grants typically have separate application periods.

Grant Award Type: Competitive.

Contract Term Length: 5 years.

¹³ Cheryl Rice, RCPP Program Coordinator, NRCS, electronic communication, November 8, 2022.

NRCS publishes¹⁴ interactive online maps of RCPP Classic and RCPP Grant projects in 2020, 2021, and 2022. The maps only include a brief narrative for each project. NRCS also publishes summary data for all programs¹⁵ with multiple filters (refer to dashboard discussion in Section 2.2.2); however, the only geographic filter is state (i.e., it is not possible to filter by the Maumee River watershed).

3.5.3 Implementation Tracking for the Maumee Watershed Nutrient TMDL

RCPP awards can be for projects that address a multitude of issues. Ohio EPA will need to evaluate each individual RCPP award to determine if the project is pertinent to the Maumee Watershed Nutrient TMDL. Ohio EPA should visit the RCPP webpages and online, interactive maps to first identify RCPP awards in the Maumee River watershed.

As of December 2022, only two awards have been in the Ohio portion of the Maumee River watershed:

- **Pilot Watershed Project** (Ohio State University; 2021; RCPP Grant \$6,839,113) to test water quality management strategies with the goal of reducing phosphorus concentrations in local water bodies. The project incentivizes participation through an “agglomeration bonus” that increases payments as more producers implement practices.

Data for this RCPP Grant are only available through the FOIA process.

- **H2Ohio Western Lake Erie Basin** (ODA; 2021; RCPP Classic \$8,000,000) to supplement H2Ohio by working with 20 partners. However, this grant targets 10 counties in the WLEB primarily in the *Portage-Cedar* and *Sandusky* subbasins. Only small portions of three counties are within the Maumee River watershed (Seneca, Shelby, and Wyandot counties), with little program acreage in the Maumee River watershed¹⁶.

Data for this RCPP Classic project, like EQIP contracts, are included in NRCS’s national planning database. Ohio EPA would need to follow the same data acquisition process as for EQIP (Section 2.2.3).

3.6 SECTION 319 OF THE CLEAN WATER ACT

Section 319 of the Clean Water Act establishes a national program to address NPS pollution. Funding allocated through Section 319 can be used by states to support their NPS management programs and at least 50% of a state’s funding must be used to implement watershed projects (U.S. EPA, 2013). Each state is required to develop a NPS management plan and update it every 5 years; this plan establishes the types of projects that each state will target for Section 319 grants.

¹⁴ <https://www.nrcs.usda.gov/programs-initiatives/rcpp-regional-conservation-partnership-program>

¹⁵ <https://www.nrcs.usda.gov/resources/data-and-reports/rca-data-viewer>

¹⁶ Kip Struder, WLEB Nutrient Management Specialist, ODA, electronic communication, November 7, 2022.

In Ohio, Ohio EPA operates the state NPS management program and administers 319 grants. Staff in Ohio EPA's Division of Surface Water's Nonpoint Source Section developed Ohio's nonpoint source management plan and updates; these staff also review Section 319 grant applications.

Section 319 grants require a 40% non-federal match, which can be a cash-match or in-kind-match, with several limitations. After award, Ohio EPA requires awardees to submit quarterly fiscal status reports, semiannual technical reports (progress reports), a final fiscal status report, and a final technical report.

3.6.1 Nutrient Reduction Practices

The *Nonpoint Source Management Plan Update* (Ohio EPA, 2022) identifies the types of projects that are eligible for Section 319 grants in Ohio. Ohio EPA categorizes NPS implementation projects into four categories:

- Nonpoint source reduction strategies
- Altered stream and habitat restoration strategies
- High-quality waters protection strategies
- Urban sediment and nutrient reduction strategies

Table 4 presents the NRCS practices that may be suitable for achieving goals associated with the NPS reduction strategies in Ohio's NPS management plan. The strategies and goals are summarized in Appendix D.

Section 319

Eligible Land: Source area contributing to nonpoint source pollution or impaired waterbody (e.g., stream segment with degraded habitat).

Application Period: Grant application period each year.

Grant Award Type: Competitive.

Contract Term Length: 3 years.

Table 4. NRCS practices that can help to reduce NPS non-urban sediment and nutrients losses

NRCS practice (code)	Upland	Livestock	Drainage	Riparian
Access control (472)	--	X	--	--
Constructed wetland (656)	X	--	--	--
Cover crop (340)	--	--	--	--
Denitrifying bioreactor (605)	--	--	X	--
Drainage water management (554)	X	--	X	--
Filter strip (393)	X	--	X	--
Grassed waterway (412)	X	--	--	--
Heavy use area protection (561)	--	X	--	--
Livestock use area protection (757) ^a	--	X	--	--
Nutrient management (590)	--	X	--	--
Obstruction removal (500)	X	--	--	--
Phosphorus removal system	--	--	X	--
Pond (378)	--	--	X	--
Prescribed grazing (528)	--	X	--	--
Residue and tillage management (329 and 345)	X	--	--	--
Riparian forest buffer (391)	--	--	--	X
Roof runoff structure (558)	--	X	--	--
Saturated buffer (604)	--	--	X	--
Spring development (574)	--	X	--	--
Structure for water control (587)	X	--	X	--
Tree/shrub establishment (612)	--	--	--	X
Waste storage facility (313)	--	X	--	--
Waste treatment lagoon (359)	--	X	--	--
Water and sediment control basin (658)	X	--	--	--
Water well (642)	--	X	--	--
Watering facility (614)	--	X	--	--
Wetland creation (658) and restoration (657)	X	--	X	X
Wetland enhancement (659)	X	--	--	--

Notes

Refer to Appendix D for the goals for the Upland (1.01), Livestock (1.02), Drainage (1.03), and Riparian (1.04) management strategies.

a. Livestock use area protection is not in Ohio's current list of NRCS practices (NRCS, 2020).

