

Level 3 Project Study Plan

2013 Doan Brook Environmental Monitoring

(1) Objectives

The objective of this study is to conduct environmental monitoring on Doan Brook as part of the Northeast Ohio Regional Sewer District (NEORSD) general watershed monitoring program. In addition, river mile (RM) 0.75 will be sampled as required by the Ohio Environmental Protection Agency (Ohio EPA) National Pollution Discharge Elimination System (NPDES) Permit No. 3PA00002*FD (1997). This sampling will be conducted by the NEORSD's Environmental Assessment group in the Water Quality and Industrial Surveillance Division (WQIS) and will occur from June 15 through September 30, 2013 (through October 15 for fish sampling assessments), as required in the OEPA *Biological Criteria for the Protection of Aquatic Life Volume III* (1987b)¹.

Stream monitoring activities will be conducted at each site by NEORSD Level 3 Qualified Data Collectors certified by Ohio EPA in Fish Community Biology, Benthic Macroinvertebrate Biology, Chemical Water Quality, and Stream Habitat Assessment. Fish and macroinvertebrate community health will be evaluated through the use of Ohio EPA's Index of Biotic Integrity (IBI), Modified Index of Well-Being (MIwb), and Invertebrate Community Index (ICI). An examination of the specific characteristics of the biological communities will be used in conjunction with water quality data, the NEORSD Macroinvertebrate Field Sheet, and Qualitative Habitat Evaluation Index (QHEI) results in order to identify impacts to the communities. Results will be compared to historic data to show temporal as well as spatial trends. Water chemistry data will also be compared to the Ohio Water Quality Standards to determine attainment of applicable uses (Ohio EPA, 2009b).

(2) Nonpoint/Point Sources

Point Sources	Nonpoint Sources
CSO(s) outside of NEORSD service area	Urban Runoff
Storm Sewer Outfalls	Landfill Leachate
Upstream Tributaries	Spills
Home Sewage Treatment Systems	Agriculture Runoff
NEORSD-owned CSOs	
Sanitary Sewer Overflows	

A map has been provided in Section 6 to show point sources that may be influencing the water quality at each sample location. These sources of pollution,

