

NORTHEAST OHIO REGIONAL SEWER DISTRICT

REGIONAL  
STORMWATER  
MANAGEMENT  
PROGRAM

**Regional Stormwater Management Program:**  
 Cuyahoga River South  
 Watershed Advisory Committee  
 October 18, 2016

*Your Sewer District* Keeping our Great Lake great.

REGIONAL  
STORMWATER  
MANAGEMENT  
PROGRAM

## 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

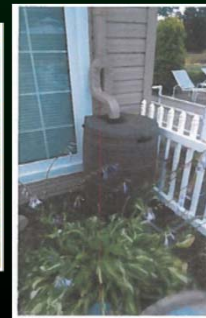


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# Stormwater Fee Credits

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



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## 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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## Stormwater Inspection and Maintenance Cuyahoga River South Fall 2016 Update



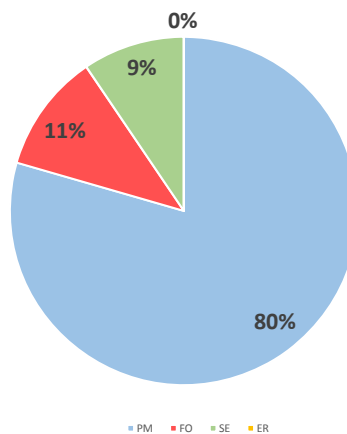
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## Cuyahoga River South 2016 Inspections

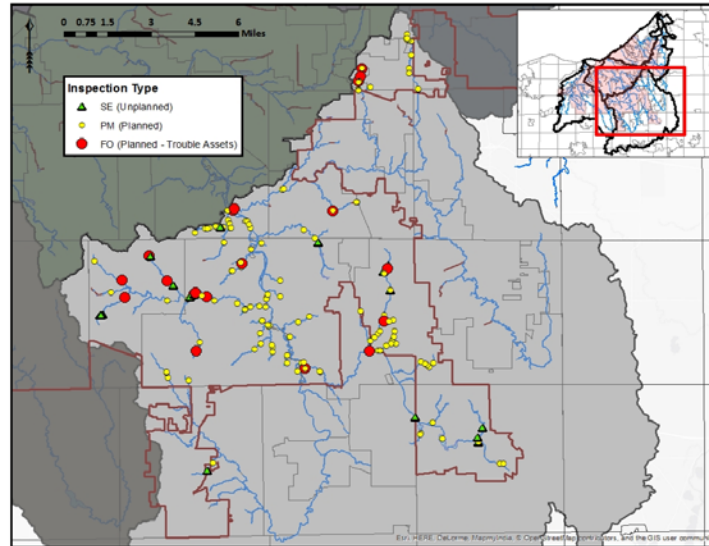
	CRS
PM	151
FO	21
SE	18
ER	0
	190

Legend:  
SE = Customer Call  
PM = Planned Inspection  
FO = Follow-up on a  
Problem Asset  
ER = Emergency  
Response





# Cuyahoga River South 2016 Completed Inspections



## Hawthorne Creek

Asset ID: HA00295 (Warrensville Heights)



**Structural Integrity**  
Stream Scour is  
Undermining Culvert Outlet

**Recommendation**

- Further Analysis
- Monitoring



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## Indian Creek

Asset ID: IC00079 (Macedonia)



### Structural Integrity

Pipe Invert Corroded

### Recommendation

- Further Analysis
- Monitoring



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## Chippewa Creek

Asset ID: CC00032 (Brecksville)



### Structural Integrity

Bank Erosion Threatening Structure

### Recommendation

- Further Analysis
- Monitoring

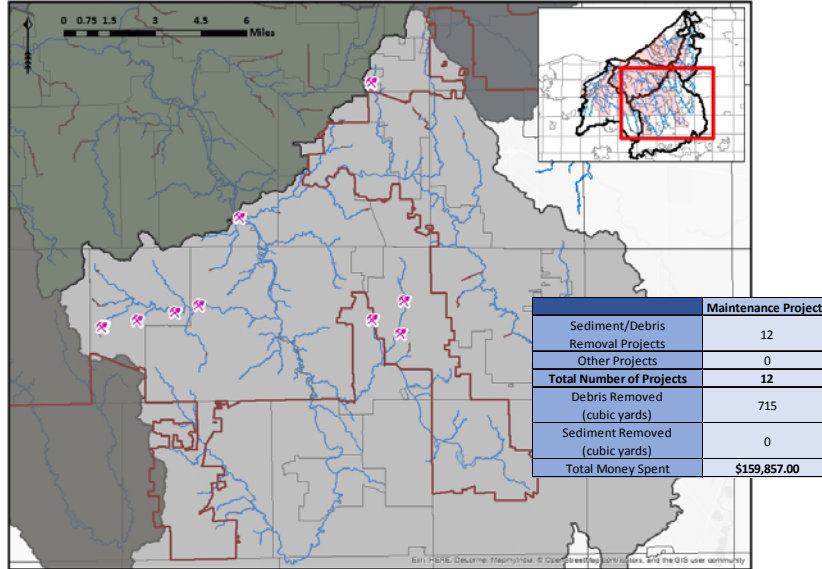


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# Cuyahoga River - South 2016 Completed Maintenance