3.6.2 Project Data

Section 319 grant spending and progress are required to be input into U.S. EPA's Grant Reporting and Tracking System (GRTS) database. GRTS uses the recently released *Nonpoint Source (NPS) Watershed Projects Data Explorer* (<https://ordspub.epa.gov/ords/grts/f?p=109:940>) to present grant data. The *Explorer* includes a public-facing, interactive map that users can use to identify the number of projects by HUC8 subbasin. The interactive map has several filters (e.g., range of years, category of pollution); however, individual projects cannot be identified.

The *Explorer* also has a dashboard to access grant information¹⁷. The dashboard can be used to query grants and projects using key information (e.g., U.S. EPA Region, state). This dashboard allows users to identify specific projects and review information about the grant budget, implementers and partners, waterbody, planned activities, and environmental outcomes.

The dashboard's query functions for *Find Projects* does include search criteria; however, only one selection can be made per query. The *Find Projects* query does not include any spatial search criteria except state; thus, it is not possible to query by the HUC8 or HUC12 watersheds in the Maumee River watershed. The dashboard's query for *Find Projects* does include search criteria for *Category of Pollution*, but phosphorus is derived from multiple sources (e.g., "Agriculture," "Animal Feeding Operations"). Additionally, the search criteria for *Type of Pollution* include multiple entries related to phosphorus (e.g., "Algal Growth/Chlorophyll," "Nutrients," "Phosphorus," "Phosphate").

Thus, this dashboard does not allow a user to create a single query for all projects in the Maumee River watershed that target nutrient reduction. Given that phosphorus spans multiple search criteria, the best query is likely to just specify the 'State' as "Ohio." Then the user would need to manually click on the hundreds of grants awarded in Ohio to identify the grants in the Maumee River watershed that address NPS of nutrients.

3.6.3 Implementation Tracking for the Maumee Watershed Nutrient TMDL

3.6.3.1 Current and Historic Data (Active and Completed Grants)

Ohio EPA will need to query GRTS for Section 319 data, and the agency will not be able to export the data from GRTS in a useful format (e.g., a spreadsheet). Ohio EPA will need to manually review individual grant records in the public facing GRTS portal.

In the *Find Projects* page on the *Data Explorer*, Ohio EPA should select the 'State' as "Ohio." Ohio EPA will then need to run individual queries for each *Fiscal Year* (e.g., "2023", "2024"). Since queries are run for one fiscal year at a time, Ohio EPA will need to run many queries to identify all the grant awards.

The query results will present the state, fiscal year, project number, and project title. Ohio EPA will then need to click on the "View" hyperlink for each project to see the *Nonpoint Source Project Summary* that appears in a new pop-up window. Agency staff can review the *Nonpoint Source Project Summary* to determine if the project

¹⁷ While U.S. EPA staff access GRTS through a different portal, which is not public-facing, the agency-portal does not include significantly better querying capabilities than the public-facing portal.

is relevant (e.g., review the *Description* in the *General Information* section, the pollutants in the *Pollutants to be Addressed* section, and the practices in the *Best Management Practice* section).

Ohio EPA will need to copy/paste relevant information from the *Nonpoint Source Project Summary* into a new Excel file.

3.6.3.2 Recommendation

As an alternative, Ohio EPA could develop and maintain its own database of Section 319 projects relevant to nutrient loading in the Maumee River watershed. Ohio EPA Division of Surface Water Nonpoint Source Section could record pertinent data from each grant award and final deliverable in a spreadsheet. Such pertinent data should include grant award ID, year, and recipient; HUC12; project or BMP type and measurements (e.g., acres); and phosphorus load reduced.

3.7 WATER RESOURCES RESTORATION SPONSOR PROGRAM



Water Resources Restoration Sponsor Program (WRRSP) projects restore and protect streams and wetlands. WRRSP projects must restore streams to attain the warmwater habitat aquatic life use, while projects to restore wetlands must restore such wetlands to Category 3¹⁸. Project may include property acquisition and restoration activities.

Ohio EPA's Division of Environmental & Financial Assistance (DEFA) administers the WRRSP. "WRRSP funds are generated by advancing the interest to be paid on loans awarded through the Water Pollution Control Loan Fund (WPCLF)" that is also administered by DEFA (Ohio EPA, 2017). The WPCLF can provide financing to municipalities for wastewater infrastructure projects. The WPCLF recipient then voluntarily sponsors a WRRSP project.

