

Northeast Ohio Regional Sewer District

Environmental Assessment

Field Projects: 2015

Who are we?

- Independent political subdivision of the state, created by court order in 1972
- Serves all or part of 62 communities
- Approximately 650 employees
- Five locations: EMSC, GJM, Easterly, Westerly, Southerly



Wastewater Treatment Plants



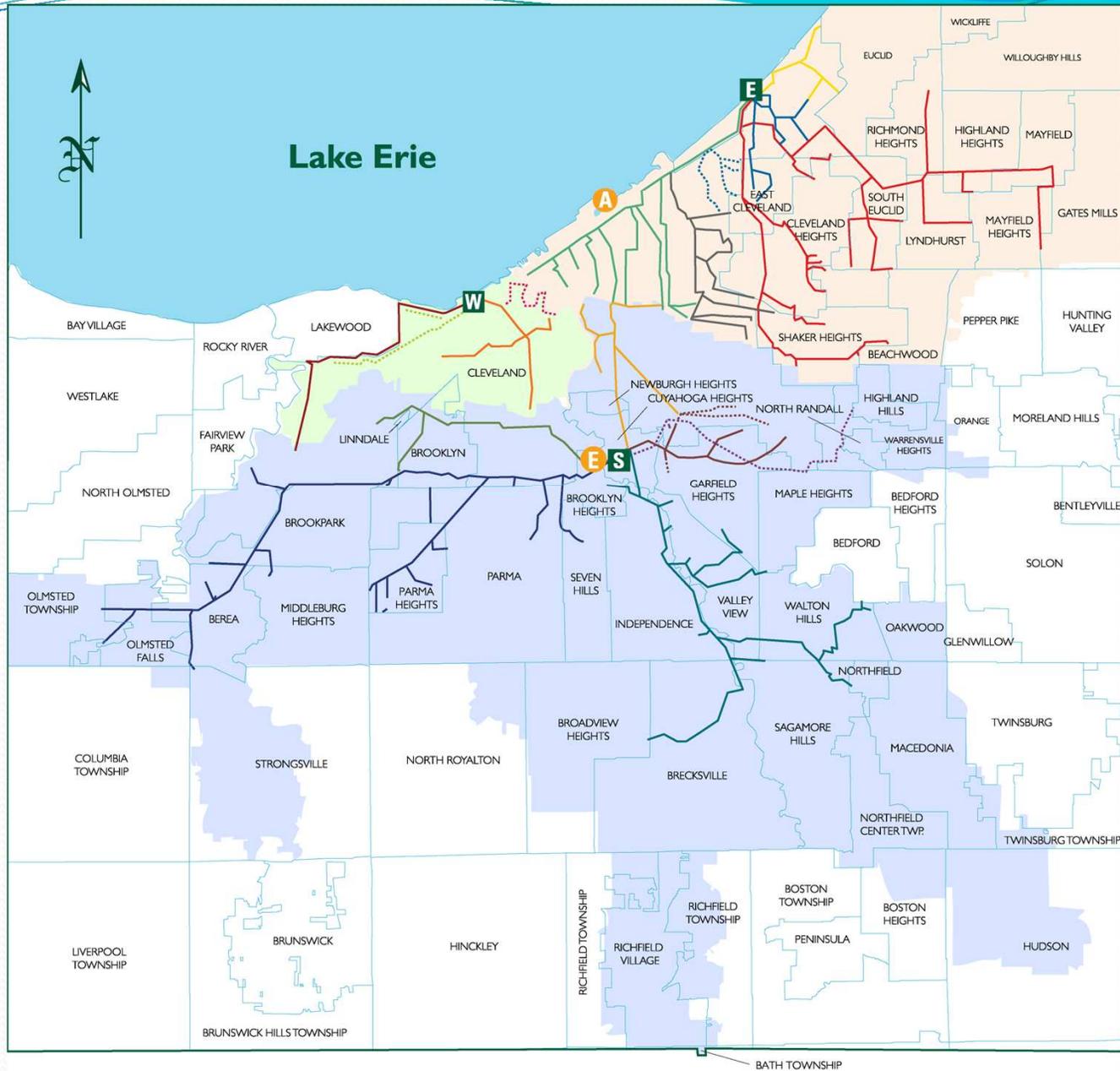
Westerly



Easterly



Southerly



Water Quality and Industrial Surveillance (WQIS)

- Industrial Surveillance
- Surcharge
- Emergency Response
- Environmental Assessment





Post-Construction Monitoring Program (Consent Decree)

- To determine bacteria and nutrient loading during wet weather events (greater than 0.25 inches of rain) in order to analyze the effectiveness of the Long Term Control Plan Projects.
- Sample collection may occur multiple times per month at any of the sites between May 1 and October 31.

Consent Decree Monitoring Sites

- Some of the sites overlap with current monitoring sites, however these samples will be their own event due to the wet weather requirement.

Surface Water	Site ID	Latitude	Longitude	River Mile	Location Information	HUC 8 Number-Name
Big Creek	EM1	41.4460	-81.6865	0.15	RM 0.15, ~330 ft downstream of Jennings Road	4110002 Cuyahoga
Cuyahoga River	EM2	41.5003	-81.7100	0.25	RM 0.25, River Left ~200 ft downstream of railroad bridge	4110002 Cuyahoga
Doan Brook	EM3	41.5330	-81.6296	0.75	RM 0.75, ~170 ft downstream of St. Clair Avenue	04110003 Ashtabula Chagrin
Dugway Brook	EM4	41.5509	-81.6086	0.37	RM 0.37, ~200 ft downstream of culvert opening	04110003 Ashtabula Chagrin
Euclid Creek	EM5	41.5833	-81.5594	0.55	RM 0.55, ~500 ft downstream of Lake Shore Blvd.	04110003 Ashtabula Chagrin
Lake Erie	EM6	41.4897	-81.7391	--	Edgewater Beach East	04120200 Lake Erie
Lake Erie	EM7	41.5842	-81.5687	--	Euclid Beach East	04120200 Lake Erie
Lake Erie	EM8	41.5862	-81.5667	--	Villa Angela Beach East	04120200 Lake Erie
Nine-Mile Creek	EM9	41.5575	-81.5991	0.40	RM 0.40, ~325 ft upstream of Lake Shore Blvd.	04110003 Ashtabula Chagrin
Ohio Canal	EM10	41.4213	-81.6559	--	Bridge at Kurtz Bros. access road, approximately 275 ft. SW of intersection of Canal Rd & E. 49th	4110002 Cuyahoga
Rocky River	EM11	41.4699	-81.8233	2.50	RM 2.40, ~230 ft upstream of Hilliard Rd. Bridge	4110001 Black-Rocky
Shaw Brook	EM12	41.5554	-81.6018	0.40	RM 0.10, ~100 ft upstream of Lake Shore Blvd.	04110003 Ashtabula Chagrin
Spring Creek	EM13	41.4378	-81.6805	0.30	RM 0.30, ~650 ft downstream of CSO 059 outfall	4110002 Cuyahoga
West Creek	EM14	41.4148	-81.6655	1.95	RM 1.95, Upstream side of Lancaster Road Bridge	4110002 Cuyahoga
Treadway Creek	EM15	41.4409	-81.6902	0.40	RM 0.40, ~285 ft east of intersection of Taiton Ave. and W. 158th St.	4110002 Cuyahoga

