



**OHIO DEPARTMENT OF
NATURAL RESOURCES**

ODNR's **H2Ohio** Program

Wetlands for Water Quality



RACHEL DENOEWER

H2Ohio Assistant Program Manager, ODNR

9 Contributing Divisions & Offices:

Coastal Management

Engineering

Forestry

Mineral Resources

Natural Areas & Preserves

Parks and Watercraft

Real Estate & Land Management

Water Resources

Wildlife



ODNR'S H2Ohio Program

Wetlands For Water Quality

 **MIKE DEWINE**
GOVERNOR OF OHIO



Reducing Phosphorus



Creating Wetlands



Addressing Failing Septic Systems



Preventing Lead Contamination

NATURAL INFRASTRUCTURE APPROACH

- Cost effective
- Long-term
- Benefits to wildlife & society



Phosphorus Reduction Impact



1 Soil Testing:
Nutrient management plans give farmers information on where to place fertilizer, when, and how much.



6 Cover crops:
When planted after the main harvest, cover crops reduce erosion, hold nutrients in the soil, and improve soil health.



2 Variable-rate fertilization:
Applying scientific fertilizer levels based on the need of each sub-acre. Reduces fertilizer application without risk of losing yield.



7 Drainage water management:
Slowing down runoff to give phosphorus more time to settle back in the soil.



3 Subsurface nutrient application:
Applying fertilizer below the surface to reduce runoff.



8 Two-stage ditch construction:
Creating modified drainage ditches to slow water flow and allow the phosphorus to settle.



4 Manure incorporation:
Mixing manure into the soil to keep it in place and prevent runoff.



9 Edge-of-field buffers:
When trees or shrubs are planted along farm fields in the right place, the plants hold on to the phosphorus and prevent its release into the water.



5 Conservation crop rotation:
Planting certain crops that reduce erosion and enrich the soil, thus reducing runoff and decreasing the need for fertilizer.




10 Wetlands:
Wetland vegetation and soils absorb phosphorus, slow down the movement of water, offer a natural filtering process, and allow phosphorus to settle.



H2Ohio

BY THE NUMBERS

141 
wetland projects

\$114 million 
to support wetland project implementation

\$4.3 million



allocated to establish independent project monitoring program

61



nonprofit conservation partners engaged

110,000+ 
acres of watershed filtered by wetland projects

15,000



acres of wetland and ecosystem restoration



180

landowners incentivized to establish wetlands and wooded riparian buffers through Lake Erie CREP

90



threatened or endangered species dependent on wetlands; many will benefit from this additional habitat

