Rocky River Watershed NORTH RIDGEVILLE CITY Seven Hills GRAFTON VILLAGE_ Northeast Ohio Regional Sewer District 1:58,912 ~ Regional Stormwater System in NEORSD

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

Map Created: March 2017

This Information is for display purposes only. The Northeast Ohio Regional Sewer District (NEORSD) makes no warranties, expressed or implied, with respect to the accuracy of and the use of this map for any specific purpose. This map was created to serve as base information for use in Geographic information Systems (GIS) for a variety of planning and analysis purposes. The instruction of use in Geographic information Systems (GIS) for a variety of planning and analysis purposes. The NEORSD expressly disclaims any liability that may result from the use of this map. For more information, plasses contact.NEORSD GIS Services, 3900 Euclid Avenue, Cleveland, Ohio 44115 (216) 881-6600 — GIS@neorsd.org

- Regional Stormwater System not in NEORSD Service Area
- Service Area
- Community
- ~ District Culverted Stream



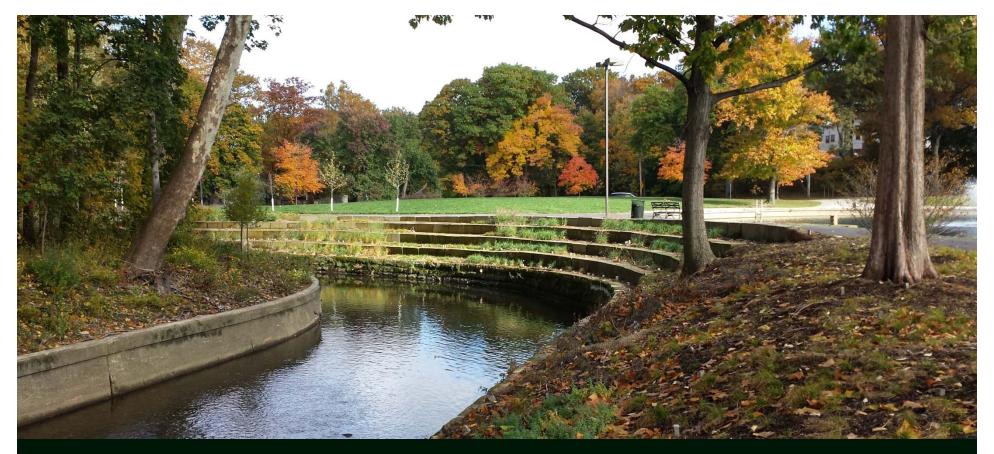
Regional Stormwater Management Program Watershed Advisory Committee March 2017





Agenda

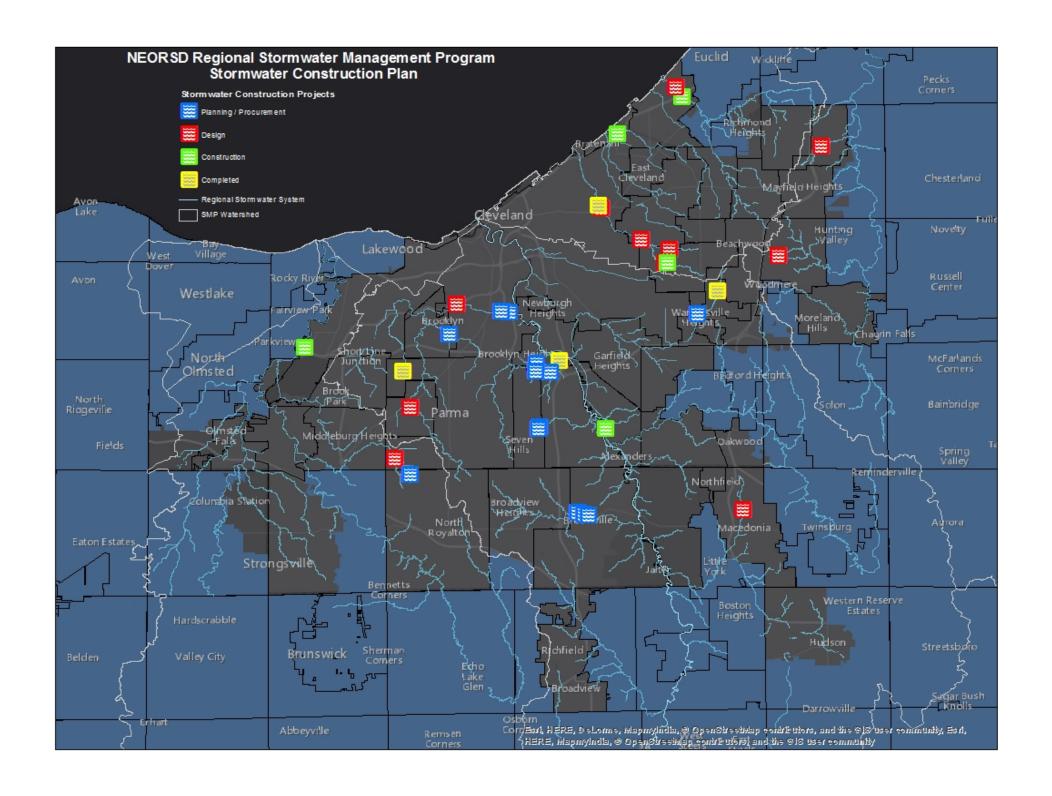
- Welcome
- Stormwater Construction Plan
- Stormwater Master Plans
- Stormwater Inspection and Maintenance
- Program Update
 - Community Cost-Share: Policy Update
 - Phase II Services
 - SW Plan Review Common comments/issues



Stormwater Construction Plan 2016-2017









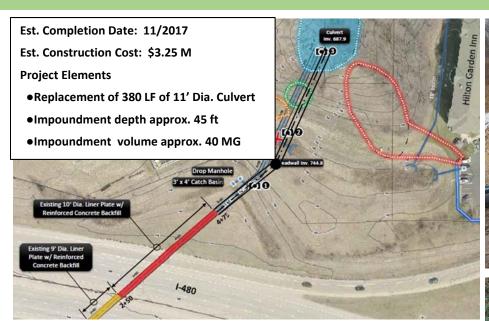
STORMWATER CONSTRUCTION PLAN



Please note, this is current as of the indicated date. This schedule will undoubtably change. Please contact your Watershed Team Leader for the most current schedule for any particular project



