

*Watershed Advisory Committee  
Lake Erie Direct Tributaries  
& Chagrin River  
October 22, 2020*

NORTHEAST OHIO REGIONAL SEWER DISTRICT



REGIONAL  
STORMWATER  
MANAGEMENT  
PROGRAM

# Agenda

- Sewer District Updates
- Stormwater Master Plan
- Stormwater Inspection and Maintenance
- Cuyahoga County Office of Emergency Management
- Stormwater Design & Construction
- Looking Ahead

# Program Highlights

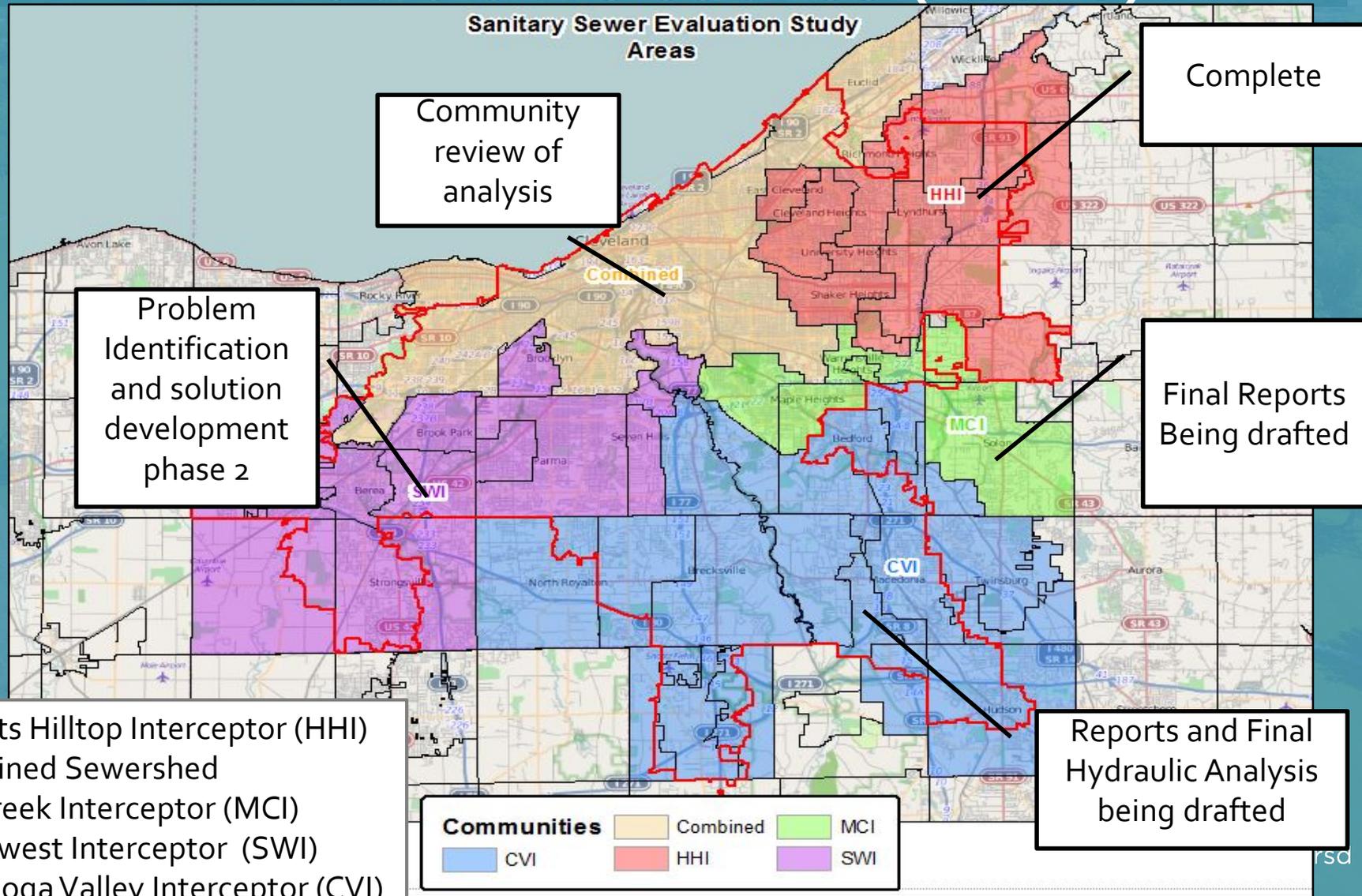
Matt Scharver, Deputy Director of Watershed Programs

# Community Cost-Share: 2020

- CCS Funds Balance (9/31/2020) \$29,717,238
- 82 projects w/ executed agreements \$8,402,435
- 31 projects w/ agreements in progress \$3,472,662
- CCS Funds available to Member Communities \$17,842,140
- 21 approved allocation agreements \$9,827,806

*55 of 55 Member Communities have participated*

# Local Sewer System Evaluation Studies (LSSES)



Heights Hilltop Interceptor (HHI)  
 Combined Sewershed  
 Mill Creek Interceptor (MCI)  
 Southwest Interceptor (SWI)  
 Cuyahoga Valley Interceptor (CVI)

# 2021 MCIP Funding Reduced

- Sewer District currently tracking \$40-\$50M revenue decline for 2020
- 2021 MCIP funding decreased to \$2.5M
- 7 projects awarded for funding in 2021
  - 3 Design & Construction projects
  - 4 Design-Only projects

# 2021 Member Community Infrastructure Program

## 7 Funded Projects

APPLICANT	PROJECT TITLE	DESIGN & CONSTRUCTION REQUEST
South Euclid	Oakmount Road Infrastructure Improvement Project	\$ 365,973.00
Maple Heights	Maple Heights Manhole Sewer Separation Project - Phase 2 (Northeast Quadrant)	\$ 1,021,887.00
Lorain County Commissioners	Westview I & I Remediation	\$ 359,300.00
	TOTAL	\$ 1,747,160.00

APPLICANT	PROJECT TITLE	DESIGN REQUEST
East Cleveland	Wheeler Avenue Sanitary Sewer Improvement Study and Design	\$302,340.00
Shaker Heights	Lynnfield & Lomond SSO 11 Control Project	\$112,500.00
Parma	Krueger Avenue Area Sewer Improvements	\$260,000.00
Parma	Green Acres Area Sewer Improvement Project	\$78,000.00
	TOTAL	\$752,840.00

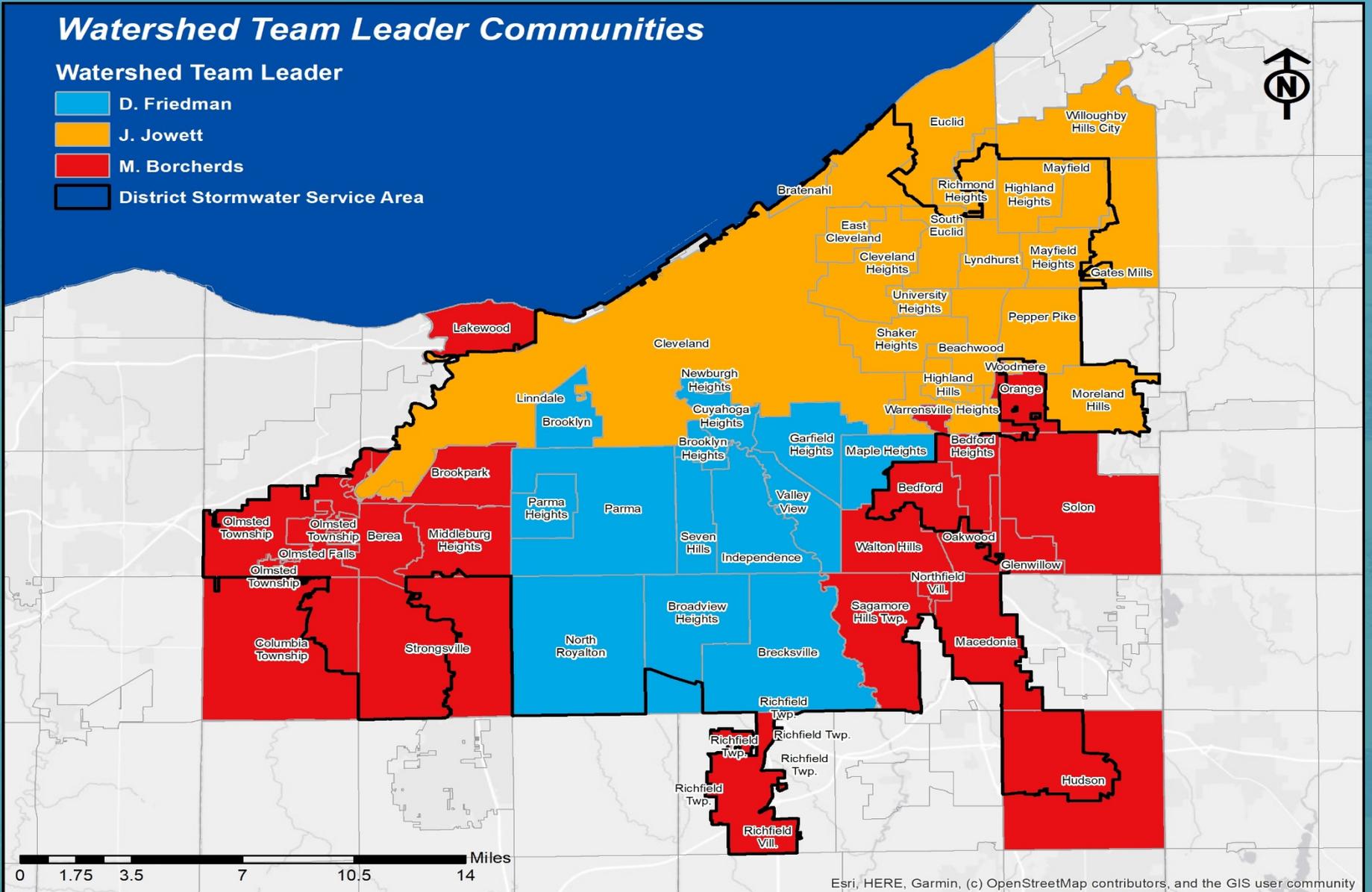
# Future MCIP Funding

- 2022 MCIP funding anticipated
- Level of funding will be determined by 2021 rate study
- Design & Construction and Design-Only