## Debris Maintenance: BR00256 Brandywine Creek (Hudson)



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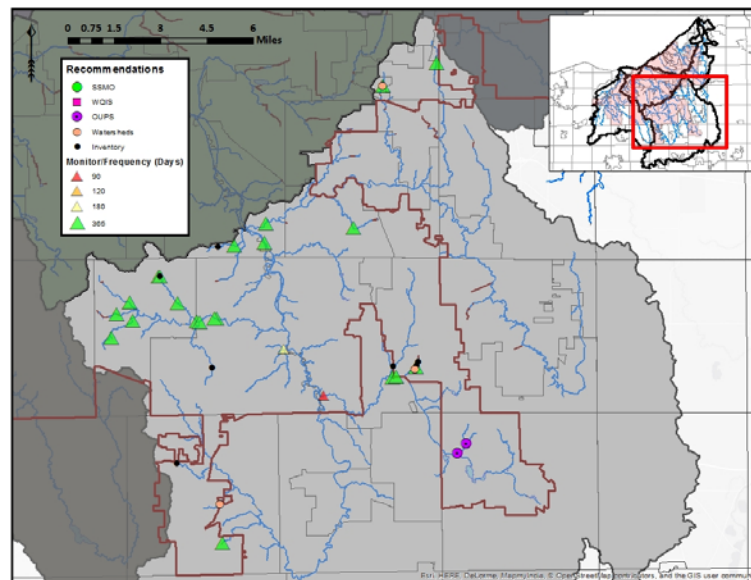
## Debris Maintenance: CC00093 Chippewa Creek (Broadview Heights)



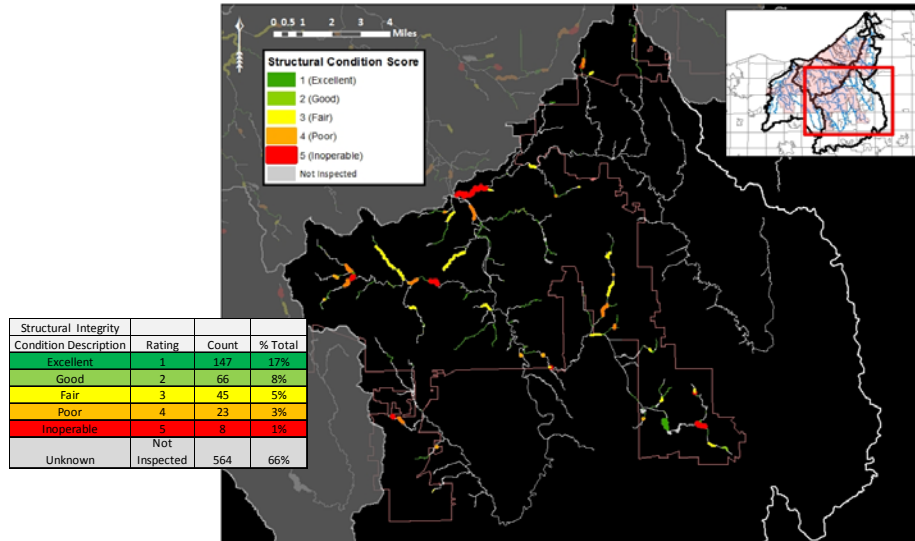
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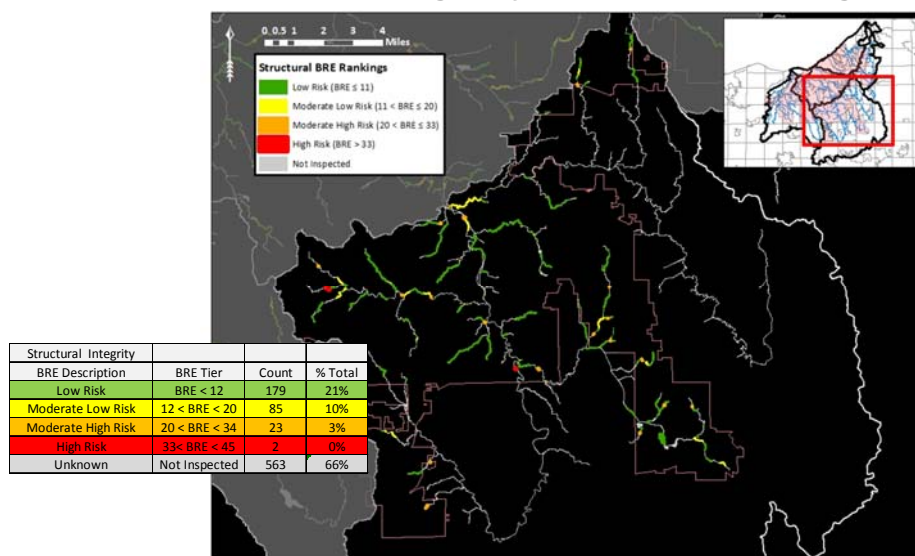
## Cuyahoga River – South Recommended Next Steps



