

**Northeast Ohio  
Regional Sewer District**

# Thanks for joining!

WE WILL START MOMENTARILY.



**Northeast Ohio  
Regional Sewer District**

# Watershed Advisory Committee

ROCKY RIVER - OCTOBER 13, 2022



**Northeast Ohio  
Regional Sewer District**

# Agenda

- Welcome, Introduction & Updates
- Stormwater Inspection and Maintenance Update
- Watershed Technical Support Update
- Urgent Storm Event Update-Feature
- Design & Construction Update
- Code Updates
- Infrastructure Funding



# Program Highlights

Frank Greenland, Director of Watershed Programs

Matt Scharver, Deputy Director of Watershed Programs



# Community Cost-Share: 2022

# Community Cost-Share: 2016-2022 Reimbursement

Year	CCS Funds Reimbursed
2016	\$ 35,166
2017	\$2,626,418
2018	\$4,218,308
2019	\$9,178,445
2020	\$6,720,943
2021	\$9,581,404
2022 (9/30/2022)	\$5,434,611
<b>Total Reimbursed</b>	<b>\$37,795,295</b>



# Report a Flood Tool

Basement, Street, & Yard Flooding



## Report a Flood Tool 2

This is the primary survey for RAFT now, Version 1 was corrupted and Report a Flood 2 was created to solve the issue. Use This Version.

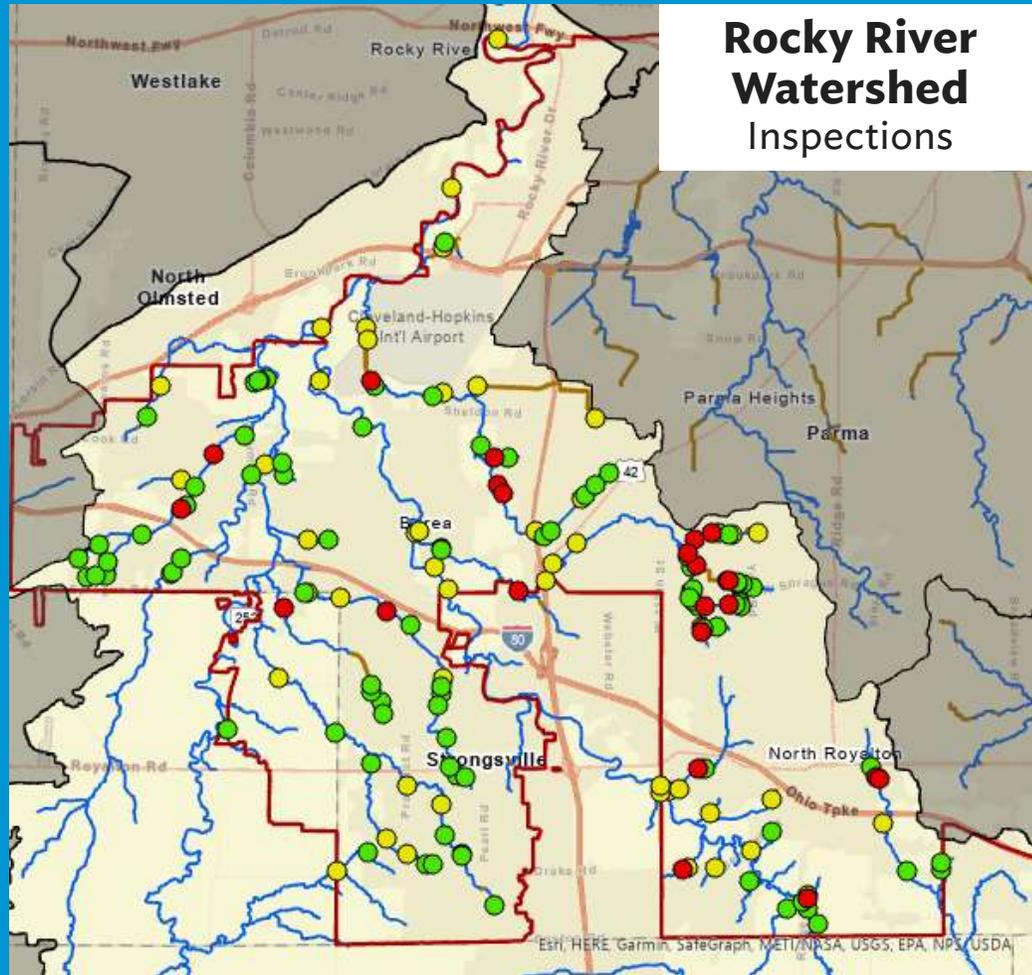
[Report Flooding Event](#)

This platform was developed to help understand basement & street flooding issues within member communities of the Northeast Ohio Regional Sewer District's service area. This data is for reference only, and should be used for display purposes only. The Northeast Ohio Regional Sewer District (NEORS) makes no warranties, expressed or implied, with

# Inspection & Maintenance Update

ROCKY RIVER SUBWATERSHED

# SWIM Inspections

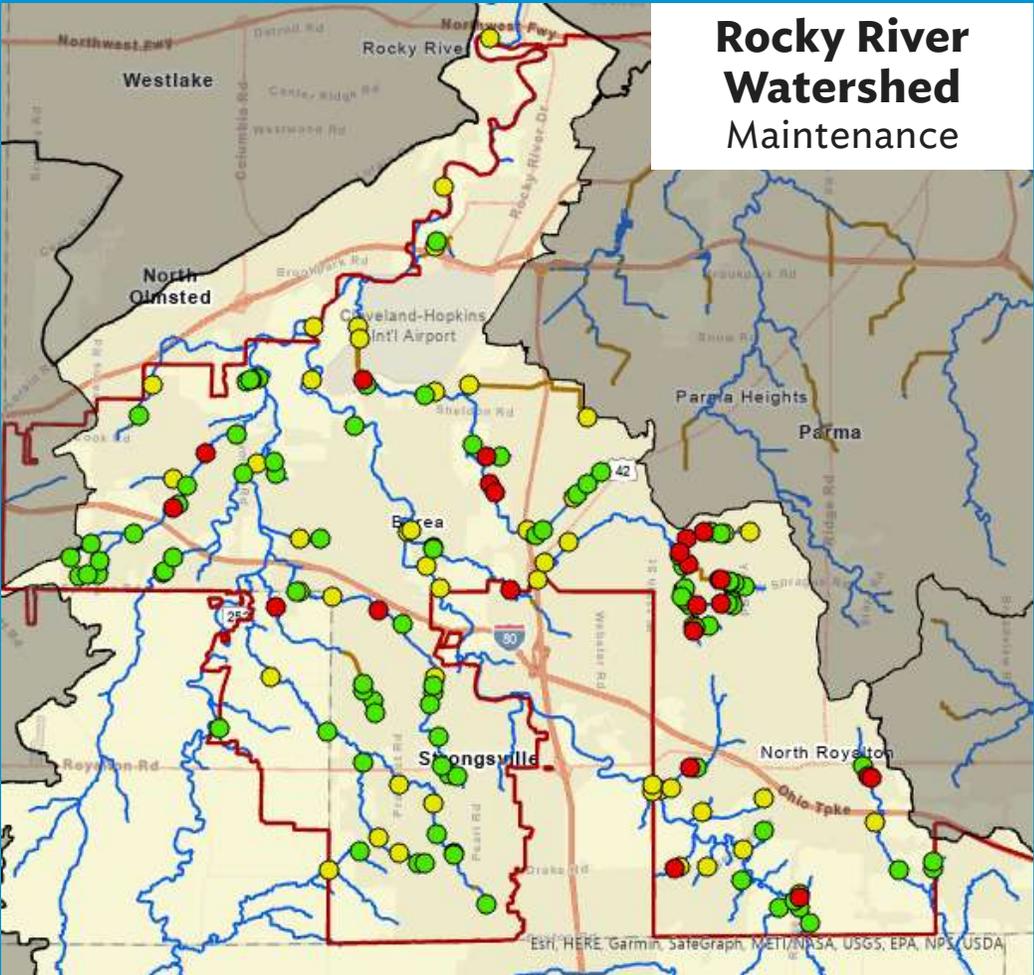


## 3/22 - 9/22 Completed Inspections

Inspection Type	Inspection Count
CCTV	0
Case	23
Inspection - Preventive	92
Inspection - Debris	60
Urgent Storm	3
<b>Total</b>	<b>178</b>



# SWIM Maintenance



## 3/22 - 9/22 Maintenance Projects

Project Type	Project Count
Basin Maintenance	1
Debris/Sediment Removal	31
Demolition	2
Tree Removal	5
<b>Total</b>	<b>39</b>

Debris Removed	Sediment Removed
356 CY	48 CY

**Legend**

- Stream
- Basin
- Crossing
- Culverted Stream
- Watershed Boundary
- District Stormwater Service Area
- Project Type
  - Basin Maintenance
  - Debris/Sediment Removal
  - Demolition
  - Vegetation Management

# Large-Scale Sediment Removal Project: Riverview Road in Brecksville

- Riverview Road frequently overtopped causing road closures
- Removed sediment 500 ft downstream of Riverview Road
- Also removed sediment from upstream vaults
- Removed a total of 472 CY of sediment



# The Riverview Road Sediment Removal Project is just downstream of the Picha Lake Basin



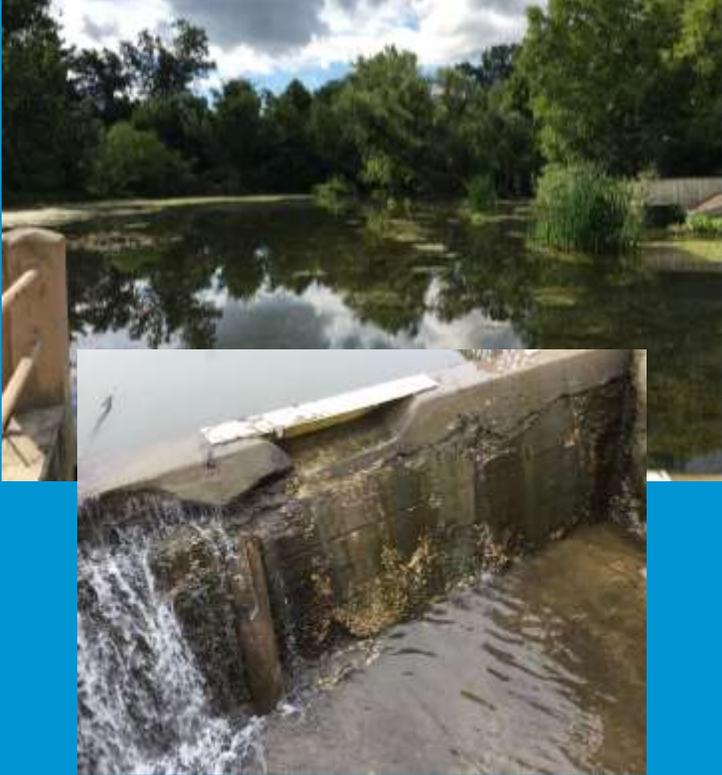
Picha Lake – Pre-Construction



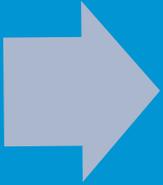
Picha Lake – Post-Construction



# Echo Lake Basin Drawdown - Strongsville



Pre-August 2020  
Existing Condition\*



August 2020  
Board Removal



February 2022  
First Notch Down

Note: Existing basin did not provide downstream flood reduction benefits.