# Watershed Team Leader Communities

## Watershed Team Leader

-  D. Friedman
-  J. Jowett
-  M. Borchers
-  District Stormwater Service Area



0 1.75 3.5 7 10.5 14 Miles

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

# Questions



Pepper Creek

# Special Features

Acquisition, Demolition & Property Owner Communications – *Lilah Zautner, Project Manager for Property Acquisition*

Partner Grant Support Request Process – *Paul Kovalcik, Stormwater Project Specialist*

# Water Resource Project Property Acquisition

## Program Goals

- Support Design and Construction project needs
- Mitigate the threat of erosion and flooding
- Protect functioning regional stormwater assets
- Leverage acquisition dollars through partnerships

## Success to date: Threat Mitigation/ Asset Protection

- Fee Simple : 41 properties/ \$ 8,944,650
- Permanent Easements: 86/ \$691,254

## Success to date: Partnerships

- Flood / Erosion Mitigation: 17 homes
- District Dollars invested: \$1,218,904
- Dollars Leveraged: \$3,549,969

## Acquisition Process

Outreach

Appraisal

FMV Offer

Board Approval

Closing /Leasing

Maintenance and  
Inspection

Water Resource  
Project

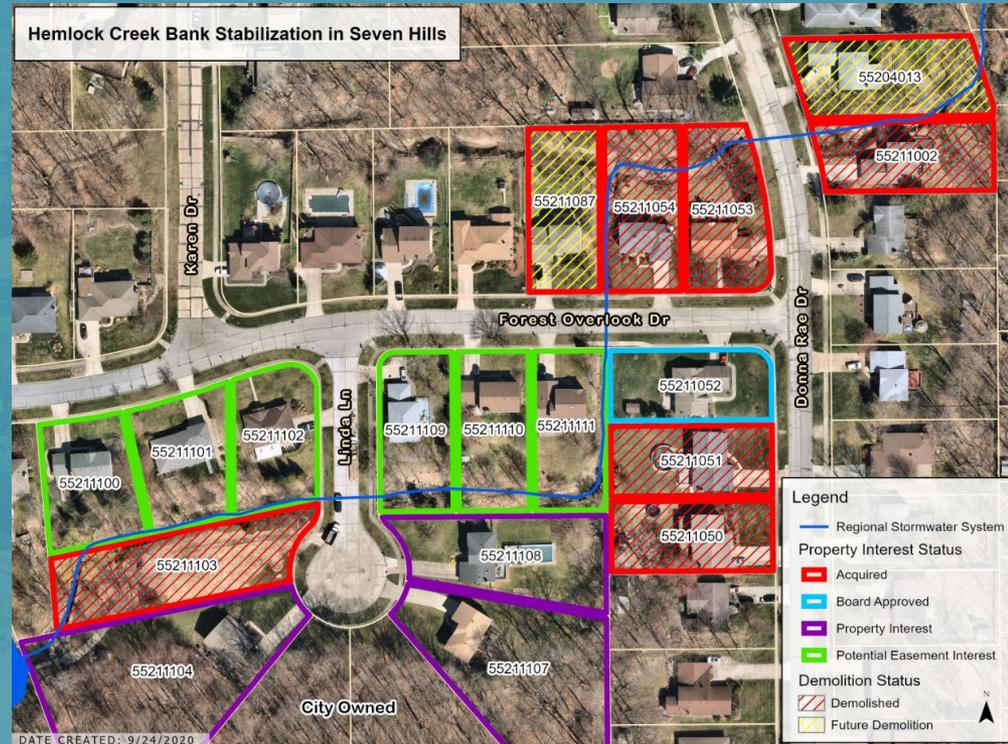
# Hemlock Creek Bank Stabilization - Seven Hills

## Land Assembly

- Planned acquisition of 12 residential properties
- 9 properties secured, 6 demolished
- Land assembly began in 1Q, 2019
- Close coordination with the City, including Emergency Services training
- Phase 2 of land assembly will continue in 2021

## Total Investment to Date

\$2,484,691



# Partner Grant Projects



**Royalton Farms 319 Project**

# Partner Grant Projects

# \$500,000

Annual match available from the District



**Planting at the East Branch of Euclid Creek**

# Partner Grant Projects

# \$300,000

Maximum request per project



**Doan Brook – Improving Fish Passage**

# Partner Grant Projects

# Application

1. A NPSIS project summary sheet.
  - a. expanded project description with anticipated outcomes
  - b. line-item cost estimate
2. Concept graphic
3. Requested match
4. Email to: [kovalcikp@neorsd.org](mailto:kovalcikp@neorsd.org)

# Partner Grant Projects

# 12/31/20

Deadline for a request to the District



**Mill Creek Phase 1 – Highland Hills**

# Partner Grant Projects

- Applications will be nominated to the District's stormwater construction plan and ranked.
- Funding will be distributed according to rank.
- The District can be available to assist with developing concepts, sediment/nutrient estimates, costs, etc.
- The District may provide in-kind services if District funds are not awarded.
- Projects must include Design and Construction that result in improvements to the District's RSS.

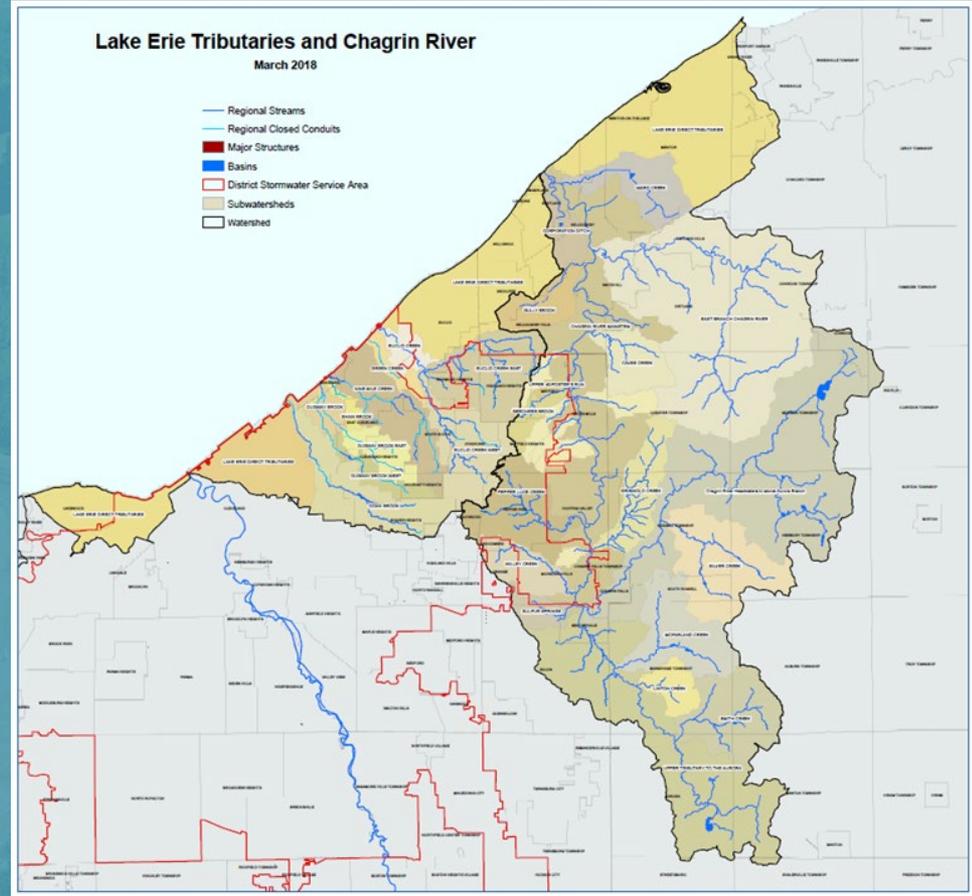
# Questions



Lilah Zautner  
Project Manager for Property  
Acquisitions, Watersheds  
[ZautnerL@neorsd.org](mailto:ZautnerL@neorsd.org)  
216-881-6600 x6455

Paul Kovalcik  
Stormwater Project Specialist  
[KovalcikP@neorsd.org](mailto:KovalcikP@neorsd.org)  
216-881-6600 x6875

