

DRAFT

**PENNSYLVANIA TURNPIKE COMMISSION
POLLUTANT REDUCTION PLAN
FOR THE
OHIO RIVER DRAINAGE BASIN
NPDES PERMIT NO. PA139602**



**PENNSYLVANIA TURNPIKE COMMISSION,
PENNSYLVANIA
OCTOBER 2022
REVISED FEBRUARY 2023**



**PREPARED BY
SKELLY AND LOY, INC.
HARRISBURG, PENNSYLVANIA**

**PENNSYLVANIA TURNPIKE COMMISSION
POLLUTANT REDUCTION PLAN
FOR THE
OHIO RIVER DRAINAGE BASIN
PENNSYLVANIA TURNPIKE COMMISSION,
PENNSYLVANIA
NPDES PERMIT NO. PA139602**

PREPARED FOR

**PENNSYLVANIA TURNPIKE COMMISSION
700 SOUTH EISENHOWER BOULEVARD
MIDDLETOWN, PENNSYLVANIA 17057**

PREPARED BY

SKELLY_{AND} LOY

A  Terracon Company

**449 EISENHOWER BOULEVARD, SUITE 300
HARRISBURG, PENNSYLVANIA 17111**

**OCTOBER 25, 2022
REVISED FEBRUARY 13, 2023**

TABLE OF CONTENTS

	PAGE
1.0 Executive Summary	1
A. Results	1
B. Purpose	1
C. PRP Layout	2
2.0 Introduction	3
A. Location	3
1. Contextual Location	3
2. MS4 Regulated Area	3
3. Ohio River Drainage Basin Location.....	4
B. Hydrology	9
C. Topography and Geology	11
D. Soils.....	14
E. Land Use	15
3.0 Required PRP Components	17
A. Public Participation	17
B. Map	18
1. MS4 Base Map	19
2. Municipal Separate Storm Sewer System	19
3. Outfalls	20
4. Storm Sewersheds	20
5. Numbering System	21
6. Planning Areas	23
C. Pollutants of Concern	23
1. MS4 Reduction Goals.....	23
D. Existing Loading for Pollutants Of Concern.....	24
1. Synopsis	24
2. Calculating MS4 Existing Pollutant Load	25
E. BMPs to Achieve the Minimum Required Reductions in Pollutant Loading	27
1. Alternatives Considered.....	33
F. Funding Mechanism(s)	36
G. Responsible Parties for Operation and Maintenance of BMPs	36



LIST OF FIGURES

	PAGE
FIGURE 1 LOCATION MAP	5
FIGURE 2 HUC12 WATERSHEDS	6
FIGURE 3 PTC OHIO RIVER OUTFALL SUMMARY	20
FIGURE 4 DEER CREEK STREAM RESTORATION LOCATION.....	28

LIST OF TABLES

	PAGE
TABLE 1 PTC OHIO RIVER DRAINAGE BASIN: EXISTING POLLUTANT LOADS, REQUIRED REDUCTION TARGETS, AND ACHIEVED REDUCTIONS	1
TABLE 2 PENNSYLVANIA TURNPIKE SYSTEM ROADWAYS	3
TABLE 3 PTC OHIO RIVER DRAINAGE BASIN REGULATED/PLANNING AREA MS4 SEGMENTS	7
TABLE 4 PTC MS4 OHIO RIVER DRAINAGE BASIN HUC12 WATERSHEDS AND SURFACE WATERS	9
TABLE 5 PTC MS4 OHIO RIVER DRAINAGE BASIN SEDIMENT AND NUTRIENT IMPAIRED NON-ATTAINING RECEIVING SURFACE WATERS SUMMARY	12
TABLE 6 PTC MS4 OHIO RIVER LAND USE DISTRIBUTION TABLE SUMMARY	16
TABLE 7 SEWERSHED NUMBERING CODE	22
TABLE 8 TURNPIKE MILEPOST DIRECTION	22
TABLE 9 POLLUTANT REDUCTION TARGETS FOR THE OHIO RIVER DRAINAGE BASIN IN PTC PERMIT PAI139602	23
TABLE 10 EXISTING POLLUTANT LOAD BY URBANIZED AREA AND HUC12 WATERSHED FOR REGULATED PTC MS4	24
TABLE 11 PROPOSED OHIO RIVER DRAINAGE BASIN BMPS	27
TABLE 12 PTC MS4 TYPICAL BID PROCESS	35



LIST OF APPENDICES

APPENDIX A – PUBLIC NOTICE COPY OF PA BULLETIN

APPENDIX B – PTC MS4 OHIO RIVER DRAINAGE BASIN
RECEIVING SURFACE WATERS TABLE

APPENDIX C – MS4 MAP LAYERS AND DATA SOURCES

APPENDIX D – MAPSHED URBAN AREA TOOL RESULTS

D1 Planning Area Existing Loads

D2 Land Use Distribution Summary

APPENDIX E – BMP CONCEPT DESIGN AND SUPPORT INFORMATION

E1 Project Location Map

E2 Deer Creek Existing Conditions Photographs

E3 Anticipated Project Schedule

E4 Example Site Protection Instrument (SPI)

APPENDIX F – PUBLIC REVIEW COMMENTS

APPENDIX G – BANK EROSION HAZARD INDEX (BEHI) AND NEAR BANK STRESS (NBS)
RESULTS AND CONTRIBUTING WATERSHED MAPS

LIST OF ACRONYMS

BMP	Best Management Practices
CAST	Chesapeake Assessment Scenario Tool
CWA	Clean Water Act
GIS	Geographic Information System
GWLF	Generalized Watershed Loading Function
HUC	Hydrologic Unit Code
ID	Identification
IDD&E	Illicit Discharge Detection and Elimination
lbs/yr	Pounds per Year
LF	Linear Feet
LRG	Land Reclamation Group, LLC
M&M	Maintenance and Monitoring
MS3	Municipal Separate Storm Sewer
MS4	Municipal Separate Storm Sewer System
NHD	National Hydrology Dataset
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
ORPRP	Ohio River Pollutant Reduction Plan
PA DEP	Pennsylvania Department of Environmental Protection
PA DCNR	Pennsylvania Department of Conservation and Natural Resources
PennDOT	Pennsylvania Department of Transportation
PRP	Pollutant Reduction Plan
PTC	Pennsylvania Turnpike Commission
SCM	Stormwater Control Measure
SPI	Site Protection Instrument
TN	Total Nitrogen



TP	Total Phosphorus
TSS	Total Suspended Solids (Sediment)
UA	Urbanized Area
UNT	Unnamed Tributary
USGS	United States Geological Survey
WLA	Waste Load Allocation

1.0 EXECUTIVE SUMMARY

A. RESULTS

The pollutants of concern are sediment, and phosphorus. Existing pollutant loads for the Pennsylvania Turnpike Commission's (PTC) MS4-regulated area were estimated using the MapShed model. The Pennsylvania Department of Environmental Protection (PA DEP) declared that if the sediment (TSS) reduction goal is obtained, the permittee may presume that the total phosphorus (TP) reduction goal is also met. Consequently, the PTC is reporting sediment reduction. A single Pollution Reduction Plan (PRP) Best Management Practice (BMP) is proposed to meet the PTC sediment reduction goal for the PTC's entire Ohio River Drainage Basin obligation. The pollution reduction project is a stream restoration and floodplain reconnection of a 988-foot segment of Deer Creek located in Indiana Township, Allegheny County, Pennsylvania. Existing pollutant loads, required reduction targets, and achieved reductions are summarized in **Table 1** below.

TABLE 1
PTC OHIO RIVER DRAINAGE BASIN: EXISTING POLLUTANT LOADS,
REQUIRED REDUCTION TARGETS, AND ACHIEVED REDUCTIONS

POLLUTANT	EXISTING LOAD	REQUIRED REDUCTION %	REQUIRED REDUCTION (LBS/YR)	ACHIEVED REDUCTION (LBS/YR)	EXCESS REDUCTION (LBS/YR)
Sediment (TSS)	1,833,004	5%	91,650	113,620*	21,970
Phosphorus (TP)	510	2.5%	12.8	Presumed	-
* The sediment reduction total represents the default value based on the MapShed effectiveness factor for stream restoration of 115 lbs/lf/yr.					

B. PURPOSE

The Ohio River Pollutant Reduction Plan (ORPRP) was prepared to comply with PA DEP National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit No. PA1139602, effective November 1, 2021, through October 31, 2026. The purpose of a PRP is to provide a basis for implementation of specific projects to capture and reduce pollutants conveyed by stormwater runoff before they reach streams, rivers, lakes, etc. (a.k.a., surface waters). Each PRP provides the background, assumptions, analysis, and methodology to establish a justifiable baseline of current pollutant load generation and then identifies BMPs with site locations, planning-level concept designs, costs, and implementation schedules. It also offers a framework for funding installation, operation, and maintenance activities that provides regulators with assurance that the identified project(s) will materialize within the scheduled timeframe. This PTC ORPRP assesses the urban watersheds within the Ohio River Drainage Basin through which the Pennsylvania Turnpike passes where the surface waters' designated use status has non-attaining and the impairment cause is sediment or phosphorus (generically referred to as nutrients).



C. PRP LAYOUT

The Executive Summary is followed by two sections. Section 2.0 (Introduction) describes the PTC's characteristics influencing PRP decisions. Topics within Section 2.0 include Hydrology, Topography and Geology, Soils, and Land Use.

Section 3.0 (Required PRP Components) provides technical data, analysis and substantiation, and proposed BMP specifics. It is organized and titled to match the titles and sequence of the PA DEP's PRP Instructions per the directions. The subsections are:

- A. Public Participation
- B. Map
- C. Pollutants of Concern
- D. Existing Loading for Pollutants of Concern
- E. BMPs to Achieve the Minimum Required Reductions in Pollutant Loading
- F. Funding Mechanism(s)
- G. Responsible Parties for Operation and Maintenance (O&M) of BMPs

The PTC opted to use the presumptive approach to report pollutant reduction. Under this approach, it is assumed that if the required sediment reduction is achieved, phosphorus and nitrogen reductions are also reached. Therefore, only sediment load reduction is reported.

2.0 INTRODUCTION

A. LOCATION

1. Contextual Location

The Pennsylvania Turnpike is a limited-access toll road network that crosses the state from the Pennsylvania-Ohio border northwest of Pittsburgh to the Pennsylvania-New Jersey border east of Philadelphia. The network also serves regions north and south of Pittsburgh and north of Philadelphia and is comprised of the segments listed in **Table 2**, Turnpike System Roadways.

**TABLE 2
PENNSYLVANIA TURNPIKE SYSTEM ROADWAYS**

ROADWAY NAME	ROUTE NO.	DESCRIPTION	MILES
Turnpike Mainline	I-76/I-276	Ohio to New Jersey Connector	359
Beaver Valley Expressway	I-376	PA-51 to US-422	16.3
Southern Beltway	PA-576	South of Pittsburgh International Airport to I-79	5.7
Mon/Fayette Expressway	PA-43	Pittsburgh to Uniontown Connector	51.4
Amos K. Hutchinson Bypass (a.k.a., Greensburg Bypass)	PA-66	I-70 to US-22 Connector	13.3
Northeast Extension	I-476	Philadelphia-Allentown-Wilkes Barre-Scranton Connector	110.1
TOTAL LENGTH			556

2. MS4 Regulated Area

The MS4 NPDES Permit applies only to urban runoff from land within the Urbanized Areas (UAs), as defined by the 2010 Census, that flows through a municipally owned and operated stormwater system with an identifiable concentrated discharge (outfall) to a surface water. The MS4 Permit also applies to non-municipal entities specified by PA DEP that are public-sector organizations and function similarly to municipal governments relative to operations of stormwater infrastructure and contributing drainage areas. The PTC is one of the organizations within this group of non-traditional MS4s.

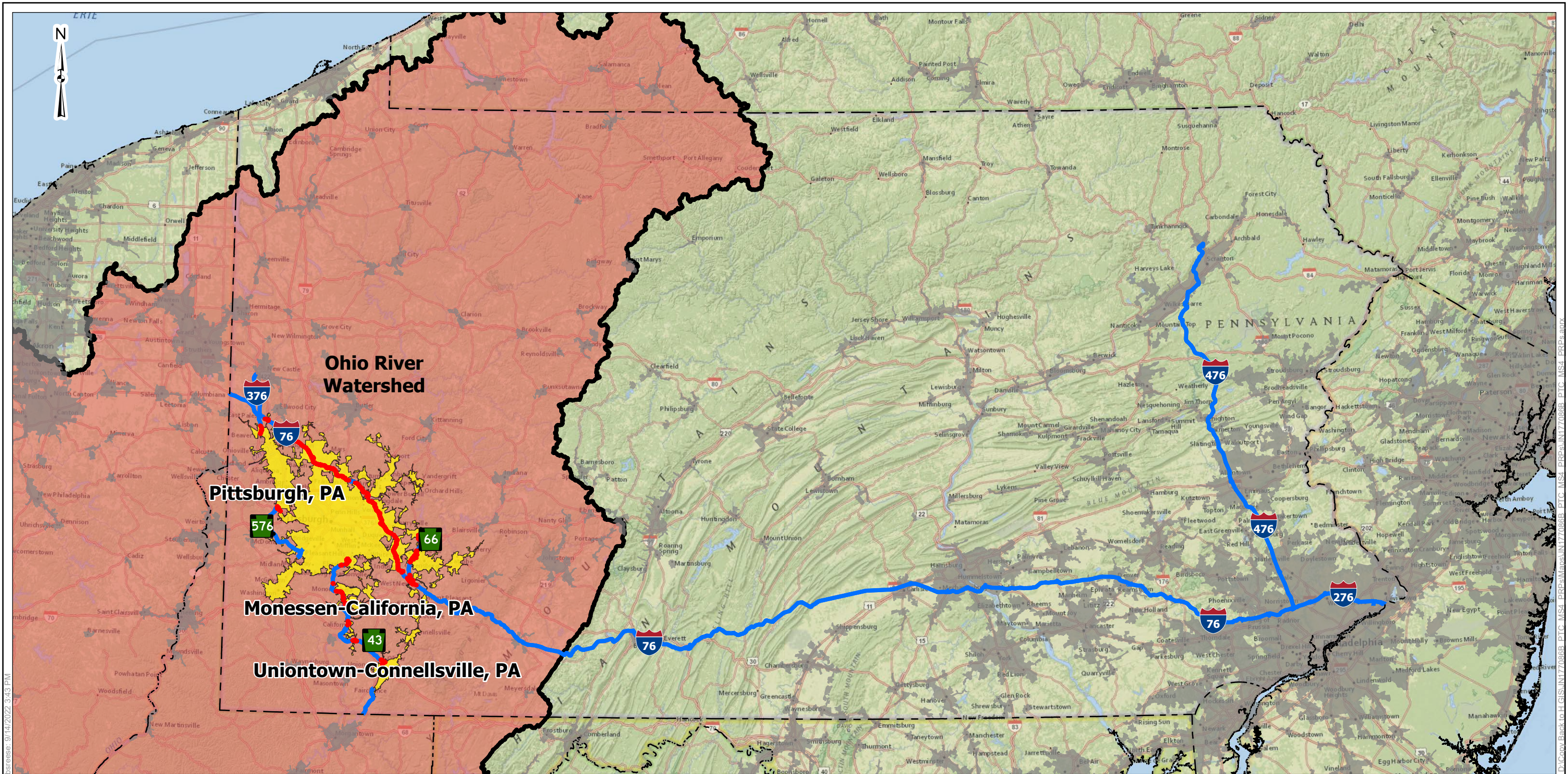
The MS4 regulated area for the PTC includes UAs as defined by the U.S. Census Bureau in its 2010 ten-year census plus the upland contributory drainage area that is within the jurisdiction of the PTC. The basis for the UA criteria, the 2010 Census, is specified in the PTC's MS4 Permit and the additional upgradient area contributing to the UA is stipulated in FAQ #10 of PA DEP's *MS4 NPDES Permits Frequently Asked Questions* (revised December 2, 2021).

The storm sewer system consists of the PTC-owned and -operated stormwater conveyance network, including the roadway, inlets/catch basins, curbs, gutters, ditches, man-made channels, or storm drains.

3. Ohio River Drainage Basin Location

This PRP is focused on the regulated portion of the 556-mile Pennsylvania Turnpike located in or contributing runoff to the UAs within the Ohio River Drainage Basin. The PTC Ohio-River MS4-regulated area includes a total of 71.5 miles of the Turnpike corridor: approximately 52.5 miles of the Turnpike Mainline roadway, 9 miles of the Mon-Fayette Expressway, 6 miles of the Amos K. Hutchinson Bypass, 2 miles of the Beaver Valley Expressway, and 2 miles of the Southern Beltway. Of the 71.5 miles within the MS4-regulated area, approximately 64 miles are part of the Pittsburgh UA, 5.5 miles are part of the Monessen-California UA, and 2 miles are part of the Uniontown-Connellsville UA.

The following figures and tables provide locational detail from the regional to more-detailed perspective. **Figure 1** is a location map that identifies the PTC's Ohio River MS4-regulated portion of the Turnpike. The applicable roadway segments are highlighted on the Location Map. **Figure 2** identifies the Hydrologic Unit Code (HUC) 12 watersheds that the PTC's Ohio River MS4-regulated area passes through. **Table 3** provides locational references for PTC's Ohio River regulated roadway segments to the nearest intersecting road or stream as well as providing Turnpike roadway segment length, latitude, and longitude of the segment midpoint and references to the UA, county, and HUC 12 watershed the PTC regulated-MS4 traverses.



Legend

- Pennsylvania Turnpike Roadway
- Pennsylvania Turnpike Roadway in MS4 Areas
- - - State Boundary
- Ohio River Watershed
- Urban Areas
 - Monessen-California, PA; Pittsburgh, PA; Uniontown-Connellsville, PA
 - Other Urban Areas

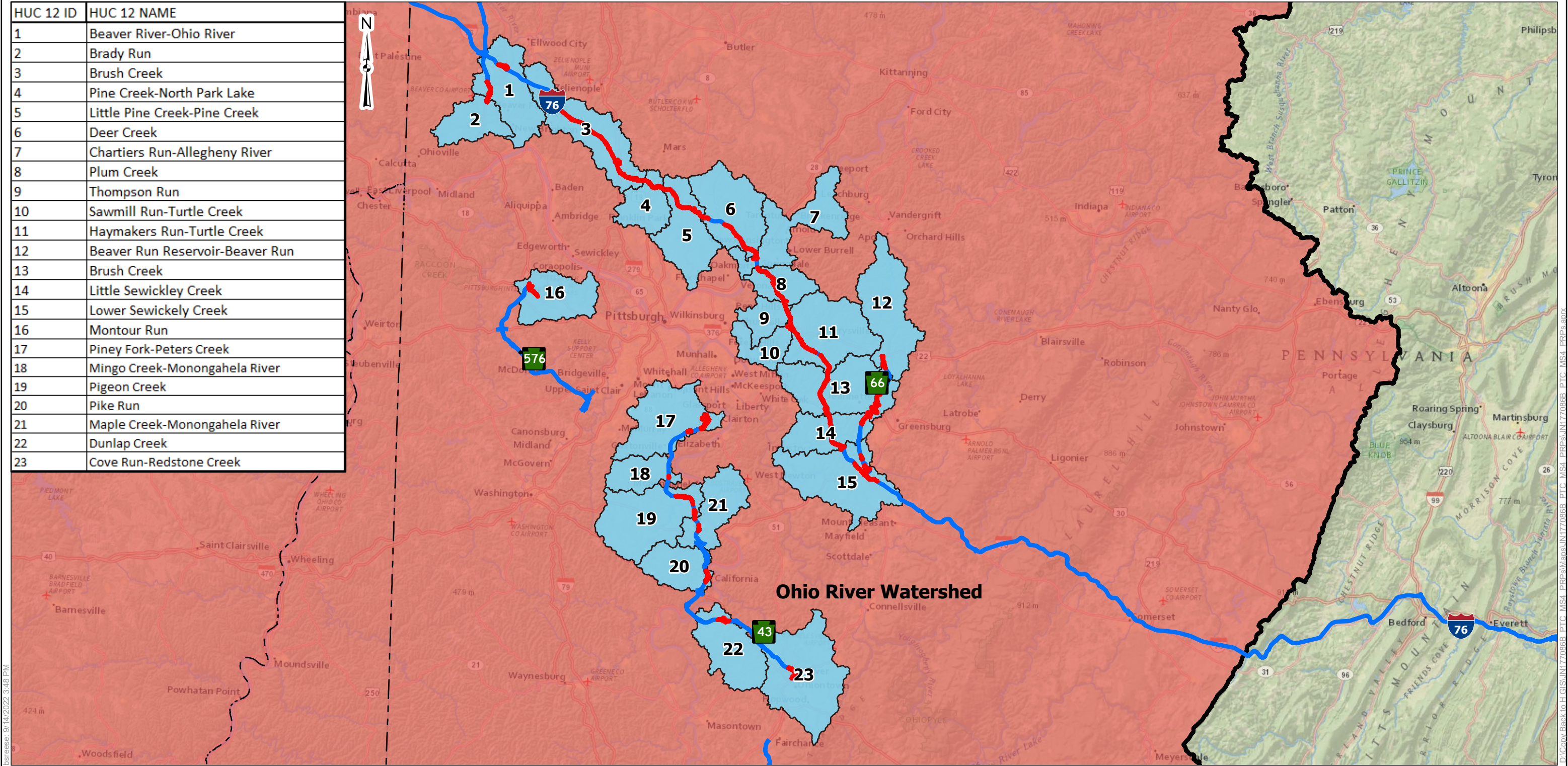
DATA SOURCES:
NatGeo World Map 2022, PTC 2021, US Census Bureau 2021, USGS 2022

Permit No.:	PAI139602
Date:	September 2022
Drawn By:	BSR
Reviewed By:	SEL



LOCATION MAP	Figure
PTC MS4 REGULATED AREA OHIO RIVER WATERSHED PENNSYLVANIA	1

HUC 12 ID	HUC 12 NAME
1	Beaver River-Ohio River
2	Brady Run
3	Brush Creek
4	Pine Creek-North Park Lake
5	Little Pine Creek-Pine Creek
6	Deer Creek
7	Chartiers Run-Allegheny River
8	Plum Creek
9	Thompson Run
10	Sawmill Run-Turtle Creek
11	Haymakers Run-Turtle Creek
12	Beaver Run Reservoir-Beaver Run
13	Brush Creek
14	Little Sewickley Creek
15	Lower Sewickely Creek
16	Montour Run
17	Piney Fork-Peters Creek
18	Mingo Creek-Monongahela River
19	Pigeon Creek
20	Pike Run
21	Maple Creek-Monongahela River
22	Dunlap Creek
23	Cove Run-Redstone Creek



Legend

- Pennsylvania Turnpike Roadway
- Pennsylvania Turnpike Roadway in MS4 Areas
- State Boundary
- Ohio River Watershed
- MS4 Planning Area HUC 12 Watersheds

DATA SOURCES:
NatGeo World Map 2022, PTC 2021, US Census Bureau 2021, USGS 2022

Permit No.:	PAI139602
Date:	September 2022
Drawn By:	BSR
Reviewed By:	SEL



HUC 12 WATERSHEDS	Figure
PTC MS4 REGULATED AREA OHIO RIVER WATERSHED PENNSYLVANIA	2

TABLE 3
PTC OHIO RIVER DRAINAGE BASIN REGULATED/PLANNING AREA MS4 SEGMENTS

PTC ROADWAY NAME	URBANIZED AREA	COUNTY	HUC12 NUMBER	HUC12 NAME	NEAREST CROSS- FEATURE BEGIN (WEST/SOUTH)	MILE POST BEGIN (WEST/SOUTH)	NEAREST CROSS- FEATURE END (EAST/NORTH)	MILE POST END (EAST/NORTH)	DISTANCE (MILES)	APPROXIMATE MIDPOINT (MILE POST)	LATITUDE	LONGITUDE		
Turnpike Mainline	Pittsburgh, Pennsylvania	Beaver	050301040103	Beaver River-Ohio River	Foxwood Road	11.82	Big Beaver Boulevard	12.85	1.03	12.34	N40°49'5.12"	W80°19'58.66"		
			050301050408	Brush Creek (North)	0.75 mile east of Sunflower Road	20.4	0.6 mile east of Middle Road	40.78	20.38	30.59	N40°39'23.01"	W80° 4'47.33"		
		Allegheny	050100090201	Pine Creek-North Park Lake										
			050100090202	Little Pine Creek-Pine Creek										
			050100090303	Deer Creek									Gibsonia Road	42.65
			05010009030	Chartiers Run-Allegheny River	Hulton Road	48.75	0.45 mile northwest of Murrysville Road	60.15	11.4	54.45	N40°27'52.18"	W79°45'42.38"		
			050100090304	Plum Creek										
			050200050703	Thompson Run										
			Westmoreland	050200050701	Haymakers Run-Turtle Creek	1.0 mile northwest of Harvison Road	60.67	0.8 mile southeast of Liberty Hill Road	71.85	11.18	66.26	N40°19'32.61"	W79°41'3.40"	
		050200050702		Brush Creek (South)										
		050200061103		Little Sewickley Creek										
		050200061104		Lower Sewickley Creek	0.2 mile southeast of Glenn Fox Road	74.03	Sportsman Road	77.17	3.14	75.6	N40°13'9.69"	W79°36'8.48"		
		Subtotal Turnpike Mainline MS4 Regulated/Planning Area Length									52.38			
		BVE ¹	Pitts ²	Beaver	050301040103	Beaver River-Ohio River	Wallace Run Road	28.85	Constitution Boulevard	31	2.15	29.925	N40°46'36.29"	W80°21'23.99"
		050301040102	Brady Run											
Subtotal Beaver Valley Expressway MS4 Regulated/Planning Area Length									2.15					

**TABLE 3
(CONTINUED)**

PTC ROADWAY NAME	URBANIZED AREA	COUNTY	HUC12 NUMBER	HUC12 NAME	NEAREST CROSS- FEATURE BEGIN (WEST/SOUTH)	MILE POST BEGIN (WEST/SOUTH)	NEAREST CROSS- FEATURE END (EAST/NORTH)	MILE POST END (EAST/NORTH)	DISTANCE (MILES)	APPROXIMATE MIDPOINT (MILE POST)	LATITUDE	LONGITUDE
SB ³	Pitts ²	Allg ⁴	050301010304	Montour Run	576/I-376 Interchange	0	0.5 mile east of Harper Road (along I-376)	N/A	1.7	N/A	N40°28'59.29"	W80°15'45.31"
Subtotal Southern Beltway – MS4 Regulated/Planning Area Length									1.7			
Amos K. ⁵	Pittsburgh, PA	Westmoreland	050200061104	Lower Sewickley Creek	PA 66B/US 119	0	North Center Avenue	0.7	0.7	0.35	N40°13'45.45"	W79°35'51.51"
			050200061103		None	1.4	None	1.8	0.4	1.06	N 40°14'43.0"	W79°36'30.37"
			050200050702	Brush Creek (South)	0.5 mile southwest of Walton Tea Room Road	5.2	North Greengate Road	8.8	3.6	7.0	N40°18'57.52	W79°35'18.22"
			050100080203	Beaver Run Reservoir-Beaver Run	0.5 mile south if Sheridan Road	12.05	Pittsburgh-Buffalo Highway	13.4	1.35	12.725	N40°23'17.58"	W79°34'11.31"
Subtotal Amos K. Hutchinson Bypass – MS4 Regulated/Planning Area Length									6.05			
Mon-Fayette Expressway	Union- Con ⁶	Fayette	050200050601	Cove Run-Redstone Creek	Interchange	±13.4	Old Pittsburgh Road	14.6	1.2	14.0	N39°55'24.31"	W79°43'55.54"
			050200050506	Dunlap Creek	Davidson Siding Road	22.8	0.4 mile northwest of PA 166	23.9	1.1	23.35	N39°59'47.02"	W79°52'14.33"
	Monessen- California, PA	Washington	050200050801	Pike Run	0.5 mile north of Malden Road	31.2	None	32.53	1.33	31.87	N40° 3'41.32"	W79°54'8.90"
			050200050803	Maple Creek-Monongahela River	Old PA 71	37.1	None	37.8	0.7	37.45	N40° 7'55.69"	W79°55'23.39"
			050200050804	Pigeon Creek	Walnut Ridge Road	38.5	0.3 mile north of Coyle Curtin Road	39.5	1.0	39.0	N40° 9'14.75"	W79°55'53.47"
					Taylor Run Road	40.1	Railroad Tracks	42.27	2.17	41.19	N40°10'46.86"	W79°56'58.18"
	Pitts ²	Allegheny	050200050505	Mingo Creek-Monongahela River	Union Street	44.85	Union Street	45.06	0.21	44.96	N40°12'33.65"	W79°59'3.99"
			050200050806	Piney Fork-Peters Creek	Gill Hall Road	50.7	None	51.0	0.3	50.85	N40°16'41.33"	W79°56'50.40"
					None	52.14	0.25 mile north of Peters Creek Road	53.3	1.16	52.72	N40°17'17.88"	W79°54'58.55"
Subtotal Mon-Fayette Expressway – MS4 Regulated/Planning Area Length									9.17			
TOTAL OHIO RIVER DRAINAGE BASIN MS4 PLANNING AREA LENGTH									71.45			

¹BVE = Beaver Valley Expressway

²Pitts = Pittsburgh, PA

³SB = Southern Beltway

⁴Allg = Allegheny

⁵Amos K. = Amos K. Hutchinson Bypass
(a.k.a. Greensburg Bypass)

⁶Union-Con = Uniontown-Connellsville, PA

B. HYDROLOGY

The United States Geological Survey (USGS) developed a hierarchical system to classify hydrology by the region size draining to the watercourse. The HUCs are comprised of 2 to 14 digits and include regions (2 digits), subregions (4 digits), basins (6 digits), subbasins (8 digits), watersheds (10 digits), subwatersheds (12 digits) and reach codes (14 digits). HUC14 watersheds, or reach codes, aid in identifying specific outfalls within the HUC12 watersheds. The PRP has been prepared based on the subwatershed (HUC12) level. HUC12s are generally in the 40- to 60-square-mile size (but can be larger or smaller). The PTC MS4 is contributory to 68 HUC12 watersheds statewide. Of those, the Turnpike's MS4 crosses 23 HUC12 watersheds within the Ohio River Drainage Basin, and PTC MS4 Outfalls are located on 99 Ohio River Drainage Basin Surface Waters. (See **Table 4** below and **Figure 2**, PTC MS4 HUC12 Watersheds, p. 6. Table 4 is arranged alphabetically by HUC12 Watershed name.)

