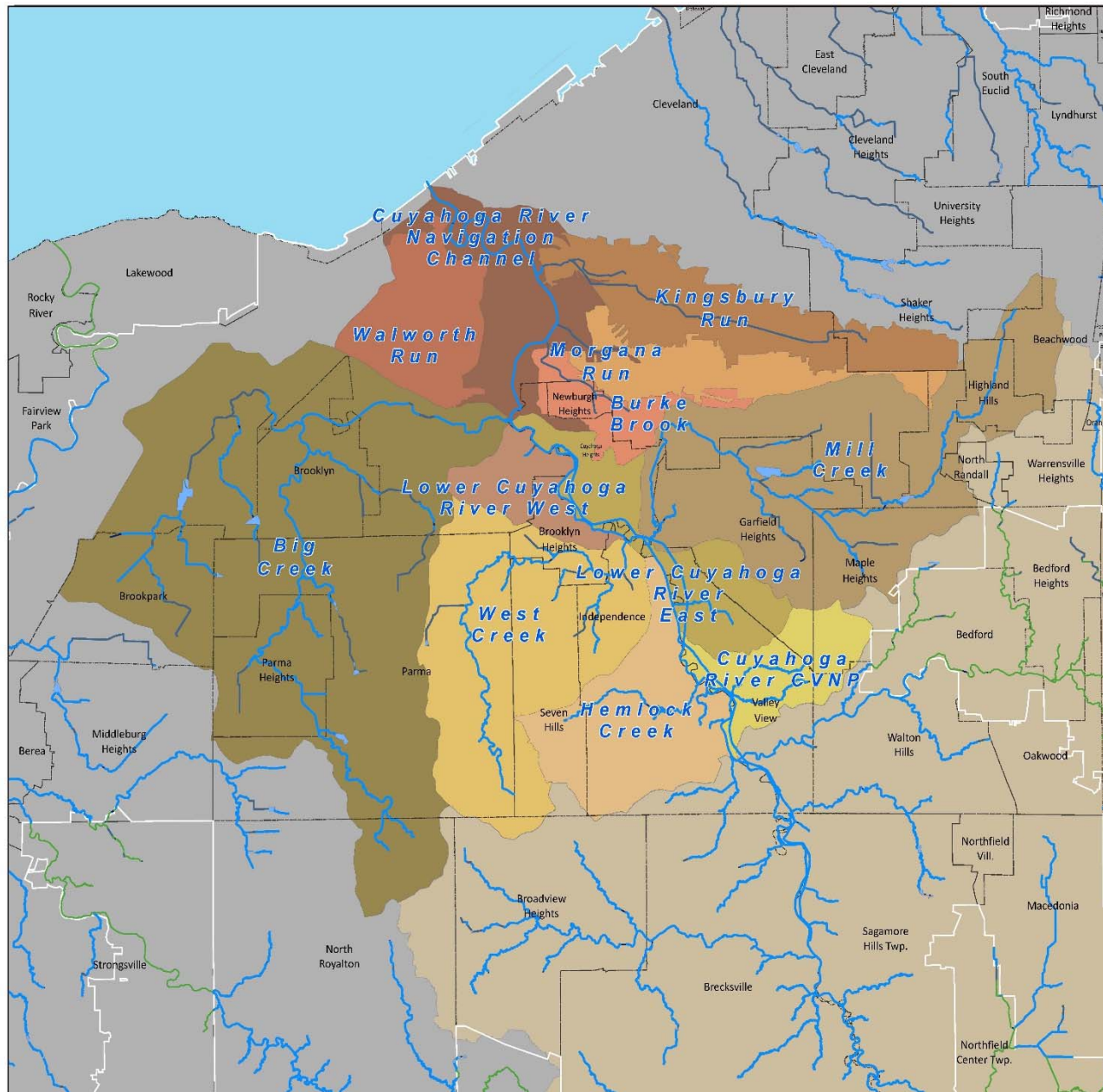


Cuyahoga River - North



- Regional Stormwater System in NEORS D Service Area
- Regional Stormwater System not in NEORS D Service Area
- Service Area
- Community
- District Culverted Stream

Northeast Ohio Regional Sewer District

Coordinate System : Ohio State Plane North
Datum: NAD 1983 , NAVD 1988
Projection: Lambert Conformal Conic
Sources: NEORS D GIS

Map Created: October 2016

1:50,524



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NORTHEAST OHIO REGIONAL SEWER DISTRICT



REGIONAL
STORMWATER
MANAGEMENT
PROGRAM

Regional Stormwater Management Program

Watershed Advisory Committee

Cuyahoga River North

October 12, 2016



Your Sewer District Keeping our Great Lake great.



Agenda

- Welcome
- Program Updates
- Community Cost-Share
- Stormwater Construction Plan
- Stormwater Master Plans
- Phase II Stormwater Services
- What's Next

Watershed Advisory Committees

- Meets March and October
- Members: Member Community, Public Agency with control of infrastructure in the watershed
- Interested Entities: Watershed Groups, Land Conservancies

Watershed Advisory Committees

- Mechanism to provide input on Programs:
 - Stormwater Master Plans
 - Stormwater Construction Plan
 - Inspection, Operation and Maintenance Activities
 - NPDES Phase II Assistance



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Agenda

- Welcome
- Program Updates
 - Stormwater Fee Billing and Credits
 - Stormwater Management Plan Review
 - Stormwater I&M
- Community Cost-Share
- Stormwater Construction Plan
- Stormwater Master Plans
- Phase II Stormwater Services
- What's Next

Stormwater Fee Billing

- 2nd round of stormwater bills started in October
- Monthly billing begins in January
 - Stormwater Only bills will remain quarterly

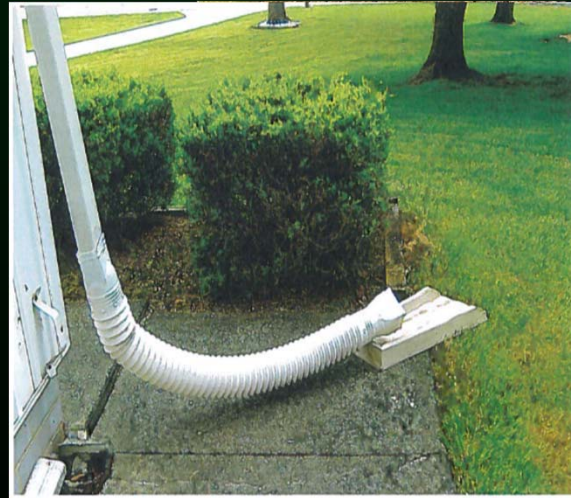
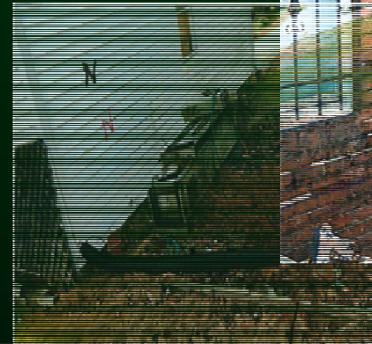


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Stormwater Fee Credits

- Stormwater Fee Credits
2013 to 10/5/2016
 - Approved: 1240
 - Pending Review: 210
 - Denied: 144
 - Incomplete: 35



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Stormwater Inspection & Maintenance Cuyahoga River North Update

Cuyahoga River North 2016 Inspections

Legend:

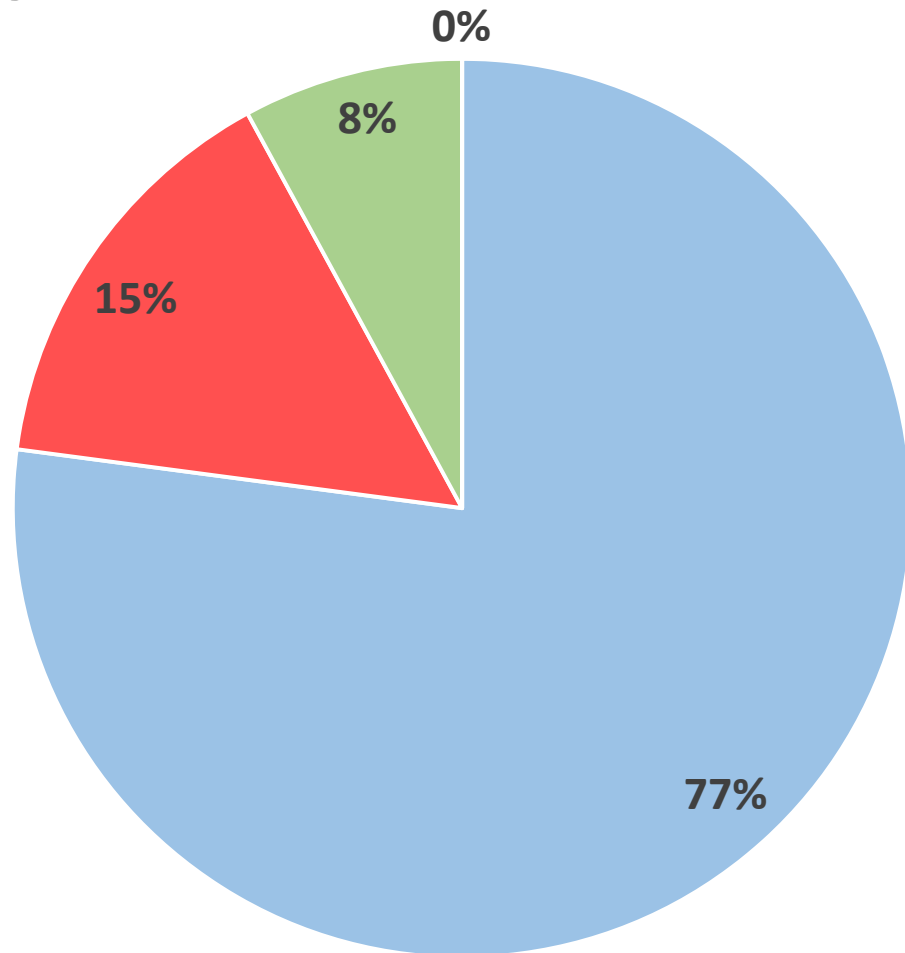
SE = Customer Call

PM = Planned Inspection

FO = Follow-up on a
Problem Asset

ER = Emergency
Response

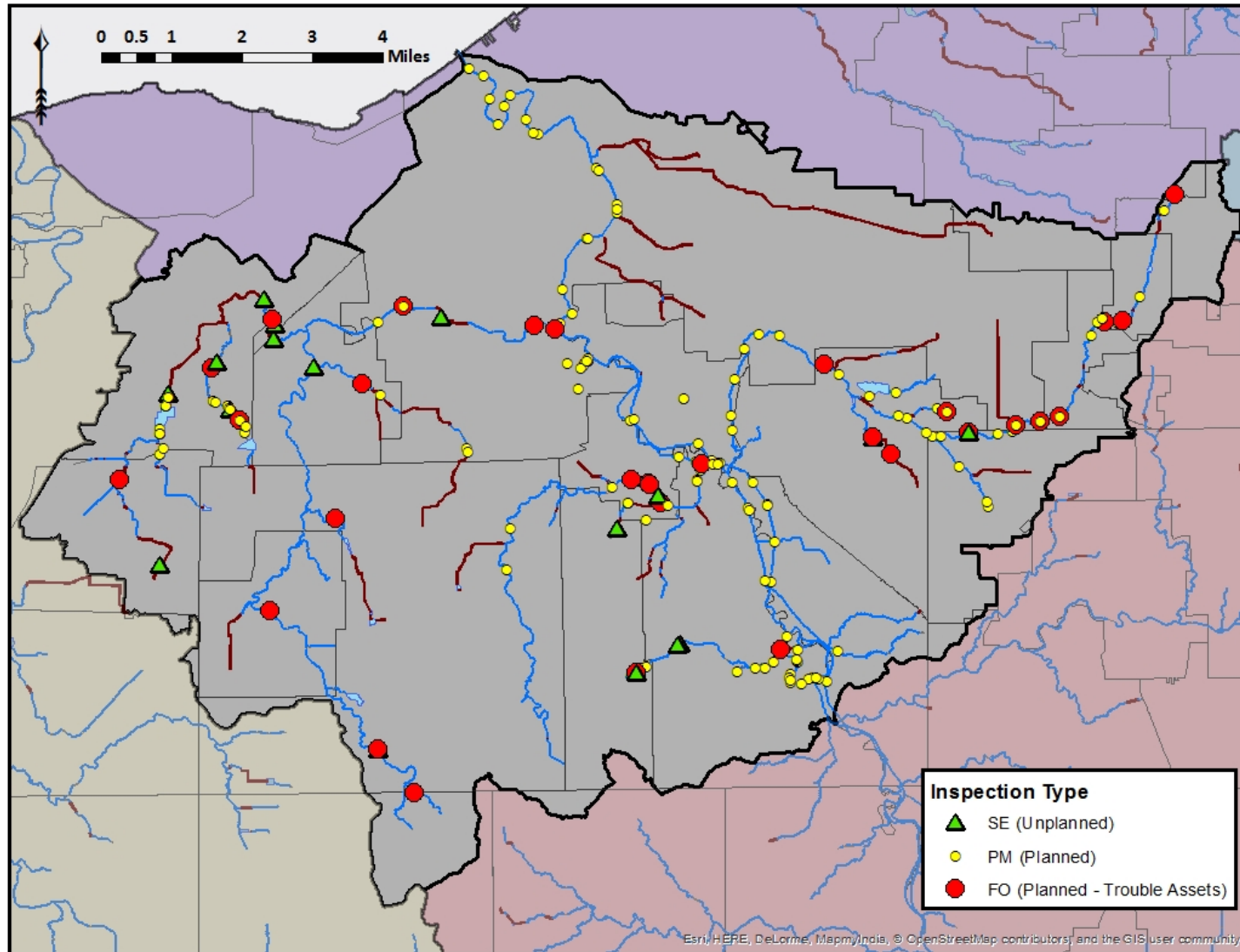
	CRN
PM	175
FO	34
SE	18
ER	0
	227



PM FO SE ER

Cuyahoga River North

2016 Inspections





Hemlock Creek

Asset ID: HC00051
(Independence)

