

Level 3 Project Study Plan

2017 Rocky River Environmental Monitoring

(1) Objectives

In 2017, the Northeast Ohio Regional Sewer District (NEORS) plans to conduct stream monitoring activities at two sites on Rocky River as required by the Ohio Environmental Protection Agency (Ohio EPA) National Pollution Discharge Elimination System (NPDES) Permit No. 3PA00002*HD (2016). This sampling will be conducted by the NEORS's Environmental Assessment group in the Water Quality and Industrial Surveillance (WQIS) Division and will occur from June 15 through September 30, 2017 (through October 15 for fish sampling assessments), as required in the OEPA *Biological Criteria for the Protection of Aquatic Life Volume III* (1987b).

The objective of the study is to monitor the Rocky River watershed to determine any impacts from NEORS combined sewer overflows (CSO). The Rocky River flows through the Cleveland Metropark's Rocky River, Mill Stream Run and Hinckley Reservations and a portion of the Northeast Ohio Regional Sewer District's (NEORS) service area. Many areas surrounding the Rocky River are highly urbanized and may be a source of pollutants to the river, especially following rain events. In addition, there are also direct discharges to the river from local wastewater treatment plants (WWTP). These point and nonpoint sources of pollution may be negatively impacting the biological communities and water chemistry within the Rocky River and its tributaries.

The two sites to be assessed are river miles (RM) 2.50 and 8.30 on the Main Branch. RM 2.50 is located upstream of Hilliard Boulevard and is downstream of eight NEORS-owned CSOs. RM 8.30 is upstream of NEORS CSOs and is in South Mastick Picnic Area Park. An assessment of stream habitat, water chemistry and fish and macroinvertebrate health will be completed at both sites.

Stream monitoring activities conducted at the two sites will be performed by NEORS 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) 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 NEORS Macroinvertebrate Field Sheet, and Qualitative

Habitat Evaluation Index (QHEI) results in order to identify impacts to the communities and to show any spatial trends. Water chemistry data will also be compared to the Ohio Water Quality Standards to determine attainment of applicable uses (Ohio EPA, 2016).