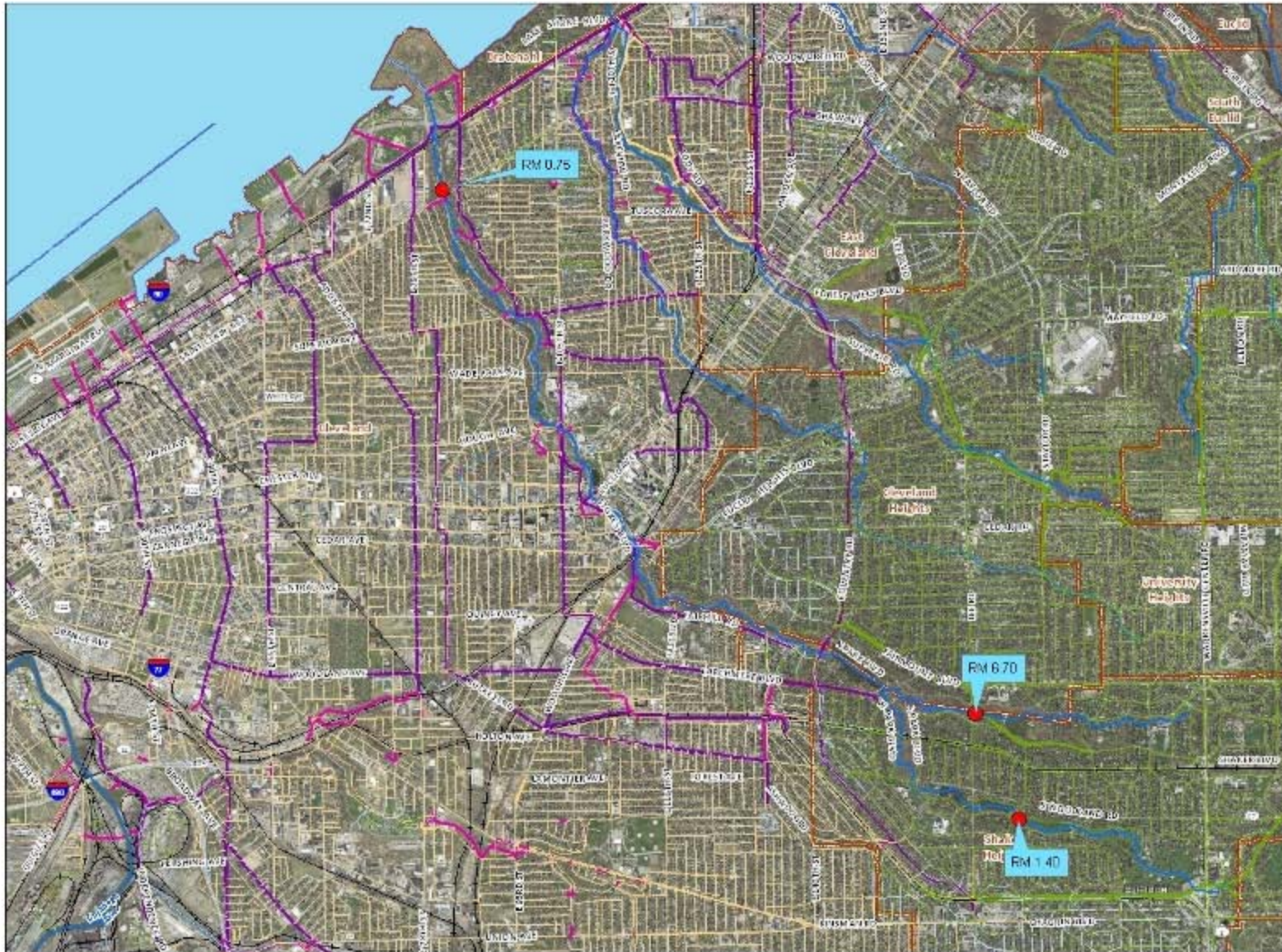
¹ See Appendix H for a list of all references.

along with the nonpoint sources listed in the table above, may be impacting the health of the fish and benthic macroinvertebrate communities.

(6) Sampling Locations

The following locations will be surveyed on Doan Brook during the 2013 field season for general watershed monitoring as outlined in this study plan. HD and water chemistry collection sites are located near the midpoint of each electrofishing zone, indicated by RM, unless otherwise noted. GPS coordinates are recorded at the downstream end of each electrofishing zone.

Site Location	Latitude	Longitude	River Mile	Description	HUC 8	Purpose
Doan Brook	41.5330°	-81.6296°	0.75	Downstream of St. Clair Avenue	Ashtabula-Chagrin 04110003	Evaluate chemistry, habitat, fish, & macroinvertebrates in support of Ohio EPA Permit #3PA00002*FD and watershed assessment
Doan Brook	41.4838°	-81.5643°	6.70	Upstream of Lee Road	Ashtabula-Chagrin 04110003	Evaluate chemistry, habitat, fish, & macroinvertebrates for watershed assessment
Doan Brook, North Branch	41.4739°	-81.5593°	1.40	Upstream of Attleboro Road	Ashtabula-Chagrin 04110003	Evaluate chemistry, habitat, fish, & macroinvertebrates for watershed assessment



Doan Brook Environmental Monitoring

- Study Site
- Outfalls
- ~ Stream
- District CSO Permit Point
- District Facility
- NEORS Combined Sewer
- NEORS CSO Responsibility Sewer
- NEORS Intercommunity Relief Sewer
- NEORS INTERCEPTOR
- Local Combined Sewer
- Local Culverted Stream
- Local Sanitary Sewer
- Local Storm Sewer



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