TABLE 4
PTC MS4 OHIO RIVER DRAINAGE BASIN
HUC12 WATERSHEDS AND SURFACE WATERS

HUC12 CODE	HUC12 WATERSHED NAME	SUBJECT SURFACE WATERS WITHIN HUC12 WATERSHED
050301040103	Beaver River-Ohio River	<ul style="list-style-type: none"> • Clarks Run • Wallace Run • Unnamed Tributary to Wallace Run • Walnut Bottom Run
050100080203	Beaver Run Reservoir-Beaver Run	<ul style="list-style-type: none"> • 1 Unnamed Tributary to Beaver Creek
050301040102	Brady Run	<ul style="list-style-type: none"> • Brady Run
050301050408	Brush Creek (North)	<ul style="list-style-type: none"> • Brush Creek • 11 Unnamed Tributaries to Brush Creek
050200050702	Brush Creek (South)	<ul style="list-style-type: none"> • Brush Creek • 7 Unnamed Tributaries to Brush Creek (South) • 4 Unnamed Tributaries to Tinkers Run
050100090304	Chartiers Run- Allegheny River	<ul style="list-style-type: none"> • Allegheny River
050200050601	Cove Run- Redstone Creek	<ul style="list-style-type: none"> • Redstone Creek • 4 Unnamed Tributaries to Redstone Creek • 1 Unnamed Tributary to Fans Run
050100090303	Deer Creek	<ul style="list-style-type: none"> • Cedar Run • Deer Creek
050200050506	Dunlap Creek	<ul style="list-style-type: none"> • Dunlap Creek • 3 Unnamed Tributaries to Dunlap Creek
050200050701	Haymakers Run- Turtle Creek	<ul style="list-style-type: none"> • Thompson Run • 1 Unnamed Tributary to Thompson Run • Turtle Creek • 1 Unnamed Tributary to Turtle Creek • Lyons Run • 1 Unnamed Tributary to Lyons Run • Byers Run • 1 Unnamed Tributary to Byers Run

**TABLE 4
(CONTINUED)**

HUC12 CODE	HUC12 WATERSHED NAME	SUBJECT SURFACE WATERS WITHIN HUC12 WATERSHED
050100090202	Little Pine Creek-Pine Creek	<ul style="list-style-type: none"> • Montour Run • 4 Unnamed Tributaries to Montour Run • Willow Run • 1 Unnamed Tributary to Willow Run • Crouse Run • 2 Unnamed Tributaries to Crouse Run
050200061103	Little Sewickley Creek	<ul style="list-style-type: none"> • Little Sewickley Creek • 3 Unnamed Tributaries to Little Sewickley Creek
050200061104	Lower Sewickley Creek	<ul style="list-style-type: none"> • Sewickley Creek • Wilson Run • 3 Unnamed Tributaries to Sewickley Creek
050200050803	Maple Creek- Monongahela River	<ul style="list-style-type: none"> • Maple Creek
050200050805	Mingo Creek-Monongahela River	<ul style="list-style-type: none"> • Mingo Creek • Froman Run
050100090202	Montour Run	<ul style="list-style-type: none"> • 4 Unnamed Tributaries to Montour Run
050200050804	Pigeon Creek	<ul style="list-style-type: none"> • Taylors Run • 2 Unnamed Tributaries to Taylors Run • 3 Unnamed Tributaries to Pigeon Creek
050200050801	Pike Run	<ul style="list-style-type: none"> • Pike Run • 1 Unnamed Tributary to Pike Run
050100090201	Pine Creek-North Park Lake	<ul style="list-style-type: none"> • North Fork Pine Creek • 1 Unnamed Tributary to North Fork Pine Creek
050200050806	Piney Fork-Peters Creek	<ul style="list-style-type: none"> • Peters Creek • 2 Unnamed Tributaries to Peters Creek • Lewis Run
050100090305	Plum Creek	<ul style="list-style-type: none"> • Plum Creek • 2 Unnamed Tributaries Plum Creek • Bodies Run
050200050704	Sawmill Run- Turtle Creek	<ul style="list-style-type: none"> • 1 Unnamed Tributary to Turtle Creek
050200050703	Thompson Run	<ul style="list-style-type: none"> • 2 Unnamed Tributaries to Thompson Run

Surface waters of Pennsylvania have been classified into four designated uses (aquatic life, fish consumption, potable water supply, and recreation), as found in Pennsylvania Title 25 Environmental Protection, Chapter 93 Water Quality Standards (Chapter 93). Every two years the surface waters are qualitatively evaluated and classified as having water quality supportive of their designated use (attaining) or having water quality deficient for support of the designated use (non-attaining). Non-attaining surface waters are tracked on the Clean Water Act (CWA) Section 303(d) List. The PTC's Permit stipulates use of the 2014 version as the basis for the PTC's pollutant load reductions.

Appendix B, PTC MS4 Ohio River Drainage Basin Receiving Surface Waters Table, identifies the PTC MS4 HUC14 receiving surface waters. Use of the HUC14 reach codes facilitates distinguishing one unnamed tributary from another one. The table provides outfalls, surface water name, reach code, the impairment status of the receiving surface water, and the cause of impairment if it is non-attaining. Of the 99 receiving surface waters, 28 are non-attaining

due to sediment and/or nutrient impairment and are listed in **Table 5**, PTC MS4 Ohio River Drainage Basin Sediment and Nutrient Impaired Non-Attaining Receiving Surface Waters Summary (p. 12).

Receiving Surface Water Names are reported by the HUC12 watershed where they are located. HUC12 watersheds are arranged geographically along the Turnpike Mainline from west to east and along the other roadways from south to north. Note that there are a number of surrogate names for sediments and nutrients. Surrogate names for sediments include Siltation, Suspended Solids, and Turbidity. Surrogate names for nutrients include Organic Enrichment/Low D.O. and Excessive Algal Growth. The Impairment Cause column also includes additional sources of impairment if identified on the CWA Section 303(d) List for the surface water.

The number of surface waters and the extent of the region covered preclude identification of all the individual surface waters on a small-scale report-sized exhibit. However, the HUC14 receiving waters are shown as lines on the MS4 maps for the entire PTC MS4-regulated area previously submitted to and on file at PA DEP (see Section 3.B, Map).

C. TOPOGRAPHY AND GEOLOGY

The section of the Turnpike that runs through the Ohio River Basin is within the Appalachian Plateaus Physiographic Province. The Appalachian Plateaus Province is comprised of sedimentary rocks such as sandstones, conglomerates, and shales; with interwoven beds of coal throughout. The province is divided into sections that capture the topographic characteristics of the region in more detail.

The portion of the Turnpike within the Ohio River Basin runs through the following sections: Northwestern Glaciated Plateau, Pittsburgh Low Plateau, Waynesburg Hills, Allegheny Mountain, and Allegheny Front. The Northwestern Glaciated Plateau is characterized by broad, rounded upland and deep, steep-sided linear valleys. The underlying rock is comprised of shale, siltstone, and sandstone, and the approximate elevation ranges from 900 to 2,200 feet. The Pittsburgh Low Plateau is dominated by a smooth to irregular, undulating surface with narrow valleys. This region also features strip mines and reclaimed land. The underlying rock consists of shale, siltstone, sandstone, limestone, and coal. The approximate elevation ranges from 660 to 2,340 feet. The Waynesburg Hills Section is very hilly with narrow hilltops and steep-sloped, narrow valleys. The underlying rock in this section includes sandstone shale, red beds, and limestone. The approximate elevation ranges from 848 to 1,638 feet. The Allegheny Mountain section is characterized by wide ridges separated by broad valleys. The underlying rock in this region includes sandstone, siltstone, shale, and conglomerate. The approximate elevation ranges from 775 to 3,210 feet. The east part Allegheny Front Section is characterized by rounded linear hills rising by steps to an escarpment and hills cut by narrow valleys. The west part of the Allegheny Front Section features undulating hills sloping away from escarpment. The underlying rock type includes shale, siltstone, and sandstone. The average elevation ranges from 540 to 2,980 feet.

TABLE 5
PTC MS4 OHIO RIVER DRAINAGE BASIN SEDIMENT AND NUTRIENT
IMPAIRED NON-ATTAINING RECEIVING SURFACE WATERS SUMMARY

URBAN AREA	RECEIVING SURFACE WATER NAME (MOST DOWNSTREAM SEWERSHED #)	HUC12 CODE	HUC12 NAME	REACH CODE AT MOST DOWNSTREAM OUTFALL	CHAPTER 93 DESIGNATED USE	IMPAIRMENT CAUSE	SURFACE WATER NAME DOWNSTREAM OF RECEIVING SURFACE WATER
PITTSBURGH PENNSYLVANIA	Brady Run (11549)	050301040102	Brady Run	05030104000018	TSF ³	Siltation	Beaver River
	Clarks Run (11009)	050301040103	Beaver River-Ohio River	05030104000027	WWF ²	Siltation	
	Walnut Bottom Run (11537)			05030104000030	WWF ²	Siltation; Water/Flow Variability	
	Brush Creek – North (11010)	050301050408	Brush Creek (North)	05030105000516	WWF ²	Nutrients; Siltation; Cause Unknown; Water/Flow Variability	Connoquenessing Creek
	UNT to Brush Creek (11069)			05030105000559	WWF ²	Nutrients; Siltation	Brush Creek
	Montour Run (11182)	050100090202	Little Pine Creek-Pine Creek	05010009000137	TSF ³	Siltation	Pine Creek
	Crouse Run (11190)			05010009000130	TSF ³	Nutrients	
	UNT to Crouse Run (11192)			05010009000131	TSF ³	Nutrients	Crouse Run
	Deer Creek (11219)	050100090303	Deer Creek	05010009000092	WWF ²	Siltation; Flow Alterations; Turbidity; TDS; Metals; Nutrients	Allegheny River
	Allegheny River (11221)	050100090304	Chartiers Run-Allegheny River	05010009000007	WWF ²	PCB; Chlordane	
	Plum Creek (11237)	050100090305	Plum Creek	0 5010009000082	WWF ²	Nutrients; Siltation	
	UNT to Thompson Run (911260)	050200050703	Thompson Run	05020005001822	WWF ²	Siltation	Thompson Run
	UNT to Turtle Creek (11261)	050200050704	Sawmill Run-Turtle Creek	05020005000672	WWF ²	Siltation	Turtle Creek
	Turtle Creek (11306)	050200050701	Haymakers Run-Turtle Creek	05020005000486	TSF ³	Nutrients; Siltation; Metals	Monongahela River
	Byers Run (11350)			05020005000619	TSF ³	Siltation	Turtle Creek
	UNT to Byers Run (11427)			05020005001895	TSF ³	Siltation	Byers Run
	UNT to Lyons Run (11365)			05020005000621	TSF ³	Siltation	Lyons Run
	Thompson Run (11276)			05020005000664	TSF ³	Siltation	Abers Creek
	Brush Creek – South (11362))			05020005000556	TSF ³	Siltation	Turtle Creek
	UNT to Brush Creek (11337)	050200050702	Brush Creek (South)	05020005000605	TSF ³	Siltation	Brush Creek
	UNT Tinkers Run (11374)			05020005000538	TSF ³	Siltation	Tinkers Run
	UNT to Little Sewickley Creek (11458)	050200061103	Little Sewickley Creek	05020006000832	TSF ³	Siltation; Water/Flow Variability	Little Sewickley Creek
	UNT to Sewickley Creek (11512)	050200061104	Lower Sewickley Creek	05020006004235	WWF ²	Nutrients	Sewickley Creek
	UNT to Beaver Run (11609)	050100080203	Beaver Run Reservoir-Beaver Run	05010008000478	HQ-CWF ⁴	Siltation	Beaver Run
	UNT to Montour Run (11628)	050301010304	Montour Run	05030101001520	TSF ³	Organic Enrichment/Low D.O.; Metals	Montour Run

**TABLE 5
(CONTINUED)**

URBAN AREA	RECEIVING SURFACE WATER NAME (MOST DOWNSTREAM SEWERSHED #)	HUC12 CODE	HUC12 NAME	REACH CODE AT MOST DOWNSTREAM OUTFALL	CHAPTER 93 DESIGNATED USE	IMPAIRMENT CAUSE	SURFACE WATER NAME DOWNSTREAM OF RECEIVING SURFACE WATER
UNIONTOWN- CONNELLSVILLE, PA	UNT to Redstone Creek (12014)	050200050601	Cove Run-Redstone Creek	05020005002922	WWF ²	Siltation; pH; Metals; Organic Enrichment/Low D.O; Suspended Solids	Redstone Creek
	UNT to Redstone Creek (12003)			05020005002953	WWF ²		
MONESSEN- CALIFORNIA, PA	Maple Creek	050200050803	Maple Creek-Monongahela River	05020005001489	WWF ²	Organic Enrichment/Low D.O.; Metals; Siltation; Water/Flow Variability	Monongahela River
1. CWF – Cold Water Fishes 2. WWF – Warm Water Fishes 3. TSF – Trout Stocking 4. HQ-CWF – High Quality Waters-Cold Water Fishes							

D. SOILS

This discussion is a generalized impression of the character of the PTC soils. Site-specific soils investigations will be required for design development.

Soils are foundational for stormwater pollution management. Well-drained soils with moderate permeability are ideal for successful implementation of infiltrative stormwater BMPs. Good soil fertility supports vigorous plant growth that is integral to infiltrative stormwater BMP effectiveness in pollution reduction. Soil characteristics along degraded streams guide the design response and are predictive of the effectiveness of sediment reduction. Soils with high levels of silt and very fine sand (loamy) tend to be more erodible. So, while loamy soils require careful management during construction to prevent sediment discharges, restorative projects that stabilize such soils can produce significant sediment reductions.

The Turnpike runs through several soil associations situated in the Ohio River Basin. Soil associations are groups of soil series that are commonly found together. Starting from the western end of the Mainline, the underlying soil associations of the Turnpike include the Ravenna-Cranfield (RC) series, Hanover-Alvira (HA) series, Gilpin-Wharton (GW) series, and Hazleton-Cookport (HC) series. The Mon-Fayette Expressway also runs through the Guernsey-Culleoka (GC) series.

The westernmost 25 miles of the Turnpike Mainline and the Beaver Valley Expressway are situated in Lawrence and Beaver counties where the dominant Ravenna and Cranfield soils were intermixed with other soils by the glaciers. Due to its formation, the RC series is located on both level areas and on steep slopes. The soil ranges from moderately deep to deep, somewhat poorly to moderately well-drained silt loam, and is comprised of neutral till. Both Ravenna and Cranfield soils are noted to have a fragipan layer at a depth of 15 to 30 inches. Fragipan is a thick layer of soil that is cement-like and restricts water flow and root penetration. Permeability of this series is moderately high above the fragipan and moderately low in the fragipan and below. The major limitations for stormwater management facility construction include seasonal wetness, widely variable permeability, flooding in the lowlands, low available water capacity on hillsides, and slope. If sites for infiltrative BMPs are under consideration in this region, site-specific evaluation is necessary. The general takeaway is that interaction with perched water tables and other soil drainage problems may prevent successful infiltration.

The next segment of Mainline cuts through the southwestern corner of Butler County and diagonally across the northern part of Allegheny County. The HA series separates the RC and GW soils and is a narrow band, only a few miles wide where the Turnpike crosses it. The HA series is generally deep, somewhat poorly to moderately well-drained silt loam, and comprised of leached till.

The GW series is moderately deep to deep, moderately well- to well-drained, medium-textured silt loam and is underlain by shale, sandstone, and siltstone. It is located on undulating to hilly uplands and with numerous small streams. Wharton generally dominates the ridges and

Gilpin is on the side slopes. Wharton soils are noted to have high water tables and are subject to erosion. Depth to bedrock is a limitation to Gilpin soils. The abundance of streams, the erosive nature of the soils, and the limited depth to a constraining feature suggest that restorative landscape and stream projects may be more effective than infiltrative BMPs for pollution reduction in the region.

The GC series is located near the Mon-Fayette Expressway through Washington and Fayette counties. Some areas are moderately deep and well-drained, ideal for infiltrative BMPs. Other areas, with high percentages of Guernsey soils, have seasonal highwater tables, which may interfere with consistent effectiveness of infiltrative BMPs. The GC series coincides with an area historically noted for strip-mining land use. While there is no longer an abundance of active mining, the residual land depressions collect acidic water. Vegetation is sparse. The known hazardous nature of the acid mine drainage may dictate extra precautions in order to design compatible stormwater management solutions.

On a similar note, soils in the greater Pittsburgh area are highly influenced by heavy industrial, commercial, and residential land use. The disturbance and compaction associated with intensely developed land use alter soils' natural characteristics and make desktop analysis less effective as a site identification tool. Potential sites in densely developed areas require secondary follow up even at early stages of site evaluation for PRP BMPs.

In general terms it appears the soils surrounding the Turnpike within the Ohio River Basin fairly consistently have constraints that point toward proposed BMPs that do not rely on infiltration as the primary means to effectively reduce sediment pollution. Alternatives such as the managed release concept (MRCs) might be warranted in the Ohio River Basin due to the preponderance of characteristics that interfere with storm water infiltration. Site-specific soil testing is warranted before committing to an infiltrative BMP solution. It also appears that some areas that easily erode and have an abundance of streams are good candidates for landscape and stream restorations that could both reduce sediment discharge and aid in improving water quality.

E. LAND USE

The Turnpike is its own unique use. It is a limited-access road with user service and roadway maintenance support facilities. More than half of the corridor length traverses rural, agricultural, and forested land. The remainder crosses more metropolitan regions with urban character. New construction in the Ohio River Drainage Basin consists of bridge and infrastructure repair/replacement, roadway widening, and redevelopment of existing service plazas and maintenance facilities. Generally, the Turnpike is split evenly between impervious surfaces and pervious surfaces (vegetated). The ratio fluctuates to more strongly impervious where the roadway passes through urbanized environments and less impervious in rural and suburban settings.

The land uses depicted by the aerial photograph background of the MS4 maps are described below in **Table 6**, PTC MS4 Ohio River Land Use Distribution Table. The land uses

were derived from the pollutant load estimating model (MapShed) utilized in preparation of the PRP (see **Appendix D**, Mapshed Urban Area Tool Results). The Land Use Distribution Table includes the Turnpike itself, but the reported categories reflect the land use through which the roadway passes. Mapshed names are cross-referenced to the Chesapeake Assessment Scenario Tool (CAST) program and are provided in accordance with the PA DEP PRP preparation instructions to refer to CAST names and definitions.

TABLE 6
PTC MS4 OHIO RIVER LAND USE DISTRIBUTION TABLE SUMMARY

LAND USE		OHIO RIVER DRAINAGE BASIN
MAPSHED NAME	CAST NAME	PLANNING AREA (ACRES)
Hay/Pasture	Pasture	20
Cropland	Double Cropped Land	5
Forest	True Forest	165
Wetland	Non-tidal Floodplain Wetland	0
Disturbed	Regulated Construction	2
Turfgrass (includes golf courses and large expanses of turf)	MS4 Turfgrass	2
Open Land	Mixed Open	158
Bare Rock	Non-Regulated Buildings and Other	0
Sandy Areas	Non-Regulated Buildings and Other	0
Unpaved Roads	No Equivalent	0
Low-Density (LD) Mixed	MS4 Buildings and Other	163
Medium Density (MD) Mixed	MS4 Buildings and Other	354
High-Density (HD) Mixed	MS4 Buildings and Other	551
Low-Density (LD) Residential	MS4 Buildings and Other	12
Medium Density (MD) Residential	MS4 Buildings and Other	4
High-Density (HD) Residential	MS4 Buildings and Other	0
Water	Water	0
TOTAL		1,436



3.0 REQUIRED PRP COMPONENTS

A. PUBLIC PARTICIPATION

The PTC invited public involvement and participation in the development of the Ohio River PRP as specified in their approved Permit and outlined below.

- The initial draft Ohio River PRP was posted on the PTC's Clean Water Website from September 24, 2022 to October 24, 2022.
- Notice of the initial draft Ohio River PRP was published in the *Pennsylvania Bulletin* on September 24, 2022. The announcement directed the public to its website to review the PRP, and a 30-day comment period was provided.
- A copy of public comments that were received are included in Appendix F, Public Review Comments.
- The PTC also directly contacted Indiana Township, where the PTC's sole PRP project is located, on September 14, 2022, which is at least 30 days prior to the submission of the PRP to PA DEP (on October 31, 2022).
- Following approval by PA DEP, a complete copy of the Ohio River PRP will be posted on the PTC's Clean Water Website <https://www.paturndpike.com/responsibility-matters/clean-water> and will continue to be published on the website for the duration of permit coverage.

Should there be revisions to the PTC's Ohio River PRP that modifies the location, type, or number of proposed BMPs, the PTC will identify the revision(s) on its website and provide a 30-day period for the acceptance of public comments. Subsequently, a copy of public comments received and the PTC's record of consideration of the comments will be provided with PTC's Ohio River PRP to PA DEP.

The verbiage of the Notification placed in the *Pennsylvania Bulletin* is presented below. A copy of the *Pennsylvania Bulletin* notification is provided in **Appendix A**.



**PENNSYLVANIA BULLETIN NOTIFICATION FOR
THE PENNSYLVANIA TURNPIKE COMMISSION
OHIO RIVER DRAINAGE BASIN PRP**

Draft National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Pollution Reduction Plans for the Pennsylvania Turnpike Commission

Notice is hereby given that the Pennsylvania Turnpike Commission will receive public comment(s) on three proposed Pollution Reduction Plans (PRPs) required for their 2021-2026 National Pollutant Discharge Elimination System (NPDES) Individual Permit to discharge stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) Permit No. PAI139602.

The Pennsylvania Turnpike Commission has developed PRPs for the Chesapeake Bay, Delaware River and Ohio River Watersheds. The PRPs determine existing sediment pollutant loadings associated with stormwater runoff and proposes potential Best Management Practices to reduce the pollutant loads to meet the requirements of the MS4 Permit, for each watershed.

The proposed PRPs can be reviewed online by visiting <https://www.paturndpike.com/responsibility-matters/clean-water> then selecting “MS4” at the top of the page and navigating to “MS4 Documentation” under “MS4 Resources”. Written comments on the PRPs will be accepted for a period of 30 days from the date of this public notice by mail to Mr. James Kaiser, Pennsylvania Turnpike Commission, 700 South Eisenhower Blvd., Middletown, PA 17057 or by e-mail at jkaiser@paturndpike.com. All comments will be tabulated and considered with the final PRPs.

B. MAP

The PTC’s MS4 map that is the basis for the PRP was submitted as part of the MS4 Annual Report for the period ending June 30, 2018, and is on file as part of the publicly accessible record with PA DEP. The sidebar graphic on the next page summarizes the information provided narratively in the following section. The map is a Geographic Information System (GIS) product created using ESRI Arc Map and serves the following purposes:

1. Inventory of the PTC’s existing stormwater network
2. Regulated area identification including delineation of the following components listed in the PA DEP PRP Instructions:
 - a. Land uses and/or impervious and pervious surfaces
 - b. Outfalls
 - c. Storm sewershed boundaries
 - d. Planning areas
 - e. Locations of proposed BMPs
3. Framework for inspections and documenting maintenance practices and Illicit Discharge Detection and Elimination (IDDE) activities

4. Future project identification that show the location of proposed pollutant-reducing projects

1. MS4 Base Map

The base map information was acquired from various publicly available sources including Bing Maps, County Parcel Information provided by the PTC, PA DEP, Pennsylvania Department of Conservation and Natural Resources (PA DCNR), Pennsylvania Department of Transportation (PennDOT), and the U.S. Census Bureau that are detailed in **Appendix C**, MS4 Map Layers and Data Sources. The information from these sources is shown on the map unedited. There are variations in the locations of duplicated information. However, the composite of the information sufficiently provides the required data elements including land uses, impervious/pervious surfaces, locations and names of surface waters that receive discharges from the MS4 outfalls, public and private property lines, municipal boundaries, and the UA boundary according to the 2010 Census. The PTC and its consultant, Skelly and Loy, Inc., A Terracon Company (Skelly and Loy) make no claims as to the accuracy of the public-source data.

2. Municipal Separate Storm Sewer System

The stormwater sewer collection system shown on the MS4 maps, consisting of the surface stormwater conveyances (PTC roadway, catch basins/inlets, pipes, manholes, intakes and discharges, ditches, swales, and similar municipally owned or PennDOT components that are connected to the system and located within the PTC property), was digitized based on historical PTC construction plans and desktop analysis of aerial photographs and topography. During the analysis, some segments of the Turnpike were under construction and other areas contained documented and/or aerial images that showed conflicting information. These areas were flagged as areas of “Insufficient Data” because positions of the stormwater sewer system could not be conclusively located using desktop source information.

The stormwater sewer system and Insufficient Data areas will be updated on an ongoing basis, and updated mapping will be provided as part of Annual Reports during the permit term as required by the PTC’s approved MS4 Permit.

MS4 MAP SUMMARY

Purposes

- Inventory
- Regulated area identification
- Framework for inspections
- Future project identification

MS4 Base Map

- GIS-Based
- Compiled from publicly available sources

Municipal Separate Storm Sewer System

- Digitized from PTC construction plan archive and aerial photographs

Outfalls and Sewersheds

- Produced by professionals
- Color-coded:
 - Green for Attaining
 - Red for Non-Attaining

Planning Areas

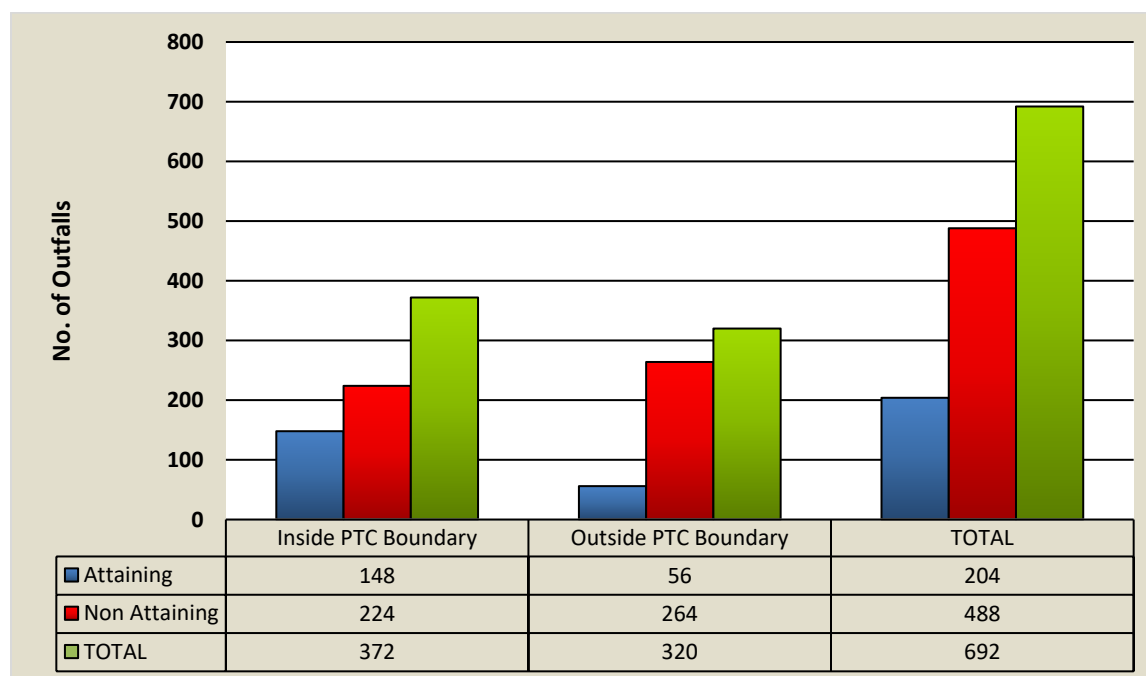
- Demarcated through GIS Analysis

3. Outfalls

The outfalls were located by the PTC's consultant, Skelly and Loy, by plotting the path that storm runoff will follow by gravity between the PTC's MS4 and the receiving surface water (a.k.a., rain traces). In establishing rain traces, surface topography with enclosed depression characteristics (such as stormwater basins, sinkholes, and ponds) were ignored, in accordance with PA DEP directions, to assume flooded conditions.

Statewide, PTC discharges to 1,727 outfalls; 886 outfalls are located within the PTC boundary, and 841 are outside the PTC territory. (**Appendix B**, PTC MS4 Ohio River Drainage Basin Receiving Surface Waters Table, provides the comprehensive list of outfalls, receiving surface waters, and surface water statistics.) There are 692 outfalls within the Ohio River Drainage Basin. **Figure 3**, PTC Ohio River Outfall Summary, provides a synopsis of the outfalls by location within the PTC MS4 (or beyond) and by impairment status of the receiving surface waters at the outfall location.

FIGURE 3
PTC OHIO RIVER OUTFALL SUMMARY

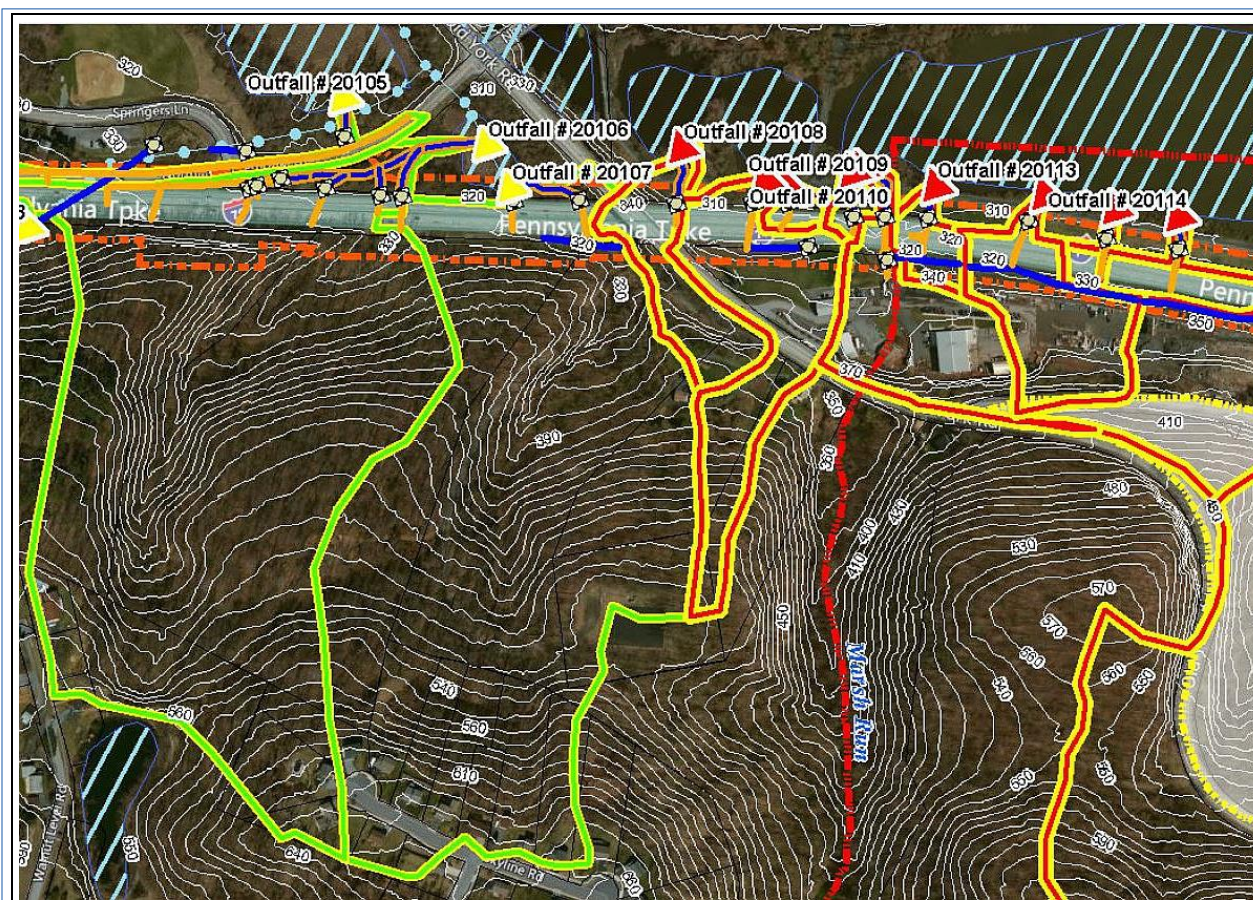


Of the 692 total outfalls, 372 are located within PTC-owned or -operated property; the remaining 320 outfalls discharge to surface waters beyond the PTC boundary and outside PTC purview. Outfalls within the PTC right-of-way have been field-verified during IDD&E screenings.