## Cuyahoga River – South Structural Integrity Condition Ratings

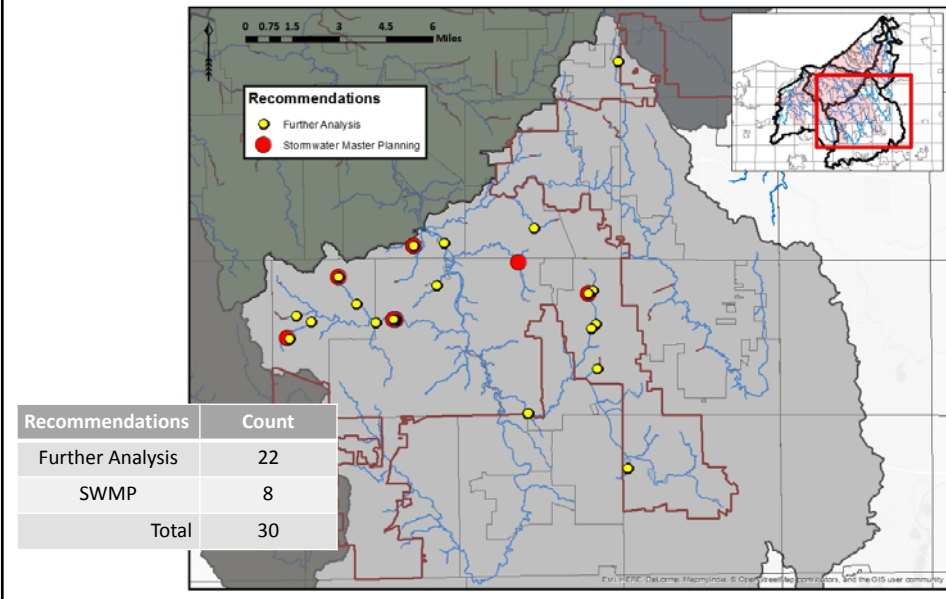


## Cuyahoga River – South Structural Integrity BRE Rankings



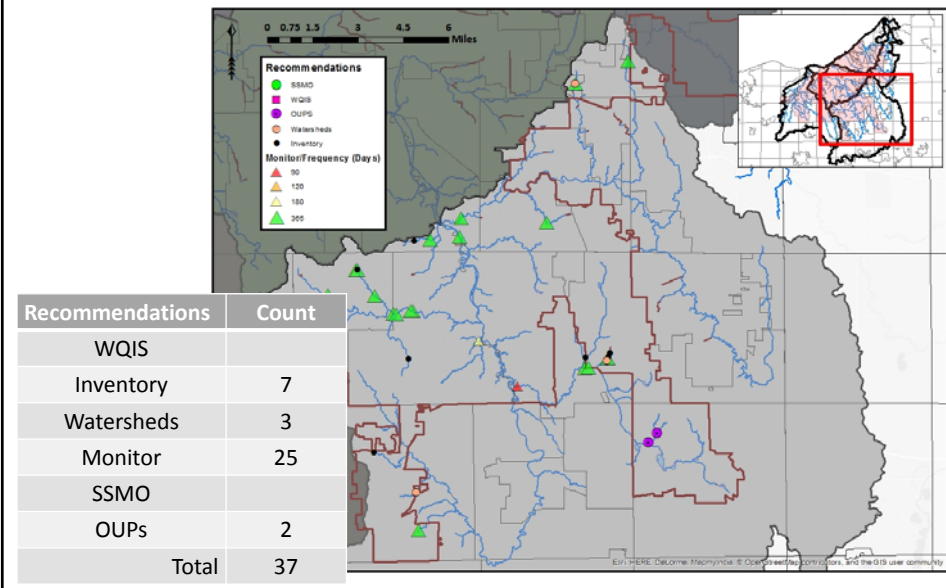
# Cuyahoga River South

## Recommended Further Analysis & SW Master Plan



# Cuyahoga River – South

## Recommended Next Steps



## Stormwater I&M

### 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 I&M

### Next Steps

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



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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



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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

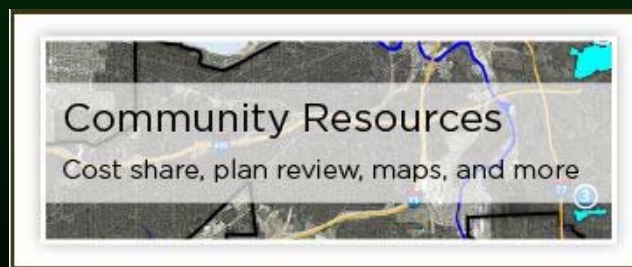


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# Community Cost-Share Community Resources Website

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



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# Community Cost-Share

- Application...
  - Project Narrative (1,000 words)
  - Ability to Provide Long-Term Maintenance (500 words)
  - Visibility & Public Outreach (500 words)
  - Budget Summary
- Vendor Registration
  - [http://www.neorsd.org/isupplier\\_homepage.php](http://www.neorsd.org/isupplier_homepage.php)



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# 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 135<sup>th</sup> 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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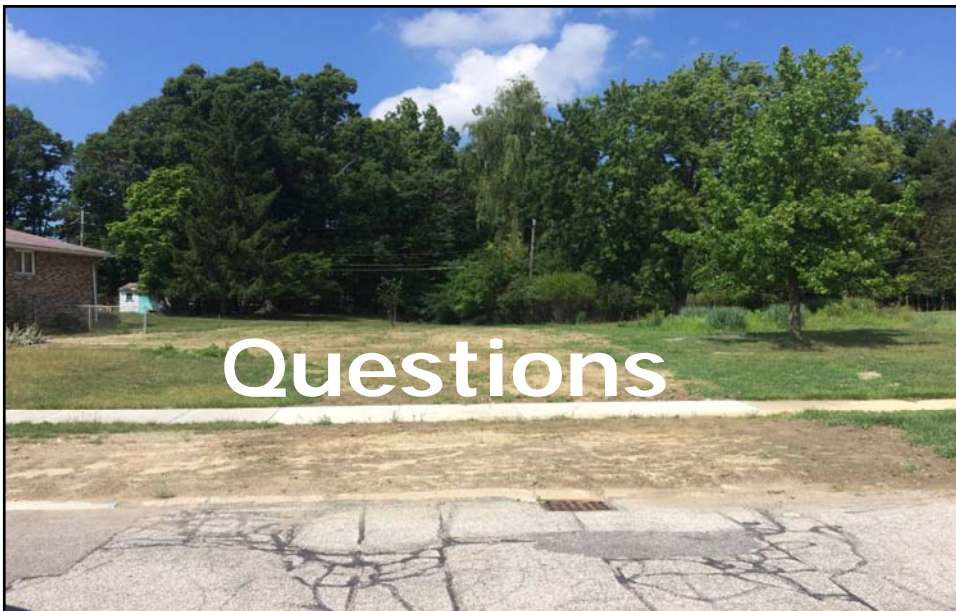




