

State Water Policies

CSEAO Summer Conference
6-13-2024





Forbes

FORBES > LIFESTYLE > TRAVEL

Columbus Is America's Fastest Growing City And A Wonderful Place To Visit

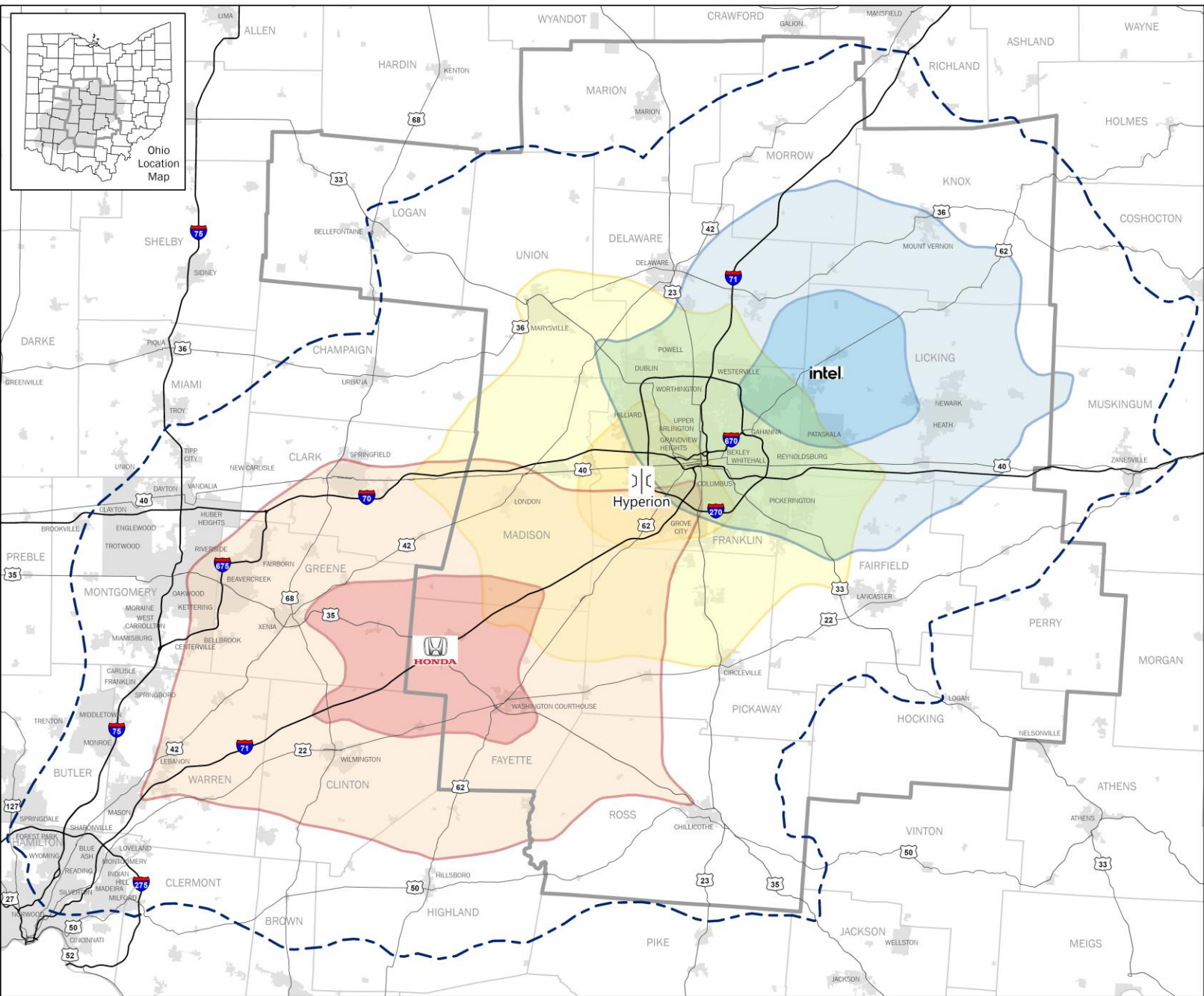
Katie Chang Contributor

Follow

0

Apr 14, 2024, 08:00am EDT





Major New Development Driving Times

Intel

- 20 minutes
- 40 minutes

Honda

- 20 minutes
- 40 minutes

Hyperion

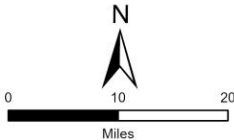
- 20 minutes
- 40 minutes

Within 60 minutes of a Development

MORPC Area

City/Village

Note: Travel assumed by car. Travel times are approximate from Intel, Hyperion, and Honda sites out at 5pm. Buffers generated using ESRI Network current conditions.



The information shown on this map is compiled from various sources made available to us which we believe to be reliable.
N:\ArcGIS\LOCAL\MajorDev\MajorDevDriveTimes.aprx
2/14/2023



Environmental Protection Agency

Ohio is the Midwest's Cloud Infrastructure Hub

- From 2015-22, Amazon Web Services (AWS) invested **\$6.3 billion** in its Ohio data centers
- In June 2023, AWS announced it planned to invest an additional **\$7.8 billion** in Ohio by 2030
- In 2017, Meta announced its initial multi-building data center campus in central Ohio that is LEED Certified Gold
 - Meta's total announced Ohio investment had grown to **\$1.5 billion** as of 2022
- In 2019, Google officially broke ground on a **\$600 million** data center in New Albany
 - In 2023, Google announced two new locations that will bring total investment to more than **\$2 billion**
- In 2021, the Tax Foundation's Location Matters report found Ohio **ranked #1** in new data center corporate tax costs

Economic Impact of the AWS US East (Ohio) Region from 2015-2022

\$6.3 billion

Total investment
in Ohio, including both
capital and operating
expenditures

\$2.2 billion

Estimated total gross
domestic product (GDP)
contributed to Ohio

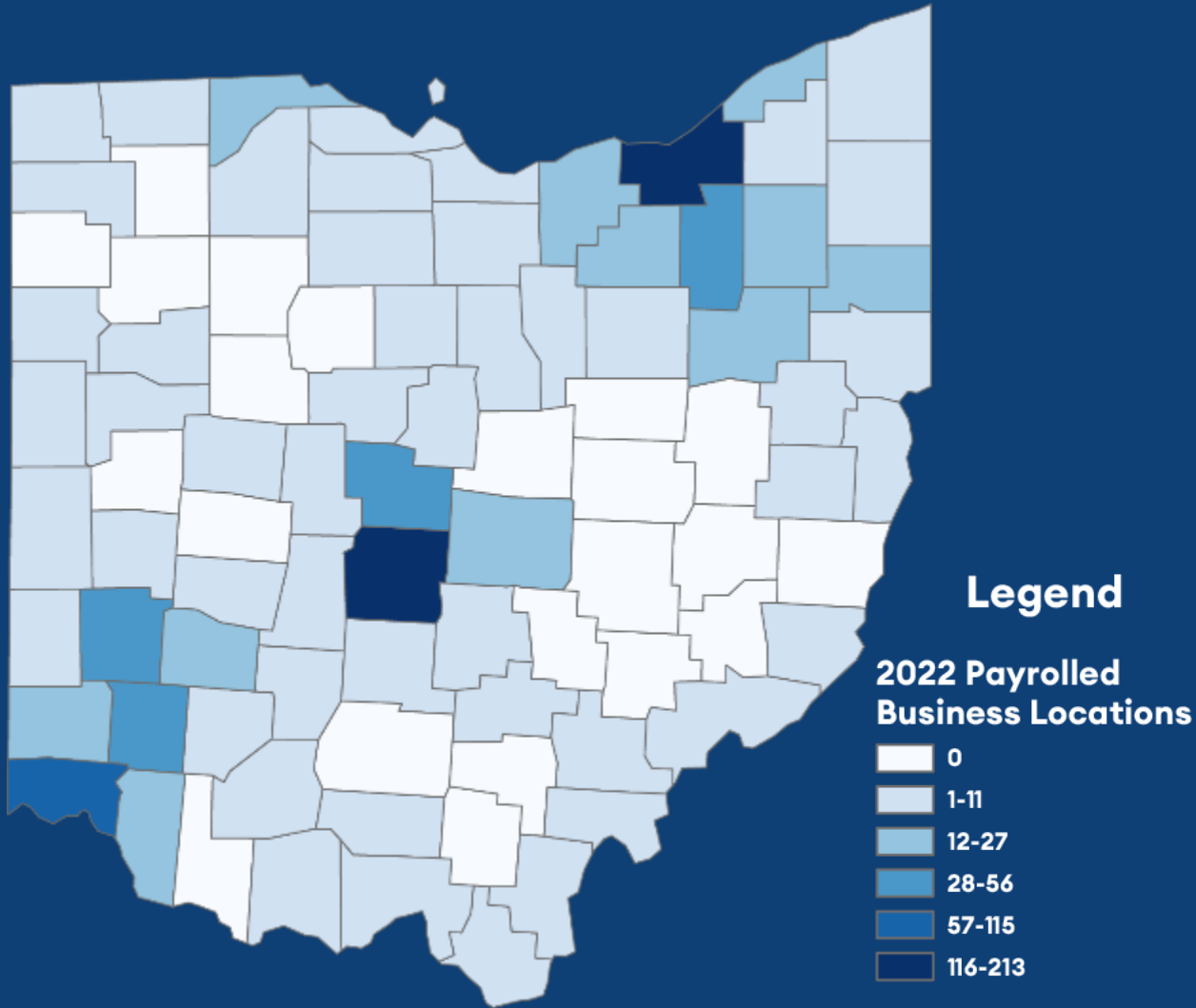
3,550

Estimated average
full-time equivalent (FTE)
jobs supported at local
vendors annually in Ohio

AWS Capital Investment in Ohio



Dramatic Growth in the Data Center Industry over the Past Decade



3X Data Center Growth

In 2011, Ohio had 379 data center locations -

Today, there are over 1,100



Source: Lightcast, 2022 Payrolled Business Locations in NAICS 51-8210: Data Processing, Hosting, and Related Services
This document is not a public record and its content should not be reprinted in any other document. Ohio Revised Code 149.43(A)(1)(bb) and 187.04(C)(1) and (2)



WWTP-Treated Effluent as Process Water





Regional Water Studies - Scope

- Comprehensive Water Study
 - Current availability
 - Current demand
 - Projected future demand 2030, 2040, & 2050
 - Gap analysis
 - Regionalization recommendations
 - Water reuse opportunities
 - Siting locations for new mega water users

Request for Proposals - Scope



Identify zones of economic opportunity based on water resource feasibility and availability



Provide a “Pathway to Readiness” for communities with capacity limitations



Maintain water quality in our rivers and streams throughout the state in the long term