Emerald Pkwy. Culvert Replacement













Baldwin Creek Bank Stabilization



Construction Commencing: Fall 2018

Est. Construction Cost: \$600,000

Project Elements:

• Repair of failing retaining wall

• Repair of impacted utilities

• Floodplain expansion







Colombo Park Bank Stabilization

Construction Commencing: Early 2018

Est. Construction Cost: \$1.6 M

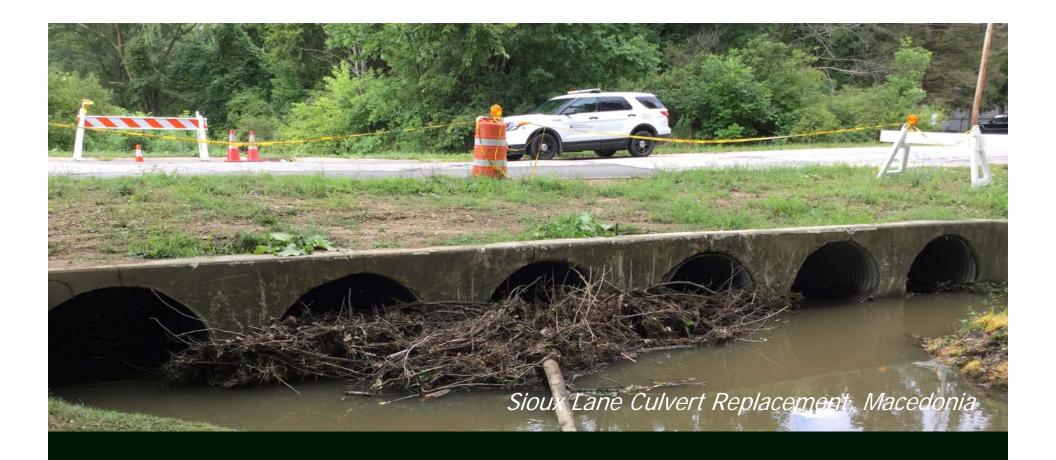
Project Elements:

 Stabilization of eroding bank to protect sanitary infrastructure

Stabilization of stream bed to reduce downcutting

• Riparian and floodplain enhancement





Stormwater Construction Plan Annual Review Process





Stormwater Construction Plan

Process

Project Nomination

Up to August

Validation

August

Business Risk Exposure Scoring

November

Stormwater
Construction Plan
Finalized in March

Stormwater Inputs

Further Analysis Projects
SW Master Plan Recommendations
Community Identified Project
Watershed Group Project



Stormwater Construction PlanCommunity Nomination





COMMUNITY PROPOSED STORMWATER PROJECT INFORMATION SUBMITTAL

The following information is necessary for the Northeast Ohio Regional Sewer District (NEORSD) to evaluate proposed projects during the stormwater construction planning process under the Regional Stormwater Management Program. Complete information will aid in determining benefit to the Regional Stormwater System and facilitate the evaluation process. NEORSD may request additional information to gain a better understanding of the project. NEORSD can provide limited technical assistance for this submittal, however preliminary engineering studies are the responsibility of the community.

The submittal of this information is solely for the purposes of facilitating the Sewer District's evaluation of projects along the Regional Stormwater System proposed by communities. The submittal of this information does not obligate the Sewer District to participate in or implement the proposed project.

Community Information	
Community	
Project Contact Name and	200
Title	
Address	
Phone Number	
Email Address	

Project Information	
Project Name	
Project Location (Address and Attached Location Map)	
Parcel Numbers	
Ownership	
Stream/Watershed	
Proposed Start Date	
Proposed Completion Date	
Project Cost	

NORTHEAST OHIO REGIONAL SEWER DISTRICT COMMUNITY STORMWATER PROJECT INFORMATION FORM

Project Description (please attach or provide the following information)

1) Project Summary

Describe the project.

- · Problem being addressed;
- Objectives and outcomes. Include explanation of the extent of specific improvements along the Regional Stormwater System;
- · Vicinity maps, drawings, or figures of the site and the project;
- · Other relevant project details that will facilitate NEORSD's review.

2) Background Information

Include studies and planning documents which support the need, and the proposed solution, if applicable.

- Site soils;
- · Geotechnical studies;
- · Wetlands, water quality, and listed species
- Preliminary hydrology and hydraulics (existing and proposed hydraulics to determine benefit to the Regional Stormwater System)
- Permitting (if initiated)
- Risks or constraints
- · Known stakeholder outreach or input
- · Current photos of the project site

3) Budget Summary

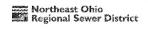
The Budget Summary should include details on materials and services including specific material cost and hourly rate. If there is a volunteer component, please identify the source of volunteers and the extent to which these volunteers are committed to the specific project. If outside funding is guaranteed, please include the amount to be paid from other sources. If outside funding is anticipated, please include information on sources, timelines, and likelihood, include an engineer's estimate if available.

2





Stormwater Construction Plan Community Nomination: Sioux Lane





COMMUNITY/ORGANIZATION PROPOSED STORMWATER PROJECT INFORMATION SUBMITTAL

He fell owing information is moses any for the Wordword Ohin Rog and Server District (WEXES)) to evaluate proposed projects during the stormwish controllers planning process under the Regional Sermisester Management Program. Complete information will delibe decerning benefit to the Regional Sormwish System and feelings the ordinaries process. NICOSSD may reposte defidical altiformation to give a better underwanding of the project. NICOSSD may provide birrieds betterfood agest stone for this submitted, however prefirmingly engineering sealess are the engineering of the project.