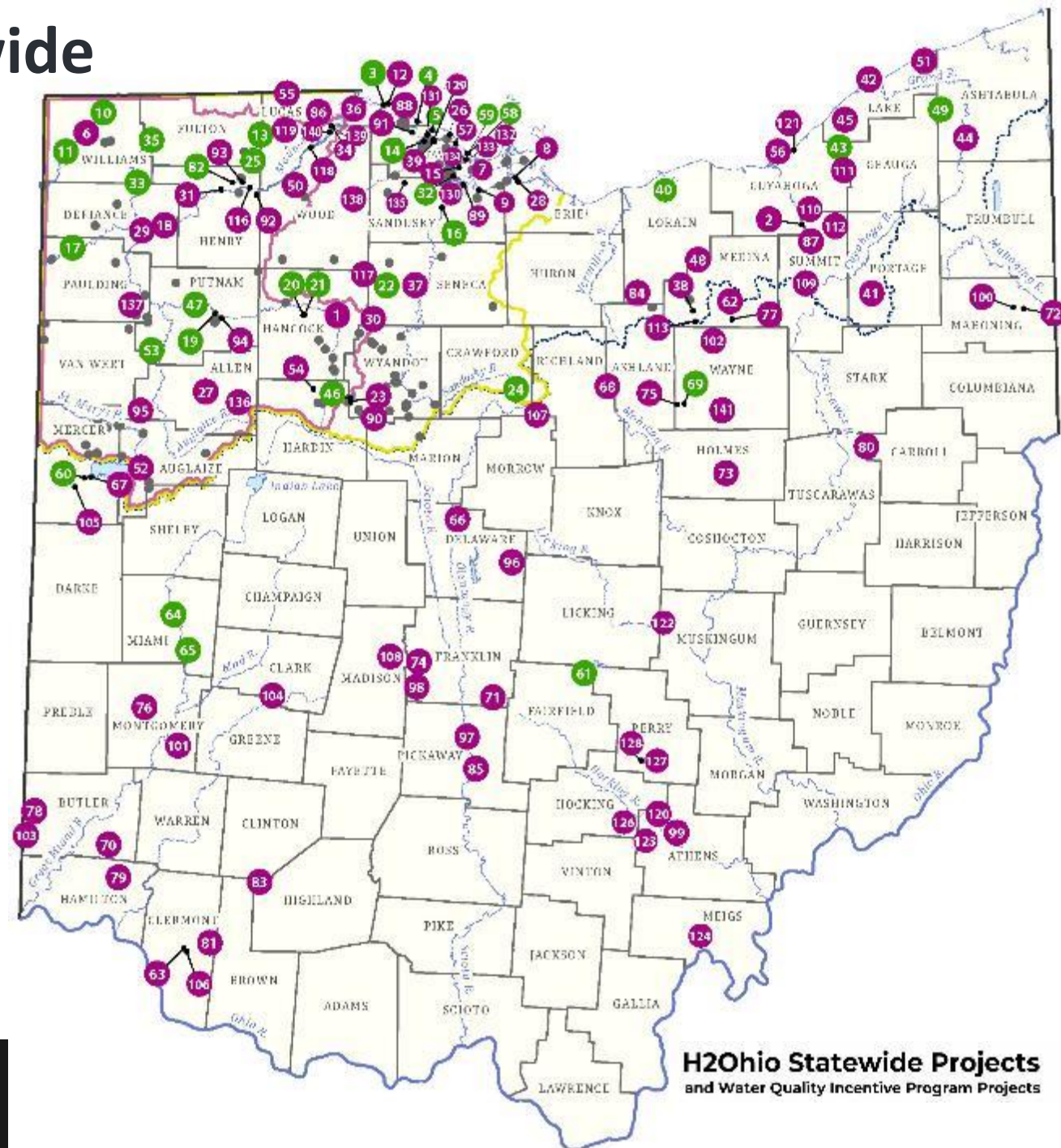


+85K

trees have been planted in wetland buffers

ODNR's H2Ohio Program is Statewide

- History of the program / Projects in progress
- 2 rounds of Ohio River Basin H2Ohio Wetland Grant Program
- Northwest Ohio is in a noncompetitive program
 - accepting grant proposals year round
- Majority of Ohio will be in competitive format with grant release in July
- Grey dots are H2Ohio Water Quality Incentive Program:
Incentive to transform unproductive land into habitat that protects and improves WQ
 - Jointly with USDA Farm Bill Lake Erie CREP
 - Forested riparian buffers and wetlands



The **H2Ohio** Wetland Grant Program



Funding Overview

- ✓ Reimbursement program – up-to-100% project funding
- ✓ Matching dollars not required
- ✓ Min. \$50,000 - No cost cap on projects
- ✓ Can cover indirect costs

H2Ohio funding is available to:

- cities, villages, counties, townships
- special districts such as park districts, joint recreation boards, or conservancy districts
- jointly sponsored projects between political subdivisions and Non-profit Organizations



The **H2Ohio** Wetland Grant Program



FAQ

Can the project include other restoration types (forest, prairie, etc.)?

Yes, project proposals submitted to the H2Ohio program can include additional restoration types if they are connected to a WQ restoration project such as a wetland, floodplain, or stream restoration.

Is there a project size minimum?

No, there is no project acreage minimum for the H2Ohio Wetland Grant Program. Our projects typically range from a couple acres to hundreds of acres of wetland and associated habitat restoration.

How long can a project take?

All H2Ohio projects must be completed within 2 years of signing a grant award agreement.



The **H2O**Ohio Wetland Grant Program: Eligible Projects

- Wetland creation
- Hydrologic restoration of wetlands on hydric soils
- Hydrologic enhancement of existing wetlands and floodplains
- Stream and floodplain restoration
- Storm flow storage, erosion reduction
- Restoration of forested riparian buffers
- Acid mine drainage (AMD) abatement
- Project focus on nutrient reduction and water quality improvements



The **H2Ohio** Wetland Grant Program: Ineligible Projects

- Projects that primarily treat invasive species
- Maintenance costs for existing high-quality wetlands
- Research and/or technology development projects
- Projects with useful life less than 15 years
- Projects that are used to meet regulatory requirements



The **H2Ohio** Wetland Grant Program: Important Dates

- **Thursday, June 29th, 2023:**
Central Ohio H2Ohio Wetland Grant Workshop
- **Early July 2023:** Grant released
- **July 18th, 2023:** Virtual Workshop
- **Mid-August** Applications due
- **October 2023:** Award notices



SEARCH 'ODNR GRANTS'

Available Grants

Grant Opportunities

OHIO RIVER BASIN H2OHIO WETLAND GRANT PROGRAM




Program Intent and Purpose


The Ohio River Basin H2Ohio Wetland Grant Program is a reimbursement grant program that provides up-to-100 percent project funding for high quality natural-infrastructure projects focused on nutrient reduction and water quality improvement within the Ohio River Basin. This grant program is state-funded through Ohio's H2Ohio program and is administered by the Ohio Department of Natural Resources ("ODNR"). Per-project budget must be justified in the application and fall in the approximate range of \$50,000 to \$500,000 in requested H2Ohio funding.

Types of Eligible Ohio River Basin H2Ohio Wetland or Natural-Infrastructure Projects Include:

- Wetland creation
- Hydrologic restoration of wetlands on hydric soils
- Hydrologic enhancement of existing wetlands and floodplains
- Stream and floodplain restoration
- Restoration of forested riparian buffers
- Acid Mine Drainage (AMD) Abatement Projects

ADDITIONAL DOWNLOADS

 [2022 Application and Program Materials](#)

 [The Ohio River Basin H2Ohio Wetland Grant Webinar — Monday, February 28th, 2022 \(MP4\)](#)