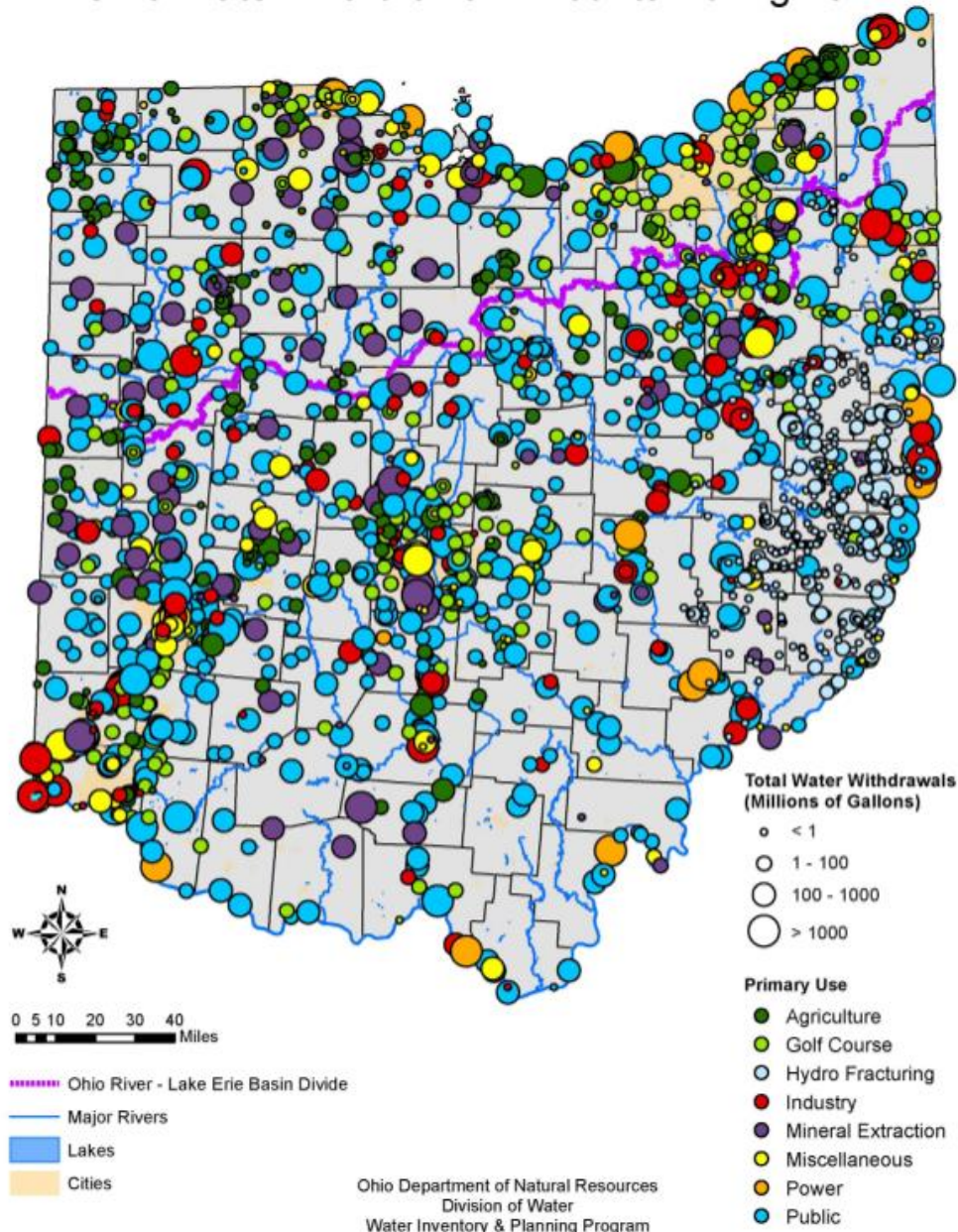


Identify ground water recharge needs and recommendations



Provide information regarding reservoir re-evaluation and management (ODNR, USACE controlled and others)

Ohio Water Withdrawal Amounts During 2021



Ohio Department of Natural Resources

- Water availability (water budget)
- High-capacity withdrawal permitting
- Reservoirs / USACE Contracts

Scoring Criteria

PROJECT TEAM/CREDENTIALS:

Expertise of entire team assembled and clearly defined roles and responsibilities

UNDERSTANDING & APPROACH:

Meets all scope requirements and has a clear, organized strategy

EXPERIENCE:

Clear demonstration of water projects that parallel the goals of this water study

DATA MANAGEMENT:

Has a compelling plan for data collection, management and modeling

SCHEDULE:

Our confidence of them meeting deadlines based on resources and deliverable projections, including expediting Licking County findings

LOCAL KNOWLEDGE:

Understanding of local issues and constraints



Proposal 1

- **\$1,111,000**
- Headquartered in MN

Proposal 2

- \$4,513,866



The logo for CDM Smith, featuring the text "CDM" in a bold, blue, sans-serif font above the text "Smith" in a similar blue font. A small green square is positioned between the "M" and "S".The logo for ARCADIS, featuring an orange stylized swirl icon to the left of the word "ARCADIS" in a black, sans-serif font.The logo for RAFTELIS, featuring a teal stylized "R" icon to the left of the word "RAFTELIS" in a teal, sans-serif font.The logo for the Midwest Biodiversity Institute (MBI), featuring a stylized graphic of green hills and blue water to the left of the text "Midwest Biodiversity Institute" in a blue, sans-serif font.

Proposal 3

- \$2,290,730

Proposal 4

- **\$2,997,700**
- **RANK 1st**
- **Contracted for \$2797,700**



Ohio Water
Development Authority

Hazen

Jacobs



Geosyntec
consultants



BURGESS & NIPLE



Overview of Hazen's Subconsultant Roles

Jacobs

Scenario planning and integrated modeling expertise, economic development planning

Eagon and Associates

Ground water availability, local modeling, ground water sensitivities and contamination

Coldwater

Ecosystem and recreational services, environmental demands, water quality limits

Burgess & Niple

Scenario development, infrastructure needs

Geosyntec

Regulatory constraints and permitting, TMDLs

Neighborhood Strategies

Ground water availability, local modeling, ground water sensitivities and contamination

Midwest Biodiversity Institute

Technical advisor - Central Ohio stream health knowledge

Lisa Jeffrey

Technical advisor - Evaluation of safe yield and water quality considerations



Home

Current and Projected
Demands

Integrated Map and Model

Scorecard for
Alternatives Analysis

Search



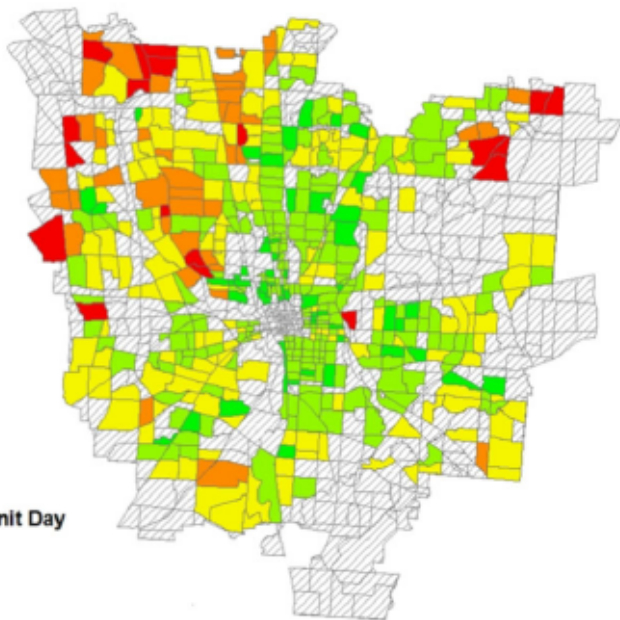
Area of interest:

City of Columbus

Historical parameter:

Residential gallons per unit day by TAZ (2018)

Historical Data



Gallons per Unit Day

- 25 - 88
- 89 - 127
- 128 - 182
- 183 - 305
- 306+

Screened Out or No Observed Use

Household growth rate:

+10%

Residential GPCD:

Base GPCD 2020-2022 Avg

Non-residential GPCD:

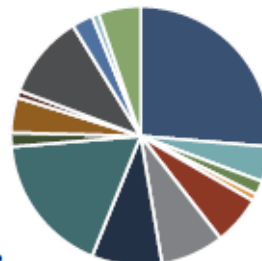
Base GPCD 2020-2022 Avg

Weather condition:

Historical Normal

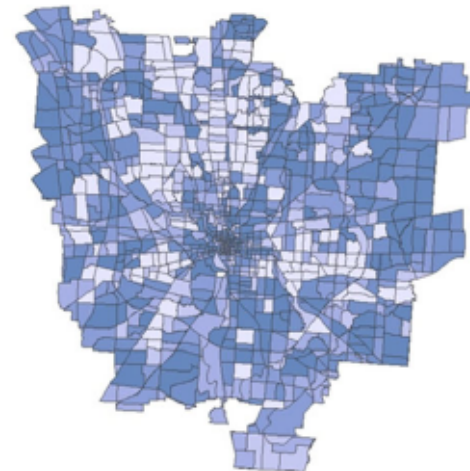
Water efficiency factor:

Passive

Total Water Use by County
in Central Ohio Region

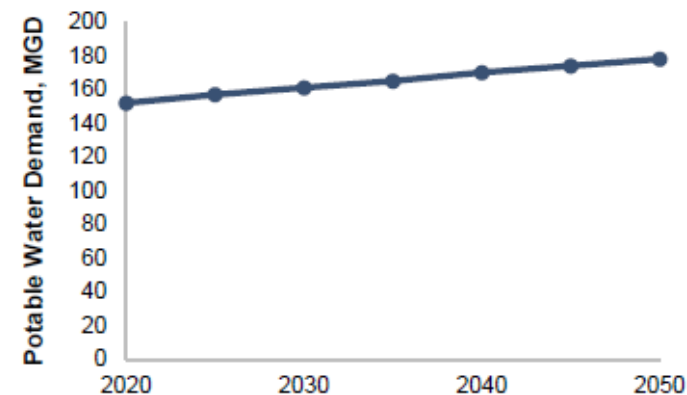
2023

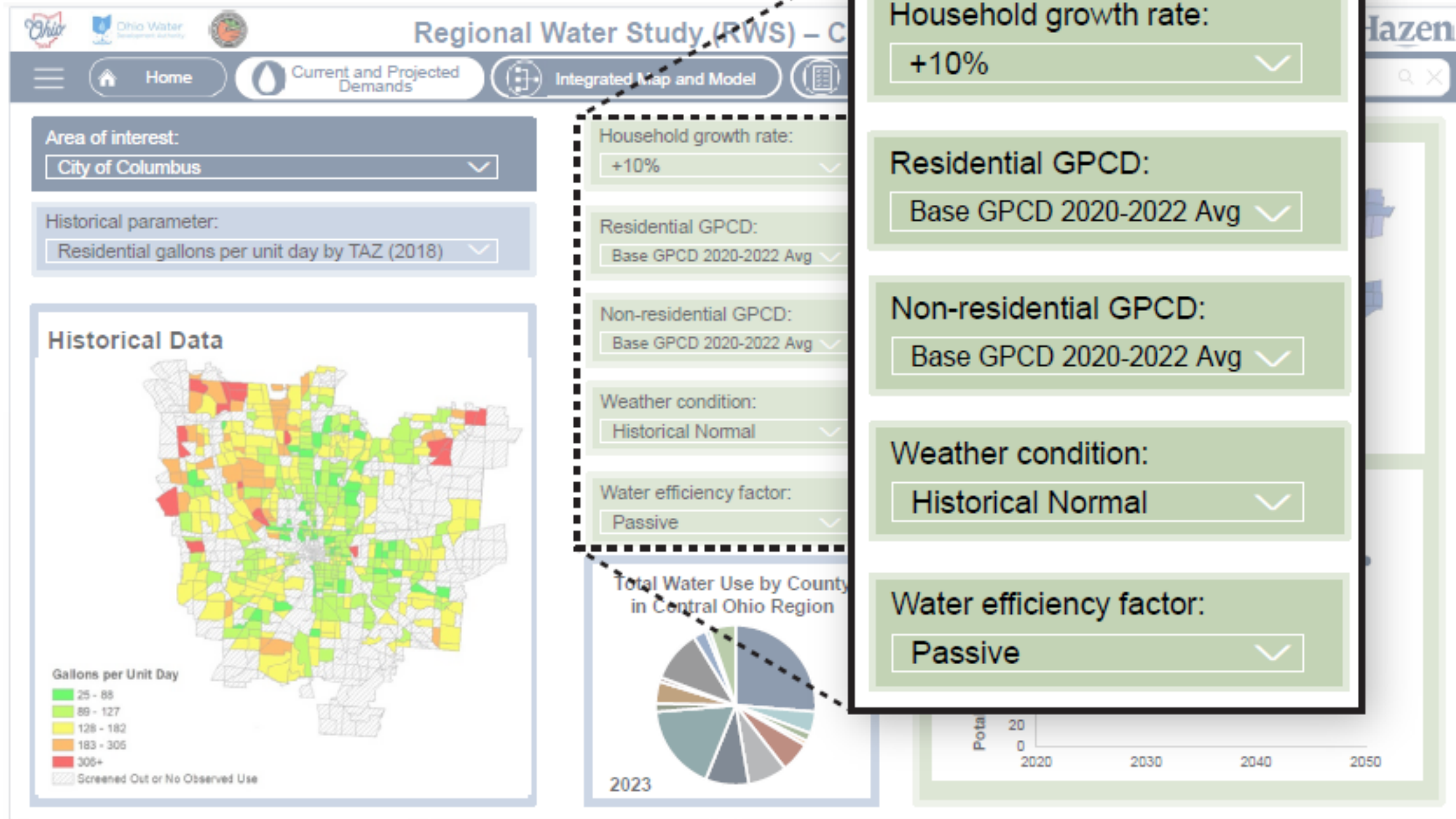
Projected Data

Change in Total Water Use
(2020-2050, MGD)