4. Storm Sewersheds

Storm sewersheds were produced by qualified staff using professional judgment to delineate contributory drainage area to each outfall. Sewersheds were color-coded to correspond

to the impairment/attainment status (in accordance with PA DEP's Integrated Water Quality Monitoring and Assessment Report) of the receiving surface water at the PTC MS4 outfall location. Sewersheds discharging to surface waters attaining their designated Chapter 93 use are color-coded "green." Sewersheds discharging to non-attaining surface waters are color-coded "red with a yellow halo." (See Photograph 1 below.)



Photograph 1 – Sample from 500-scale PTC MS4 Map: The image shows green-colored sewersheds discharging to attaining surface waters at yellow-colored outfalls and red-colored sewersheds discharging to non-attaining surface waters at red-colored outfalls.

5. Numbering System

The numbering code has five digits. The first digit refers to the major drainage basin in which the outfall is located. The next number refers to the sewershed's UA. The final three digits are the sewershed identification (ID) number. (See **Table 7**, PTC Sewershed Numbering Code, below.)

TABLE 7
SEWERSHED NUMBERING CODE

DIGIT 1	MAJOR DRAINAGE BASIN	DIGIT 2	URBANIZED AREA	DIGITS 3 THROUGH 5 (SEQUENTIAL SEWERSHED ID)
1	Ohio River Basin	1	Pittsburgh	001 to 999
		2	Uniontown-Connellsville	
		3	California-Monessen	
2	Chesapeake Bay Basin	1	Harrisburg	
		2	Lancaster	
		3	Wilkes Barre-Scranton	
3	Delaware River Basin	1	Philadelphia	
		2	Allentown	

The three-digit outfall ID was generated using the latitude/longitude coordinates of the outfall locations relative to their geographic position within each UA. A numbering routine to assign a “next number” based on longitudinal values for west-east Turnpike segments and latitudinal values for the north-south segments, supplemented with operator input on curving and transitional Turnpike segments, resulted in Sewershed IDs that generally follow the Turnpike System Roadway mile marker direction as shown below (**Table 8**, Turnpike Milepost Direction). In areas where there are multiple roadway segments or particularly dramatic changes in direction, sequential numbering might have sequencing gaps. This is because the following east or south coordinate is located on another road segment or curve within the same UA. Out-of-sequence numbering may also occur to accommodate new outfalls discovered during outfall screenings.

TABLE 8
TURNPIKE MILEPOST DIRECTION

TURNPIKE ROADWAY NAME	ROUTE NUMBER	MILE POST DIRECTION (LOWEST TO HIGHEST VALUE)
Turnpike Mainline	I-76/I-276	West to East
Beaver Valley Expressway	I-376	Nominally: West to East Geographically: North to South
Southern Beltway	PA-576	Nominally: West to East Geographically: North to South
Mon/Fayette Expressway	PA-43	South to North
Amos K. Hutchinson Bypass (a.k.a., Greensburg Bypass)	PA-66	South to North
Northeast Extension	I-476	South to North

Sewersheds contain structures and conveyances. The numbers are not shown on the map to preserve map legibility, but these features are numbered, too. The first five numbers of

each component of the storm sewer system within a sewershed uses that sewershed's ID number to tie those features to the sewershed. The number is followed by a period and suffix codes that identify the type of structure or conveyance, etc.

Once established, the numbering needs to remain constant so that activities occur at the same location and records stay connected perpetually. Newly discovered outfalls will most often result in splitting an established sewershed. Additionally, there are a few instances where the same sewershed identification number was inadvertently duplicated. In these cases, a prefix number "9" is added to one of the two sewersheds to differentiate them and their affiliated storm sewer components. For example, if an established sewershed with the number 22024 is split, one will retain 22024 and the other will become 922024.

6. Planning Areas

Planning Areas were derived through GIS analysis that merged and clipped the sewershed, the 2010 UA, and the upstream contributory area to the limits of the PTC right-of-way. Planning Areas represent the portion of the PTC where pollutant reduction is required. In the Ohio River Basin, the Planning Area includes only the sewersheds that are impaired by sediment or nutrients which correspond to the pollutants of concern listed below.

C. POLLUTANTS OF CONCERN

Pollutants of concern within the overall PRP Planning Area are sediment and total phosphorus. PA DEP established pollutant removal targets in the PTC's approved permit. Pollutant removal goals for the Ohio River Drainage Basin are listed in **Table 9**.

TABLE 9
POLLUTANT REDUCTION TARGETS FOR THE
OHIO RIVER DRAINAGE BASIN IN PTC PERMIT PA1139602

POLLUTANT	REDUCTION TARGET
Sediment (TSS)	5%
Phosphorus (TP)	2.5%

1. MS4 Reduction Goals

The PTC has opted to use the presumptive approach. BMP projects to reduce pollutants will report only sediment reduction required to achieve 5% sediment reduction.

a. Presumptive Approach to Pollutant Reduction

In accordance with PA DEP's PRP Instructions (3800-PM-BCW0100k, Rev. 3/2017) Section I.B., a presumption of nutrient removal compliance may be assumed if the permit-required sediment removal is achieved (5% in the Ohio River Drainage Basin).

D. EXISTING LOADING FOR POLLUTANTS OF CONCERN

1. Synopsis

Existing loading totals for sediment and phosphorus were calculated by HUC12 watershed using the MapShed model. Analysis at HUC12 watershed scale is consistent with the requirement to apply the MapShed model to sufficiently sized (>10-square-mile) watersheds.

Table 10 lists the existing pollutant loads for each of the UAs and HUC 12 watersheds where the PTC MS4 is located. (Also see MapShed Urban Area Tool Results, **Appendix D1**, Planning Area Existing Loads.) A detailed discussion of the approach, the computer model, and other supporting calculations are provided below.

TABLE 10
EXISTING POLLUTANT LOAD
BY URBANIZED AREA AND HUC12 WATERSHED FOR REGULATED PTC MS4

URBAN AREA	WATERSHED NAME (HUC CODE)		SEDIMENT TSS (LBS/YR)	PHOSPHORUS TP (LBS/YR)
PITTSBURGH, PENNSYLVANIA	Brady Run	(050301040102)	14,761.5	6.7
	Beaver River-Ohio River	(050301040103)	84,087.3	27.4
	Brush Creek (North)	(050301050408)	226,821.9	67.2
	Little Pine Creek-Pine Creek	(050100090202)	143,243.0	36.4
	Deer Creek	(050100090303)	31,389.6	9.8
	Chartiers Run-Allegheny River	(050100090304)	20,958.2	5.3
	Plum Creek	(050100090305)	162,363.2	34.3
	Sawmill Run-Turtle Creek	(050200050704)	27,506.8	9.0
	Haymakers Run-Turtle Creek	(050200050701)	189,277.9	50.1
	Brush Creek (South)	(050200050702)	543,918.3	139.4
	Little Sewickley Creek	(050200061103)	55,327.8	20.3
	Lower Sewickley Creek	(050200061104)	78,725.3	29.1
	Beaver Run Reservoir-Beaver Run	(050100080203)	67,500.3	21.5
	Montour Run	(050100090202)	113,572.3	32.1
	Subtotal – Pittsburgh, Pennsylvania		1,759,453.4	488.6
UNIONTOWN- CONNELLSVILLE, PA	Cove Run-Redstone Creek	(050200050601)	54,447.0	14.9
	Subtotal – Uniontown-Connellsville, Pennsylvania		54,447.0	14.9
MONESSEN- CALIFORNIA, PA	Maple Creek-Monongahela River	(050200050803)	19,103.2	6.5
	Subtotal – Monessen-California, Pennsylvania		19,103.2	6.5
OHIO RIVER DRAINAGE BASIN PTC MS4 TOTAL			1,833,003.6	510.0

2. Calculating MS4 Existing Pollutant Load

Calculating the existing pollutant load includes first determining what areas are regulated by the MS4 permit. The regulated portion of the PTC property includes the roadway and facilities that are in a UA or drain into a UA called planning areas. The initial planning area pollutant loads may be determined through accepted computer modeling (like MapShed) or by using the PA DEP Simplified Method (a spreadsheet application of generalized county-based pollutant loading rates that can be applied to planning areas to produce pollutant load estimates). The total pollutant load may be adjusted to recognize other conditions that could decrease MS4 pollutant- reduction obligations. Adjustments include 1) reducing the planning area through parsing and 2) reducing the modeled pollutant load equivalent to the capacity for pollution treatment in existing stormwater BMPs in excess of their required construction stormwater discharge NPDES Permit obligations.

The PTC used MapShed to generate pollutant loads and made no adjustments to decrease its MS4 pollutant load-reduction obligations.

a. MapShed Discussion

MapShed is a PA DEP- approved GIS-based modeling method. Data layers were downloaded from the MapShed website and serve as the basis for calculating existing pollutant loads. PTC performed Pollutant Load Calculations in 2017 to align with PA DEP instructions at the time and performed their pollutant modeling using MapShed. The results of the 2017 model represent identical criteria that municipal MS4 permittees applied.

i. MapShed Urban Area Tool

MapShed's Urban Area Tool analyzes the intensely developed portions of watershed to determine the existing pollutant loads generated by the PTC MS4 regulated area (Planning Area). The Urban Area Tool is reliant on access to a data layer and look-up table defining municipal boundaries referred to as the UA data layer. The turnpike is linear, and it crosses numerous municipalities. The PTC's boundaries do not coincide with municipal boundaries, and the MS4 Planning Area is only a portion of the entire PTC right-of-way. In order to access the underlying database, it was necessary to create and associate the PTC Planning Area as a substitution for MapShed's UA data layer.

In addition to the substitution for the built-in municipal layers that did not coincide with the planning area, limited adaptations were made to MapShed and are listed to the right.

MODIFICATIONS TO MAPSHED

- MapShed-provided data layers were re-projected and clipped to the municipal boundary to gain performance, reduce inconsistencies, and provide platform stability.
- Consultant-created Planning Areas were substituted for the MapShed-provided UA data layer.
- HUC12 watersheds from the USGS were substituted for MapShed-provided smaller watersheds.

The Urban Area Tool provides four categories of information:

1. **Watershed Total Pollutant Load** – The annual load of sediment, phosphorus, and nitrogen generated by the entire HUC12 watershed, expressed in pounds per year. Pollutant loading rates are generated at the HUC-12 watershed level.
2. **MS4 Total Pollutant Load** – The MS4 portion of the watershed's pollutant load. The MS4 Pollutant Load is the load generated when no adjustments are made to the planning area (planning area with no parsing).
3. **MS4 Regulated Pollutant Load** – Subset of MS4 total load reflecting any acreage reductions from the Planning Areas. This category would be used if parsing is applied to reduce the size of the planning area.
4. **Unregulated Pollutant Load** – Counterpart to the Regulated Pollutant Load that represents the portion of the pollutant load conveyed by another MS4 permittee (and not conveyed through the PTC MS4 stormwater sewer system).

The Regulated Pollutant Load portion of the Urban Area Tool allows the user to simulate parsing by inputting an adjusted percentage of land area within land use categories to reflect a smaller regulatory area resulting from exclusions (parsing). There was no parsing for the PTC (see Subsection d, Planning Area Deductions - Parsing, below).

GIS analysis was used to generate a substitute boundary for the Urban Area data layer. Therefore, the Regulated Pollutant Load and its counterpart, Unregulated Pollutant Load, categories of the Urban Area Tool were unnecessary. The Watershed Total Pollutant Load feature does not address PTC-relevant loading. The MS4 Total Pollutant Load feature of the Urban Area Tool is the only necessary Urban Area Tool feature that is needed for reporting.

b. Planning Area Determination

As stated in Section 3.B, Map (p. 18), the limits of the planning areas were created using GIS analysis to identify the portion of the PTC property within and contributing to the 2010 UA that is also served by the PTC separate storm sewer. In the Ohio River Drainage Basin, the planning area is synonymous with the regulated PTC MS4 because all sewersheds were included regardless of the impairment status of the receiving surface water. The PTC Planning Area was substituted for the Urban Area data layers in the MapShed model and consists of 1,436 acres.

c. Pollutant Load Calculation

Calculating the existing pollutant load includes determining which HUC12 watersheds require modeling. Applicable HUC12 watersheds are those containing planning areas (segments of the Turnpike that are in a UA or drain into the UA). MapShed analyzes data affecting pollution loads including streams, land cover, soils, topography/terrain, long-term precipitation data, and a few data sets like discharges from wastewater treatment plants and animal populations, that are not relevant to the PTC. Loading rates are generated for pollutants of concern based on the

character of the entire HUC12. The HUC12 loading rate is applied to the planning area(s) within the HUC12 to estimate the existing pollution generated by each planning area.

d. Planning Area Deductions - Parsing

Per the PA DEP PRP Instructions, it is acceptable to decrease the area from the first analysis by excluding/parsing areas that possess their own NPDES permit such as an industrial site covered by a PAG-03 permit, regions under the jurisdiction of another regulated MS4, and areas that do not contribute drainage to the permittee's Municipal Separate Storm Sewer (MS3). The smaller region remaining following the parsing exercise represents the MS4 Planning Area that is subject to pollutant reduction removal.

The PTC PRP did not perform any parsing.

e. Existing Stormwater Facility Pollutant Load Adjustments

In addition to land area excluded from the MS4 planning area, the pollutant load baseline is permitted to be further decreased to reflect the runoff pollution treatment provided by the PTC's existing stormwater management facilities in excess of the pollutant reduction required by their respective NPDES permits for construction stormwater discharges.

The PTC's PRP does not quantify/take reduction credit for pollutant removal accomplished by existing facilities to reduce the sediment reduction target. Therefore, the pollutant loads generated by the MapShed model represent the existing load baseline used to generate pollutant reduction targets.

Table 10, Existing Pollutant Load By Urbanized Area and HUC12 Watershed for Regulated PTC MS4 (page 24) presents the results from MapShed's Urban Area Tool. The results tables generated by the model are provided in **Appendix D**.

E. BMPs TO ACHIEVE THE MINIMUM REQUIRED REDUCTIONS IN POLLUTANT LOADING

The PTC is planning a single BMP project to meet the required sediment reduction target. The project is a 988-linear-foot (LF) stream floodplain restoration and is summarized in **Table 11**, Proposed Ohio River Drainage Basin BMPs, below.

**TABLE 11
PROPOSED OHIO RIVER DRAINAGE BASIN BMPs**

BMP OPTIONS	NO. OF PROJECTS	TREATED LF	SEDIMENT REDUCTION (LBS/YR)	REDUCTION GOAL (LBS/YR)	EXCESS REDUCTION (LBS/YR)
Stream Restoration	1	988	91,650	113,620*	21,970
* The sediment reduction total represents the default value based on the MapShed effectiveness factor for stream restoration of 115 lbs/lf/yr.					

PTC and PennDOT collaboratively contracted a full-delivery vendor, Land Reclamation Group, LLC (LRG), to locate PA DEP-acceptable pollution reduction projects; obtain required permits and approvals; and construct, operate, and maintain the project(s) perpetually to meet PTC's sediment reduction obligation in the Ohio River Drainage Basin.

LRG identified the Deer Creek Project to meet PTC's reduction goal. The BMP is located near Dorseyville, Pennsylvania, on land owned by Independence Excavation, Inc. The project is approximately 1,500 feet (0.28 mile) west of Saxonburg Boulevard and approximately 1,800 feet (0.34 mile) north of the PTC MS4-regulated area in Indiana Township, Allegheny County, Pennsylvania (see **Figure 4**). The project meets PA DEP's site location criteria for stream restoration projects because it is within one mile of the PTC MS4 boundary. The segment of Deer Creek proposed for restoration is immediately adjacent to and receives drainage from the Pittsburgh UA. The Turnpike is in the Deer Creek watershed. The proposed stream restoration will offset sediment pollution associated with the Turnpike's storm-water runoff.

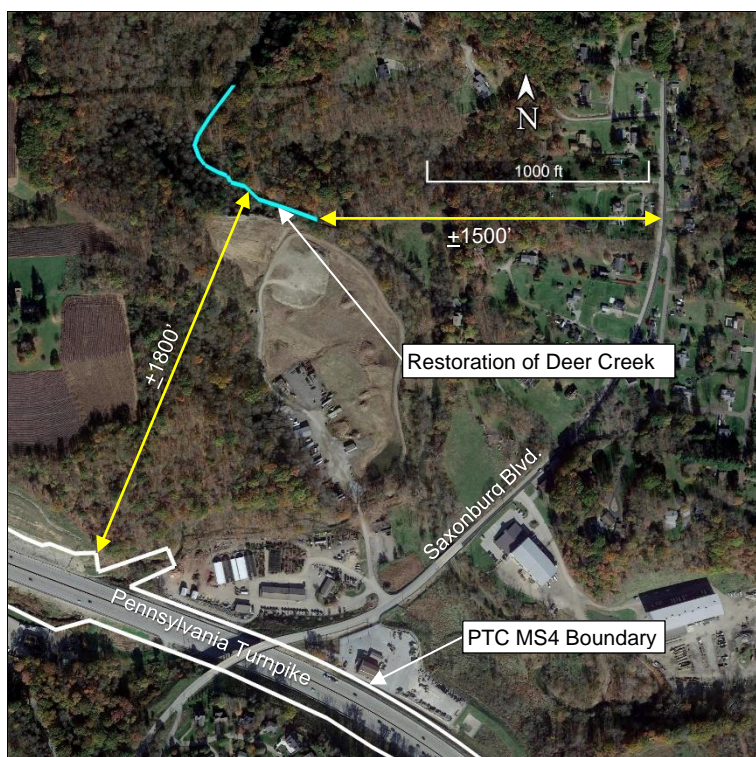


FIGURE 4
DEER CREEK STREAM RESTORATION LOCATION

The reach of Deer Creek proposed for restoration is listed in PA DEP's 2014 and 2020 *Integrated Water Quality Reports* as non-attaining for aquatic life with impairments caused by suspended solids, nutrients, siltation, flow alterations, turbidity, and other habitat alterations. This segment's designated use is Cold Water Fishes (CWF). The stream is eroded and has minimal bank protection. A Bank Erosion Hazard Index (BEHI) field assessment to confirm the existing level of stream degradation was performed and backed by photodocumentation.

LRG staff reviewed the proposed project to ensure that the eligibility requirements listed in PA DEP's *Considerations of Stream Restoration Projects in Pennsylvania for Eligibility as an MS4 Best Management Practice* (May 11, 2018) will be met. Because the PTC used MapShed to calculate the MS4 loading rates, a default rate of 115 lbs/lf/yr may be applied to the proposed length of restoration to calculate the anticipated sediment reduction generated by the project.

Table 11 on page 27 summarizes the expected sediment pollution reduction for the Deer Creek project and the commitment PTC is providing for MS4 pollutant reduction compliance.

PA DEP's minimum qualifying criteria for using a stream restoration project to fulfil sediment reduction goals are itemized in italics below. Supporting documentation is provided in **Appendix G**.

1. *Siting:*

- *Permittee must document existing channel or streambank erosion and an actively enlarging or incising urban stream condition prior to restoration (an existing problem).*

The upstream watershed is urbanized, causing an increase in storm surge (volume and velocity of stormwater in the channel). This surge is causing the streambanks to erode. The eroding streambanks are depositing sediment within the project reach, and the deposition is exacerbating additional streambank erosion.

BEHI and Near Bank Stress (NBS) assessments were utilized to empirically assess the stream banks and erosion issues within the stream channel. The BEHI and NBS results verify the visual assessment of the existing condition of the stream, confirming that the stream channel is actively eroding. Apart from one bank segment that had a BEHI rating of low, the BEHI and NBS results ranged from moderate to very high. The overwhelming ratings for both assessments were high. The summary, individual worksheets, and pictures are provided in Appendix G.

- *Effectiveness is most readily demonstrated for projects in 1st-3rd order streams (small). Larger scale projects will require additional documentation.*

The selected stream segment is a 4th-order stream. The contributory watershed is approximately 19 square miles, including approximately 6.65 square miles of Urbanized Area. It is critical to repair this stream promptly due to its rapidly deteriorating condition and elevated sediment pollution contribution. While it is acknowledged that cumulatively smaller headwater stream restoration is a preferred approach, delaying repair of the selected segment until the numerous contributing smaller streams can be stabilized will allow this segment to continue to deteriorate at unacceptable levels. It is imperative that this segment be restored without delay. An Urbanized Area map, Land Cover map, and Impervious Surface map identifying the upstream watershed have been included in **Appendix G** to provide additional documentation supporting why the stream meets qualifying criteria.

- *The project must address at least 100 linear feet of stream channel.*

The project length is approximately 1,150 feet, which is longer than the 100-foot minimum.

- *Impervious areas upstream of the project must be sufficiently treated to address peak flows that may exceed engineering design thresholds or compromise channel form and function.*

The proposed restoration will be designed to withstand current conditions, and governmental regulatory requirements will prevent new development from discharging runoff at rates exceeding the currently existing conditions. The municipalities within the contributory area to the project and their respective ordinance requirements are summarized in the table below.

TOWNSHIP	RATE CONTROL	VOLUME CONTROL	APPLIES TO	COMMENT
Indiana Township, Allegheny County	X	X	Earth Disturbance >1 acre	Ordinance 384
Hampton Township, Allegheny County	X	X	Earth disturbance >2,500 SF	Ordinance 815
West Deer Township, Allegheny County	X	X	Earth disturbance >5,000 SF	Chapter 182
Richland Township, Allegheny County	X	X	Earth disturbance >5,000 SF	Chapter 26
Middlesex, Butler County	X	X	New impervious surface >5,000 SF	Article III, Section 144

- *The project must address both sides of the channel on sites where a need to do so is evident.*

BMPs will be implemented on both streambanks to minimize erosion.

2. Techniques:

- *The goal is to apply a comprehensive approach that may employ a mix of techniques appropriate to the site, creating long-term stability of the streambed, streambanks, and floodplain.*

One of the designed BMPs utilized is a modified vegetated geogrid bank stabilization technique. This BMP was designed by the United States Department of Agriculture, Natural Resource and Conservation Service and is in the Engineering Field Handbook (1996); Chapter 16, pages 16-23. This BMP protects the streambank and provides an opportunity for vegetation to take root and stabilize the existing eroding streambank. It will prevent additional streambank erosion once established. The modification of the structure is in the footing. A log framed deflector utilized by the Pennsylvania Fish and Boat Commission will be constructed instead of a rock fill. The deflectors will be filled with exiting streambed materials that were deposited within the channel from the eroding banks. The log framed deflectors will be vegetated with hydrophytic plants. The modified footing will prevent flowing water to scour the soil along the toe of the bank. Additionally, the framed structures will direct the flow of the water to the

center of the channel, maintaining velocity and energy within the channel. This structure will primarily be utilized on the right descending bank.

A cross vane will be used in the channel to help maintain the stream's flow in the center of the channel.

On the left descending bank, a bank bench will be constructed with coir logs. Toe wood and branch layering will be installed to provide vegetated bank stabilization. The plugs and live stakes will be inserted into the coir log to improve stabilization.

- *Streambank or streambed armoring may be used where necessary to maintain channel stability, but the length of stream that is armored (such as with riprap and gabions) may not be included in the load reduction calculation.*

Some rock will be used to ensure stability of the BMPs as shown in the construction details, but LRG does not propose to riprap the banks for stabilization.

- *Projects should maximize floodplain reconnection, with a minimal channel invert elevation increase required to achieve this objective. Restoration bank height ratios must be 1.0 or less.*

The maximization of the floodplain will result in bank height ratios of 1.0 or less.

The streambanks in this reach are 8-10 feet high on the right descending bank. The left descending bank is 1.5-2 feet tall along the reach. The project will maximize floodplain reconnection along the left descending bank. The planned design has a phased floodway.

There is not currently a connection to the floodplain. The design implements BMPs that enhance connection to the floodplain. The use of deflectors and the bank bench will provide a primary flood stage area for the channel. This area will disperse the energy across the floodplain. The reconnection will reduce the energy of the water, providing the opportunity for the deposit sediment and gravels over the floodplain where it can be naturally stabilized.

- *A permanent 35-foot minimum riparian buffer.*

A 35-foot riparian buffer will be maintained along the stream within the project limits on both streambanks.

The following Deer Creek information is located in **Appendix E**:

- (E1) Project Location Map
- (E2) Deer Creek Existing Conditions Photographs
- (E3) Anticipated Project Schedule
- (E4) Example Site Protection Instrument (SPI)

In addition to the project's sediment reduction effectiveness, the project was selected for the following reasons:

1. **Prevents Stream Degradation/Restores Stream Health:** The ultimate purpose of the MS4 program is to ensure that surface waters are healthy. Deer Creek is non-attaining and already on the integrated 303.D list with impairment caused by sediment. The proposed stream restoration provides meaningful sediment reduction and progress toward reestablishing the stream's attaining status. Additionally, the practices required by PA DEP to ensure eligibility for pollution reduction credits for stream restoration mandate introducing biodiversity and eco-system sustainability. While it is true that implementation of widely distributed new and retrofit SCMs will also improve stream health, benefits will be incremental, necessitate many projects, and require a long period of time to realize desired pollutant reductions in comparison to a single stream restoration project. The outcome of stream restoration is that more streams will attain or preserve their designated use more effectively than possible through implementation of other types of projects.
2. **Achievable implementation schedule:** PTC adheres to internal procedures for capital budget planning and a structured bid and procurement process for outsourcing of design, permitting, and construction. PTC has been making accommodations to prioritize expenditures for the capital investment so the allocation for the Deer Creek Restoration is in the current budget. However, typical timing for a single uncontroversial contract from inception through construction is three to six years. The turnaround time is dependent on many factors (e.g., regulatory approvals) outside PTC's control. The variables and number of projects could destroy the schedule if PTC needed to process hundreds of smaller projects to meet its pollutant reduction obligations. A single, meaningful pollution reduction project adds predictability to the schedule.
3. **Effective:** The PTC is sensitive to budget because of its fiduciary responsibility to Turnpike users. It is important that projects perform well and are constructed for the best price, since ultimately it is Turnpike travelers who pay for improvements.
4. **Environmentally Sensitive:** A single construction site minimizes the overall amount of disturbed land and concentrates fewer construction vehicles and equipment at a single

JUSTIFICATION FOR SELECTED POLLUTION REDUCTION PROJECT

- Prevents Stream Degradation/Restores Stream Health
- Achievable implementation schedule
- Effective
- Environmentally Sensitive
- Safety
- Environmental Justice Benefits
- Consistent with PTC Sustainability Plan and Clean Water Initiative
- Diversification of PTC's Stormwater Management Response

area. The simplicity minimizes potential for sediment releases from construction activity and air pollution and automotive fluid discharges from construction vehicles/equipment that multiply when construction takes place at numerous widely distributed construction locations. Additionally, stream restorations are designed to be self-sustaining, and therefore require fewer site visits for maintenance and less use of herbicides, pesticides, etc. over their life cycle. Finally, the habitat created by the restoration itself is environmentally beneficial.

5. **Safety:** Construction activity for a stream restoration project like the Deer Creek restoration is off the roadway. Generally, Stormwater Control Measures (SCMs) that capture and treat stormwater are located in close proximity to the travel lanes. As previously expressed, in order to be as effective for pollution reduction, many SCMs would be required to be constructed or renovated. Even though jersey barriers direct traffic and provide a protected area for contractors, each construction site would create safety hazards for both the Turnpike travelers and for construction contractors due to the disruptive traffic patterns. The proposed project selection eliminates hundreds of opportunities for traffic accidents because the project is separated from the active roadway.
6. **Consistent with PTC Sustainability Plan and Clean Water Initiative:** The previous bullets exemplify the PTC's mission to incorporate the organization's economic, environmental, and social impact in decision making and to implement sustainable practices throughout the PTC system.
7. **Diversification of PTC's Stormwater Management Response:** The Turnpike already supports an inventory of approximately 430 widely dispersed SCMs that attenuate runoff and pollution from the roadway. These SCMs are engineered structures or devices designed to slow down, hold, infiltrate, and/or treat stormwater runoff before it enters waterbodies and groundwater. Stream restorations add diversity to the PTC stormwater management response.

1. Alternatives Considered

The PTC considered an abundance of options to accomplish pollution reduction. PTC initially analyzed sediment reduction through modifications of existing stormwater management facilities and capitalizing on landforms within the right-of-way that had spatial and physical characteristics that could be modified to hold runoff,

CRITERIA USED TO SEARCH AND EVALUATE PRP PROJECTS

- Simplicity of ownership
 - 1st PTC-owned properties
 - 2nd Land owned by an adjacent MS4
- Spatial and physical characteristics to support appropriately responsive BMP
- Modifications to existing stormwater management facilities
 - 1st Facilities constructed prior to 2003
 - 2nd Facilities constructed between 2003 and 2010
- Ease of Access
- Simplicity of Permitting
- Project achievable within time frame established by permit

allow sediment to settle, and provide infiltration. A list of criteria used to search and evaluate potential locations for PRP Projects is listed in the above sidebar. A total of 106 opportunity sites were identified. In order to achieve the same volume of sediment reduction accomplished by the selected Deer Creek stream restoration, PTC identified that 22 projects would be required. The projects included 1 detention basin, 3 dry extended basins, 16 vegetated swales, and 2 stream restorations (480 lf).



Photograph No. 3 – Existing Stormwater Basin: Example of an existing stormwater facility evaluated for retrofit to improve pollutant removal capabilities.

Some of the projects included treatment trains consisting of multiple SCM types at a single project location. The estimated cost was just under \$8 million.

A significant determinative factor in project selection is achievability with the permit's time frame. While individual projects were achievable within the time frame established by the permit, collectively the time to design, permit, and construct the projects exceeded the schedule. (See the section on Impacts to Project Schedule provided below.)

a. Impacts to Project Schedule

There are two significant factors to project schedule: 1) internally required PTC procedures and 2) design/permitting timing. The second item has been previously discussed in this report. While PTC can prioritize design schedules, once the pre-construction permit applications are initiated, schedules are heavily influenced by the regulatory approval process and often include delays beyond PTC's control. As previously stated, the larger the number of projects, the greater the uncertainty for the schedule. The focus of the discussion below provides some of the internal complexities of scheduling within the PTC.

The PTC is a State Commission; its primary purpose is to construct, finance, and maintain the Pennsylvania Turnpike. It is an independent commission, not part of another state agency. It operates under the leadership of a five-member board (four members are appointed by the Governor with $\frac{2}{3}$ Senate approval, and one member is the current Secretary of PennDOT).

The PTC planning process intertwines time frame and costs. The cost of new construction activity is tied to its projected schedule for allocating funds. According to PTC Policy and Procedure [(PTC 502005539(02/01))]:

“The Ten-Year Capital Plan (“Capital Plan”) is the process for identifying both short and long-term needs, establishing priorities and examining long-term financial implications and the overall effectiveness of funding such long-term needs and debt.”

The Capital Plan is updated annually, allowing for modification based on new conditions/information. Projects are generally coordinated by matching their priority and available funds. Typically, a capital project will methodically move from long-term planning (10+ years) to construction.

The PTC outsources design, permitting, and construction services and has a structured bid and procurement process it follows to employ consultants and contractors. The procurement process is managed by PTC staff. The process ensures project quality as well as compliance with all ancillary regulation pertaining to the Commission’s actions as a public governmental body. The integration of these requirements causes all but the most urgent emergency response activities to be completed more slowly than projects managed by local municipal governments or completed by the private-market sector.