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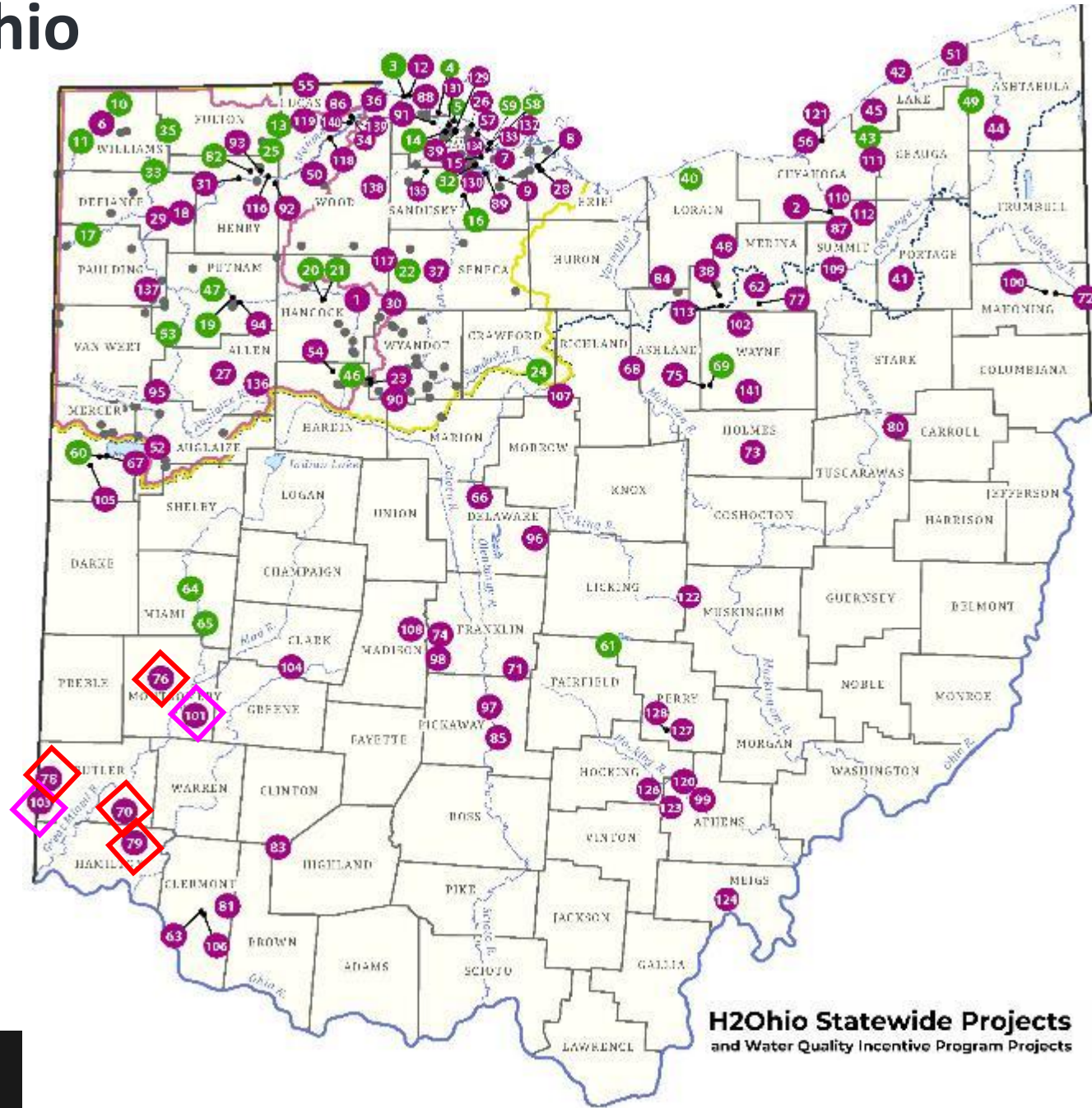
FOR MORE INFORMATION



ODNR's H2Ohio Program in SW Ohio

ORB H2Ohio Wetland Grant Program

- 2021 – 4 projects awarded (~\$1.5mil)
 - Mill Creek Alliance
 - Five Rivers Metro Park
 - Three Valley Conservation Trust
 - Gorman Heritage Farm
- 2022 – 2 projects awarded (~\$800k)
 - Metro Parks of Butler Co
 - Centerville-Washington Park District



BUTLER CO Indian Cree Wetland &

- Project par
- Budget: \$4
- Whitewater

The project v
to a protecte
reach of Indi



Figure 2. Conceptual Plan
INDIAN CREEK - HOFFMANN
WETLAND AND STREAM RESTORATION
 Approximate Scale: 1 in = 300 feet

PLAN LEGEND*	
	RIPIARIAN BUFFER ENHANCEMENT
	REGRADE, FABRIC & PLANT
	VEGETATED ROCK TOE
	PROPOSED FLOWLINE IMPROVEMENT
	ROCK CROSS VANE/RIFFLES
	LOG DEFLECTOR WETLAND
	ENHANCEMENT