- Structural Integrity: Common isolated structural issue at outfall entry points into culverts
- Recommendation: Monitoring



Chevy Branch

Asset ID: WB00442
(Cleveland)

- Structural Integrity:
Failed Retaining Wall
along RSS
- Recommendation
Further Analysis



Mill Creek

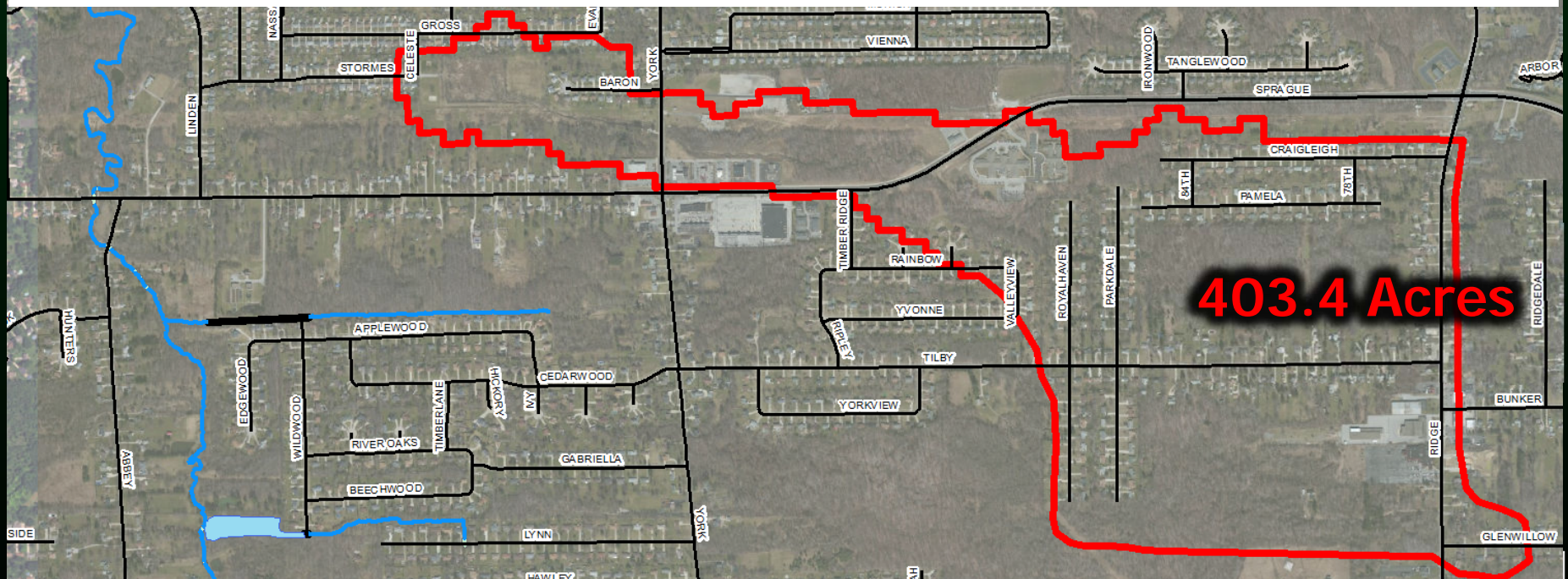
Asset ID: MC00137

(Highland Hills)

- **Structural Integrity:**
Utility Footer of the abutment has eroded and stream diverts around it during higher flows
- **Recommendation:**
Further Analysis

Regional Terminus Inquiry Process

1. Coordinate with Customer (e.g., background, available info)
2. Conduct Analysis (Desktop GIS Analysis and Field Visits)
3. Submit Findings and Finalize Regional or Local Declaration
4. Submit Summary Report to Customer

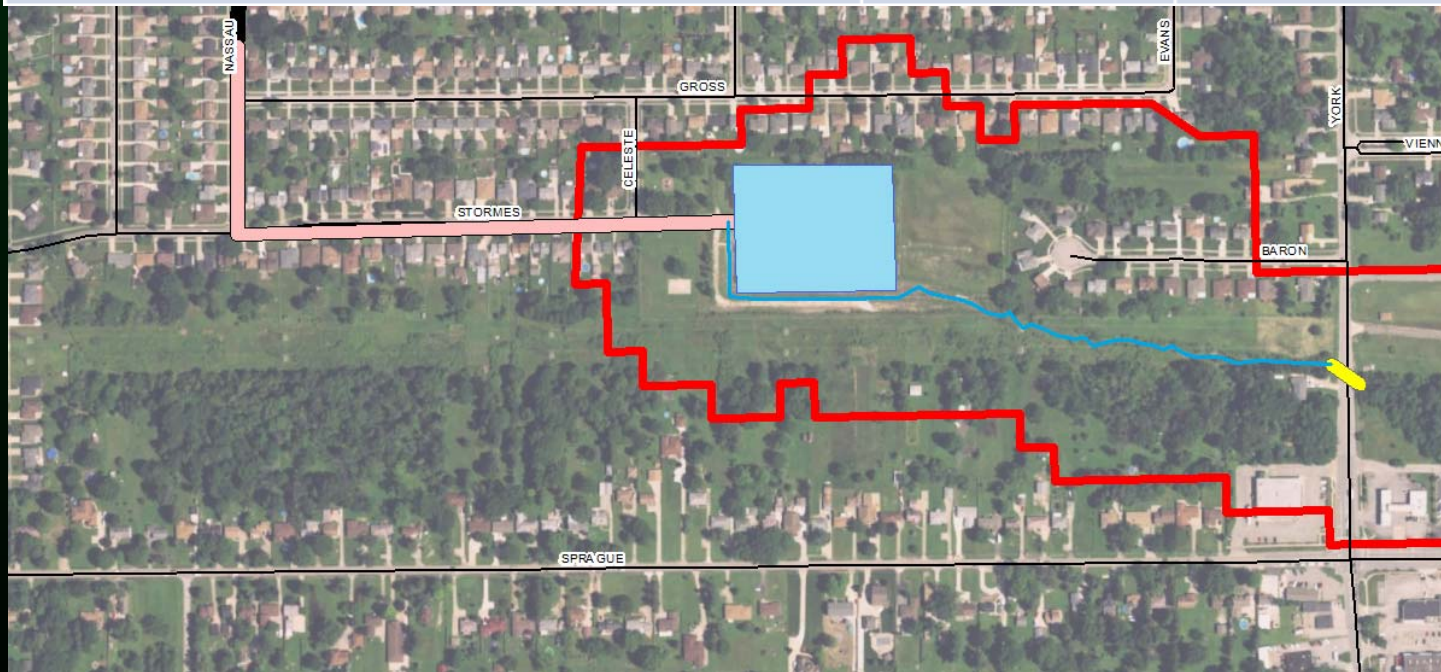


Example: Bonny Banks/Stormes Drive (Baldwin Creek – Parma)

Regional Terminus Point Inquiry

Bonny Banks/Stormes Drive in Parma

Asset Class Type	Number of Assets	Length in Miles
Stream	1	0.39
Crossing	1	0.02
Culverted Stream (Extension of Current Culverted Stream)	1	0.37
Basin	1	-
TOTAL	4	0.78

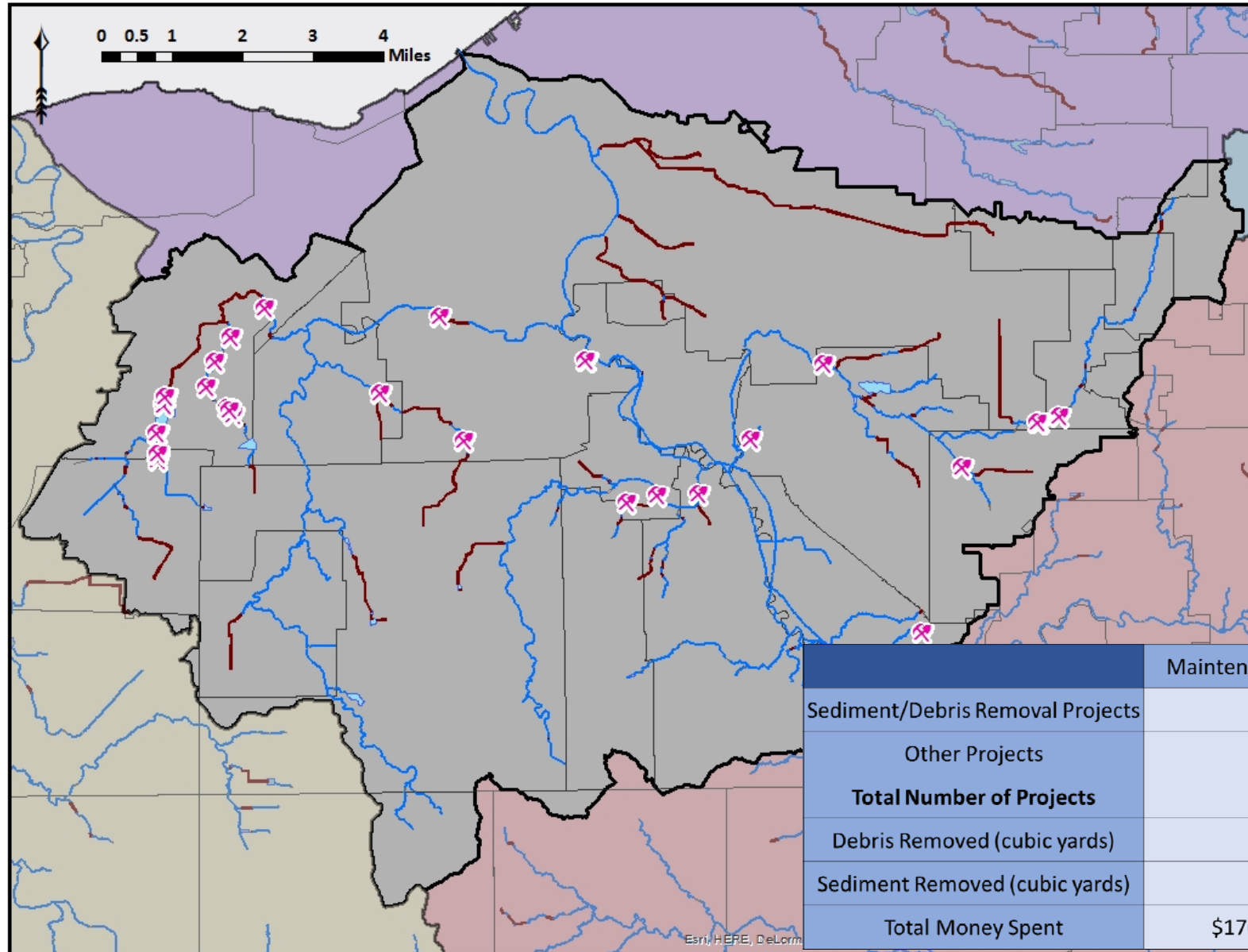


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Cuyahoga River North

2016 Maintenance Activities



Debris Maintenance: WB00079

Big Creek West Branch (Customer Call)