Typical timing for a single uncontroversial contract from inception through construction is provided in **Table 12**, below. (Complex projects can require a longer time frame.)

TABLE 12
PTC MS4 TYPICAL BID PROCESS

ID	DESCRIPTION	TIME EXPENDED
Project origination	Project added to Capital Plan	Varies (1 to 10+ years)
Project initiation	Project moved from planning to Request for Proposal (RFP) for Design	12 months
Design and Permitting	Notice to Proceed to shovel-ready bid package	12-24 months
Construction	Bidding through Final Construction	12-36 months
TOTAL		36 to 72 months (excluding time on Capital Plan prior to bid process)

If the Ohio River Drainage Basin PRP proposed 22 projects, some, but not all, could be processed simultaneously. This PRP focuses solely on the Ohio River Drainage Basin. The Turnpike also traverses the Chesapeake Bay Basin and the Delaware River Basin, which are included under the jurisdiction of the same MS4 permit with the same deadlines. The sheer number of projects; the extent of geographic regions involved; the number of projects (including those in the other major drainage basins); and the number of agencies, authorizations, and approvals realistically make use of widely dispersed small-scale pollution-reduction projects unrealistic. The only reasonable solution is to focus on a few large and effective stream

restoration projects. The benefits of stream restoration as a solution for sediment pollution are itemized starting on page 32.

F. FUNDING MECHANISM(S)

The PTC contracted LRG as part of an agreement for full-delivery of pollution-reducing projects in collaboration with PennDOT. The contract price includes locating and selecting project(s), securing land and easements or rights required for project implementation, designing the project, obtaining required permits and approvals, justifying project eligibility and pollution reduction credits including pre- and post-construction testing and monitoring, constructing the project, and providing for perpetual operations and maintenance (O&M) of the project. When complete the project will meet PTC's sediment reduction obligation in the Ohio River Drainage Basin. Since the preconstruction monitoring and design are underway but not finalized, the quote for the ultimate price is not yet available.

PTC reserved adequate funds, including a contingency buffer, in its capital budget in anticipation of this obligation. The organization will pay for the project from the Commission's general funds. The contract contains contract payment milestones; when the contractor satisfies that portion of work, PTC will release payment. The structure of the contract provides legal protections for PTC to compel work completion tied both to work quality and adherence to schedule. The PTC is confident in its capability to fund the project.

G. RESPONSIBLE PARTIES FOR OPERATION AND MAINTENANCE OF BMPs

As stated in the previous section, LRG will be responsible for providing ongoing O&M. The following excerpt is taken from the *Sawmill Run Watershed Pollutant Reduction Plan*, Land Reclamation Group, LLC, August 2022.

Per the excerpt below, LRG is responsible for maintenance during the Maintenance and Monitoring (M&M) period associated with Chapter 105 permit conditions, which includes fixing damage to the stream banks due to flood events, invasive species control, and performing inspections after major flood events that have the potential to damage the stream system during the establishment period covered by the permit. Following the M&M period, when the long-term O&M period begins, LRG will act as the initial long-term steward unless responsibility is formally and legally delegated to another qualified, watershed-focused entity to assume long-term stewardship responsibilities. PTC can use legal remedies to enforce these contractual O&M obligations. (References to PennDOT and to the Pittsburgh Water and Sewer Authority, who are part of this same contractual arrangement with LRG, have been omitted to simplify the narrative and provide clarity solely to the arrangement between LRG and PTC.)

A copy of the Example Site Protection Instrument (SPI) is located in **Appendix E4**. The SPI will be recorded at the county courthouse along with any secondary negotiated easements.

BMP Operations and Maintenance (O&M)

(Excerpted from *Sawmill Run Watershed Pollutant Reduction Plan*, Land Reclamation Group, LLC, August 2022.)

Maintenance and Monitoring

Following construction and acceptance of the BMPs by the partners, LRG will begin the required five-year maintenance and monitoring (M&M) period. LRG will inspect the BMPs annually to perform monitoring and maintenance to ensure the viability of the project through the M&M period. The need to perform maintenance will be assessed during the visit, and if deemed necessary, appropriate action will be performed to repair any deficient BMPs in part, or whole. Maintenance will include the control of invasive species to promote the success of riparian planting areas. LRG will also perform inspections after major flooding events that have the potential to cause damage to the BMPs.

During the five-year monitoring period, LRG will prepare reports to submit to the PTC by December 31 of each year. At minimum, these reports will include.

- Visual observations of the BMPs, including things such as stream bank and channel stability
- Description of the general conditions of the restoration and stormwater BMPs
- Photos taken at ground level, drone aeriels, and at fixed monitoring locations
- Assessments of vegetative cover for floodplain restoration BMPs
- BEHI and NBS assessments for stream channel restoration BMPs
- Hydrologic data from stream and floodplain restoration BMPs
- Discussion of maintenance and monitoring activities
- Proposed additional maintenance schedule for following year, if applicable
- The anticipated schedule for implementation of the BMPs design plan is included as Appendix E3.

Long Term Operations and Maintenance

Long term operation and maintenance (O&M) will commence once the five-year monitoring is completed. It is anticipated that LRG will act as the long-term steward initially until responsibilities can be turned over to another qualified entity. LRG will prepare an Operation and Maintenance Plan that identifies types of maintenance activities, maintenance frequencies, personnel, and equipment requirements, and estimated annual maintenance costs to provide long term O&M of the BMPs. The plan will include provisions that LRG will obtain, and record fully executed instruments in the chain of title for the BMPs that make these obligations legally binding and enforceable by PTC and PADEP. If the entity is a municipality, then LRG will obtain a fully executed and binding agreement with an appropriate resolution from the municipal entity. This agreement between LRG and the municipality will be enforceable by PTC, and or other potential Municipal Partners.

APPENDICES

**APPENDIX A –
PUBLIC NOTICE COPY OF PA BULLETIN**

From: [Bulletin](#)
To: [McLaughlin, Jeanmarie](#)
Cc: [Noss, Nicholas](#); [Hoffman, Nathan](#); [Kaiser, James](#)
Subject: RE: PA Turnpike Commission -- Public Notice (Draft PRP Plans - MS4 Permit)
Date: Tuesday, September 13, 2022 11:19:06 AM

ALERT - This email is from an **External Source**. Be careful opening attachments, clicking links or responding.

Hello Ms. McLaughlin:

Thank you for sending notice PRP Plans – MS4 Permits. As requested, we will publish this in the September 24, 2022 issue of the *Pennsylvania Bulletin*. Take care and have a great day!

Corinne Marut

Editorial Assistant

Legislative Reference Bureau

Pennsylvania Code & Bulletin Office

647 Main Capitol Building

Harrisburg, PA 17120-0033

717-783-1530

cmarut@palrb.us

From: McLaughlin, Jeanmarie <jmclaugh@paturnpike.com>

Sent: Tuesday, September 13, 2022 10:58 AM

To: Bulletin <bulletin@palrb.us>

Cc: Noss, Nicholas <nnoss@paturnpike.com>; Hoffman, Nathan <nhoffman@paturnpike.com>; Kaiser, James <jkaiser@paturnpike.com>

Subject: PA Turnpike Commission -- Public Notice (Draft PRP Plans - MS4 Permit)

Ms. Marut,

Please find attached the Pennsylvania Turnpike Commission's Public Notice for its "[Draft National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Pollution Reduction Plans for the Pennsylvania Turnpike Commission](#)" to be published in the September 24, 2022 issue of the Pennsylvania Bulletin. If you have any questions regarding the Notice, please feel free to contact Nick Noss (717-831-7129) or Nate Hoffman (717-831-7119), I have copied them on this email as well. I believe you spoke with them this morning. We greatly appreciate your help and assistance. If you require any additional information, please let us know.

Jeanmarie McLaughlin

Assistant Counsel IV

Pennsylvania Turnpike Commission

P.O. Box 67676 | Harrisburg, PA 17106-7676

700 S. Eisenhower Blvd. | Middletown, PA 17057

Phone 717.831.7318 | jmclaugh@paturndpike.com

www.paturndpike.com

This email and any attachments are intended for the review and use of the individual(s) to whom it is addressed. If you are not the intended recipient, you are hereby notified that any dissemination, use, transmission or copying of this e-mail is strictly prohibited. If you have received this email in error, please notify the sender immediately and delete the email from your email system.

Draft National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Pollution Reduction Plans for the Pennsylvania Turnpike Commission

Notice is hereby given that the Pennsylvania Turnpike Commission will receive public comment(s) on three proposed Pollution Reduction Plans (PRPs) required for their 2021-2026 National Pollutant Discharge Elimination System (NPDES) Individual Permit to discharge stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) Permit No. PAI139602.

The Pennsylvania Turnpike Commission has developed PRPs for the Chesapeake Bay, Delaware River and Ohio River Watersheds. The PRPs determine existing sediment pollutant loadings associated with stormwater runoff and proposes potential Best Management Practices to reduce the pollutant loads to meet the requirements of the MS4 Permit, for each watershed.

The proposed PRPs can be reviewed online by visiting **<https://www.paturnpike.com/responsibility-matters/clean-water>** then selecting “MS4” at the top of the page and navigating to “MS4 Documentation” under “MS4 Resources”.

Written comments on the PRPs will be accepted for a period of 30 days from the date of this public notice by mail to Mr. James Kaiser, Pennsylvania Turnpike Commission, 700 South Eisenhower Blvd., Middletown, PA 17057 or by e-mail at jkaiser@paturnpike.com. All comments will be tabulated and considered with the final PRPs.

**APPENDIX B –
PTC MS4 OHIO RIVER DRAINAGE BASIN
RECEIVING SURFACE WATERS TABLE**

Ohio River Basin
RECEIVING WATERS TABLE
9/4/2022



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11001	40.81915952	-80.33838448	Clarks Run	WWF	Yes	25	195	Non-Attaining	Erosion from Derelict Land - Siltation	Pittsburgh, PA	Beaver River-Ohio River	50301040103	05030104000027	N/A	N/A	N/A	N/A	N/A	N/A
11002	40.81898909	-80.33706859	Clarks Run	WWF	Yes	25	195	Non-Attaining	Erosion from Derelict Land - Siltation	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000027	N/A	N/A	N/A	N/A	N/A	N/A
11003	40.81878808	-80.33564791	Clarks Run	WWF	Yes	26	196	Non-Attaining	Erosion from Derelict Land - Siltation	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000027	N/A	N/A	N/A	N/A	N/A	N/A
11004	40.81864507	-80.33514215	Clarks Run	WWF	Yes	26	196	Non-Attaining	Erosion from Derelict Land - Siltation	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000027	N/A	N/A	N/A	N/A	N/A	N/A
11005	40.81840941	-80.33436523	Clarks Run	WWF	Yes	26	196	Non-Attaining	Erosion from Derelict Land - Siltation	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000027	N/A	N/A	N/A	N/A	N/A	N/A
11006	40.8183193	-80.33405873	Clarks Run	WWF	Yes	26	196	Non-Attaining	Erosion from Derelict Land - Siltation	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000027	N/A	N/A	N/A	N/A	N/A	N/A
11007	40.81805578	-80.33349272	Clarks Run	WWF	Yes	26	196	Non-Attaining	Erosion from Derelict Land - Siltation	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000027	N/A	N/A	N/A	N/A	N/A	N/A
11008	40.81788532	-80.33314944	Clarks Run	WWF	Yes	26	196	Non-Attaining	Erosion from Derelict Land - Siltation	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000027	N/A	N/A	N/A	N/A	N/A	N/A
11009	40.81205554	-80.32473108	Clarks Run	WWF	No	27	196	Non-Attaining	Erosion from Derelict Land - Siltation	Non-Urban	Beaver River-Ohio River	050301040103	05030104000027	N/A	N/A	N/A	N/A	N/A	N/A
11010	40.75368854	-80.21383731	Brush Creek	WWF	Yes	43	197	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	50301050408	05030105000505	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11027	40.73824775	-80.18939085	Brush Creek	WWF	No	46	197	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000509	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11038	40.73425795	-80.1739407	Brush Creek	WWF	No	48	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000510	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11044	40.73395058	-80.16917522	Brush Creek	WWF	Yes	48	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000511	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11046	40.73319896	-80.16782221	Brush Creek	WWF	Yes	48	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000511	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11047	40.73048243	-80.16674902	Brush Creek	WWF	No	49	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000512	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11048	40.72871454	-80.16475705	Brush Creek	WWF	No	49	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000512	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11051	40.72691363	-80.16073924	Brush Creek	WWF	No	50	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000513	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11054	40.7263233	-80.16005485	Brush Creek	WWF	No	50	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000513	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11055	40.72575384	-80.15947405	Brush Creek	WWF	No	50	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000513	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11056	40.72545143	-80.15870718	Brush Creek	WWF	No	50	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000513	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11057	40.72409163	-80.15709041	Brush Creek	WWF	No	50	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000513	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11058	40.72237631	-80.15150507	Brush Creek	WWF	No	51	198	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Brush Creek	050301050408	05030105000514	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11062	40.72171803	-80.1494753	Brush Creek	WWF	Yes	51	198	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000515	N/A	N/A	N/A	N/A	N/A	N/A
11063	40.72149747	-80.14898439	Brush Creek	WWF	Yes	51	198	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000515	N/A	N/A	N/A	N/A	N/A	N/A
11064	40.72091864	-80.14744685	Brush Creek	WWF	Yes	51	198	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000515	N/A	N/A	N/A	N/A	N/A	N/A
11065	40.71862476	-80.14287074	Brush Creek	WWF	No	52	199	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000515	N/A	N/A	N/A	N/A	N/A	N/A
11066	40.71831896	-80.14160451	Brush Creek	WWF	No	52	199	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000515	N/A	N/A	N/A	N/A	N/A	N/A
11067	40.71781486	-80.14033176	Brush Creek	WWF	No	52	199	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000515	N/A	N/A	N/A	N/A	N/A	N/A
11068	40.71705931	-80.13841881	Brush Creek	WWF	No	52	199	Non-Attaining	Agriculture - Nutrients ; Road Runoff - Siltation ; Agriculture - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000516	N/A	N/A	N/A	N/A	N/A	N/A
11077	40.70879894	-80.12673532	Brush Creek	WWF	Yes	54	199	Non-Attaining	Construction - Siltation ; Agriculture - Cause Unknown ; Urban Runoff/Storm Sewers - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability	Pittsburgh, PA	Brush Creek	050301050408	05030105000518	N/A	N/A	N/A	N/A	N/A	N/A
11078	40.70870685	-80.12659435	Brush Creek	WWF	Yes	54	199	Non-Attaining	Construction - Siltation ; Agriculture - Cause Unknown ; Urban Runoff/Storm Sewers - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability	Pittsburgh, PA	Brush Creek	050301050408	05030105000518	N/A	N/A	N/A	N/A	N/A	N/A
11079	40.70865297	-80.12653451	Brush Creek	WWF	Yes	54	199	Non-Attaining	Construction - Siltation ; Agriculture - Cause Unknown ; Urban Runoff/Storm Sewers - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability	Pittsburgh, PA	Brush Creek	050301050408	05030105000518	N/A	N/A	N/A	N/A	N/A	N/A
11080	40.70687841	-80.12467313	Brush Creek	WWF	Yes	55	199	Non-Attaining	Construction - Siltation ; Agriculture - Cause Unknown ; Urban Runoff/Storm Sewers - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability	Pittsburgh, PA	Brush Creek	050301050408	05030105000518	N/A	N/A	N/A	N/A	N/A	N/A
11081	40.70564852	-80.12435997	Brush Creek	WWF	Yes	55	199	Non-Attaining	Construction - Siltation ; Agriculture - Cause Unknown ; Urban Runoff/Storm Sewers - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability	Pittsburgh, PA	Brush Creek	050301050408	05030105000518	N/A	N/A	N/A	N/A	N/A	N/A
11082	40.70315449	-80.12264408	Brush Creek	WWF	No	55	199	Non-Attaining	Construction - Siltation ; Agriculture - Cause Unknown ; Urban Runoff/Storm Sewers - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability	Pittsburgh, PA	Brush Creek	050301050408	05030105000518	N/A	N/A	N/A	N/A	N/A	N/A
11083	40.70027905	-80.12051747	Brush Creek	WWF	No	56	199	Non-Attaining	Construction - Siltation ; Agriculture - Cause Unknown ; Urban Runoff/Storm Sewers - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability	Pittsburgh, PA	Brush Creek	050301050408	05030105000518	N/A	N/A	N/A	N/A	N/A	N/A
11084	40.70000441	-80.11933232	Brush Creek	WWF	Yes	56	199	Non-Attaining	Construction - Siltation ; Agriculture - Cause Unknown ; Urban Runoff/Storm Sewers - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability	Pittsburgh, PA	Brush Creek	050301050408	05030105000518	N/A	N/A	N/A	N/A	N/A	N/A

Ohio River Basin
RECEIVING WATERS TABLE

9/4/2022



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11085	40.69907267	-80.11879818	Brush Creek	WWF	Yes	56	199	Non-Attaining	Construction - Siltation ; Agriculture - Cause Unknown ; Urban Runoff/Storm Sewers - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability	Pittsburgh, PA	Brush Creek	050301050408	05030105000518	N/A	N/A	N/A	N/A	N/A	N/A
11095	40.68177402	-80.10809716	Brush Creek	WWF	No	59	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000522	N/A	N/A	N/A	N/A	N/A	N/A
11096	40.68150579	-80.10714024	Brush Creek	WWF	No	59	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000522	N/A	N/A	N/A	N/A	N/A	N/A
11097	40.68020772	-80.10629535	Brush Creek	WWF	Yes	59	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000522	N/A	N/A	N/A	N/A	N/A	N/A
11098	40.67939031	-80.10623047	Brush Creek	WWF	No	59	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000522	N/A	N/A	N/A	N/A	N/A	N/A
11099	40.67898758	-80.10588489	Brush Creek	WWF	No	59	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000522	N/A	N/A	N/A	N/A	N/A	N/A
11100	40.6787574	-80.10454428	Brush Creek	WWF	Yes	59	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000522	N/A	N/A	N/A	N/A	N/A	N/A
11101	40.67842673	-80.10435359	Brush Creek	WWF	No	59	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000522	N/A	N/A	N/A	N/A	N/A	N/A
11103	40.6772967	-80.10375027	Brush Creek	WWF	No	59	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000522	N/A	N/A	N/A	N/A	N/A	N/A
11104	40.67626722	-80.10322497	Brush Creek	WWF	No	60	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000522	N/A	N/A	N/A	N/A	N/A	N/A
11105	40.67525482	-80.10271244	Brush Creek	WWF	No	60	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11106	40.67422233	-80.10223173	Brush Creek	WWF	No	60	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11109	40.67303579	-80.10161627	Brush Creek	WWF	No	60	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11110	40.67258701	-80.10137041	Brush Creek	WWF	No	60	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11111	40.67155791	-80.10081175	Brush Creek	WWF	No	60	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11112	40.67080229	-80.10028528	Brush Creek	WWF	No	60	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11113	40.67057591	-80.10023276	Brush Creek	WWF	No	60	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11114	40.66955935	-80.09971976	Brush Creek	WWF	No	61	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11116	40.66903884	-80.09944777	Brush Creek	WWF	No	61	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11117	40.66848031	-80.09910218	Brush Creek	WWF	Yes	61	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11118	40.66749112	-80.0988779	Brush Creek	WWF	Yes	61	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11119	40.66796988	-80.098873	Brush Creek	WWF	Yes	61	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000523	N/A	N/A	N/A	N/A	N/A	N/A
11124	40.66523943	-80.09767814	Brush Creek	WWF	No	61	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000524	N/A	N/A	N/A	N/A	N/A	N/A
11133	40.65777411	-80.08981772	Brush Creek	WWF	No	63	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000526	N/A	N/A	N/A	N/A	N/A	N/A
11134	40.65511504	-80.08485058	Brush Creek	WWF	No	<Null>	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000526	N/A	N/A	N/A	N/A	N/A	N/A
11135	40.65424431	-80.07970659	Brush Creek	WWF	No	64	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000527	N/A	N/A	N/A	N/A	N/A	N/A
11136	40.65472133	-80.0746208	Brush Creek	WWF	Yes	64	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000528	N/A	N/A	N/A	N/A	N/A	N/A
11140	40.65374529	-80.06778104	Brush Creek	WWF	Yes	65	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000529	N/A	N/A	N/A	N/A	N/A	N/A
11141	40.65359455	-80.06682888	Brush Creek	WWF	Yes	65	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000529	N/A	N/A	N/A	N/A	N/A	N/A
11128	40.66326974	-80.09681174	Brush Creek	WWF	No	62	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000547	N/A	N/A	N/A	N/A	N/A	N/A
11129	40.66275323	-80.0964859	Brush Creek Stream Culvert	WWF	No	62	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000547	N/A	N/A	N/A	N/A	N/A	N/A
11131	40.66203453	-80.09593972	Brush Creek	WWF	No	62	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000547	N/A	N/A	N/A	N/A	N/A	N/A

Ohio River Basin
RECEIVING WATERS TABLE

9/4/2022



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11132	40.66133588	-80.09555207	Brush Creek	WWF	No	62	201	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000547	N/A	N/A	N/A	N/A	N/A	N/A
11102	40.67767787	-80.10395949	Brush Creek	WWF	No	59	200	Non-Attaining	Construction - Siltation ; Urban Runoff/Storm Sewers - Water/Flow Variability ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000553	N/A	N/A	N/A	N/A	N/A	N/A
11107	40.67598584	-80.10212198	UNT to Brush Creek	WWF	Yes	60	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000553	N/A	N/A	N/A	N/A	N/A	N/A
11108	40.67594265	-80.10209614	UNT to Brush Creek	WWF	Yes	60	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000553	N/A	N/A	N/A	N/A	N/A	N/A
11115	40.67681271	-80.09981338	UNT to Brush Creek	WWF	Yes	59	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000553	N/A	N/A	N/A	N/A	N/A	N/A
11120	40.67702308	-80.0991028	UNT to Brush Creek	WWF	Yes	59	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000553	N/A	N/A	N/A	N/A	N/A	N/A
11123	40.67706692	-80.09824052	UNT to Brush Creek	WWF	Yes	59	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000553	N/A	N/A	N/A	N/A	N/A	N/A
11125	40.67740791	-80.09797451	UNT to Brush Creek	WWF	Yes	59	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000553	N/A	N/A	N/A	N/A	N/A	N/A
11126	40.67737171	-80.09787396	UNT to Brush Creek	WWF	Yes	59	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000553	N/A	N/A	N/A	N/A	N/A	N/A
11130	40.67837981	-80.096805	UNT to Brush Creek	WWF	Yes	59	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000553	N/A	N/A	N/A	N/A	N/A	N/A
11087	40.68958026	-80.11228708	UNT to Brush Creek	WWF	No	57	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000554	N/A	N/A	N/A	N/A	N/A	N/A
11088	40.689574	-80.11218299	UNT to Brush Creek	WWF	No	57	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000554	N/A	N/A	N/A	N/A	N/A	N/A
11089	40.68999466	-80.11192305	UNT to Brush Creek	WWF	Yes	57	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000554	N/A	N/A	N/A	N/A	N/A	N/A
11090	40.69006424	-80.11149442	UNT to Brush Creek	WWF	Yes	57	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000554	N/A	N/A	N/A	N/A	N/A	N/A
11091	40.69077827	-80.11121141	UNT to Brush Creek	WWF	No	57	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105000554	N/A	N/A	N/A	N/A	N/A	N/A
11069	40.71725129	-80.13836909	UNT to Brush Creek	WWF	Yes	52	199	Non-Attaining	Agriculture - Nutrients ; Road Runoff - Siltation ; Agriculture - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000559	N/A	N/A	N/A	N/A	N/A	N/A
11070	40.71755636	-80.13788079	UNT to Brush Creek	WWF	Yes	52	199	Non-Attaining	Agriculture - Nutrients ; Road Runoff - Siltation ; Agriculture - Siltation	Pittsburgh, PA	Brush Creek	050301050408	05030105000559	N/A	N/A	N/A	N/A	N/A	N/A
11059	40.72180356	-80.15029373	Brush Creek	WWF	No	51	198	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000562	N/A	N/A	N/A	N/A	N/A	N/A
11015	40.74854273	-80.20711768	Brush Creek	WWF	No	44	197	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000832	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11016	40.74859818	-80.20636041	Brush Creek	WWF	No	44	197	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000832	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11017	40.74853775	-80.20615098	Brush Creek	WWF	No	44	197	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000832	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11019	40.74816564	-80.2052492	Brush Creek	WWF	Yes	44	197	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000832	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11020	40.74788369	-80.20480961	Brush Creek	WWF	No	44	197	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000832	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11021	40.74747394	-80.20422836	Brush Creek	WWF	No	44	197	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000832	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11022	40.74709544	-80.20361185	Brush Creek	WWF	No	44	197	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Brush Creek	050301050408	05030105000832	Yes	Brush Creek (Butler)	Organic Enrichment/Low D.O. ; DO/BOD	Yes	N/A	No WLA for PTC
11092	40.68771127	-80.11043083	UNT to Brush Creek	WWF	Yes	58	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105005781	N/A	N/A	N/A	N/A	N/A	N/A
11093	40.68786093	-80.11036714	UNT to Brush Creek	WWF	Yes	58	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105005781	N/A	N/A	N/A	N/A	N/A	N/A
11094	40.68795229	-80.10999686	UNT to Brush Creek	WWF	Yes	58	200	Non-Attaining	Road Runoff - Siltation ; Small Residential Runoff - Cause Unknown	Pittsburgh, PA	Brush Creek	050301050408	05030105005781	N/A	N/A	N/A	N/A	N/A	N/A
11150	40.65048787	-80.03837223	UNT to North Fork Pine Creek	CWF	No	68	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000157	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11151	40.65017868	-80.03786854	UNT to North Fork Pine Creek	CWF	No	68	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000157	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11152	40.64868465	-80.0354962	UNT to North Fork Pine Creek	CWF	Yes	69	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000157	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11153	40.64647623	-80.03331001	UNT to North Fork Pine Creek	CWF	No	69	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000157	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11154	40.6454771	-80.03168915	UNT to North Fork Pine Creek	CWF	No	69	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000157	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11155	40.64526911	-80.03124707	UNT to North Fork Pine Creek	CWF	No	69	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000157	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11156	40.64386572	-80.02941732	North Fork Pine Creek	CWF	Yes	70	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000154	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE



9/4/2022

SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11157	40.64269823	-80.02932142	North Fork Pine Creek	CWF	Yes	70	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000154	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11158	40.64172651	-80.02896044	North Fork Pine Creek	CWF	No	70	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000154	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11159	40.64317373	-80.01577419	UNT to North Fork Pine Creek	CWF	Yes	71	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000156	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11160	40.64433494	-80.01572967	UNT to North Fork Pine Creek	CWF	Yes	71	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000156	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11161	40.64256029	-80.01527551	UNT to North Fork Pine Creek	CWF	No	71	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000156	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11162	40.64092981	-80.01506812	UNT to North Fork Pine Creek	CWF	No	71	202	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Pine Creek-North Park Lake	050100090201	05010009000156	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11187	40.61200805	-79.94980943	Crouse Run	TSF	No	81	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000130	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11188	40.61032459	-79.94956139	Crouse Run	TSF	No	81	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000130	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11189	40.61030496	-79.94952584	Crouse Run	TSF	No	81	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000130	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11190	40.60932729	-79.9494763	Crouse Run	TSF	No	81	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000130	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11191	40.61070286	-79.9495013	Crouse Run	TSF	No	81	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000130	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11192	40.60681819	-79.94312411	UNT to Crouse Run	TSF	No	82	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000131	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11193	40.60691582	-79.94293519	UNT to Crouse Run	TSF	No	82	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000131	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11194	40.60755439	-79.94225869	UNT to Crouse Run	TSF	Yes	82	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000131	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11195	40.60759415	-79.94205573	UNT to Crouse Run	TSF	No	82	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000131	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11175	40.61830705	-79.98432549	Montour Run	TSF	No	<Null>	203	Non-Attaining	Road Runoff - Siltation	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000137	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11182	40.61408525	-79.98281993	Montour Run	TSF	No	<Null>	203	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000137	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11171	40.63220283	-79.98763258	Montour Run	TSF	Yes	75	203	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000138	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11173	40.62971524	-79.98615615	Montour Run	TSF	Yes	75	203	Non-Attaining	Road Runoff - Siltation	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000138	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11174	40.62930722	-79.98591506	Montour Run	TSF	Yes	75	203	Non-Attaining	Road Runoff - Siltation	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000138	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11176	40.62348801	-79.98412041	Montour Run	TSF	No	76	203	Non-Attaining	Road Runoff - Siltation	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000138	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11177	40.62429305	-79.98394771	Montour Run	TSF	Yes	76	203	Non-Attaining	Road Runoff - Siltation	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000138	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11178	40.625322	-79.9839303	Montour Run	TSF	No	76	203	Non-Attaining	Road Runoff - Siltation	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000138	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11180	40.62566246	-79.98385359	Montour Run	TSF	No	76	203	Non-Attaining	Road Runoff - Siltation	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000138	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11172	40.63317605	-79.98759169	Montour Run	TSF	Yes	75	203	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000139	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
91172	40.63313695	-79.59148922	Montour Run	TSF	Yes	75	203	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000139	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11169	40.63325277	-79.98944296	UNT to Montour Run	TSF	Yes	75	203	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009000140	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11170	40.6332044	-79.98887743	UNT to Montour Run	TSF	No	75	203	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000140	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11196	40.6042619	-79.9410508	UNT to Crouse Run	TSF	No	82	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000812	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11197	40.6035156	-79.93870279	UNT to Crouse Run	TSF	No	82	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000812	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11198	40.60323832	-79.93807729	UNT to Crouse Run	TSF	No	82	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000812	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11199	40.60247728	-79.93636757	UNT to Crouse Run	TSF	No	83	204	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000812	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11200	40.60297338	-79.93476898	UNT to Crouse Run	TSF	No	83	205	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000812	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11201	40.60296221	-79.93459288	UNT to Crouse Run	TSF	No	83	205	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000812	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11163	40.63938982	-80.00498925	UNT to Montour Run	TSF	No	72	203	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Little Pine Creek-Pine Creek	50100090202	05010009000957	N/A	N/A	Pathogens	N/A	N/A	N/A
11164	40.63956614	-80.00280032	UNT to Montour Run	TSF	No	73	203	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000957	N/A	N/A	Pathogens	N/A	N/A	N/A
11165	40.63959246	-80.00257037	UNT to Montour Run	TSF	No	73	203	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009000957	N/A	N/A	Pathogens	N/A	N/A	N/A
11166	40.63971733	-79.99748958	UNT to Montour Run	TSF	Yes	73	203	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009001015	N/A	N/A	Pathogens	N/A	N/A	N/A
11167	40.63971027	-79.99684161	UNT to Montour Run	TSF	Yes	73	203	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009001015	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11168	40.6397395	-79.99681275	UNT to Montour Run	TSF	Yes	73	203	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Little Pine Creek-Pine Creek	050100090202	05010009001015	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11179	40.62861487	-79.98398393	UNT to Montour Run	TSF	No	75	203	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009001023	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11181	40.62845227	-79.98384499	UNT to Montour Run	TSF	No	75	203	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Little Pine Creek-Pine Creek	050100090202	05010009001023	Yes	Pine Creek Watershed	Pathogens	Yes	N/A	No WLA for PTC
11213	40.58855624	-79.87618639	Deer Creek	CWF	No	90	206	Non-Attaining	Construction - Siltation ; Construction - Flow Alterations ; Construction - Suspended Solids ; Construction - Turbidity ; Source Unknown - Nutrients ; Habitat Modification - Other Habitat Alterations	Pittsburgh, PA	Deer Creek	050100090303	05010009000097	N/A	N/A	N/A	N/A	N/A	N/A