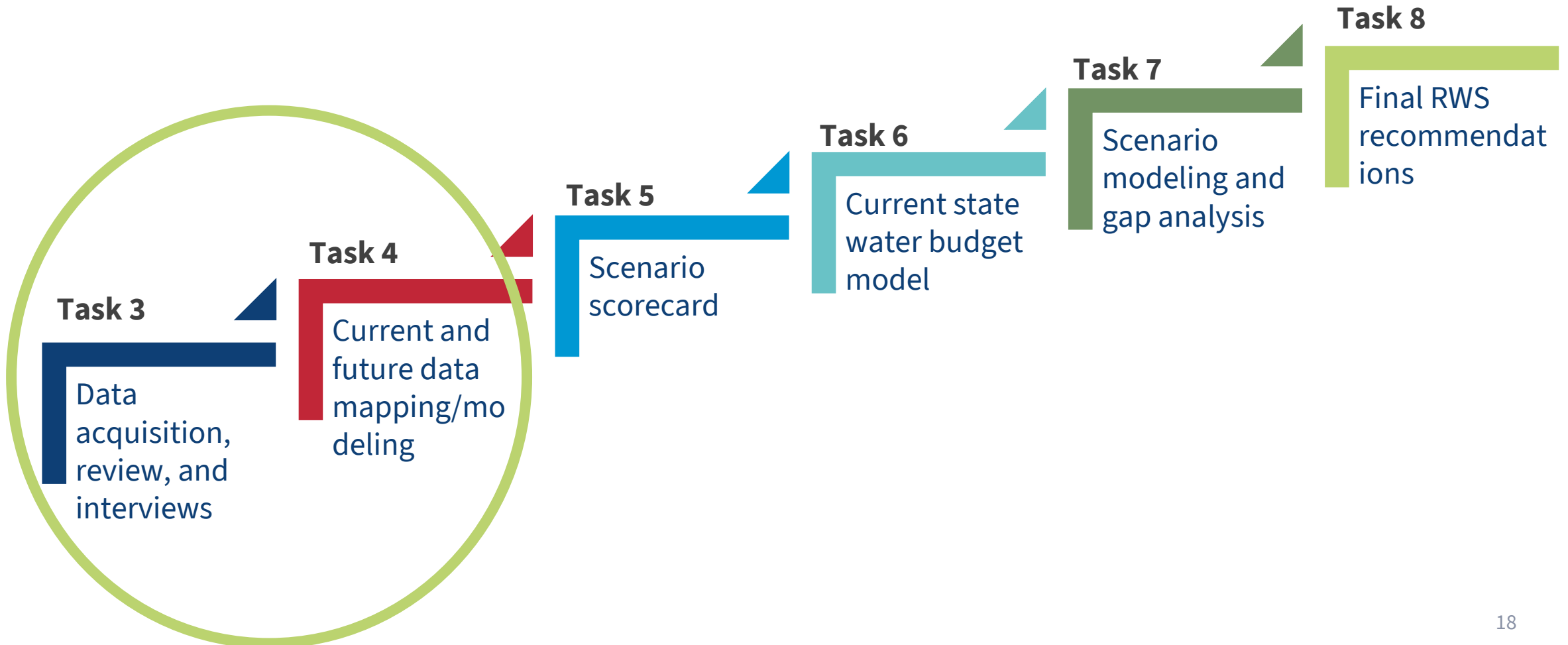
- 0.078 - -0.008
- 0.007 - 0.000
- 0.001 - 0.003
- 0.004 - 0.010
- 0.011 - 0.028
- 0.029 - 0.963

Projected Data

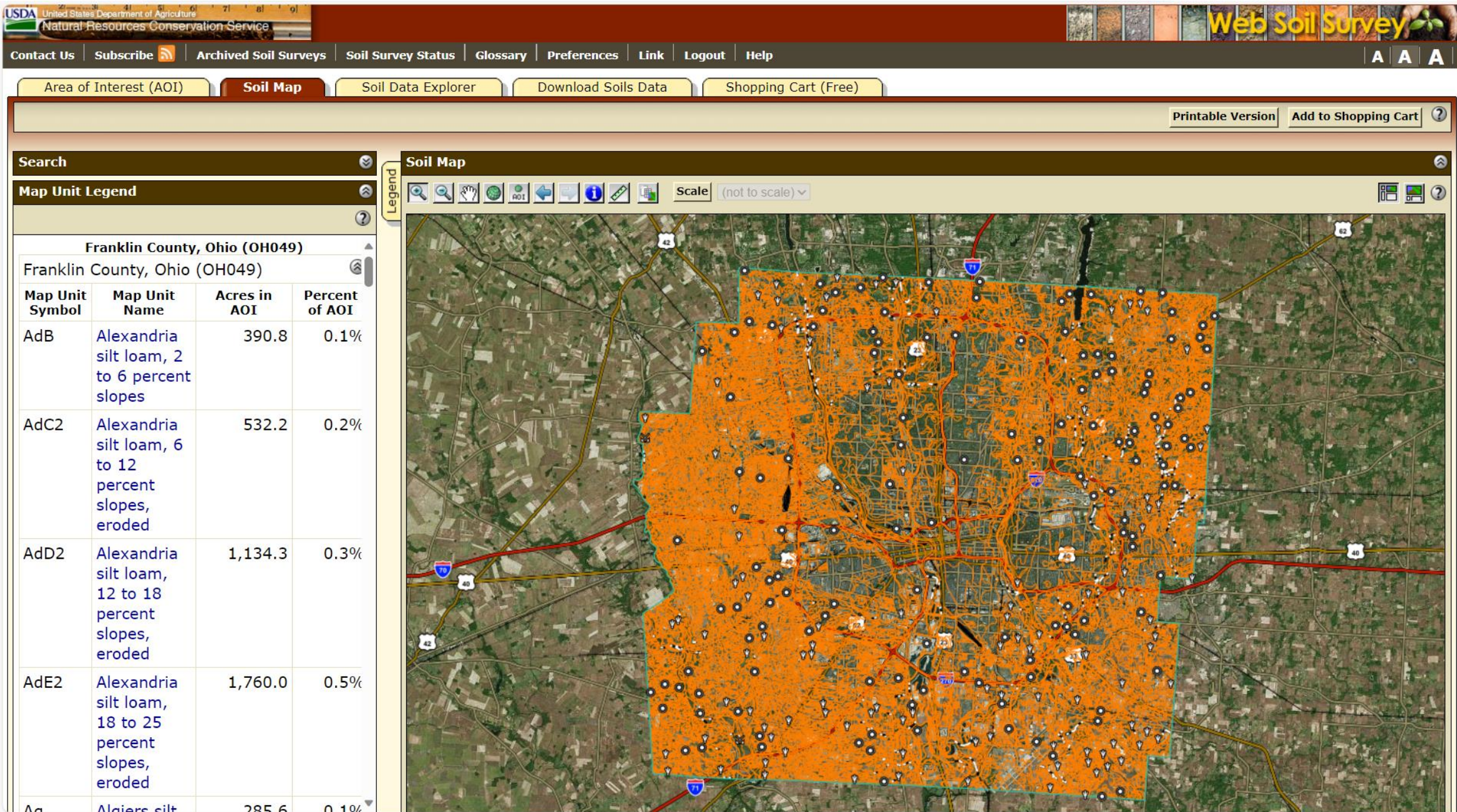




Project Workflow



USDA NRCS Web Soil Survey



**OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL SURVEY**

WATER WELLS DATABASE

HELP LOGIN

Zoom In **Zoom Out**

Wells **Sealing Reports** **Well Symbology** **Base Map** **Features & Layers** **Select** **Measure** **Draw** **Zoom To Location**

Aquifer Type

QUICK SEARCH **ADVANCED SEARCH**

☒ Well Log ☐ Sealing Reports

County: **FRANKLIN** Township: **Select Township**

Record Number:

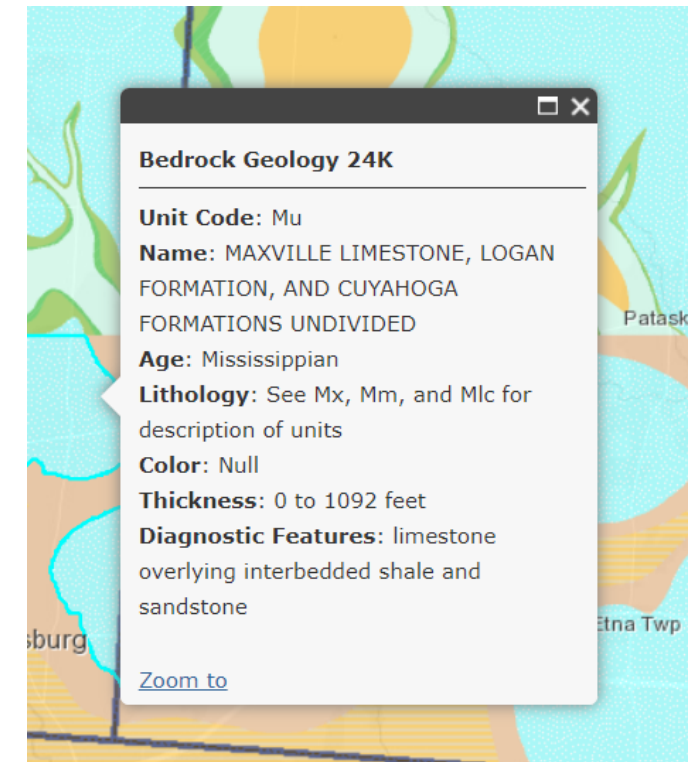
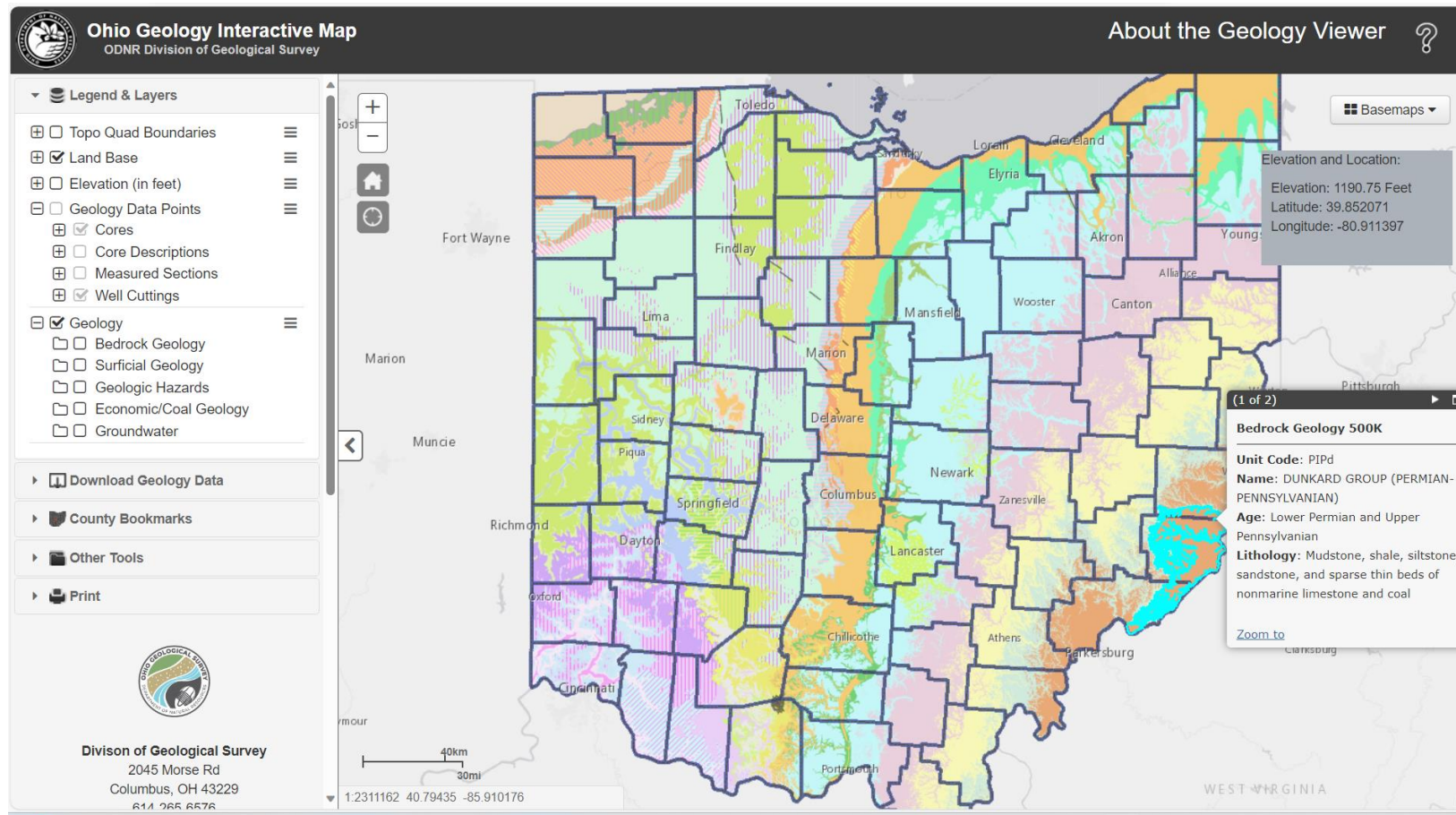
SEARCH BY