(2) Point/Nonpoint Sources

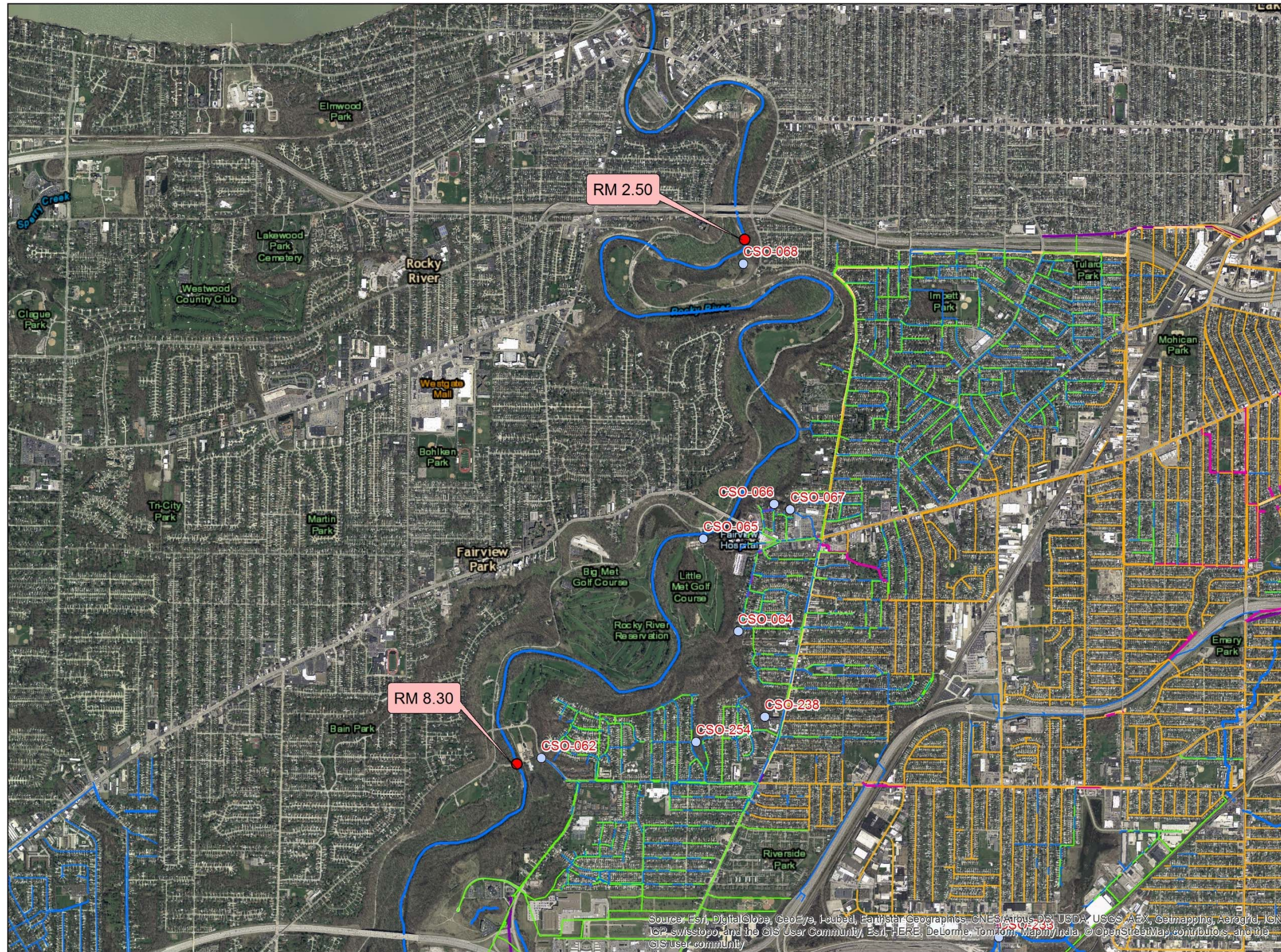
Point Sources	Nonpoint Sources
North Olmsted WWTP	Stormwater runoff
North Royalton A & B WWTPs	Spills
Strongsville B & C WWTPs	Agriculture
Medina SD300 and SD500 WWTPs	
Cleveland Hopkins Airport	
NASA Lewis/Glenn Facility	
Cleveland Hopkins Airport	
Combined Sewer Overflows	
Storm Sewer Outfalls	
Home Sewage Treatment Systems	

A map has been provided in Section 6 to show point sources that may be influencing the water quality at each sample location. Other point sources include numerous tributaries to the Rocky River. These sources, along with the ones listed in the table above, may be impacting the health of the fish and benthic macroinvertebrate communities in the Rocky River watershed.

(6) Sampling Locations

The following sample locations will be surveyed on Rocky River during the 2017 field season. Benthic macroinvertebrate and water chemistry collection sites are located near the midpoint of each electrofishing zone, indicated by RM. GPS coordinates are recorded at the downstream end of each electrofishing zone.

Location	Latitude	Longitude	River Mile	Description	HUC	Purpose
Upstream of Mastick Road	41.435408	-81.843580	8.30	Rocky River US of NEORSD CSOs	04110001 Black-Rocky	Evaluate water chemistry, fish, macroinvertebrates and habitat upstream of CSOs
Upstream of Hilliard Boulevard	41.469855	-81.823322	2.50	Rocky River DS of NEORSD CSOs	04110001 Black-Rocky	Evaluate water chemistry, fish, macroinvertebrates and habitat downstream of CSOs



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Overview Map



Legend

- Sample Points
- CSO Outfall
- Regional Drainage
- Local Combined Sewer
- Local Sanitary Sewer
- Local Storm Sewer
- NEORS D CSO Combined Sewer
- NEORS D CSO Responsibility Sewer
- NEORS D Intercommunity Relief Sewer
- NEORS D Interceptor
- District Facility



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