CSO Permit Required Sampling

- Stream monitoring shall be conducted at each of the 14 sites at least once during the 5 year permit cycle.
- We are doing 10 this year. 7 CSO sites (different from above) will be sampled twice during Wet weather events, April -November.





CSO Permit Sampling Sites

- 1) Cuyahoga River upstream of Mill Creek confluence (RM 12.1/11.95)
- 2) Cuyahoga River downstream Big Creek confluence (RM 7.0)
- 3) Big Creek at Memphis/Tiedeman Park (RM 4.4)
- 4) Big Creek downstream Jennings Road (RM 0.15)
- 5) Doan Brook upstream Lee Road (RM 6.7)
- 6) Doan Brook downstream of St. Clair Avenue (RM 0.75)
- 7) Euclid Creek upstream of St. Clair Avenue (RM 1.65)
- 8) Euclid Creek downstream of Lakeshore Boulevard (RM 0.55)
- 9) Mill Creek upstream of S. Miles Road (RM 8.3)
- 10) Mill Creek upstream of Canal Road (RM 0.12)
- 11) West Creek downstream I-480 (RM 2.1)
- 12) West Creek between Granger and Schaaf Roads (RM 0.2)
- 13) Rocky River upstream of Mastick Road (RM 8.3)
- 14) Rocky River upstream of Hilliard Boulevard (RM 2.5)

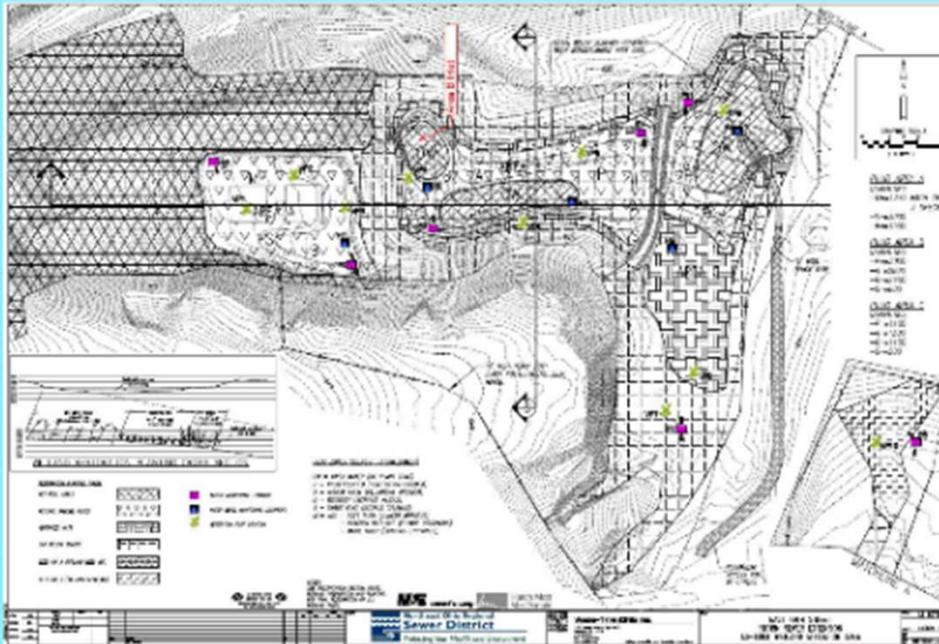
Wetland Monitoring





Wetland Monitoring

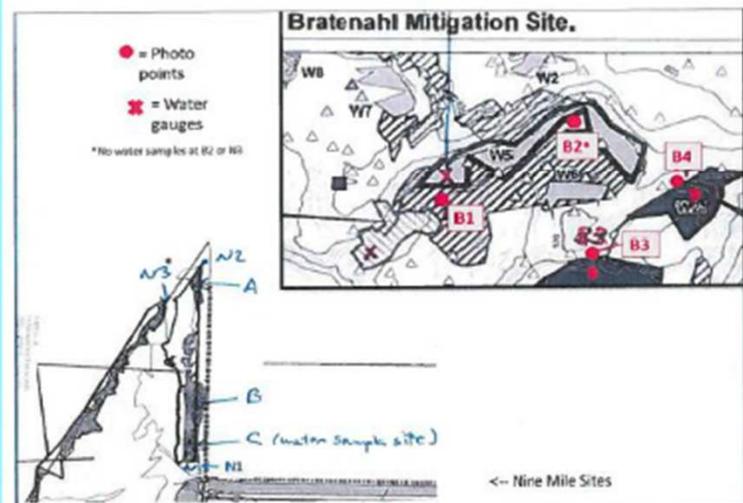
- May and August
- Sediment and water
- Photos of all the sites
- Bratenhal, Nine-Mile, and Southerly