* Approximate locations

tatewide Projects
 ility Incentive Program Projects



BUTLER CO

Dry Fork Stream Governor Bebb

- Project par
- Budget: \$4
- Supplemer
- Whitewater

The project w
improve in-st
systemic eros
enhance nutr



ATTACHMENT 1E



**BUTLER COUNTY METROPARKS
STREAM AND WETLAND RESTORATION
AT GOVERNOR BEBB METROPARK, OKEANA, OHIO**

PLAN LEGEND

- PROJECT BOUNDARY / RIPARIAN BUFFER
- TOEWOOD REVETMENT
- ROCK TURNING VANE
- MICRODETENTION BASIN

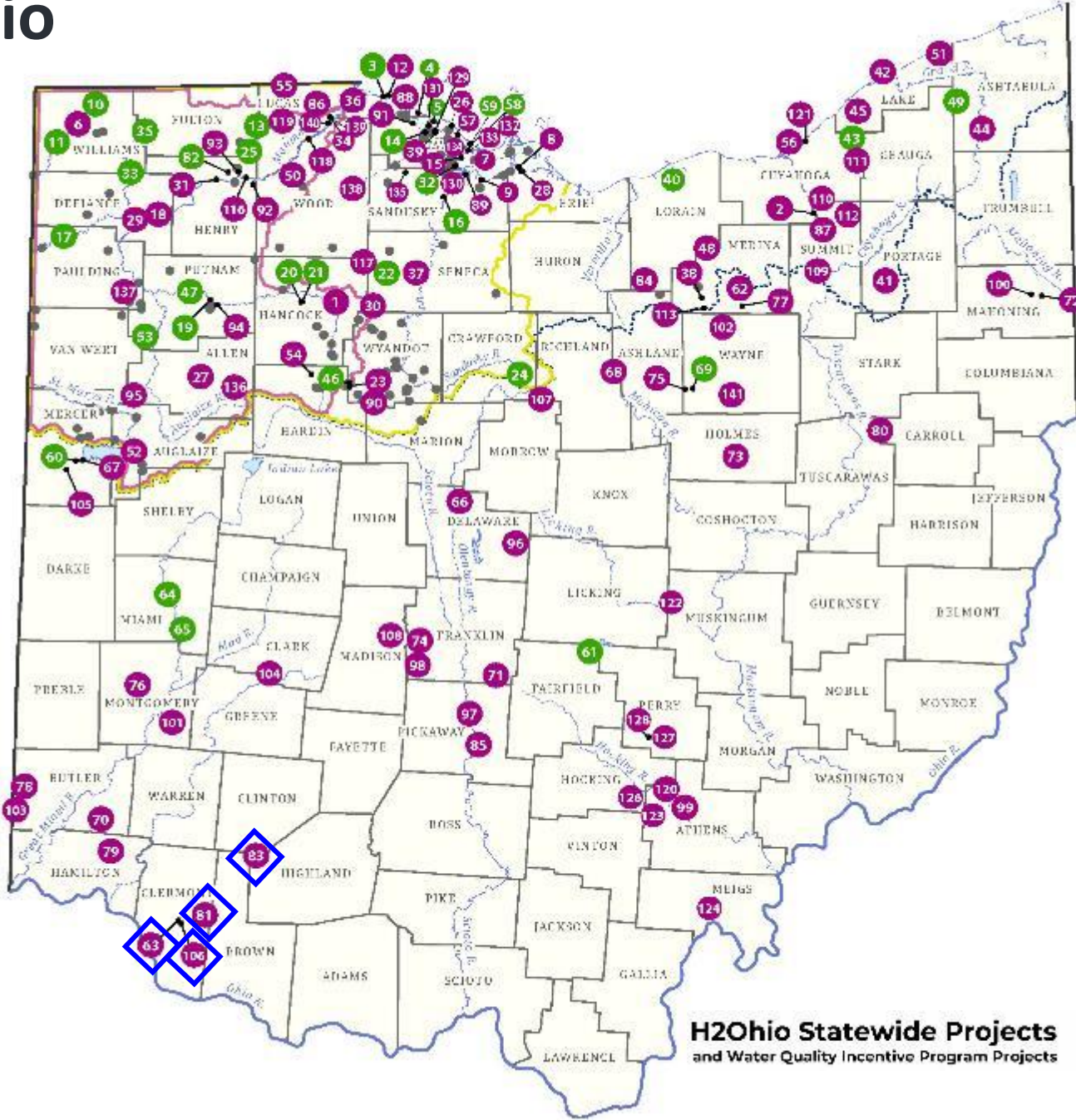
Ohio Statewide Projects
Water Quality Incentive Program Projects



ODNR's H2Ohio Program in SW Ohio

EFLMR watershed a priority for the Division of PWC (\$1.14mil)

- Clermont SWCD – (\$290k)
- Wetland feasibility study – (\$50k)
- Tech Deployment – (\$800k)



H2Ohio Statewide Projects and Water Quality Incentive Program Projects



Legend

- Pump Station
- ▲ USGS Stream Gage



Table 7 Summary of Alternatives – Cost-Benefit Analysis

	Total Cost (\$)	Annual Flow Treated (%)	Percent of TMDL Target Reduction (%)		Average Annual Reduction (%)		Average Annual Reduction (lb/yr)		Average Cost Per Annual Reduction (\$/lb)	
			TN	TP	TN	TP	TN	TP	TN	TP
Option 1.1A	\$ 10,794,766	2.0%	1.6%	1.5%	1.0%	1.2%	13,961	2,688	\$ 773	\$ 4,017
Option 1.2A	\$ 13,201,648	2.9%	2.3%	2.2%	1.4%	1.7%	20,078	3,842	\$ 658	\$ 3,437
Option 1.3A	\$ 19,107,607	4.2%	3.3%	3.3%	2.1%	2.5%	29,291	5,563	\$ 652	\$ 3,435
Option 2A	\$ 14,284,852	2.6%	2.1%	2.0%	1.3%	1.6%	18,350	3,518	\$ 778	\$ 4,061
Option 3A	\$ 29,951,921	6.9%	5.4%	5.3%	3.4%	4.1%	47,641	9,081	\$ 629	\$ 3,298
Option 1.1B	\$ 14,005,717	2.9%	2.9%	2.9%	1.5%	1.8%	15,781	2,519	\$ 888	\$ 5,561
Option 1.2B	\$ 17,147,103	4.4%	4.3%	4.4%	2.2%	2.7%	23,671	3,778	\$ 724	\$ 4,539
Option 1.3B	\$ 24,107,102	7.0%	6.7%	6.9%	3.5%	4.2%	37,299	5,953	\$ 646	\$ 4,049
Option 2B	\$ 18,872,110	4.0%	3.9%	4.0%	2.0%	2.4%	21,375	3,412	\$ 883	\$ 5,532
Option 3B	\$ 37,560,366	11.0%	10.6%	10.9%	5.5%	6.6%	58,675	9,365	\$ 640	\$ 4,011



The **H2Ohio** Wetland Grant Program: Application Preparation



Ohio Department of
NATURAL RESOURCES

H2Ohio

Ohio River Basin H2Ohio Wetland Grant Program

Information and Application

2023



RESOURCES FOR PROJECT DEVELOPMENT

SUPPORTING PROJECT SUMMARY DOCUMENTS

- Project Map with work areas outlined
 - Include Map Legend
- Stream Stats Map – drainage area streamstats.usgs.gov/ss/
- USDA Web Soils map – hydric soils websoilsurvey.nrcs.usda.gov/app/
- Nutrient calculations – Showing amount of Phosphorous/Nitrogen removed



SELECT A STATE / REGION >

Exploration Tools



Step 1: Use the map or the search tool to identify an area of interest. At zoom level 8 or greater State/Region selection will be enabled.