# Echo Lake Basin Drawdown - Strongsville



May 2022  
Native Seed & Cover  
Crop Planted



July 2022  
Vegetation Growth



August 2022  
Second Notch Down

# Supplemental Tree Plantings at Completed Project Sites

- NEORSD received GLRI grant funds to plant trees in Cuyahoga County for stormwater management
- Planted over 130 trees to supplement vegetation already installed at project sites
  - Stickney Creek at Ridge Rd, Brooklyn
  - Baldwin Creek at Abbey Rd, North Royalton
  - Pepper Luce Creek at Shaker Blvd, Pepper Pike



# Watershed Technical Support

# Rocky River Stormwater Master Plan



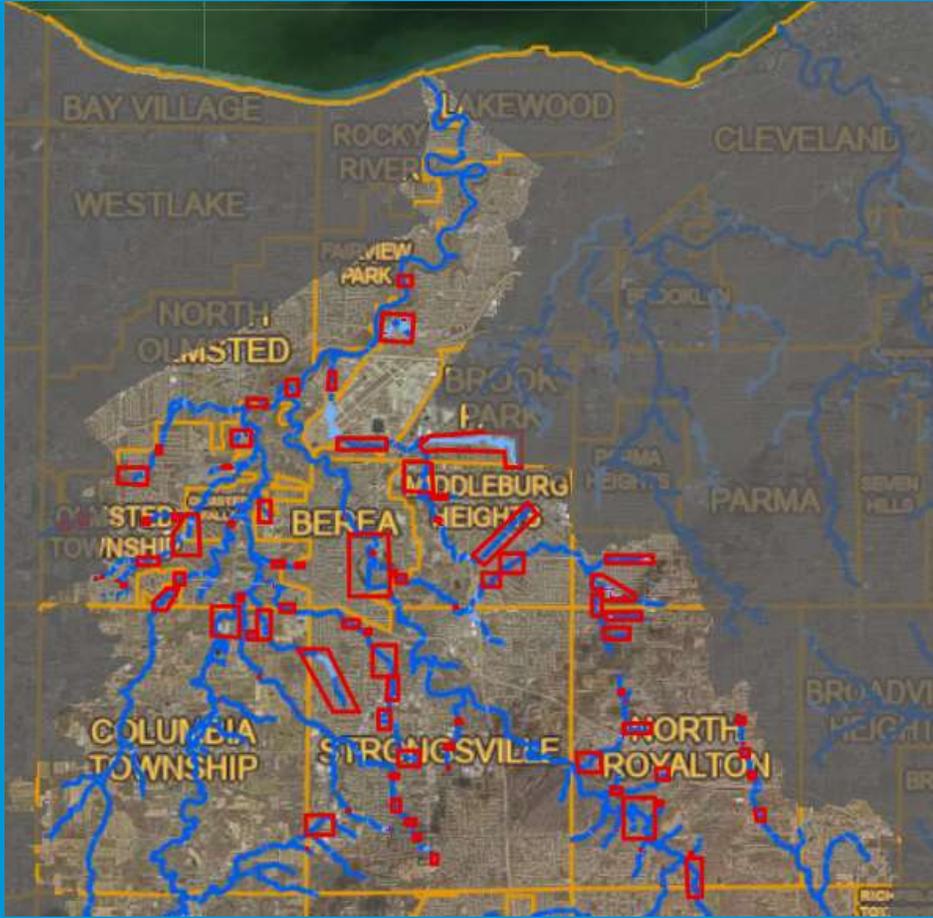
Plum Creek – Olmsted Falls



**Northeast Ohio  
Regional Sewer District**

# Rocky River Stormwater Master Plan

## Problem Area Determination

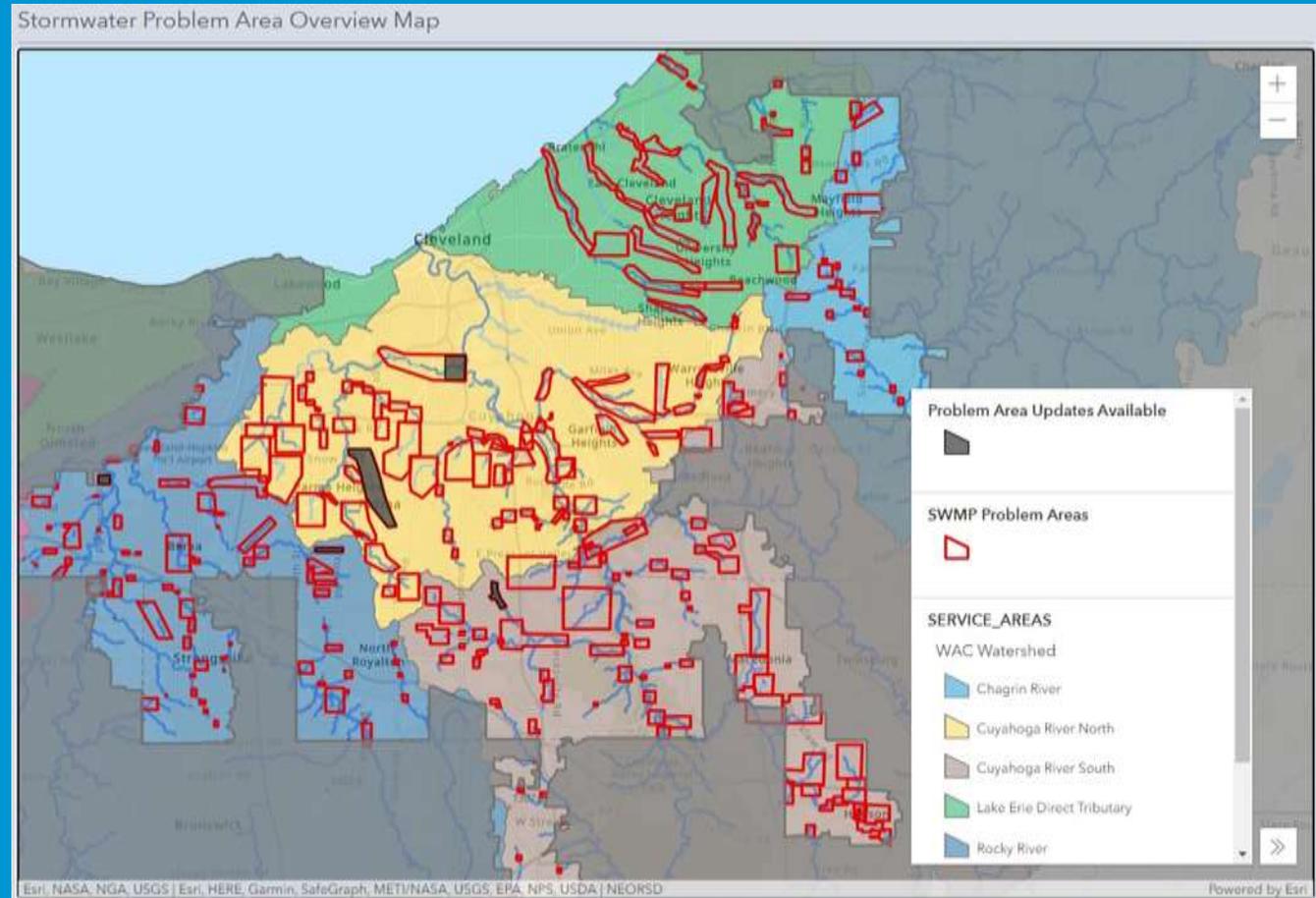


Watershed	Problem Areas	Stand-alone Projects	Estimate Costs
Abram Creek	7	3	\$43,193,000
Baker Creek	7	14	\$21,848,000
Baldwin Creek	10	5	\$48,593,000
Blodgett Creek	7	5	\$17,637,000
French Creek	2	0	\$ 1,035,000
Plum Creek	3	1	\$ 8,639,000
Rocky River EB	16	11	\$81,078,000
Rocky River MB	3	1	\$ 3,502,000
Rocky River WB	16	10	\$49,766,000
<b>Totals</b>	<b>71</b>	<b>50</b>	<b>\$275,291,000</b>

# Stormwater Master Plan Study

## SWMP Study Status

- Identified problem areas have been nominated, scored and are being prioritized as part of the annual stormwater construction plan review
- Rocky River SWMP Community Reports sent out to WAC Community Members
  - A resource for details on problem areas
- District personnel available to answer any SWMP questions that you might have.