DEFA is supported by other divisions at Ohio EPA to provide technical support for restoration projects.

3.7.1 Nutrient Reduction Practices

DEFA awards WRRSP projects to restore and protect streams and wetlands. Stream restoration, riparian corridor restoration, floodplain reconnection, and wetland enhancement or restoration are examples of WRRSP projects that could reduce in-stream nutrient loading. However, nutrient load reduction is an ancillary benefit that is not a program focus.

WRRSP

Eligible Land: Streams and wetlands.

Application Period: Grant application period each year.

Grant Award Type: Competitive.

Contract Term Length: Fast track 1-year cycle or standard 2-year cycle.

¹⁸ Wetlands assigned to category 3 support superior habitat, or hydrological or recreational functions as determined by an appropriate wetland evaluation methodology acceptable to the director (Ohio Administrative Code 3745-1-54).

3.7.2 Project Data

DEFA maintains a database of WRRSP projects, including completed and ongoing projects. Database records for each project include county, watershed, and geographic coordinates. Most of the data are public records, including project locations. DEFA does not include a database field to indicate potential nutrient load reductions. To determine if WRRSP projects may reduce nutrient loading, DEFA staff will need to review project files individually.

3.7.3 Implementation Tracking for the Maumee Watershed Nutrient TMDL

Ohio EPA staff in the Division of Surface Water will need to contact DEFA staff (Table 2) to obtain WRRSP data. DEFA's WRRSP program data will need to be reviewed on a project-by-project basis to determine if individual awards are pertinent to implementation tracking for the Maumee Watershed Nutrient TMDL.

4.0 IMPLEMENTATION TRACKING DATA COMPILATION

After all the implementation tracking data are acquired from the federal and state funding programs, Ohio EPA can compile the data in a single Microsoft Excel workbook. As the datasets will be in different structures and formats, the workbook should be composed of individual worksheets for each funding program.

Originally, a single master dataset was envisioned, where implementation tracking data from all the federal and state funding programs would be compiled into a single worksheet. To accomplish this, a considerable amount of pre-processing would be needed to standardize the structure and format of the data. Additionally, a set of standardized practice codes would be necessary, as different programs use different practice codes. While such standardization is possible, Ohio EPA would be required to (1) expend potentially significant resources pre-processing data and (2) make a series of assumptions to be able to standardize practice codes across programs.

Using a single workbook with worksheets for individual programs will allow Ohio EPA to avoid spending resources standardizing structure, format, and practice codes. Without such standardization, Ohio EPA will only be able to report summary statistics by individual funding program. Some coarse-scale summary across funding programs may still be possible, depending on how Ohio EPA decides to proceed with biennial reporting.

As Ohio EPA has not completed the TMDL yet and has not clearly defined what the biennial reporting will look like, proceeding with a single workbook with worksheets for individual programs is the preferred approach that provides the most flexibility to the agency for future biennial reporting. Ohio EPA may be required to adapt its approach in the future as funding programs change and agency biennial reporting objectives evolve.

5.0 BIBLIOGRAPHY

- FSA. (2022). *Conservation Reserve Enhancement Program (CREP)*. Retrieved October 11, 2022, from https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/Conservation/PDF/fsa_crep_factsheet_22.pdf
- FSA. (n.d.). *About the Conservation Reserve Program*. (USDA) Retrieved October 7, 2022, from <https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/index>
- FSA. (n.d.). *CRP Practices Library*. (USDA) Retrieved October 11, 2022, from <https://www.fsa.usda.gov/programs-and-services/conservation-programs/crp-practices-library/index>
- Great Lakes Commission. (n.d.). *About GLSNRP*. Retrieved November 14, 2022, from <https://www.glc.org/work/sediment>
- H2Ohio. (n.d.). *About H2Ohio*. Retrieved October 13, 2022, from H2Ohio: <https://h2.ohio.gov/about-h2ohio/>
- NRCS. (2020). *Index of Conservation Practice Standards, Ohio*. Field Office Technical Guide. Retrieved October 7, 2022, from <https://efotg.sc.egov.usda.gov/#/state/OH/documents/>
- NRCS. (n.d.). *Environmental Quality Incentives Program*. (USDA) Retrieved October 7, 2022, from <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/eqip/>
- Ohio EPA. (2017). *Water Resource Restoration Sponsor Program (WRRSP)*. DEFA, Columbus. Retrieved 11 14, 2022, from <https://epa.ohio.gov/static/Portals/29/documents/ofa/WRRSPfactsheetNov2017.pdf>
- Ohio EPA. (2022). *Nonpoint Source Management Plan Update*. Division of Surface Water, Nonpoint Source Section, Columbus, Ohio. Retrieved October 12, 2022, from https://epa.ohio.gov/static/Portals/35/nps/2019-NPS_Mgmt_Plan.pdf
- Ohio Lake Erie Commission. (2022). *Lake Erie Protection Fund*. Retrieved October 24, 2022, from <https://lakeerie.ohio.gov/funding-opportunities/protection-fund>
- U.S. EPA. (2013). *Nonpoint Source Program and Grants Guidelines for States and Territories*. Guidance, Washington, DC. Retrieved October 11, 2022, from <https://www.epa.gov/sites/default/files/2015-09/documents/319-guidelines-fy14.pdf>
- U.S. EPA. (2019, October 30). *Great Lakes Restoration Initiative Action Plan III. Fiscal Year 2020 - Fiscal Year 2024*. Retrieved October 24, 2022, from <https://www.epa.gov/sites/default/files/2019-10/documents/glri-action-plan-3-201910-30pp.pdf>