- Sandstone & Limestone (SLI)
- Shells Lime Sand (LSS)
- Shells/Lime/Sand (SHL)
- Traverse Group (TRV)
- Dolomite (DOL)
- Limestone & Gravel (LSG)
- Limestone (LST)
- Shell (SHE)
- Niagara Formation (NIA)
- Marl (MRL)
- Shale w/ Sandstone Streaks (SHD)
- Shale & Sandstone (SHS)
- Stringer (STG)
- Streak (STK)
- Sandstone & Shale (STS)
- Injun Sandstone & Shale (ISH)
- Sandstone/Shale/Limestone (SSL)
- Limestone & Shale (LSH)
- Limestone & Rock (LSR)
- Shale & Limestone (SHI)
- Limestone & Clay (LSC)
- Lime & Clay (LMC)
- Sand & Clay (SCL)
- Mud & Sand (MSD)

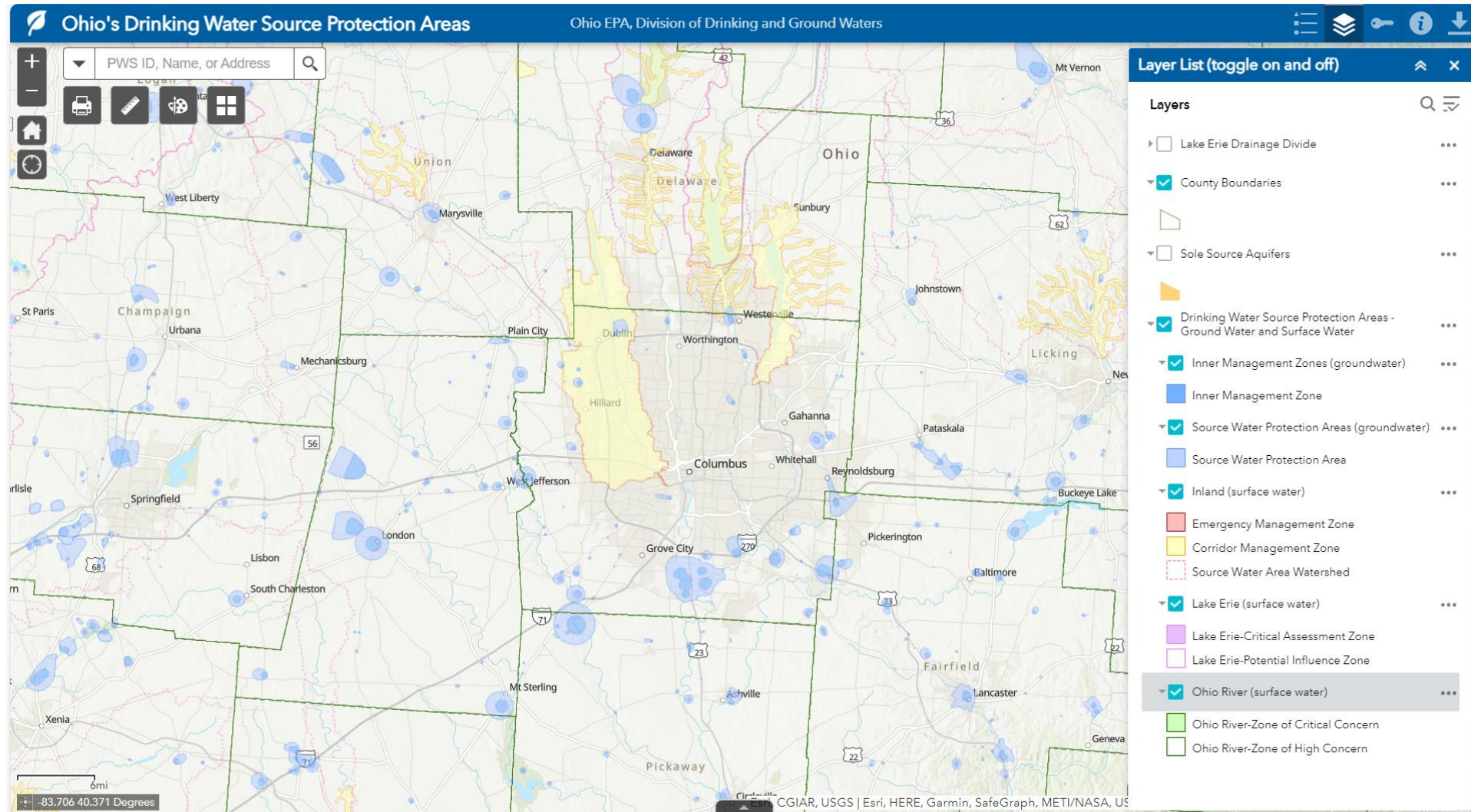
PRINT MAP

Leaflet | Powered by Esri | OSU GIS, City of Gahanna, City of Grandview Heights, Franklin County Auditor, Esri, HERE, Garmin, INCREMENT P, NG

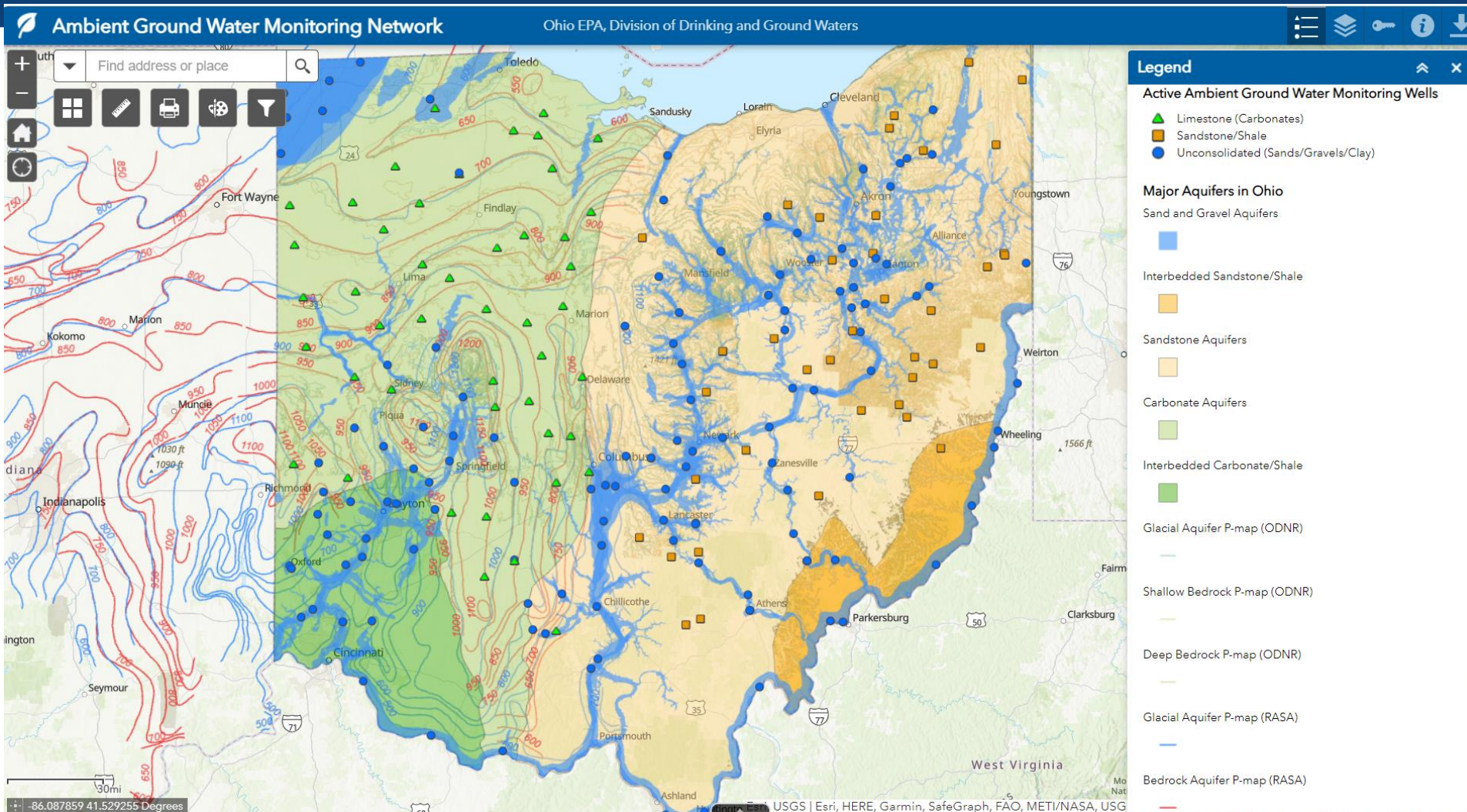
Ground Water Vulnerability Map of Ohio



Drinking Water Source Protection Area



Ambient Ground Water Monitoring Data



Strawser & Allen Partnership

County: Franklin
Ambient Well ID: 39FRA00404
Well No: 1
ODNR Well Log: 468710
Aquifer Lithology: LS
Local Aquifer Name: Hilliard
Geologic Age: DEV_SIL
Well Depth (ft): 85.00
Casing Length (ft): 41.00
Depth to Bedrock (ft): 26.00
Elevation (AMSL, ft): 708.00
Sampling Status: Active18Cycle
Inorganic Report: [LINK](#)
Organic Report: [LINK](#)
Time Series: [LINK](#)

[Zoom to](#)

Voluntary Action Program Properties Ohio EPA, Division of Environmental Response and Revitalization