The suggested of this information is usely for the purposes of facilitating the Sewer Districts evaluation of projects along the Regional Stormwater System proposed by communities and/or regaritations. The radiustrat of this information does not obligate the Sover District to patients in a implement the proposed, project.

Organization/Community Infor- Organization/Community	City of Macedonia
Preject Centact Name and Title	Donald F. Sheehy, City Engineer
Address	22999 Forbes Road, Sakwood, Chio 41146
Phone Number	440-439-1939
Forail Address	observation in the disco-

Project Name	Siguz Name Culvert Replacement
Project Location (Address and Attached Location Map)	Sioux Lane, between Chenook Run and Chow Drive
Parcel Numbers	Sioux Lane public right-of-way
Gwnership Stream/Watershed	City of Macedonia Endian Cook
Proposed Start Date	09/15/18
Proposed Completion Date	10/15/16
Project Cost	\$215,000,00

Sioux Lane Culvert Replacement City of Macedonia Proposed Storm Water Project Submittal June 21, 2016

1) Project Summary

The Blook Law Culvert Registerment Poject consists of the compete remote of the outleting sitious microstrips and installation of a consist of the consisting the consisting sitious microstrips and installation of a consist of the consisting of the four force of the consisting of the consisting of the consisting of the consisting or that is four force in height and housely feet in width. This project will address both the structural failings, and the hydraulic inefficiencies of the civiling orossing. The costing in sinkholes on the readway surface. The except of these sinkholes has previously feeded the City of Maccochia to close issue, tane to traffic. Given the obstruction deficiencies of the crossing, the City will need to proceed with the cultivate relationary the fall of 2015. The durings to the exciting pipes has also woulded in partial belongies of the culvert than resident pit hydraulic capacity of the crossing. Finally, the dischard gather at the updatesm openings and further restort forw. This cusace the need for continual monitoring and cleaning of the culvert by both local and NEORSD forces. See attached mapping.

2) Background Information

NEORSD performed a complete inspection of this cubert on May 20, 2016, the results of which are on file. In addition, we have performed preliminary byteriallic calculations for the cubert replacement. In summary, replacing the cristing six-barrel crossing with a 4" x 20" box culvert will lower the updream water surface elevation immediately upstream of Sicus. Late by two inches. This culvert replacement will have no effect out surface elevations downstream of Sicus. Lane, See the tables below. All water surface elevations given in feet above see large.

		25 Year Stor	m Event		
	Approx. 300' Upstream	Immediately Upstream	Culvert	Immediately Downstream	Approx. 300 Downstream
Existing Conditions	1003.14	1002.89		1000.90	1000.43
Proposed Conditions	1003.04	1002.72		1000.90	1000.43

100 Year Storm Event							
of an areas	Approx. 300' Upstream	Immediately Upstream	Culvert	Immediately Downstream	Approx. 300 Downstream		
Existing Conditions	1003.63	1003.41		1001.78	1001.44		
Proposed	1003.50	1003.24		1001.78	1001.44		



The preliminary project cost estimate is \$215,000.00. The NEORSD share for culvert and hydraulic improvements is estimated to be \$174,000.00. The City of Macedonia.

le'll	Jur Description	Unit	Quartity	t	ril Piloe	- 1	ctel Price		
				т		_		Locarati	model or
	REPLACE WITH 4'x20' FOUR-SIDED BOX CULVERT			П				VECREO	Lose
- 1	EXISTING OVER CULVERT (E) REMOVAL	_JWP	1	2	100.00	8	HI-OCAL	5 1000000	
2	4920 CONCRETE BOX CULVERT INSTALLATION	1.0	230	5	175000	8	106 406 40	5-105-00000	
3	COOT 5/2 TYPE 2 MEMBRAN E VALTER PROCEING	SY	100	5	50	8	4.0000	5 425000	
4	HEADWALL INSTALIATION	MACH	- 2		50000	8	10,000,00	\$ 10,000,000	
- 5	SUBGRADE UNDERGUT	CY	20	\$	45.00	8	2.4040404	6 1 NO. COL	
E	HALF HEIGHT HEADYON	EACH.	2	2	9.33.		1000	5 1,000,000	
- 7	CATCH BASINS	EVCH	- :	3	2503.00	8	5000		\$ 5,XXX
- 6	12" S FORM SERVER	1.0	40	\$	1000		2000		\$ 200.0
ě	MATER MAIN LOWERING	JMP		\$	15,000,00		15 (30 (3)		
10	SANITARY SEWER REPLACEMENT WICKSING	1.0	10	\$	10000		8 500 60	5 530000	
11	PAVEMENT PLANING SCHENOOK to CROWN	97	1,300	1	5.00	8	6.000.60		\$ 65KAX
12	2" ASPEAUT SURFACE COURSE	CY	120	1	203.00	8	20,000,00		\$ 2200.20
13	CASTING ADJUSTED TO GRADE	EACH	:	2	303.00		630.63		\$ 90.3.30
								5 540,000.00	
					to treet,		17.858.65		\$ 24.33
Total Construction Cost						ŧ	137 (10 C)	5 160,100.00	t 27,5° 3.30
			Ratio	20.	Apr.inla	3	20,000		
Erd x is:						3	10000		
Constructor General							1,500,00		
	Fines En Folkway Fines, av						1000		_
	Construir 1 tipoto 1						1000	5 252000	8 5225N
			TOTAL PROP	17011	an areana	1,	11.00.07	. 13/13/0	0.0000
_	20TAC-09	MIT ARRIVANIA SIN	DOO OOT O	V247	CODMATE		244 645 00	2 173,478,17	0.00 200 0

SIGHT LANE CHILDEDT DEDLACEMENT

Note:
The costs shown concept or estimate of probatic contrastic stores property in good felloand reasonable cond. Chaptin balley
Expression 110 has reasonable conditions about the management of conditions as the conditions.