Search for a place

Help

IDENTIFY A STUDY AREA v

SELECT SCENARIOS v

BUILD A REPORT v

POWERED BY WIM

USGS Home Contact USGS Search USGS Accessibility FOIA Privacy Policy & Notices

Zoom Level: 4
Map Scale: 1:36,978,596
Lat: 39.9097, Lon: -91.4941

500 km
300 mi

Layers

- Base Maps v
- National Layers v



SELECT A STATE / REGION

Ohio ⓘ ▾

IDENTIFY A STUDY AREA ▶

Step 1: Zoom in to level 15 or greater to enable the delineation tool

Delineate

SELECT SCENARIOS ▾

BUILD A REPORT ▾

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Exploration Tools

+

-

Layers

Base Maps ▾

Application Layers ▾

National Layers ▾

OH Map Layers ▾

Zoom Level: 14
Map Scale: 1:36,111
Lat: 39.0470, Lon: -84.0282

500 m
2000 ft

Leaflet | Esri



SELECT A STATE / REGION

Ohio

IDENTIFY A STUDY AREA

Step 2: Click the 'Delineate' button to activate the delineation tool

Delineate

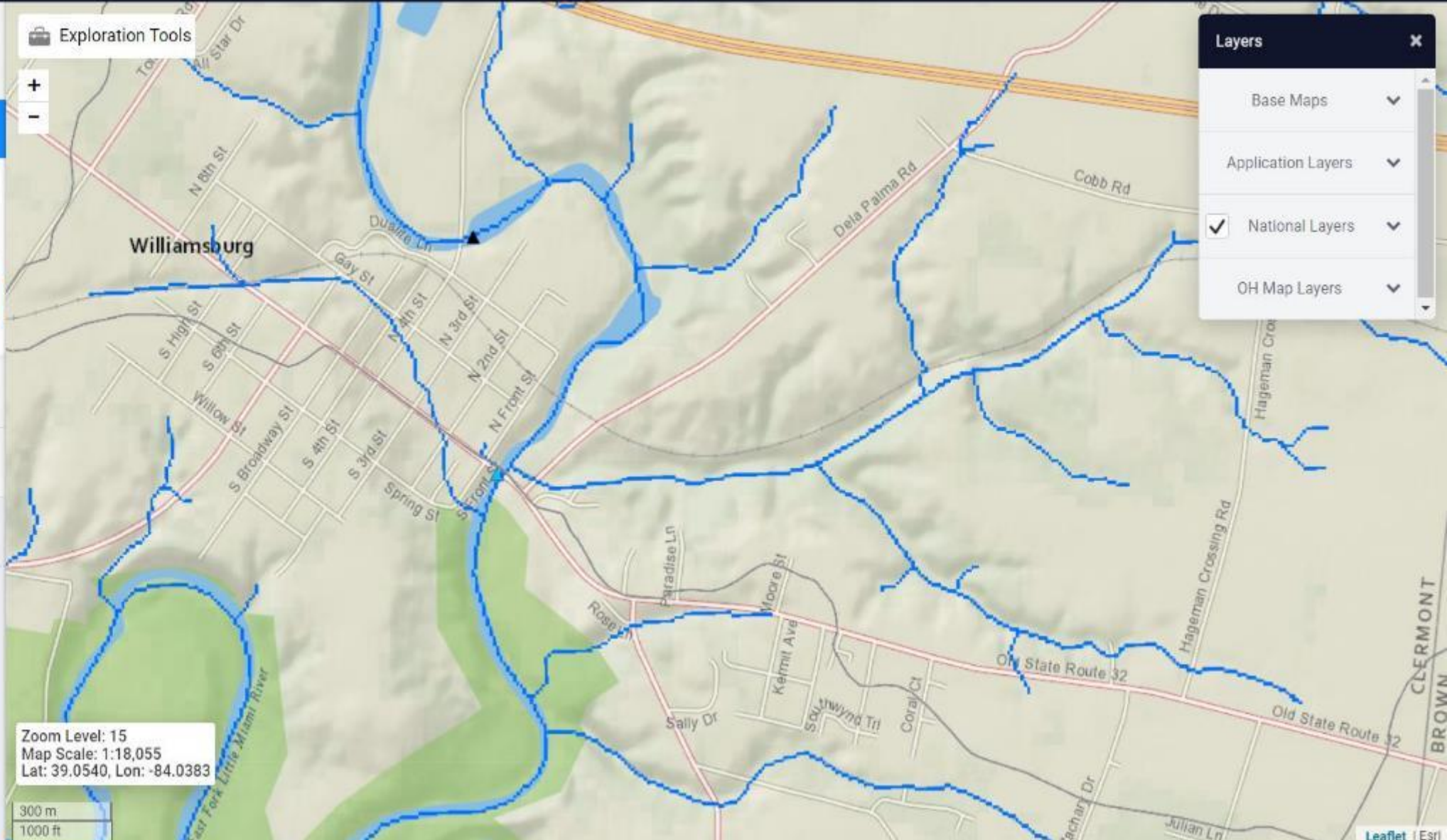
SELECT SCENARIOS

BUILD A REPORT

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Exploration Tools



Layers

- Base Maps
- Application Layers
- National Layers
- OH Map Layers

Zoom Level: 15
Map Scale: 1:18,055
Lat: 39.0540, Lon: -84.0383

300 m
1000 ft

Leaflet | Esri



SELECT A STATE / REGION

Ohio

IDENTIFY A STUDY AREA

Basin Delineated

Step 5: Your delineation is complete. You can now clear, edit, or download your basin, or choose a state or regional study specific function (if available). Click **continue** when you are ready.

Clear Basin

Edit Basin

State/Region Specific Functions

The following additional functions are available for Ohio.

Check For Water Use

Download Basin

Continue

Exploration Tools

+

-

Layers

Base Maps

Application Layers

National Layers

OH Map Layers

Zoom Level: 15
Map Scale: 1:18,055
Lat: 39.0547, Lon: -84.0263

300 m
1000 ft



BUILD A REPORT >

Step 1: You can modify computed basin characteristics here, then select the types of reports you wish to generate. Then click the "Build Report" button

▼ Show Basin Characteristics

Select available reports to display:

- Basin Characteristics Report
- Scenario Flow Reports

Open Report

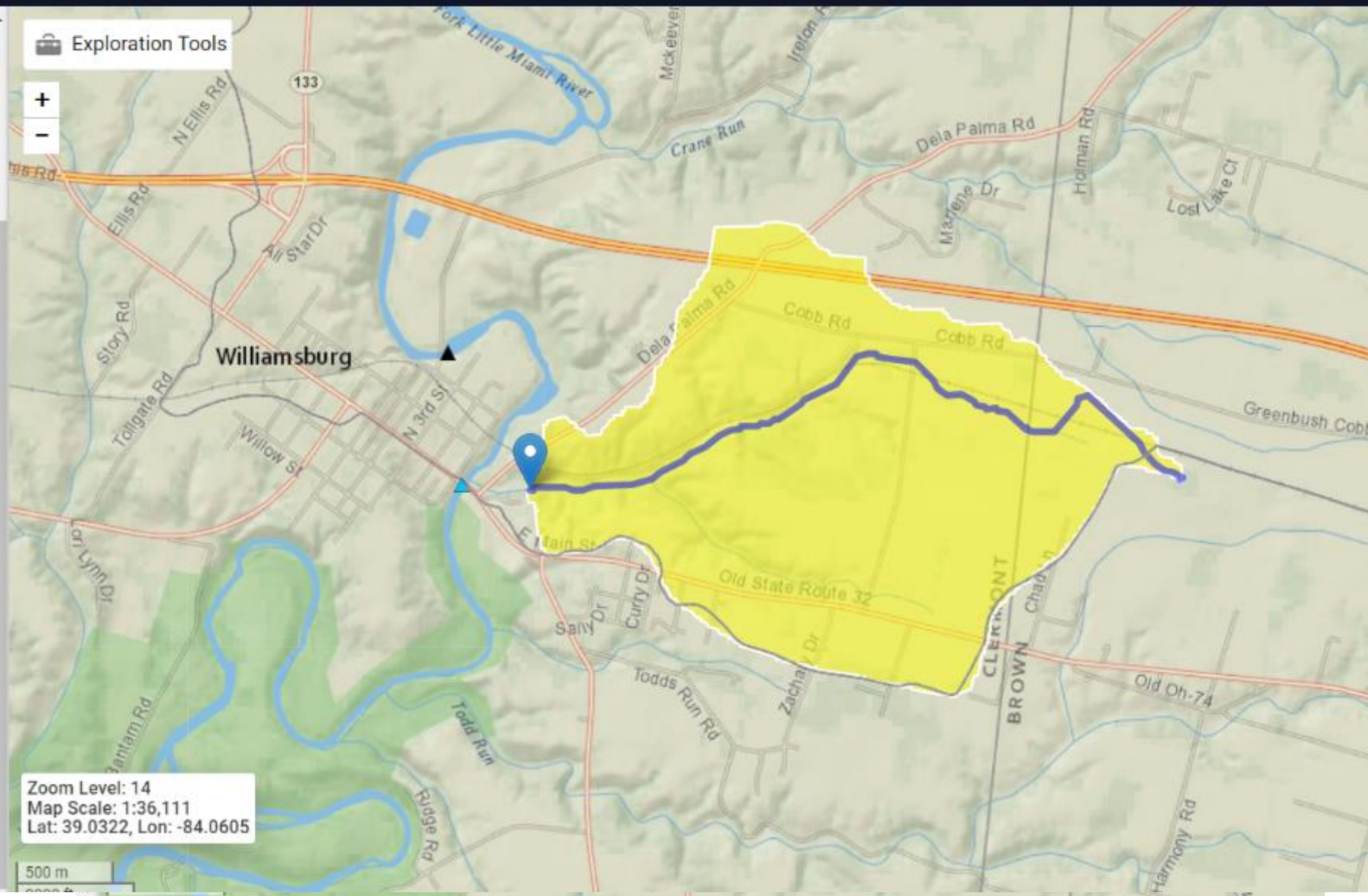
POWERED BY WIM

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Exploration Tools

+

-



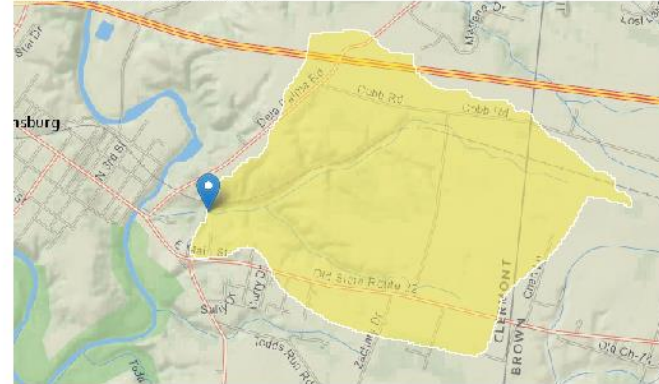
Double Click on Picture to Open Report

5/23/23, 8:31 AM

StreamStats

StreamStats Report

Region ID: OH
Workspace ID: OH20230523122746936000
Clicked Point (Latitude, Longitude): 39.05245, -84.04399
Time: 2023-05-23 08:28:09 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CSL1085LFP	Change in elevation divided by length between points 10 and 85 percent of distance along the longest flow path to the basin divide, LFP from 2D grid	48.7	feet per mi
DRNAREA	Area that drains to a point on a stream	1.82	square miles
FOREST	Percentage of area covered by forest	15.3	percent
LAT_CENT	Latitude of Basin Centroid	39.0534	decimal degrees

<https://streamstats.usgs.gov/iss/>

1/11





You are here: Web Soil Survey Home

Search

Enter Keyword

All NRCS Sites

Browse by Subject

- Soils Home
- National Cooperative Soil Survey (NCSS)
- Archived Soil Surveys
- Status Maps
- Official Soil Series Descriptions (OSD)
- Series Extent Explorer
- Geospatial Data Gateway
- eFOTG
- National Soil Characterization Data
- Soil Health
- Soil Geography

The simple yet powerful way to access and use soil data.



Welcome to Web Soil Survey (WSS)



Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

Soil surveys can be used for general farm, local, and wider area planning. Onsite investigation is needed in some cases, such as soil quality assessments and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center at the following link: [USDA Service Center](#) or your NRCS State Soil Scientist at the following link: [NRCS State Soil Scientist](#).

I Want To...