Ohio River Basin
RECEIVING WATERS TABLE



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11214	40.58788822	-79.8756798	Deer Creek	CWF	No	90	206	Non-Attaining	Construction - Siltation ; Construction - Flow Alterations ; Construction - Suspended Solids ; Construction - Turbidity ; Source Unknown - Nutrients ; Habitat Modification - Other Habitat Alterations	Pittsburgh, PA	Deer Creek	050100090303	05010009000097	N/A	N/A	N/A	N/A	N/A	N/A
11215	40.58678449	-79.87462754	Deer Creek	CWF	No	90	206	Non-Attaining	Construction - Siltation ; Construction - Flow Alterations ; Construction - Suspended Solids ; Construction - Turbidity ; Source Unknown - Nutrients ; Habitat Modification - Other Habitat Alterations	Pittsburgh, PA	Deer Creek	050100090303	05010009000097	N/A	N/A	N/A	N/A	N/A	N/A
11216	40.5864576	-79.87408995	Deer Creek	CWF	No	90	206	Non-Attaining	Construction - Siltation ; Construction - Flow Alterations ; Construction - Suspended Solids ; Construction - Turbidity ; Source Unknown - Nutrients ; Habitat Modification - Other Habitat Alterations	Pittsburgh, PA	Deer Creek	050100090303	05010009000097	N/A	N/A	N/A	N/A	N/A	N/A
11217	40.58633882	-79.87312745	Deer Creek	CWF	No	90	206	Non-Attaining	Construction - Siltation ; Construction - Flow Alterations ; Construction - Suspended Solids ; Construction - Turbidity ; Source Unknown - Nutrients ; Habitat Modification - Other Habitat Alterations	Pittsburgh, PA	Deer Creek	050100090303	05010009000097	N/A	N/A	N/A	N/A	N/A	N/A
11218	40.53784088	-79.8424327	Deer Creek	WWF	No	<Null>	<Null>	Non-Attaining	Construction - Siltation ; Construction - Flow Alterations ; Construction - Turbidity ; Subsurface Mining - TDS ; Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - TDS ; Source Unknown - Nutrients	Pittsburgh, PA	Deer Creek	050100090303	05010009000092	N/A	N/A	N/A	N/A	N/A	N/A
11219	40.54630832	-79.83326916	Deer Creek	WWF	No	<Null>	207	Non-Attaining	Construction - Siltation ; Construction - Flow Alterations ; Construction - Turbidity ; Subsurface Mining - TDS ; Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - TDS ; Source Unknown - Nutrients	Non-Urban	Deer Creek	050100090303	05010009000092	N/A	N/A	N/A	N/A	N/A	N/A
11220	40.55085559	-79.83039575	Deer Creek	WWF	Yes	97	207	Non-Attaining	Construction - Siltation ; Construction - Flow Alterations ; Construction - Turbidity ; Subsurface Mining - TDS ; Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - TDS ; Source Unknown - Nutrients	Non-Urban	Deer Creek	050100090303	05010009000092	N/A	N/A	N/A	N/A	N/A	N/A
11221	40.53514992	-79.82302749	Allegheny River	WWF	No	100	208	Non-Attaining	Source Unknown - PCB	Non-Urban	Chartiers Run-Allegheny River	50100090304	05010009000007	Yes	Allegheny River	PCB ; Chlordane	Yes	N/A	No WLA for PTC
11222	40.53954141	-79.82177614	Allegheny River	WWF	No	99	208	Non-Attaining	Source Unknown - PCB	Non-Urban	Chartiers Run-Allegheny River	050100090304	05010009000007	Yes	Allegheny River	PCB ; Chlordane	Yes	N/A	No WLA for PTC
11223	40.53965632	-79.82092863	Allegheny River	WWF	No	99	208	Non-Attaining	Source Unknown - PCB	Non-Urban	Chartiers Run-Allegheny River	050100090304	05010009000007	Yes	Allegheny River	PCB ; Chlordane	Yes	N/A	No WLA for PTC
11224	40.51735422	-79.81989743	Plum Creek	WWF	No	<Null>	208	Non-Attaining	Abandoned Mine Drainage - Metals ; Urban Runoff/Storm Sewers - Other Inorganics (Sulfates, etc.) ; Urban Runoff/Storm Sewers - Oil and Grease	Pittsburgh, PA	Plum Creek	50100090305	05010009000079	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11225	40.51820633	-79.81697219	Plum Creek	WWF	No	<Null>	208	Non-Attaining	Abandoned Mine Drainage - Metals ; Urban Runoff/Storm Sewers - Other Inorganics (Sulfates, etc.) ; Urban Runoff/Storm Sewers - Oil and Grease	Pittsburgh, PA	Plum Creek	050100090305	05010009000079	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11226	40.51825661	-79.80682766	Plum Creek	WWF	No	103	208	Non-Attaining	Abandoned Mine Drainage - Metals ; Urban Runoff/Storm Sewers - Other Inorganics (Sulfates, etc.) ; Urban Runoff/Storm Sewers - Oil and Grease	Pittsburgh, PA	Plum Creek	050100090305	05010009000079	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11230	40.51145654	-79.79573406	Plum Creek	WWF	No	105	209	Non-Attaining	Abandoned Mine Drainage - Metals ; Urban Runoff/Storm Sewers - Other Inorganics (Sulfates, etc.) ; Urban Runoff/Storm Sewers - Oil and Grease	Pittsburgh, PA	Plum Creek	050100090305	05010009000080	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11231	40.51195677	-79.79405467	Plum Creek	WWF	No	105	209	Non-Attaining	Abandoned Mine Drainage - Metals ; Urban Runoff/Storm Sewers - Other Inorganics (Sulfates, etc.) ; Urban Runoff/Storm Sewers - Oil and Grease	Pittsburgh, PA	Plum Creek	050100090305	05010009000080	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11232	40.50198538	-79.79154109	Plum Creek	WWF	No	<Null>	209	Non-Attaining	Abandoned Mine Drainage - Metals ; Urban Runoff/Storm Sewers - Other Inorganics (Sulfates, etc.) ; Urban Runoff/Storm Sewers - Oil and Grease	Pittsburgh, PA	Plum Creek	050100090305	05010009000081	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11233	40.50717131	-79.79163196	Plum Creek	WWF	No	105	209	Non-Attaining	Abandoned Mine Drainage - Metals ; Urban Runoff/Storm Sewers - Other Inorganics (Sulfates, etc.) ; Urban Runoff/Storm Sewers - Oil and Grease	Pittsburgh, PA	Plum Creek	050100090305	05010009000081	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11236	40.50026525	-79.78855337	Plum Creek	WWF	No	106	209	Non-Attaining	Abandoned Mine Drainage - Metals ; Urban Runoff/Storm Sewers - Other Inorganics (Sulfates, etc.) ; Urban Runoff/Storm Sewers - Oil and Grease	Pittsburgh, PA	Plum Creek	050100090305	05010009000081	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11237	40.49483886	-79.78535527	Plum Creek	WWF	No	107	209	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000082	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11239	40.49469502	-79.78414165	Plum Creek	WWF	No	107	209	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000082	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11238	40.49042741	-79.78409006	Plum Creek	WWF	No	108	209	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000083	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11240	40.48888323	-79.78111991	Plum Creek	WWF	Yes	108	209	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000084	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11241	40.48887736	-79.78093722	Plum Creek	WWF	Yes	108	209	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000084	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11242	40.48886077	-79.7802418	Plum Creek	WWF	Yes	108	209	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000084	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11243	40.48879502	-79.78019717	Plum Creek	WWF	Yes	108	209	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000084	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11244	40.48719918	-79.777469	Plum Creek	WWF	No	109	209	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000084	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11245	40.48614325	-79.77407988	Plum Creek	WWF	No	109	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000084	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11246	40.48533891	-79.77313292	Plum Creek	WWF	No	109	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000084	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11247	40.48482261	-79.77199535	Plum Creek	WWF	No	109	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000084	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11248	40.48455142	-79.77112488	Plum Creek	WWF	No	110	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000084	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11249	40.48395663	-79.77032264	Plum Creek	WWF	No	110	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000085	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11250	40.4833573	-79.76971628	Plum Creek	WWF	No	110	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000085	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11251	40.48294409	-79.76867452	Plum Creek	WWF	No	110	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000085	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11252	40.47945849	-79.76491599	Plum Creek	WWF	No	111	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000085	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11256	40.47823136	-79.7631905	Plum Creek	WWF	No	111	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000085	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11253	40.46381654	-79.76388969	UNT to Thompson Run	WWF	No	112	210	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Thompson Run	050200050703	05020005000683	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11254	40.47215541	-79.76393256	UNT to Plum Creek	WWF	No	111	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000589	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11255	40.47330957	-79.76365209	UNT to Plum Creek	WWF	No	111	210	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Plum Creek	050100090305	05010009000589	Yes	Plum Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11257	40.46377937	-79.7618727	UNT to Thompson Run	WWF	Yes	113	210	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Thompson Run	050200050703	05020005000683	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11258	40.46382276	-79.7618537	UNT to Thompson Run	WWF	Yes	113	210	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Thompson Run	050200050703	05020005000683	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11259	40.46405272	-79.7610446	UNT to Thompson Run	WWF	Yes	113	210	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Thompson Run	050200050703	05020005000683	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11260	40.46400029	-79.76101147	UNT to Thompson Run	WWF	Yes	113	210	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Thompson Run	050200050703	05020005000683	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
911260	40.45888898	-79.45387337	UNT to Thompson Run	WWF	No	113	210	Non-Attaining	Channelization - Siltation	Pittsburgh, PA	Thompson Run	050200050703	05020005001822	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	N/A
11261	40.43431771	-79.75956012	UNT to Turtle Creek	WWF	No	<Null>	211	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Sawmill Run-Turtle Creek	50200050704	05020005000672	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11262	40.43829761	-79.75874856	UNT to Turtle Creek	WWF	No	116	211	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Sawmill Run-Turtle Creek	050200050704	05020005000672	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11263	40.43781161	-79.75770546	UNT to Turtle Creek	WWF	No	116	211	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Sawmill Run-Turtle Creek	050200050704	05020005000672	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11305	40.40870258	-79.72486352	Turtle Creek	TSF	No	122	212	Non-Attaining	Small Residential Runoff - Nutrients ; Small Residential Runoff - Siltation ; Abandoned Mine Drainage - Metals ; Removal of Vegetation - Nutrients ; Removal of Vegetation - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000486	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11306	40.40857908	-79.72413762	Turtle Creek	TSF	No	122	212	Non-Attaining	Small Residential Runoff - Nutrients ; Small Residential Runoff - Siltation ; Abandoned Mine Drainage - Metals ; Removal of Vegetation - Nutrients ; Removal of Vegetation - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000486	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11307	40.40833654	-79.72321242	Turtle Creek	TSF	Yes	122	212	Non-Attaining	Small Residential Runoff - Nutrients ; Small Residential Runoff - Siltation ; Abandoned Mine Drainage - Metals ; Removal of Vegetation - Nutrients ; Removal of Vegetation - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000486	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11309	40.40849339	-79.72234562	Turtle Creek	TSF	Yes	122	212	Non-Attaining	Small Residential Runoff - Nutrients ; Small Residential Runoff - Siltation ; Abandoned Mine Drainage - Metals ; Removal of Vegetation - Nutrients ; Removal of Vegetation - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000486	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11301	40.41254806	-79.7276412	Turtle Creek	TSF	Yes	121	212	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000487	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11302	40.41207932	-79.72703473	Turtle Creek	TSF	Yes	121	212	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000487	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11303	40.41187253	-79.72607455	Turtle Creek	TSF	No	121	212	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000487	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11304	40.41157938	-79.72520065	Turtle Creek	TSF	No	121	212	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000487	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11308	40.40986216	-79.72258899	Turtle Creek	TSF	No	122	212	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000487	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11310	40.40920025	-79.72228248	Turtle Creek	TSF	No	122	212	Non-Attaining	Urban Runoff/Storm Sewers - Nutrients ; Urban Runoff/Storm Sewers - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000487	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11350	40.3969299	-79.69375659	Byers Run	TSF	Yes	125	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005000619	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11354	40.39654967	-79.6930507	Byers Run	TSF	Yes	125	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005000619	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11357	40.39609884	-79.69229941	Byers Run	TSF	Yes	126	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005000619	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11359	40.39550492	-79.6917416	Byers Run	TSF	Yes	126	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005000619	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11360	40.39491562	-79.69151918	Byers Run	TSF	No	126	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005000619	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11361	40.39433046	-79.69136774	Byers Run	TSF	No	126	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005000619	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11368	40.3922092	-79.68884778	Byers Run	TSF	No	126	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11376	40.39093877	-79.68764309	Byers Run	TSF	Yes	126	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11379	40.39106285	-79.68686357	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11380	40.39112062	-79.68682304	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11383	40.39038475	-79.68602693	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11386	40.38996826	-79.68558202	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11389	40.389548	-79.68512524	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11390	40.38913092	-79.68465635	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11393	40.38874478	-79.6841848	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11395	40.38810055	-79.68362109	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11398	40.38788627	-79.68323496	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11403	40.38704808	-79.68228702	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11407	40.38644301	-79.68170542	Byers Run	TSF	Yes	127	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11413	40.38537485	-79.68044873	Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11414	40.38498338	-79.67997013	Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11418	40.38456746	-79.67950294	Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11423	40.38394894	-79.67875959	Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11428	40.37042447	-79.67787767	Byers Run	TSF	No	130	214	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11429	40.37201421	-79.67792273	Byers Run	TSF	No	130	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11431	40.37318365	-79.67767978	Byers Run	TSF	No	130	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11432	40.37304769	-79.67765442	Byers Run	TSF	No	130	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11433	40.38327522	-79.67785039	Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11434	40.3735387	-79.6775058	Byers Run	TSF	No	129	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11435	40.37372865	-79.6774077	Byers Run	TSF	No	129	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11436	40.38293056	-79.67734141	Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11437	40.37428976	-79.67662831	Byers Run	TSF	No	129	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11439	40.37489482	-79.67634229	Byers Run	TSF	No	129	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11440	40.37553373	-79.6758841	Byers Run	TSF	No	129	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11441	40.38172686	-79.6758445	Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11582	40.32488758	-79.57833464	UNT to Brush Creek	WWF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes	Yes	No WLA for PTC
11374	40.31871157	-79.68584985	UNT to Tinkers Run	TSF	No	<Null>	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes	Yes	No WLA for PTC
11382	40.31775177	-79.68396225	UNT to Tinkers Run	TSF	No	<Null>	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes	Yes	No WLA for PTC
11385	40.31768615	-79.68377832	UNT to Tinkers Run	TSF	No	<Null>	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes	Yes	No WLA for PTC
11391	40.31562328	-79.6821746	UNT to Tinkers Run	TSF	No	138	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes	Yes	No WLA for PTC
11399	40.31526925	-79.68084627	UNT to Tinkers Run	TSF	Yes	138	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes	Yes	No WLA for PTC
11405	40.31506934	-79.6797691	UNT to Tinkers Run	TSF	Yes	138	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes	Yes	No WLA for PTC
11406	40.31522104	-79.67969814	UNT to Tinkers Run	TSF	Yes	138	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes	Yes	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11411	40.31522468	-79.67885918	UNT to Tinkers Run	TSF	Yes	139	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11416	40.31562428	-79.67774549	UNT to Tinkers Run	TSF	No	138	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11417	40.31567686	-79.67773595	UNT to Tinkers Run	TSF	No	138	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000538	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11362	40.331931	-79.68955195	Brush Creek 101	TSF	Yes	136	215	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000556	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11363	40.33202624	-79.68894469	Brush Creek 102	TSF	Yes	136	215	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000556	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11442	40.38115342	-79.67522868	Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11364	40.33090325	-79.68869688	UNT to Brush Creek	TSF	Yes	136	215	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000556	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11443	40.3766662	-79.67508852	Byers Run	TSF	No	129	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11444	40.37721284	-79.67487761	Byers Run	TSF	No	129	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11445	40.38028412	-79.67473158	Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11580	40.32456365	-79.5765643	UNT to Brush Creek	TSF	No	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11581	40.32460603	-79.57680451	UNT to Brush Creek	TSF	No	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11446	40.37939403	-79.67461125	Byers Run	TSF	No	129	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11583	40.32467059	-79.57717027	UNT to Brush Creek	TSF	No	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11447	40.37825133	-79.6745738	Byers Run	TSF	No	129	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000620	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11365	40.39303125	-79.68976787	Byers Run	TSF	No	126	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005000621	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11584	40.32478523	-79.57775694	UNT to Brush Creek	TSF	No	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11585	40.32506239	-79.57877841	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11586	40.32523383	-79.5792774	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11269	40.44123609	-79.74363954	Thompson Run	TSF	No	<Null>	211	Non-Attaining	Channelization - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000664	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11587	40.32554048	-79.58072597	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11588	40.32583539	-79.58199814	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11272	40.44033704	-79.74274051	Thompson Run	TSF	No	<Null>	211	Non-Attaining	Channelization - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000664	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11589	40.32585105	-79.58212578	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11590	40.32587339	-79.58173866	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11591	40.32590781	-79.58200917	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE

9/4/2022



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11592	40.32590822	-79.5821046	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11593	40.325911	-79.58292087	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11594	40.32596501	-79.58292763	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000574	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11337	40.33616336	-79.69327105	UNT to Brush Creek	TSF	No	135	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11276	40.43783146	-79.74034184	Thompson Run	TSF	No	<Null>	211	Non-Attaining	Channelization - Siltation	Pittsburgh, PA	Haymakers Run-Turtle Creek	050200050701	05020005000664	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11338	40.34093103	-79.69339606	UNT to Brush Creek	TSF	No	135	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11339	40.33924169	-79.69333748	UNT to Brush Creek	TSF	No	135	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11340	40.33746993	-79.69325052	UNT to Brush Creek	TSF	No	135	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11341	40.34029493	-79.69331443	UNT to Brush Creek	TSF	No	135	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11342	40.33967366	-79.6931894	UNT to Brush Creek	TSF	Yes	135	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11343	40.34148861	-79.69323906	UNT to Brush Creek	TSF	No	134	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11344	40.3384592	-79.69306721	UNT to Brush Creek	TSF	Yes	135	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11345	40.33878046	-79.6930346	UNT to Brush Creek	TSF	Yes	135	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11346	40.33691499	-79.69297034	UNT to Brush Creek	TSF	No	135	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11347	40.34225952	-79.6927806	UNT to Brush Creek	TSF	No	134	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11348	40.34290304	-79.69246814	UNT to Brush Creek	TSF	No	134	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11349	40.34346433	-79.69228462	UNT to Brush Creek	TSF	No	134	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11351	40.34407927	-79.69207204	UNT to Brush Creek	TSF	No	134	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11355	40.34453352	-79.69147853	UNT to Brush Creek	TSF	No	134	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11356	40.34509028	-79.69140361	UNT to Brush Creek	TSF	No	134	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11358	40.3454786	-79.69068968	UNT to Brush Creek	TSF	No	134	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE

9/4/2022



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11367	40.34871746	-79.68773056	UNT to Brush Creek	TSF	Yes	133	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11369	40.34911568	-79.68733664	UNT to Brush Creek	TSF	Yes	133	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11370	40.34929502	-79.6872963	UNT to Brush Creek	TSF	Yes	133	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11371	40.3494312	-79.68727572	UNT to Brush Creek	TSF	Yes	133	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11372	40.34998647	-79.68723658	UNT to Brush Creek	TSF	No	133	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11373	40.35109287	-79.68689472	UNT to Brush Creek	TSF	No	133	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11375	40.35135906	-79.68663535	UNT to Brush Creek	TSF	No	133	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11377	40.35215214	-79.68626536	UNT to Brush Creek 170	TSF	No	133	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11378	40.35304002	-79.68588776	UNT to Brush Creek	TSF	No	133	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11381	40.35381172	-79.6853734	UNT to Brush Creek	TSF	No	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11384	40.35458928	-79.68497729	UNT to Brush Creek	TSF	No	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11388	40.35541283	-79.68443554	UNT to Brush Creek	TSF	No	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11392	40.35635249	-79.68329828	UNT to Brush Creek	TSF	Yes	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11397	40.35702874	-79.68270158	UNT to Brush Creek	TSF	Yes	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11400	40.35692009	-79.68198479	UNT to Brush Creek	TSF	Yes	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11401	40.35697939	-79.68192832	UNT to Brush Creek	TSF	Yes	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11402	40.35703666	-79.68183312	UNT to Brush Creek	TSF	Yes	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11404	40.35718341	-79.68134857	UNT to Brush Creek	TSF	No	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11408	40.35754015	-79.68077161	UNT to Brush Creek	TSF	No	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11409	40.35781705	-79.6803118	UNT to Brush Creek	TSF	No	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brus h Cr)	No WLA for PTC
11424	40.38317745	-79.67871622	UNT to Byers Run	TSF	No	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005001895	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE

9/4/2022



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11427	40.38307985	-79.67852878	UNT to Byers Run	TSF	Yes	128	213	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Non-Urban	Haymakers Run-Turtle Creek	050200050701	05020005001895	Yes	Turtle Creek Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11448	40.30021749	-79.67119231	UNT to Little Sewickley	TSF	Yes	141	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	50200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11449	40.29496797	-79.6709797	UNT to Little Sewickley	TSF	Yes	142	216	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11450	40.29905853	-79.67092173	UNT to Little Sewickley	TSF	No	141	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11451	40.30071757	-79.67087803	UNT to Little Sewickley	TSF	Yes	141	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11452	40.29742507	-79.67073579	UNT to Little Sewickley STREAM CULVERT	TSF	No	141	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11453	40.29623065	-79.67058932	UNT to Little Sewickley	TSF	Yes	141	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11454	40.29515574	-79.67034901	UNT to Little Sewickley	TSF	Yes	142	216	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11455	40.29398185	-79.67010396	UNT to Little Sewickley	TSF	Yes	142	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11457	40.29028898	-79.66938491	UNT to Little Sewickley	TSF	Yes	142	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11458	40.27066191	-79.66879739	UNT to Little Sewickley	TSF	No	145	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11459	40.29093012	-79.6693648	UNT to Little Sewickley	TSF	Yes	142	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11460	40.2892878	-79.66929557	UNT to Little Sewickley	TSF	Yes	142	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11461	40.29195866	-79.66934421	UNT to Little Sewickley	TSF	No	142	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Habitat Modification - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11462	40.28673558	-79.6691063	UNT to Little Sewickley	TSF	Yes	143	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11463	40.27385079	-79.668696	UNT to Little Sewickley	TSF	Yes	145	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11464	40.27218849	-79.66863985	UNT to Little Sewickley	TSF	Yes	145	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11465	40.28462684	-79.66876662	UNT to Little Sewickley	TSF	No	143	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11466	40.28372649	-79.6687098	UNT to Little Sewickley	TSF	Yes	143	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11467	40.2809835	-79.66850036	UNT to Little Sewickley	TSF	Yes	144	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11468	40.27819327	-79.66840224	UNT to Little Sewickley	TSF	Yes	144	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11469	40.27935473	-79.66842913	UNT to Little Sewickley	TSF	No	144	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11470	40.27790941	-79.66832781	UNT to Little Sewickley	TSF	Yes	144	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11471	40.2769599	-79.66824641	UNT to Little Sewickley	TSF	Yes	144	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11513	40.21915184	-79.6018689	Sewickley Creek	WWF	Yes	156	219	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006000437	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11514	40.21881636	-79.60101322	Sewickley Creek	WWF	Yes	156	219	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006000437	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11515	40.21835674	-79.59964629	Sewickley Creek	WWF	No	156	219	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006000437	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11516	40.21791266	-79.59876257	Sewickley Creek	WWF	No	156	219	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006000437	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11517	40.21703635	-79.59648734	Sewickley Creek	WWF	Yes	157	219	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006000437	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11518	40.21236829	-79.59350613	Wilson Run	WWF	No	157	219	Non-Attaining	Abandoned Mine Drainage - Metals	Non-Urban	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11519	40.21193732	-79.59254411	Wilson Run	WWF	No	157	219	Non-Attaining	Abandoned Mine Drainage - Metals	Non-Urban	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11520	40.21188079	-79.58928514	Wilson Run	WWF	No	158	219	Non-Attaining	Abandoned Mine Drainage - Metals	Non-Urban	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11521	40.21208796	-79.58370639	Wilson Run	WWF	No	158	219	Non-Attaining	Abandoned Mine Drainage - Metals	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11522	40.21200922	-79.58336545	Wilson Run	WWF	No	158	219	Non-Attaining	Abandoned Mine Drainage - Metals	Non-Urban	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE

9/4/2022



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11523	40.21186106	-79.58206934	Wilson Run	WWF	No	158	219	Non-Attaining	Abandoned Mine Drainage - Metals	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11524	40.21147088	-79.58183871	Wilson Run	WWF	No	158	219	Non-Attaining	Abandoned Mine Drainage - Metals	Non-Urban	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11525	40.21128167	-79.58172496	Wilson Run	WWF	No	158	219	Non-Attaining	Abandoned Mine Drainage - Metals	Non-Urban	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11526	40.21035862	-79.57973873	Wilson Run	WWF	No	159	219	Non-Attaining	Abandoned Mine Drainage - Metals	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11527	40.20963568	-79.57832806	Wilson Run	WWF	No	159	219	Non-Attaining	Abandoned Mine Drainage - Metals	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006000661	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11483	40.23438009	-79.62191353	UNT to Sewickley Creek	WWF	No	153	218	Non-Attaining	Road Runoff - Nutrients	Non-Urban	Lower Sewickley Creek	50200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11484	40.23352473	-79.62115504	UNT to Sewickley Creek	WWF	No	153	218	Non-Attaining	Road Runoff - Nutrients	Non-Urban	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11485	40.23264594	-79.61995454	UNT to Sewickley Creek	WWF	No	153	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11486	40.23233362	-79.61939166	UNT to Sewickley Creek	WWF	Yes	153	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11487	40.23197558	-79.61895199	UNT to Sewickley Creek	WWF	Yes	153	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11488	40.23188791	-79.61876048	UNT to Sewickley Creek	WWF	Yes	153	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11489	40.23171913	-79.61853824	UNT to Sewickley Creek	WWF	Yes	153	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11490	40.23159672	-79.61837362	UNT to Sewickley Creek	WWF	Yes	153	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11491	40.23140899	-79.61810998	UNT to Sewickley Creek	WWF	Yes	153	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11492	40.23122991	-79.61784545	UNT to Sewickley Creek	WWF	Yes	153	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11493	40.23087761	-79.61752498	UNT to Sewickley Creek	WWF	No	154	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11494	40.23069232	-79.61734306	UNT to Sewickley Creek	WWF	No	154	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11495	40.23008314	-79.61681023	UNT to Sewickley Creek	WWF	No	154	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11496	40.2295896	-79.61584916	UNT to Sewickley Creek	WWF	Yes	154	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11497	40.22948707	-79.61578711	UNT to Sewickley Creek	WWF	No	154	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11535	40.77602732	-80.3581352	WALNUT BOTTOM RUN	WWF	Yes	774	220	Non-Attaining	Urban Runoff/Storm Sewers - Siltation ; Habitat Modification - Water/Flow Variability	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000030	N/A	N/A	N/A	N/A	N/A	N/A
11536	40.77546604	-80.35562976	WALNUT BOTTOM RUN	WWF	Yes	774	220	Non-Attaining	Urban Runoff/Storm Sewers - Siltation ; Habitat Modification - Water/Flow Variability	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000030	N/A	N/A	N/A	N/A	N/A	N/A
11537	40.77515796	-80.3547393	WALNUT BOTTOM RUN	WWF	No	774	220	Non-Attaining	Urban Runoff/Storm Sewers - Siltation ; Habitat Modification - Water/Flow Variability	Pittsburgh, PA	Beaver River-Ohio River	050301040103	05030104000030	N/A	N/A	N/A	N/A	N/A	N/A
11538	40.7656208	-80.36403905	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	50301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11539	40.76547865	-80.36385909	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11540	40.76542991	-80.36380768	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11541	40.76481874	-80.36311926	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11542	40.76480137	-80.36310299	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11543	40.76475829	-80.36304726	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11544	40.76448141	-80.36277583	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11545	40.76383758	-80.36197756	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11546	40.76305979	-80.36097337	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11547	40.76305709	-80.36100444	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11548	40.76303456	-80.36098269	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11549	40.76269969	-80.36060733	Brady	TSF	No	776	220	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Brady Run	050301040102	05030104000018	N/A	N/A	N/A	N/A	N/A	N/A
11498	40.22797626	-79.61535158	UNT to Sewickley Creek	WWF	No	154	218	Non-Attaining	Road Runoff - Nutrients	Non-Urban	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11499	40.22657317	-79.61244425	UNT to Sewickley Creek	WWF	No	154	218	Non-Attaining	Road Runoff - Nutrients	Non-Urban	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11552	40.22325255	-79.59270791	Sewickley Creek	WWF	No	777	219	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Upper Sewickley Creek	050200061104	05020006000438	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11553	40.22644108	-79.58977152	Sewickley Creek	WWF	No	777	219	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - pH	Pittsburgh, PA	Upper Sewickley Creek	050200061104	05020006000438	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11500	40.22591245	-79.6098835	UNT to Sewickley Creek	WWF	No	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11501	40.22550286	-79.60922502	UNT to Sewickley Creek	WWF	Yes	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11502	40.22492221	-79.60870442	UNT to Sewickley Creek	WWF	Yes	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11503	40.2246052	-79.60802568	UNT to Sewickley Creek	WWF	Yes	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11504	40.22463699	-79.6079951	UNT to Sewickley Creek	WWF	Yes	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11505	40.22421805	-79.60724372	UNT to Sewickley Creek	WWF	Yes	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11506	40.22377445	-79.60664001	UNT to Sewickley Creek	WWF	Yes	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11507	40.22361563	-79.60626305	UNT to Sewickley Creek	WWF	Yes	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11508	40.22300818	-79.60582982	UNT to Sewickley Creek	WWF	Yes	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11509	40.22241314	-79.60564093	UNT to Sewickley Creek	WWF	No	155	218	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11510	40.22014078	-79.6036822	UNT to Sewickley Creek	WWF	Yes	156	219	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11511	40.21990696	-79.60336152	UNT to Sewickley Creek	WWF	Yes	156	219	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11512	40.21947808	-79.60275877	UNT to Sewickley Creek	WWF	Yes	156	219	Non-Attaining	Road Runoff - Nutrients	Pittsburgh, PA	Lower Sewickley Creek	050200061104	05020006004235	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11472	40.2749343	-79.66813663	UNT to Little Sewickley	TSF	Yes	144	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11473	40.27417723	-79.66806271	UNT to Little Sewickley	TSF	Yes	145	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11474	40.27602818	-79.66806466	UNT to Little Sewickley	TSF	No	144	216	Non-Attaining	Grazing Related Agric - Siltation ; Road Runoff - Water/Flow Variability	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006000832	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11456	40.28758214	-79.66976744	UNT to Little Sewickley	TSF	Yes	143	216	Non-Attaining	Road Runoff - Water/Flow Variability ; Grazing Related Agric - Siltation	Pittsburgh, PA	Little Sewickley Creek	050200061103	05020006002067	Yes	Sewickley Creek Watershed	Metals ; pH ; TDS	Yes	N/A	No WLA for PTC
11410	40.35798351	-79.68019262	UNT to Brush Creek	TSF	No	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11412	40.35830293	-79.67986762	UNT to Brush Creek	TSF	Yes	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11415	40.35906488	-79.67908867	UNT to Brush Creek	TSF	Yes	132	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11419	40.3638813	-79.67853048	UNT to Brush Creek	TSF	Yes	131	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11420	40.36296011	-79.67849113	UNT to Brush Creek	TSF	Yes	131	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11421	40.36442045	-79.6784641	UNT to Brush Creek 148	TSF	Yes	131	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11422	40.36315585	-79.67841075	UNT to Brush Creek	TSF	No	131	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11425	40.36458797	-79.67814735	UNT to Brush Creek	TSF	Yes	131	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11426	40.3621838	-79.67806591	UNT to Brush Creek	TSF	Yes	131	214	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005000605	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11605	40.33974244	-79.58025201	UNT to Brush Creek	TSF	No	795	123	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001933	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11595	40.32760463	-79.58034857	UNT to Brush Creek	TSF	Yes	793	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC
11596	40.32883402	-79.58064953	UNT to Brush Creek	TSF	Yes	794	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	Yes (Turtle Cr)	Yes (Brush Cr)	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE

9/4/2022



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11597	40.32941016	-79.58066392	UNT to Brush Creek	TSF	Yes	794	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11598	40.3296985	-79.58066235	UNT to Brush Creek	TSF	Yes	794	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11599	40.3299526	-79.5794836	UNT to Brush Creek	TSF	Yes	794	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11600	40.33195829	-79.58004319	UNT to Brush Creek	TSF	Yes	794	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11601	40.3334589	-79.58018072	UNT to Brush Creek	TSF	Yes	794	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11602	40.33432748	-79.58026611	UNT to Brush Creek	TSF	Yes	794	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11603	40.33461972	-79.58014498	UNT to Brush Creek	TSF	No	795	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11604	40.33502265	-79.58012545	UNT to Brush Creek	TSF	No	795	222	Non-Attaining	Bank Modifications - Siltation ; Golf Courses - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001956	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11366	40.33092583	-79.68754912	UNT to Brush Creek	TSF	No	136	215	Non-Attaining	Agriculture - Siltation ; Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001981	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11387	40.32843404	-79.68374012	UNT to Brush Creek	TSF	No	137	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001981	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11573	40.31260466	-79.59496463	UNT to Brush Creek	TSF	No	790	222	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001982	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11574	40.31271824	-79.58817701	UNT to Brush Creek	TSF	No	791	222	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001983	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11575	40.31339324	-79.58993957	UNT to Brush Creek	TSF	Yes	791	222	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001983	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11576	40.3137378	-79.59081212	UNT to Brush Creek	TSF	Yes	791	222	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001983	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11577	40.31382028	-79.59190751	UNT to Brush Creek	TSF	Yes	791	222	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001983	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11578	40.31401596	-79.59241555	UNT to Brush Creek	TSF	Yes	791	222	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001983	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11430	40.3168518	-79.67612312	UNT to Tinkers Run	TSF	No	<Null>	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005001998	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11438	40.31032266	-79.67474072	UNT to Tinkers Run	TSF	No	139	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005002002	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11394	40.31394859	-79.68187358	UNT to Tinkers Run	TSF	No	<Null>	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005002004	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC
11396	40.31093926	-79.68138706	UNT to Tinkers Run	TSF	No	<Null>	215	Non-Attaining	Bank Modifications - Siltation	Pittsburgh, PA	Brush Creek	050200050702	05020005002004	Yes	Brush Creek (Westmoreland)_Turtle Creek Watershed	Metals ; pH	(Turtle Cr)	(Brus h Cr)	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE



9/4/2022

SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
11606	40.38789188	-79.57565899	UNT to Beaver Creek	HQ-CWF (HIGH QUALITY- COLD WATER FISHES)	No	<Null>	223	Non-Attaining	Road Runoff - Siltation	Non-Urban	Beaver Run Reservoir-Beaver Run	50100080203	05010008000479	Yes	Kiskiminetas-Conemaugh River Watersheds TMDL	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
11607	40.39398426	-79.57177248	UNT to Beaver Creek	HQ-CWF (HIGH QUALITY- COLD WATER FISHES)	No	804	223	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Beaver Run Reservoir-Beaver Run	050100080203	05010008000479	Yes	Kiskiminetas-Conemaugh River Watersheds TMDL	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
11608	40.39438353	-79.57169772	UNT to Beaver Creek	HQ-CWF (HIGH QUALITY- COLD WATER FISHES)	No	804	223	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Beaver Run Reservoir-Beaver Run	050100080203	05010008000479	Yes	Kiskiminetas-Conemaugh River Watersheds TMDL	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
11609	40.39593171	-79.57048496	UNT to Beaver Creek	HQ-CWF (HIGH QUALITY- COLD WATER FISHES)	Yes	804	223	Non-Attaining	Road Runoff - Siltation	Pittsburgh, PA	Beaver Run Reservoir-Beaver Run	050100080203	05010008000478	Yes	Kiskiminetas-Conemaugh River Watersheds TMDL	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
11618	40.29201852	-79.91533914	Peters Creek	TSF	No	912	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000442	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11619	40.29218963	-79.91140821	UNT to Peters Creek	TSF	No	912	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000442	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11620	40.29218573	-79.91501843	Peters Creek	TSF	No	912	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000442	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11622	40.2924327	-79.91373318	Peters Creek	TSF	Yes	912	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000442	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11623	40.29250638	-79.91303487	Peters Creek	TSF	Yes	912	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000442	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11624	40.2925871	-79.91356205	Peters Creek	TSF	Yes	912	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000442	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11625	40.29524665	-79.90968108	Peters Creek	TSF	No	913	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000442	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11626	40.29526202	-79.90967361	Peters Creek	TSF	No	913	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000442	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11617	40.29076461	-79.91720306	Peters Creek	TSF	Yes	912	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000443	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11611	40.27955368	-79.94281865	Peters Creek	TSF	Yes	908	224	Non-Attaining	Source Unknown - Cause Unknown ; Abandoned Mine Drainage - Metals	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000444	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11613	40.27911627	-79.93834702	Peters Creek	TSF	Yes	909	224	Non-Attaining	Source Unknown - Cause Unknown ; Abandoned Mine Drainage - Metals	Non-Urban	Piney Fork-Peters Creek	050200050806	05020005000444	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11614	40.2810119	-79.93619151	Peters Creek	TSF	Yes	909	224	Non-Attaining	Source Unknown - Cause Unknown ; Abandoned Mine Drainage - Metals	Non-Urban	Piney Fork-Peters Creek	050200050806	05020005000444	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11610	40.28093141	-79.95232264	Peters Creek	TSF	No	<Null>	224	Non-Attaining	Source Unknown - Cause Unknown ; Abandoned Mine Drainage - Metals	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005000445	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11627	40.29659488	-79.91964354	Lewis Run	TSF	No	913	224	Non-Attaining	Source Unknown - Pathogens	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005001573	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11615	40.28472434	-79.92041312	UNT to Peters Creek	TSF	Yes	911	224	Non-Attaining	Source Unknown - Cause Unknown ; Abandoned Mine Drainage - Metals	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005002051	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11616	40.28474883	-79.92070676	UNT to Peters Creek	TSF	Yes	911	224	Non-Attaining	Source Unknown - Cause Unknown ; Abandoned Mine Drainage - Metals	Pittsburgh, PA	Piney Fork-Peters Creek	050200050806	05020005002051	Yes	Peters Creek Watershed	Metals	Yes	N/A	No WLA for PTC
11628	40.47658824	-80.25475466	UNT to Montour Run	TSF	No	914	225	Non-Attaining	Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Metals	Non-Urban	Montour Run	50100090202	05030101001520	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11629	40.47869235	-80.25719086	UNT to Montour Run	TSF	No	914	225	Non-Attaining	Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Metals	Non-Urban	Montour Run	050100090202	05030101001520	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11630	40.47917545	-80.25778762	UNT to Montour Run	TSF	No	914	225	Non-Attaining	Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Metals	Non-Urban	Montour Run	050100090202	05030101001520	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11632	40.48209151	-80.26336342	UNT to Montour Run	TSF	No	914	225	Non-Attaining	Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Metals	Non-Urban	Montour Run	050301010304	05030101001520	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11633	40.48336219	-80.26649892	UNT to Montour Run	TSF	Yes	914	225	Non-Attaining	Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Metals	Non-Urban	Montour Run	050100090202	05030101001520	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11638	40.48752572	-80.27289459	UNT to Montour Run	TSF	Yes	<Null>	225	Non-Attaining	Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Metals	Non-Urban	Montour Run	050100090202	05030101001520	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11634	40.48605586	-80.26375787	UNT to Montour Run	TSF	No	914	225	Non-Attaining	Habitat Modification - Siltation	Pittsburgh, PA	Montour Run	050100090202	05030101003702	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11635	40.48625674	-80.26383146	UNT to Montour Run	TSF	No	914	225	Non-Attaining	Habitat Modification - Siltation	Pittsburgh, PA	Montour Run	050301010304	05030101003702	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11636	40.48901362	-80.2641642	UNT to Montour Run	TSF	Yes	914	225	Non-Attaining	Habitat Modification - Siltation	Pittsburgh, PA	Montour Run	050100090202	05030101003702	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11637	40.48904721	-80.26407335	UNT to Montour Run	TSF	Yes	914	225	Non-Attaining	Habitat Modification - Siltation	Pittsburgh, PA	Montour Run	050301010304	05030101003702	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
11631	40.48148833	-80.25879705	UNT to Montour Run	TSF	Yes	914	225	Non-Attaining	Habitat Modification - Siltation	Pittsburgh, PA	Montour Run	050100090202	05030101003714	Yes	Montour Run Watershed	Metals ; pH	Yes	N/A	No WLA for PTC
12001	39.81405164	-79.77989654	UNT to Georges Creek	WWF	No	<Null>	227	Non-Attaining	Abandoned Mine Drainage - Metals ; Abandoned Mine Drainage - Siltation	Non-Urban	Muddy Run-Georges Creek	050200050203	05020005000949	N/A	N/A	N/A	N/A	N/A	N/A
12007	39.91782826	-79.71987662	Redstone Creek	WWF	Yes	832	228	Non-Attaining	Abandoned Mine Drainage - Metals	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005000756	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12015	39.91863206	-79.72091755	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Abandoned Mine Drainage - Metals	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005000756	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12016	39.92307595	-79.7238926	Redstone Creek	WWF	No	<Null>	228	Non-Attaining	Abandoned Mine Drainage - Metals	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005000756	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC

Ohio River Basin
RECEIVING WATERS TABLE



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
12008	39.91773485	-79.72637346	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002922	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12009	39.91778407	-79.7246756	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002922	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12010	39.91822416	-79.72429323	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002922	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12011	39.9183857	-79.72334337	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002922	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12012	39.91845734	-79.72272728	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002922	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12013	39.91848558	-79.72211498	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002922	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12014	39.91850617	-79.72177279	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002922	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12002	39.91251168	-79.73374005	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002953	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12003	39.91258875	-79.73091929	UNT to Redstone Creek	WWF	No	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002953	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12004	39.91268146	-79.73349029	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Uniontown--Connellsville, PA	Cove Run-Redstone Creek	050200050601	05020005002953	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12005	39.91288014	-79.73501199	UNT to Redstone Creek	WWF	No	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Non-Urban	Cove Run-Redstone Creek	050200050601	05020005002953	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
12006	39.91755619	-79.72797368	UNT to Redstone Creek	WWF	Yes	832	228	Non-Attaining	Road Runoff - Siltation ; Abandoned Mine Drainage - pH ; Abandoned Mine Drainage - Metals ; Small Residential Runoff - Organic Enrichment/Low D.O. ; Urban Runoff/Storm Sewers - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Suspended Solids	Non-Urban	Cove Run-Redstone Creek	050200050601	05020005002953	Yes	Redstone Creek Watershed	Metals ; pH ; Siltation ; Suspended Solids	Yes	N/A	No WLA for PTC
13008	39.99880281	-79.89213892	Dunlap Creek	WWF	No	853	231	Non-Attaining	Source Unknown - Pathogens	Non-Urban	Dunlap Creek	050200050506	05020005000342	N/A	N/A	N/A	N/A	N/A	N/A
13017	40.130021	-79.92305325	Maple Creek	WWF	Yes	880	233	Non-Attaining	Small Residential Runoff - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Metals ; Road Runoff - Siltation ; Natural Sources - Water/Flow Variability	Monessen--California, PA	Maple Creek-Monongahela River	050200050803	05020005001489	N/A	N/A	N/A	N/A	N/A	N/A



SEWERSHED NUMBER	OUTFALL LATITUDE (Decimal Degrees)	OUTFALL LONGITUDE (Decimal Degrees)	STREAM NAME	DESIGNATED USE (Chapter 93)	WITHIN PTC BOUNDARY	MAP NUMBER (100 Scale)	MAP NUMBER (500 Scale)	NON-ATTAINING STATUS	POLLUTANT NAME (Source-Cause)	URBANIZED AREA (2010)	HUC12 NAME	HUC12 CODE	REACH CODE	Approved TMDL	TMDL NAME	TMDL CAUSE	TMDL SPECIFIC	TMDL GENERAL	WLA
13018	40.13018884	-79.92375486	Maple Creek	WWF	Yes	880	233	Non-Attaining	Small Residential Runoff - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Metals ; Road Runoff - Siltation ; Natural Sources - Water/Flow Variability	Non-Urban	Maple Creek-Monongahela River	050200050803	05020005001489	N/A	N/A	N/A	N/A	N/A	N/A
13019	40.13033608	-79.92426285	Maple Creek	WWF	Yes	880	233	Non-Attaining	Small Residential Runoff - Organic Enrichment/Low D.O. ; Abandoned Mine Drainage - Metals ; Road Runoff - Siltation ; Natural Sources - Water/Flow Variability	Monessen--California, PA	Maple Creek-Monongahela River	050200050803	05020005001489	N/A	N/A	N/A	N/A	N/A	N/A

APPENDIX C – MS4 MAP LAYERS AND DATA SOURCES

PENNSYLVANIA TURNPIKE
COMMISSION
MS4 Map Layers and Data
Sources



LAYER	SOURCE
2010 Urbanized Area	PA DEP (Referenced to US Census Bureau)
Basemap	Microsoft Bing Aerial photography
BMP -Existing	Skelly and Loy, Inc.
Discharge Point	Skelly and Loy, Inc.
Discharge Point Other	Skelly and Loy, Inc.
Elevation Data (contours)	PA DCNR
Flow Arrows	Skelly and Loy, Inc.
Inlets	PTC Record Drawings, Skelly and Loy, Inc.
Inlets - Other	PTC Record Drawings, Skelly and Loy, Inc.
Intake Points	PTC Record Drawings, Skelly and Loy, Inc.
Intake Points-Other	PTC Record Drawings, Skelly and Loy, Inc.
Lakes	Pennsylvania Fish and Boat Commission
Manholes	PTC Record Drawings, Skelly and Loy, Inc.
PTC Boundary	PTC Record Drawings, Skelly and Loy, Inc.
Municipal Boundaries	Penn DOT
NWI (Wetlands)	US Fish and Wildlife Service
Observation Points	Skelly and Loy, Inc.
Outfall - Impaired	PTC Record Drawings, Skelly and Loy, Inc.
Outfall - Unimpaired	PTC Record Drawings, Skelly and Loy, Inc.
Parcels	PTC
Pipes	PTC Record Drawings, Skelly and Loy, Inc.
Pipes-Other	PTC Record Drawings, Skelly and Loy, Inc.
Planning Area	Skelly and Loy, Inc.
Proposed BMPs	Skelly and Loy, Inc.
Proposed Drainage Area	Skelly and Loy, Inc.
Rain Traces	Skelly and Loy, Inc.
Storm Sewershed - Impaired	Skelly and Loy, Inc.
Storm Sewershed - Unimpaired	Skelly and Loy, Inc.
Stream	PA DEP
Stream Impaired	PA DEP
Surface Water Conveyance	PTC Record Drawings, Skelly and Loy, Inc.

- The projection of information shown on the Maps is NAD 1983 State Plane Pennsylvania South US Feet

APPENDIX D – MAPSHED URBAN AREA TOOL RESULTS

D1

Planning Area Existing Loads

MapShed Results

BRADY RUN PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	2	52.20	26.10	0.20	0.09	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	12	4213.20	351.10	13.40	1.12	2.50	0.21
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	5	48.00	9.60	1.30	0.25	0.20	0.03
MD Mixed	2	103.80	51.90	2.80	1.38	0.30	0.15
HD Mixed	5	259.50	51.90	6.90	1.38	0.80	0.15
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		10084.82		5.0		1.4	0.005
Groundwater				94.1		1.5	0.003
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	26	14761.5		123.7		6.7	

Source Weighting

Print Export to JPEG Exit

MapShed Results

BEAVER RIVER – OHIO RIVER PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio'



Watershed Totals

Municipality Loads

Regulated Loads

Unregulated Loads

View loads for municipality:

(87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	30	642.00	21.40	2.40	0.08	0.30	0.01
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	22	6831.00	310.50	23.30	1.06	3.70	0.17
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	15	138.00	9.20	3.60	0.24	0.50	0.03
MD Mixed	22	1115.40	50.70	27.10	1.23	2.90	0.13
HD Mixed	35	1774.50	50.70	43.10	1.23	4.60	0.13
LD Residential	2	18.40	9.20	0.50	0.24	0.10	0.03
MD Residential	2	101.40	50.70	2.50	1.23	0.30	0.13
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
							Source Weighting
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		73466.64		36.7		9.6	0.010
Groundwater				263.5		5.4	0.007
Point Sources				0.0		0.0	0.000
Septic Systems				16.2		0.0	0.001
Totals	128	84087.3		418.9		27.4	

Print

Export to JPEG

Exit

MapShed Results

BRUSH CREEK (NORTH) PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	15	169.50	11.30	1.10	0.07	0.20	0.01
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	27	3734.10	138.30	21.90	0.81	2.40	0.09
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	27	280.80	10.40	7.60	0.28	0.80	0.03
MD Mixed	47	2749.50	58.50	67.20	1.43	7.10	0.15
HD Mixed	86	5031.00	58.50	123.00	1.43	12.90	0.15
LD Residential	2	20.80	10.40	0.60	0.28	0.10	0.03
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		214836.19		107.4		31.1	0.021
Groundwater				833.3		12.6	0.010
Point Sources				0.0		0.0	0.000
Septic Systems				16.8		0.0	0.001
Totals	204	226821.9		1178.9		67.2	

Source Weighting

Print Export to JPEG Exit

MapShed Results

LITTLE PINE CREEK – PINE CREEK PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals

Municipality Loads

Regulated Loads

Unregulated Loads

View loads for municipality:

(87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	2	39.80	19.90	0.20	0.09	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	7	2027.20	289.60	7.80	1.11	1.10	0.16
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	7	78.40	11.20	2.00	0.29	0.20	0.03
MD Mixed	35	1967.00	56.20	43.10	1.23	4.90	0.14
HD Mixed	49	2753.80	56.20	60.30	1.23	6.90	0.14
LD Residential	2	22.40	11.20	0.60	0.29	0.10	0.03
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		136354.44		68.2		17.0	0.010
Groundwater				238.6		6.2	0.007
Point Sources				0.0		0.0	0.000
Septic Systems				21.0		0.0	0.001
Totals	102	143243.0		441.8		36.4	

Print

Export to JPEG

Exit

MapShed Results

DEER CREEK PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio'

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	0	0.00	0.00	0.00	0.00	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	5	1451.00	290.20	5.90	1.18	0.90	0.17
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	2	23.80	11.90	0.60	0.30	0.10	0.03
MD Mixed	5	304.00	60.80	7.70	1.53	0.80	0.16
HD Mixed	10	608.00	60.80	15.30	1.53	1.60	0.16
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		29002.78		14.5		3.9	0.004
Groundwater				131.1		2.5	0.002
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	22	31389.6		175.1		9.8	

Source Weighting

Print Export to JPEG Exit

MapShed Results

CHARTIERS RUN – ALLEGHENY RIVER PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	0	0.00	0.00	0.00	0.00	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	2	801.20	400.60	2.80	1.38	0.40	0.22
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Mixed	5	408.00	81.60	10.40	2.08	1.10	0.22
HD Mixed	2	163.20	81.60	4.20	2.08	0.40	0.22
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		19585.77		9.8		2.5	0.001
Groundwater				43.1		0.9	0.001
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	9	20958.2		70.3		5.3	

Source Weighting

Print Export to JPEG Exit

MapShed Results

PLUM CREEK PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	7	2370.20	338.60	6.80	0.97	1.80	0.25
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	5	152.00	30.40	0.60	0.12	0.10	0.02
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	2	1112.00	556.00	3.40	1.70	0.60	0.30
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	7	74.90	10.70	2.00	0.29	0.20	0.03
MD Mixed	15	906.00	60.40	20.60	1.37	2.30	0.15
HD Mixed	27	1630.80	60.40	37.00	1.37	4.10	0.15
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	2	120.80	60.40	2.70	1.37	0.30	0.15
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		155996.45		78.0		20.2	0.015
Groundwater				218.3		4.7	0.010
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	65	162363.2		369.4		34.3	

Source Weighting

Print Export to JPEG Exit

MapShed Results

SAWMILL RUN – TURTLE CREEK PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	2	408.80	204.40	1.30	0.64	0.30	0.16
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	0	0.00	0.00	0.00	0.00	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	2	916.20	458.10	2.80	1.41	0.50	0.24
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	2	18.40	9.20	0.50	0.25	0.10	0.03
MD Mixed	12	610.80	50.90	14.30	1.19	1.60	0.13
HD Mixed	15	765.00	51.00	17.90	1.19	2.00	0.13
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		24787.59		12.4		3.1	0.005
Groundwater				56.8		1.4	0.004
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	33	27506.8		106.0		9.0	

Source Weighting

Print Export to JPEG Exit

MapShed Results

HAYMAKERS RUN – TURTLE CREEK
PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio



Watershed Totals

Municipality Loads

Regulated Loads

Unregulated Loads

View loads for municipality:

(87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	2	420.00	210.00	1.50	0.75	0.40	0.19
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	10	240.00	24.00	1.20	0.12	0.20	0.02
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	10	3679.00	367.90	14.20	1.42	2.10	0.21
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	5	78.00	15.60	2.00	0.40	0.20	0.04
MD Mixed	30	2481.00	82.70	62.70	2.09	6.90	0.23
HD Mixed	37	3063.60	82.80	77.30	2.09	8.50	0.23
LD Residential	2	31.20	15.60	0.80	0.40	0.10	0.04
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
						Source Weighting	
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		179285.08		89.6		23.6	0.010
Groundwater				398.5		8.1	0.005
Point Sources				0.0		0.0	0.000
Septic Systems				32.9		0.0	0.001
Totals	96	189277.9		680.7		50.1	

Print

Export to JPEG

Exit

MapShed Results

BRUSH CREEK (SOUTH) PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	5	780.00	156.00	2.70	0.54	0.70	0.14
Cropland	5	8684.00	1736.80	25.60	5.12	5.50	1.09
Forest	94	1663.80	17.70	7.50	0.08	0.90	0.01
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	2	73.20	36.60	1.20	0.59	0.10	0.06
Open Land	30	8211.00	273.70	30.60	1.02	4.80	0.16
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	54	502.20	9.30	12.40	0.23	1.60	0.03
MD Mixed	116	5742.00	49.50	149.60	1.29	16.20	0.14
HD Mixed	133	6583.50	49.50	171.60	1.29	18.60	0.14
LD Residential	2	18.60	9.30	0.50	0.23	0.10	0.03
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		511660.02		255.8		72.4	0.037
Groundwater				1148.6		18.5	0.018
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	441	543918.3		1806.1		139.4	

Source Weighting

Print Export to JPEG Exit

MapShed Results

LITTLE SEWICKLEY CREEK PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio!



Watershed Totals

Municipality Loads

Regulated Loads

Unregulated Loads

View loads for municipality:

(87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	2	371.60	185.80	1.20	0.59	0.30	0.17
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	0	0.00	0.00	0.00	0.00	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	10	2490.00	249.00	9.70	0.97	1.60	0.16
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	7	88.20	12.60	2.20	0.32	0.20	0.03
MD Mixed	12	854.40	71.20	24.10	2.01	2.50	0.21
HD Mixed	25	1777.50	71.10	50.00	2.00	5.30	0.21
LD Residential	2	25.20	12.60	0.60	0.32	0.10	0.03
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
						Source Weighting	
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		49720.94		24.9		7.5	0.019
Groundwater				208.5		2.8	0.005
Point Sources				0.0		0.0	0.000
Septic Systems				12.8		0.0	0.001
Totals	58	55327.8		334.0		20.3	

Print

Export to JPEG

Exit

MapShed Results

LOWER SEWICKLEY CREEK PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals **Municipality Loads** Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	2	318.00	159.00	1.10	0.56	0.30	0.16
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	0	0.00	0.00	0.00	0.00	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	7	1765.40	252.20	7.10	1.02	1.20	0.17
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	10	130.00	13.00	3.40	0.34	0.40	0.04
MD Mixed	17	1218.90	71.70	39.10	2.30	4.10	0.24
HD Mixed	30	2151.00	71.70	69.00	2.30	7.20	0.24
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		73142.04		36.6		11.7	0.013
Groundwater				338.0		4.2	0.003
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	66	78725.3		494.3		29.1	

Source Weighting

Print Export to JPEG Exit

MapShed Results

BEAVER RUN RESERVOIR – BEAVER RUN PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	2	45.80	22.90	0.20	0.12	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	5	1826.50	365.30	7.10	1.41	1.20	0.23
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	7	106.40	15.20	2.80	0.40	0.30	0.04
MD Mixed	7	569.10	81.30	16.80	2.40	1.80	0.25
HD Mixed	15	1219.50	81.30	36.00	2.40	3.80	0.25
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		63733.04		31.9		9.3	0.012
Groundwater				349.0		5.1	0.003
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	36	67500.3		443.8		21.5	

Source Weighting

Print Export to JPEG Exit

MapShed Results

MONTOUR RUN PLANNING AREA

Select input data file:

Watershed Totals **Municipality Loads** Regulated Loads Unregulated Loads

View loads for municipality:

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	0	0.00	0.00	0.00	0.00	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	2	140.00	70.00	0.30	0.16	0.10	0.05
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	15	4789.50	319.30	15.90	1.06	2.60	0.17
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	5	46.00	9.20	1.30	0.25	0.20	0.03
MD Mixed	15	826.50	55.10	24.60	1.64	2.60	0.17
HD Mixed	57	3140.70	55.10	93.50	1.64	9.70	0.17
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		104629.60		52.3		13.2	0.009
Groundwater				152.5		3.7	0.007
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	94	113572.3		340.4		32.1	

Source Weighting

Print Export to JPEG Exit

MapShed Results

COVE RUN – REDSTONE CREEK PLANNING
AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio!