APPENDIX A: CRP PRACTICES

Practice Code	Practice Name
CP-1	Establishment of permanent introduced grasses and legumes
CP-2	Establishment of permanent native grasses
CP-3/3A	Tree planting
CP-4D	Permanent wildlife habitat
CP-5A	Field windbreaks establishment
CP-8A	Grass waterway
CP-9	Shallow water areas for wildlife
CP-12	Wildlife food plot
CP-15A	Contour grass strips
CP-16A	Shelterbelt establishment
CP-17A	Living snow fences
CP-18B	Establishment of permanent vegetation to reduce salinity
CP-21	Filter strip
CP-22	Riparian buffers
CP-23	Wetland restoration on floodplains
CP-23A	Wetland restoration, non-floodplains
CP-25	Rare and declining habitat
CP-27 & CP-28	Farmable Wetlands Program
CP-29	Marginal pastureland wildlife buffer
CP-30	Marginal pastureland wetland buffer
CP-31	Bottomland timber establishment on wetlands
CP-33	Habitat buffers for upland birds
CP-36	Longleaf pine establishment
CP-37	Duck nesting habitat
CP-38	State Acres for Wildlife Enhancement (SAFE)
CP-39	Farmable Wetlands Program constructed wetlands
CP-40	Farmable Wetlands Program aquaculture wetlands
CP-41	Farmable Wetlands Program flooded prairie wetlands
CP-42	Pollinator habitat
CP-43	Prairie strips

APPENDIX B: EQIP PRACTICES

NRCS Practice Code	NRCS Practice Name	Units	Lifespan (Years)	Address Nutrients? ^a
472	Access Control	acre	10	--
560	Access Road	feet	10	Yes
309	Agrichemical Handling Facility	number	15	--
371	Air Filtration and Scrubbing	number	10	--
311	Alley Cropping	acre	15	--
333	Amending Soil Properties with Gypsum Products	acre	1	Yes
591	Amendments for Treatment of Agricultural Waste	animal unit	1	--
366	Anaerobic Digester	number	25	Yes
316	Animal Mortality Facility	number	15	Yes
396	Aquatic Organism Passage	mile	5	--
310	Bedding	acre	15	--
314	Brush Management	acre	10	--
672	Building Envelope Improvement	number	10	--
326	Clearing and Snagging	feet	5	--
317	Composting Facility	number	15	Yes
327	Conservation Cover	acre	5	Yes
328	Conservation Crop Rotation	acre	1	Yes
656	Constructed Wetland	acre	15	Yes
332	Contour Buffer Strips	acre	5	Yes
330	Contour Farming	acre	5	Yes
334	Controlled Traffic Farming	acre	1	Yes
340	Cover Crop	acre	1	Yes
342	Critical Area Planting	acre	10	Yes
589	Cross Wind Trap Strips	acre	5	--
605	Denitrifying Bioreactor	number	10	Yes
356	Dike	feet	20	--
362	Diversion	feet	10	--
554	Drainage Water Management	acre	1	Yes
432	Dry Hydrant	number	15	--
647	Early Successional Habitat Development-Mgt	acre	1	--
368	Emergency Animal Mortality Management	number	1	--

NRCS Practice Code	NRCS Practice Name	Units	Lifespan (Years)	Address Nutrients? ^a
374	Farmstead Energy Improvement	number	10	--
592	Feed Management	animal unit	1	--
382	Fence	feet	20	Yes
386	Field Border	acre	10	--
393	Filter Strip	acre	10	Yes
394	Firebreak	feet	5	--
399	Fishpond Management	acre	1	--
512	Forage and Biomass Planting	acre	5	--
511	Forage Harvest Management	acre	1	--
666	Forest Stand Improvement	acre	10	--
655	Forest Trails and Landings	acre	5	--
410	Grade Stabilization Structure	number	15	Yes
412	Grassed Waterway	acre	10	Yes
355	Groundwater Testing	number	1	--
561	Heavy Use Area Protection	square feet	10	Yes
422	Hedgerow Planting	feet	15	--
315	Herbaceous Weed Treatment	acre	5	--
603	Herbaceous Wind Barriers	feet	5	--
325	High Tunnel System	square feet	5	--
595	Integrated Pest Management	acre	1	--
430	Irrigation Pipeline	feet	20	--
441	Irrigation System, Microirrigation	acre	15	--
443	Irrigation System, Surface and Subsurface	acre	15	--
449	Irrigation Water Management	acre	1	--
460	Land Clearing	acre	10	--
543	Land Reclamation, Abandoned Mined Land	acre	15	--
544	Land Reclamation, Currently Mined Land	acre	15	--
466	Land Smoothing	acre	10	--
670	Lighting System Improvement	number	10	--
468	Lined Waterway or Outlet	feet	15	--
516	Livestock Pipeline	feet	20	--