Find address or place

Layers

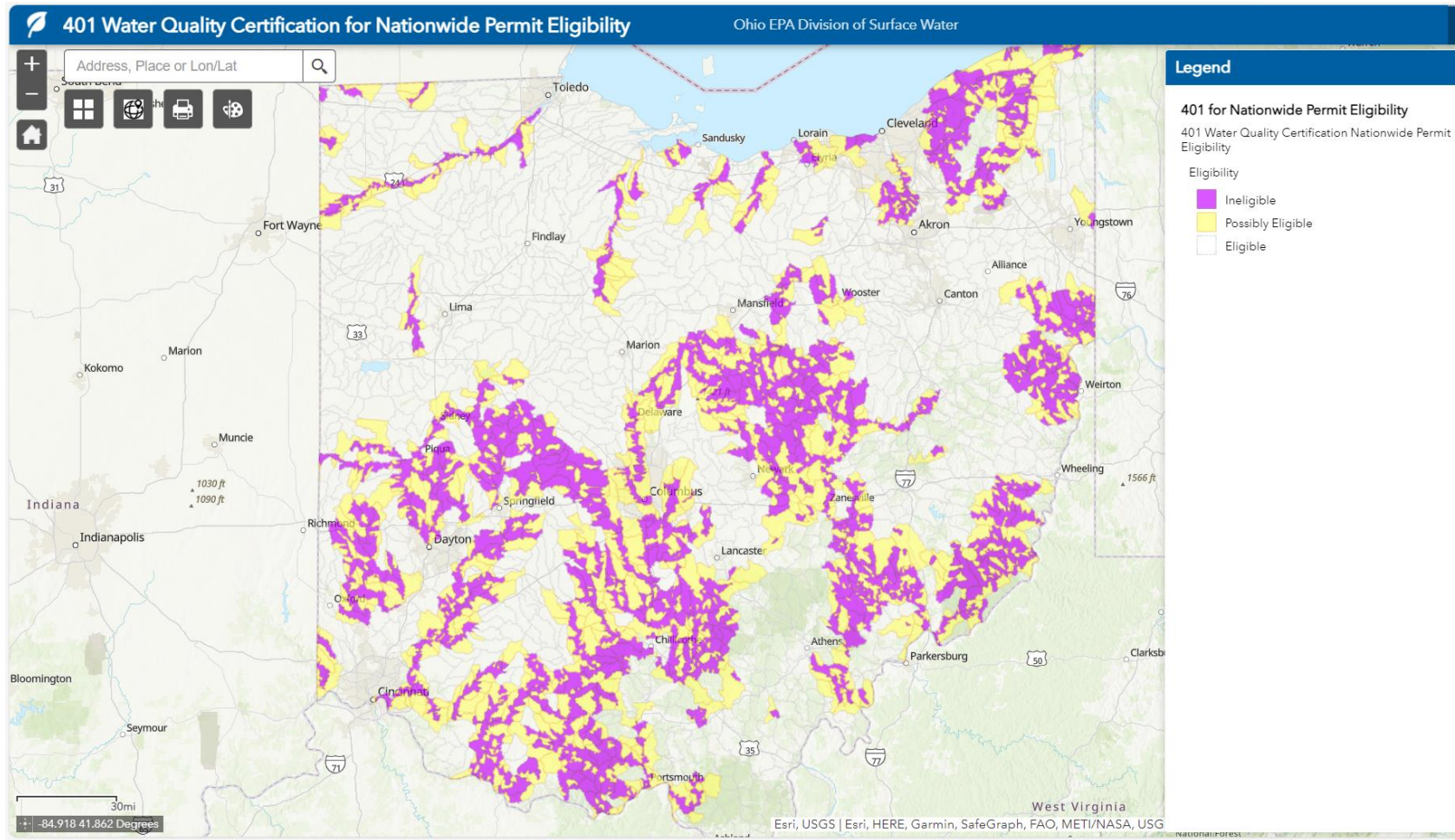
- ☒ Urban Setting Designation (USD) Area Centroid
- ☒ Urban Setting Designation (USD) Areas
- ☒ DERR - Covenant Not to Sue Centroids
- ☒ DERR - Covenant Not to Sue Areas
- Environmental Covenant
- Covenant Not to Sue
- Easement
- Institutional Control
- Other
- ☐ Statewide Parcels

The map displays the Columbus, Ohio area, highlighting various land use designations and property boundaries. Key features include:

- Urban Setting Designation (USD) Area Centroid:** Represented by red dots.
- Urban Setting Designation (USD) Areas:** Represented by red polygons.
- DERR - Covenant Not to Sue Centroids:** Represented by orange dots.
- DERR - Covenant Not to Sue Areas:** Represented by orange polygons.
- Environmental Covenant:** Represented by green polygons.
- Covenant Not to Sue:** Represented by orange polygons.
- Easement:** Represented by blue polygons.
- Institutional Control:** Represented by purple polygons.
- Other:** Represented by green polygons.
- Statewide Parcels:** Represented by thin black lines.

Neighborhoods and landmarks labeled on the map include: Upper Arlington, Grandview Heights, Whitehall, Blacklick Estates, Obetz, Grove City, Post Oak Country Estates, New Rome Westwoods Village, Alton, Thornapple Grove, Lake Darby, and the John Glenn Columbus International Airport. Major roads shown include I-70, I-670, I-270, and various state routes like 33, 62, 16, and 104.

Ohio EPA Stream Eligibility Map



Category Definitions:

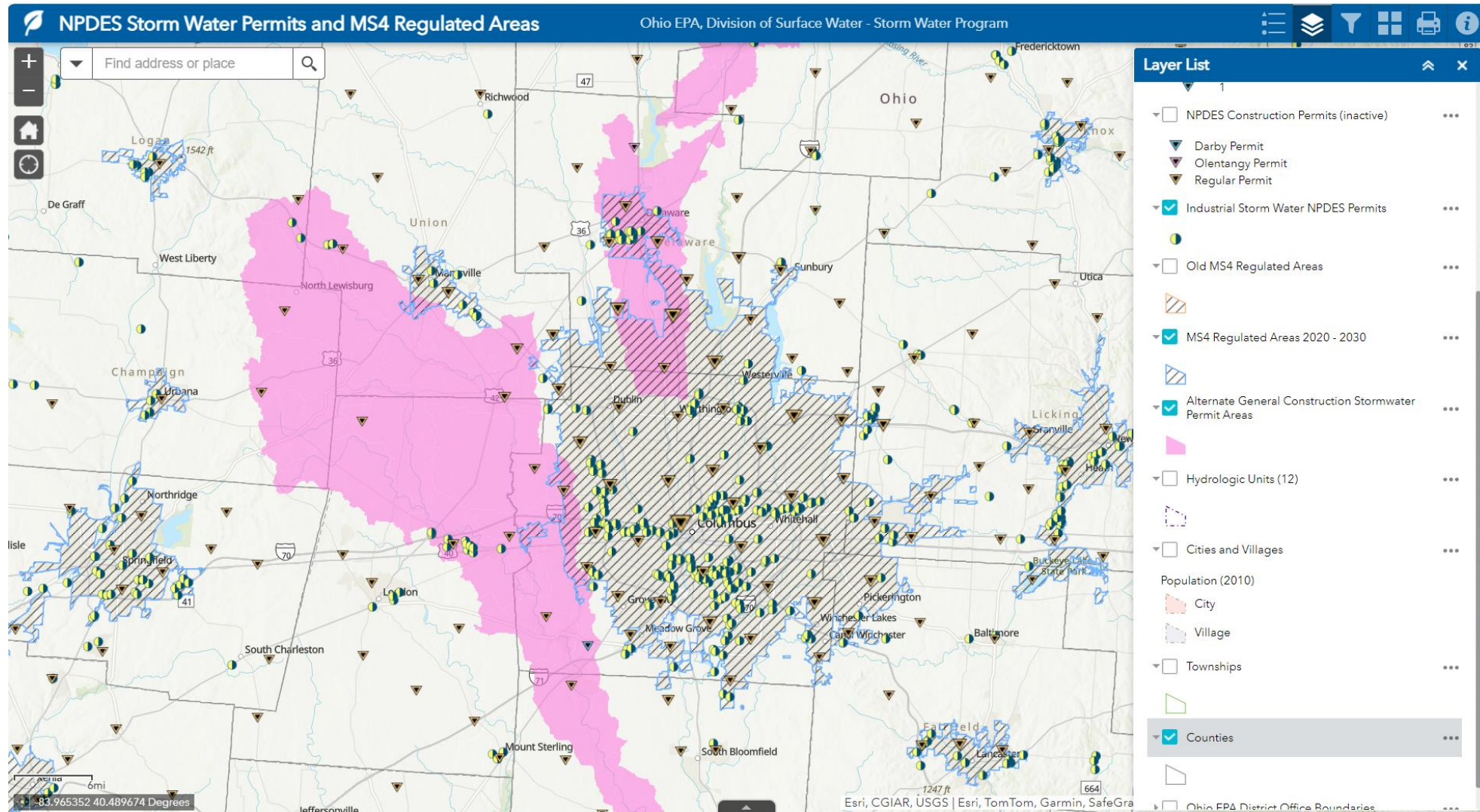
Ineligible Areas (Shaded Purple): an individual 401 water quality certification is required.

Possibly Eligible Areas (Shaded Yellow): may require an individual water quality certification if the streams which are proposed to be impacted exhibit habitat features indicative of high quality waters, or if other Ohio general and special limitations and conditions for the nationwide permits are not met.

Eligible Areas (No Shading): may require an individual 401 water quality certification if Ohio general and special limitations and conditions for the nationwide permits are not met.

[Zoom to](#)