Scoring for Project Prioritization



Analysis Components

- Financial
- Social/Reputational
- Compliance
- Environmental
- Safety

2 years= 50 points

5 years= 20 points

10 years= 10 points

25 years= 5 points

50 years= 1 points

100 years= 0 points





Stormwater Construction Plan



Northeast Ohio Regional Sewer District

Show Project Summaries

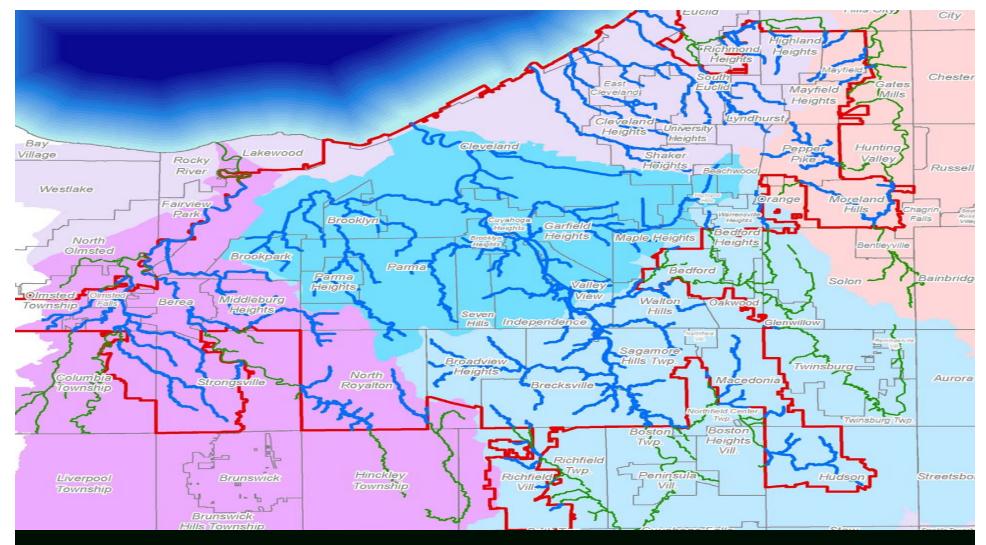
2017 - 2021 Stormwater Program Summary As of Jan 31, 2017

Project Name and Location	RFP(1)	Design(2)	Award of Construction	Construction Est.(\$M)
Stormwater				
Rocky River				
Rocky River SWMP Study	02-Mar-	17 15-Jun-1	7 N/A	N/A
Emerald Parkway Culvert Repair	05-Jan-17	A 06-Apr-1	7 N/A	\$2.8
Baldwin Creek Stabilization BD00253, BD00259, BD00257	06-Oct-16	A 16-Feb-17	A N/A	\$1.4
Debris Rock Modifications and Bank stabilization AC00018 & AC00123	N	/A N//	A 1st Quarter 2021	\$0.3
North Royalton Culvert Repair BD00296	4th Quarter 20	18 1st Quarter 201	9 N/A	\$1.4

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









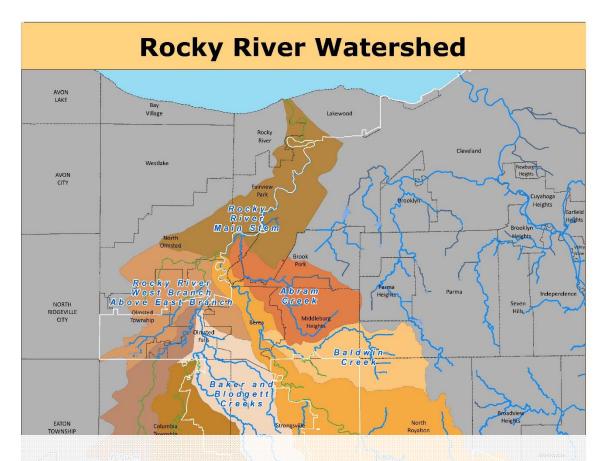


Stormwater Master PlansGoals and Objectives

- Multi-objective, watershed approach to developing solutions for broad suite of problems
- Prioritized list of construction and maintenance projects at the Watershed-level and Program-level
- Identification of early action projects





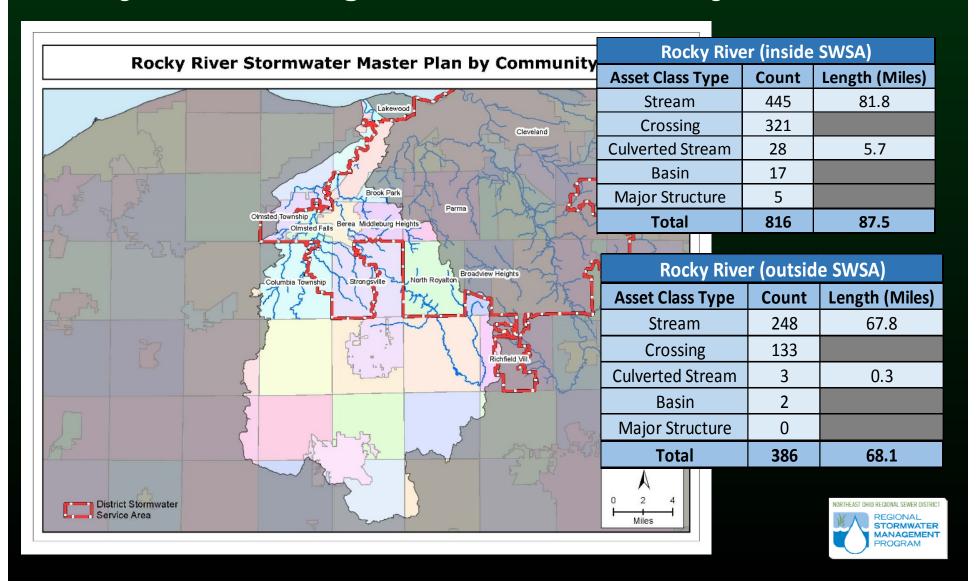


Cuyahoga River South – Awarded Cuyahoga River North – Awarded

Rocky River - RFP Released Feb. 21, 2017

Chagrin River & Lake Erie Direct Tributaries - RFP Release 3rd Qtr 2018

Rocky River – Regional Stormwater System Assets



Rocky River – Schedule

- Proposals due March 28, 2017
- Award anticipated July 2017
 - http://www.qsisphere.com/LowerMcClea y/tour.html?startscene=53&startactions= lookat(-315.1,4.24,140,0,0);
- Local System SWMP





Rocky River – 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 District.