Before



After

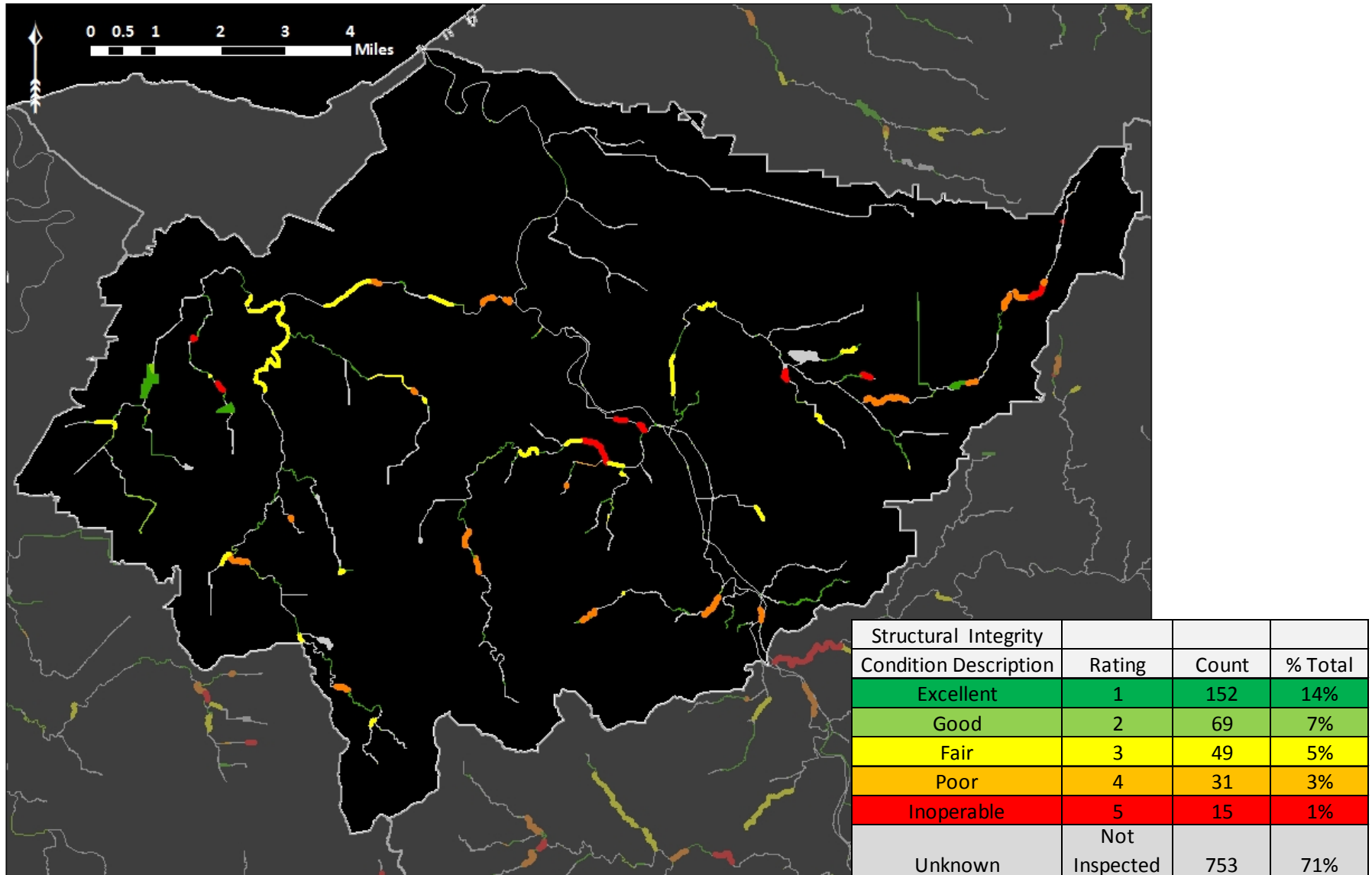
Debris Maintenance: SP00003

Spring Creek (Customer Call)