## Community Cost-Share



## Questions



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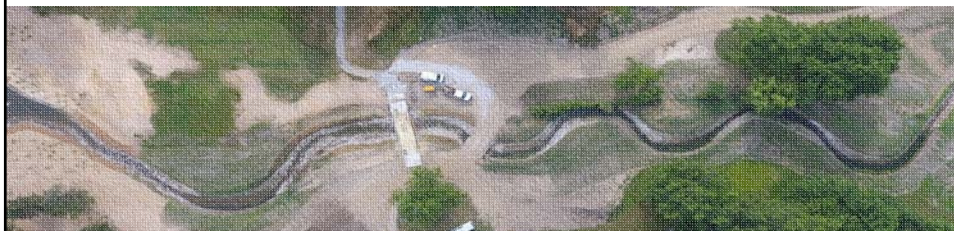
# Agenda

- 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

Status at close of Q3

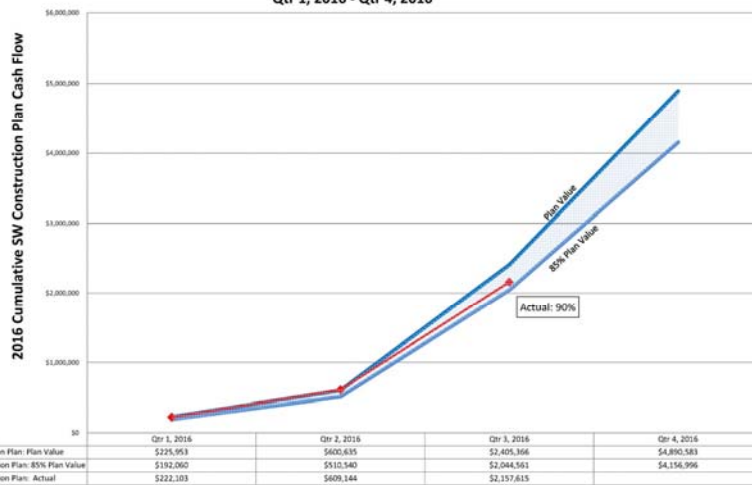
	Estimated Construction Cost	Procurement	Design	Construction
1311 Highland Park Golf Course Stream Restoration (Other funding agency, wastewater budget, community funds, etc.)	\$1,700,000			Tracking to meet substantial completion date of 12/15/2016. 97%
1413 Chevrolet Blvd. Detention Basin (Other funding agency, wastewater budget, community funds, etc.)	\$1,702,405			Met substantial completion date of 10/06/2016. 100%
1487 Shaw Brook Culverted Stream Rehabilitation (Other funding agency, wastewater budget, community funds, etc.)	\$950,000		On schedule	
1364 Euclid Creek Concrete Spillway EC00008	\$362,097		On schedule	
1365 Shaker - Green Lake Dredging DB00101	\$2,700,000		On schedule	
1320 Shaker Lakes Dam Rehabilitations DB00056 & DB00101	\$1,600,000		On schedule	
1410 Doan Brook Stream Stabilization DB00029 & DB00021	\$2,350,000		On schedule	
1411 Big Creek Stabilization BC00032	\$6,000,000		Tracking behind schedule due to coordination issues with CCR Removal. 10%	
1409 Colombo Park BC00299	\$1,000,000		Design NCP approximately 2 months behind but expect to meet overall schedule for construction award. 10%	
1412 Cuyahoga River at Towpath Bank Stabilization CR00132	\$1,500,000		On schedule	
1369 Beechers Brook and Pepper Creek Bank Stabilization CW00021 & CW00146	\$2,750,000	88%	Advanced commencement of procurement. Approximately 6 months ahead of schedule.	
1490 Hemlock Creek Bank Stabilization	\$1,500,000	88%	Advanced commencement of procurement. Approximately 6 months ahead of schedule.	
1491 Mill Creek Bank Stabilization MC00125	\$1,000,000	88%	Advanced commencement of procurement. Approximately 3 months ahead of schedule.	
180 Baldwin Ck Bank Stabilization BD00259, BD00257	\$1,200,000	0%		
180 Baldwin Ck Bank Stabilization BD00297	\$300,000	0%		
180 Emerald Parkway Culvert Rehabilitation	\$2,000,000		This is project will most likely have a short term negative as well as a long-term positive impact.	