# Rocky River Stormwater Master Plan Advanced Stormwater Planning

## Goal to ready projects for full design

- Projects that require additional information to understand full RSS impacts
- Are Cost Prohibitive w/o phasing
- Breakdown of complex, preferred alternatives into manageable projects
- Acquisition/Easement procurement
- Coordination considerations with outside stakeholders



# Rocky River Stormwater Master Plan Community Lead Project Opportunities



**Abrams Creek Detention Basin  
Middleburg Heights**

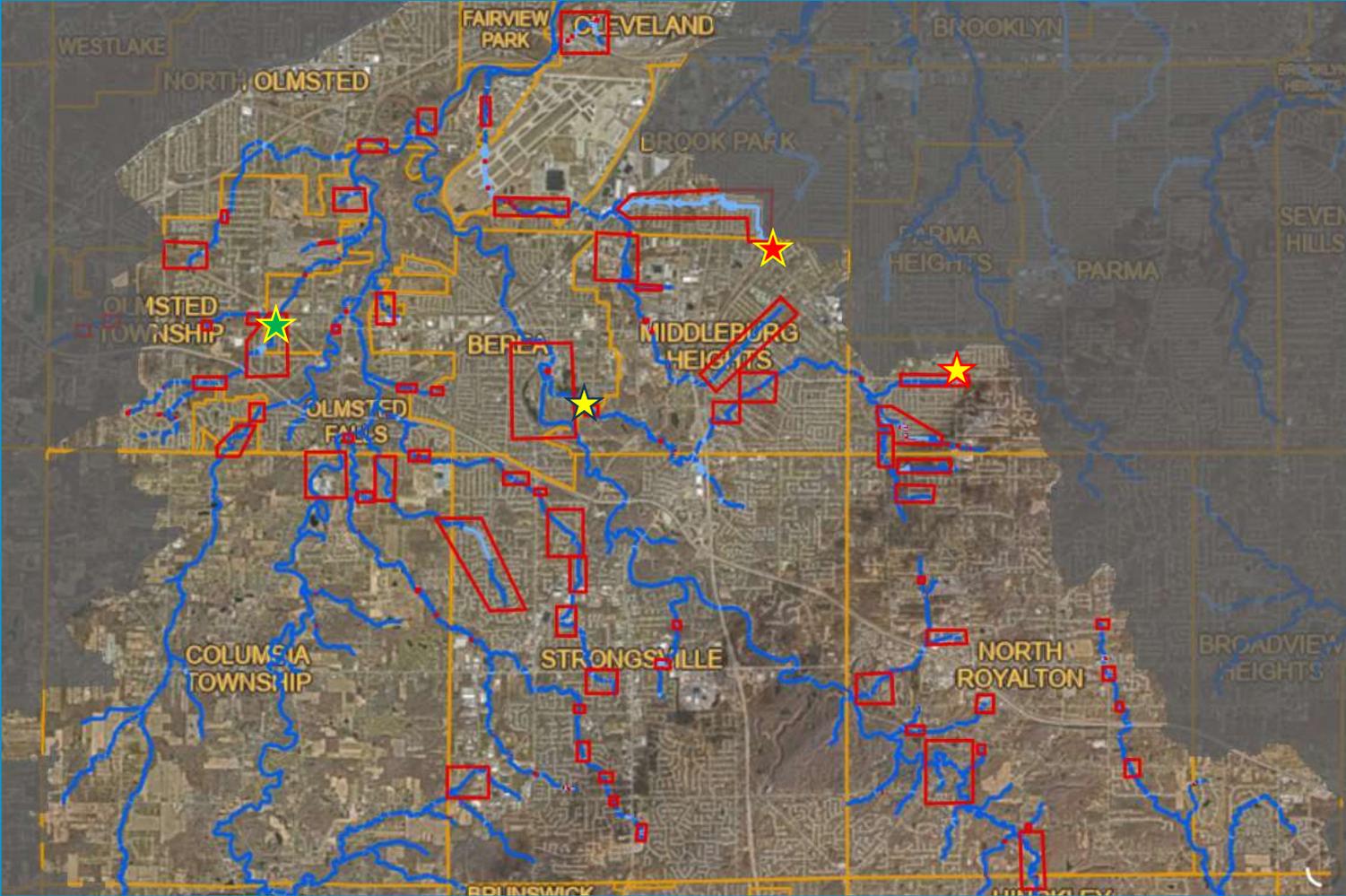


**Sheldon Road Bridge Raising  
Brookpark / Middleburg Heights**

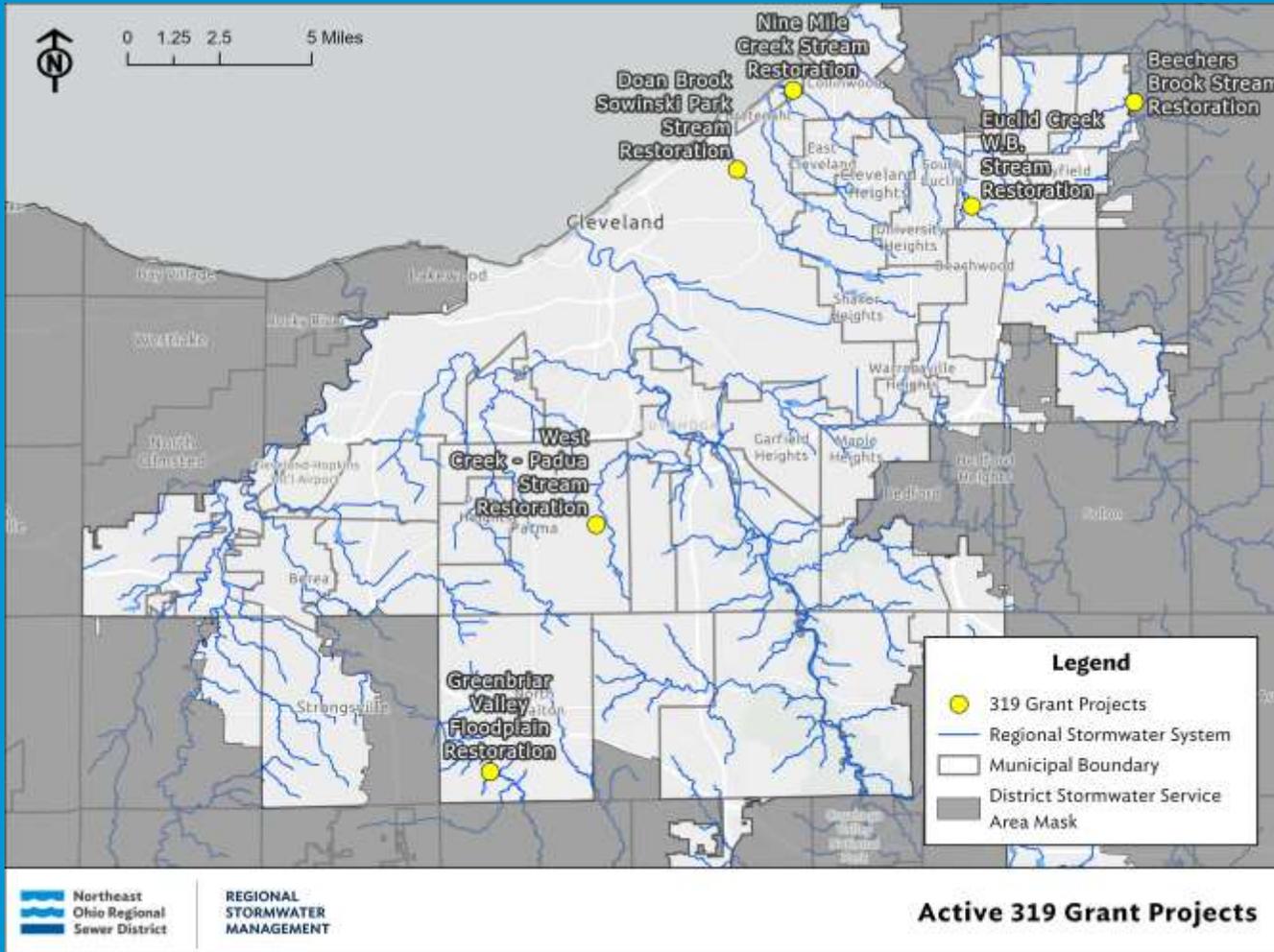
# Rocky River Stormwater Master Plan Property Acquisition Activities

**Legend**

- ★ WBPA-05
- ★ BCPA-03
- ★ ACPA-06
- ★ BDPA-06



# Ohio EPA Section 319 Grant Program Projects



- **In Design Phase**
  - Greenbriar Valley Floodplain Restoration
  - West Creek – Padua Stream Restoration
  - Euclid Creek West Branch Phase I Stream Restoration
- **Beginning Construction Phase**
  - Nine Mile Creek Stream Restoration
  - Doan Brook Sowinski Park Stream Restoration
- **Recently Completed**
  - Beechers Brook Stream Restoration
- **Total Project Costs: \$3,253,736**
- **Total District Match: \$1,479,463 (45.5%)**

# Rocky River Stormwater Master Plan Watershed Partner Lead Project



Greenbriar Valley Floodplain Restoration  
North Royalton



# Questions



Baldwin Creek – Parma

# Urgent Storm Event Update

GEORGE REMIAS, PE

MANAGER OF STORMWATER STRATEGIC SUPPORT

# Agenda

- Model Data Management Update
- Upcoming 2023 USGS Contract
  - Increased River Gages [25 to 27]
  - Increased Rain Gages [1 to 11]
  - New Cuyahoga River Flood Inundation Mapping [16.4-miles]
- Gauge Adjusted Radar Rainfall (GARR) Contract
  - Added Features [Forecast Rainfall; Monitoring; Rules & Alerts]
  - Looking for Pilot Member Communities to Develop Specific Rules & Alerts

# Model Data Management Update

## Reasons for Updating Models:

- New Construction
- New Alternatives
- Improved Data (Survey, LiDAR)
- Comply with modeling standards
- Additional model detail (extending into local system)