# Chagrin River / Lake Erie Direct Tributaries Stormwater Master Plan



# Stormwater Master Plan Study Status (Through 9/1/2020)

## Cuyahoga River South

Completion Date: June 2019



■ Remaining ■ Completed  
**100 % Complete**

## Cuyahoga River North

Completion Date: July 2020



■ Remaining ■ Completed  
**100% Complete**

## Rocky River

Completion Date: November 2020



■ Remaining ■ Completed  
**96% Complete**

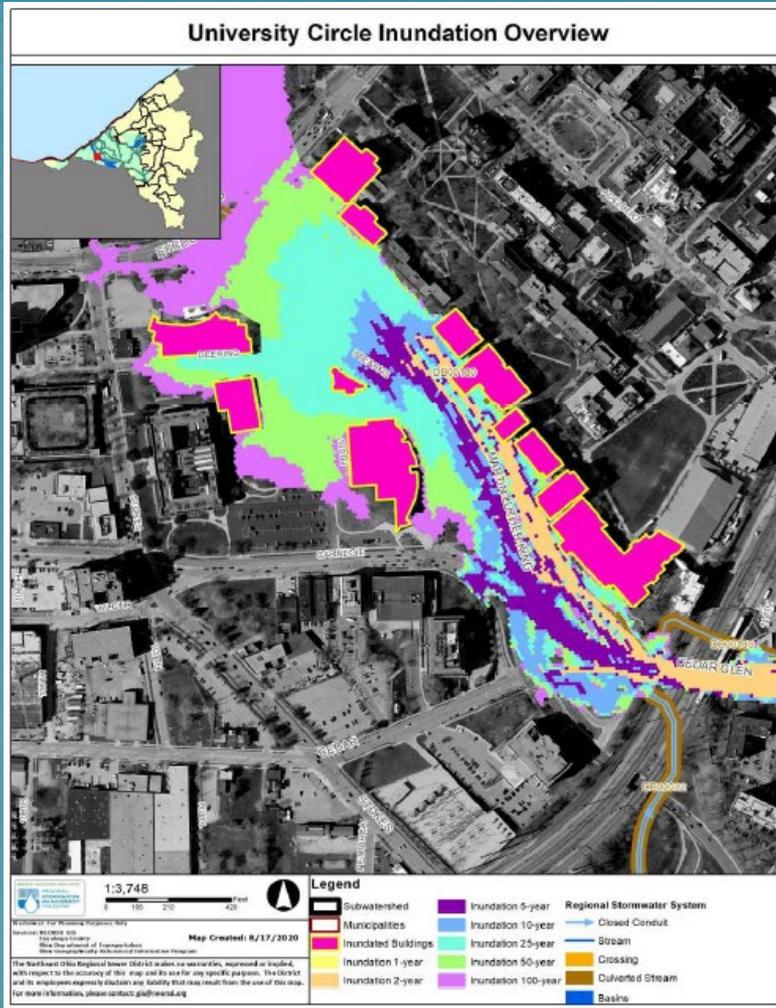
## Chagrin River / Lake Erie Tribs

Completion Date: May 2021



■ Remaining ■ Completed  
**67% Complete**

# Chagrin River / Lake Erie Direct Tributaries Stormwater Master Plan

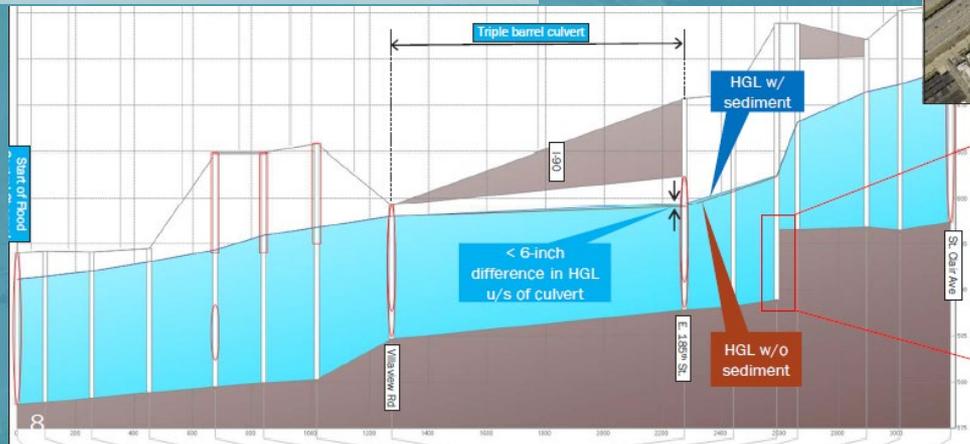


## Significant work thru October 2020

- Field Data Collection Task 92% Complete
- Covid-19 Pandemic Having Minor Impact On Project. Field Crews Following Pandemic Protocols
- Fall 2020
  - Expected Completion of Spherical Imagery
  - Completion of Culverted Stream Inspections.
- SWMM Model Development Well Underway: ~73% Complete

# Chagrin River / Lake Erie Direct Tributaries SWMP – Model Development

- Completed Models Doan Brook
  - Doan Brook
  - Beechers Brook
- Models Currently Under Construction
  - Euclid Creek (East, West, Mainstem)
  - Pepper Luce Creek
  - Nine-Mile Creek
  - Dugway (East & West Branch)
  - Wiley Creek



~ 8 ft drop u/s of triple barrel culvert prevents any HGL increases from continuing u/s

TRA TECH JACOBS



# Chagrin River / Lake Erie Direct Tributaries SWMP – Community Coordination

- Continued Coordination with Member Communities
- Meet with communities
  - Problem Area Review
- SWMP Recommendations and Community Report – 3<sup>rd</sup> Quarter 2021

Your Watershed Team Leader, Jeff Jowett, serves as the point of contact between the communities and the District

# Questions



# *Stormwater Inspection & Maintenance (SWIM)*

- Inspection Program
- Maintenance Program
- Culverted Stream Inspections
- Labor Day Storm Event