NRCS Practice Code	NRCS Practice Name	Units	Lifespan (Years)	Address Nutrients? ^a
353	Monitoring Well	number	15	--
484	Mulching	acre	1	--
379	Multi-Story Cropping	acre	10	--
590	Nutrient Management	acre	1	Yes
500	Obstruction Removal	acre	10	--
319	On-Farm Secondary Containment Facility	number	15	--
582	Open Channel	feet	15	--
782	Phosphorus Removal System	number	10	Yes
378	Pond	number	20	--
520	Pond Sealing or Lining - Compacted Soil Treatment	square feet	15	--
521	Pond Sealing or Lining - Geomembrane or Geosynthetic Clay Liner	square feet	20	--
522	Pond Sealing or Lining, Concrete	square feet	20	--
338	Prescribed Burning	acre	1	--
528	Prescribed Grazing	acre	1	Yes
533	Pumping Plant	number	15	--
566	Recreational Land Grading and Shaping	acre	15	--
329	Residue and Tillage Management, No Till	acre	1	Yes
345	Residue and Tillage Management, Reduced Till	acre	1	Yes
643	Restoration of Rare or Declining Natural Communities	acre	1	--
391	Riparian Forest Buffer	acre	15	Yes
390	Riparian Herbaceous Cover	acre	5	Yes
654	Road/Trail/Landing Closure and Treatment	feet	10	--
558	Roof Runoff Structure	number	15	Yes
367	Roofs and Covers	number	10	--
604	Saturated Buffer	feet	15	Yes
350	Sediment Basin	number	20	Yes
646	Shallow Water Development and Management	acre	5	--
318	Short Term Storage of Animal Waste and Byproducts	cubic feet	1	--
574	Spring Development	number	20	--
442	Sprinkler System	acre	15	--
578	Stream Crossing	number	10	Yes

NRCS Practice Code	NRCS Practice Name	Units	Lifespan (Years)	Address Nutrients? ^a
395	Stream Habitat Improvement and Management	acre	5	Yes
580	Streambank and Shoreline Protection	feet	20	Yes
585	Strip-cropping	acre	5	--
587	Structure for Water Control	number	20	Yes
649	Structures for Wildlife	number	5	--
606	Subsurface Drain	feet	20	--
607	Surface Drain, Field Ditch	feet	15	--
608	Surface Drain, Main or Lateral	feet	15	--
575	Trails and Walkways	feet	10	--
612	Tree/Shrub Establishment	acre	15	Yes
660	Tree-Shrub Pruning	acre	10	--
490	Tree-Shrub Site Preparation	acre	1	--
620	Underground Outlet	feet	20	--
645	Upland Wildlife Habitat Management	acre	1	--
635	Vegetated Treatment Area	acre	10	Yes
601	Vegetative Barrier	feet	5	--
360	Waste Facility Closure	number	15	Yes
633	Waste Recycling	number	1	--
632	Waste Separation Facility	number	15	--
313	Waste Storage Facility	number	15	--
634	Waste Transfer	number	15	Yes
629	Waste Treatment	number	10	Yes
359	Waste Treatment Lagoon	number	15	Yes
638	Water and Sediment Control Basin	number	10	Yes
642	Water Well	number	20	--
614	Watering Facility	number	10	--
351	Well Decommissioning	number	20	--
658	Wetland Creation	acre	15	Yes
659	Wetland Enhancement	acre	15	Yes
657	Wetland Restoration	acre	15	Yes
644	Wetland Wildlife Habitat Management	acre	1	--

NRCS Practice Code	NRCS Practice Name	Units	Lifespan (Years)	Address Nutrients? ^a
420	Wildlife Habitat Planting	acre	5	--
380	Windbreak/Shelterbelt Establishment	feet	15	--
650	Windbreak/Shelterbelt Renovation	feet	15	--
384	Woody Residue Treatment	acre	10	--

Source: Field Office Technical Guide (NRCS, 2020)

Note a: Practices that appreciably reduce nutrient losses. Best professional judgement.

APPENDIX C: OHIO NPS MANAGEMENT PLAN

Nonpoint Source Reduction Strategies

1.01: Upland Management Strategies

Goal 1.01.01—Encourage the use of advanced conservation practice siting tools and whole farm conservation planning in addition to nutrient management planning

1.02: Livestock Management Strategies

Goal 1.02.01—Improve manure management practices

Goal 1.02.02—Manage runoff in livestock production area

Goal 1.02.03—Improve Grazing Practices

1.03: Drainage Water Management Strategies

Goal 1.03.01—Reduce the rate and amount of runoff

Goal 1.03.02—Increase treatment of field runoff

1.04: Riparian Management Strategies

Goal 1.04.01—Increase riparian wetland retention areas

Goal 1.04.02—Protect and restore riparian forested acres

Goal 1.04.03—Establish voluntary “no-plow” zones in riparian areas

1.05: Failing Onsite Treatment System Strategies

Goal 1.05.01—Reduce the Number of Failing Onsite Treatment Systems

Altered Stream and Habitat Restoration Strategies

2.01: Restore Streams using Natural Channel Design Methods

Goal 2.01.01: Restore impaired streams altered aquatic habitats.