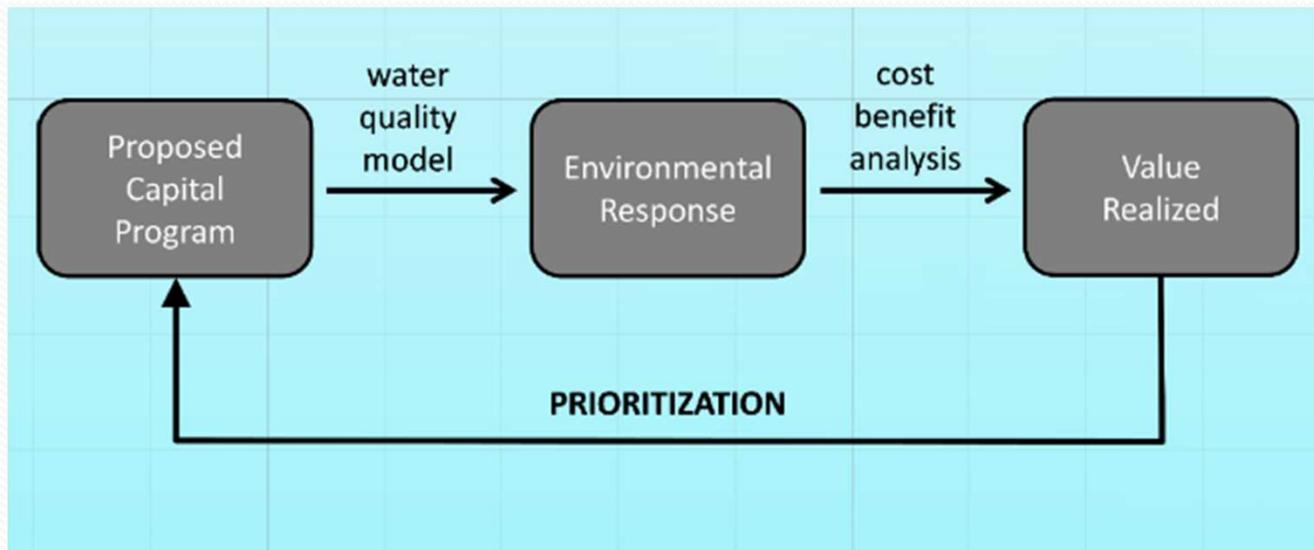
Investigators: *Sochalen, Meany*
 Date: *8/27/14* Time: *9:15*
 Weather conditions: *Overcast 72°*

	Site	Photos at Photo Point Locations	Measurement at Hydrological Gauges (ft)	Water Samples, Time	Soil Sampling
Nine Mile Sites	N1	<input checked="" type="checkbox"/> Y	<i>0.92</i> ft.	<input checked="" type="checkbox"/> Y	hrs
	N2	<input checked="" type="checkbox"/> Y	<i>0.62</i> ft.	<input checked="" type="checkbox"/> Y	hrs
	N3	<input checked="" type="checkbox"/> Y	<i>0.82</i> ft.		
Bratenahl Sites	B2, W5	Y/N	ft.		
	B1	<input checked="" type="checkbox"/> Y	<i>4.36</i> ft.	<input checked="" type="checkbox"/> Y	hrs
	B3, W22	<input checked="" type="checkbox"/> Y	<i>1.62</i> ft.	<input checked="" type="checkbox"/> Y	hrs
	B4, W21	<input checked="" type="checkbox"/> Y	<i>0.0</i> ft.	<input checked="" type="checkbox"/> Y	hrs

Comments:



Integrated Planning



Integrated Planning

- Working with Michigan Tech to collect data for designing models
- Models are meant to show which projects are most effective and financially the best choice
- Last year 1 wet weather event was sampled and a dry weather was done



Beach Sampling and Lake Erie Nutrient Study



Beach Sampling

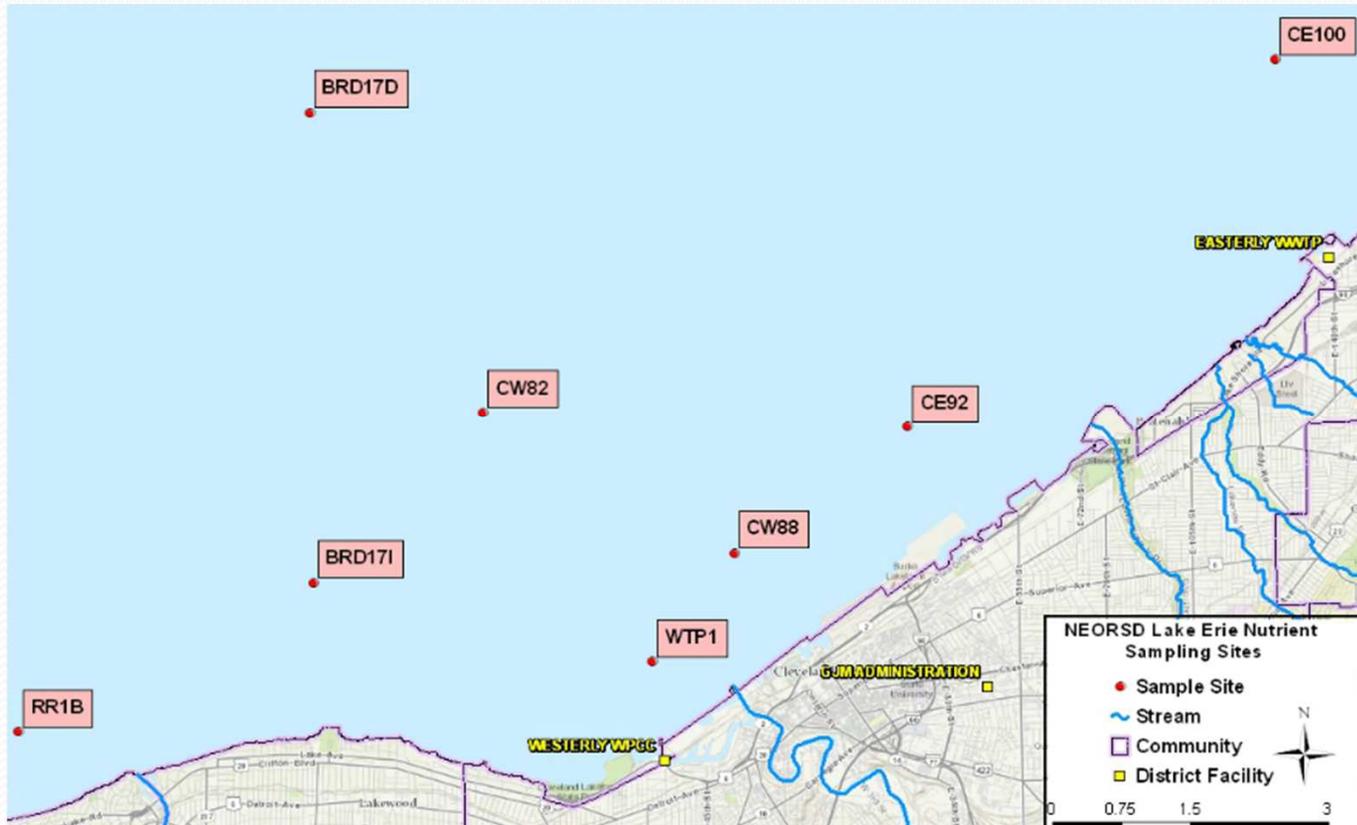
- Villa Angela Beach, Euclid Beach, Edgewater Beach, Euclid Creek RM 0.55
- *E. coli* densities, field parameters, visual observation
- May 1 through October 30th