## STORMWATER CONSTRUCTION PLAN 2016 PROJECTS

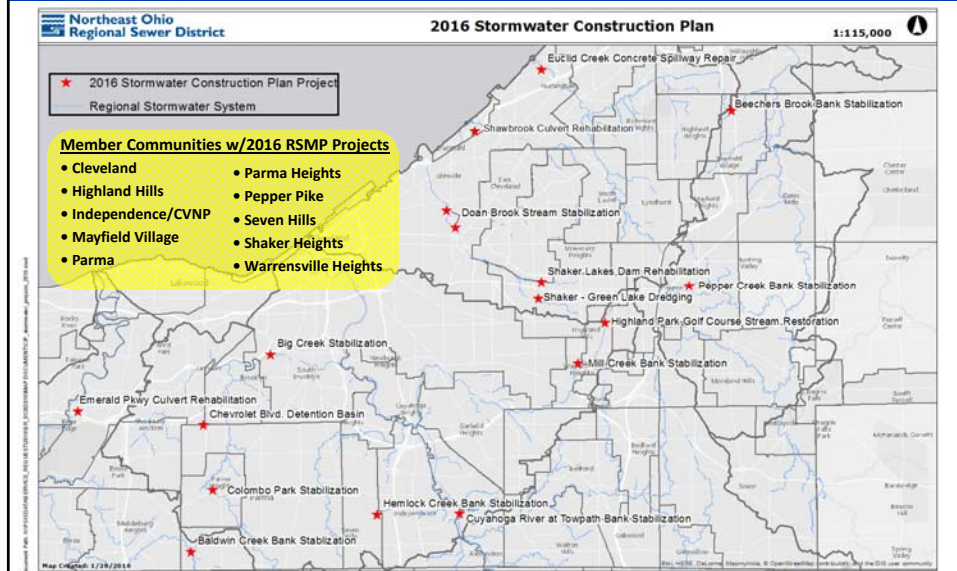


Total Stormwater Construction Plan  
(Planning, Design, & Construction)  
Cash Flow Projection  
Qtr 1, 2016 - Qtr 4, 2016

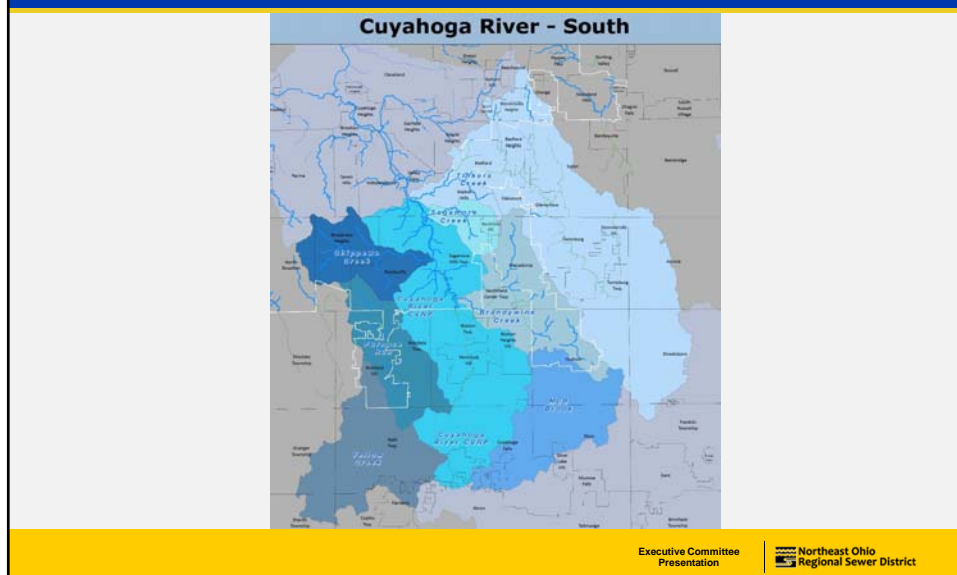




## STORMWATER CONSTRUCTION PLAN 2016 PROJECTS



## STORMWATER CONSTRUCTION PLAN 2016 PROJECTS





design

## CUYAHOGA RIVER BANK STABILIZATION



Northeast Ohio  
Regional Sewer District



design

## BIG CREEK BANK STABILIZATION



Northeast Ohio  
Regional Sewer District





design

## BIG CREEK BANK STABILIZATION



00:03:20:29



Northeast Ohio  
Regional Sewer District



construction

## HIGHLAND PARK GOLF COURSE STREAM RESTORATION



Before



During Construction



After

Northeast Ohio  
Regional Sewer District


**construction**



## HIGHLAND PARK GOLF COURSE STREAM RESTORATION



### Highland Park Golf Course Stream Restoration Project



#### Northeast Ohio Regional Sewer District



**CITY OF CLEVELAND**  
Mayor Frank G. Jackson

**PROJECT COST: \$1,699,400**





Funded by the Ohio EPA Water Resource Restoration Sponsor Program, the Northeast Ohio Regional Sewer District, and the US Forest Service









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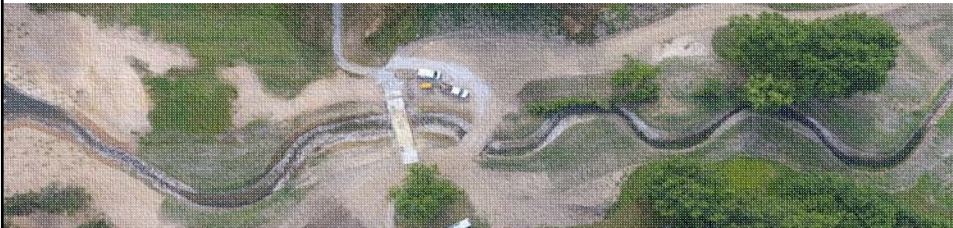