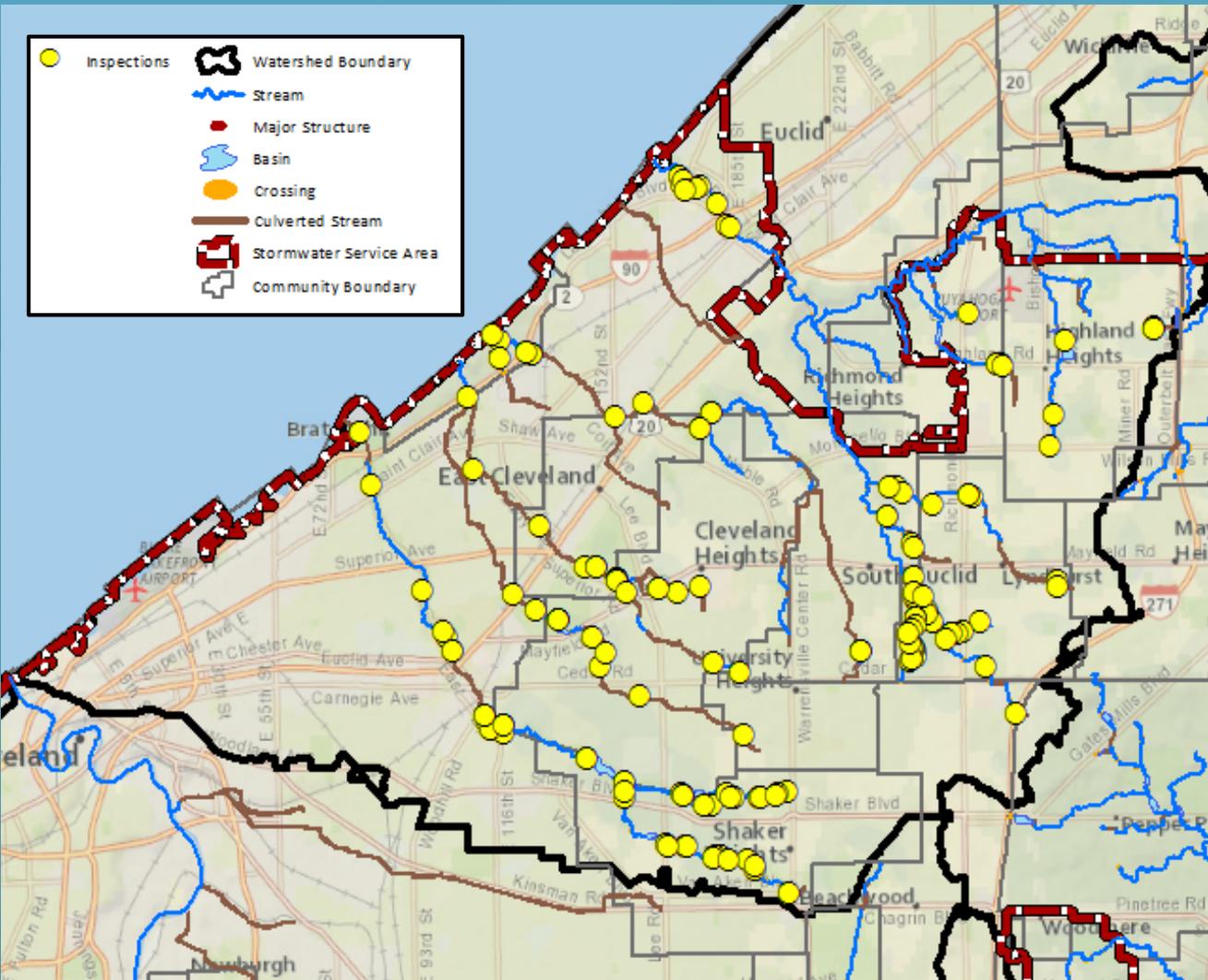
# SWIM

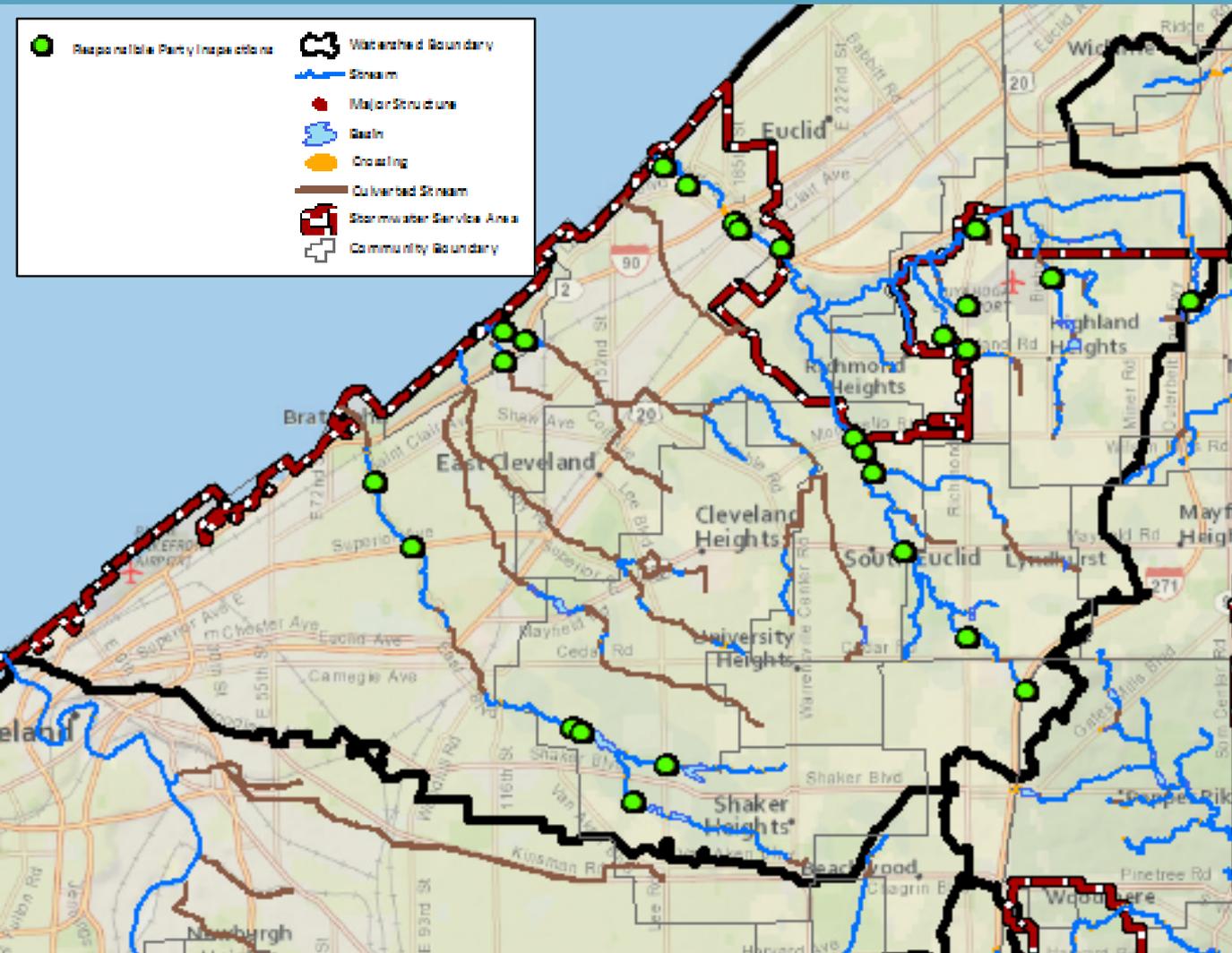
## 2020 Inspection Program



# Lake Erie Tributaries Watershed Inspections

**2020 Completed Inspections**  
Lake Erie Tributaries: 185





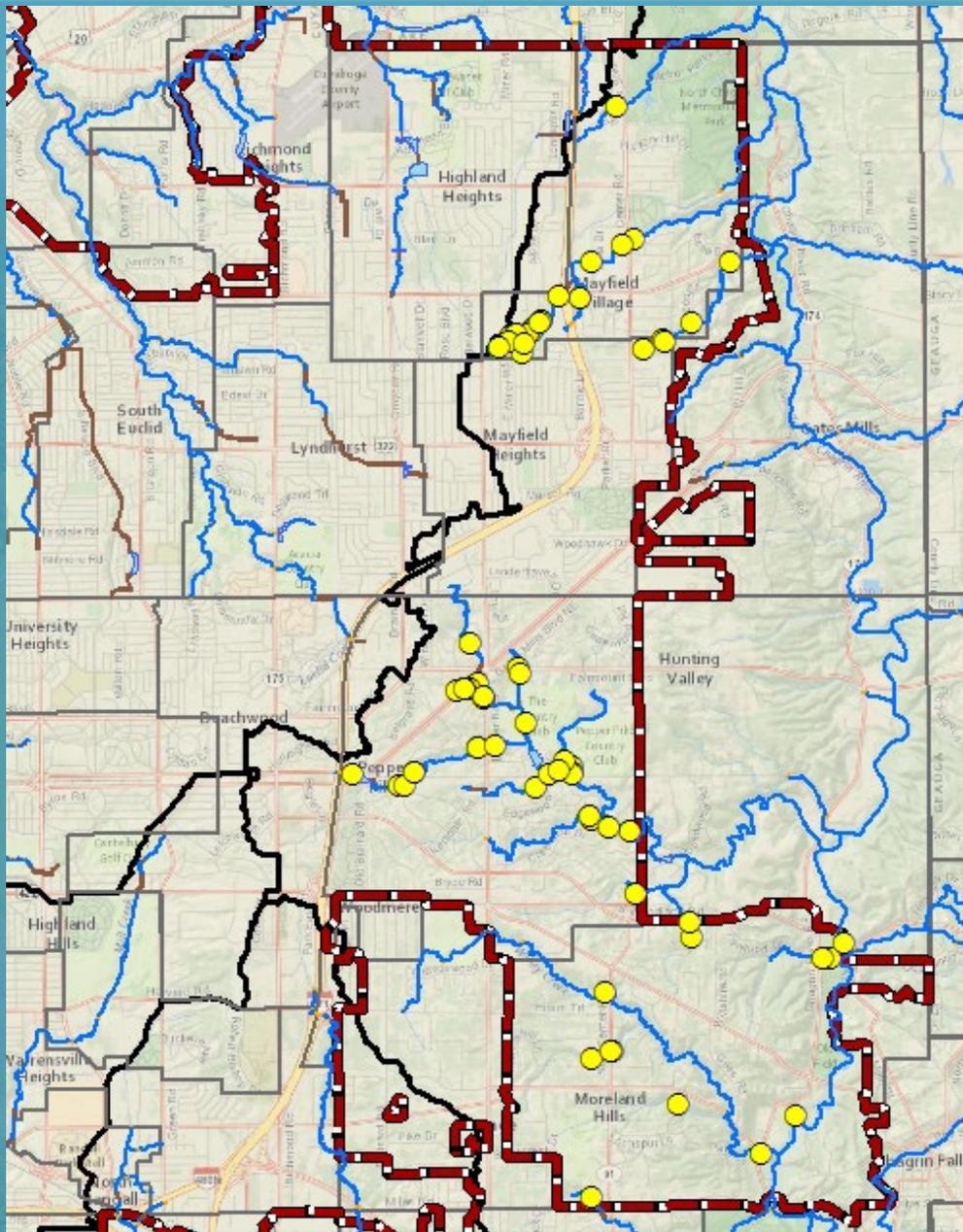
# Lake Erie Tributaries Watershed

## Responsible Party Benchmark Inspections

27 responsible party benchmark inspections in Lake Erie Tributaries Watershed

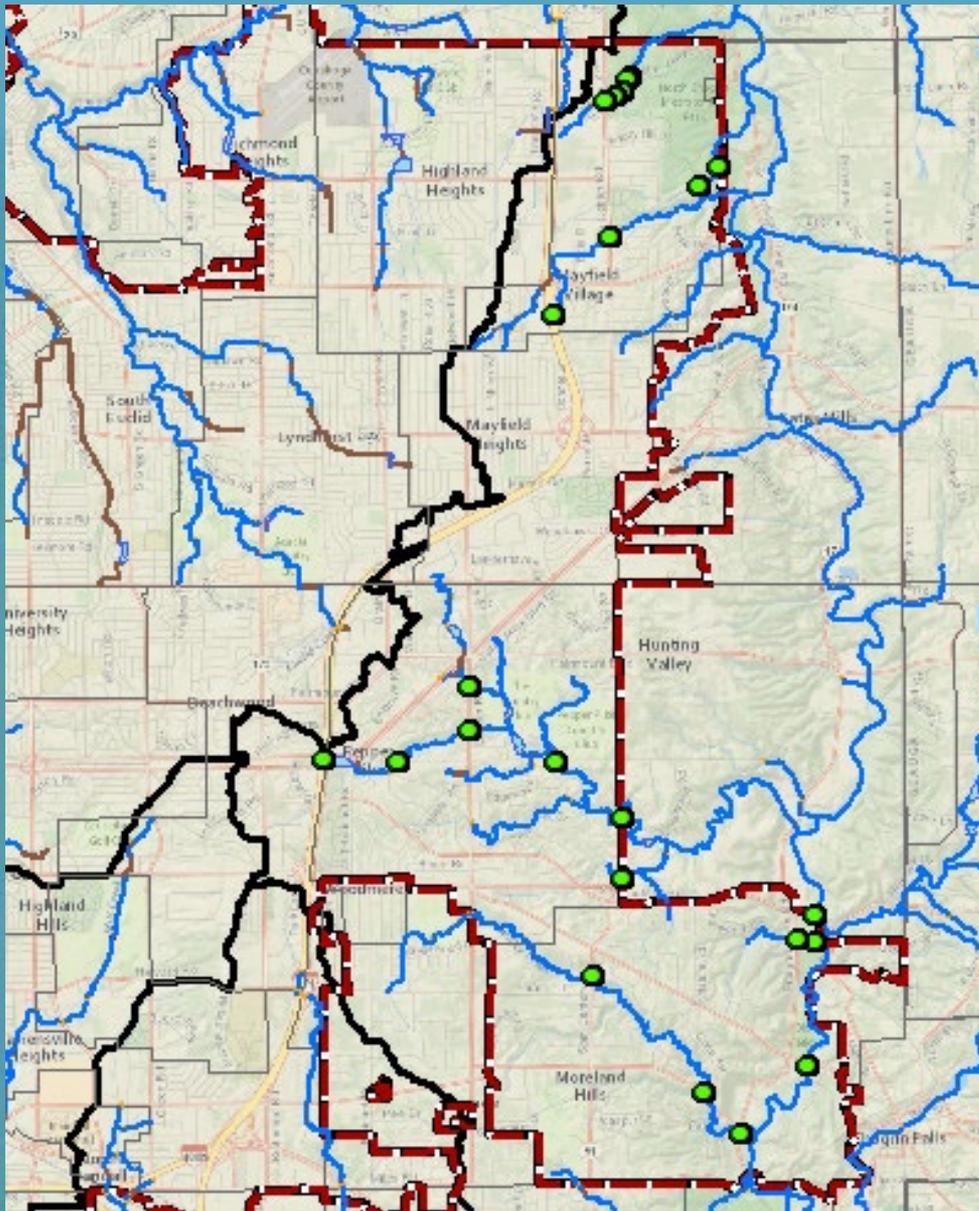
# Chagrin River Watershed Inspections

**2020 Completed Inspections**  
Chagrin River Watershed: 78



# Chagrin River Watershed Responsible Party Benchmark Inspections

23 responsible party benchmark inspections in Chagrin River Watershed



# SWIM

## Inspection – Customer Request

PC00146  
Pepper Luce Creek  
Pepper Pike  
75 CY Removed



Northeast Ohio  
Regional Sewer District



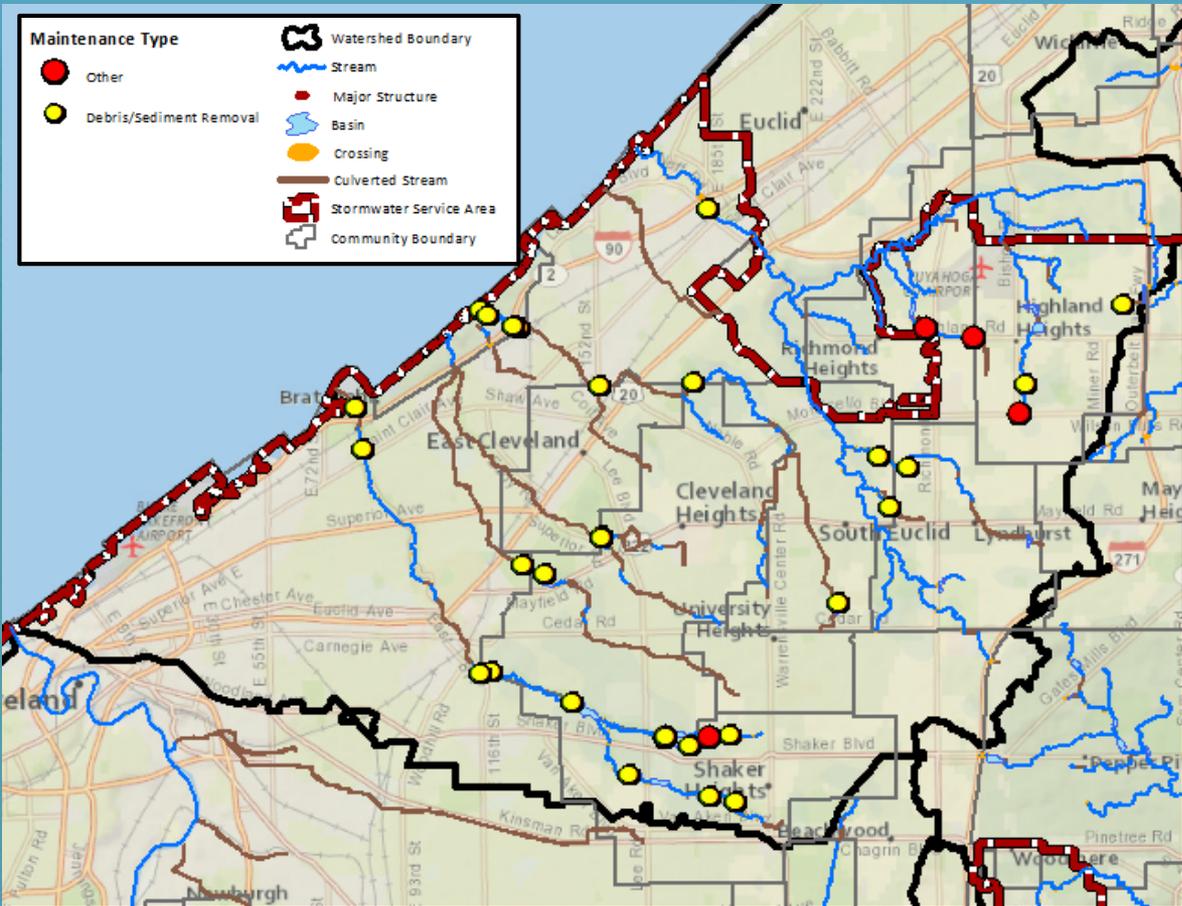
@neorsd

# SWIM

## 2020 Maintenance Program



# Lake Erie Tributaries Watershed Maintenance



## 2020 Maintenance Tasks

Project Type	Projects (Count)	Debris Removed (CY)	Sediment Removed (CY)
Sediment & Debris	36	878	70
Other	6		
<b>Total</b>	<b>42</b>	<b>878</b>	<b>70</b>

### 6 "Other" Projects are:

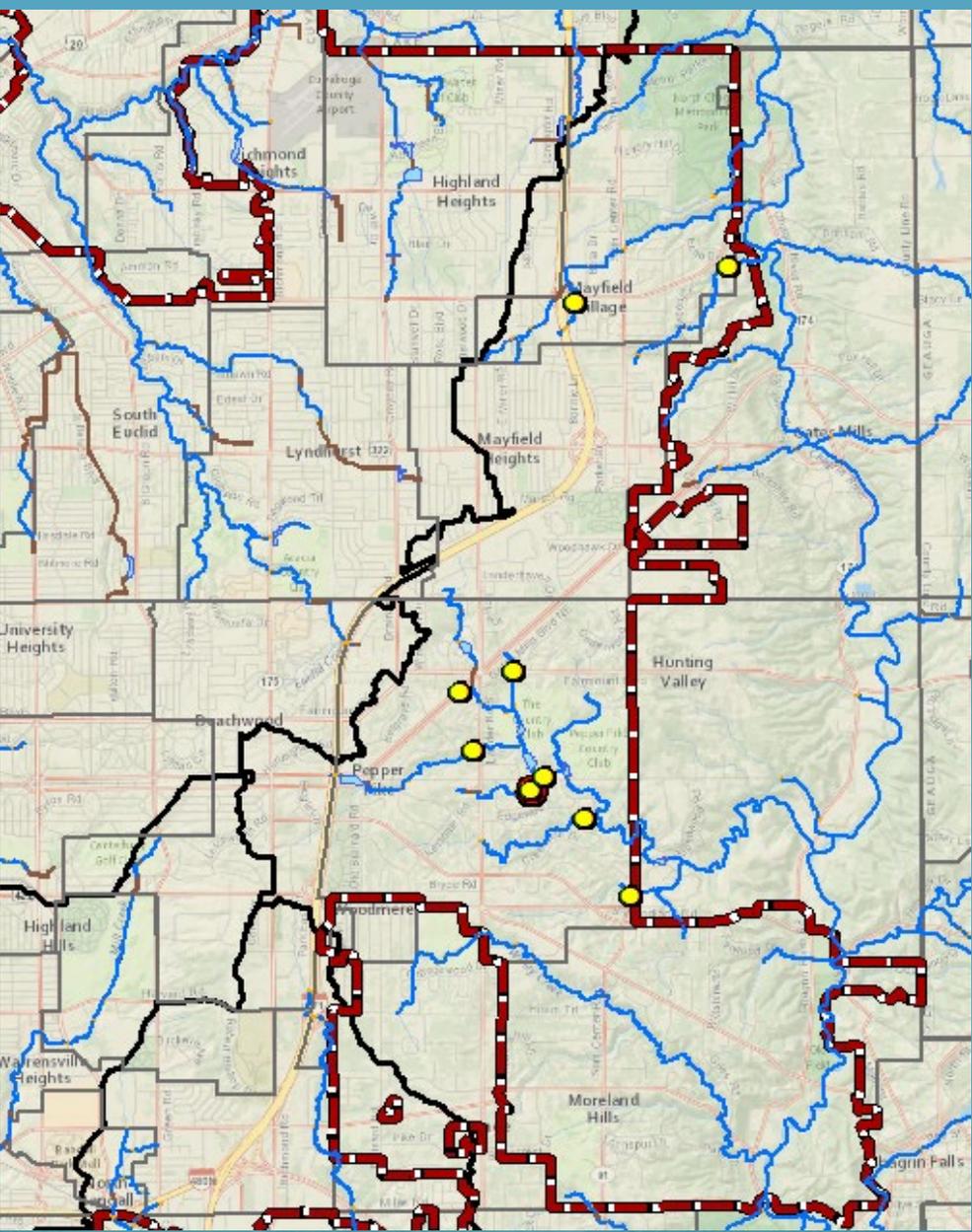
- 3 streambank stabilization projects (EE00216, EE00350, EE00194)
- Headwall repair at DB00062
- Tree removal prior to small scale project EE00216
- Boom installation at DB00056\_DEB01

# Chagrin River Watershed Maintenance

## 2020 Maintenance Tasks

Project Type	Projects (Count)	Debris Removed (CY)	Sediment Removed (CY)
Sediment & Debris	10	225	120
Other	1		
<b>Total</b>	<b>11</b>	<b>225</b>	<b>120</b>

1 "Other" Project is streambank stabilization at PC00120 to address scour at culvert outlet.



**Maintenance Type**

- Other
- Debris/Sediment Removal
- Watershed Boundary
- Stream