Beach Sampling Sites

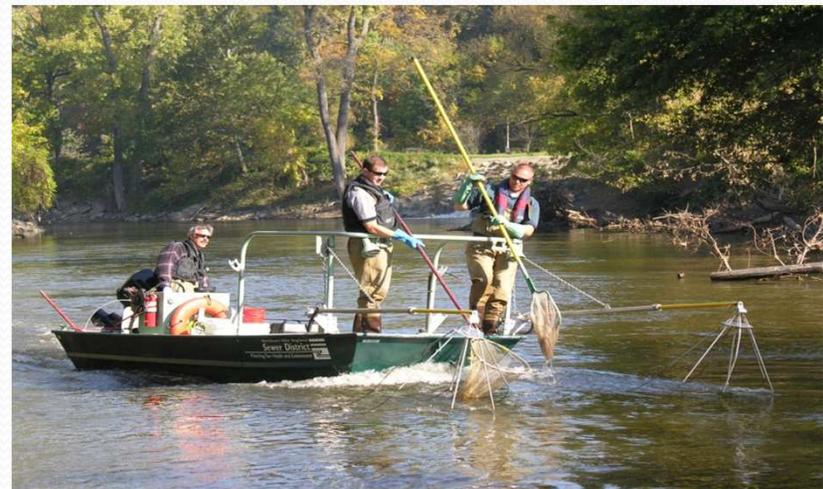


Lake Erie Monitoring



- Determine spatial trends in algal densities and nutrient concentrations in Lake Erie.

Environmental Assessments for Watershed Monitoring program



Euclid Creek

- 1) **RM 1.65**
- 2) **RM 0.55***
- 3) RM 0.40, fish survey only



*Consent Decree Site

CSO Permit Sampling Required

Euclid Creek Monitoring Sites



Cuyahoga River Sites

- 1) RM 16.20
- 2) **RM 12.10**
- 3) RM 11.30
- 4) RM 10.75
- 4) RM 10.10
- 5) RM 8.60
- 6) **RM 7.00**
- 7) RM 5.90
- 8) RM 2.75
- 9) RM 0.20 (RM 0.25*)

*Consent Decree Site
CSO Permit Sampling Required



Big Creek

- 1) RM 0.15*
- 2) RM 4.40
- 3) RM 0.02, West Branch
- 4) RM 0.03, Stickney Creek
- 5) RM 0.20, Snow and Pearl Branch
- 6) RM 9.80