## QUESTIONS

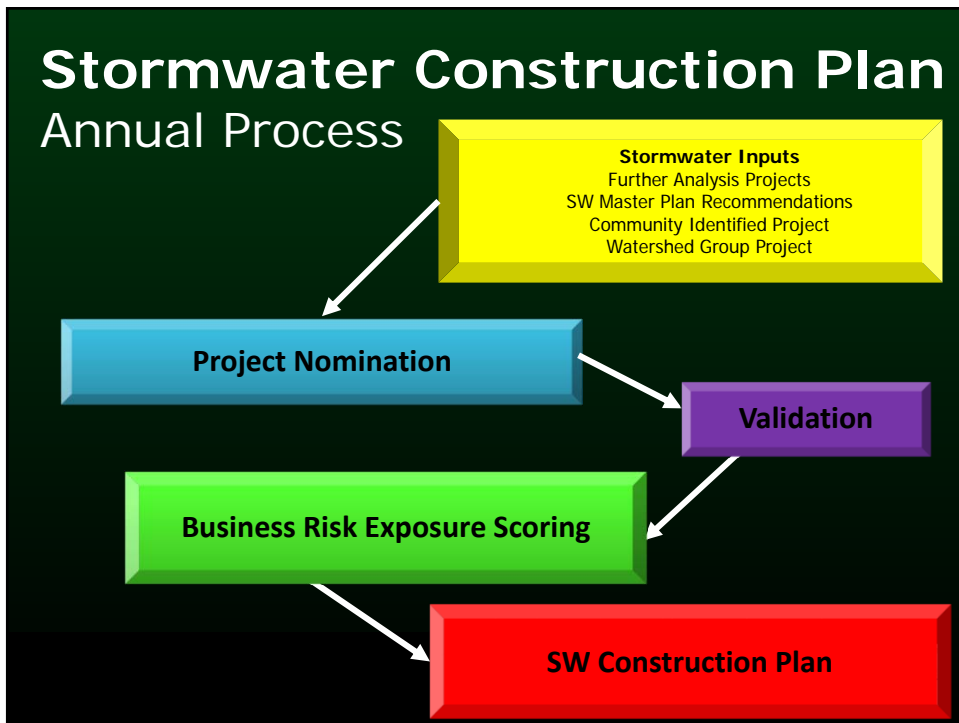


#### Northeast Ohio Regional Sewer District









## 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



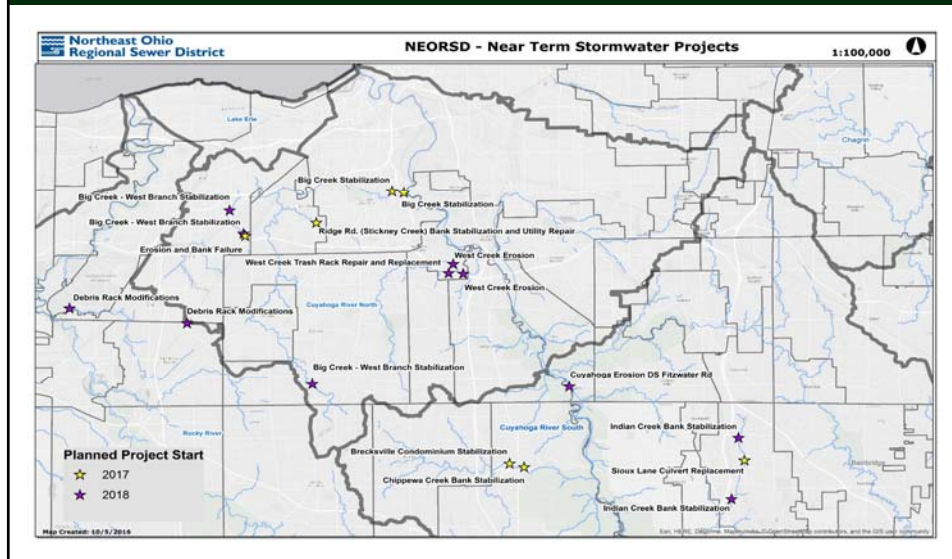
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## Community Identified Project

- 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



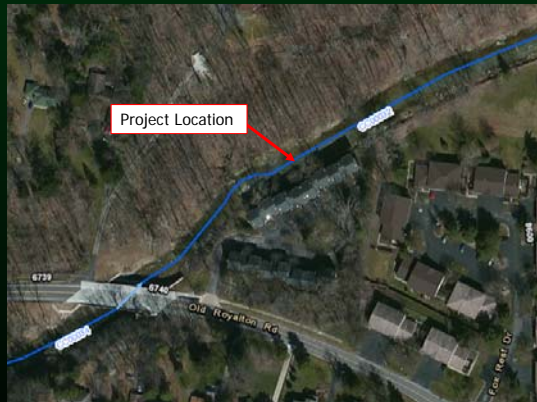
## Sioux Lane Culvert Replacement Indian Creek (Macedonia)



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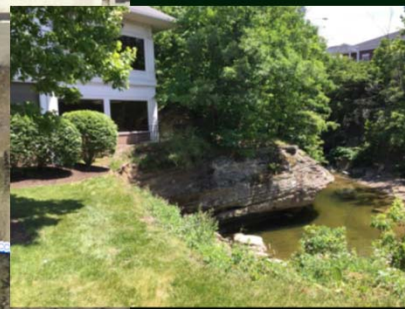
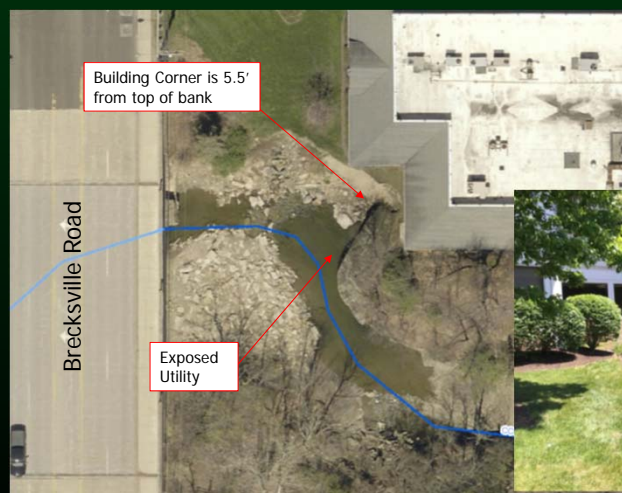
# Condominium Stabilization Chippewa Creek (Brecksville)