- Major Structure
- Basin
- Crossing
- Culverted Stream
- Stormwater Service Area
- Community Boundary

# SWIM

## 2020 Maintenance vs 2019 Maintenance

**2019**

- 202 Projects
- 3,746 Cu. Yds. Debris
- 7,255 Cu. Yds. Sediment

**2020**

- 214 Projects
- 3,562 Cu. Yds. Debris
- 5,856 Cu. Yds. Sediment

# SWIM Maintenance Task: Doan Brook

DB00034 Bemba Dam Inlet  
Doan Brook  
Cleveland  
40 CY Removed



# SWIM Maintenance Task: Nine Mile Creek

NM00050  
Bratenahl  
35 CY Removed



# Small Scale Maintenance Project: Euclid Creek East

EE00216  
Richmond Heights



# Small Scale Maintenance Project : Small Tribs to the Chagrin River



CT00104  
Mayfield Heights

# SWIM

## Culverted Stream Inspection Update



# SWIM

## Culverted Stream Inspection Update

- Reviewed SWMP CCTV and PACP inspection reports
- Comparing SWIM findings to SWMP to verify maintenance recommendations
- To date have completed 68 follow up inspections out of 113 service area wide

# SWIM

## Culverted Stream Inspection Update

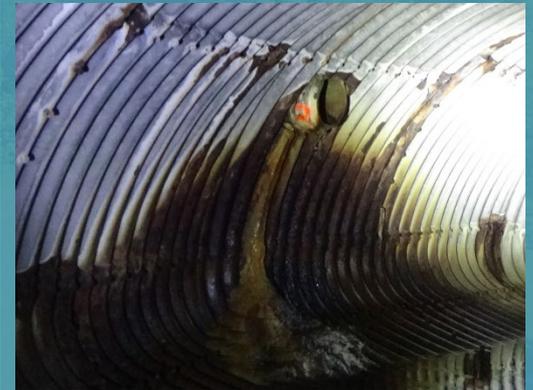
MC00058  
Mill Creek  
Garfield Heights  
SWMP Recommendation:  
Rehab or Replacement (TBD)



# SWIM

## Culverted Stream Inspection Update

MCo0056  
Mill Creek  
Garfield Heights  
SWMP Recommendation:  
Rehab or Replacement (TBD)



# SWIM

## Labor Day Storm Event



Big Creek / Maplegrove Ave / North Royalton

# Urgent Storm Response

## September 7<sup>th</sup> – *Summary of Rainfall*

- **0.83 – 4.55 inches** of total rainfall over **7-hour period** (6-hour Recurrence Interval: <1-YR to <200-YR; Average: 25-YR)
- **0.76 – 1.67 inches** of total rainfall over peak 1-hour period (1-hour Recurrence Interval: <1-YR to <10-YR; Average: 2-YR)
- **0.32 – 0.81 inches** of total rainfall over peak 15-minute (15-min Recurrence Interval: <1-YR to <5-YR; Average: < 1-YR)