*Consent Decree Site

CSO Permit Sampling Required

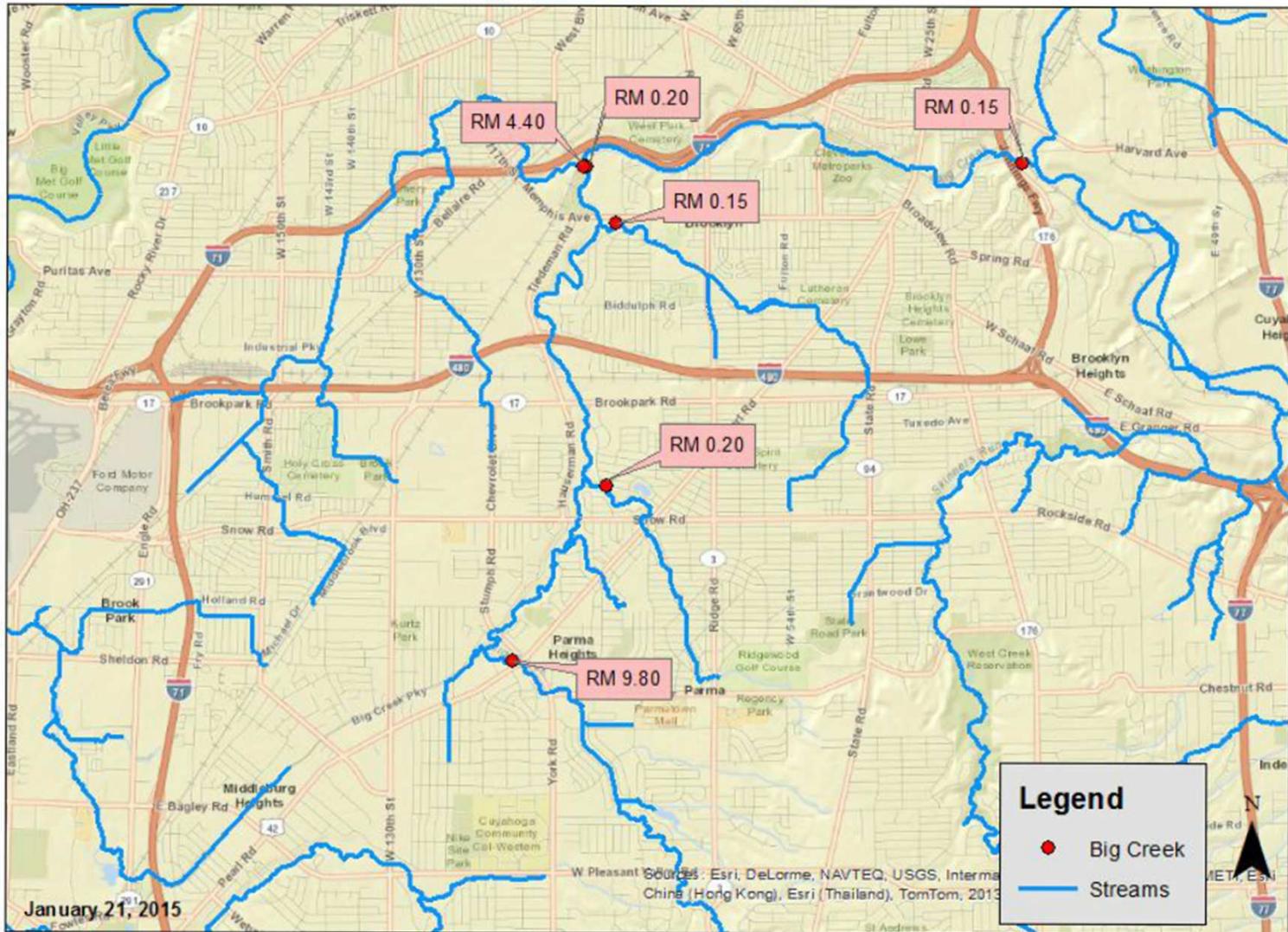
2014: 2 sites on Big Creek



Big Creek RM 0.15, 2014



Big Creek Monitoring Sites