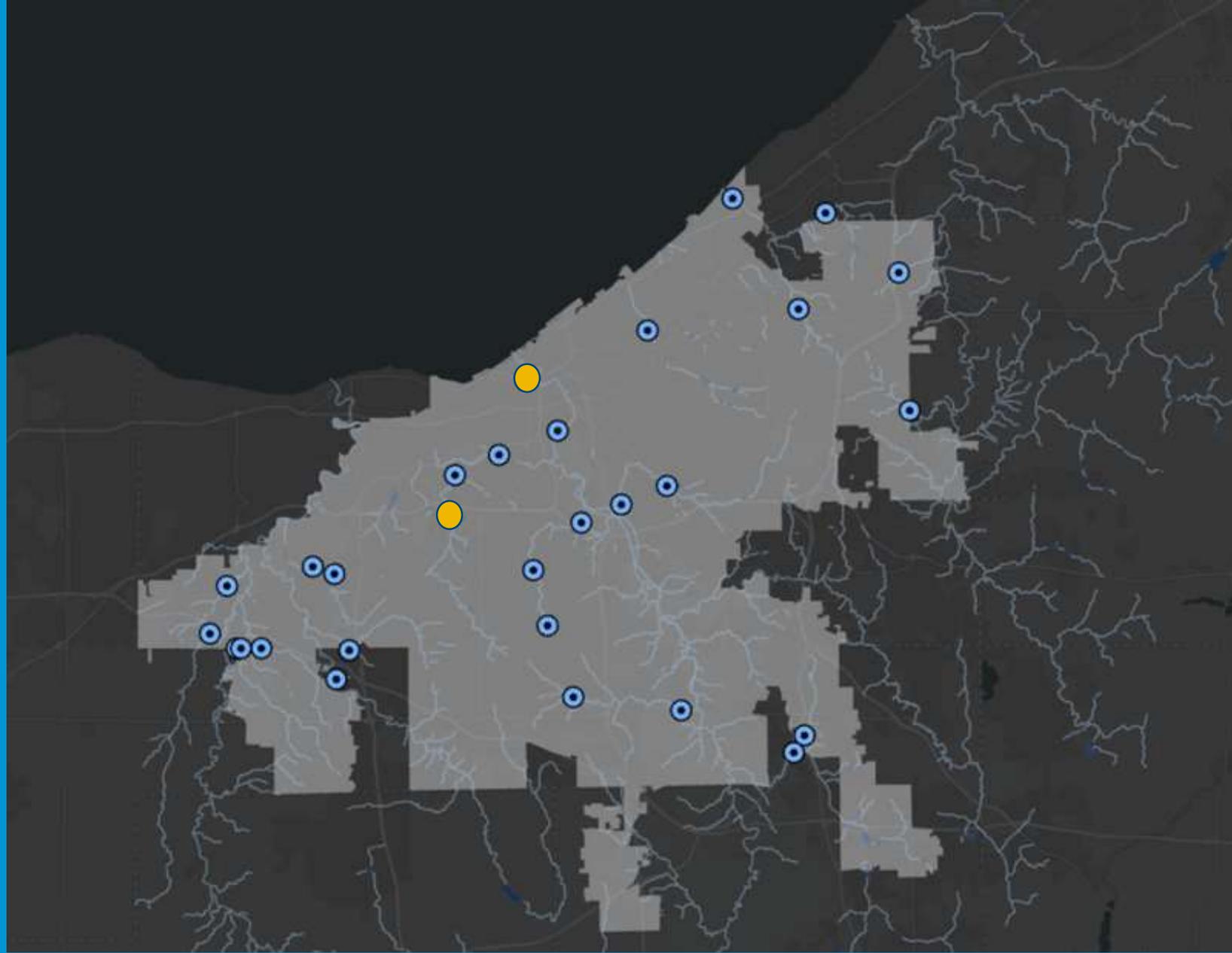
Updated Models: Big Creek, Mill Creek, and Chippewa Creek

On-going Model Updates: Abram Creek, Baldwin Creek, and West Creek

Remaining Models: All models are intended to be updated and

# 2023 USGS Agreement

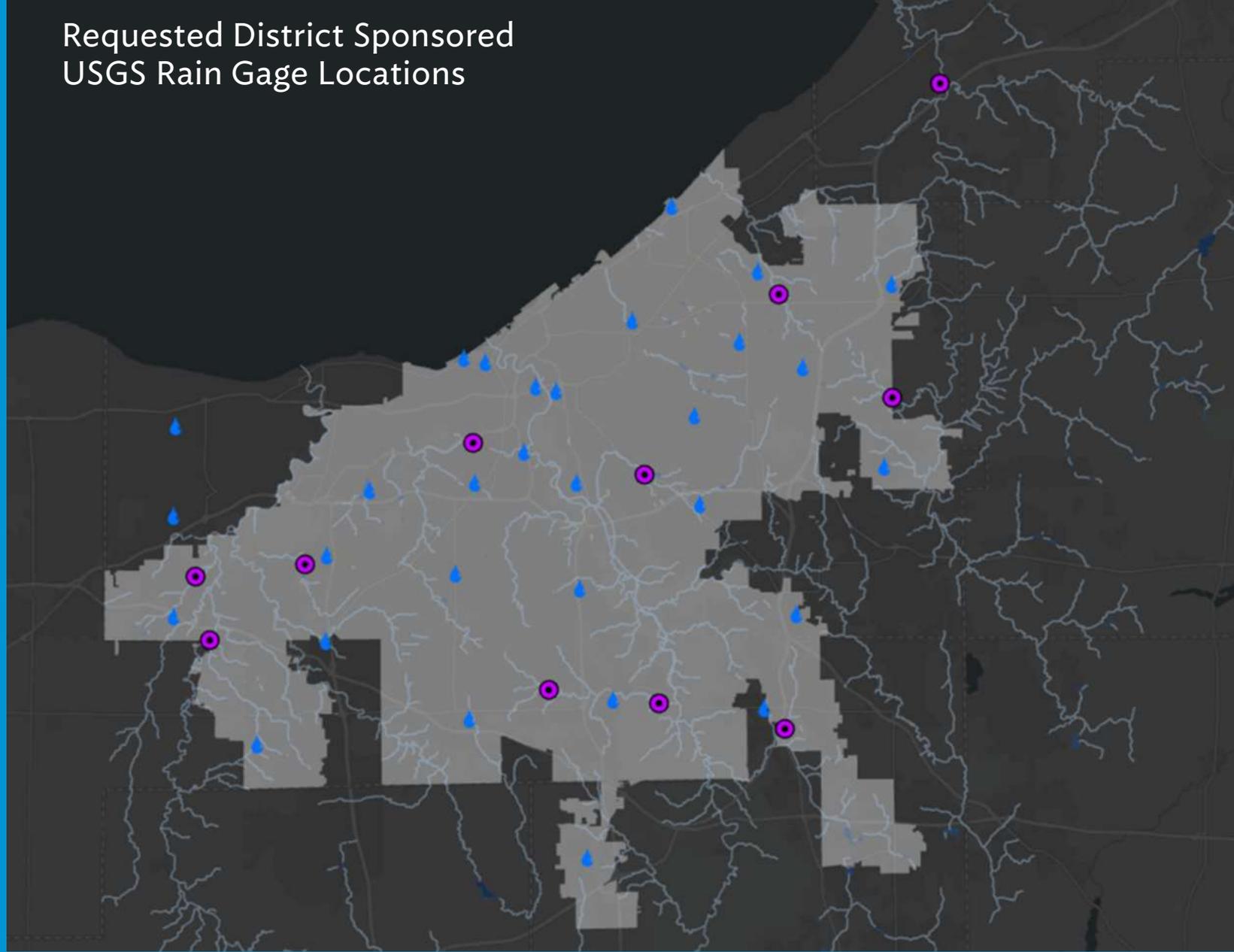
- Operation and maintenance of 27 stream gages (25 existing and 2 new)



# New USGS Rain Gage Locations

- District is investing in 11 USGS rain gages (10 existing and 1 new)
- The 10 new rain gages will be Pluvio, which are supposed to be very accurate and reliable during high intensity storm events.

Requested District Sponsored  
USGS Rain Gage Locations



# New Flood Inundation Mapping

- USGS will create 16.4 miles of Flood Inundation Mapping along the Cuyahoga River
- Will support on-line advanced flood warning services to other agencies, member communities, residents and businesses along the Cuyahoga River

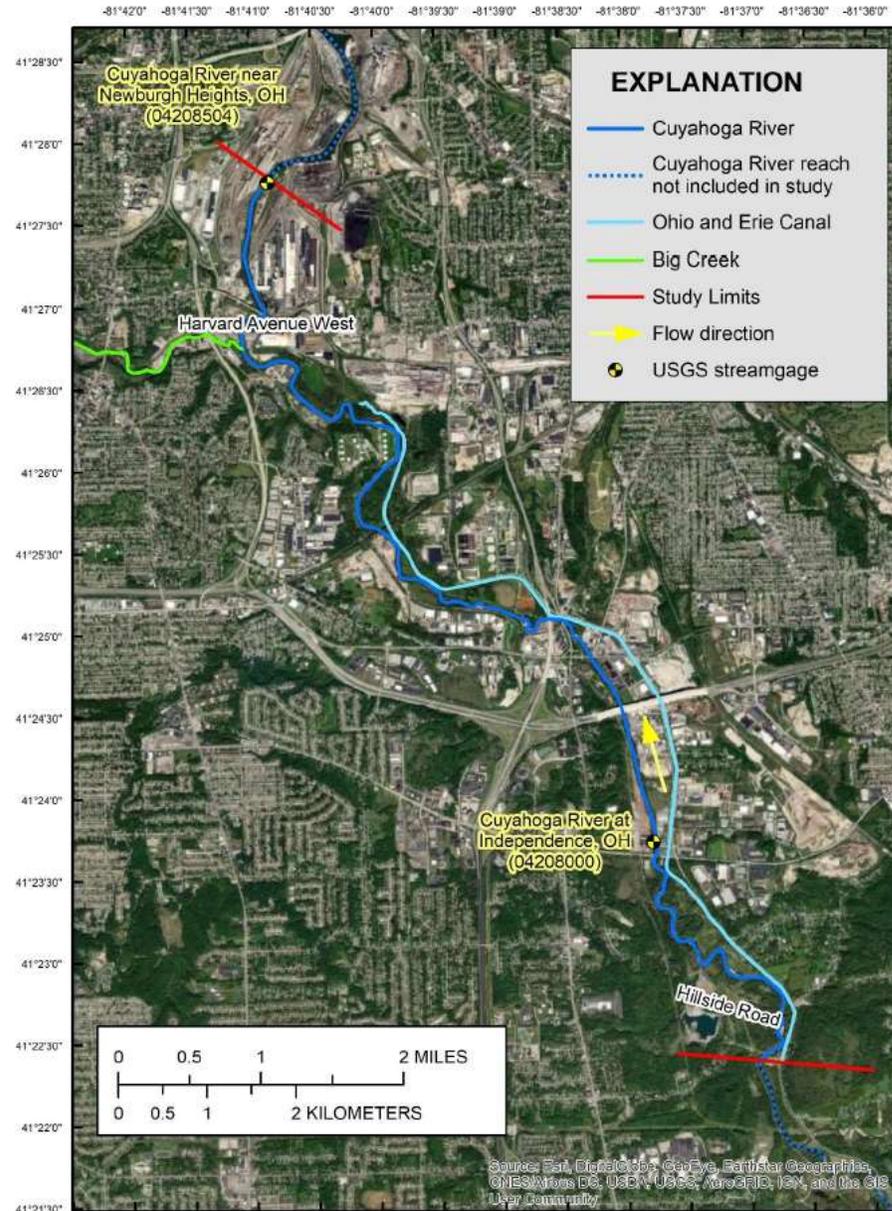


Figure 1. Map of proposed study reach near Independence, Ohio.