Jeff Jowett Watershed Team Leader 216-881-6600 Ext. 6881 jowettj@neorsd.org







Stormwater Inspection and Maintenance





Stormwater Inspection & Maintenance All actions begin with an Inspection





NORTHEAST OHIO REGIONAL SEWER DISTRICT
REGIONAL
STORMWATER
MANAGEMENT
PROGRAM

Stormwater Inspection & Maintenance Inspection Recommendations



Stormwater Inspections Rocky River: 20

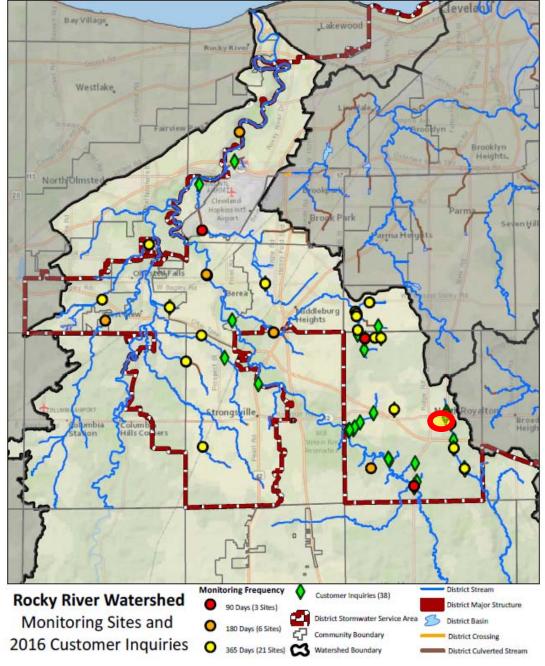
Rocky River: 2016 Summary

38 Customer Inquiries (132 in Service Area)

30 sites currently being monitored (**190** in Service Area)

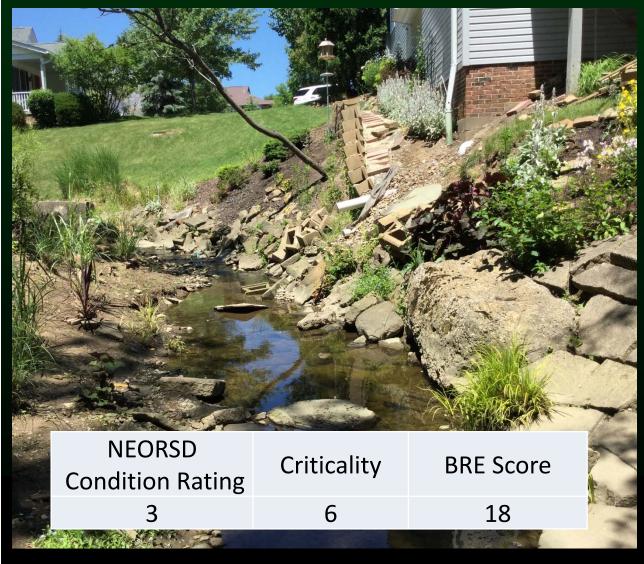






Stormwater Inspections

Rocky River: East Branch



Asset #: RE00625 North Royalton SWAN Lake Blvd BTU: Residential Building

Structural Integrity:

- Failure bank protection
- o Exposed bank

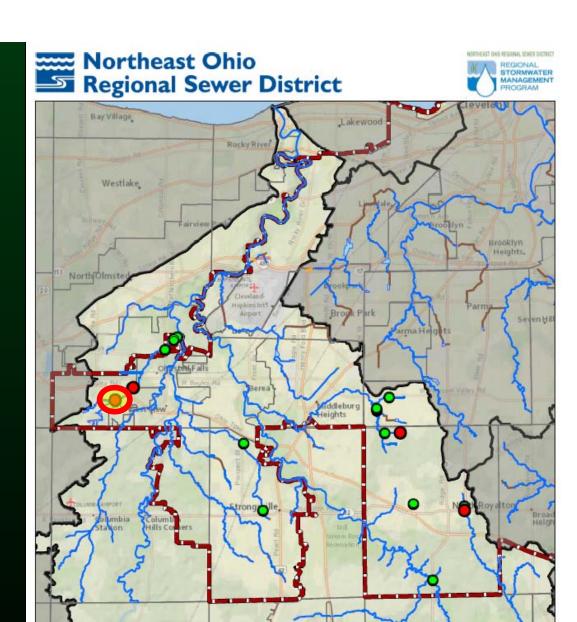
Recommendation:

- **✓** SWMP
- ✓ Monitoring

Stormwater Inspection: Further Analysis/SW Master Plan Rocky River: 2016 Summary

4 Assets recommended for SW Master Plan (37 in Service Area)

14 assets recommended for Further Analysis(120 in Service Area)



Rocky River Watershed Stormwater Master Planning and Further Analysis Recommendations



Stormwater Inspection: Further Analysis/SW Master Plan

Rocky River: Minnie Creek



Asset ID: MN00037 Olmsted Township Schady Road BTU: Driveway

Structural Integrity:

- o Abutment failure
- Exposed rebar throughout
- o Footer scoured away

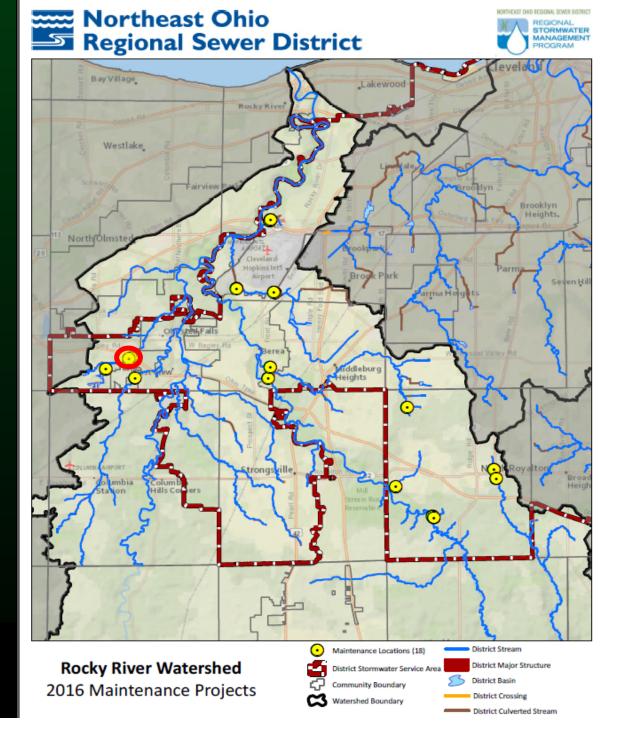
Recommendation:

- ✓ Notify Owner
- ✓SWMP (assess hydraulic performance of all driveways)
- ✓ Monitor

Stormwater Maintenance Rocky River: 2016 Summary

18 Maintenanceprojects(112 in Service Area)

564 CY sediment and debris removed (3,646 CY in Service Area)



Stormwater Maintenance

Rocky River: Minnie Creek

Asset ID: MN00017

Community: Olmsted Township

Maintenance Project: Sediment Removal - 80 CY

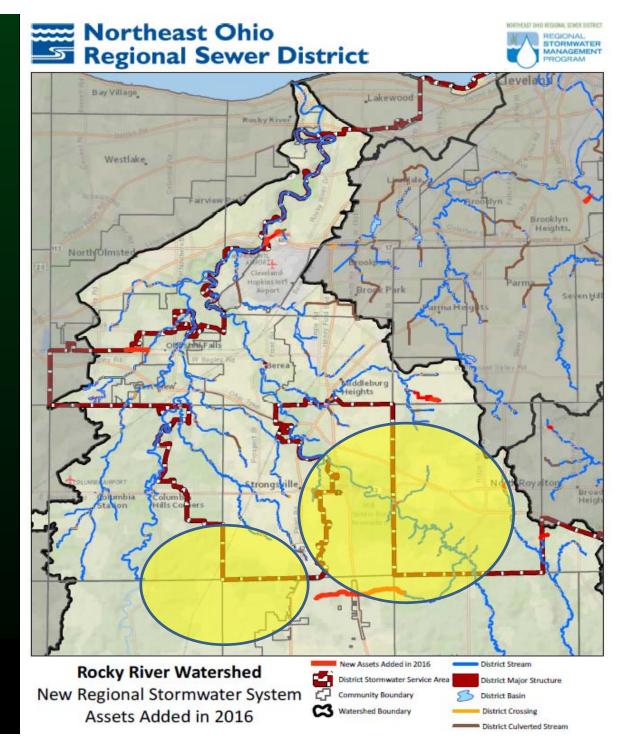




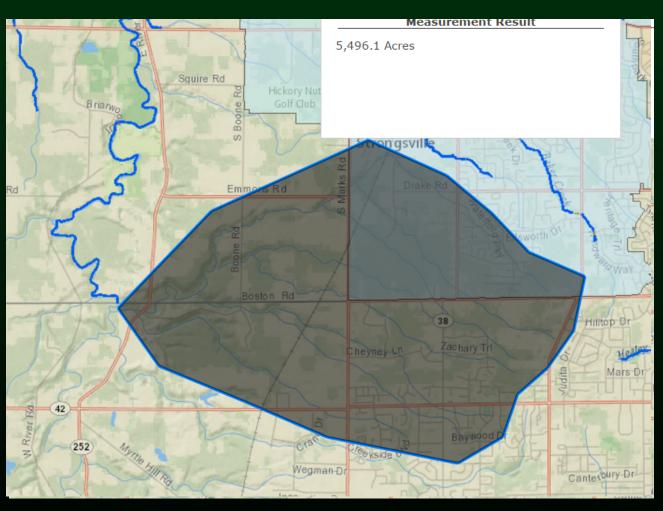




Regional
Stormwater
System
New Assets
(Mostly
Terminus
Extensions)



Regional Stormwater System Rocky River: West Branch



North Royalton

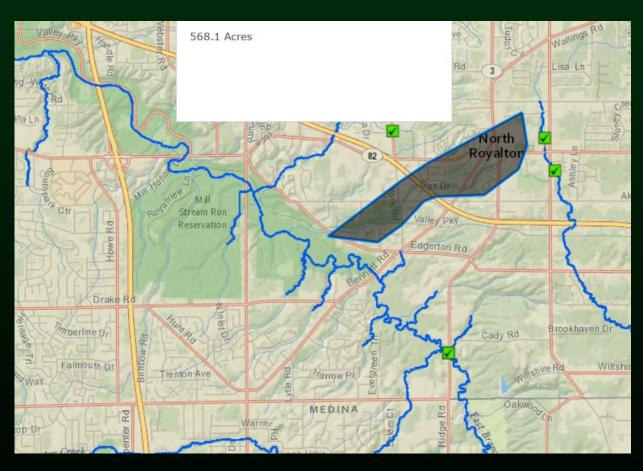
Area of interest will likely become a new subwatershed (DA > 3 sq miles)