Goal 2.01.02: Manage invasive species management

2.02: Daylighting Culverted and Severely Modified Streams

Goal 2.02.01: Daylight culverted headwater streams.

2.03: Strategies for Restoring and Protecting Riparian Habitat

Goal 2.03.01: Restore and protect riparian habitat

Goal 2.03.02: Address the cause of severely eroding stream banks

Goal 2.03.03: Restore vernal pools and other riparian wetlands

Goal 2.03.04: Increase native shrub and tree plantings in riparian areas

2.04: Restoring Natural Flow

Goal 2.04.01: Restore and Protect Natural Flow Conditions

2.05: Improve Land Use Practices

Goal 2.05.01—Encourage riparian setback and development standards and codes

Goal 2.05.02—Establish voluntary no-mow zones

Goal 2.05.03—Encourage the installation of green stormwater systems

High-Quality Waters Protection Strategies

3.01: Restore and Protect High Quality In-Stream Habitat

Goal 3.01.01 - Provide financial assistance to local governments, park districts and other local implementers to restore impaired segments of high-quality streams

Goal 3.01.02 - In high quality waters, stream restoration projects must use bioengineering methods and materials (where appropriate) to rehabilitate and/or restore in-channel riffles and pools

3.02: Manage Invasive Species

Goal 3.02.01 - Improve and expand financial support for the management and/or removal of invasive plant species in high quality watersheds

3.03: Acquire and Protect High Quality Riparian Areas

Goal 3.03.01 – Increase the protection and restoration of riparian zones along all of Ohio’s rivers and streams, but especially along high-quality streams

Goal 3.03.02 – Increase the use of riparian setback codes and/or required permits

Goal 3.03.03 – Encourage communities to require the use of Low Impact Development practices in high quality watersheds

Urban Sediment and Nutrient Reduction Strategies

4.01: Reduce Stormwater Runoff

Goal 4.01.01: Reduce the rate and amount of runoff

Goal 4.01.02: Encourage the installation of green stormwater management systems

4.02: Passively Treat Stormwater Runoff

Goal 4.02.01: Increase the use of urban stormwater wetland treatment systems

Goal 4.02.02: Protect and restore effective riparian buffers

4.03: Low Impact Development (LID)

Goal 4.03.01: Encourage communities to demonstrate the use of LID practices

APPENDIX D: HUC12 SUBWATERSHEDS IN THE MAUMEE WATERSHED

HUC12	Name	Area (sq. mi.)
041000030104	Bird Creek-East Branch Saint Joseph River	29.56
041000030106	Clear Fork-East Branch Saint Joseph River	49.87
041000030204	Lake Da Su An-West Branch Saint Joseph River	16.24
041000030301	Nettle Creek	36.37
041000030302	Cogsworth Cemetary-Saint Joseph River	9.74
041000030303	Eagle Creek	34.94
041000030304	Village of Montpelier-Saint Joseph River	20.8
041000030305	Bear Creek	24.41
041000030306	West Buffalo Cemetary-Saint Joseph River	13.7
041000030402	Headwaters Fish Creek	13.84
041000030405	Town of Alvarado-Fish Creek	16.04
041000030406	Cornell Ditch-Fish Creek	24.69
041000030501	Bluff Run-Saint Joseph River	23.7
041000030502	Big Run	30.17
041000030503	Russell Run-Saint Joseph River	17.95
041000030505	Willow Run-Saint Joseph River	16.43
041000030506	Hoodelmier Ditch-Saint Joseph River	27.24
041000040101	Muddy Creek	16.45
041000040102	Center Branch	28.99
041000040103	East Branch	21.25
041000030405	Town of Alvarado-Fish Creek	16.04
041000040104	Kopp Creek	33.81
041000040105	Sixmile Creek	17.6
041000040106	Fourmile Creek-Saint Marys River	16.49
041000040201	Hussey Creek	12.36
041000040202	Eightmile Creek	22.44
041000040203	Blierdofer Ditch	14.56
041000040204	Twelvemile Creek	23.56
041000040205	Prairie Creek-Saint Marys River	42.2
041000040301	Little Black Creek	24.94
041000040302	Black Creek	29.5
041000040303	Yankee Run-Saint Marys River	59.41
041000040304	Duck Creek	15.88
041000040305	Town of Willshire-Saint Marys River	13.39
041000040401	Twentyseven Mile Creek	28.68
041000040404	Little Blue Creek	16.6
041000050201	Zuber Cutoff	36.82
041000050202	North Chaney Ditch-Maumee River	18.42
041000050203	Marie DeLarme Creek	48.99