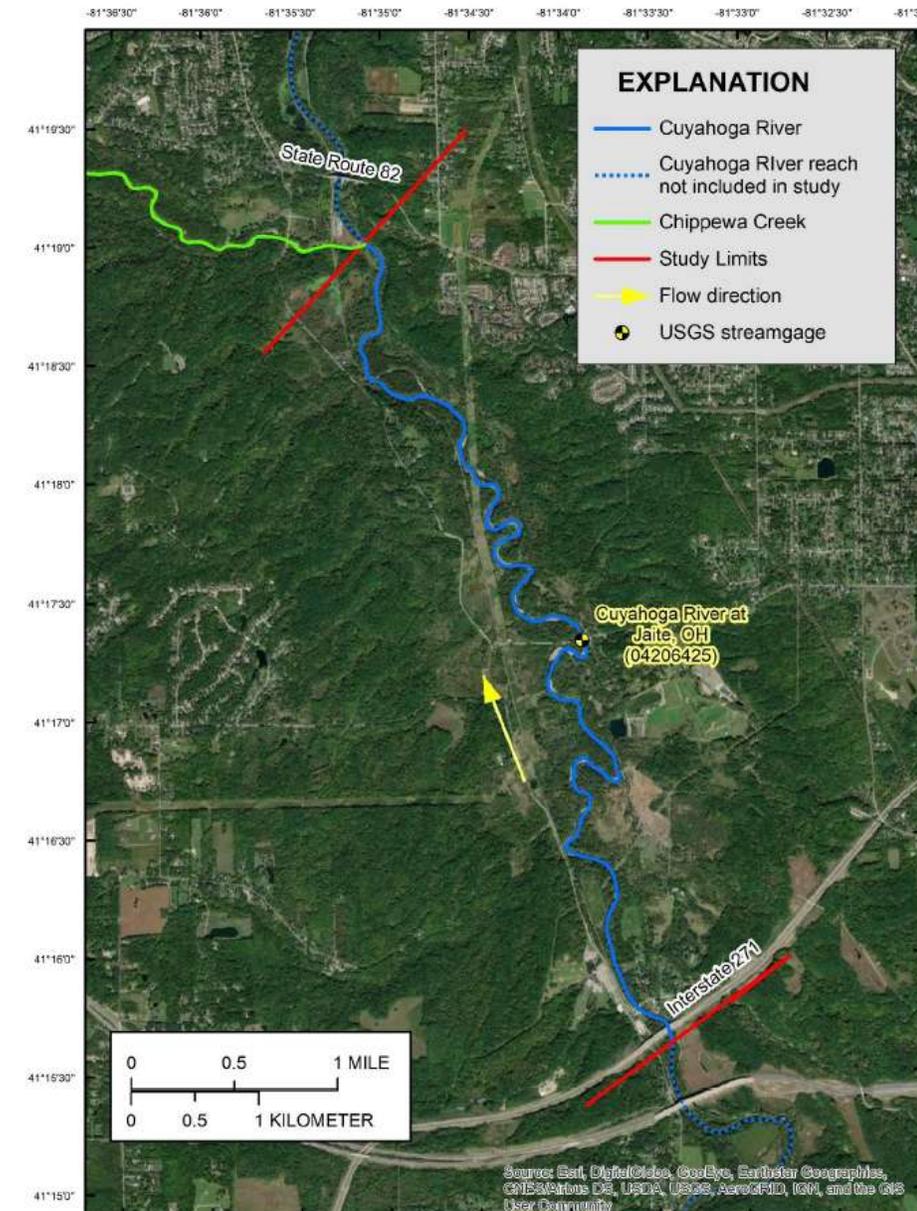


Figure 2. Map of proposed study reach near Jaite, Ohio.

# Flood Inundation Mapping Example: Blanchard River near Findlay

← → ↻ fwm.wim.usgs.gov/fim/



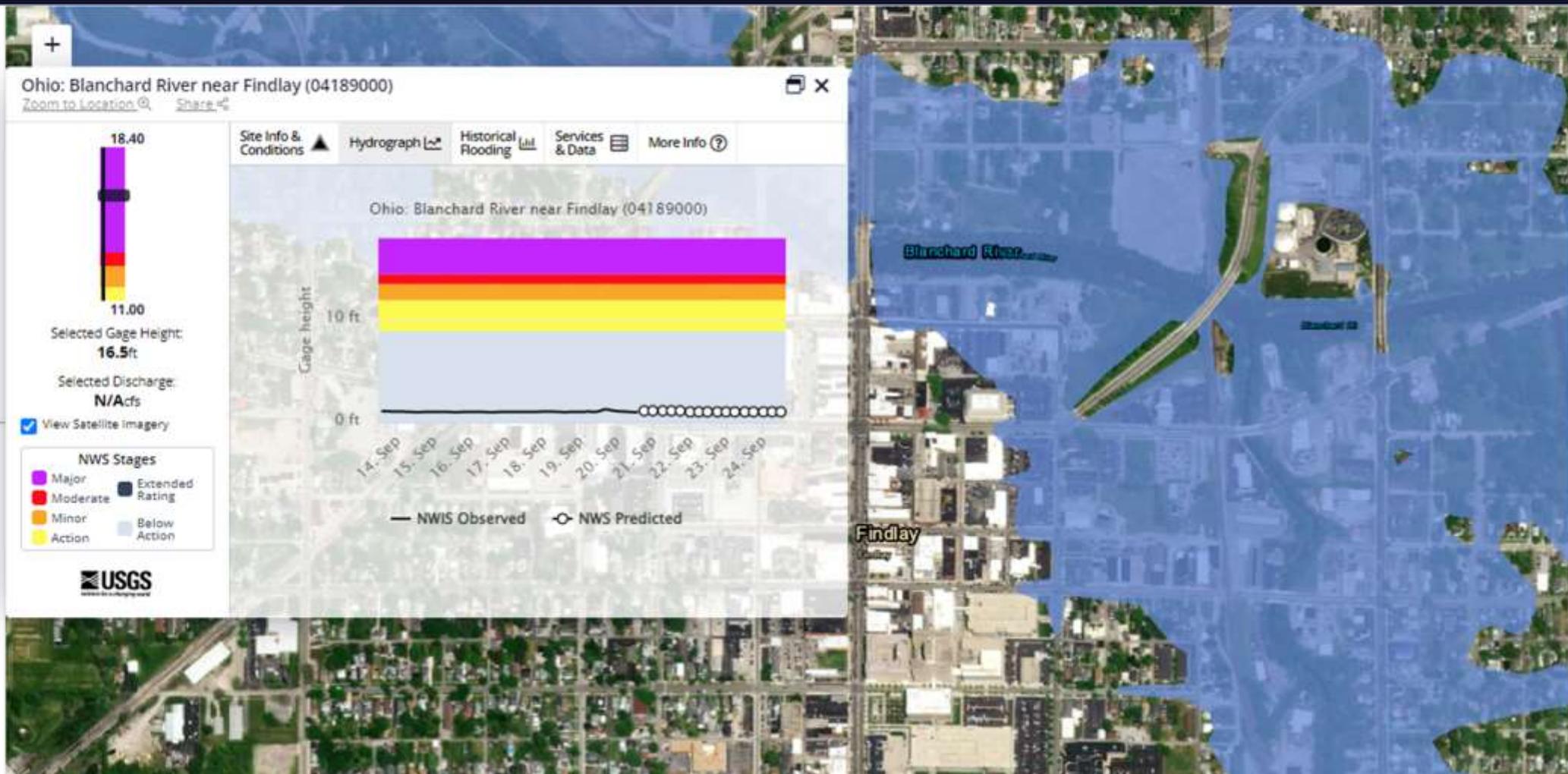
## Flood Inundation Mapper

### Basemaps

- Streets
- Satellite
- Hybrid
- Topo
- Terrain
- Gray
- OSM
- NetGeo
- Nat'l Map