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	0	0.00	0.00	0.00	0.00	0.00	0.00
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	0	0.00	0.00	0.00	0.00	0.00	0.00
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	5	49.50	9.90	1.30	0.26	0.20	0.03
MD Mixed	12	634.80	52.90	13.60	1.13	1.60	0.13
HD Mixed	15	793.50	52.90	17.10	1.14	2.00	0.13
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		52969.20		26.5		7.7	0.004
Groundwater				223.9		3.4	0.002
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	32	54447.0		282.4		14.9	

Source Weighting

Print Export to JPEG Exit

MapShed Results

MAPLE CREEK – MONONGAHELA RIVER PLANNING AREA

Select input data file: W:\Projects\2012 Projects and Proposals\R12-0564.015 PTC MS4\MapShed\Ohio -Mapshed Runfiles\Ohio

Watershed Totals Municipality Loads Regulated Loads Unregulated Loads

View loads for municipality: (87280)

Source	Source Area (ac)	Sediment		Nitrogen		Phosphorus	
		Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)	Total Load (lb)	Loading Rate (lb/ac)
Hay/Pasture	0	0.00	0.00	0.00	0.00	0.00	0.00
Cropland	0	0.00	0.00	0.00	0.00	0.00	0.00
Forest	5	215.00	43.00	0.70	0.13	0.20	0.03
Wetland	0	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed	0	0.00	0.00	0.00	0.00	0.00	0.00
Turfgrass	0	0.00	0.00	0.00	0.00	0.00	0.00
Open Land	2	1635.60	817.80	4.20	2.12	0.90	0.45
Bare Rock	0	0.00	0.00	0.00	0.00	0.00	0.00
Sandy Areas	0	0.00	0.00	0.00	0.00	0.00	0.00
Unpaved Roads	0	0.00	0.00	0.00	0.00	0.00	0.00
LD Mixed	5	50.00	10.00	1.30	0.26	0.20	0.03
MD Mixed	2	105.80	52.90	2.70	1.33	0.30	0.14
HD Mixed	10	529.00	52.90	13.30	1.33	1.40	0.14
LD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
MD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
HD Residential	0	0.00	0.00	0.00	0.00	0.00	0.00
Water	0						
Farm Animals				0.0		0.0	0.000
Tile Drainage		0.00		0.0		0.0	0.000
Stream Bank		16567.78		8.3		2.2	0.003
Groundwater				69.1		1.3	0.002
Point Sources				0.0		0.0	0.000
Septic Systems				0.0		0.0	0.000
Totals	24	19103.2		99.6		6.5	

Source Weighting

Print Export to JPEG Exit

D2

Land Use Distribution Summary

LAND USE DISTRIBUTION SUMMARY
PTC MS4 PLANNING AREA
 (ACRES)



LAND USE		WATERSHED NAME																
MAPSHED NAME	CAST NAME	Brady Run	Beaver River-Ohio River	Brush Creek (North)	Little Pine Creek-Pine Creek	Deer Creek	Chartiers Run-Allegheny River	Plum Creek	Haymakers Run-Turtle Creek	Sawmill Run-Turtle Creek	Brsuh Creek (South)	Little Sewickley Creek	Lower Sewickley Creek	Beaver Run Reservoir-Beaver Run	Montour Run	Cove Run-Redstone Creek	Maple Creek-Monongahela River	Total Ohio River Basin
Hay/Pasture	Pasture	0	0	0	0	0	0	7	2	2	5	2	2	0	0	0	0	20
Cropland	Double Cropped Land	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5
Forest	True Forest	2	30	15	2	0	0	5	10	0	94	0	0	2	0	0	5	165
Wetland	Non-tidal Floodplain Wetland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Disturbed	Regulated Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Turfgrass	MS4 Turfgrass	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Open Land	Mixed Open	12	22	27	7	5	2	2	10	2	30	10	7	5	15	0	2	158
Bare Rock	Non-Regulated Buildings and Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sandy Areas	Non-Regulated Buildings and Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unpaved Roads	No Equivalent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Low-Density (LD) Mixed	MS4 Buildings and Other	5	15	27	7	2	0	7	5	2	54	7	10	7	5	5	5	163
Medium Density (MD) Mixed	MS4 Buildings and Other	2	22	47	35	5	5	15	30	12	116	12	17	7	15	12	2	354
High-Density (HD) Mixed	MS4 Buildings and Other	5	35	86	49	10	2	27	37	15	133	25	30	15	57	15	10	551
Low-Density (LD) Residential	MS4 Buildings and Other	0	2	2	2	0	0	0	2	0	2	2	0	0	0	0	0	12
Medium Density (MD) Residential	MS4 Buildings and Other	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4
High-Density (HD) Residential	MS4 Buildings and Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water	Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		26	128	204	102	22	9	65	96	33	441	58	66	36	94	32	24	1436

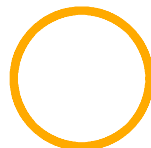
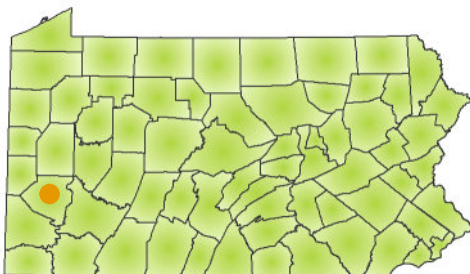
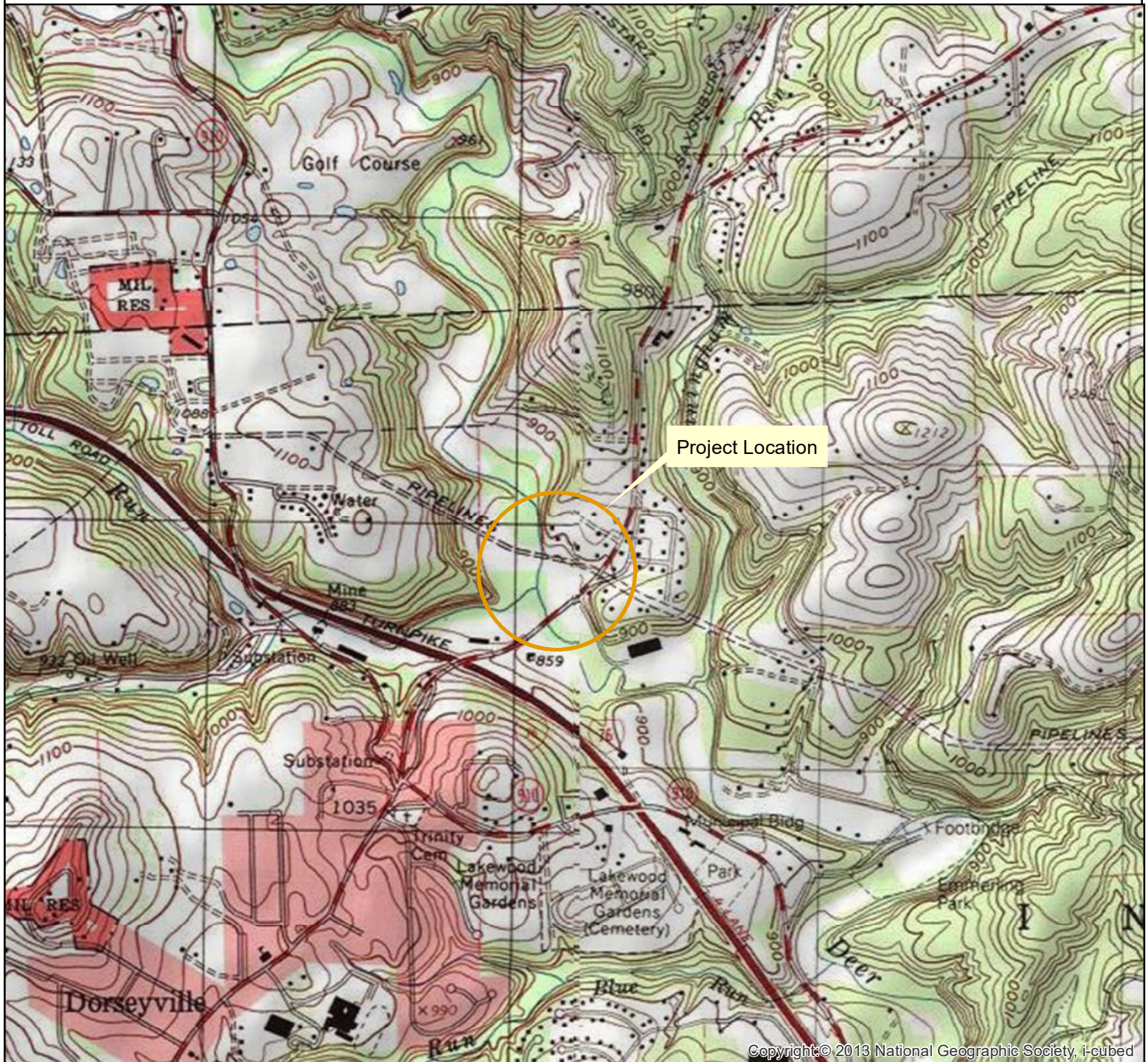
**APPENDIX E –
BMP CONCEPT DESIGN AND
SUPPORT INFORMATION**

E1

Project Location Map

Figure 1 Project Location

Deer Creek Stream Restoration Site
Indiana Township, Allegheny County, Pennsylvania



Project Location



0 750 1,500 3,000 Feet

Scale: 1:24,000

Map Source: USGS Quadrangle

Created by:
Hunt Valley Environmental, LLC

E2

Deer Creek Existing Conditions Photographs

Deer Creek



Photo 1



Photo 2

Deer Creek



Photo 3

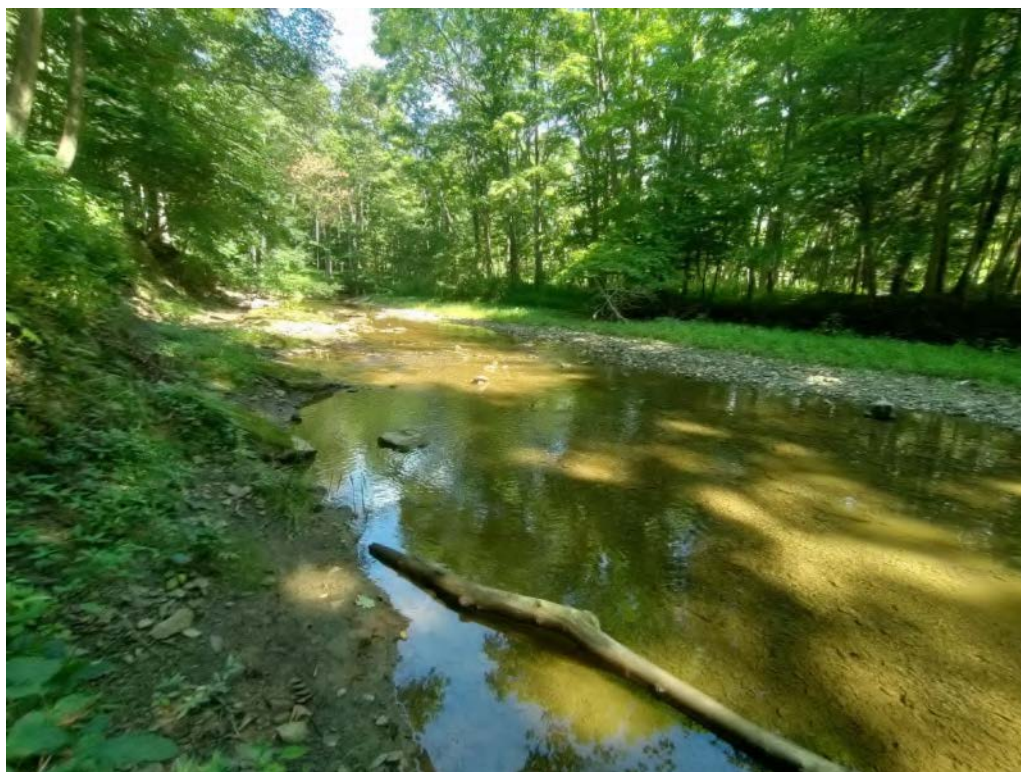


Photo 4

Deer Creek



Photo 5



Photo 6

Deer Creek



Photo Location 7



Photo 8

Deer Creek



Photo 9



Photo Location 10

Deer Creek



Photo Location 11



Photo 12

Deer Creek



Photo Location 13



Photo Location 14

Deer Creek



Photo 15



Photo Location 16

Deer Creek



Photo 17



Photo Location 18

E3

Anticipated Project Schedule

Sawmill Run/PTC MS4 Schedule:

	Milestone Activity	Milestone Date (on or before)
1.	Conceptual PRP submitted to PennDOT	June 13 th 2022
2.	Final PRP submitted to PennDOT	September 15 th 2022
3.	Federal, State, and Local permits & approvals	April 2023
4.	Begin BMP construction	July 2023
5.	25% construction complete	July 2023
6.	50% construction complete	September 2023
7.	100% construction complete	December 2023
8.	Post-Construction monitoring begins	January 2024
9.	Required Sediment Reduction Approval	January 2025
10.	Post-Construction Monitoring Ends	November 2028
11.	End of Post-Construction	December 2028

E4

Example Site Protection Instrument (SPI)

Note: This is an example document. The Pennsylvania Turnpike Commission will be specifically named in documents relating to the Deer Creek Stream restoration Project.

DEED RESTRICTIONS

DECLARATION OF RESTRICTIVE COVENANTS FOR CONSERVATION

THIS DECLARATION OF RESTRICTIVE COVENANTS FOR
CONSERVATION (hereinafter “Declaration”) made this [Click here to enter text.](#) day of [Click here to enter text.](#), 20[Click here to enter text.](#), by **Land Owner** (hereinafter “Grantors”);

WITNESSETH:

WHEREAS, Grantors are the fee simple owners of certain tracts of land located in Township, County and being a portion of the property conveyed to the Grantors by deed recorded in deed book _____ in the land records of County, Pennsylvania, more particularly described in Exhibit A and B attached hereto and incorporated by reference, hereinafter referred to as the “Property”; and

WHEREAS, Grantors have agreed to allow Land Reclamation Group (LRG) to create MS4 BMPs on a portion of the Property, hereinafter referred to as the “_____ Area;”

WHEREAS, LRG has entered into an agreement with the _____

WHEREAS, the _____ has approved the BMPs Plan for the _____, Pennsylvania Department of Transportation Action ID [INSERT ACTION ID NUMBER];

WHEREAS, pursuant to the LRG Contract No. ____ and the _____ BMPs Plan, LRG proposes to create, maintain, and preserve a high-quality, self-sustaining natural aquatic system and buffer located on the _____ described in **Exhibit A and present on the plat plan attached as Exhibit B** attached hereto, which contains or will contain land, functions, values, and services that may serve as compensation and mitigation for impacts to waters of the United States and/or waters of the State that were permitted by the Third Parties; and

WHEREAS, under Federal and State law, the Army Corps of Engineers has issued Permit No. _____, and the Pennsylvania Department of Environmental Protection has issued Permit No. _____ (collectively, the “Permits”), for impacts to waters of the United States and/or the State of Pennsylvania expected to result from the creation of the self-sustaining natural aquatic system located on the Mitigation Area; and

WHEREAS, the _____ requires that a site protection instrument, such as this Declaration of Restrictive Covenants, be executed and recorded in order that the BMPs Area shall be preserved in its natural or reestablished condition forever; and

WHEREAS, the Grantors agree to the creation of these conservation-based covenants and intends the BMP Area shall be properly created, monitored, and then preserved and

maintained in a natural condition in perpetuity; and

WHEREAS, the Grantors agree to grant to LRG, PennDOT, _____ and the Pennsylvania Department of Environmental Protection certain rights with respect to the Property and the creation and monitoring of the BMP Area.

NOW, THEREFORE, in consideration of the mutually-held interests in preservation of the environment, as well as the terms, conditions, and restrictions contained herein, and pursuant to the laws of the Commonwealth of Pennsylvania, Grantors agree to the following terms and conditions:

1. PURPOSE

The purpose of this Declaration of Restrictive Covenants for Conservation is:

To properly create, maintain, and monitor the BMP Area in accordance with the terms of conditions of the aforementioned Permit

To preserve and protect the native flora, fauna, soils, water table and drainage patterns, and other conservation values of the established BMP Area;

To preserve the established BMP Area in its scenic and open condition; and in general,

To assure that the established BMP Area, including its air space and subsurface, will be retained in perpetuity in its natural condition as provided herein and to prevent any use of the BMP Area that will impair or interfere with its natural resource functions and values. Grantors intend that this Declaration will confine the use of the BMP Area to such activities as are consistent with the purpose of this Declaration.

To accomplish the purpose of this Declaration, the following rights are created in accordance with Pennsylvania law:

- A. Grantors hereby grant to LRG, thePennDOT, _____, the Pennsylvania Department of Environmental Protection (hereinafter "PADEP"), and their authorized representatives the right to enter upon the Property to inspect the BMPs Area at reasonable times to monitor compliance with and otherwise enforce the terms of this Declaration; provided that, except in cases where immediate entry is necessary to prevent, terminate, ormitigate a violation of this Declaration; such entry shall be upon reasonable prior notice to the Grantors or anysuccessors or assigns, and Grantors, LRG, PennDOT, _____ and PADEP shall not unreasonably interfere with Grantor's or their successor'sor assign's use and quiet enjoyment of the Property in accordance with the terms of this Declaration;
- B. Grantors hereby grant to LRG, PennDOT, _____, or the PADEP the right to enforce the terms of this Declaration by appropriate legal proceedings inaccordance with Pennsylvania law so as to prevent any activity on or use of the Property that is inconsistent with the purpose of this Declaration and to require the restoration ofsuch areas or features of the BMP Area that may be damaged by any inconsistent activity or use; and
- C. Grantors hereby grant to LRG, or their authorized representatives, the right to enter upon

the Property and its BMP Area at reasonable times, upon prior notice to the property owner; and upon prior notice and written approval by PennDOT to take any appropriate environmental or conservation management measures consistent with the terms and purposes of this Declaration, including:

- (i) Planting of native vegetation (i.e. trees, shrubs, grasses and forbs); or
- (ii) Restoring, altering or maintaining: the topography; hydrology; drainage; structural integrity; streambed; water quantity; water quality; any relevant feature of any stream, wetland, water body, or vegetative buffer within the BMP Area.

2. DURATION

This Declaration shall remain in effect in perpetuity, shall run with the land regardless of ownership or use, and is binding upon Grantors, their heirs, executors, administrators, successors, representatives, devisees, and assigns, as the case may be, as long as said party or parties shall have any interest in any part of the BMP Area.

3. PERMITTED USES

This Declaration will not prevent the Grantors; subsequent property owner(s); and the personal representatives, heirs, successors, and assigns of either the Grantors or subsequent property owner from making use of the area(s) that are not expressly prohibited herein and are not inconsistent with the purpose of this Declaration.

4. RESTRICTIONS

Any activity in or use of the BMP Area inconsistent with the purpose of the Declaration by the Grantors; subsequent property owner(s); and the personal representatives, heirs, successors, and assigns of either the Grantors or subsequent property owner, is prohibited. Without limiting the generality of the foregoing, and except when an approved purpose under 1.C above, or as necessary to accomplish BMP approved under the aforementioned permit, the following activities and uses are expressly prohibited in, on, over, or under the BMP Area, subject to all of the express terms and conditions below:

- A. **Structures.** The construction of man-made structures including but not limited to the construction, removal, placement, preservation, maintenance, alteration, or decoration of any buildings, roads, billboards, or other advertising. This restriction does not include deer stands, bat boxes, bird nesting boxes, bird feeders, duck blinds, and the placement of signs for safety purposes or boundary demarcation.
- B. **Demolition.** The demolition of fencing structures constructed for the purpose of demarcation of the BMP Area or for public safety.
- C. **Soils.** The removal, excavation, disturbance, or dredging of soil, sand, peat, gravel, or aggregate material of any kind; or any change in the topography of the land, including any discharges of dredged or fill material, ditching, extraction, drilling, driving of piles, mining, or excavation of any kind.
- D. **Drainage.** The drainage or disturbance of the water level or the water table, except for pre-existing or approved project-related stormwater discharges and any maintenance associated with those stormwater discharges. All pre-existing or approved project-related

drainage/stormwater discharge features should be shown on the accompanying plat plan is attached to this Declaration.

Waste or Debris. The storage, dumping, depositing, abandoning, discharging, or releasing of any gaseous, liquid, solid, or hazardous waste substance, materials or debris of whatever nature on, in, over, or underground or into surface or ground water, except for pre-existing or approved project-related stormwater discharges and any maintenance associated with those stormwater discharges.

E. **Non-Native Species.** The planting or introduction of non-native species.

F. **Herbicides, Insecticides and Pesticides.** The use of herbicides, insecticides, or pesticides, or other chemicals, except for as may be necessary to control invasive species that threaten the natural character of the BMP Area. State- approved municipal application programs necessary to protect the public health and welfare are not included in this prohibition.

G. **Removal of Vegetation.** The mowing, cutting, pruning, or removal of any kind; disturbance, destruction, or the collection of any trees, shrubs, or other vegetation, except for pruning, cutting or removal for:

- (i) safety purposes; or
- (ii) control in accordance with accepted scientific forestry management practices for diseased or dead vegetation; or
- (iii) control of non-native species and noxious weeds; or
- (iv) scientific or nature study.

I. **Agricultural Activities.** Unless currently used for agricultural or similarly related purposes, conversion of, or expansion into, any portion of the BMP Area for use of agricultural, horticultural, aquacultural, silvicultural, livestock production or grazing activities. This prohibition also includes conversion from one type of these activities to another (e.g., from agricultural to silvicultural).

J. **Other:** Other acts, uses, excavation, or discharges which adversely affect fish or wildlife habitat or the preservation of lands, waterways, or other aquatic resources within the BMP Area.

K. **Recreation Uses.** Recreational use of ATV's, dirt bikes, motorcycles, off-road vehicles or motor vehicles of any kind is prohibited in the BMP Area.

L. **Destruction or alteration of the BMP Area EXCEPT:** _____

(i) Alteration necessary to construct the BMP sites within the BMP Area and associated improvements proposed to be built by LRG, its contractors, its successors, and/or assigns, as approved in the BMP plan approved by the Permit and incorporated into this conservation easement by reference;

(ii) Alteration necessary to ensure the success of the BMP sites including monitoring, reconstruction, maintenance, or repair of the constructed BMP sites, as approved by PennDOT and PADEP;

(iii) Removal of vegetation when approved by PennDOT and PADEP and conducted for removal of noxious or invasive plants, or other purposes under H. above.

5. INSPECTION, ENFORCEMENT AND ACCESS RIGHTS

PennDOT and/or the PADEP, and its/their authorized representatives, agents, contractors, and/or designated surety/sureties shall have the right to enter and go upon the Property, to inspect the BMP Area, take actions necessary to verify compliance with this Declaration and as determined to be necessary by the PennDOT and/or PADEP. When practicable, and except in cases of emergency, such entry shall be upon prior reasonable notice, preferably at least twenty-four (24) hours in advance, to the property owner. The Grantors grant to the PennDOT, and/or the PADEP, a discretionary right to enforce this Declaration in a judicial action against any person(s) or other entity(ies) violating or attempting to violate these restrictive covenants: provided, however, that no violation of these restrictive covenants shall result in a forfeiture or reversion of title. In any enforcement action, an enforcing agency shall be entitled to a complete restoration for any violation, as well as any other judicial remedy such as civil penalties. Nothing herein shall limit the right of the PennDOT to modify, suspend, or revoke the permit.

6. RECORDING AND EXECUTION BY PARTIES

The Grantors agree to record this Declaration in the Land Records of the county or counties where the Property is located and provide the PennDOT with proof of recordation prior to the start of the work authorized by the attached permit. Further, if anticipated activities in the BMP Area are agreed upon for future phases of the site, as spelled out in the "Reserved Rights", the Grantors must submit plans to the PennDOT and PADEP for review and approval prior to any work in the BMP Area.

7. NOTICE OF TRANSFER OF PROPERTY INTERESTS

No transfer of the rights of this Declaration, or of any other property interests pertaining to the BMP Area or the underlying property it occupies shall occur without sixty (60) calendar days prior written notice to the PADEP and PennDOT.

8. MODIFICATIONS

The restrictions contained in this Declaration are required by the LRG the _____ BMP Plan,. There shall be no changes or alterations to the provisions in this Declaration without prior written approval from the appropriate PennDOT.

9. RESERVED RIGHTS

The Grantors and any holders of easements or other property rights for the operation and maintenance of pre-existing or project-related structures or infrastructure such as roads, utilities, drainage ditches, or stormwater facilities that are present on, over or under the BMP Area reserve the right, within the terms and conditions of their permits, their agreements, and the law, to continue with such operation and maintenance. All pre-existing or approved project-related structures or infrastructure shall be shown on the accompanying plat map or approved plan and

attached to this instrument.

A. If the authorized project requires any related or unanticipated infrastructure modifications, utility relocation, drainage ditches, or stormwater controls within the identified BMP Area, or if situations require measures to remove threats to life or property within the identified BMP Area, said activities must be approved in writing by PennDOT subject to terms and conditions set forth in the written approval. Approval is subject to the Corps' sole discretion. If approved, said activities must be identified on amended Exhibits A and B and must be recorded and specifically noted as an "amendment" and copies of the recorded amended Exhibits must be provided to PennDOT and PADEP within 60 days of approval. Approval of said activity by PennDOT is in addition to any Clean Water Act, Section 404 permit, or other authorization, which may be required in order to legally implement said activity. The Grantors accept the obligation to place any other responsible party on reasonable prior notice of their need to request such Corps approval.

10. SEVERABILITY

If any portion of this Declaration, or the application thereof to any person or circumstance, is found to be invalid, the remainder of the provisions of this instrument, or application of such provision to persons or circumstances other than those as to which it is found to be invalid, as the case may be, shall not be affected thereby.

11. MITIGATION

If the work required by a BMP plan, including maintenance or remedial work, under the Department of Army permit and the Pennsylvania Code Title 25 Environmental Protection Chapter 105 Dam Safety and Waterway Management Permit for the authorized project occurs within the BMP Area, then the Grantors or LRG are allowed to construct the BMP working accordance with the authorized BMP plan, a copy of which is incorporated by reference.

COAL RIGHTS NOTICE.

The following notice is given to and accepted by Grantors for the purpose and with the intention of compliance with the requirements of the Pennsylvania Conservation and Preservation Declarations Act. Nothing herein shall imply the presence or absence of workable coal seams or the severance of coal interests from the Property.

NOTICE: THIS DECLARATION MAY IMPAIR THE DEVELOPMENT OF COAL INTERESTS INCLUDING WORKABLE COAL SEAMS OR COAL INTERESTS WHICH HAVE BEEN SEVERED FROM THE PROPERTY.

12. DURATION COVENANT RUNNING WITH THE LAND

THIS CONSERVATION EASEMENT VESTS A SERVITUDE RUNNING WITH THE LAND THAT SHALL REMAIN IN EFFECT IN PERPETUITY. THIS CONSERVATION EASEMENT IS BINDING UPON THE UNDERSIGNED GRANTORS AND, UPON RECORDATION IN THE PUBLIC RECORDS, ALL SUBSEQUENT OWNERS OF THE PROPERTY OR ANY PORTION OF THE PROPERTY THAT

INCLUDES THE CONSERVATION AREA WILL BE BOUND BY ITS TERMS, WHETHER OR NOT SUCH SUBSEQUENT OWNER HAD ACTUAL NOTICE OF THIS CONSERVATION EASEMENT AND WHETHER OR NOT THE DEED OF TRANSFER OF THE PROPERTY SPECIFICALLY REFERS TO THE TRANSFER BEING UNDER AND SUBJECT TO THIS CONSERVATION EASEMENT.

13. MINERAL SUBORDINATION

The Grantor controls the gas and mineral rights of the property. The Grantor agrees to subordinate these rights to the deed restriction for the protection of the area described in Exhibit A and presented on the plan in Exhibit B.

NOTICE TO PARTIES WITH EMINENT DOMAIN AUTHORITY:

14. EMINENT DOMAIN

Exercise of eminent domain by any party ("Condemning Party") to take land held as part of this Site may remove restrictions that the Sponsor, PennDOT, and PADEP intend will protect the BMP Site and preserve the land serving as Compensation for other permitted impacts, in perpetuity. Where the Condemning Party (1) intends to take action(s) that will have impacts on BMP land; and (2) is required to obtain a Corps and/or PADEP permit for such impacts, PADEP have discretion to increase the Condemning Party's wetland and/or stream Compensation requirements, as part of the permitting process, in order to account for the loss of BMP areas."

15. CONSENT OF LENDER AND TRUSTEE

Grantors are the maker of a note dated _____ secured by a deed of trust dated _____ from the Grantor to _____ as trustees and either of whom may act, recorded in the Clerk's office for the benefit of Bank (The "Deed of Trust."). as trustees, join herein for the sole purpose of subordinating the lien, dignity and priority of the Deed of Trust to this Declaration. _____ joins herein for the sole purpose of consenting to the trustee's actions. The Bank subordination agreement is attached as Exhibit C.

IN WITNESS WHEREOF said GRANTOR has executed this Declaration the day and year first above written.

**[COMPANY OR GOVERNMENT
ENTITY NAME OF GRANTOR, IF
APPLICABLE]**

BY _____

:

**[TITLE OF OFFICER OF
GRANTOR ENTITY, OR
GRANTOR'S NAME, IF AN
INDIVIDUAL]**

COMMONWEALTH OF PENNSYLVANIA:

: SS

COUNTY OF [Click here to enter text.](#):

:

On [Click here to enter text.](#), before me, a Notary Public for the Commonwealth aforesaid, personally appeared [Click here to enter text.](#), who acknowledged himself/herself to be **[TITLE OF OFFICER OF GRANTOR ENTITY, OR GRANTOR'S NAME, IF AN INDIVIDUAL]**, and that s/he, as **[USE IF APPLICABLE: an officer of]** the Grantor, being authorized to do so, executed, in my presence, the foregoing Declaration for the purposes herein contained

IN WITNESS WHEREOF, I have set my hand and official seal.

Notary Public
My commission expires:

[SEAL]

COMMONWEALTH OF PENNSYLVANIA:

: SS

COUNTY OF

:

Recorded in the Office for Recording of Deeds in and for aforesaid County, in Record Book
Page

Witness my hand and seal of Office On ____

GRANTOR

GRANTOR

**APPENDIX F –
PUBLIC REVIEW COMMENTS**

Notice of the initial draft Ohio River PRP was published in the Pennsylvania Bulletin on September 24, 2022. The announcement directed the public to its website to review the PRP, and a 30-day comment period was provided. The public-comment period ended on October 24, 2022.

No comments were received during the Public Comment Period.

**APPENDIX G -
BANK EROSION HAZARD INDEX (BEHI) AND
NEAR BANK STRESS (NBS) RESULTS
AND CONTRIBUTING WATERSHED MAPS**

BEHI Summary Table

Project Name		Deer Creek							
Feature	Length, ft (Bank or deposition)	Height, ft (Bank or Headcut)	BEHI Rating	NBS Rating	Predicted Rate of Bank Erosion (ft/year)	Predicted Erosion Amount (ft ³ /year)	Predicted Erosion Amount (tons/year)	Predicted Erosion Rate (tons/year/ft)	Comments
Feature I.D. (Bank., Headcut or Deposition I.D.)									
1	216.0	0.8	Moderate	High	0.80	144.00	6.74	0.03	Right Bank
1	216.0	0.5	Low	High	0.16	17.28	0.81	0.00	Left Bank
2	230.0	6.5	Very High	Moderate	0.64	956.80	44.80	0.20	Left Bank
2	230.0	0.8	Moderate	Moderate	0.30	57.50	2.69	0.01	Right Bank
3	182.0	2.5	High	Very High	1.75	796.25	37.28	0.21	Left Bank
3	182.0	8.0	High	Very High	1.75	2548.00	119.30	0.67	Right Bank
4	129.0	2.5	High	High	1.00	322.50	15.10	0.12	Right Bank
4	129.0	2.5	High	High	1.00	322.50	15.10	0.12	Left Bank
5	231.0	3.7	High	High	1.00	847.00	39.66	0.18	Right Bank
5	231.0	3.7	High	High	1.00	847.00	39.66	0.18	Left Bank
TOTAL OF ALL GRIDS	1976.0	N/A	N/A	N/A	9.4	6858.8	321.1	1.7	

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:		25.95				
Reach:		Comments:	R							Moderate				
Location:	1	Bank Length	216					Total Score Values:	Very Low	Low	Moderate	High	Very High	Extreme
Date:	8/16/2022								5-10	10-20	20-30	30-40	40-45	45-50

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
0.83	0.33	2.50	8.57	Very High	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
0.42	0.83	0.50	3.90	Low	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
60.00	0.50	30.00	5.90	Moderate	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
15.00			1.68	Very Low	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
30.00			5.90	Moderate	
			Adjustment		Notes
Bank Materials					
			Adjustment		Notes
Bank Stratification					
TOTAL SCORE			25.95		

		Bank Erosion Potential						
Erodibility Variables			Very Low	Low	Moderate	High	Very High	Extreme
	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
Index		1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10	
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
Silt / Clay		No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)															
Stream: Deer Creek					Location: Independence Excavation										
Station:			Stream Type:			Valley Type:									
Observers: AT, MM			Date: 8-16-22												
Methods for Estimating Near-Bank Stress (NBS)															
(1)	Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance								
(2)	Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction								
(3)	Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction								
(4)	Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction								
(5)	Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction								
(6)	Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction								
(7)	Velocity profiles / Isovels / Velocity gradient					Level IV	Validation								
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....					NBS = High / Very High								
		Extensive deposition (continuous, cross-channel).....					NBS = Extreme								
		Chute cutoffs, down-valley meander migration, converging flow.....					NBS = Extreme								
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)	<table border="1"> <tr> <td>Method</td> <td>1</td> </tr> <tr> <td colspan="2">Dominant Near-Bank Stress</td> </tr> <tr> <td colspan="2">High</td> </tr> </table>				Method	1	Dominant Near-Bank Stress		High	
		Method	1												
	Dominant Near-Bank Stress														
	High														
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)										
(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)											
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)										
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft^2)	Mean Depth d_{bkf} (ft)					Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft^2)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)		
Level IV	(7)	Velocity Gradient (ft / sec / ft)		Near-Bank Stress (NBS)											
Converting Values to a Near-Bank Stress (NBS) Rating															
Near-Bank Stress (NBS) ratings	Method number														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)								
Very Low	N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50								
Low	N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00								
Moderate	N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60								
High	See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00								
Very High	(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40								
Extreme	Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40								
Overall Near-Bank Stress (NBS) rating						High									

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:		19.21					
Reach:		Comments:	1							Low					
Location:		Bank Length	216					Total Score Values:	Very Low	Low	Moderate	High	Very High	Extreme	
Date:	8/16/2022								5-10	10-20	20-30	30-40	40-45	45-50	

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
0.50	0.33	1.50	5.90	Moderate	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
5.00	0.50	10.00	1.00	Very Low	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
5.00	10.00	50.00	4.32	Moderate	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
10.00			1.45	Very Low	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
25.00			6.54	High	
			Adjustment		Notes
Bank Materials					
			Adjustment		Notes
Bank Stratification					
TOTAL SCORE			19.21		