NPDES MS4 Regulated Areas

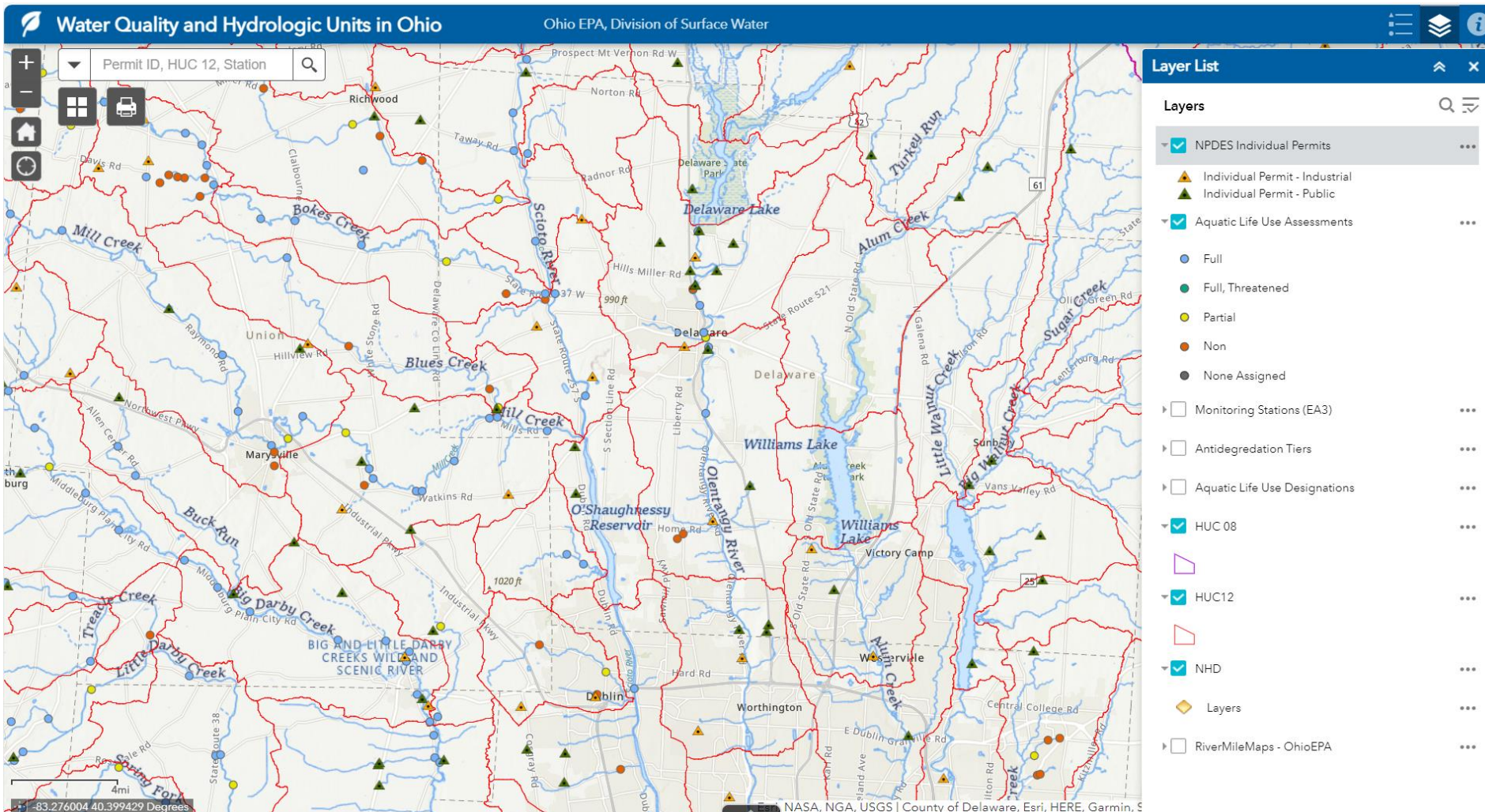


Water Quality and Hydrologic Units

Watershed Attributes

Watersheds - Watershed - HUC12: Bliss Run-Alum Creek

Name	Bliss Run-Alum Creek
AreaAcres	33,866.00
AreaSqKm	137.05
GNIS_ID	
HUC12	050600011602
HUMod	TF
HUType	Standard
LoadDate	January 18 2013
MetaSourceID	
NonContributingAcres	0.00
NonContributingSqKm	0.00
SourceDataDesc	
Zoom to	



How's My Waterway

Let's get started!

Search by address, zip code, or place... [Go](#) OR [Use My Location](#)

Choose a place to learn about your waters:

Community

State & Tribal

National

Explore Topics:



Swimming



Eating Fish



Aquatic Life



Drinking Water



Columbus, Ohio

WATERSHED: Kian Run-Scioto River (050600012302)

Overview

Swimming

Eating Fish

Aquatic Life

Drinking Water

Water Quality

Overview

Show Text ☒

Your Waters: What We Know

Waters in your community are connected within a local [watershed](#). The **dashed outline on the map shows your watershed**.

Water quality is monitored for physical, chemical and biological factors. The monitoring results are assessed against EPA approved water quality standards or thresholds. Water can be impaired, meaning it is not able to be used for certain purposes.... [Show more](#)

DISCLAIMER

2

Waterbodies

38

Water Monitoring Locations

6

Permitted Dischargers

Waterbody Conditions:

● Good

● Impaired

▲ Condition Unknown

Overall condition of **2** waterbodies in the *Kian Run-Scioto River* watershed.

Expand All ☐

● **Kian Run-Scioto River**

State Waterbody ID: OH050600012302

State Water Quality Overview

Advanced Search

Ohio Water Quality

Choose a Topic:

Swimming

Eating Fish

Aquatic Life

Drinking Water

Other

Pick your Water Type and Use:

Water Type:

Rivers and Streams

Use:

Recreation - Bathing Waters

Assessed **Rivers and Streams** that support **Recreation - Bathing Waters**

Targeted monitoring provides information on water quality problems for the subset of those waters that were assessed.

Good

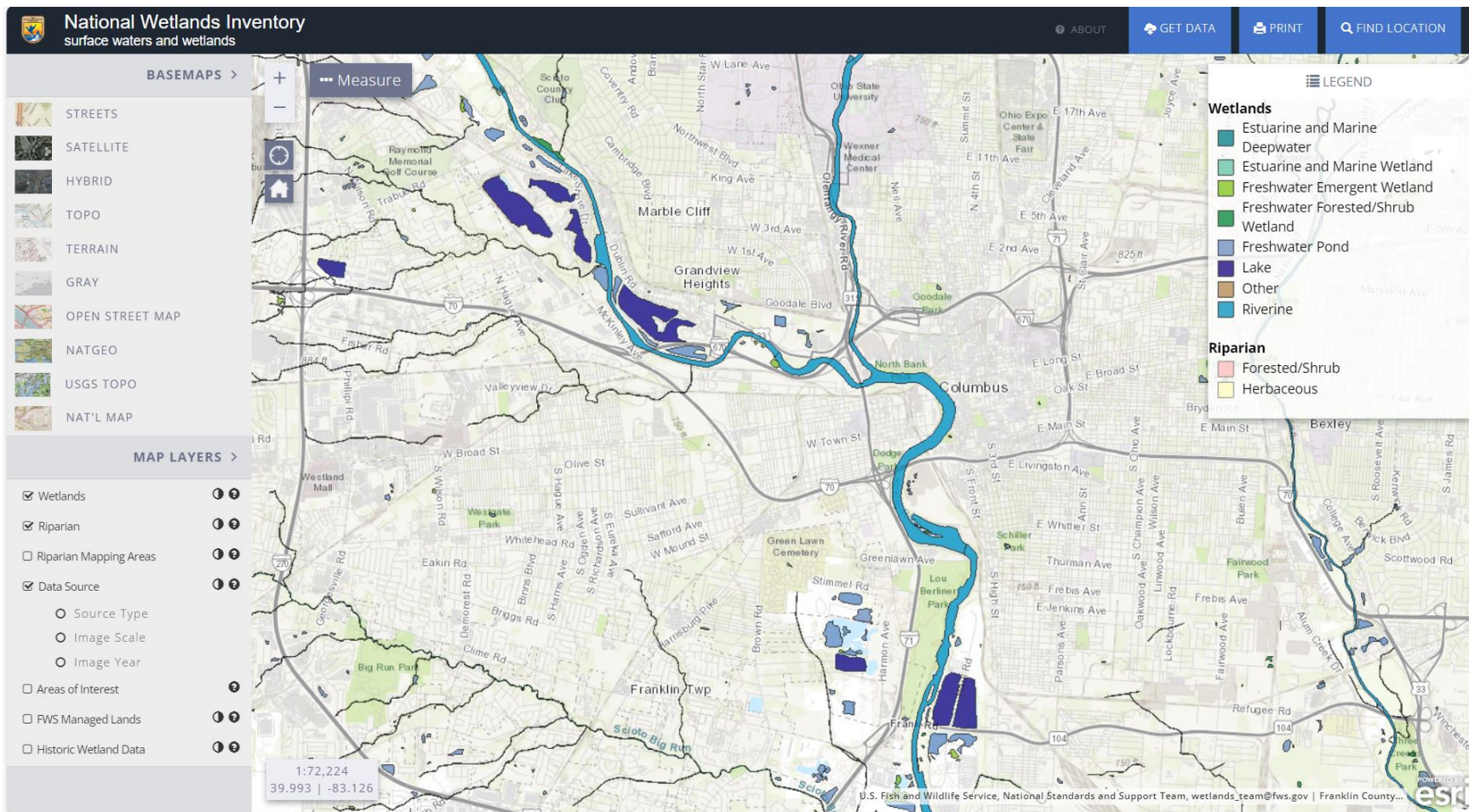
235 miles

210 miles

Impairment for Ohio **Rivers and Streams** assessed for **Recreation - Bathing Waters**

contain [Bacteria and Other Microbes](#).

U.S. Fish and Wildlife Service National Wetland Inventory



General Description Reports About

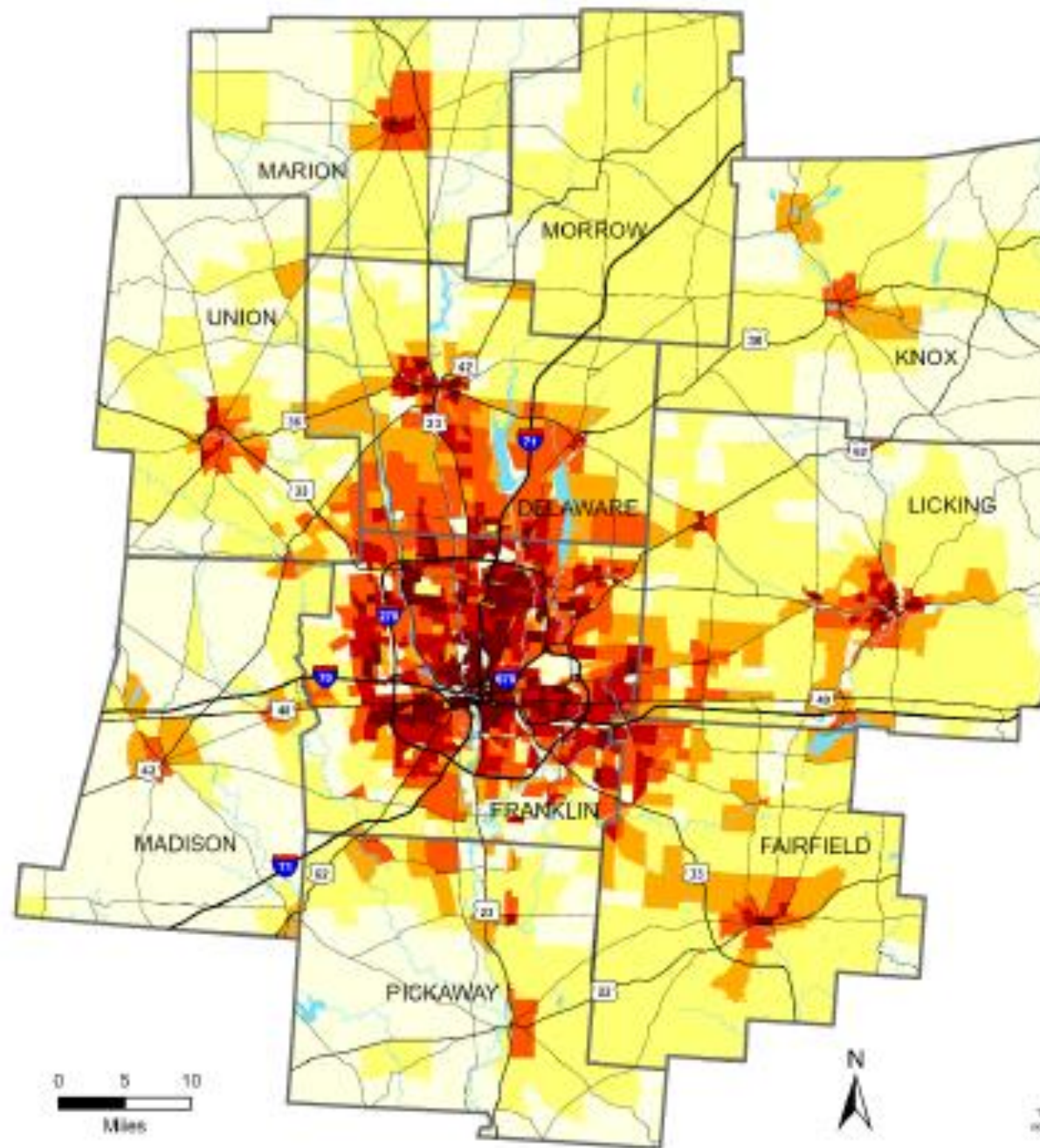
This 513.69 acre Riverine habitat is classified as a R2UBH. For a complete code description, click [here](#).

The wetlands and deepwater habitats in this area were photo interpreted using 1 meter (or less) digital, color infrared imagery from 2007. Click [here](#) for project specific mapping conventions and information.

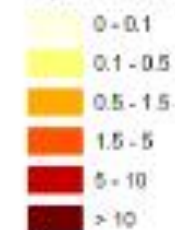
[Zoom to wetland](#)

[Zoom to project area](#)

Population Density Forecast 2050



Population 2050 per acre



Traffic Analysis Zone outputs from
MORPC regional land use model,
based on local input.