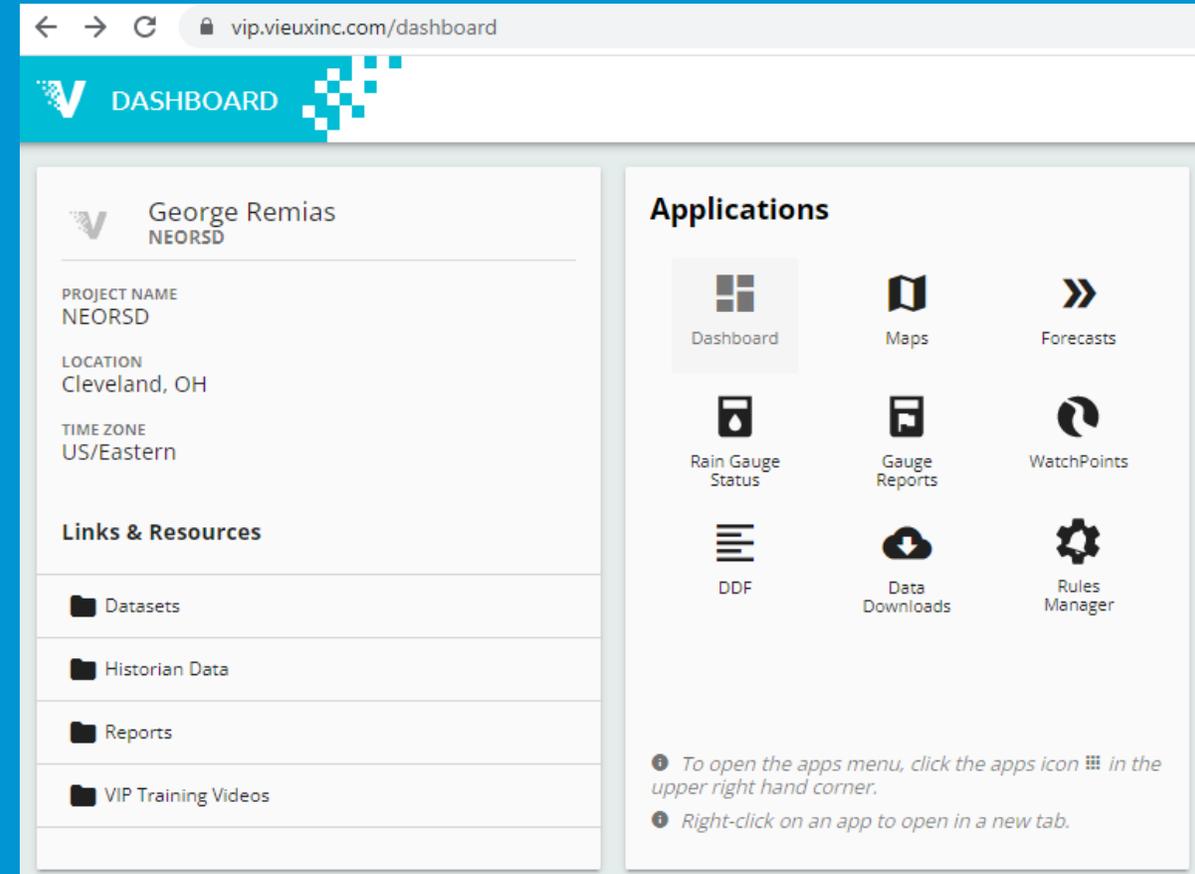
### Map Layers

- National Weather Service Radar
- Flood Watches and Warnings
- AHP5 Forecast Sites
- Major flooding
- Moderate flooding
- Minor flooding
- Near flood
- No flooding



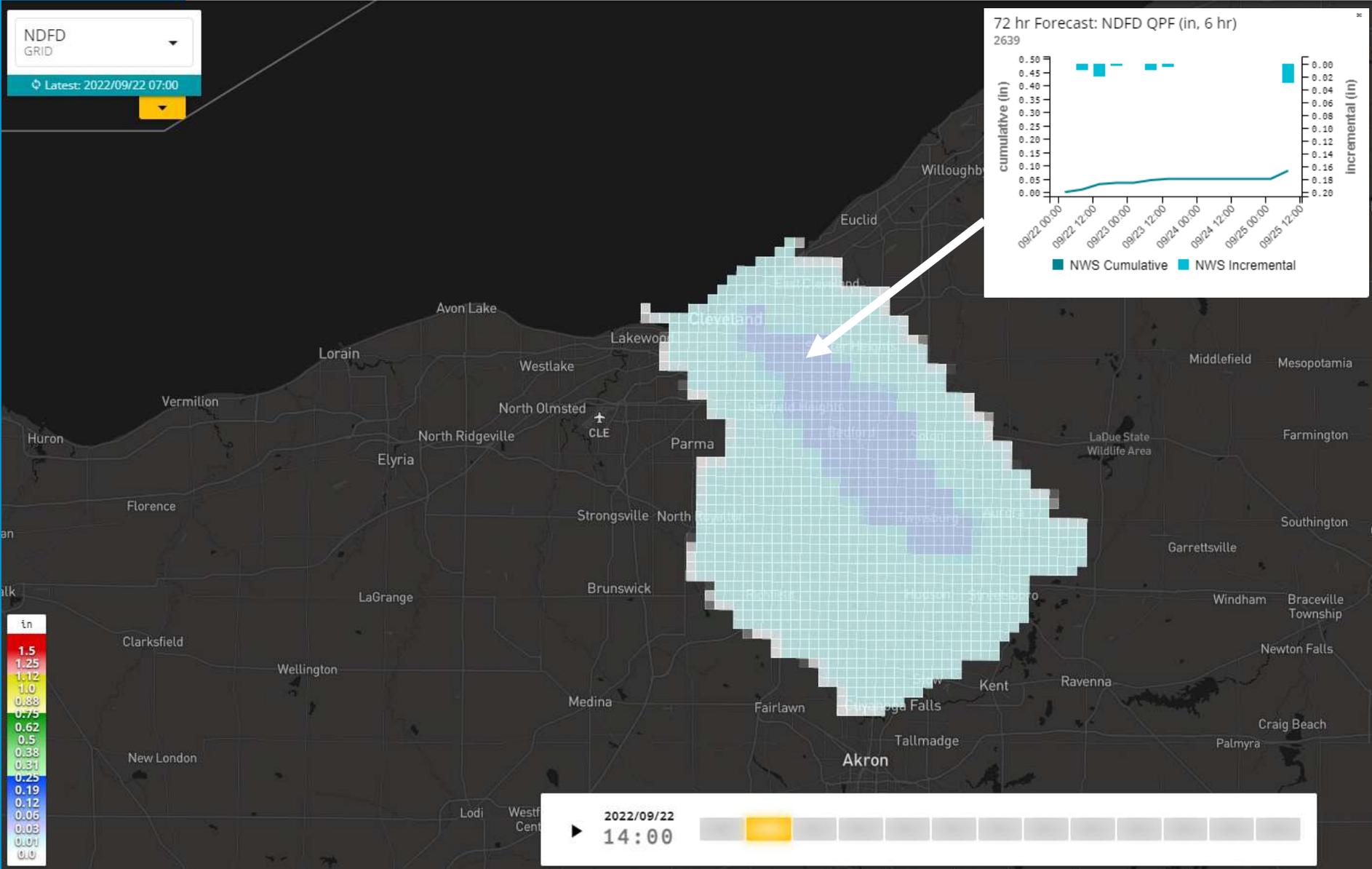
# GARR Services

- Since 2016, the District has invested in gauge adjusted radar rainfall (GARR) data to support the RSMP and Performance Compliance Project (PCP).
- Before Aug 2022, the primary product was an End of Month (EOM) GARR dataset to support model calibration.
- The District was interested in improved tools to track future and current storms to support communicating internally and externally about issues across the SWSA.



# Forecasting Services

NDFD  
GRID  
Latest: 2022/09/22 07:00



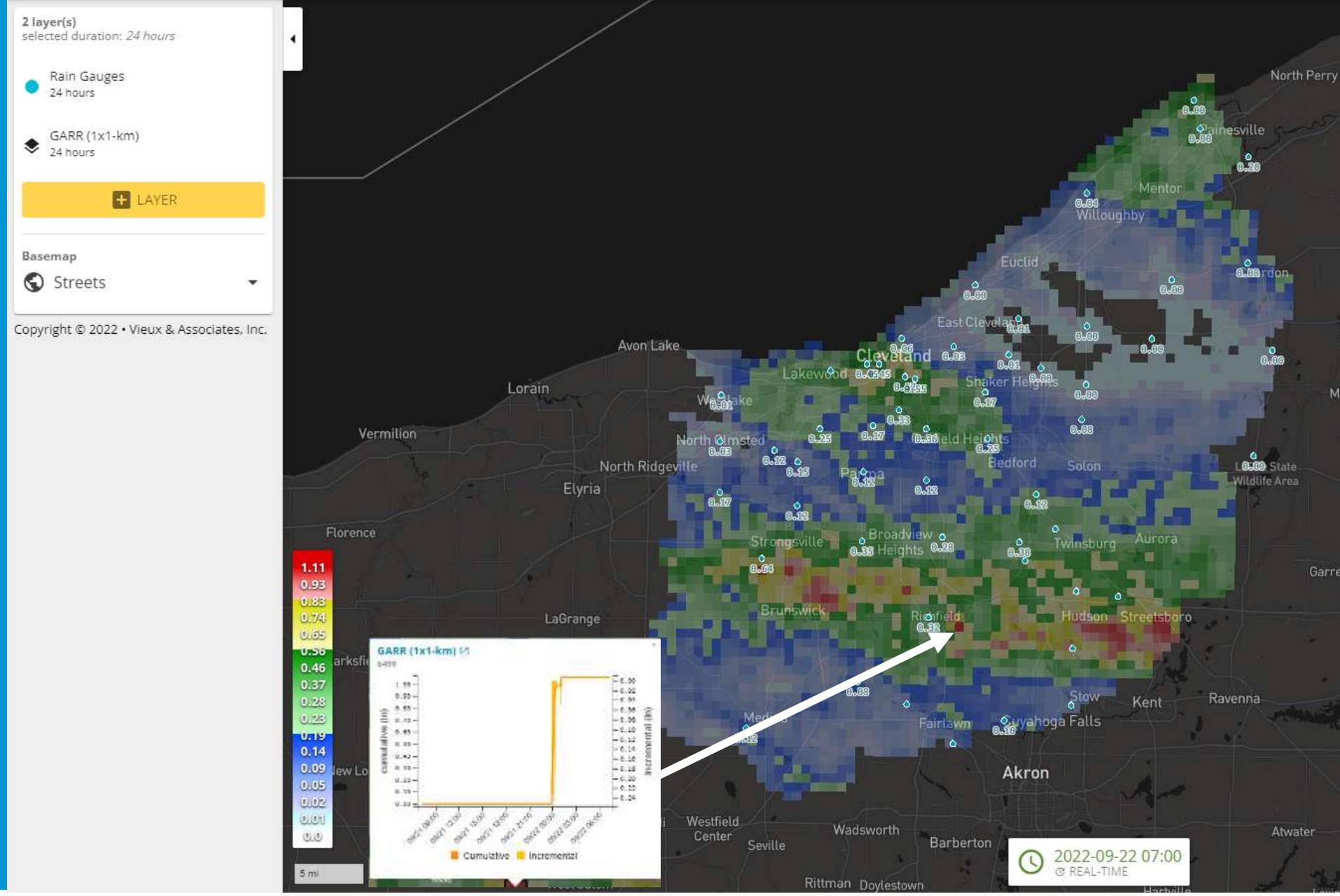
View provides three different forecasting datasets:

- PreView:
  - 0-1-hour forecast
  - 5-min time steps
- HRRR:
  - 1-18-hour forecast
  - 1-hour time steps
- NDFD:
  - 1 – 3-day forecast
  - 6-hour time steps

# Near Real-Time (NRT) GARR

5-minute timestep NRT GARR is created using:

- NOAA Radar Rainfall (1kmx1km)
- Real-Time Rain Gauges (46):
  - District (30)
  - Other (16)



# WatchPoints

The District is tracking nearly 100 monitors:

- USGS Sites (35)
- District (25)
- 3<sup>rd</sup> Party Vendor sites under District Contract (50)

Each monitor lists current readings and two watchpoints:

- NWS equivalent - Action Stage
- NWS equivalent - Minor Flood Stage



# Rules Manager and Alert Notifications

The interface is titled "Rules Manager and Alert Notifications". It features a sidebar on the left with "All Items" and "TYPES" (DDF, Forecast, GARR, Gauges, PreView, WatchPoints) and "IMPORTANCE" (Critical, Moderate, Low impact). The central panel shows a search bar and a list of rules:

- Test: GARR Rule (3410 feature(s) | 1 in)
- Test: Multi-Dataset criteria (1 feature(s) | 2 in)
- Test: Try to add multi-criteria (6 feature(s) | 2.01 in)
- Test: WatchPoints (1 feature(s) | 9 ft)

The right-hand panel shows the configuration for the selected rule:

- Rule:** Test GARR Rule when any pixel exceeds 1"
- Notifications:** Description: Test GARR Rule when any pixel exceeds 1"
- Suggestion:** include specific services, structures, and locations that are likely to be impacted
- Importance:** LOW IMPACT (selected), MODERATE, CRITICAL
- Type - subtype (locked):** GARR - Value
- Description:** Whether rainfall crosses a threshold.
- Source:** GARR (1x1-km)
- Aggregation:** Any
- Map:** A map showing a highlighted area in orange, with labels for Avon Lake, Akron, and Youngstown. The map shows a large orange-shaded region in the center, likely representing the area where the rule is triggered.
- Map Stats:** TOTAL: 3,410 | SELECTED: 3,410
- Map Controls:** Zoom in (+), Zoom out (-), Full screen, Search, and a legend icon.
- Map Labels:** Avon Lake, Akron, Youngstown, Lorain, Milliam, Wall.
- Map Status:** Active (checked)
- Map Actions:** Save, Refresh, and a red stop button.

# Looking for Pilot Member Communities to Develop Specific Rules & Alerts

- Both Regional and Local Rules and Alerts can be defined throughout the service area Forecast (Rainfall), Current (Rainfall or Monitor Data)
- The District is looking for interested parties to pilot developing specific rules and alerts for their area.
- If interested in being a pilot community, contact your WTL.

# Stormwater Design and Construction

# Design and Construction Projects

[Project Story Map](#)

Over \$124M in Construction



Project Name	City	Subwatershed	Actual or Estimated Construction NTP
Debris Racks and Access Road Improvements	(various)	(various)	1-Jun-21
Rocky River Stabilization & Sewer Protection	North Royalton	Rocky River	30-Aug-21
Lake View Cemetery Dam Maintenance	Cleveland	Dugway Brook	8-Nov-21
Baldwin Creek Stabilization near Abbey Road	North Royalton	Baldwin Creek	19-Jan-22
Chippewa Creek Stream Stabilization Broadview Rd	Broadview Hts	Chippewa Creek	1-Feb-22
Big Creek Flood Reduction near Sprague Road	(various)	Big Creek	14-Mar-22
Blodgett Creek Stabilization near Brigadoon	Strongsville	Blodgett Creek	14-Mar-22
Brandywine Creek Barlow Dam Improvements	Hudson	Brandywine Creek	14-Apr-22
Brookside Culvert	Cleveland	Big Creek	10-May-22
Baldwin Stormes Drive	Parma	Baldwin Creek	10-Jun-22
Picha Basin	Brecksville	Cuy Trib	17-Jun-22
Pepper Luce Creek Stabilization Gates Mills Blvd	Pepper Pike	Pepper Luce Creek	27-Jun-22
Big Creek Upper Ridgewood Basin	Parma	Big Creek	1-Aug-22
Bear Creek Culvert Improvements	North Randall	Bear Creek	15-Sep-22
Stafford Basin	Maple Hts	Wood Creek	26-Sep-22
Chippewa Creek Stabilization Route 21	Brecksville	Chippewa Creek	16-Nov-22
Doan Stabilization in Shaker Hts Country Club	Shaker Heights	Doan Brook	14-Dec-22
Big Creek near Old York Road in Parma Hts	Parma Hts	Big Creek	18-Jan-23
Brookside in Independence CH00147	Independence	Cuy Trib	18-Jan-23
Mill Creek Culverted Stream Rehab (ROCS1)	Garfield Hts	Mill Creek	19-Apr-23
West Creek Stabilization	Brooklyn Hts	West Creek	19-Apr-23
Chippewa Creek Flood Reduction Echo Ln	Broadview Hts	Chippewa Creek	19-Apr-23
Dugway Brook - Forest Hills Dam	Cleveland	Dugway Brook	31-May-23
Mill Creek Restoration near Cricket Ln	Warrensville Hts	Mill Creek	21-Jun-23
Hemlock Seven Hills Phase 1	Seven Hills	Hemlock Creek	21-Jun-23
Big Creek Near Ridge Road	Parma	Big Creek	5-Jul-23
Baldwin Bonny Banks Basin	Parma	Baldwin Creek	15-Nov-23
Cuyahoga River Vaughn Road Raising	Brecksville	Cuyahoga	3-Jan-24
Cuyahoga Trib Riverview Road Reconstruction	Brecksville	Cuy Trib	6-Feb-24
West Creek Veterans Basin	Parma	West Creek	6-Feb-24
Abrams Creek Flood Reduction Sheldon Rd	(various)	Abrams Creek	1-May-24
Big Creek Flood Reduction near Oakridge	North Royalton	Big Creek Creek	30-May-24
Renewal of Culverted Stream II (ROCS2)	(various)	various	30-Nov-24
Hemlock Creek near Hemlock Road	Independence	Hemlock Creek	30-Nov-24
Baldwin - York Pleasant Valley Dell Haven Basin	Parma	Baldwin Creek	30-Dec-24
Mill Creek Restoration Kerruish Basin	Garfield Hts	Mill Creek	30-Jan-25
Doan Restoration at Horseshoe Lake Park	(various)	Doan Brook	13-Jan-25
Lower Shaker Lake Reconstruction	(various)	Doan Brook	13-Jan-26



# Stormwater Design

# 1558 Baldwin Creek Dell Haven Basin - City of Parma

## Project Goals:

- Add storage
- Reduce flooding

**Consultant:** Proposals being evaluated

**Estimated Construction:** \$5.0M

## Facts to Note:

- Evaluated under SW Master Planning and Advanced SW Planning
- This project will reduce peak flows by 50%, increasing Level of Service ~10-year to 25-year
- Phase 1 of larger problem area near York/Pleasant Valley



# 1661 Baldwin Creek Bonny Banks Basin - City of Parma

## Project Goals:

- Increase storage capacity of the existing Bonny Banks Basin
- Reduce flooding downstream of the basin along Stormes Dr and surrounding neighborhood

**Consultant:** EMH&T (GES)

**Estimated Construction:** \$1.6M

## Facts to Note:

- Existing basin receives runoff from >300 acres of developed land and was constructed in the 1960's
- This project will build upon the benefits of the Baldwin Creek Relief Culvert at Stormes Dr in Parma Project currently under construction





# Stormwater Construction

# 1616 Baldwin Creek Relief Culvert at Stormes Drive City of Parma

## Project Goals:

- Reduce flood risk
- Increase conveyance with new culvert

**Contractor:** Fabrizi Trucking & Paving Co.

**Construction Award:** \$1,641,527.00

**Construction NTP:** June 10, 2022

## Facts to Note:

- Almost all work is being performed in public R/W, waterline relocation underway
- Future basin expansion project will continue to reduce flood risk in this neighborhood



# 1556 Baldwin Creek Stabilization near Abbey Rd City of North Royalton

## Project Goals:

- Reduce erosion risk
- Replace culvert crossing
- Restore floodplain

**Contractor:** RiverReach

**Construction Award:** \$763K

**Construction NTP:** Jan 19, 2022

## Facts to Note:

- 1 property acquisition, several easements
- Use of live branch layering, toe wood, and live stake for stream banks



# 1590 Rocky River Stream Stabilization and Sewer Protection in City of North Royalton

Substantial Completion Anticipated  
December 2022

**Contract Award:** \$711,535.00

**Lineal Feet of Stream Work:** 500'



# 1650 Blodgett Creek Stabilization City of Strongsville

## Project Goals:

- 350 feet of stream stabilization
- 270 feet of sanitary sewer replacement
- Storm sewer and outfall replacement

**Contractor:** Northstar

**Construction Award:** \$389,360

**Construction NTP:** Mar 14 2022

## Facts to Note:

- City of Strongsville committing dollars to replace and protect local sanitary sewer





# Completed Projects

# 1555 Rocky River Tributary Stabilization and Re-Alignment Along Ridge Road in City of North Royalton

Final Completion March 31, 2022

**Final Contract Amount:** \$389,711.27

**Lineal Feet of Stream Work:** 323'



# Code Updates

# Title III & IV Repeal and Replacement



# Authority

Ohio Revised Code Section 6119.08

**Title III Separate Sanitary Sewer Code**

**Title IV Combined Sewer Code**



# Title III – Updated

**Document structure**

**Definitions**

**Creation of The Water Quality Technical Program**



# Title III – Updated

**Original Purpose-** ...to provide a procedure by which the District and each Community served by the District can cooperate...