- Start Web Soil Survey (WSS)
- Know Web Soil Survey Requirements
- Know Web Soil Survey operation hours
- Find what areas of the U.S. have soil data
- Find information by topic
- Know how to hyperlink from other documents to Web Soil Survey
- Know the SSURGO data structure
- Use Web Soil Survey on a mobile device

Announcements/Events

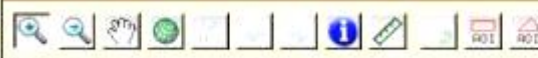
- Web Soil Survey 3.4.0 has been released! [View](#)



Area of Interest (AOI) | [Soil Map](#) | [Soil Data Explorer](#) | [Download Soils Data](#) | [Shopping Cart \(Free\)](#)

- Search**
- Area of Interest**
 - Import AOI
- Quick Navigation**
 - Address
 - State and County
 - Soil Survey Area
 - Latitude and Longitude or Current Location
 - PLSS (Section, Township, Range)
 - Bureau of Land Management
 - Department of Defense
 - Forest Service
 - National Park Service
 - Hydrologic Unit

Area of Interest Interactive Map

Legend  View Extent Scale



Search [?]

Area of Interest [?]

[Open All](#) [Close All](#)

AOI Properties [?]

[Clear AOI](#) [?]

AOI Information [?] [?]

Name:

Map Unit Symbols: Use Soil Survey Area Map Unit Symbols
 Use National Map Unit Symbols

Area (acres): 61.2

Soil Data Available from Web Soil Survey [?] [?]

Clermont County, Ohio (OH025)

Data Availability: Tabular and Spatial, complete

Tabular Data: Version 20, Sep 8, 2022

Spatial Data: Version 7, Sep 16, 2019

[Clear AOI](#)

[Import AOI](#) [?]

[Export AOI](#) [?]

Quick Navigation [?]

[Address](#) [?]

[State and County](#) [?]

[Soil Survey Area](#) [?]

[Latitude and Longitude or Current Location](#) [?]

[PLSS \(Section, Township, Range\)](#) [?]

[Bureau of Land Management](#) [?]

[Department of Defense](#) [?]

Area of Interest Interactive Map [?]

Legend [?]

View Extent: Scale:

The map displays an aerial view of a rural area in Clermont, Ohio. A large cyan hatched rectangle covers most of the central and right portions of the image, indicating an Area of Interest (AOI). Within this hatched area, a yellow rectangle highlights a specific spot. The map includes labels for 'Clermont' and 'Riverside Ln'. A road, a house, and a pond are visible within the AOI.



Area of Interest (AOI) | Soil Map | **Soil Data Explorer** | Download Soils Data | Shopping Cart (Free)

View Soil Information By Use: All Uses

Printable Version | Add to Shopping Cart

Intro to Soils | Suitabilities and Limitations for Use | **Soil Properties and Qualities** | Ecological Sites | Soil Reports

Search

Properties and Qualities Ratings

Open All | Close All

Soil Chemical Properties

Soil Erosion Factors

Soil Health Properties

Soil Physical Properties

Soil Qualities and Features

AASHTO Group Classification (Surface)

AASHTO Group Index

Depth to a Selected Soil Restrictive Layer

Depth to Any Soil Restrictive Layer

Depth to Bedrock

Drainage Class

Frost Action

Frost-Free Days

Hydrologic Soil Group

View Description | View Rating

View Options

Map

Table

Description of Rating

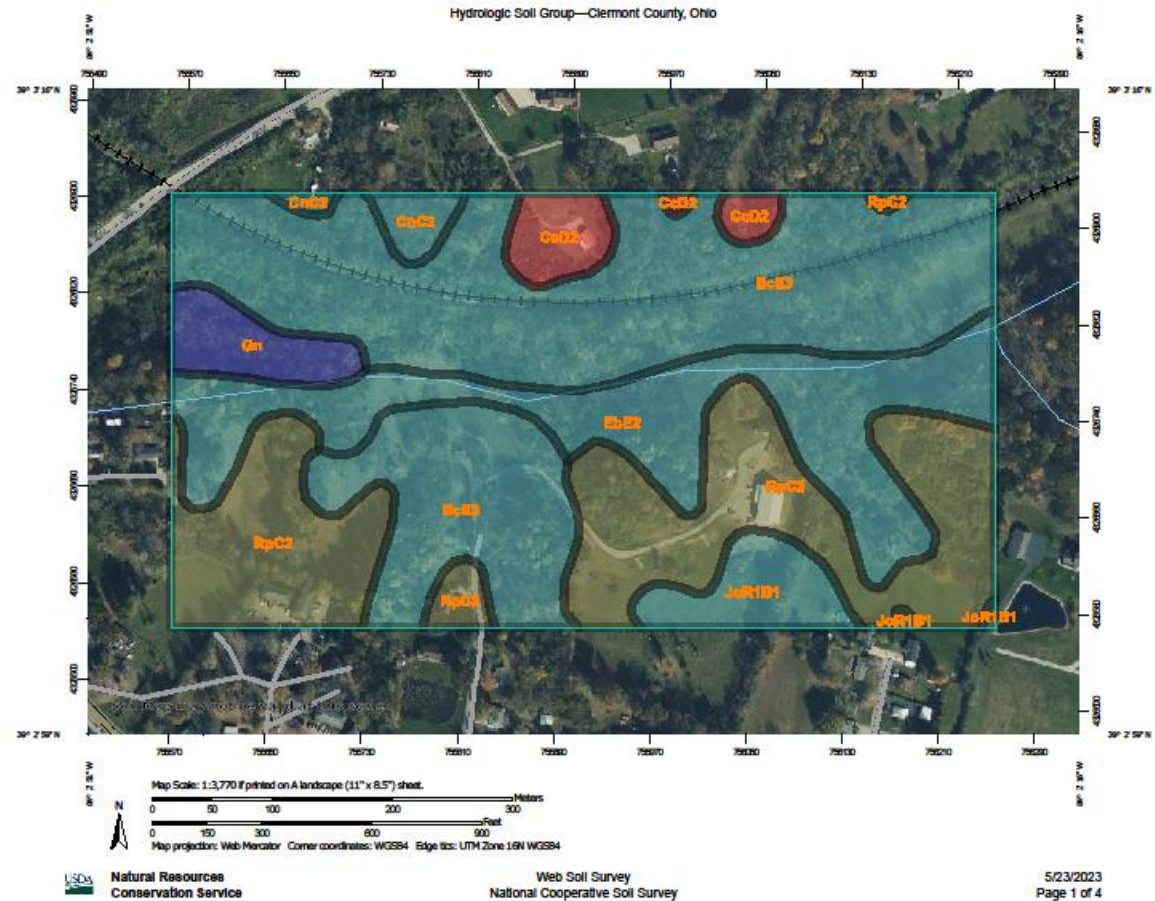
Soil Map

Legend | Scale (not to scale)