# Urgent Storm Response

## September 7<sup>th</sup> – USGS Stream Gauge Data

### Major Flood Stage:

- Big Creek @ Cleveland,

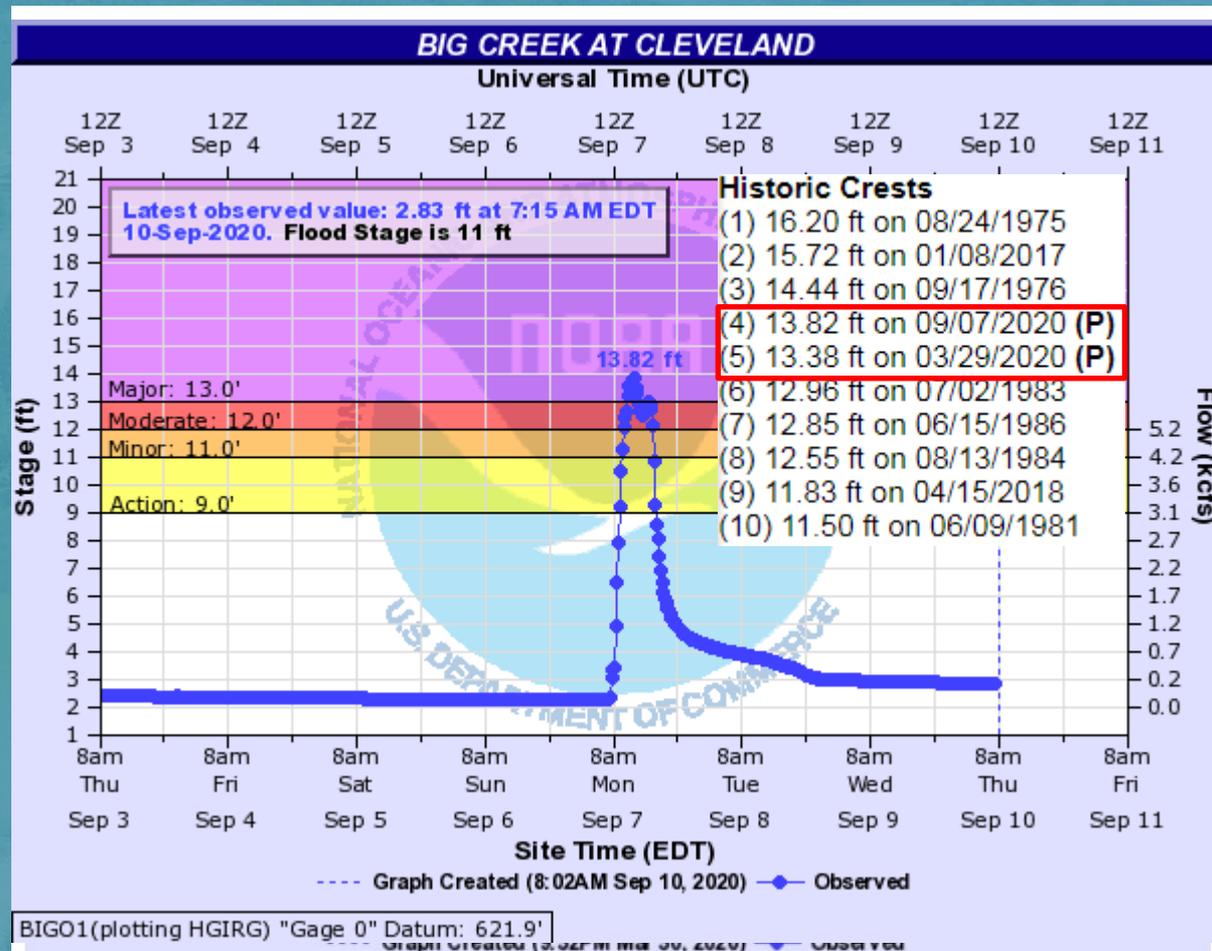
### Moderate Flood Stage:

- Cuyahoga River @ Independence
- Mill Creek @ Garfield Parkway

### Minor Flood Stage:

- None

9/7/20 was the fourth highest recorded event. September, May, and March 2020 events all in the top 10 highest on record.



# SWIM

## Labor Day Storm Event



Big Creek at Jennings Road

# SWIM

## Labor Day Storm Event



Broadway Ave. Garfield Heights

# SWIM

## Labor Day Storm Event - Summary

- Inspection staff completed 90 observation inspections
- Maintenance staff responded to 29 maintenance work orders
  - 812 Cu. Yds. of debris removed
  - ~\$86,000
- SWIM received 18 Customer Service calls

# SWIM

## March 30<sup>th</sup> – September 7<sup>th</sup> Comparison

**March 30**

**September 7**

71

Inspections

90

47

Maintenance Projects

26

1,097

Cu. Yds. Removed

812



Cuyahoga County  
Together We Thrive

# Office of Emergency Management

- Preparedness Presentation
- Cuyahoga County Public Library - Independence, Ohio
- May 9, 2019

# Discussion Points

- **Overview of Cuyahoga County Office of Emergency Management**
- **Why Prepare?**
- **What You Can Do**



*Tornado damage at Ursuline College, 2013*



# Perception v. Reality



<https://youtu.be/3jXlhPGs0T8>





# Cuyahoga County *Demographics*



**>60** Law Enforcement Agencies



**51** Fire Response Agencies



**25** Public Safety Answering Points (PSAPs)



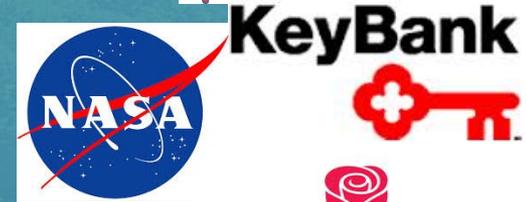
**31** School Districts



# Cuyahoga County *Demographics*

Cuyahoga County is home to...

- The corporate headquarters of many large companies.
- Three airports: Cleveland Hopkins International Airport (CLE), Burke Lakefront Airport (BKL), and the Cuyahoga County Airport
- Three top tier hospital systems: the Cleveland Clinic (the area's largest employer), University Hospitals, and The MetroHealth System.
- NASA also maintains a facility in the County, *the Glenn Research Center*.





# Cuyahoga County *Demographics*

- Cuyahoga County has **billions of dollars in infrastructure**, including high rise buildings, professional sports venues, several universities, and public buildings.
- Both **freight and passenger rail operations** occur within Cuyahoga County.
- The **Port of Cleveland** is situated in the County along Lake Erie, on the east side of the Cuyahoga River. The Port exports locally-made products to U.S. and foreign markets and also receives a variety of raw materials for area manufactures.
- Cuyahoga County has a robust **transportation infrastructure**: 7 interstate highways, 5 U.S. routes, over 1,200 bridges, and more than 4,300 miles of municipal roads in the County.





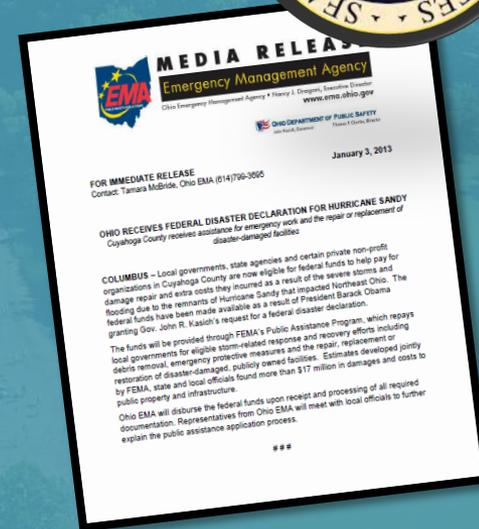
# Cuyahoga County *Threats & Hazards*

Cuyahoga County and its communities are at risk of a range of natural, human-caused, and technological hazards... *including freezing lighthouses and flammable rivers.*



# Cuyahoga County *Threats & Hazards*

<u>Type of Incident</u>	<u>Presidential Declaration Date</u>
• Heavy rains and flooding	March 24, 1964
• Tornado	April 14, 1965
• Heavy rains and flooding	July 15, 1969
• Storms and flooding	July, 1972
• Storms and flooding	April 27, 1973
• Floods	September 11, 1975
• Severe Blizzard	January 26, 1978
• Heavy rains and flooding	July 21, 2003
• Regional Power Outage	August 14-15, 2003
• Heavy rain and flooding	July, 2006
• <b>Destructive winds</b>	<b>January 3, 2013</b>



# Cuyahoga County *Threats & Hazards*

Although the lighthouse has since thawed and the water quality of the Cuyahoga River has been significantly improved; emergencies continue to occur in Cuyahoga County.

The **Cuyahoga County Office of Emergency Management** recognizes the need to continually enhance planning and coordination with the **Whole Community**, especially it's 59 political subdivisions.



# What We Do

CCOEM works closely with public safety forces, government agencies, non-governmental organizations, businesses, and the public to enhance **preparedness, planning, and effective response** to natural hazards, man-made catastrophes, and emergencies.