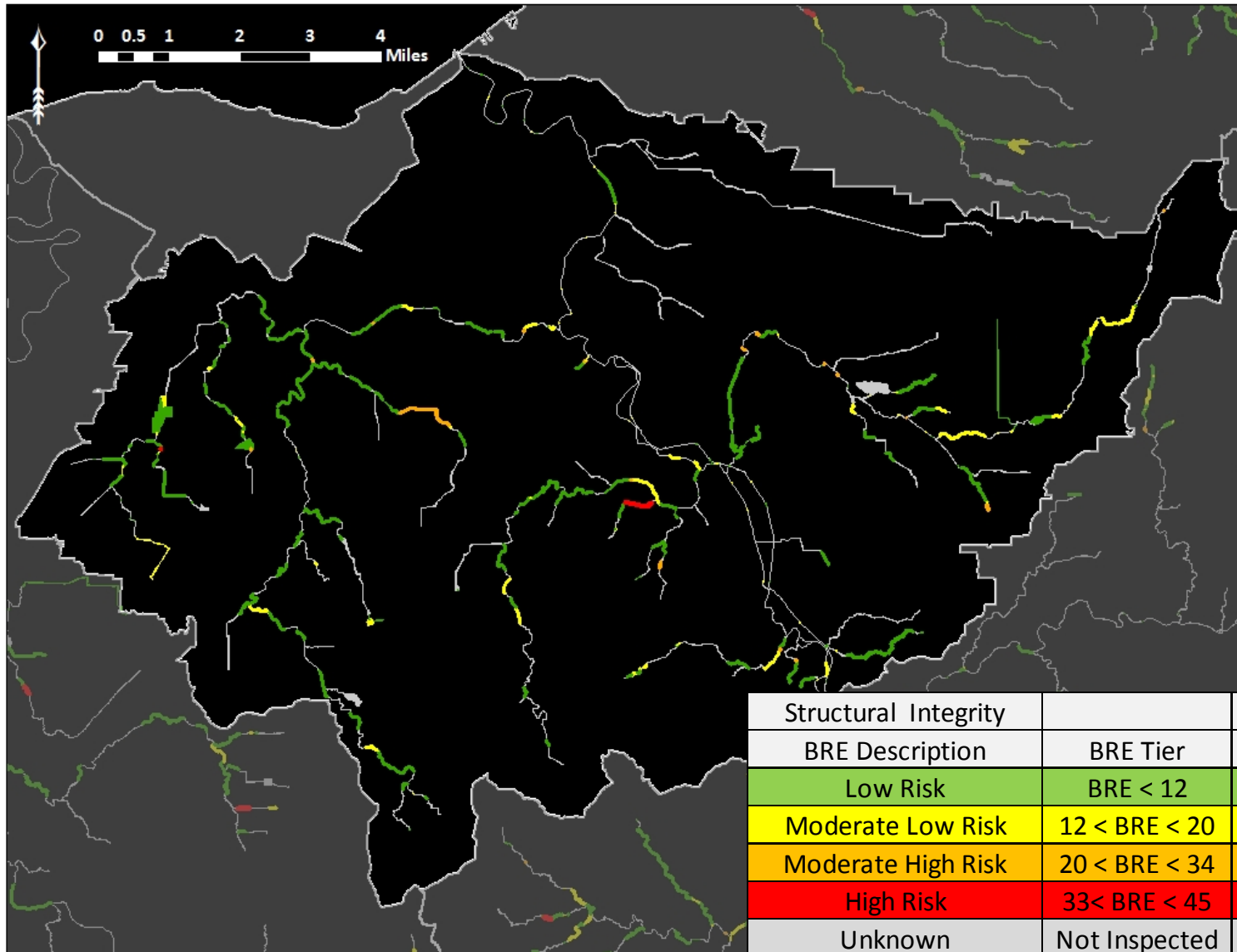
Cuyahoga River North

Structural Integrity Condition Ratings



Cuyahoga River North

Structural Integrity BRE Rankings



West Creek

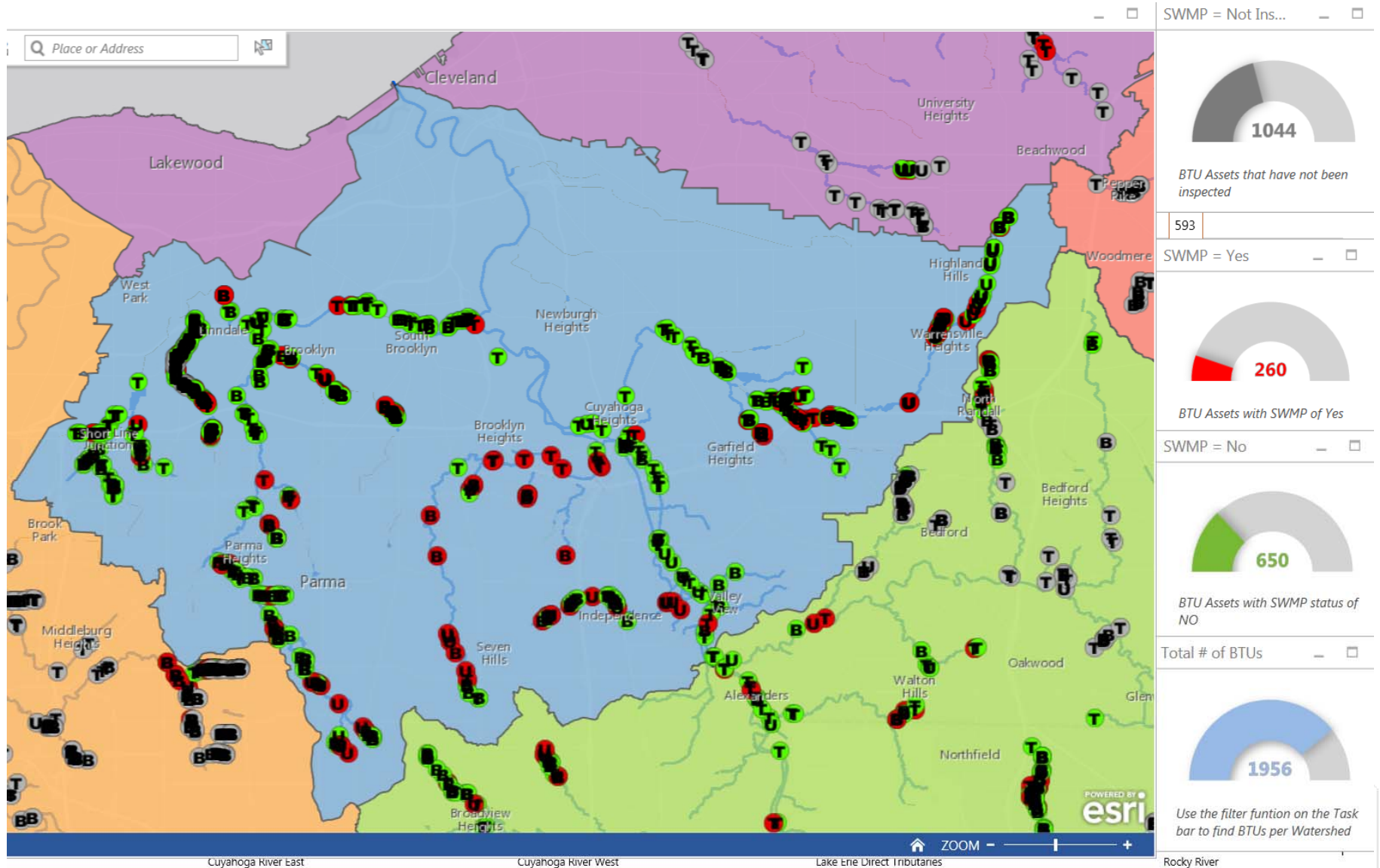
Asset ID: WC00049

Brooklyn Heights



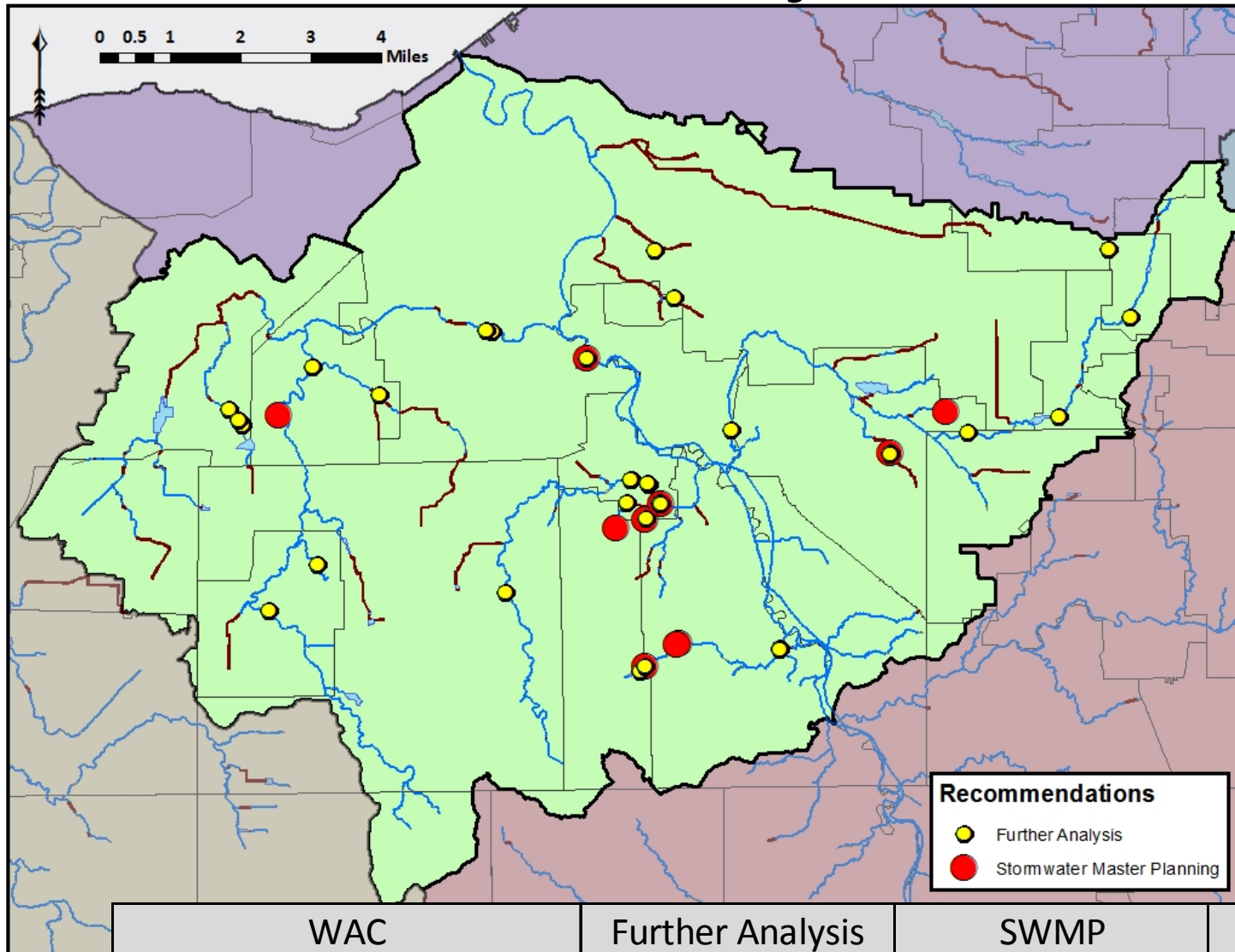
Buildings, Transportation, and Utilities Status Update

Recommended to Inspect for Channel Erosion Concerns



Cuyahoga River North

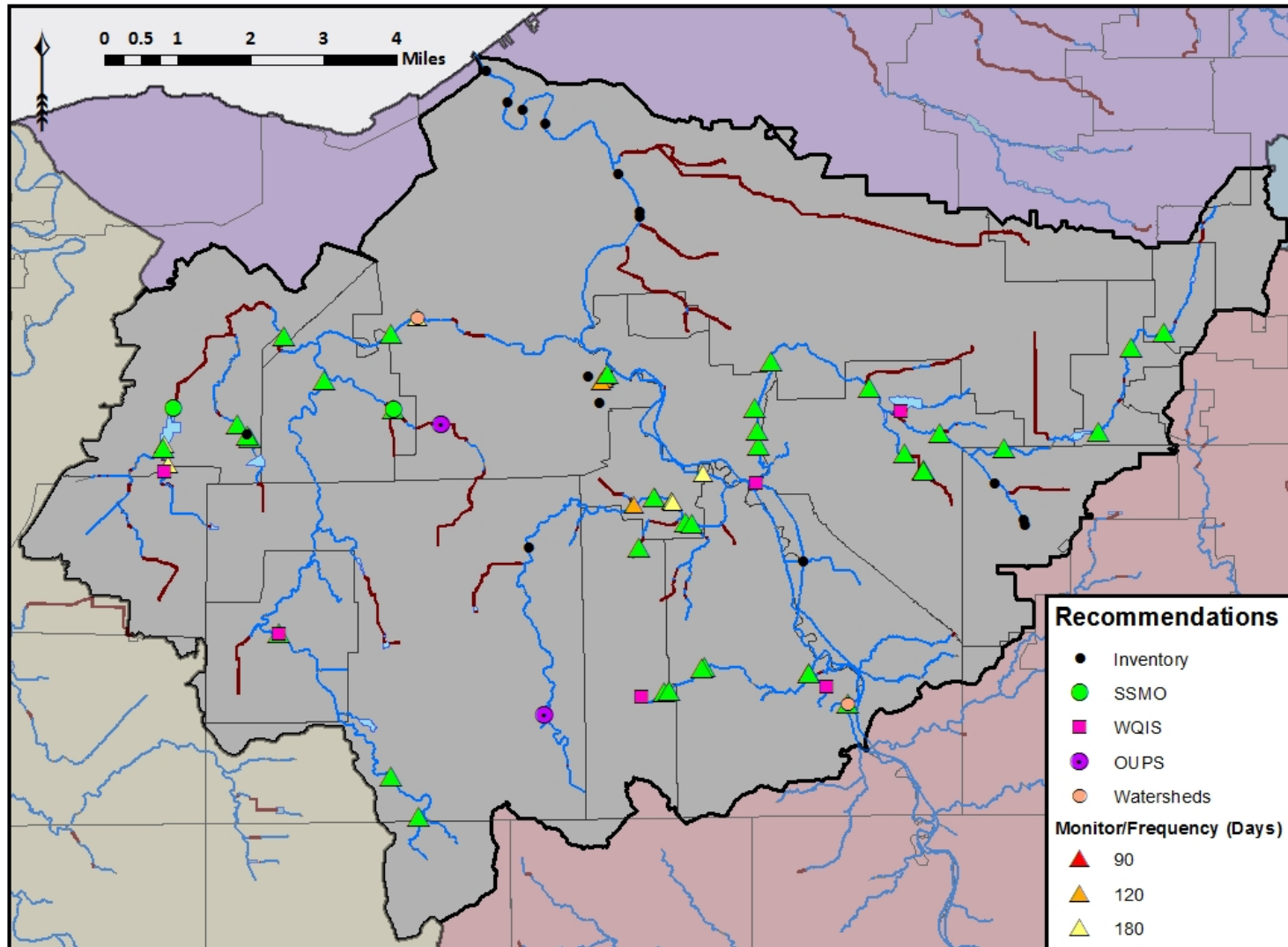
Recommended Further Analysis & SW Master Plan



WAC	Further Analysis	SWMP	Total
CRN	33	10	43

Cuyahoga River North

Recommended Next Steps



WQIS	Inventory	Watersheds	Monitor	SSMO	OUPS	Total
5	15	2	46	2	2	72

Stormwater Inspection & Maintenance – Next Steps

- Track all recommendations to completion
- Continue inspecting assets without condition scores
- Coordinate with asset owners to collect record drawings and historical inspections



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Stormwater Inspection & Maintenance – Next Steps

- 2016 State of the Infrastructure Report
- Inspect assets at the BTU level
- Update storm event inspection routes



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Title V – SW Mgm't Plan Review

Member Community Responsibilities

- Submit/cause to submit SW mgm't plans to the Sewer District within 7 days of your receipt of plans
- Ensure minimum standards are used for design, including all applicable federal and state regulations
- Adopt minimum stormwater design and programmatic standards consistent with Ohio EPA NPDES MS4 and CGP Permits
- Update the Sewer District when your stormwater management regulations are revised



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Title V – SW Mgm't Plan Review

Sewer District Responsibilities

- Review submissions with respect to flooding, erosion and water quality issues
- Provide review comments within 15 business days of receiving a **complete** SW Mgm't Plan
- Ensure SCMs meet minimum design standards - maximize future credits opportunities
- **Sewer District comments are advisory only and are non-binding on the Member Community and the applicant**



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Agenda

- Welcome
- Program Updates
- Community Cost-Share
 - Policy, Application, and Review Process
 - Program Forms
 - Example Projects
- Stormwater Construction Plan
- Stormwater Master Plans
- Phase II Stormwater Services
- What's Next

Community Cost-Share

- \$5,923,528.40 available across communities
- Eleven approved projects, totaling \$559,950.32
- Outreach to communities offering assistance
- Focus for October Watershed Advisory Committee meetings



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Community Cost-Share

- Program Policy
- Process Overview
 - Project Eligibility
 - Ineligible Projects
 - Application Overview
 - Reimbursement Overview



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Community Cost-Share

- Program Forms
 - Application
 - Progress Report
 - Budget Modification Request
 - Reimbursement Request
- Cover Sheet
- Deliverable Expense Worksheet



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Community Cost-Share Community Resources Website

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



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*Community Cost-Share Program
Application*

**Community Cost-Share Program
APPLICATION**

Member Community Information

Community: _____

Primary Project Contact: _____
(Name & Title) _____

Mailing Address: _____

Phone Number: _____

Email: _____

Project Information

Project Title: _____

Address or Location of Project: _____

Project Start Date: _____

Project End Date: _____

Community Cost-Share Fund Request: _____

Submission Date: _____



Community Cost-Share

- Application...
 - Project Narrative (1,000 words)
 - Ability to Provide Long-Term Maintenance (500 words)
 - Visibility & Public Outreach (500 words)
 - Budget Summary
- Vendor Registration



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*Community Cost-Share Program
Application*

Vendor Registration

Prior to submission, ensure that the Member Community is a registered vendor with the District. Vendor Registration can be done by accessing http://www.neorsd.org/isupplier_homepage.php and completing the New Vendor Registration. If unsure of the Member Community vendor status, by initiating the New Vendor Registration a message of active registration will appear if currently registered as a vendor.

Project Budget

Project Expenses	Community Cost-Share Expense	Line Item Description
Professional Services		
Personnel <i>(Member Community staff only)</i>		
Subcontract		
Equipment		
Materials		
Other		
TOTAL	\$	



Community Cost-Share

- Agreement
 - Template agreement tailored to project request
 - Legal review and execution timing
 - Projects must be pre-approved to be eligible for reimbursement



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Community Cost-Share

Garfield Heights

- *East 135th Sanitary Sewer Replacement*
- Acute SSO/Illicit Discharge
- 8" sanitary sewer / excavation / roadway repair
- *\$131,022.94 approved*
- Budget Modification Request for increased costs



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Community Cost-Share

Parma

- *Coventry-West Creek Impervious Surface Removal*
- Chronic sewage-stormwater basement flooding adjacent to West Creek tributary
- Demolition of 3 single-family homes (10,030 sq.ft. of IA)
- ***\$37,023.90 approved w/ budget modification***
- Budget Modification Request for increased costs