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# Chippewa Creek Bank Stabilization Chippewa Creek (Brecksville)



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# Building Demolition

## Chippewa Creek (Brecksville)



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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
  - Project Overview
  - Coordination with WAC and Communities
  - Critical Success Factors
- Phase II Stormwater Services
- What's Next

## Stormwater Master Plans

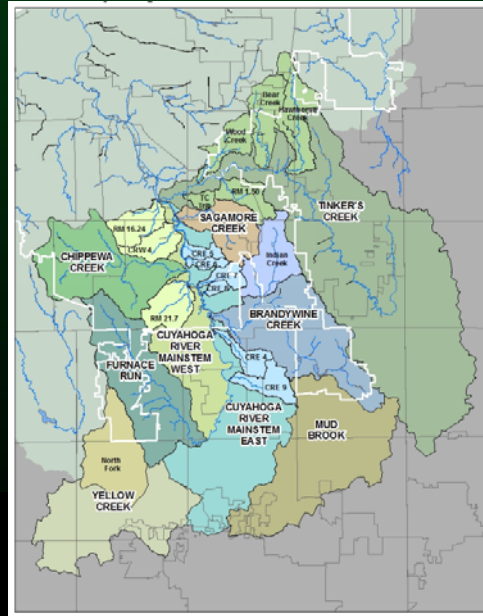
### Goals and Objectives

- 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, maintenance activities and areas for preservation



## Cuyahoga River South SWMP Project Area

- 288 sq mi Drainage Area
- 89 sq mi within District Stormwater Service Area
- 9 Subwatersheds
- Cuyahoga River mainstem
- 24 Communities



## Cuyahoga River South SWMP 4 Main Objectives

1. Operational performance evaluation
2. Alternatives development & evaluation
3. Development of a Stormwater Master Plan (SWMP)
4. Stakeholder involvement



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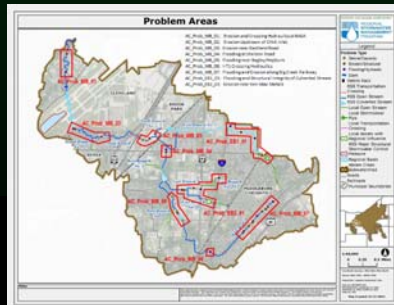
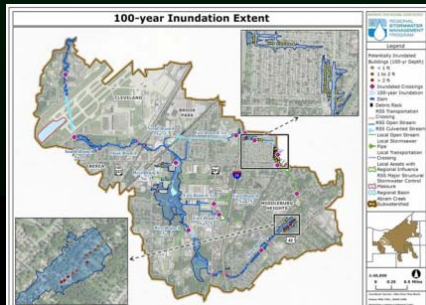
## Objective 1: Operational Performance Evaluation

- Assess field condition of regional stormwater system
  - Streams
  - Crossings
  - Culverted Streams
  - Basins
  - Major Structures
- Monitoring program to support study



## Objective 1: Operational Performance Evaluation

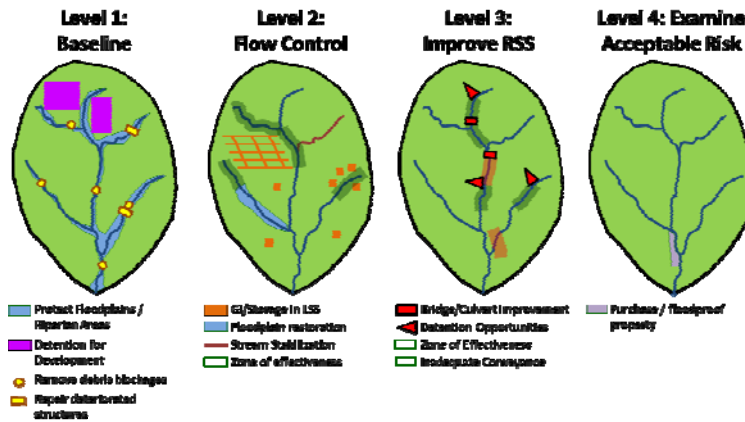
- Utilize field data and hydraulic modeling to identify problems
  - Flooding
  - Structural/erosion
  - Sediment & debris blockages



## Objective 2:

### Alternatives Development & Evaluation

Formulate comprehensive sets of solutions that consider watershed-wide effects



## Objective 2:

### Alternatives Development & Evaluation

- Size & evaluate alternatives to achieve acceptable level of risk

#### Condition

- Current state of regional system
- Impacts to transportation, buildings & utilities

#### Criticality Consequence of failure

	3	4	5	6	7	8	9
1							
2							
3							
4							
5							



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## Objective 3: Development of SW Master Plan