Will be defined during Rocky River **SWMP**





Regional Stormwater System Rocky River: East Branch



North Royalton

Several small tributaries will likely be part of RSS

Will be defined during Rocky River SWMP

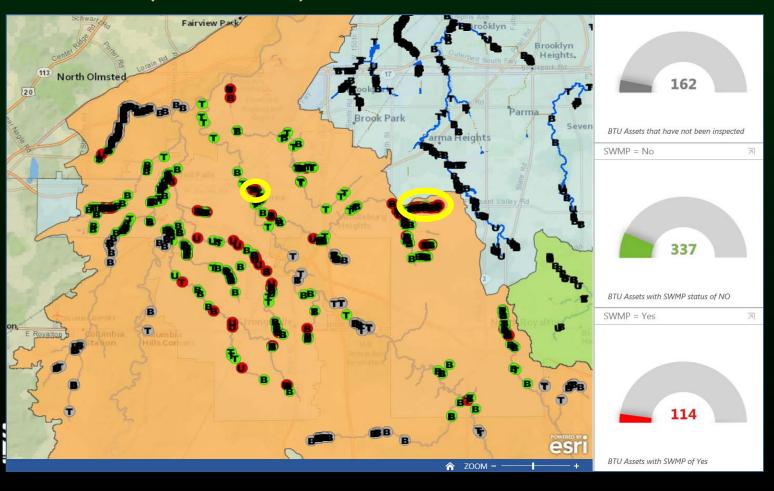




Potentially Threatened Infrastructure:Buildings, Transportation and Utilities (BTU)

BTUs (out of 651) along streams in Rocky River are recommended for SW Master Plan assessment

BTUs (out of 1,979) in Service Area recommended to date



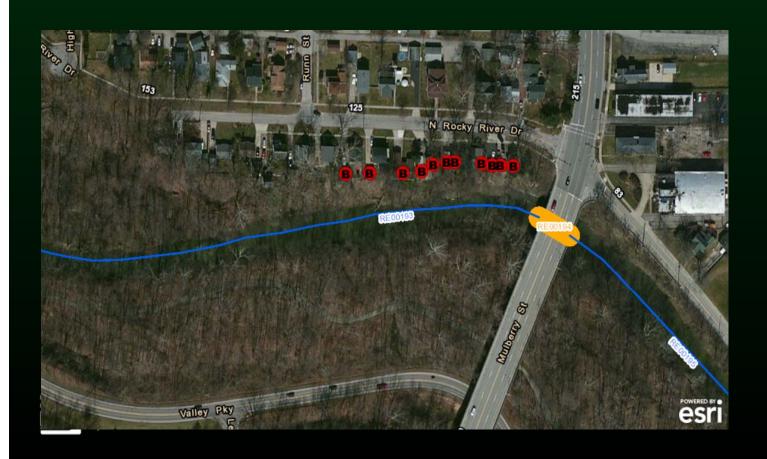


Threatened Infrastructure: BTUs

Rocky River: East Branch

Community: Berea

BTUs: Buildings recommended for SW Master Plan





Threatened Infrastructure: BTUs

Rocky River: Baldwin Creek

Community: Parma

BTUs: Buildings and Detached Garages recommended for

SW Master Plan



Stormwater Inspection & Maintenance 2017 Agenda

- Continuing to collect RSS data:
 - Record drawings
 - Responsible party infrastructure: culverted streams, bridges, culverts, basins, major structures
 - Gather historical inspections reports
- Future data request to be made to the community and individual agencies



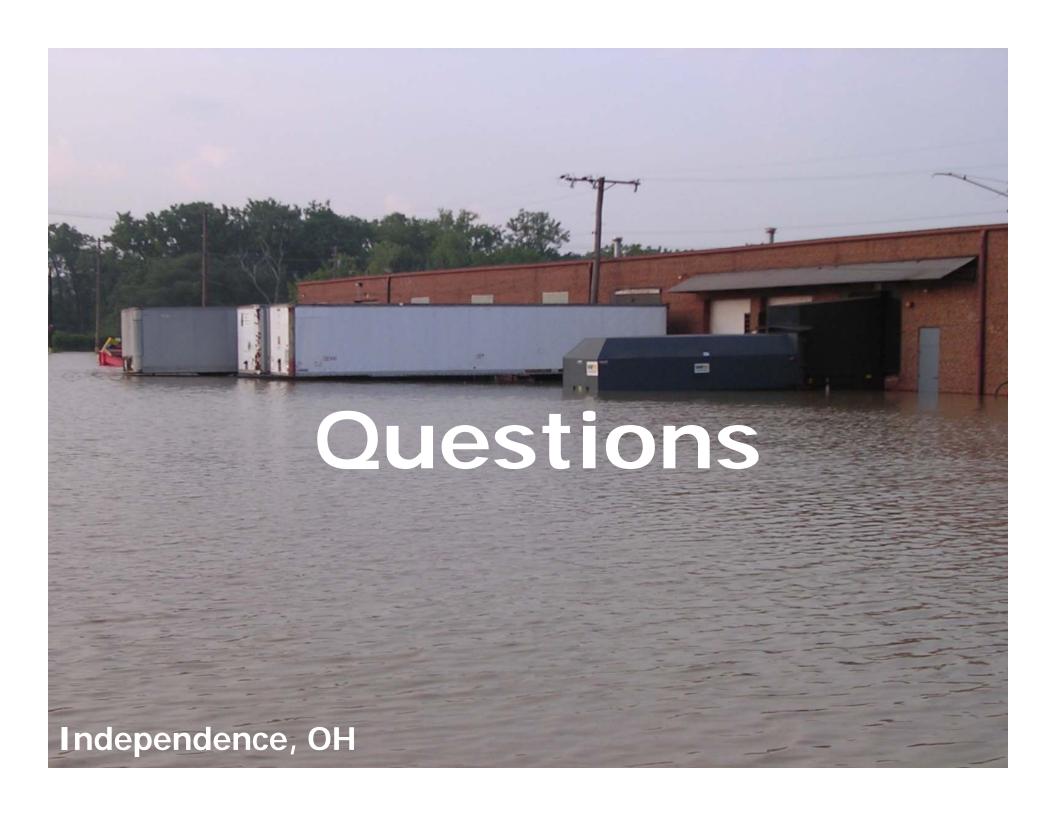


Stormwater Inspection & Maintenance 2017 Agenda

- Planning to pilot new maintenance project types:
 - Basin Dredging
 - Structural Repair
 - Streambank Stabilization (small scale/low cost/low risk)
- Looking for potential locations
- Contact SWIM representative (Mark Link, George Remias) with ideas