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Community Cost-Share



Your



Questions



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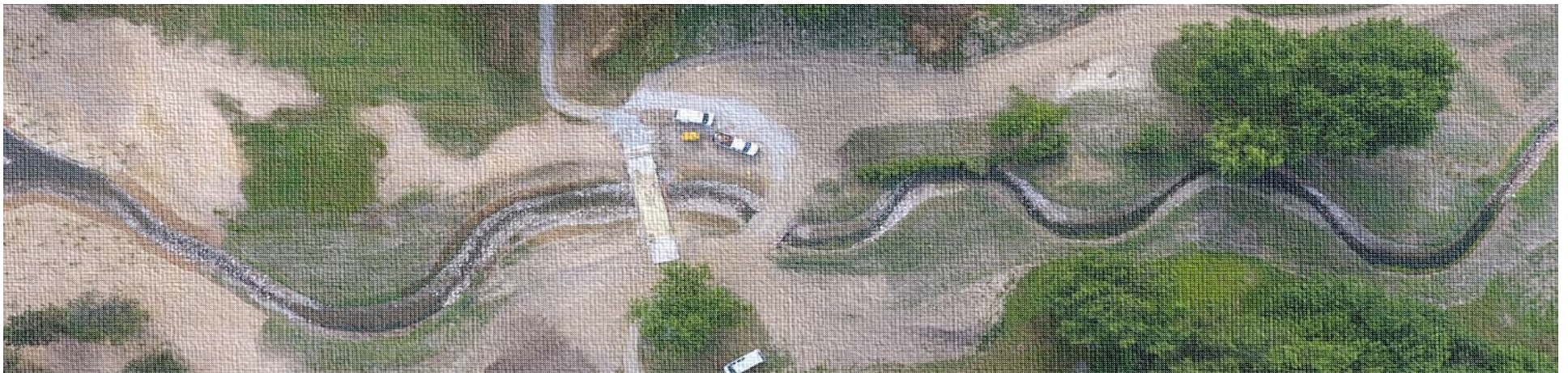
Agenda

- Welcome
- Program Updates
- Community Cost-Share
- Stormwater Construction Plan
 - Status of 2016 Projects
 - Proposed Near Term Projects
- Stormwater Master Plans
- Phase II Stormwater Services
- What's Next



2016 CONSTRUCTION PLAN

 **Northeast Ohio
Regional Sewer District**





STORMWATER CONSTRUCTION PLAN 2016 STATUS UPDATE



Stormwater Construction Plan: 2016

Procurement Design Construction

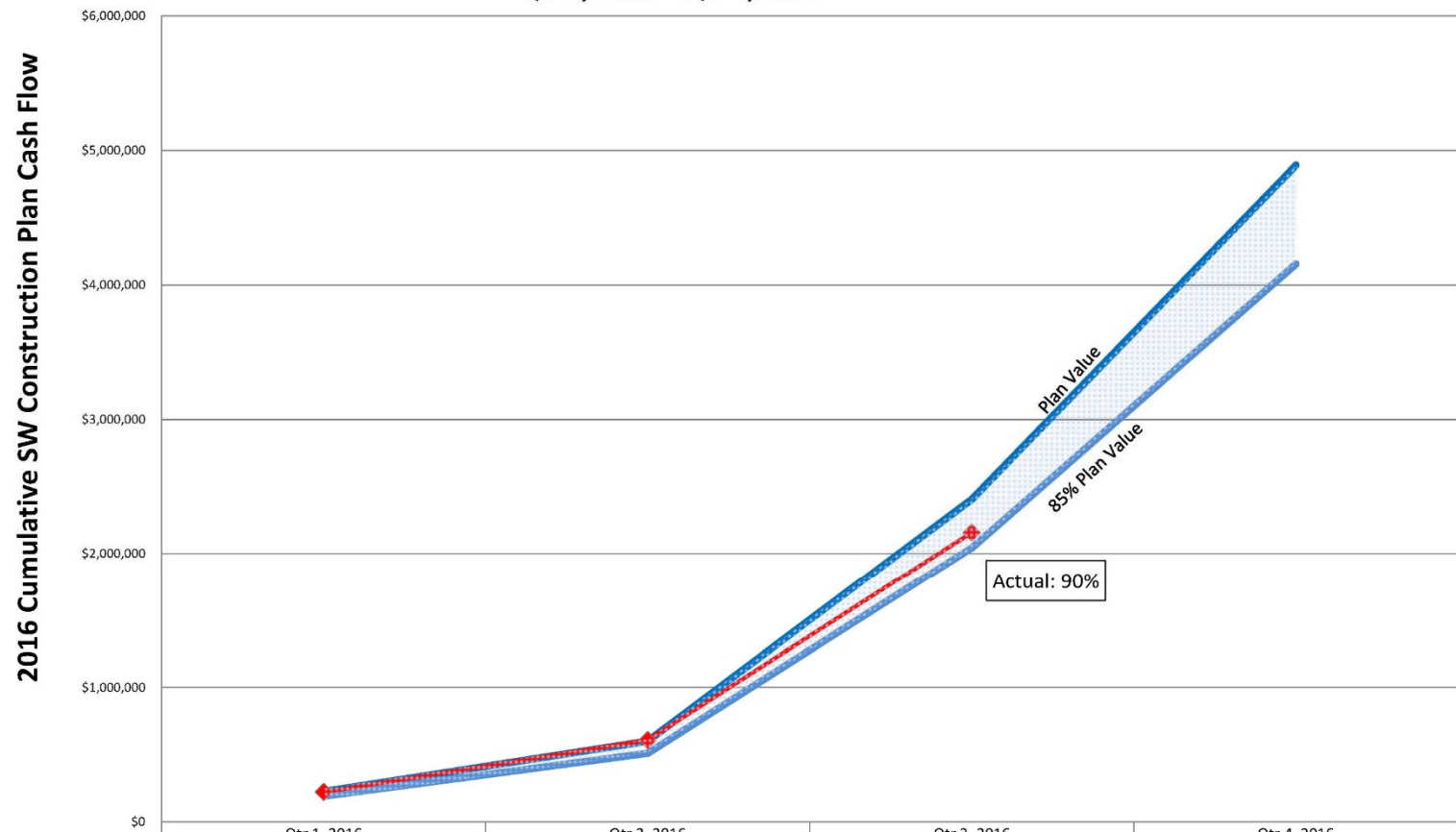
Status at close of Q3		Estimated Construction Cost	Procurement	Design	Construction
1311	Highland Park Golf Course Stream Restoration Other Funding (grants, wastewater budget, community funded, etc.)	\$1,700,000			Tracking to meet substantial completion date of 11/23/2016. 97%
1413	Chevrolet Blvd. Detention Basin Other Funding (grants, wastewater budget, community funded, etc.)	\$1,702,405			Met substantial completion date of 10/26/2015. 100%
1487	Shaw Brook Culverted Stream Rehabilitation Other Funding (grants, wastewater budget, community funded, etc.)	\$950,000		On schedule 100%	
1364	Euclid Creek Concrete Spillway EC00008	\$362,097		100%	
1365	Shaker - Green Lake Dredging DB00101	\$2,700,000		98%	On schedule
1320	Shaker Lakes Dam Rehabilitations DB00056 & DB00101	\$3,600,000		90%	
1410	Doan Brook Stream Stabilization DB00029 & DB00021	\$2,350,000		On schedule 30%	
1411	Big Creek Stabilization BC00032	\$6,000,000		20% Tracking behind schedule due to coordination issues with CSX Railroad.	
1409	Colombo Park BC00299	\$1,000,000		30% Design NTP approximately 3.5 months behind but expect to meet overall schedule by construction award.	
1412	Cuyahoga River at Towpath Bank Stabilization CR00132	\$1,500,000		On schedule 50%	
1369	Beechers Brook and Pepper Creek Bank Stabilization CW00021 & CW00146	\$2,750,000	60%	Advanced commencement of procurement. Approximately 6 months ahead of schedule.	
1490	Hemlock Creek Bank Stabilization	\$1,500,000	80%	Advanced commencement of procurement. Approximately 3 months ahead of schedule.	
1491	Mill Creek Bank Stabilization MC00125	\$1,000,000	80%	Advanced commencement of procurement. Approximately 3 months ahead of schedule.	
TBD	Baldwin Ck Bank Stabilization BD00259, BD00257	\$1,200,000	5%		
TBD	Baldwin Ck Bank Stabilization BD00297	\$300,000	5%		
TBD	Emerald Parkway Culvert Rehabilitation	\$2,000,000		This is project will most likely have a short term repair as well as a long-term, permanent solution.	



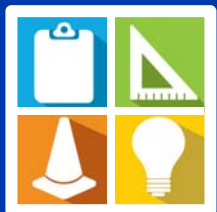
STORMWATER CONSTRUCTION PLAN 2016 PROJECTS



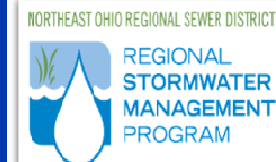
Total Stormwater Construction Plan (Planning, Design, & Construction) Cash Flow Projection Qtr 1, 2016 - Qtr 4, 2016



	Qtr 1, 2016	Qtr 2, 2016	Qtr 3, 2016	Qtr 4, 2016
Cumulative SW Construction Plan: Plan Value	\$225,953	\$600,635	\$2,405,366	\$4,890,583
Cumulative SW Construction Plan: 85% Plan Value	\$192,060	\$510,540	\$2,044,561	\$4,156,996
Cumulative SW Construction Plan: Actual	\$222,103	\$609,144	\$2,157,615	



STORMWATER CONSTRUCTION PLAN 2016 PROJECTS



**Northeast Ohio
Regional Sewer District**

2016 Stormwater Construction Plan

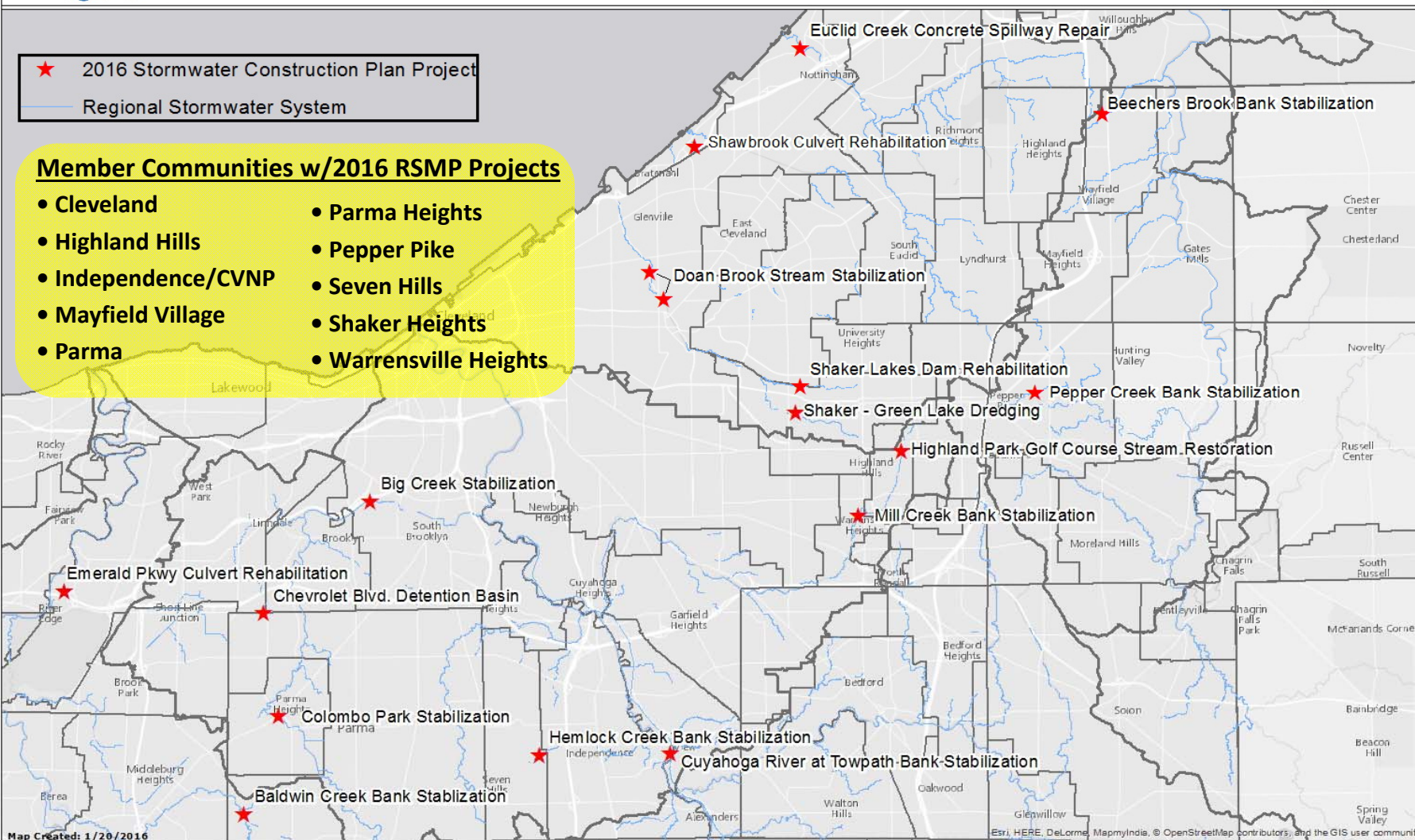
1:115,000



- ★ 2016 Stormwater Construction Plan Project
- Regional Stormwater System

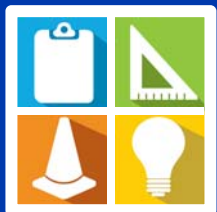
Member Communities w/2016 RSMP Projects

- Cleveland
- Highland Hills
- Independence/CVNP
- Mayfield Village
- Parma
- Parma Heights
- Pepper Pike
- Seven Hills
- Shaker Heights
- Warrensville Heights