## **Creation of the Water Quality Technical Support Program (WQTSP)**

- District to provide support to communities in addressing water quality issues regulated by others, such as OEPA and County Board of Health
- Voluntary program

## **Community Discharge Permit- Community Must:**

- Control Excessive I/I
- Maintain and update local sewer data
- Implement BMPs
- Create a Community Compliance Plan outlining how compliance of the permit objectives will be achieved



# Title IV – Updated

**Document structure**

**Definitions**

**Connections to or Disconnections from the  
Combined Sewer System**



# Benefits of Title III & IV Updates

- **Consistency**
  - Permits for all communities
    - 1 unified permit
- **Improved utilization of District resources**
  - Local Sewer System Evaluation Studies
  - Member Community Infrastructure Program Grant
- **Usability**
- **Simplicity**
- **Water quality improvement and infrastructure investment**



# Title V – Updated

## Increased Credit Eligibility

- Applicants can receive credit for partial responsibility for maintenance of SCM
- Applicants can receive credit for an SCM that they do not directly drain to, if:
  - The SCMs is oversized to compensate for these areas
  - If the applicant has partial responsibility for the maintenance of SCM

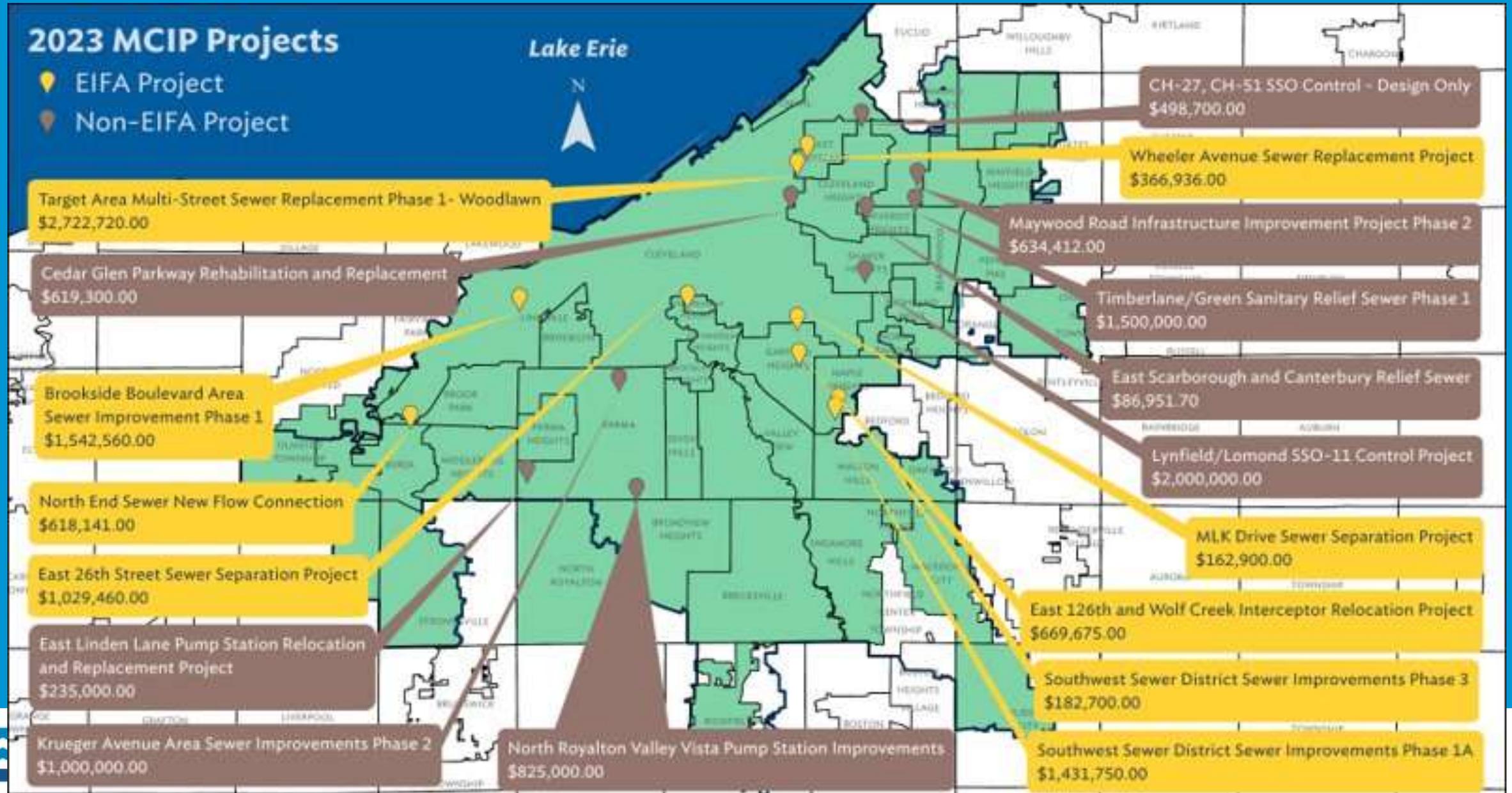
## Updated Definition of “Associated Impervious Surface”

- Definition updated to accurately reflect the above changes to credit eligibility



# Infrastructure Funding Update

# Member Community Infrastructure Program (MCIP) 2023



# Infrastructure Investment and Jobs Act: Ohio Clean Water State Revolving Fund

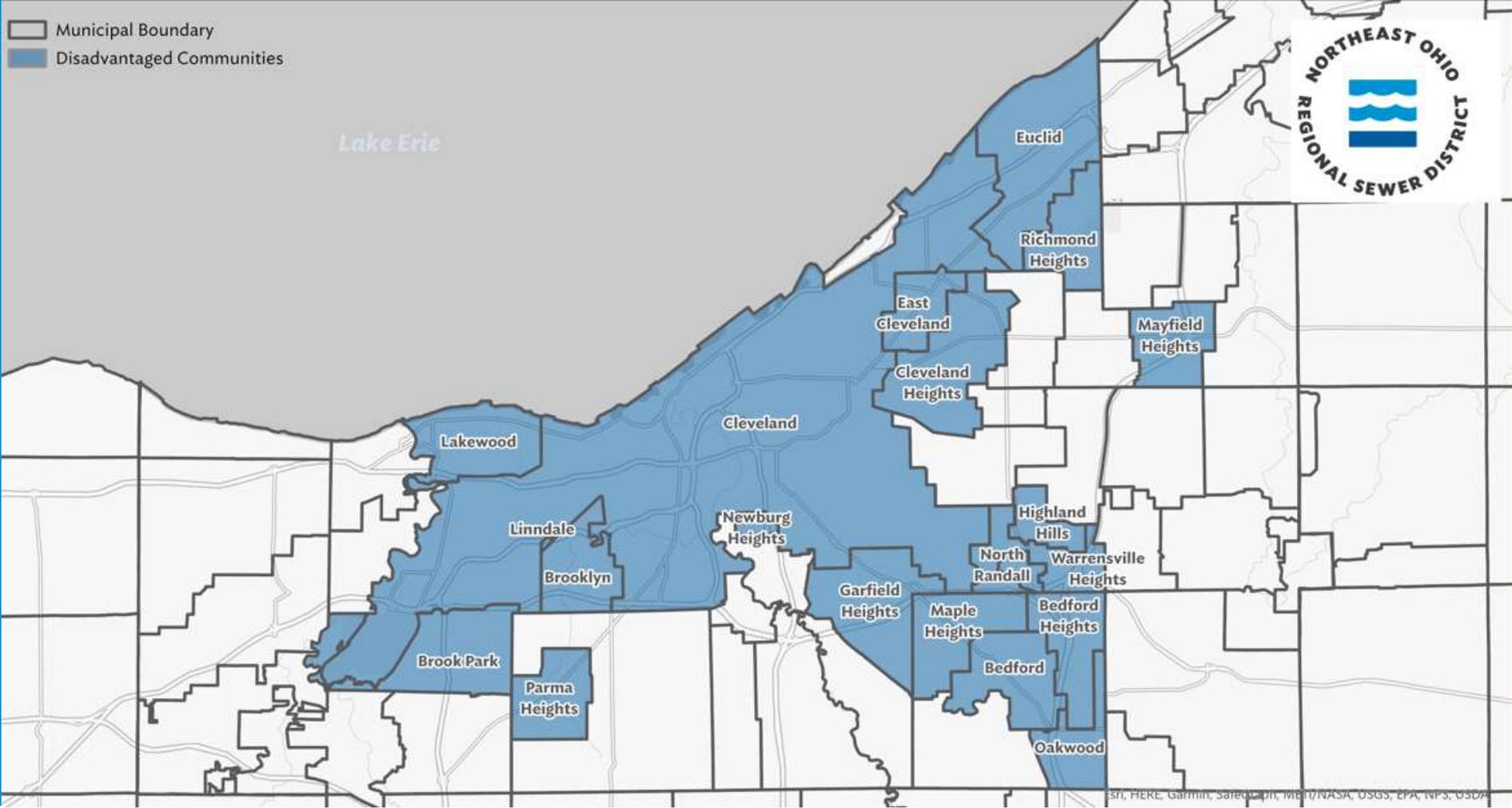
- Approximately \$100 million/year to the Water Pollution Control Loan Fund (WPCLF)
  - 5 years of funding
  - 49% through grants referred to as “principal forgiveness”
  - Focus of grants is disadvantaged communities
  - District goal to ensure maximum IIJA grant funding to region

# 2023 WPCLF Affordability Criteria

Median Household Income (MHI)	$\leq \$58,116$
Unemployment Rate	$\geq 5.3\%$
Poverty Rate < 200% of Poverty Level	$\geq 30.4\%$
Percent Population Change	$\leq 50\%$ Increase

**3/4 Criteria**

# 20 Communities Meet OEPA Affordability Criteria



# Project Submittal Process

- Communities provided their priority projects.
- District reviewed and applied for 8 projects, \$8.3M for design in 2022.
- **If awarded, we will be seeking construction funding and potentially more design dollars next year.**



# 2022 Clean Watersheds Needs Survey

- EPA report to Congress on Clean Water needs
  - Supports state and congressional budgeting efforts
  - Supports public information and other clean water initiatives
  - Typically conducted every 4 years
- Survey sent to large or small community based on population served (10,000)
- Survey information due October 28<sup>th</sup>
- Contact [CWNS@epa.ohio.gov](mailto:CWNS@epa.ohio.gov) if you have not received request



# WTL Contact

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Watershed Team Leader

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Donna Friedman

Manager of Community Watershed Coordination

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(216) 401-1332

**Thank you!**