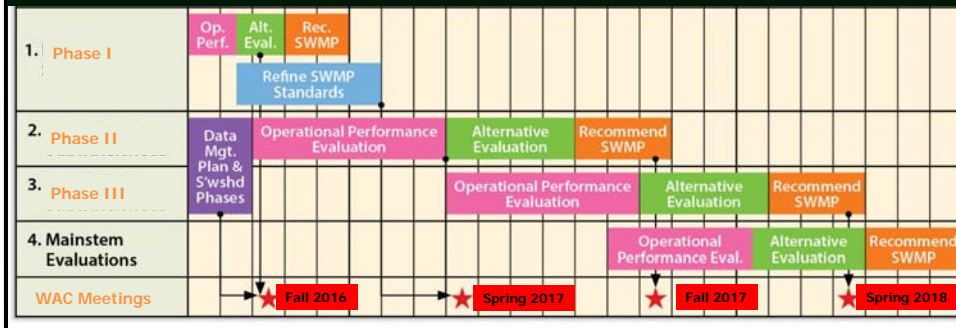
- Business case to select preferred alternatives
- Phasing / priorities
- Project definition statements
- Policy recommendations
- Inspection and maintenance recommendations
- Preservation recommendations



## Objective 4: Gain Stakeholder Feedback

### Who

- Watershed Advisory Committee
- Member Communities
- Other public agencies
- District staff



## Cuyahoga River South SWMP

### Key Critical Success Factors

- Complete project within budget and schedule
- Effective data management
- Stakeholder feedback on project plan
  - WAC Meetings
  - Community Work Plans
  - Draft Business Case Summary
  - Draft Implementation Plan
- **Others?**

## Cuyahoga River South SWMP

### Data Requests/Needs

- Record drawings
- Inspection reports
- Previous studies
- Recent or future projects



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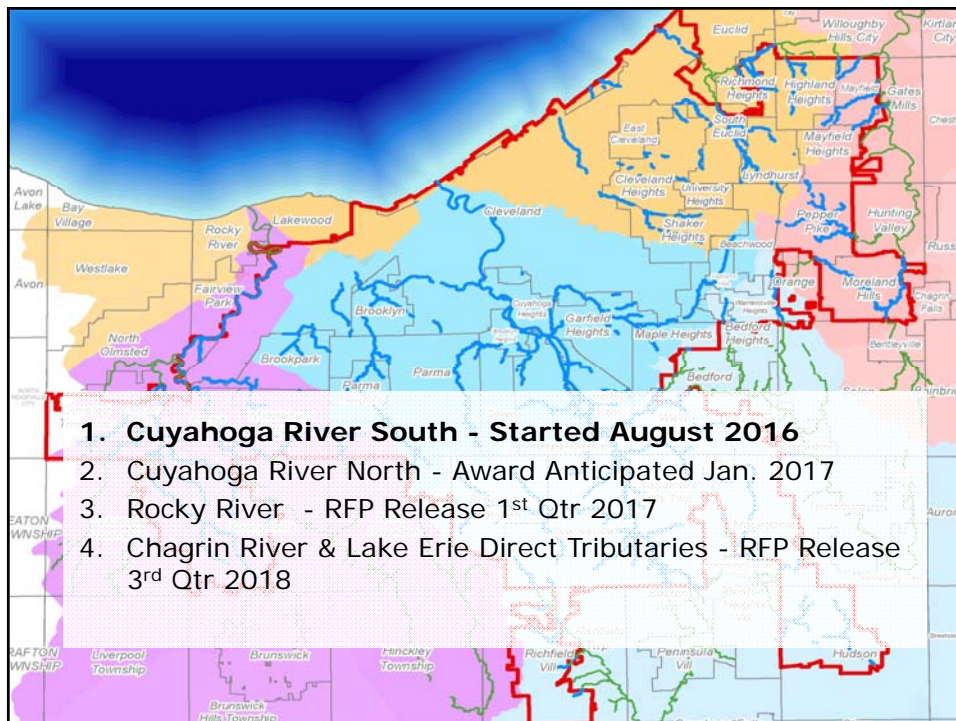
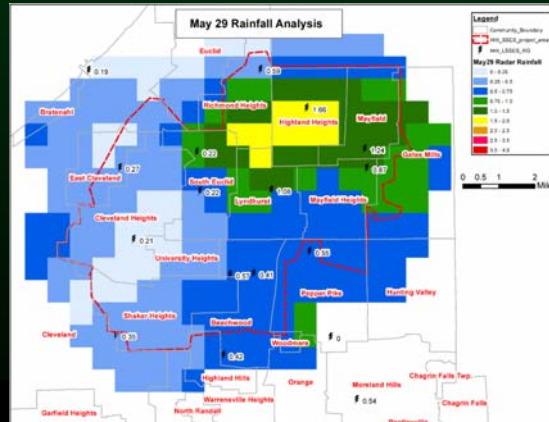


# New Data Sources

## LiDAR Data



## Radar Rainfall





## 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



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## Summary of Services

### WAC Communities in Cuyahoga County

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



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## Summary of Services

### WAC Communities in Summit County

- **Summit County Combined General Health District**
  - MCM #3
- **Summit SWCD**
  - MCM #1
  - MCM #2
  - MCM #6
- **Applicable watershed organization**



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## Agreement Structure:

### Cuyahoga & Summit Boards of Health (BOH)

- Step 1: BOH and Sewer District enter into cooperative agreement.
  - Cuyahoga provides MCM #3 and #6
  - Summit provides MCM #3
  - Sewer District pays BOHs
- Step 2: BOH enter into agreements with interested communities.
- Step 3: Sewer District approves services and pays BOH.



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## Next Steps for Boards of Health:

### What to Look for in Late 2016

- Letter from BOH 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 SWCDs offering services
  - MCM #1 and #2 from Cuyahoga
  - MCM #1, #2, AND #6 from Summit
  - 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
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## 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

**Rachel Webb**

Senior Watershed Team Leader

216-881-6600 Ext. 6645

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

**Stormwater Program: Community Resources**

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