Map Created: 1/20/2016

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community



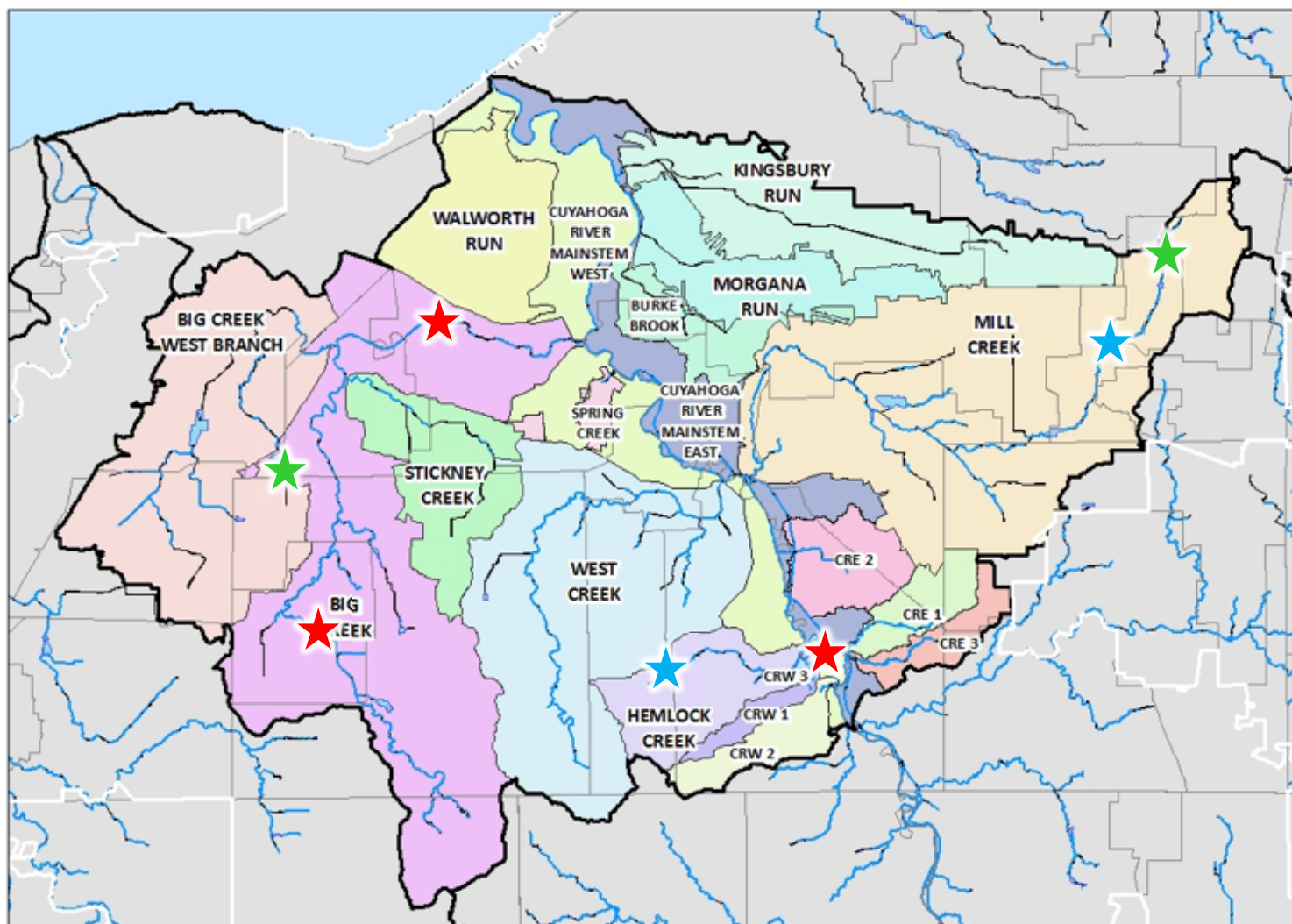
STORMWATER CONSTRUCTION PLAN 2016 PROJECTS

NORTHEAST OHIO REGIONAL SEWER DISTRICT



REGIONAL
STORMWATER
MANAGEMENT
PROGRAM

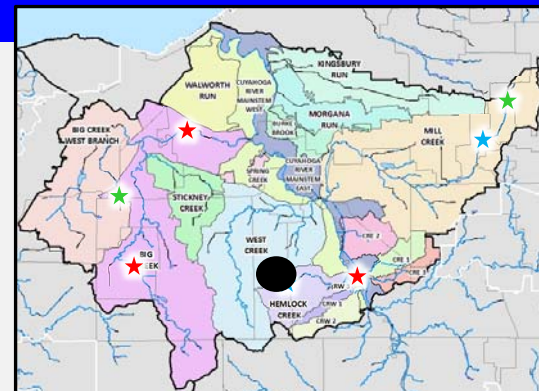
Cuyahoga River North Subwatersheds





Procurement/Scoping

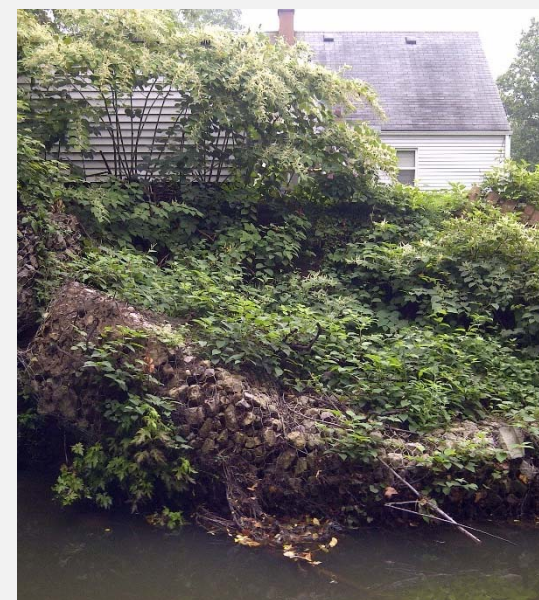
HEMLOCK CREEK BANK STABILIZATION





Procurement/Scoping

MILL CREEK (MC000125) BANK STABILIZATION





design

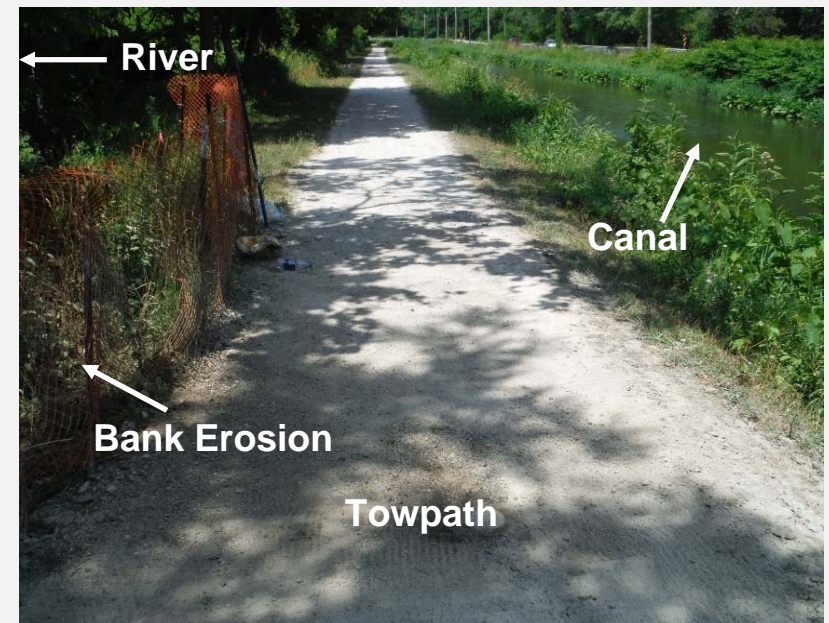
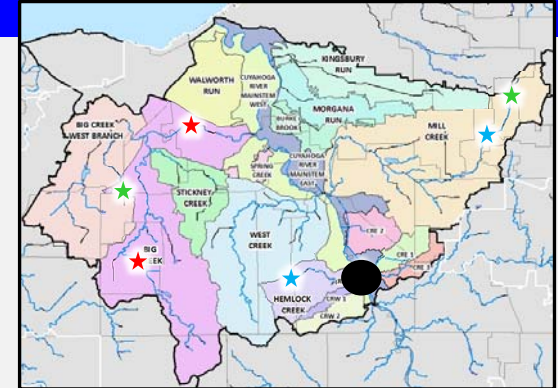
COLOMBO PARK BANK STABILIZATION





design

CUYAHOGA RIVER BANK STABILIZATION





design

BIG CREEK BANK STABILIZATION





design

BIG CREEK BANK STABILIZATION





construction

CHEVROLET BLVD. DETENTION BASIN



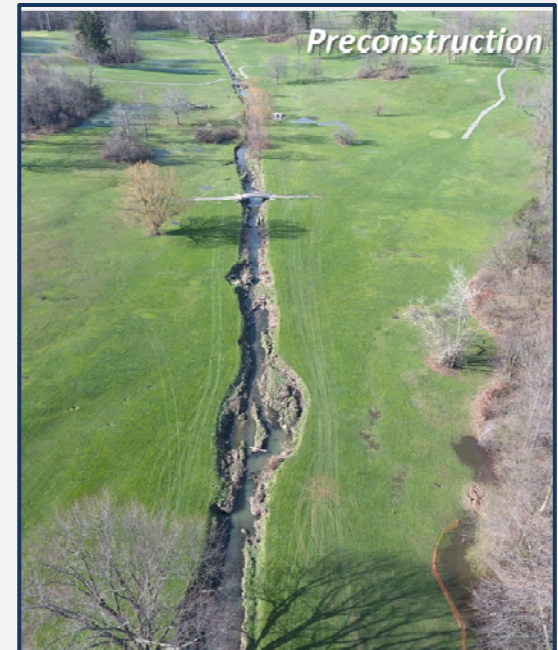


construction

HIGHLAND PARK GOLF COURSE STREAM RESTORATION



Preconstruction





construction

HIGHLAND PARK GOLF COURSE STREAM RESTORATION





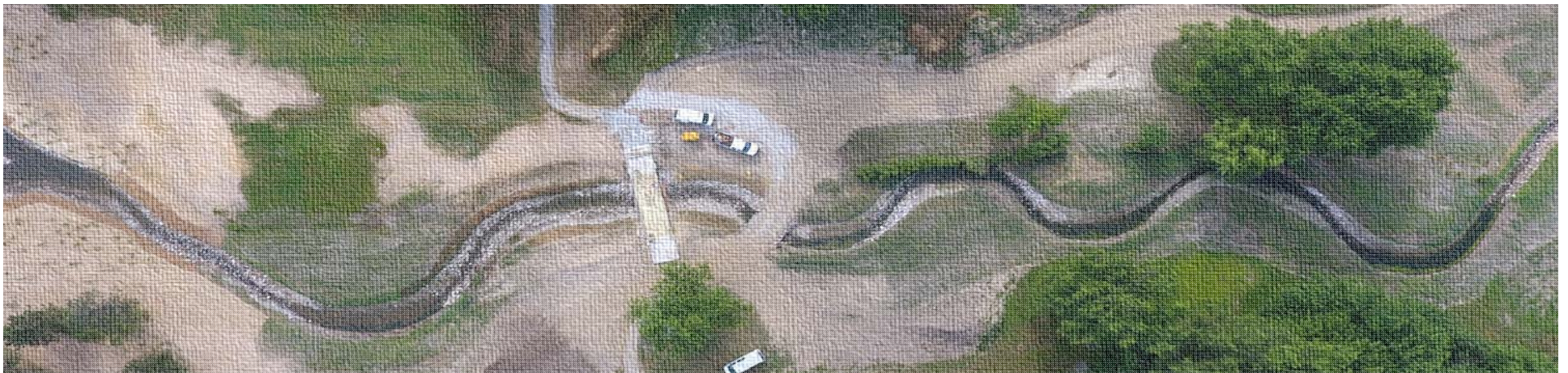
construction

HIGHLAND PARK GOLF COURSE STREAM RESTORATION





QUESTIONS



Stormwater Projects

- Project Coordination
 - Service Agreements
 - City Engineers
 - Community & Stakeholder Meetings