**WHEN A DISASTER OR EMERGENCY OCCURS, MOST OF WHAT WE DO, WE'VE ALREADY DONE.**

# Organizational Structure

## OPERATIONS

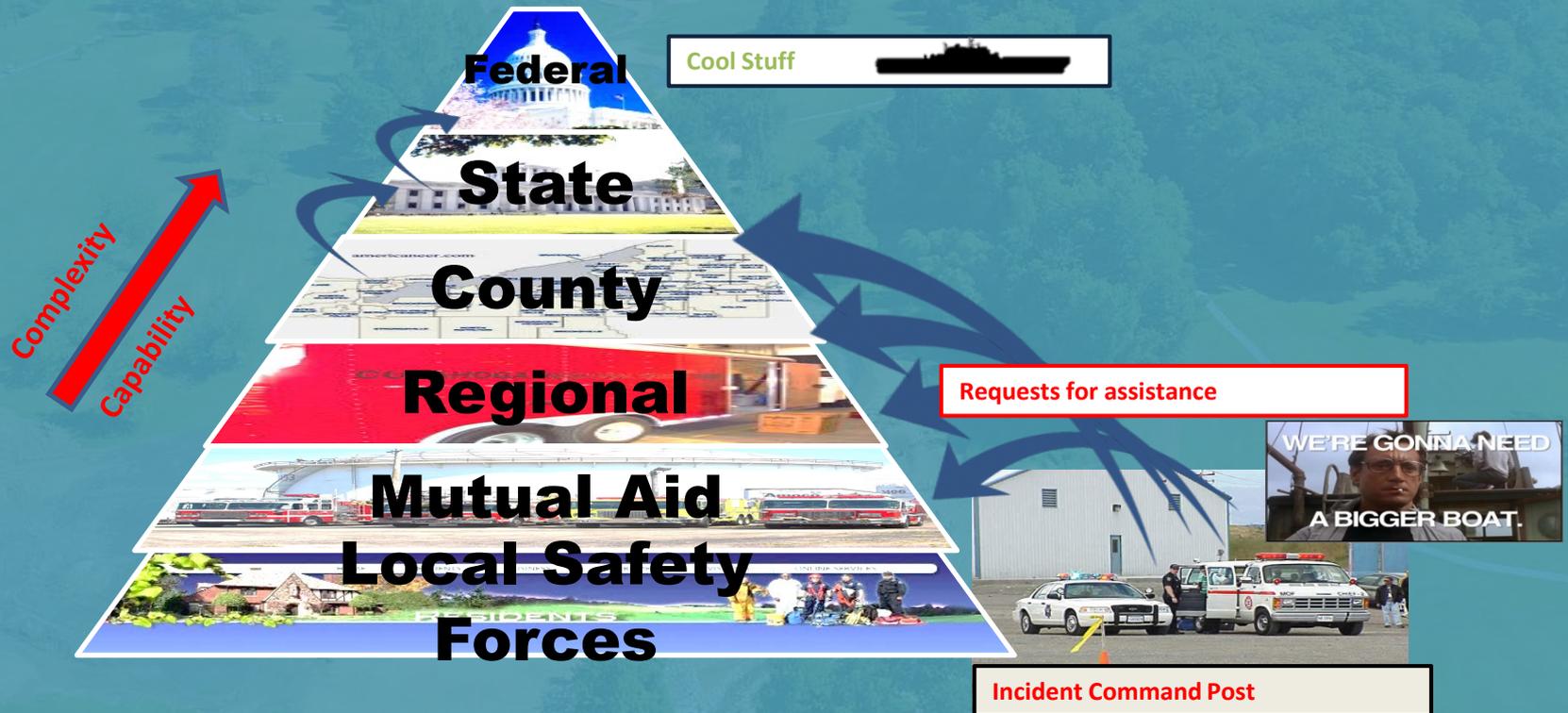
- Emergency Operations Center (EOC)
- Damage Assessments
- LEPC Support
- All-Hazards Exercises
- MYTEP
- Office Administrative support

## PLANNING

- County Response and Recovery Plans
- Public Safety Trainings
- Outreach
- Office newsletters, magazine, social media
- Technical assistance and guidance for community and partner agencies



# National Incident Management System (NIMS)



# Thank you. Questions?

Kevin Friis, Planning Manager  
Cuyahoga County Office of  
Emergency Management  
9300 Quincy Ave., 2nd floor  
Cleveland, OH 44106

O: (216) 348-4222 C: (216) 543-4690  
F: (216) 443-5253

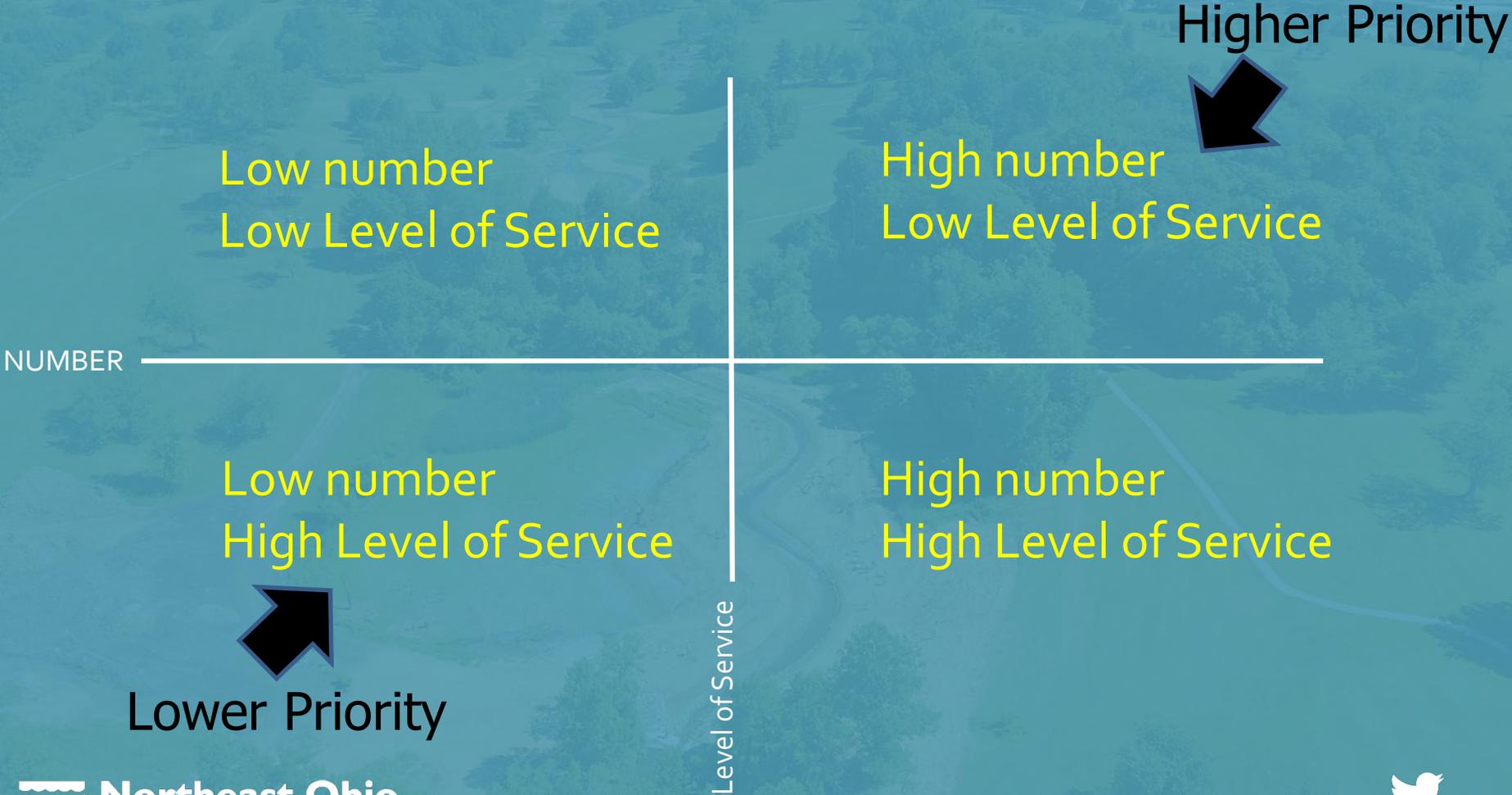
[KFRIIS@CUYAHOGACOUNTY.US](mailto:KFRIIS@CUYAHOGACOUNTY.US)



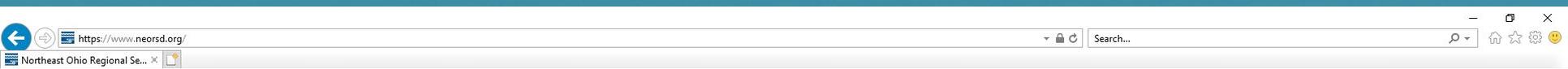
# Stormwater Design and Construction Program



# Project Prioritization



# Stormwater Storymap



NOTICE: Southerly Electrical Infrastructure I

Doing business with us ▸

Industrial Customers ▸

Engineering & Construction

Plan Review

Procurement

Register as a New Vendor /  
iSupplier Login

Bids and Proposals: Active,  
Closed, and Awarded

Business Opportunity Program:  
Get certified

Event Calendar

GovDeals Surplus Items

Capital Improvement Plan

Stormwater Construction  
Program

Opportunity Corridor on-site  
stormwater management  
strategy report

*qualify for a lower  
? We can help.*

*ograms*

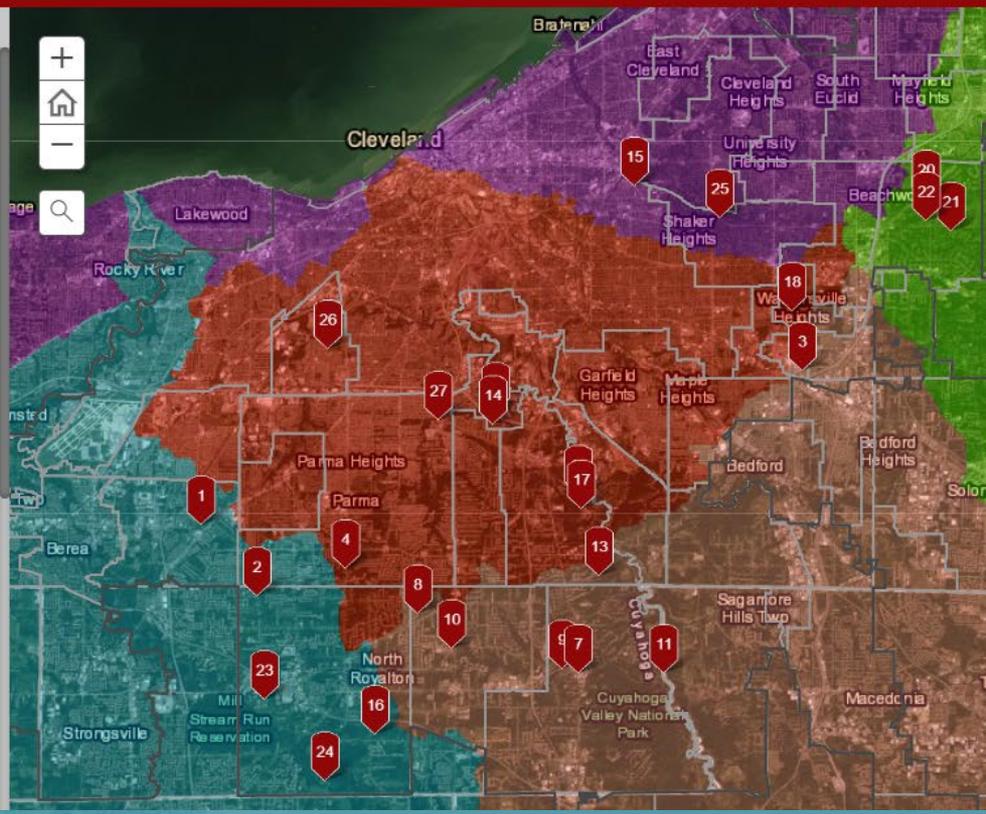
# NEORSD Stormwater Design & Construction Program

Navigate using the tabs below and by clicking the images to view more details on our completed, current design, and current construction stormwater projects. Zoom in to view satellite imagery and Regional Stormwater culverts, conduits, etc). Use the "Zoom To" drop down menu to locate your watershed.