- \$9,946,579.37 available across communities
- 32 approved projects, totaling \$3,041,990.58
- 6 completed projects, totaling \$199,529.74
- Vendor Registration
 http://www.neorsd.org/isupplier_homepage.php
- Policy Update





Policy Update Example - Shaker Heights

- Allocation Agreement: Underground Stormwater Detention
- Construction Costs \$750,000
 - City to apply for reimbursement annually over seven (7) years







Policy Update Example - Parma

- Allocation Agreement: Equipment Purchase
 - Jet/Vacuum Machine: \$550,000
 - Mechanical Broom Sweeper: \$281,517
 - Maintenance: $$40,000 \times 5 \text{ years} = $325,000$
- Total = \$1,075,000
- Application Approved January
- Apply for \$215,000/year reimbursement as funds accrue

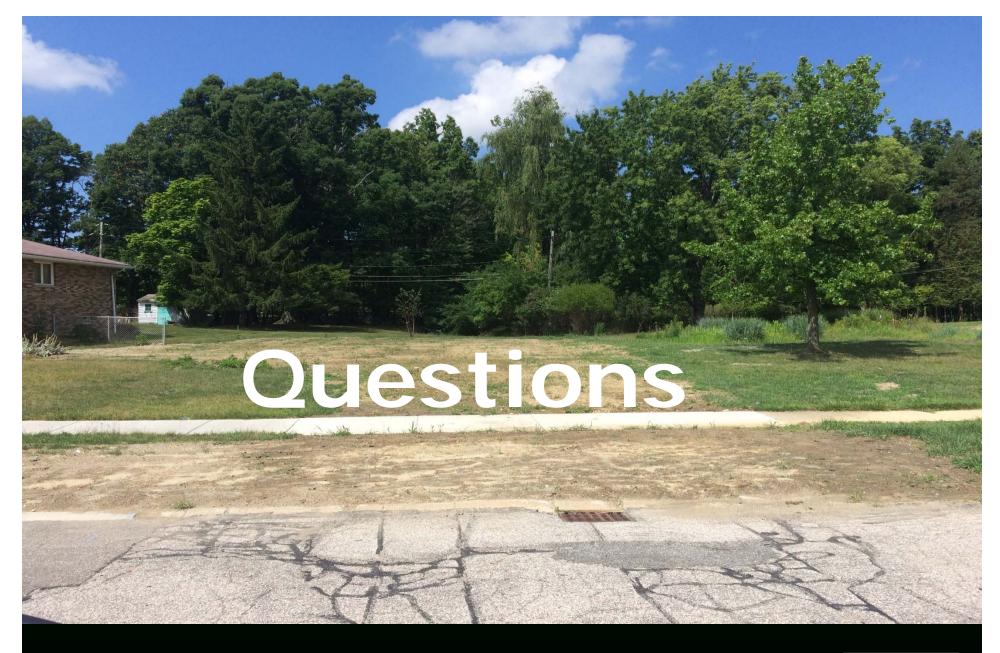




Community Cost-Share Policy Update

Allocate CCS funds to a project before funds have accumulated in the Member Community's CCS account

- 1. Submit CCS application for the project to WTL
- 2. District reviews application for compliance with CCS Policy
- 3. Execute CCS project agreement with District for allocation of CCS funds
- 4. Implement project
- 5. Submit reimbursement request to District for CCS funds
- 6. Repeat step 5 until the Member Community has requested and received the total amount needed for project

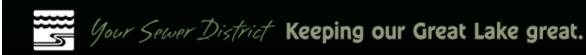






Title V Requires Phase II Support Services for Certain MCM's

- 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





Providing Services with Established Providers

- Cuyahoga County Board of Health
 - 48 communities offered services
 - 1 community has declined
- Cuyahoga Soil & Water Conservation District
 - 48 communities offered services
 - 1 community has declined
- Lorain County Stormwater Management District
 - Columbia Township
- Summit County Combined General Health District
 - 5 out of 5 communities
- Summit Soil & Water Conservation District
 - 5 out of 5 communities

Title V – SW Mgmt Plan Review

Recurring Issues/Comments

- Lack of detail on SCM outlet structure to guard against "leaks"
 - Ensure wall penetrations, and weir wall inserts/seams are watertight
- SCM inspection & maintenance plans
 - Lack of detail to define dredging needs to maintain function of the SCM
- Considerations to maximize future stormwater fee credits





Title V – SW Mgmt Plan Review Recurring Issues/Comments

- Incorrect WQv calcs for redevelopment
 - Calculate minimum required WQv for the site as a whole
 - SCMs must be designed for the WQv of its watershed - must meet or exceed the minimum required WQv
- Inaccurate drainage area delineations and curve number interpretations
 - Need to account for offsite run-on







What's Next...

- WAC Meetings
 - Lake Erie/Chagrin River: March 13
 - Cuyahoga River North: March 15
 - Cuyahoga River South: March 20
 - Rocky River Watershed: March 22
- Next Round in October 2017



Questions

Jeff Jowett

Watershed Team Leader 216-881-6600 Ext. 6881 jowettj@neorsd.org

Stormwater Program: Community Resources

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

Rocky River Watershed NORTH RIDGEVILLE CITY Seven Hills GRAFTON VILLAGE_ Northeast Ohio Regional Sewer District 1:58,912 ~ Regional Stormwater System in NEORSD

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

Map Created: March 2017

This Information is for display purposes only. The Northeast Ohio Regional Sewer District (NEORSD) makes no warranties, expressed or implied, with respect to the accuracy of and the use of this map for any specific purpose. This map was created to serve as base information for use in Geographic information Systems (GIS) for a variety of planning and analysis purposes. The instruction of use in Geographic information Systems (GIS) for a variety of planning and analysis purposes. The NEORSD expressly disclaims any liability that may result from the use of this map. For more information, plasses contact.NEORSD GIS Services, 3900 Euclid Avenue, Cleveland, Ohio 44115 (216) 881-6600 — GIS@neorsd.org

- Regional Stormwater System not in NEORSD Service Area
- Service Area
- Community
- ~ District Culverted Stream