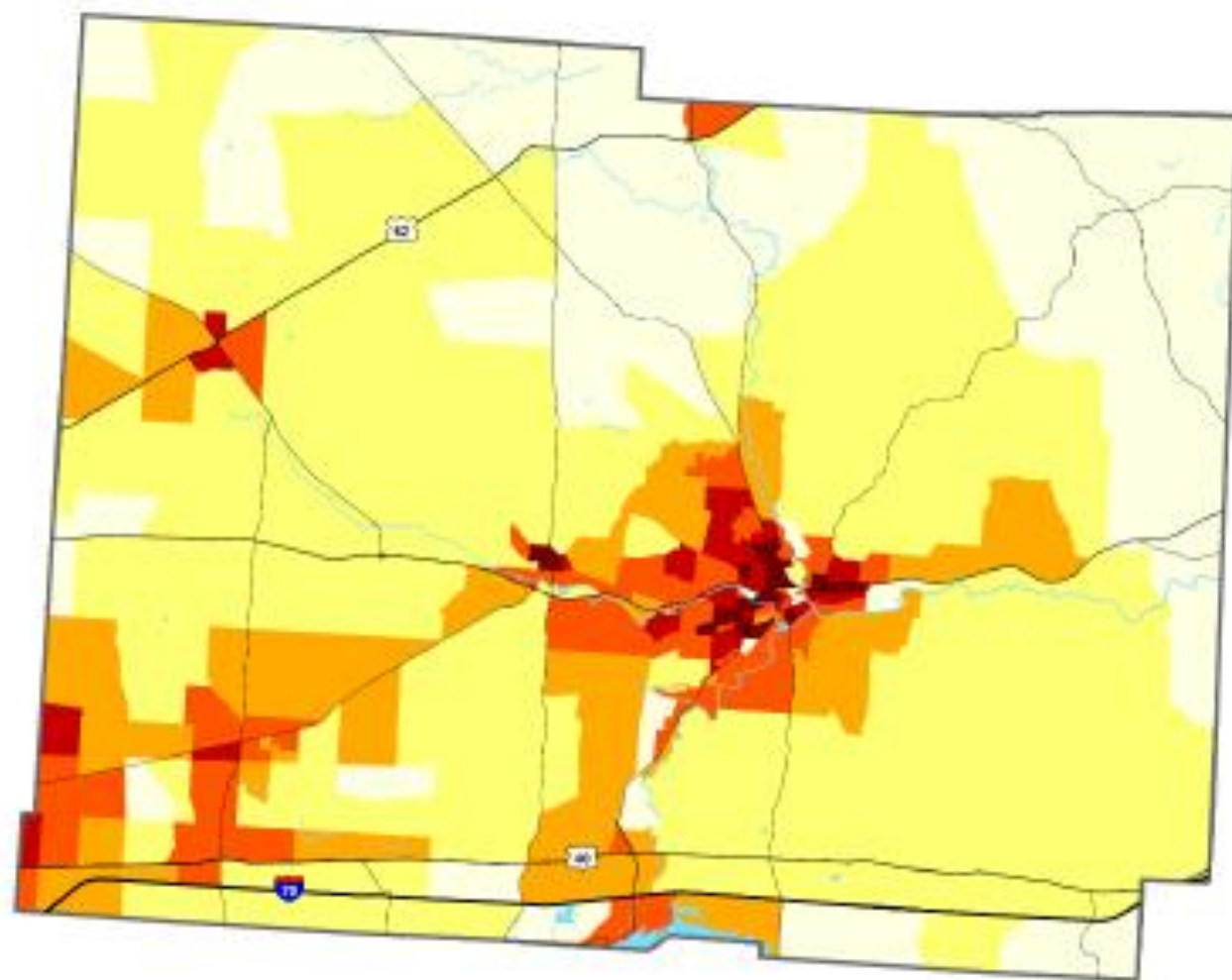
10 County Population: 2,925,943



The information shown on this map is compiled from various
sources made available to us which are believed to be reliable.
No warranty is made by MORPC for any use of the information
12/1/2023



Population Density Forecast 2050 Licking County



Population 2050 per acre



Traffic Analysis Zone outputs from
NORPC regional land use model,
based on local input.

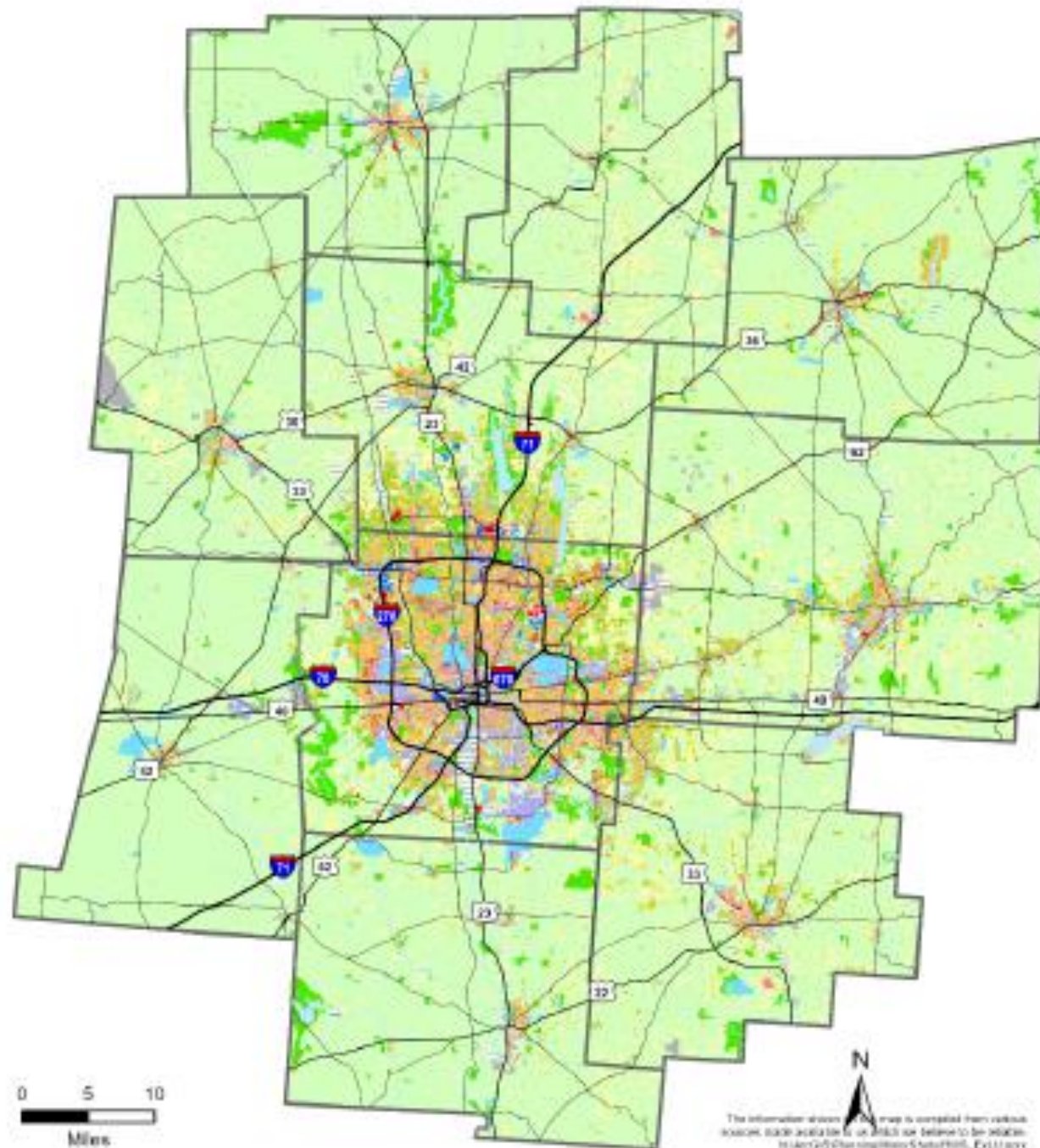
Licking County
2050 Population: 236,202



The information shown on this map is compiled from various
sources made available for us which are believed to be reliable.
No use of Planning/Policy Study 2020. For more info
12/18/2025



Central Ohio Existing Land Use



MORPC Standardized Existing Land Use 2021

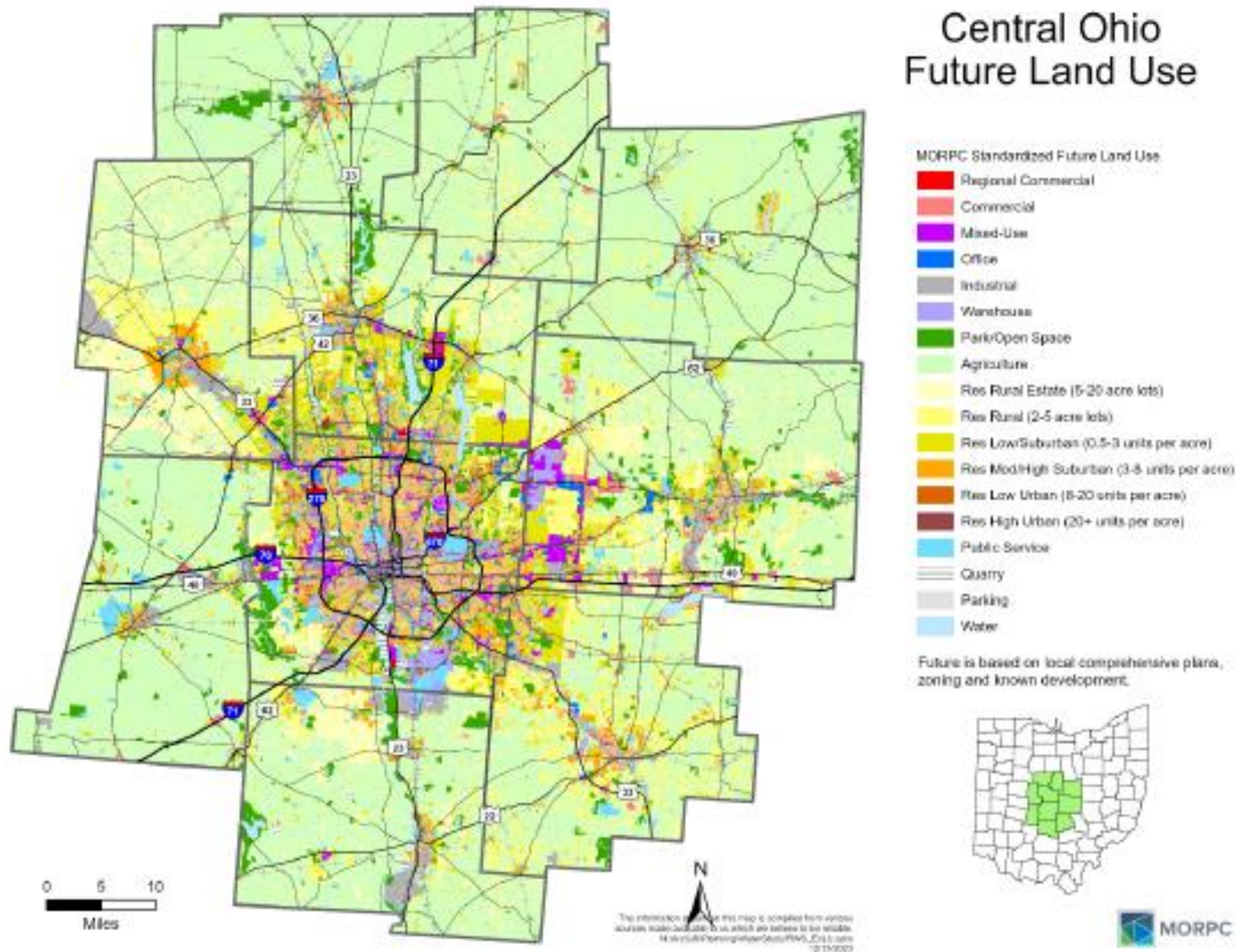
- Regional Commercial
- Commercial
- Mixed-Use
- Office
- Industrial
- Warehouse
- Park/Open Space
- Agriculture
- Res. Rural Estate (5-20 acre lots)
- Res. Rural (2-5 acre lots)
- Res. Low/Suburban (0.5-3 units per acre)
- Res. Mod/High Suburban (3-8 units per acre)
- Res. Low Urban (8-20 units per acre)
- Res. High Urban (20+ units per acre)
- Public Service
- Quarry
- Vacant
- Parking
- Water