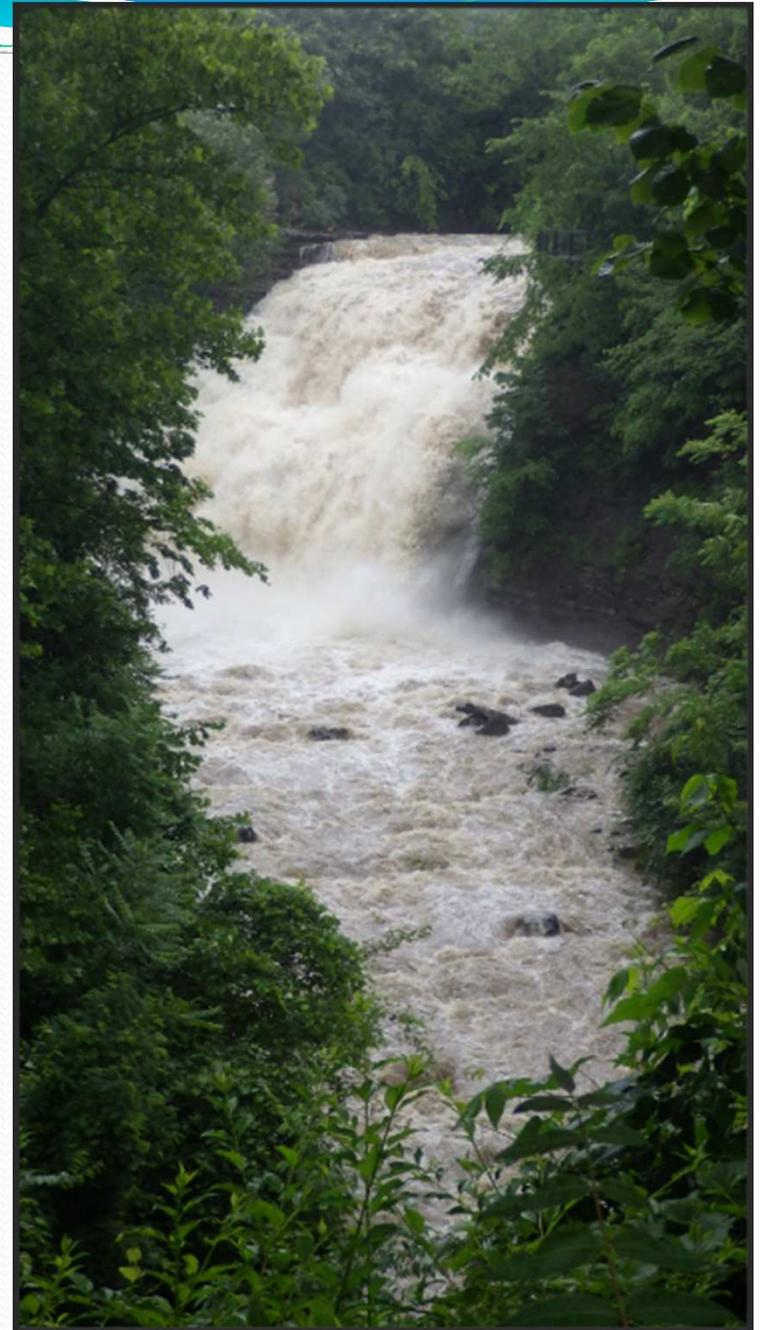


Mill Creek

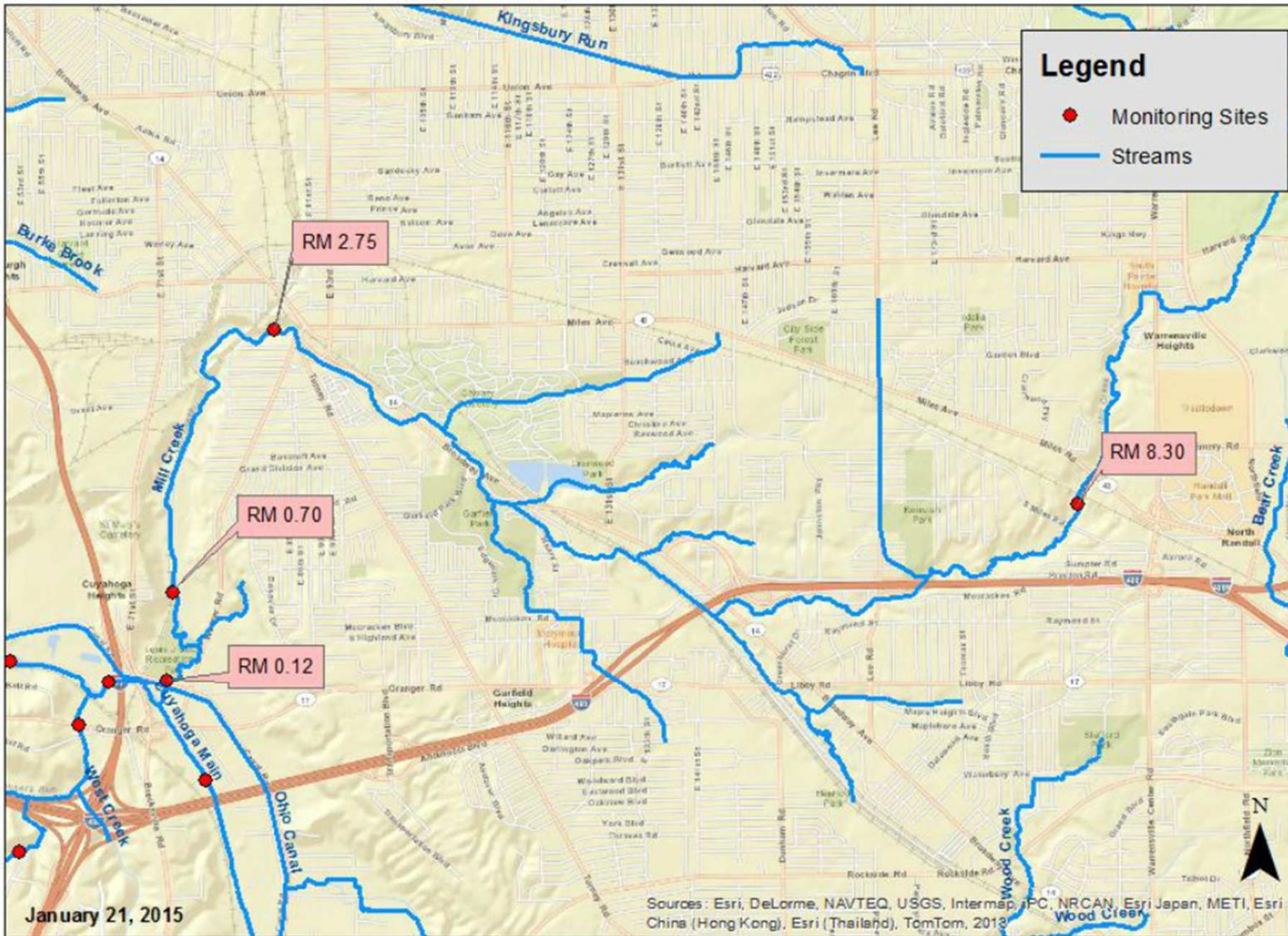
- 1) **RM 0.12**
- 2) **RM 0.70**
- 3) **RM 2.75**
- 4) **RM 8.30**