- All Projects
- Design**
- Construction
- Complete



 <b>1</b> Abram Creek / Big Creek Parkway Detention...	 <b>2</b> Baldwin Creek Stabilization Near Abb...	 <b>3</b> Bear Creek Culvert Removal	 <b>4</b> Big Creek Stream Stabilization Upstream...
 <b>5</b> Brandywine Creek - Barlow Community...	 <b>6</b> Brandywine Creek - Owen Brown Bridge...	 <b>7</b> Chippewa Creek Bank Stabilization at Route 21	 <b>8</b> Chippewa Creek Flood Reduction Near Echo...
 <b>9</b> Chippewa Creek Stabilization at...	 <b>10</b> Chippewa Creek Stream Stabilization Near...	 <b>11</b> Cuyahoga River Bank Stabilization Brecksville	 <b>12</b> Cuyahoga River Bank Stabilization at Railway...



# Design





*City of Brooklyn - Stickney Creek Stream Restoration- August 28*



*City of Brooklyn - Stickney Creek Stream Restoration- August 28*

# Pepper Luce Creek at Lander Road City of Pepper Pike

## Pepper Luce Creek Streambank Stabilization

- Arrest streambank erosion
- Protect utility assets
- Create & expand floodplain

Professional Service Firm: Jacobs  
(GES Contract Task Order)

Design Phase: Bid Opening – October 6, 2020

Request to Enter into Construction Contract:  
4<sup>th</sup> Quarter 2020

Estimated Construction Cost: \$760,000

Failed gabion baskets &  
streambank erosion



# City of North Royalton - Ridge Road Repair and Rocky River Tributary Stabilization

**Problem:** Bank erosion adjacent to Ridge Road

**Project benefit to RSS:**

- Reduces sediment deposition
- Creates a new stable stream channel

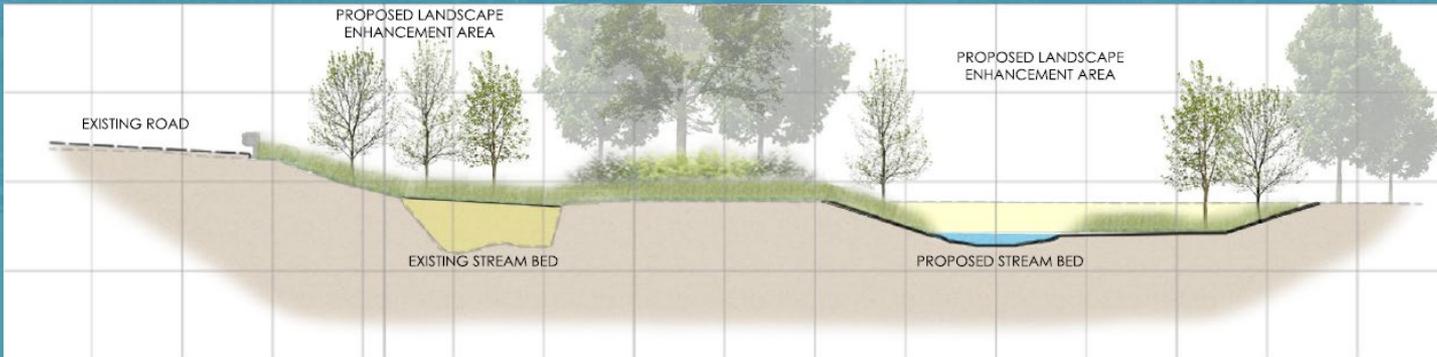
**Construction Award:**

October 15, 2020

**Cost:** \$438,471.10



# City of North Royalton - Ridge Road Repair and Rocky River Tributary Stabilization



Before



After

# Chippewa Creek near Broadview Road City of Broadview Heights

## Chippewa Creek Streambank Stabilization

- Arrest streambank erosion
- Protect local sanitary utility assets
- Relocate stream away from gabion basket retaining wall
- Create & expand floodplain

Professional Service Firm: GPD  
(GES Contract Task Order)

Design Phase: 90% Design

Request to Advertise for Bid: 1<sup>st</sup> Quarter 2021

Estimated Construction Cost: \$1,522,000



Threatened gabion basket retaining wall



# Big Creek Upper Ridgewood Basin Modifications

## City of Parma

### RSS Flooding in City of Parma along Big Creek

- Recommendation from SWMP
- Expand Basin, provide storage
- Reduce flooding downstream

Professional Service Firm: Stantec  
(GES Contract Task Order)

Design Phase: Scope Development

Coordination: City of Parma

Design: 2021

Construction: 2022

Estimated Construction Cost: \$1,372,000

Big Creek Main Branch, Problem Area BC-PA-07, Zoom 2 RSS Inundation Overview



Upper Ridgewood Basin

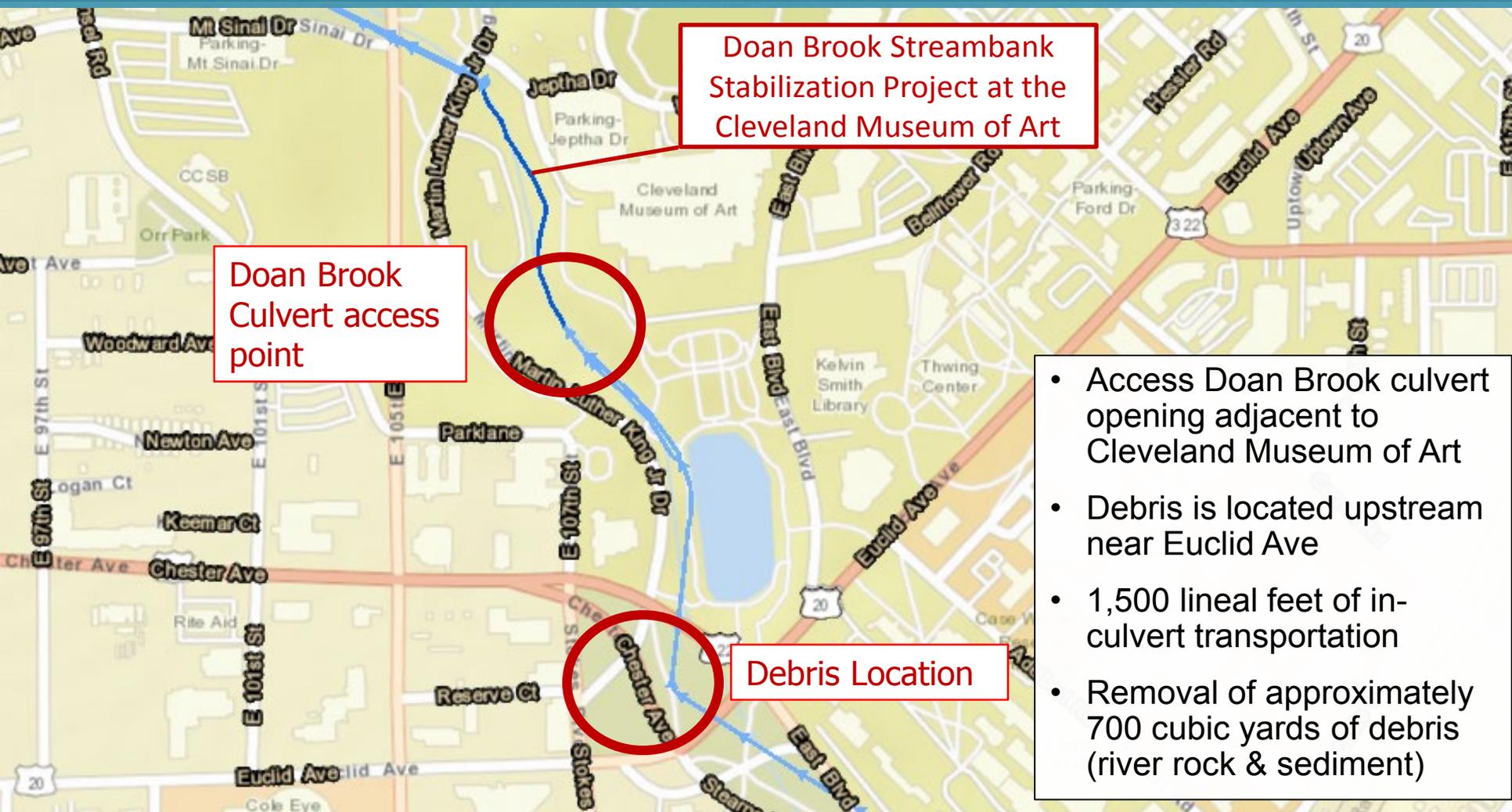
# West Creek Bank Stabilization by Sandpiper Drive – City of Parma

*Construction in progress*



# Doan Brook Culvert Debris Removal

*Debris blockage beneath Euclid Avenue (1,500 lineal feet from daylight)*



Doan Brook Streambank  
Stabilization Project at the  
Cleveland Museum of Art

Doan Brook  
Culvert access  
point

Debris Location

- Access Doan Brook culvert opening adjacent to Cleveland Museum of Art
- Debris is located upstream near Euclid Ave
- 1,500 lineal feet of in-culvert transportation
- Removal of approximately 700 cubic yards of debris (river rock & sediment)

# Doan Brook Culvert Debris Removal

*Remove approximately 700 cubic yards of river rock & sediment*



# Questions

## Pepper Creek Bank Stabilization – City of Pepper Pike



# Cost-Saving Programs

- *Crisis Assistance*
  - *Up to \$300 sewer credit*
  - *Experienced financial hardship within last 6 months (loss of job, loss of income, death in family, medical expenses, etc.)*

# Cost-saving Programs

- *Homestead*
  - 65 and older *or* permanently disabled
  - Household income must not exceed \$33,500
- *Affordability*
  - Annual income is at or below 200% of the poverty level

*Customer Service: (216) 881-8247*

# WTL Contact

**Jeff Jowett**

216.881.6600 Ext. 6881

Cell: 216.630.1433

[jowettj@neorsd.org](mailto:jowettj@neorsd.org)



***Stormwater Program: Community Resources***

<http://www.neorsd.org/communitystormwaterresources.php>