WEB SOIL SURVEY

Double Click image to open report



The Ohio Wetland Grant Program: Coordination with State & Federal Agencies

Submit conceptual design or project ideas:

- State Historic Preservation Office (SHPO)
- Ohio Department of Natural Resources Environmental Review (ER)
- US Fish & Wildlife Service – Ohio Ecological Services Field Office

Quick phone calls/emails to get more information on regulatory process for projects

- Ohio Environmental Protection Agency (EPA) – Permits Programs
- US Army Corps of Engineers (USACE) – 3 regulatory districts in Ohio (4 military districts)



COORDINATION WITH SHPO



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OHIO DEPARTMENT OF NATURAL RESOURCES

COORDINATION WITH SHPO



About the Section 106
Review Process in Ohio



Submitting Projects for
Section 106 Review



Check the Status of a
Project review



Advisory Council on
Historic Preservation

Section 106 Online Training



Connect with the
Resource, Protection &
Review Staff



Archaeology Guidelines



COORDINATION WITH SHPO – SIMPLY STATED

- **GOOD COVER LETTER**
 - identification of agency, contact person, return mailing address, telephone and email, and funding source and grant number
- **LOCATION MAP**
 - Site clearly marked. Map(s) show location within the county, within the city, and nearest crossroad or intersection
- **PHOTOGRAPHS**
 - View of buildings, structures, landscape, topography, floodplain & riparian features
- **SCOPE OF WORK**
 - A detailed list of the work you plan to do and how you will do it
- **PROJECT SUMMARY FORM**
- **QUESTIONS? CONTACT Section106@ohiohistory.org**



Submitting a Project for Section 106 Review

The State Historic Preservation Office (SHPO) recommends that agencies use the Section 106 Review Project Summary Form and its supporting documents to submit most routine projects for review (*see exceptions below).



Let Us Help You

Agencies planning large or complex projects are encouraged to contact SHPO early in planning to discuss options to help you meet your responsibilities under 36 CFR Part 800.

Call Us
614.298.2000



Project Summary Form

Download the
Project Summary
Form



Submit Your Project Electronically

We now accept only electronic submissions. Please send an electronic copy via email. Note that file size is limited to 20 MB. For submissions of a larger size, please contact us to

Submit Your Project

[Additional Resources & Tools](#)

Additional Resources & Tools



Project Summary Form (PSF) Form and Instructions:

[Project Summary Form](#)



[Tools to Complete Section III of the Project Summary Form](#)



[Recording Cultural Resource - for Professionals](#)



[Recording Archaeological Sites - for Non-Professionals](#)



[OHC: Archaeological Survey/Excavation Permit](#)



[Online Mapping System](#)

ENVIRONMENTAL REVIEW

About the Division

Canal Lands Program

Capital Projects

Environmental Review

Outdoor Recreation
Facility Grants

Ohio Canal Maps



The Office of Real Estate - Environmental Review Services Section is responsible for coordinating and facilitating environmental reviews and comment response letters generated by the ER. For many projects, demonstrating coordination with ODNR is a requirement that must be fulfilled to secure funding, licensing, or permitting, at both the state and federal level. Coordination letters that are prepared through ODNR's ER Program are done so under the authority of the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Fish and Wildlife Coordination Act (FWCA), the Clean Water Act (CWA), the Coastal Zone Management Act (CZMA), and other applicable laws and regulations.

What To Submit



How / Where to Submit



Ohio Natural Heritage Database



Related Links



Ohio Power Siting Board Related



FOR MORE INFORMATION

Office of Real Estate & Land Management

2045 Morse Rd., Bldg. E-2
Columbus, OH 43229

Environmental Review:

Please direct all Environmental Review inquiries (except ODOT project inquiries) to:

Mike Pettegrew, Administrator
Mike.Pettegrew@dnr.ohio.gov
(614) 265-6387

For ODOT related inquiries:

Kyla Maunz, ODOT Program Liaison
Kyla.Maunz@dnr.ohio.gov
(614) 265-6386

Samantha Robbins, Consultant
Samantha.Robbins@dnr.ohio.gov

Please join the Office of Real Estate and Land Management mailing list!

Submit



Ohio Ecological Services Field Office

Ohio Ecological Services Field Office

About Us

What We Do

Contact Us

Requesting a review of a development project by our office is a two-step process:

1. Request an official species list for your project area through the Service's Information for Planning and Consultation ([IPaC](#)) system; then
2. Send your complete project information to Ohio@fws.gov for review, including a copy of your IPaC-generated species list.

Step 1

You MUST enter the following project information into the Service's Information for Planning and Consultation (IPaC) system to obtain an official species list for your project area.

Log into IPaC: <https://ecos.fws.gov/ipac/>

Our response

The Ohio Ecological Services Field Office will send a response email within approximately 30 days of receipt with technical assistance or further recommendations for specific species.

THANK YOU

Let's stay in touch.

**RACHEL
DENOEWER**

rachel.denoewer@dnr.ohio.gov

H2.ohio.gov/Natural-Resources

Facebook.com/H2Ohio.Initiative

Twitter: @H2ohio



H2Ohio

Three blue wavy lines positioned below the 'H2Ohio' text, suggesting water or a natural resource theme.