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Doan Brook Stream Enhancement, Cleveland

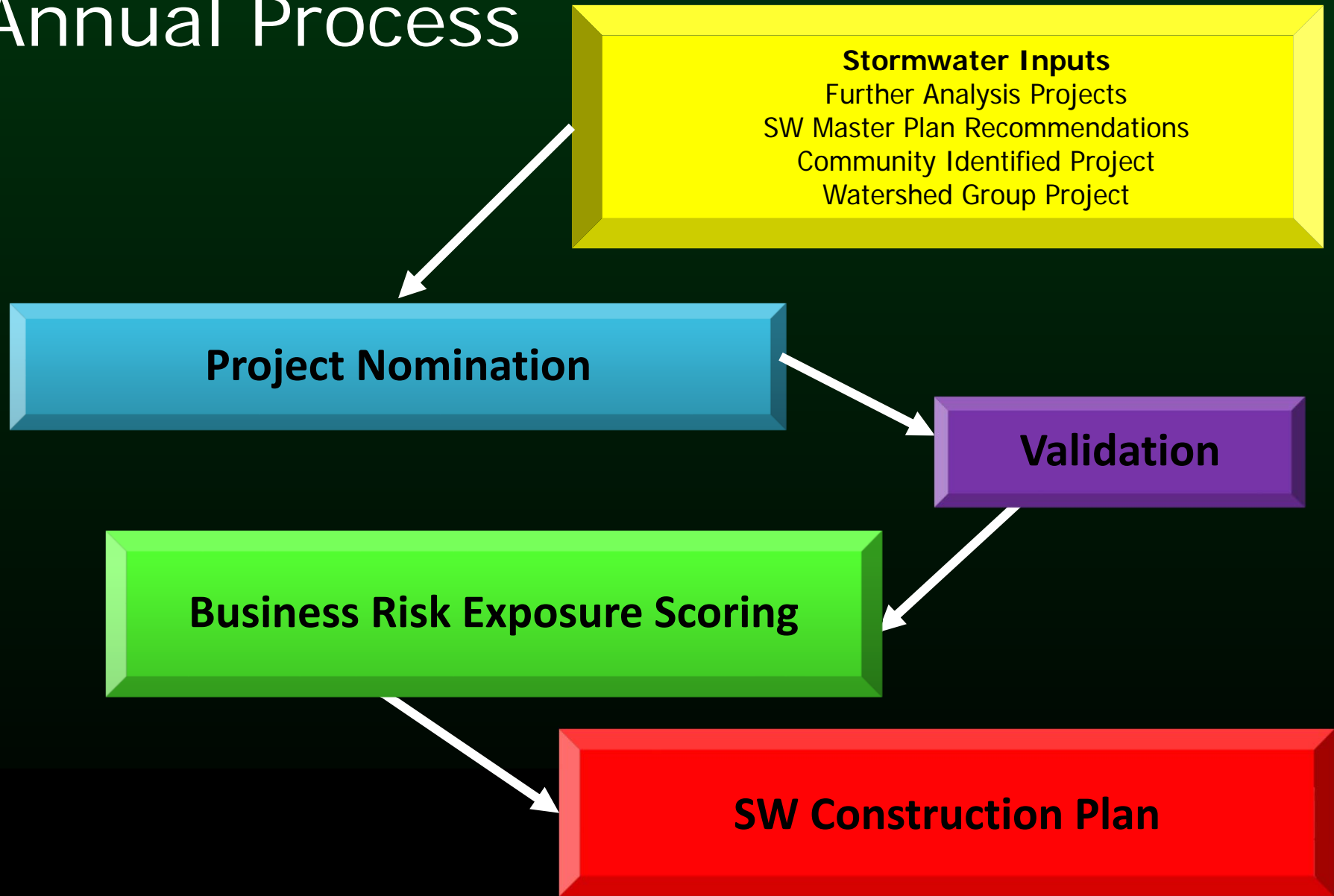
Stormwater Construction Plan Proposed Projects



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Stormwater Construction Plan Annual Process



Community Identified Project

Submit Project information to the Sewer District

- Budget
- Project Summary
 - Problem being addressed
 - Explanation of the extent of specific improvements along the RSS
 - Site maps



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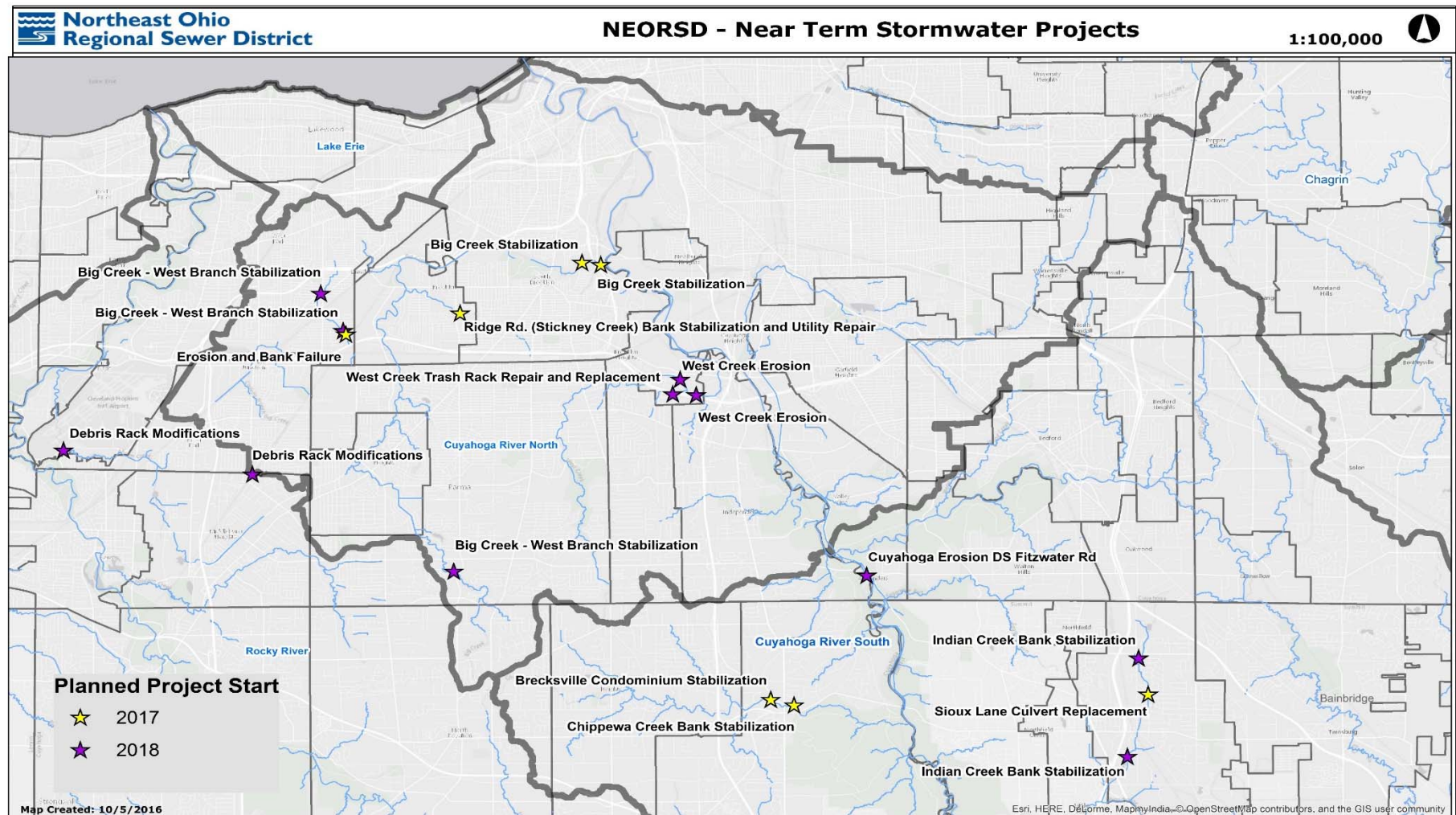


Community Identified Project

- Background Information
 - Studies and planning documents which support the need, and the proposed solution
 - Site geotechnical studies, wetlands, water quality, and listed endangered species
 - Existing and proposed preliminary hydrology and hydraulics
 - Permitting (if initiated)
 - Risks or constraints
 - Known stakeholder outreach or input
 - Current photos of the project site

Stormwater Construction Plan

Proposed Projects



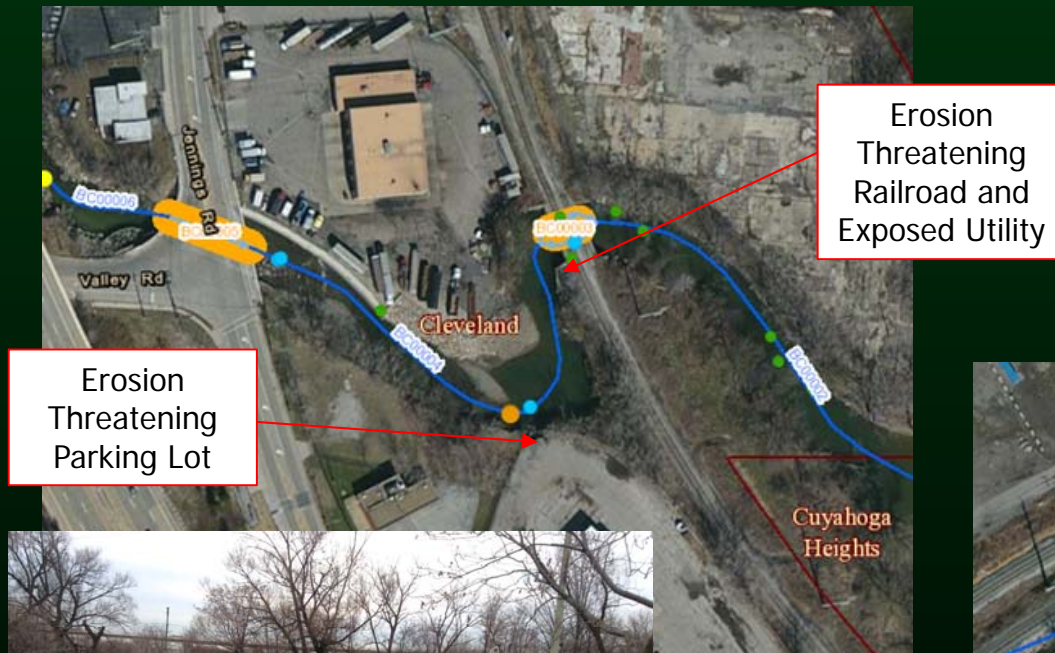
Ridge Road Bank Stabilization Stickney Creek (Brooklyn)



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Stream Bank Stabilization Big Creek (Cleveland)



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Streambank Erosion & Failure

Big Creek – West Branch (Parma)