HUC12	Name	Area (sq. mi.)
041000050204	Gordon Creek	44.1
041000050205	Sixmile Cutoff-Maumee River	15.68
041000050206	Platter Creek	21.66
041000050207	Sulphur Creek-Maumee River	18.19
041000050208	Snooks Run-Maumee River	24.92
041000060201	Silver Creek-Bean Creek	21.61
041000060202	Deer Creek-Bean Creek	31.68
041000060203	Old Bean Creek	33.28
041000060204	Mill Creek	40.67
041000060205	Stag Run-Bean Creek	14.42
041000060301	Bates Creek-Tiffin River	29.24
041000060302	Leatherwood Creek	17.31
041000060303	Flat Run-Tiffin River	33.12
041000060401	Upper Lick Creek	27.96
041000060402	Middle Lick Creek	30.82
041000060403	Prairie Creek	29.74
041000060404	Lower Lick Creek	17.36
041000060501	Beaver Creek	45.07
041000060502	Brush Creek	65.92
041000060503	Village of Stryker-Tiffin River	25.21
041000060504	Coon Creek-Tiffin River	30.17
041000060601	Lost Creek	32.29
041000060602	Mud Creek	26.56
041000060603	Webb Run	20.37
041000060604	Buckskin Creek-Tiffin River	20.93
041000070101	Headwaters Auglaize River	42.38
041000070102	Blackhoof Creek	16.29
041000070103	Wrestle Creek-Auglaize River	29.86
041000070104	Pusheta Creek	34.64
041000070105	Dry Run-Auglaize River	24.22
041000070201	Twomile Creek	31.71
041000070202	Village of Buckland-Auglaize River	9.97
041000070203	Sims Run-Auglaize River	28.78
041000070204	Sixmile Creek-Auglaize River	29.88
041000070301	Upper Hog Creek	21.66
041000070302	Middle Hog Creek	30.42
041000070303	Little Hog Creek	22.21
041000070304	Lower Hog Creek	16.1
041000070305	Lost Creek	17.4

HUC12	Name	Area (sq. mi.)
041000070306	Lima Reservoir-Ottawa River	27.34
041000070401	Little Ottawa River	16.41
041000070402	Dug Run-Ottawa River	28.02
041000070403	Honey Run	13.26
041000070404	Pike Run	13.23
041000070405	Leatherwood Ditch	13.44
041000070406	Beaver Run-Ottawa River	20.82
041000070501	Sugar Creek	64.1
041000070502	Plum Creek	39.81
041000070503	Village of Kalida-Ottawa River	20.57
041000070601	Kyle Prairie Creek	19.03
041000070602	Long Prairie Creek-Little Auglaize River	26.17
041000070603	Wolf Ditch-Little Auglaize River	21.18
041000070604	Dry Fork-Little Auglaize River	57.03
041000070701	Hagerman Creek	16.14
041000070702	West Branch Prairie Creek	50.5
041000070703	Prairie Creek	39.19
041000070801	Dog Creek	57.65
041000070802	Upper Town Creek	14.39
041000070803	Maddox Creek	33.74
041000070804	Lower Town Creek	38.69
041000070805	Middle Creek	16.39
041000070806	Burt Lake-Little Auglaize River	13.91
041000070901	Upper Jennings Creek	26.97
041000070902	West Jennings Creek	13.94
041000070903	Lower Jennings Creek	28.11
041000070904	Big Run-Auglaize River	21.01
041000070905	Lapp Ditch-Auglaize River	21.21
041000070906	Prairie Creek	13.78
041000070907	Town of Oakwood-Auglaize River	16.48
041000071001	Upper Prairie Creek	15.27
041000071002	Upper Blue Creek	25.51
041000071003	Middle Blue Creek	19.44
041000071004	Lower Blue Creek	48.09
041000071005	Town of Charloe-Auglaize River	21.92
041000071101	North Powell Creek	46.77
041000071102	Upper Powell Creek	38.79
041000071103	Lower Powell Creek	12.85
041000071201	Headwaters Flatrock Creek	24.53

HUC12	Name	Area (sq. mi.)
041000071204	Brown Ditch-Flatrock Creek	24.37
041000071205	Wildcat Creek-Flatrock Creek	55.77
041000071206	Big Run-Flatrock Creek	48.23
041000071207	Little Flatrock Creek	17.81
041000071208	Sixmile Creek	28.27
041000071209	Eagle Creek-Auglaize River	34.24
041000080101	Cessna Creek	23.2
041000080102	Headwaters Blanchard River	19.65
041000080103	The Outlet-Blanchard River	34.08
041000080104	Potato Run	27.83
041000080105	Ripley Run-Blanchard River	36.92
041000080201	Brights Ditch	28.42
041000080202	The Outlet	38.33
041000080203	Findlay Upground Reservoir Number One-Blanchard River	22.48
041000080204	Lye Creek	27.53
041000080205	City of Findlay-Blanchard River	16.20
041000080301	Upper Eagle Creek	26.35
041000080302	Lower Eagle Creek	33.99
041000080303	Aurand Run	18.01
041000080304	Howard Run-Blanchard River	36.25
041000080401	Binkley Ditch-Little Riley Creek	14.35
041000080402	Upper Riley Creek	14.34
041000080403	Marsh Run-Little Riley Creek	16.24
041000080404	Middle Riley Creek	15.6
041000080405	Lower Riley Creek	25.12
041000080501	Tiderishi Creek	19.15
041000080502	Ottawa Creek	44.89
041000080503	Moffitt Ditch	13.52
041000080504	Dukes Run	15.01
041000080505	Dutch Run	14.75
041000080506	Village of Gilboa-Blanchard River	41.16
041000080601	Cranberry Creek	45.22
041000080602	Pike Run-Blanchard River	28.61
041000080603	Miller City Cutoff	22.62
041000080604	Bear Creek	12.66
041000080605	Deer Creek-Blanchard River	39.32
041000090101	West Creek	15.93
041000090102	Upper South Turkeyfoot Creek	21.00
041000090103	School Creek	38.82