2014: 7 sites on Mill Creek

CSO Permit Sampling Required



Mill Creek Monitoring Sites



West Creek

- 1) **RM 0.20**
- 2) RM 1.60
- 3) **RM 2.10** (RM 1.95*)
- 4) RM 3.65
- 5) RM 5.30
- 6) RM 0.20, Unnamed Tributary (south)

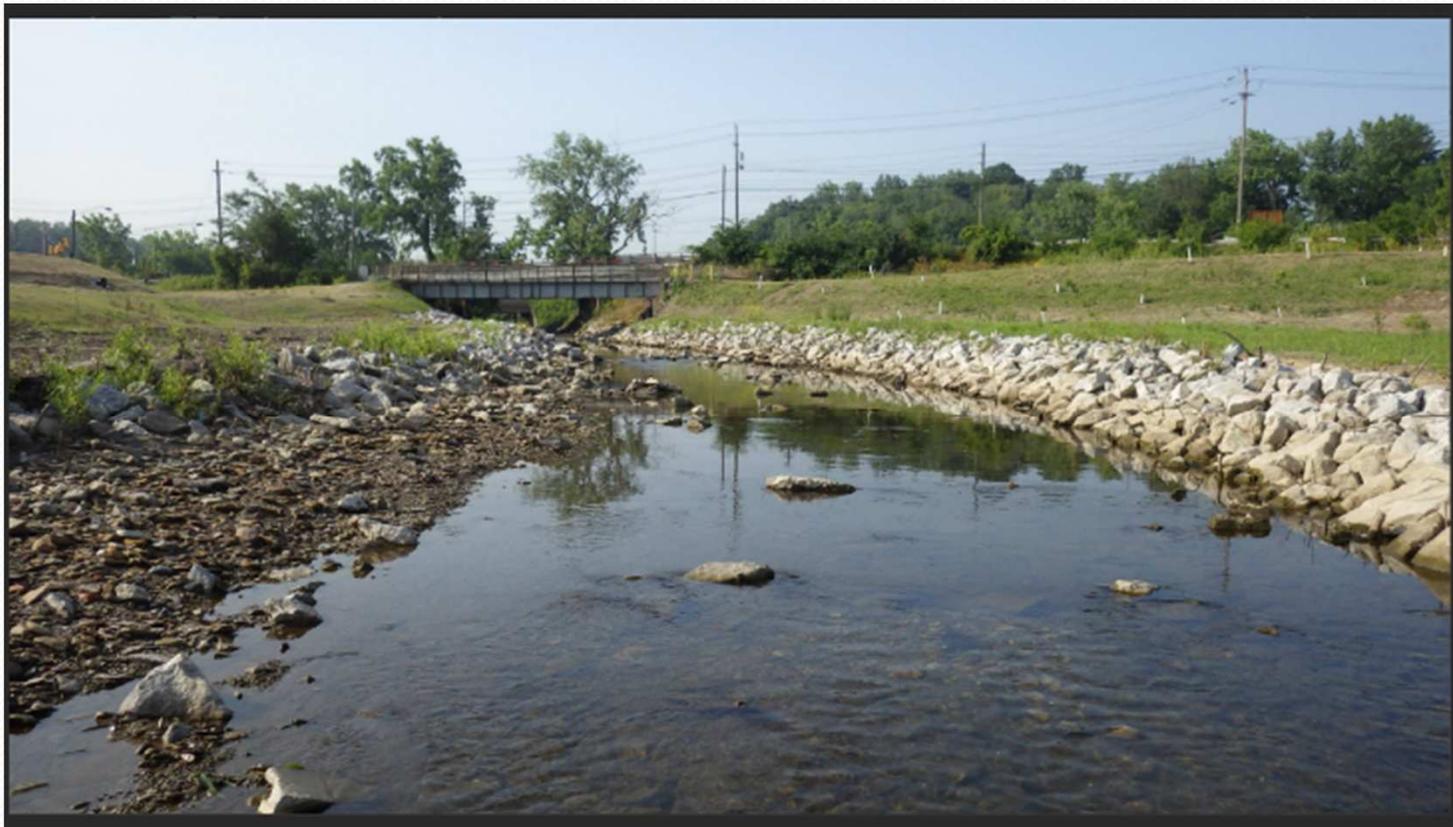
*Consent Decree Site

CSO Permit Sampling Required

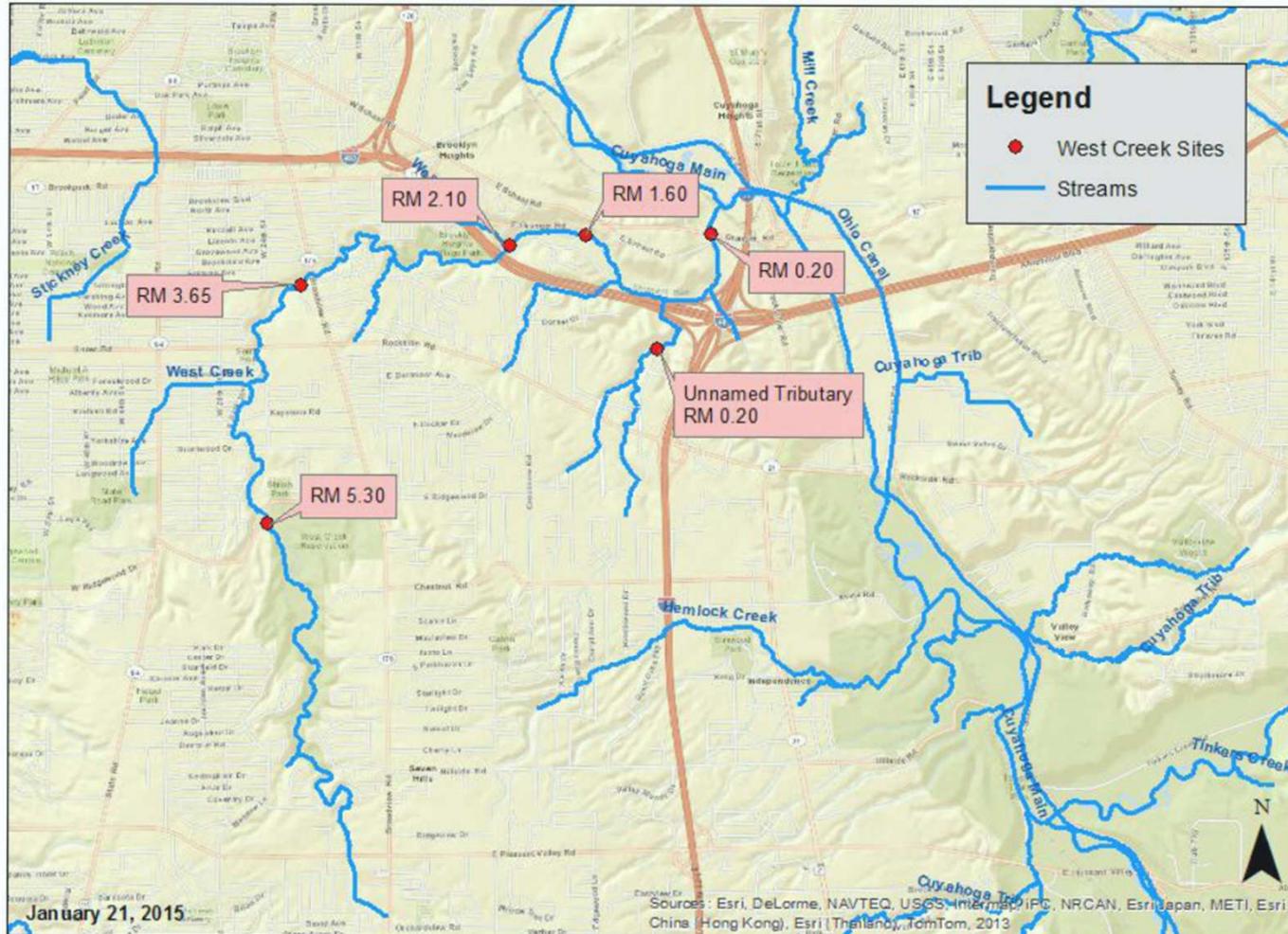
2014: 4 sites on West Creek



West Creek RM 0.20, 2014



West Creek Monitoring Sites



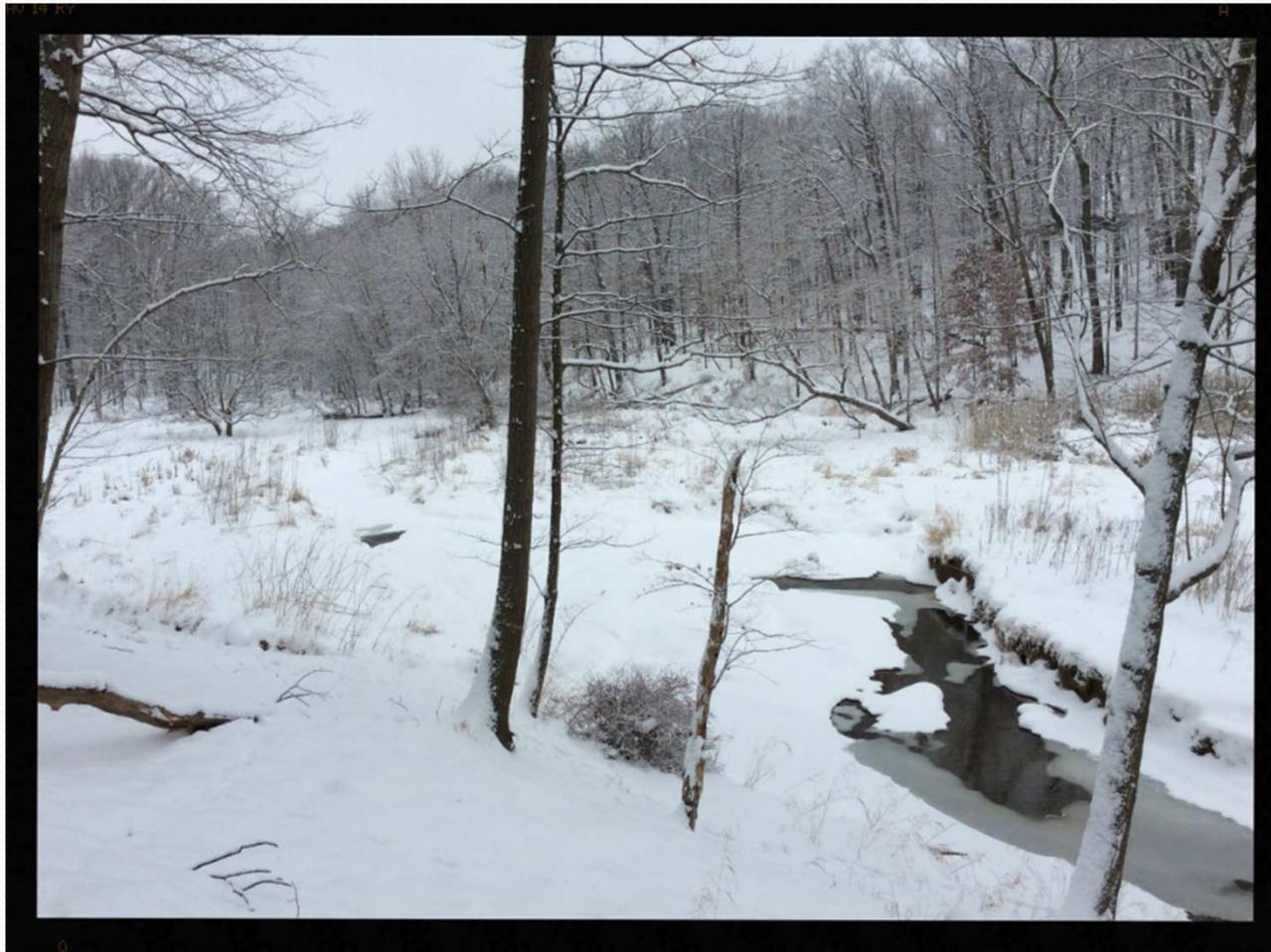
Hemlock Creek

- 1) RM 0.10, Lower Branch
- 2) RM 0.15
- 3) RM 1.15
- 4) RM 2.50

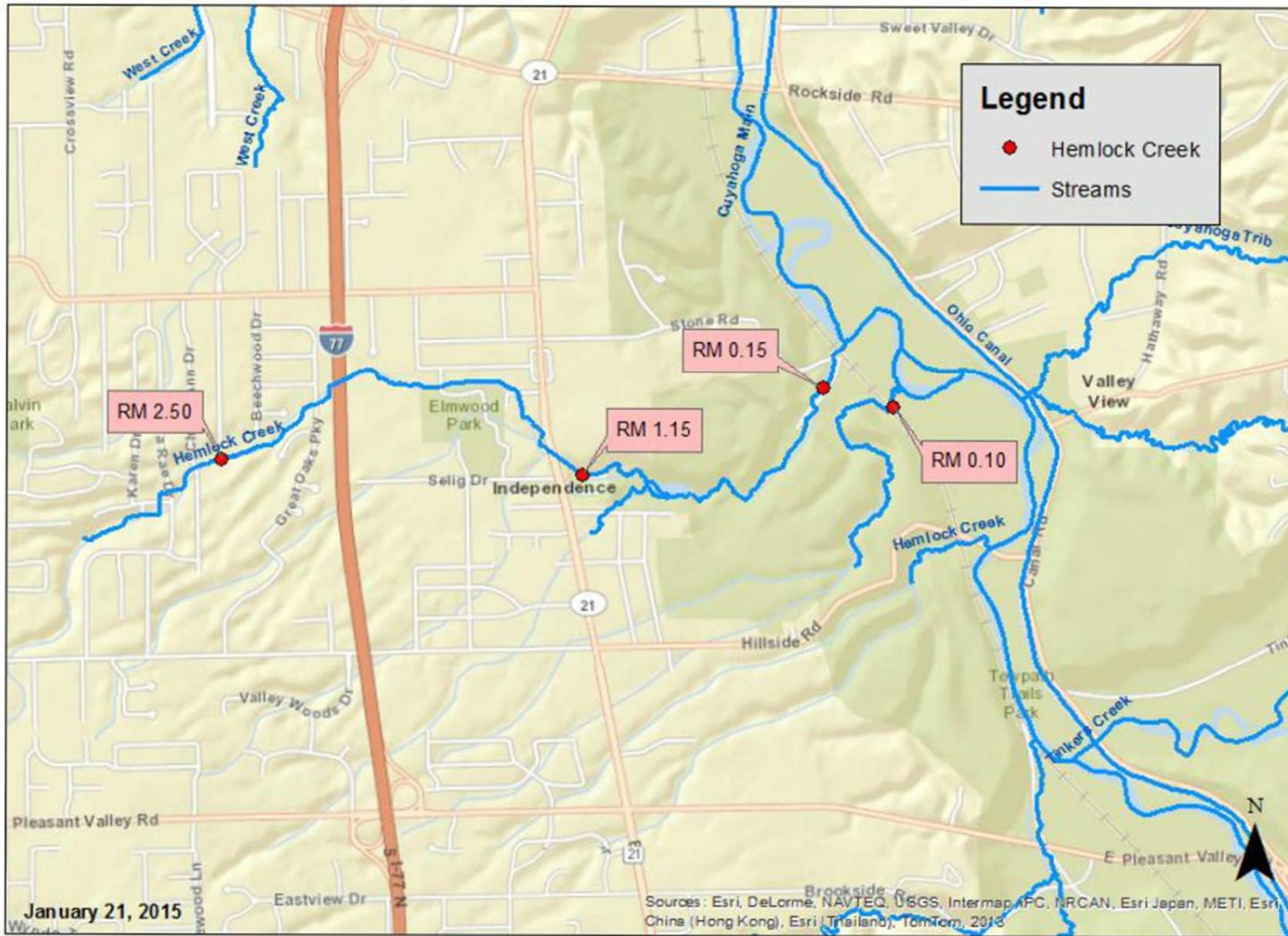


NEORSD hasn't sampled this creek before.

Hemlock Creek RM 1.15



Hemlock Creek Monitoring Sites



Illicit Discharge Detection & Elimination (IDDE)

- Program focuses on finding the sources of illicit discharges to local water ways
 - Identify an outfall with high *E. coli*
 - Outfalls are placed on a list for investigation
 - Verify high *E. coli* and flow measurement
 - If *E. coli* is high, begin source tracking
 - Some discharges may be intermittent and require additional sampling



Illicit Discharge Detection & Elimination (IDDE)



Environmental Assessment Group

Kelsey Amidon

Donna Friedman

Seth Hothem

Ron Maichle

Mark Matteson

Denise Phillips

Eric Soehnlen

Tom Zabloutny

Supervisor: John W. Rhoades