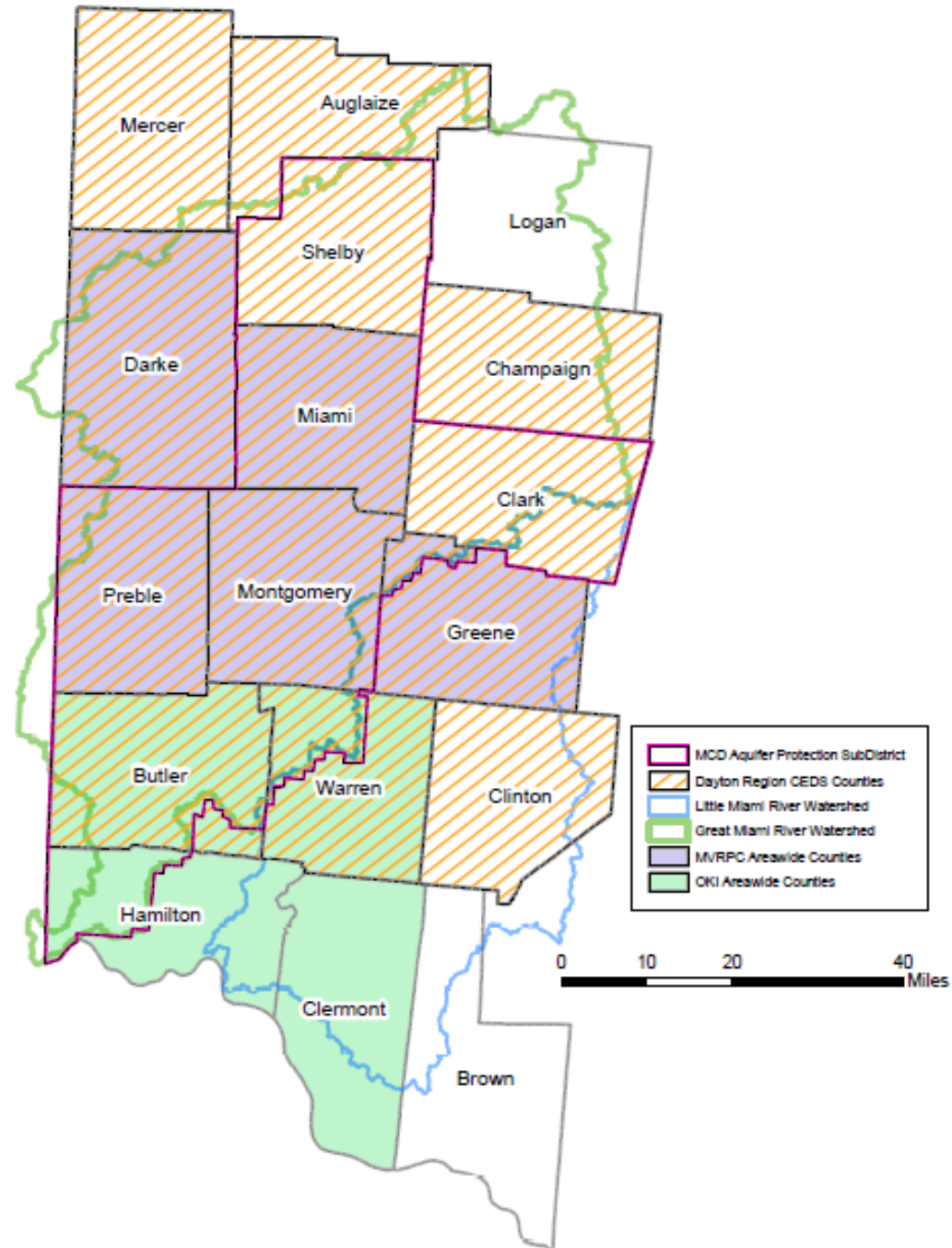
0 5 10
Miles

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Central Ohio Future Land Use



Southwest Ohio Comprehensive Water Study





**Environmental
Protection
Agency**

Next Steps

Central Ohio - completion date = December 2024

Southwest Ohio – Request for Proposals = late Summer 2024

Project Manager - Tiffani Kavalec, Policy Director
– Ohio EPA

Tiffani.Kavalec@epa.ohio.gov



WWTP-Treated Effluent as Process Water



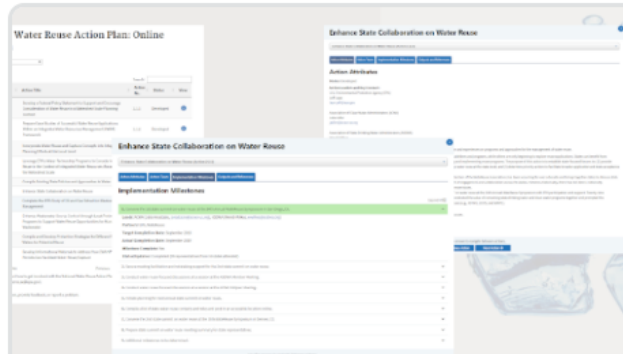
About Water Reuse

Water reuse is the practice of reclaiming water from a variety of sources, treating it, and reusing it for beneficial purposes. It can provide alternative supplies for potable and non-potable uses to enhance water security, sustainability, and resilience. EPA's Water Reuse Program helps foster collaboration among water reuse stakeholders and helps advance water reuse applications across the United States. [Sign up for EPA's water reuse email updates](#) to learn about the latest activities and find opportunities to get engaged.



REUSExplorer Tool

This tool contains summaries of state regulations and guidelines for a variety of water reuse applications.



WRAP Online Platform

The WRAP Online Platform is an interactive tool that tracks and presents the progress of all constituent actions of the National Water Reuse Action Plan (WRAP).



Resource Hub Organized by End-Use

This tool organizes useful information and resources for water reuse professionals by end-use.

MEMBER RESOURCE

Environmental Benefits of Water Reuse

Learn how water reuse projects can restore habitats, employ natural wetland treatment, prevent subsidence and saltwater intrusion, and more!

[LEARN MORE](#)

Waterreuse.org

[Login](#)[Contact Us](#)[Career Center](#)[WaterReuse Connect](#)[Recycled Water User Network](#)[About Us](#)[Engage](#)[Educate](#)[Advocate](#)[News](#)[Become a Member](#)[State Sections](#) **WATERREUSE**
ARIZONA **WATERREUSE**
CALIFORNIA **WATERREUSE**
COLORADO **WATERREUSE**
FLORIDA **WATERREUSE**
MID-ATLANTIC **WATERREUSE**
NEVADA **WATERREUSE**
NEW MEXICO **WATERREUSE**
OHIO

WateReuse Ohio – Officers & Members



- President
 - John Newsome, **Columbus**
- Vice President
 - Brian Coghlan, **Del-Co**
- Secretary
 - Patekka Bannister, **Toledo**
- Treasurer
 - Andrew Sampson, **MSD Cincinnati**
- Aqua Ohio
- Delaware County
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- Heath
- Johnstown
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- Mason
- Mid-Ohio W&SD
- NEORSD
- Piqua
- Southwest Licking
- St. Henry
- Sunbury
- Jobs Ohio
- Ohio Business Roundtable
- Cleveland Water Alliance
- OSU - Ohio Water Resources Center
- Eurofins
- Intuitech, Inc
- Arcadis
- CDM Smith
- Hazen & Sawyer
- Burgess & Niple
- MS Consultants
- Jacobs
- ODH
- Ohio EPA
- Ohio DNR
- Amazon Web Services
- Honda



- **First Board Meeting took place May 29th**
- **Sub-committee interest, broken into 6 sub-categories:**
 - **Potable**
 - **Purple Pipe**
 - **Onsite**
 - **Outreach**
 - **Financial**
 - **Regulatory**

Proposed WaterReuse Sub-Committees

Potable

Indirect Reuse (reservoir recharge, aquifer recharge)

Direct Reuse

Specifications

Infrastructure required (pipes, pumps, towers, etc.)

Treatment technology required

Purple Pipe

Irrigation Use

Agricultural Use

Industrial Use

Specifications

Infrastructure required (pipes, pumps, towers, etc.)

Treatment technology required

Onsite technology required

Gray Water/stormwater

Closed loop sewer mining

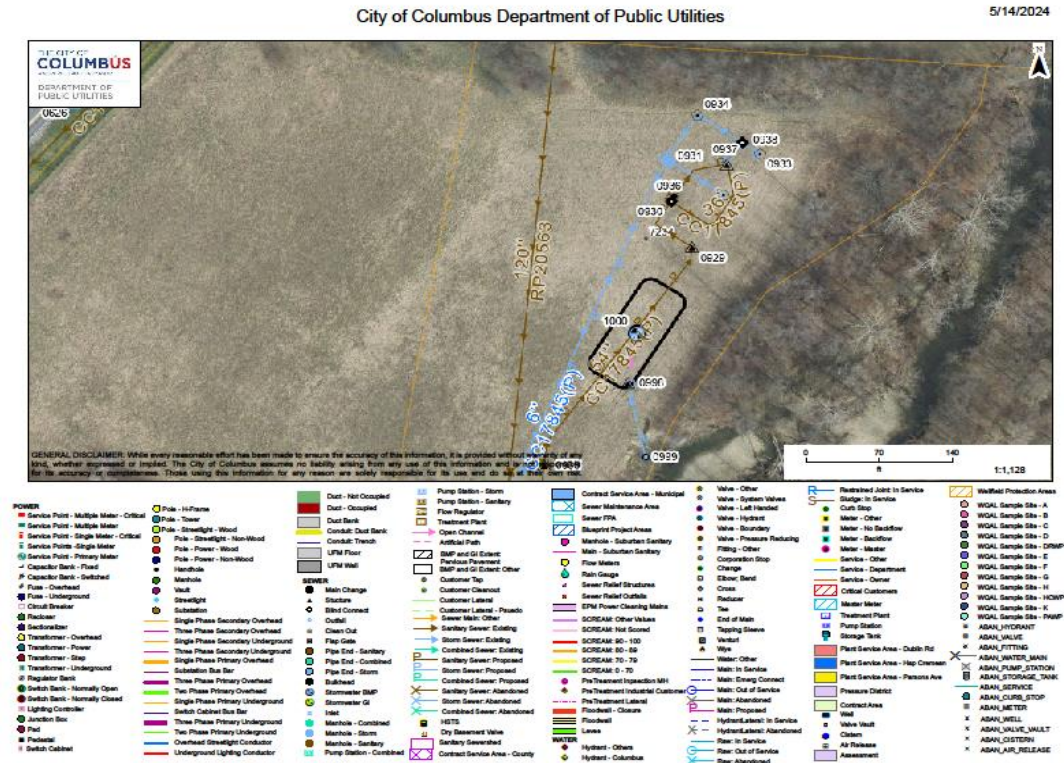
Industrial Use

Infrastructure Required

Treatment

Outreach

- **Why is Columbus participating in reuse?**
 - **Various economic drivers**
 - **Source water**
 - **Peak shaving**
 - **Willing partners**
- **RFP currently in process of legislation**
 - **WWTP effluent**
 - **Mining operations**
 - **Sewer mining**



PFAS Action Plan 2.0



- **MCL Rule Development**
- **Dupont / Washington Works Settlement**
- **H2Ohio Rivers**
- **Dayton Sewershed Source Investigation**
- **Statewide Source Investigation**
- **AFFF - Fire Fighting Foam - Take Back**
- **Fish Consumption Advisory Methodology**
- **Risk Communications**
- **Funding, etc**

AFFF Takeback



Questions