HUC12	Name	Area (sq. mi.)
041000090104	Middle South Turkeyfoot Creek	36.20
041000090105	Little Turkeyfoot Creek	23.09
041000090106	Lower South Turkeyfoot Creek	13.77
041000090201	Preston Run-Maumee River	17.08
041000090202	Benien Creek	24.00
041000090203	Wade Creek-Maumee River	37.27
041000090204	Garret Creek	28.55
041000090205	Oberhaus Creek	23.97
041000090206	Village of Napoleon-Maumee River	21.30
041000090207	Creager Cemetery-Maumee River	17.88
041000090301	Upper Bad Creek	22.77
041000090302	Lower Bad Creek	41.40
041000090401	Konzen Ditch	25.18
041000090402	North Turkeyfoot Creek	49.94
041000090403	Dry Creek-Maumee River	27.32
041000090501	Big Creek	21.49
041000090502	Hammer Creek	25.06
041000090503	Upper Beaver Creek	16.69
041000090504	Upper Yellow Creek	34.59
041000090505	Brush Creek	25.08
041000090506	Lower Yellow Creek	22.65
041000090507	Cutoff Ditch	22.03
041000090508	Middle Beaver Creek	23.43
041000090509	Lower Beaver Creek	16.76
041000090510	Lick Creek-Maumee River	23.36
041000090601	Tontogany Creek	45.25
041000090602	Sugar Creek-Maumee River	21.69
041000090603	Haskins Road Ditch-Maumee River	15.7
041000090701	Ai Creek	50.75
041000090702	Fewless Creek-Swan Creek	28.29
041000090703	Gale Run-Swan Creek	16.88
041000090801	Upper Blue Creek	20.25
041000090802	Lower Blue Creek	24.45
041000090803	Wolf Creek	27.12
041000090804	Heilman Ditch-Swan Creek	36.82
041000090901	Grassy Creek Diversion	24.74
041000090902	Grassy Creek	13.66
041000090903	Crooked Creek-Maumee River	18.86
041000090904	Delaware Creek-Maumee River	16.52

APPENDIX E: FOIA REQUESTS

Freedom of Information Act (FOIA) requests are managed through the U.S. Department of Agriculture's (USDA) Office of Information Affairs. Information about how to submit a FOAI request to USDA is published online: <https://www.usda.gov/ogc/office-information-affairs/foia-division>

Users must submit FOIA requests online, after registering at USDA's FOIA portal:

<https://www.usda.gov/ogc/office-information-affairs/foia-division>

When submitting a FOIA request to USDA, the user must provide their full name, organization, title, telephone number, postal address, and electronic mail address. Ohio EPA should select an individual to represent the Agency.

USDA's FOIA regulations are published online in the electronic Code of Federal Regulations:

<https://www.ecfr.gov/current/title-7/subtitle-A/part-1>

Sample Text to Include in a Future FOIA Request

The Ohio Environmental Protection Agency (Ohio EPA) is requesting spatially aggregated agricultural practices data for the Maumee River watershed. Ohio EPA will use these data, along with similar data from other federal and state funding programs, to support the Agency's requirements with reporting implementation progress for the Maumee Watershed Nutrient Total Maximum Daily Load. The objective is to document that federal and state funding programs are financing implementation activities that will ultimately lead to improved water quality in the Maumee River watershed and Lake Erie.

Ohio EPA would like aggregated data from the Conservation Reserve Program and Conservation Reserve Enhancement Program (hereafter, together as CRP) administered by the Farm Service Administration and the Environmental Quality Incentive Practice program administered by the Natural Resources Conservation Service.

Ohio EPA is only interested in spatially aggregated size information by practice code within a subwatershed. For example, total acres of filter strip (CP-21) in CRP or total feet of saturated buffer (604) in EQIP.

Ohio EPA would like the CRP and EQIP data to be aggregated by FSA or NRCS practice code (respectively) for each year from 2008 through 2021 at the scale of the finest hydrologic unit that can be provided (i.e., HUC8, HUC10, HUC12) across Ohio's portion of the Maumee River watershed.

The Maumee watershed is composed of seven HUC8 subbasins: *St. Joseph* (HUC 04100003), *St. Marys* (HUC 04100004), *Upper Maumee* (HUC 04100005), *Tiffin* (HUC 04100006), *Auglaize* (HUC 04100007), *Blanchard* (HUC 04100008), and *Lower Maumee* (HUC 04100009). Ohio EPA can provide lists of HUC10s or HUC12s, if needed.

The data request could be fulfilled via spreadsheets that contains FSA or NRCS practice codes as column headers, subwatersheds as row headers, and aggregated summations (e.g., total acres, total feet) as the values.

Ohio EPA is willing to pay applicable processing fees.