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Questions

Highland Park Golf Course Stream Restoration, Highland Hills

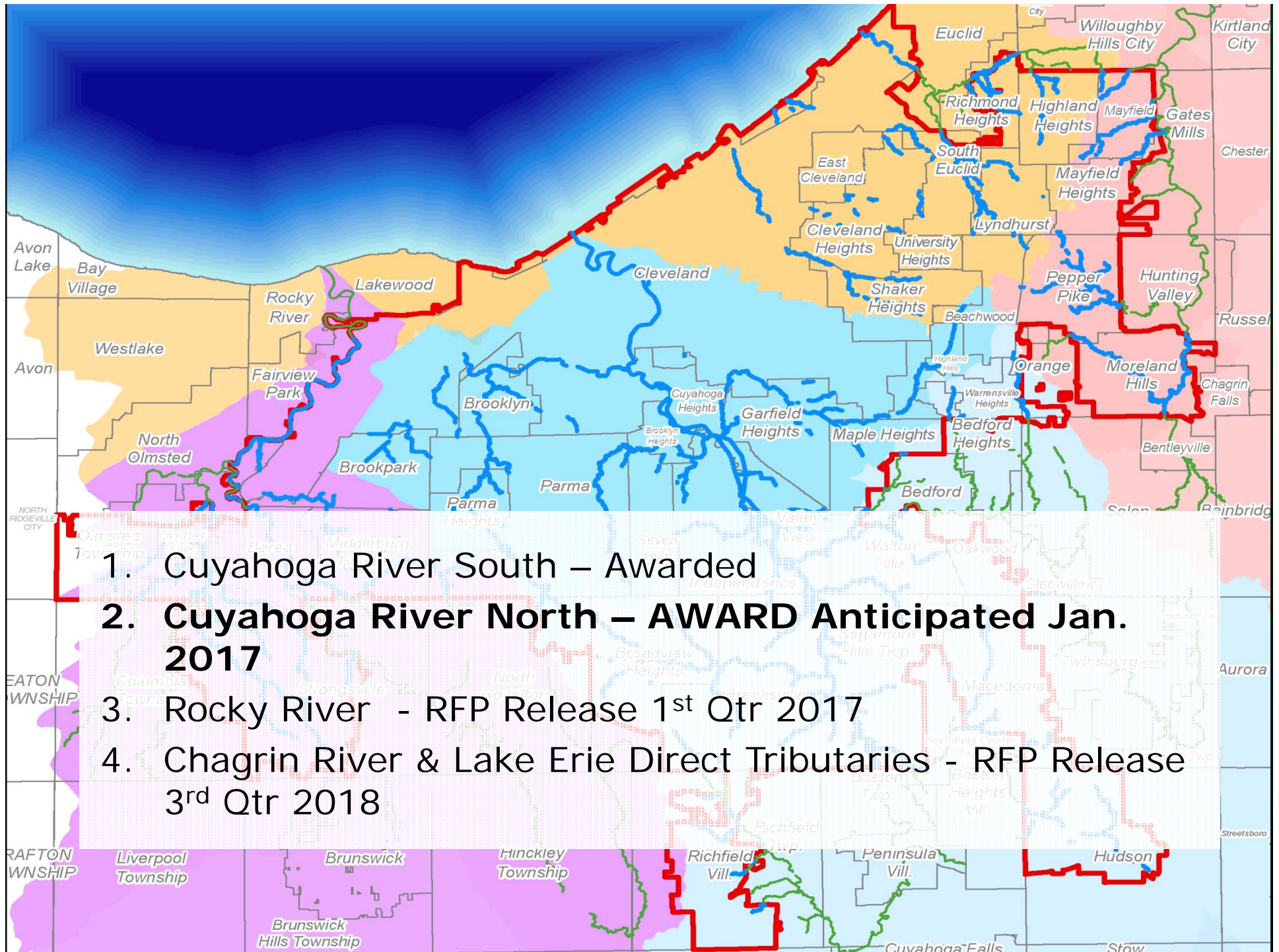
Agenda

- Welcome
- Program Updates
- Community Cost-Share
- Stormwater Construction Plan
- Stormwater Master Plans
 - Schedule
- Phase II Stormwater Services
- What's Next

Stormwater Master Plans

Goals and Objectives

- Operational Performance Evaluation
 - Identify areas of erosion and flooding through a combination of modeling, field assessments, and monitoring including portions of the LSS
- Alternatives Development and Evaluation
 - Comprehensive set of solutions to existing and future problems
- Development of Master Plan
 - Recommendations for policies, construction projects, and maintenance activities



1. Cuyahoga River South – Awarded
2. **Cuyahoga River North – AWARD Anticipated Jan. 2017**
3. Rocky River - RFP Release 1st Qtr 2017
4. Chagrin River & Lake Erie Direct Tributaries - RFP Release 3rd Qtr 2018

Stormwater Master Plans

Possible Data Needs

- Known problems
- Previous studies
- Recent or future projects



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Cuyahoga North – Master Plan Communication

The Watershed Team Leader will contact you to inform you of any work in the watershed and serves as the point of contact between the communities and the Sewer District.

Rachel Webb

Senior Watershed Team Leader

WebbR@neorsd.org

216-881-6600 x6645

Matt Scharver

Senior Watershed Team Leader

SchaverM@neorsd.org

216-881-6600 x6880



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A photograph showing a flooded industrial area. In the foreground, murky brown floodwater covers the ground. In the middle ground, several large, light blue and white industrial trailers are partially submerged. To the right, a long, single-story brick building with a dark roof is visible. A utility pole with power lines stands behind the trailers. The sky is overcast and grey.

Questions

Independence, OH

Agenda

- Welcome
- Program Updates
- Community Cost-Share
- Stormwater Construction Plan
- Stormwater Master Plans
- Phase II Stormwater Services
 - Service Providers
 - Services to be Provided under RSMP
 - Program Structure
- What's Next

Ohio EPA Stormwater Program "Phase II"

- National Pollutant Discharge Elimination System (**NPDES**) Permit for Municipal Separate Storm Sewer Systems (**MS4s**)
- Requires communities to develop a stormwater management program that includes **Six Minimum Control Measures**
- All Sewer District Member Communities (except Linndale) included



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Six Minimum Control Measures

- MCM #1: Public Education and Outreach
- MCM #2: Public Participation and Involvement
- MCM #3: Illicit Discharge Detection and Elimination
- MCM #4: Construction Site Runoff Control
- MCM #5: Post-Construction Runoff Control
- MCM #6: Pollution Prevention/Good Housekeeping for Municipal Operations



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Sewer District Required to Provide Support to Communities for.....

- MCM #1: Public Education and Outreach
- MCM #2: Public Participation and Involvement
- MCM #3: Illicit Discharge Detection and Elimination
- MCM #6: Pollution Prevention/Good Housekeeping for Municipal Operations



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Providing Support through Cooperative Agreements with.....

- Cuyahoga County
 - Board of Health
 - Soil & Water Conservation District
- Summit County
 - Combined General Health District
 - Soil & Water Conservation District
- Lorain County Stormwater Management District
- Applicable watershed organizations specifically providing MCM #1 and #2 services

Summary of Services for Cuyahoga River North WAC Communities

- **Cuyahoga County Board of Health**
 - MCM #3
 - MCM #6
- **Cuyahoga SWCD**
 - MCM #1
 - MCM #2
- **Applicable watershed organization**



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Agreement Structure:

Cuyahoga County Board of Health

- Step 1: Board of Health and Sewer District enter into cooperative agreement.
 - Board of Health provides MCM #3 and #6
 - Sewer District pays Board of Health
- Step 2: Board of Health enters into agreements with interested communities
- Step 3: Sewer District approves services and pays Board of Health



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Next Steps for MCM #3 & MCM #6: What to Look for in Late 2016

- Letter from Board of Health for 2017 cooperative agreement.
 - As usual, if already receiving services
 - New, if not working with Board of Health
- Please note:
 - Sampling all outfalls with dry weather flow
 - Coordinating on source tracking
 - Only monitoring outfalls in Sewer District service area for partially served communities



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Agreement Structure:

Soil & Water Conservation Districts

Ohio Soil and Water Conservation
Commission State Matching Fund Policy:

- Revenue received by SWCD from direct payments of stormwater utilities not matched
- Result: Tripartite contracting arrangement



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Agreement Structure:

Soil & Water Conservation Districts

- Step 1: SWCD, Sewer District, and interested community enter into agreement
- Step 2: Communities pay SWCD under agreement
- Step 3: Sewer District reimburses communities



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Next Steps:

What to Look for in Late 2016

- Letter from SWCD offering MCM #1 and #2 services
 - As usual, if already receiving services
 - New, if not working with SWCD
- Please note:
 - Services available across communities
 - Coordinating on Phase II messaging
 - Different agreement in place if working with watershed organization



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Agenda

- Welcome
- Program Updates
- Community Cost-Share
- Stormwater Construction Plan
- Stormwater Master Plans
- Phase II Stormwater Services
- What's Next

What's Next...

- Sewer District staff in streams doing:
 - Inspections
 - Maintenance
- Design and construction of projects
- Community Cost-Share applications
 - Available funds indicated on handout
- Plan review of submitted SW Management Plans

What's Next...

- WAC Meetings
 - Cuyahoga River – North: October 12
 - Cuyahoga River – South: October 18
 - Lake Erie Direct Tributaries: October 19
 - Chagrin River Watershed: October 26
 - Rocky River Watershed: October 27
- Next Round in March 2017

Questions

Matt Scharver

Senior Watershed Team Leader

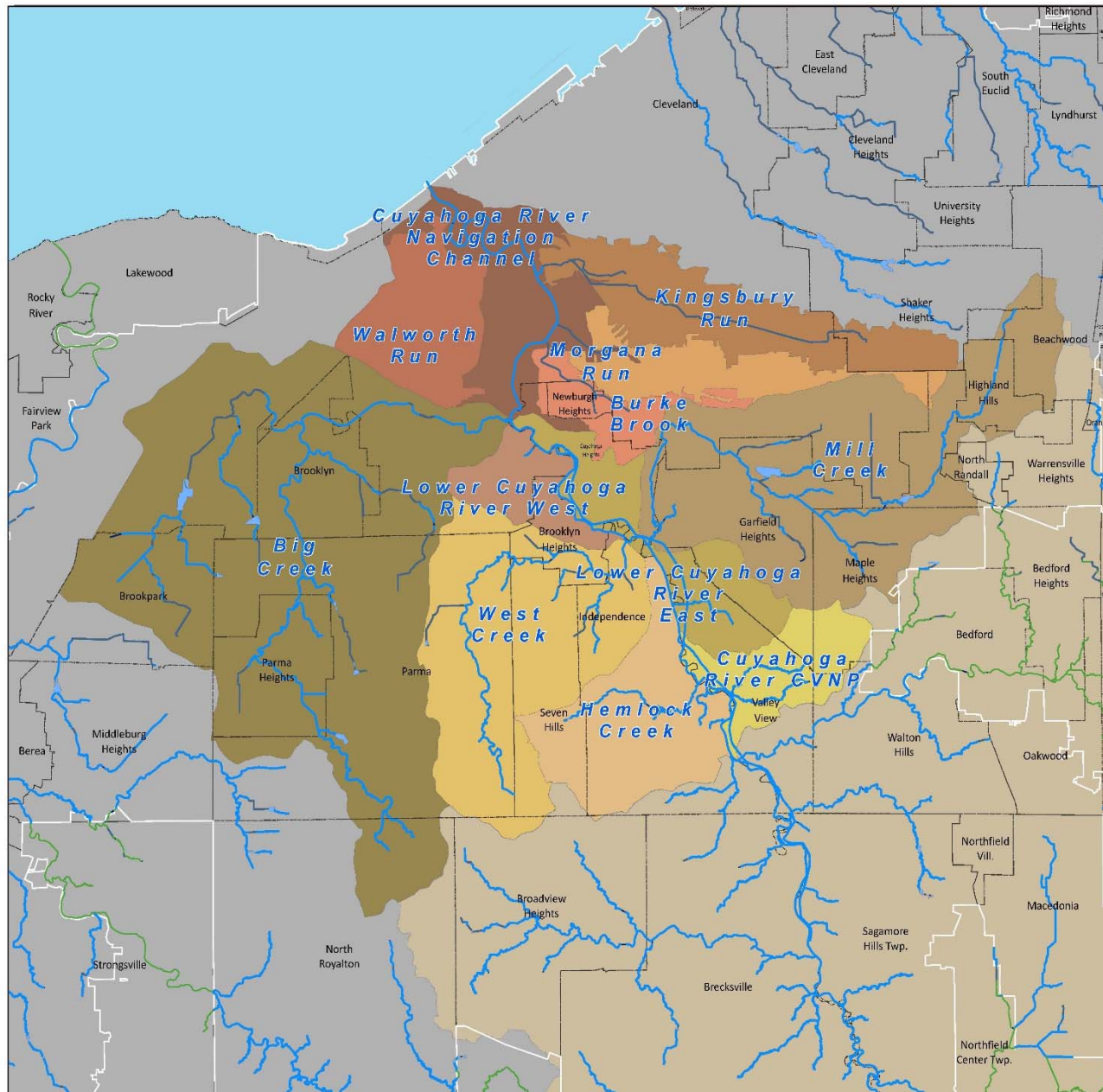
216-881-6600 Ext. 6880






scharverm@neorsd.org

Stormwater Program: Community Resources

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

Cuyahoga River - North



-  Regional Stormwater System in NEORS D Service Area
-  Regional Stormwater System not in NEORS D Service Area
-  Service Area
-  Community
-  District Culverted Stream



Coordinate System : Ohio State Plane North
Datum: NAD 1983 , NAVD 1988
Projection: Lambert Conformal Conic
Sources: NEORS D GIS

Map Created: October 2016

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