		Bank Erosion Potential						
Erodibility Variables			Very Low	Low	Moderate	High	Very High	Extreme
	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
Index		1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10	
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
	Silt / Clay	No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)									
Stream: Deer Creek					Location: Independence Excavation				
Station:			Stream Type:			Valley Type:			
Observers: AT, MM			Date: 8-16-22						
Methods for Estimating Near-Bank Stress (NBS)									
(1) Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance			
(2) Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction			
(3) Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction			
(4) Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction			
(5) Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction			
(6) Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction			
(7) Velocity profiles / Isovels / Velocity gradient					Level IV	Validation			
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....			NBS = High / Very High				
		Extensive deposition (continuous, cross-channel).....			NBS = Extreme				
		Chute cutoffs, down-valley meander migration, converging flow.....			NBS = Extreme				
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)				
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)				
	(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)				
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)				
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft ²)	Mean Depth d_{bkf} (ft)	Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft ²)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)
Level IV	(7)	Velocity Gradient (ft / sec / ft)		Near-Bank Stress (NBS)					
Converting Values to a Near-Bank Stress (NBS) Rating									
Near-Bank Stress (NBS) ratings		Method number							
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Very Low		N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50	
Low		N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00	
Moderate		N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60	
High		See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00	
Very High		(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40	
Extreme		Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40	
Overall Near-Bank Stress (NBS) rating							High		

Method	1
Dominant Near-Bank Stress	
High	

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:	43.15						
Reach:		Comments:	1						Very High						
Location:		2	Bank Length	230					Total Score Values:	Very Low	Low	Moderate	High	Very High	Extreme
Date:	8/16/2022									5-10	10-20	20-30	30-40	40-45	45-50

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
6.50	0.33	19.50	10.00	Extreme	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
2.00	6.50	0.31	5.82	Moderate	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
30.00	0.31	9.23	8.53	Very High	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
90.00			7.90	High	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
30.00			5.90	Moderate	
		Adjustment			Notes
Bank Materials					
		Adjustment			Notes
Bank Stratification		5.00			undercutting
TOTAL SCORE			43.15		

		Bank Erosion Potential						
Erodibility Variables		Very Low	Low	Moderate	High	Very High	Extreme	
	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
Index		1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10	
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
	Silt / Clay	No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)									
Stream: Deer Creek					Location: Independence Excavation				
Station:			Stream Type:			Valley Type:			
Observers: AT, MM			Date: 8-16-22						
Methods for Estimating Near-Bank Stress (NBS)									
(1) Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance			
(2) Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction			
(3) Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction			
(4) Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction			
(5) Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction			
(6) Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction			
(7) Velocity profiles / Isovels / Velocity gradient					Level IV	Validation			
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....			NBS = High / Very High				
		Extensive deposition (continuous, cross-channel).....			NBS = Extreme				
		Chute cutoffs, down-valley meander migration, converging flow.....			NBS = Extreme				
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)				
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)				
	(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)				
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)				
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft ²)	Mean Depth d_{bkf} (ft)	Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft ²)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)
Level IV	(7)	Velocity Gradient (ft / sec / ft)		Near-Bank Stress (NBS)					
Converting Values to a Near-Bank Stress (NBS) Rating									
Near-Bank Stress (NBS) ratings		Method number							
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Very Low		N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50	
Low		N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00	
Moderate		N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60	
High		See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00	
Very High		(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40	
Extreme		Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40	
Overall Near-Bank Stress (NBS) rating							Moderate		

Method	1
Dominant Near-Bank Stress	
Moderate	

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:	25.95						
Reach:		Comments:	r						Moderate						
Location:		2	Bank Length	230					Total Score Values:	Very Low	Low	Moderate	High	Very High	Extreme
Date:	8/16/2022									5-10	10-20	20-30	30-40	40-45	45-50

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
0.83	0.33	2.50	8.57	Very High	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
0.42	0.83	0.50	3.90	Low	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
60.00	0.50	30.00	5.90	Moderate	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
15.00			1.68	Very Low	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
30.00			5.90	Moderate	
			Adjustment		Notes
Bank Materials					
			Adjustment		Notes
Bank Stratification					
TOTAL SCORE			25.95		

		Bank Erosion Potential						
Erodibility Variables		Very Low	Low	Moderate	High	Very High	Extreme	
	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
Index		1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10	
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
	Silt / Clay	No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)															
Stream: Deer Creek					Location: Independence Excavation										
Station:			Stream Type:			Valley Type:									
Observers: AT, MM			Date: 8-16-22												
Methods for Estimating Near-Bank Stress (NBS)															
(1) Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance									
(2) Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction									
(3) Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction									
(4) Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction									
(5) Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction									
(6) Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction									
(7) Velocity profiles / Isovels / Velocity gradient					Level IV	Validation									
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....			NBS = High / Very High										
		Extensive deposition (continuous, cross-channel).....			NBS = Extreme										
		Chute cutoffs, down-valley meander migration, converging flow.....			NBS = Extreme										
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)	<table border="1" style="margin: auto;"> <tr><td>Method</td><td>1</td></tr> <tr><td colspan="2">Dominant Near-Bank Stress</td></tr> <tr><td colspan="2">Moderate</td></tr> </table>				Method	1	Dominant Near-Bank Stress		Moderate	
		Method	1												
	Dominant Near-Bank Stress														
	Moderate														
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)										
(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)											
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)										
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft^2)	Mean Depth d_{bkf} (ft)	Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft^2)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)						
Level IV	(7)	Velocity Gradient (ft / sec / ft)		Near-Bank Stress (NBS)											
Converting Values to a Near-Bank Stress (NBS) Rating															
Near-Bank Stress (NBS) ratings		Method number													
		(1)	(2)	(3)	(4)	(5)	(6)	(7)							
Very Low		N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50							
Low		N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00							
Moderate		N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60							
High		See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00							
Very High		(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40							
Extreme		Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40							
Overall Near-Bank Stress (NBS) rating							Moderate								

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:	37.52					
Reach:		Comments:	1						High					
Location:		Bank Length	182					Total Score Values:	Very Low	Low	Moderate	High	Very High	Extreme
Date:	8/16/2022								5-10	10-20	20-30	30-40	40-45	45-50

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
2.50	0.33	7.50	10.00	Extreme	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
0.67	2.50	0.27	6.32	High	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
70.00	0.27	18.67	7.40	High	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
90.00			7.90	High	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
30.00			5.90	Moderate	
		Adjustment			Notes
Bank Materials					
		Adjustment			Notes
Bank Stratification					
TOTAL SCORE			37.52		

Bank Erosion Potential								
		Very Low	Low	Moderate	High	Very High	Extreme	
Erodibility Variables	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
	Silt / Clay	No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)															
Stream: Deer Creek					Location: Independence Excavation										
Station:			Stream Type:			Valley Type:									
Observers: AT, MM			Date: 8-16-22												
Methods for Estimating Near-Bank Stress (NBS)															
(1) Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance									
(2) Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction									
(3) Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction									
(4) Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction									
(5) Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction									
(6) Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction									
(7) Velocity profiles / Isovels / Velocity gradient					Level IV	Validation									
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....			NBS = High / Very High										
		Extensive deposition (continuous, cross-channel).....			NBS = Extreme										
		Chute cutoffs, down-valley meander migration, converging flow.....			NBS = Extreme										
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)	<table border="1" style="margin: auto;"> <tr><td>Method</td><td>1</td></tr> <tr><td colspan="2">Dominant Near-Bank Stress</td></tr> <tr><td colspan="2">Very High</td></tr> </table>				Method	1	Dominant Near-Bank Stress		Very High	
Method	1														
Dominant Near-Bank Stress															
Very High															
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)										
	(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)										
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)										
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft ²)	Mean Depth d_{bkf} (ft)	Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft ²)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)						
Level IV	(7)	Velocity Gradient (ft / sec / ft)			Near-Bank Stress (NBS)										
Converting Values to a Near-Bank Stress (NBS) Rating															
Near-Bank Stress (NBS) ratings		Method number													
		(1)	(2)	(3)	(4)	(5)	(6)	(7)							
Very Low		N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50							
Low		N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00							
Moderate		N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60							
High		See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00							
Very High		(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40							
Extreme		Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40							
Overall Near-Bank Stress (NBS) rating							Very High								

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:	34.25					
Reach:		Comments:	r						High					
Location:		Bank Length	182					Total Score Values:	Very Low	Low	Moderate	High	Very High	Extreme
Date:	8/16/2022								5-10	10-20	20-30	30-40	40-45	45-50

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
8.00	0.33	24.00	10.00	Extreme	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
4.50	8.00	0.56	3.60	Low	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
30.00	0.56	16.88	7.65	High	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
90.00			7.90	High	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
40.00			5.11	Moderate	
			Adjustment		Notes
Bank Materials					
			Adjustment		Notes
Bank Stratification					
TOTAL SCORE			34.25		

		Bank Erosion Potential						
Erodibility Variables			Very Low	Low	Moderate	High	Very High	Extreme
	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
Index		1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10	
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
	Silt / Clay	No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)															
Stream: Deer Creek					Location: Independence Excavation										
Station:			Stream Type:			Valley Type:									
Observers: AT, MM			Date: 8-16-22												
Methods for Estimating Near-Bank Stress (NBS)															
(1)	Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance								
(2)	Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction								
(3)	Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction								
(4)	Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction								
(5)	Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction								
(6)	Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction								
(7)	Velocity profiles / Isovels / Velocity gradient					Level IV	Validation								
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....					NBS = High / Very High								
		Extensive deposition (continuous, cross-channel).....					NBS = Extreme								
		Chute cutoffs, down-valley meander migration, converging flow.....					NBS = Extreme								
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)	<table border="1"> <tr> <td>Method</td> <td>1</td> </tr> <tr> <td colspan="2">Dominant Near-Bank Stress</td> </tr> <tr> <td colspan="2">Very High</td> </tr> </table>				Method	1	Dominant Near-Bank Stress		Very High	
		Method	1												
	Dominant Near-Bank Stress														
	Very High														
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)										
(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)											
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)										
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft^2)	Mean Depth d_{bkf} (ft)	Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft^2)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)						
Level IV	(7)	Velocity Gradient (ft / sec / ft)			Near-Bank Stress (NBS)										
Converting Values to a Near-Bank Stress (NBS) Rating															
Near-Bank Stress (NBS) ratings	Method number														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)								
Very Low	N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50								
Low	N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00								
Moderate	N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60								
High	See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00								
Very High	(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40								
Extreme	Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40								
Overall Near-Bank Stress (NBS) rating						Very High									

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:	32.24					
Reach:		Comments:	r						High					
Location:		Bank Length	129					Total Score Values:	Very Low	Low	Moderate	High	Very High	Extreme
Date:	8/16/2022								5-10	10-20	20-30	30-40	40-45	45-50

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
2.50	0.33	7.50	10.00	Extreme	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
1.00	2.50	0.40	4.90	Moderate	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
30.00	0.40	12.00	8.22	Very High	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
20.00			1.90	Very Low	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
20.00			7.22	High	
			Adjustment		Notes
Bank Materials					
			Adjustment		Notes
Bank Stratification					
TOTAL SCORE			32.24		

Bank Erosion Potential								
Erodibility Variables			Very Low	Low	Moderate	High	Very High	Extreme
	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
Index		1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10	
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
	Silt / Clay	No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)															
Stream: Deer Creek					Location: Independence Excavation										
Station:			Stream Type:			Valley Type:									
Observers: AT, MM			Date: 8-16-22												
Methods for Estimating Near-Bank Stress (NBS)															
(1) Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance									
(2) Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction									
(3) Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction									
(4) Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction									
(5) Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction									
(6) Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction									
(7) Velocity profiles / Isovels / Velocity gradient					Level IV	Validation									
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....			NBS = High / Very High										
		Extensive deposition (continuous, cross-channel).....			NBS = Extreme										
		Chute cutoffs, down-valley meander migration, converging flow.....			NBS = Extreme										
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)	<table border="1" style="margin: auto;"> <tr><td>Method</td><td>1</td></tr> <tr><td colspan="2">Dominant Near-Bank Stress</td></tr> <tr><td colspan="2">High</td></tr> </table>				Method	1	Dominant Near-Bank Stress		High	
	Method	1													
	Dominant Near-Bank Stress														
	High														
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)										
(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)											
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)										
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft ²)	Mean Depth d_{bkf} (ft)	Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft ²)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)						
Level IV	(7)	Velocity Gradient (ft / sec / ft)			Near-Bank Stress (NBS)										
Converting Values to a Near-Bank Stress (NBS) Rating															
Near-Bank Stress (NBS) ratings		Method number													
		(1)	(2)	(3)	(4)	(5)	(6)	(7)							
Very Low		N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50							
Low		N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00							
Moderate		N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60							
High		See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00							
Very High		(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40							
Extreme		Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40							
Overall Near-Bank Stress (NBS) rating							High								

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:	35.67					
Reach:		Comments:	1						High					
Location:		Bank Length	129					Total Score Values:	Very Low	Low	Moderate	High	Very High	Extreme
Date:	8/16/2022								5-10	10-20	20-30	30-40	40-45	45-50

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
2.50	0.33	7.50	10.00	Extreme	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
1.00	2.50	0.40	4.90	Moderate	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
40.00	0.40	16.00	7.76	High	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
90.00			7.90	High	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
40.00			5.11	Moderate	
			Adjustment		Notes
Bank Materials					
			Adjustment		Notes
Bank Stratification					
TOTAL SCORE			35.67		

Bank Erosion Potential								
Erodibility Variables			Very Low	Low	Moderate	High	Very High	Extreme
	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
Index		1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10	
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
	Silt / Clay	No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)															
Stream: Deer Creek					Location: Independence Excavation										
Station:			Stream Type:			Valley Type:									
Observers: AT, MM			Date: 8-16-22												
Methods for Estimating Near-Bank Stress (NBS)															
(1)	Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance								
(2)	Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction								
(3)	Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction								
(4)	Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction								
(5)	Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction								
(6)	Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction								
(7)	Velocity profiles / Isovels / Velocity gradient					Level IV	Validation								
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....					NBS = High / Very High								
		Extensive deposition (continuous, cross-channel).....					NBS = Extreme								
		Chute cutoffs, down-valley meander migration, converging flow.....					NBS = Extreme								
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)	<table border="1"> <tr> <td>Method</td> <td>1</td> </tr> <tr> <td colspan="2">Dominant Near-Bank Stress</td> </tr> <tr> <td colspan="2">High</td> </tr> </table>				Method	1	Dominant Near-Bank Stress		High	
		Method	1												
	Dominant Near-Bank Stress														
	High														
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)										
(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)											
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)										
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft^2)	Mean Depth d_{bkf} (ft)	Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft^2)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)						
Level IV	(7)	Velocity Gradient (ft / sec / ft)			Near-Bank Stress (NBS)										
Converting Values to a Near-Bank Stress (NBS) Rating															
Near-Bank Stress (NBS) ratings	Method number														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)								
Very Low	N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50								
Low	N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00								
Moderate	N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60								
High	See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00								
Very High	(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40								
Extreme	Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40								
Overall Near-Bank Stress (NBS) rating						High									

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:	34.40						
Reach:		Comments:	r						High						
Location:	5	Bank Length	231						Total Score	Very Low	Low	Moderate	High	Very High	Extreme
Date:	8/16/2022								Values:	5-10	10-20	20-30	30-40	40-45	45-50

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
3.67	0.33	11.00	10.00	Extreme	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
2.00	3.67	0.55	3.68	Low	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
30.00	0.55	16.36	7.71	High	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
90.00			7.90	High	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
40.00			5.11	Moderate	
			Adjustment		Notes
Bank Materials					
			Adjustment		Notes
Bank Stratification					
TOTAL SCORE			34.40		

Bank Erosion Potential								
Erodibility Variables		Very Low	Low	Moderate	High	Very High	Extreme	
	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
Index		1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10	
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
	Silt / Clay	No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)															
Stream: Deer Creek					Location: Independence Excavation										
Station:			Stream Type:			Valley Type:									
Observers: AT, MM			Date: 8-16-22												
Methods for Estimating Near-Bank Stress (NBS)															
(1) Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance									
(2) Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction									
(3) Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction									
(4) Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction									
(5) Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction									
(6) Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction									
(7) Velocity profiles / Isovels / Velocity gradient					Level IV	Validation									
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....			NBS = High / Very High										
		Extensive deposition (continuous, cross-channel).....			NBS = Extreme										
		Chute cutoffs, down-valley meander migration, converging flow.....			NBS = Extreme										
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)	<table border="1" style="margin: auto;"> <tr><td>Method</td><td>1</td></tr> <tr><td colspan="2">Dominant Near-Bank Stress</td></tr> <tr><td colspan="2">High</td></tr> </table>				Method	1	Dominant Near-Bank Stress		High	
	Method	1													
	Dominant Near-Bank Stress														
	High														
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)										
(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)											
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)										
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft ²)	Mean Depth d_{bkf} (ft)	Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft ²)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)						
Level IV	(7)	Velocity Gradient (ft / sec / ft)		Near-Bank Stress (NBS)											
Converting Values to a Near-Bank Stress (NBS) Rating															
Near-Bank Stress (NBS) ratings		Method number													
		(1)	(2)	(3)	(4)	(5)	(6)	(7)							
Very Low		N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50							
Low		N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00							
Moderate		N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60							
High		See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00							
Very High		(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40							
Extreme		Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40							
Overall Near-Bank Stress (NBS) rating							High								

USFWS - SHARP
STREAM NAME - REACH IDENTIFICATION

BANK EROSION HAZARD INDEX

Stream:	Deer Creek	Observer(s):	AT, MM	Data:	AT	QA/QC:		Total Score:	34.40					
Reach:		Comments:	1						High					
Location:		Bank Length	231					Total Score Values:	Very Low	Low	Moderate	High	Very High	Extreme
Date:	8/16/2022								5-10	10-20	20-30	30-40	40-45	45-50

Erodibility Variables					
Bank Height / Bankfull Height Ratio					
Bank Height	Bankfull Height	Value	Index	Bank Erosion Potential	Notes
3.67	0.33	11.00	10.00	Extreme	
Root Depth / Bank Height Ratio					
Root Depth	Bank Height	Value	Index	Bank Erosion Potential	Notes
2.00	3.67	0.55	3.68	Low	
Weighted Root Density					
Root Density (%)	Root Depth / Bank Height	Value	Index	Bank Erosion Potential	Notes
30.00	0.55	16.36	7.71	High	
Bank Angle					
Bank Angle (°)			Index	Bank Erosion Potential	Notes
90.00			7.90	High	
Surface Protection					
Surface Protection (%)			Index	Bank Erosion Potential	Notes
40.00			5.11	Moderate	
			Adjustment		Notes
Bank Materials					
			Adjustment		Notes
Bank Stratification					
TOTAL SCORE			34.40		

Bank Erosion Potential								
Erodibility Variables			Very Low	Low	Moderate	High	Very High	Extreme
	Bank Height / Bankfull Height	Value	1.00-1.10	1.11-1.19	1.20-1.50	1.60-2.00	2.10-2.80	>2.80
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Root Depth / Bank Height	Value	1.00-0.90	0.89-0.50	0.49-0.30	0.29-0.15	0.14-0.05	<0.05
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Weighted Root Density	Value	100-80	79-55	54-30	29-15	14-5	<5
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Bank Angle	Value	0-20	21-60	61-80	81-90	91-119	>119
		Index	1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10
	Surface Protection	Value	100-80	79-55	54-30	29-15	14-10	<10
Index		1.0-1.9	2.0-3.9	4.0-5.9	6.0-7.9	8.0-9.0	10	
Adjustments								
Bank Material	Bedrock	Bedrock banks have a very low erosion potential.						
	Boulders	Boulder banks have a low erosion potential.						
	Cobble	Subtract 10 points. No adjustment if sand/gravel compose greater than 50% of bank.						
	Clay/Silt Loam	Add 5 points.						
	Gravel	Add 5-10 points depending on percentage of bank material composed of sand.						
	Sand	Add 10 points.						
	Silt / Clay	No adjustment.						
Stratification								
Add 5-10 points depending on position of unstable layers in relation to bankfull stage.								

Worksheet 3-12. Various field methods of estimating Near-Bank Stress (NBS) risk ratings to calculate erosion rate.

Estimating Near-Bank Stress (NBS)															
Stream: Deer Creek					Location: Independence Excavation										
Station:			Stream Type:			Valley Type:									
Observers: AT, MM			Date: 8-16-22												
Methods for Estimating Near-Bank Stress (NBS)															
(1) Channel pattern, transverse bar or split channel/central bar creating NBS					Level I	Reconnaissance									
(2) Ratio of radius of curvature to bankfull width (R_c / W_{bkf})					Level II	General prediction									
(3) Ratio of pool slope to average water surface slope (S_p / S)					Level II	General prediction									
(4) Ratio of pool slope to riffle slope (S_p / S_{rif})					Level II	General prediction									
(5) Ratio of near-bank maximum depth to bankfull mean depth (d_{nb} / d_{bkf})					Level III	Detailed prediction									
(6) Ratio of near-bank shear stress to bankfull shear stress (τ_{nb} / τ_{bkf})					Level III	Detailed prediction									
(7) Velocity profiles / Isovels / Velocity gradient					Level IV	Validation									
Level I	(1)	Transverse and/or central bars-short and/or discontinuous.....			NBS = High / Very High										
		Extensive deposition (continuous, cross-channel).....			NBS = Extreme										
		Chute cutoffs, down-valley meander migration, converging flow.....			NBS = Extreme										
Level II	(2)	Radius of Curvature R_c (ft)	Bankfull Width W_{bkf} (ft)	Ratio R_c / W_{bkf}	Near-Bank Stress (NBS)	<table border="1" style="margin: auto;"> <tr><td>Method</td><td>1</td></tr> <tr><td colspan="2">Dominant Near-Bank Stress</td></tr> <tr><td colspan="2">High</td></tr> </table>				Method	1	Dominant Near-Bank Stress		High	
	Method	1													
	Dominant Near-Bank Stress														
	High														
	(3)	Pool Slope S_p	Average Slope S	Ratio S_p / S	Near-Bank Stress (NBS)										
(4)	Pool Slope S_p	Riffle Slope S_{rif}	Ratio S_p / S_{rif}	Near-Bank Stress (NBS)											
Level III	(5)	Near-Bank Max Depth d_{nb} (ft)	Mean Depth d_{bkf} (ft)	Ratio d_{nb} / d_{bkf}	Near-Bank Stress (NBS)										
	(6)	Near-Bank Max Depth d_{nb} (ft)	Near-Bank Slope S_{nb}	Near-Bank Shear Stress τ_{nb} (lb/ft ²)	Mean Depth d_{bkf} (ft)	Average Slope S	Bankfull Shear Stress τ_{bkf} (lb/ft ²)	Ratio τ_{nb} / τ_{bkf}	Near-Bank Stress (NBS)						
Level IV	(7)	Velocity Gradient (ft / sec / ft)			Near-Bank Stress (NBS)										
Converting Values to a Near-Bank Stress (NBS) Rating															
Near-Bank Stress (NBS) ratings		Method number													
		(1)	(2)	(3)	(4)	(5)	(6)	(7)							
Very Low		N / A	> 3.00	< 0.20	< 0.40	< 1.00	< 0.80	< 0.50							
Low		N / A	2.21 – 3.00	0.20 – 0.40	0.41 – 0.60	1.00 – 1.50	0.80 – 1.05	0.50 – 1.00							
Moderate		N / A	2.01 – 2.20	0.41 – 0.60	0.61 – 0.80	1.51 – 1.80	1.06 – 1.14	1.01 – 1.60							
High		See	1.81 – 2.00	0.61 – 0.80	0.81 – 1.00	1.81 – 2.50	1.15 – 1.19	1.61 – 2.00							
Very High		(1)	1.50 – 1.80	0.81 – 1.00	1.01 – 1.20	2.51 – 3.00	1.20 – 1.60	2.01 – 2.40							
Extreme		Above	< 1.50	> 1.00	> 1.20	> 3.00	> 1.60	> 2.40							
Overall Near-Bank Stress (NBS) rating							High								



Photo 1



Photo 2



Photo 3

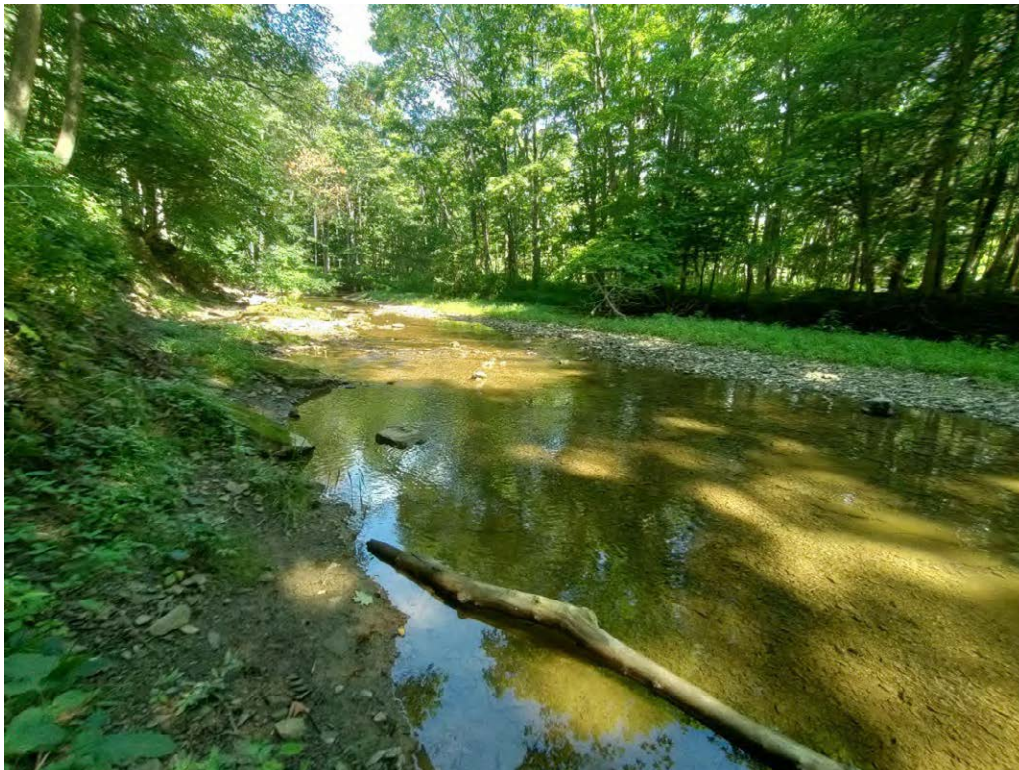


Photo 4



Photo 5



Photo 6

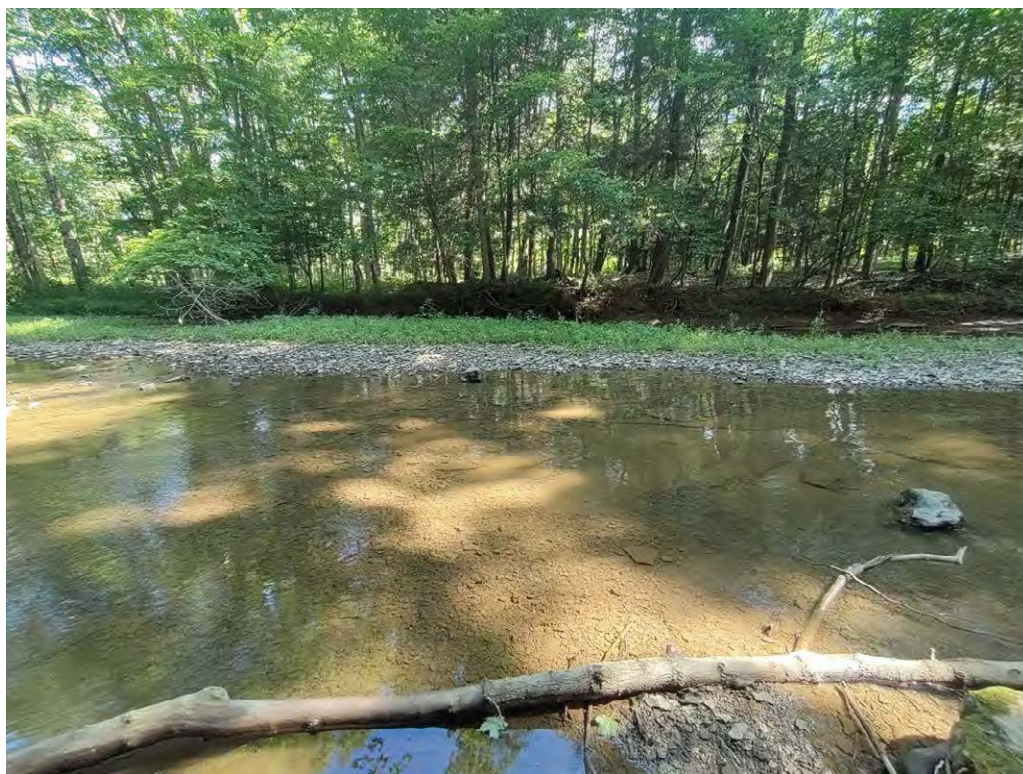


Photo Location 7



Photo 8



Photo 9



Photo Location 10



Photo Location 11

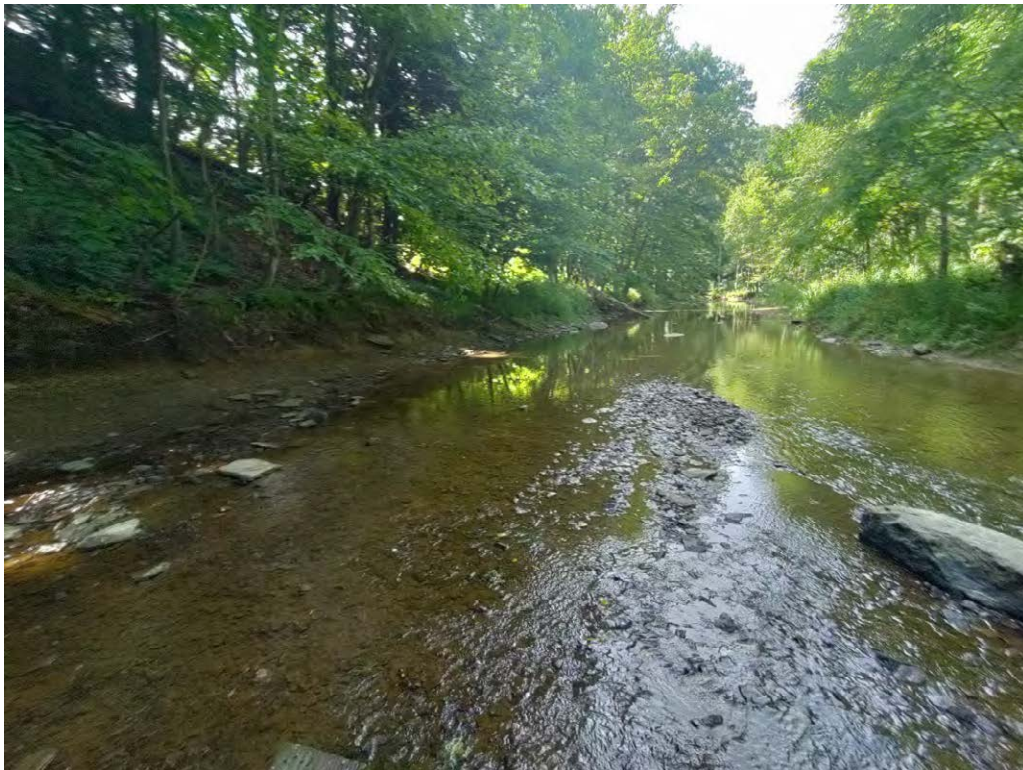


Photo 12



Photo Location 13



Photo Location 14



Photo 15



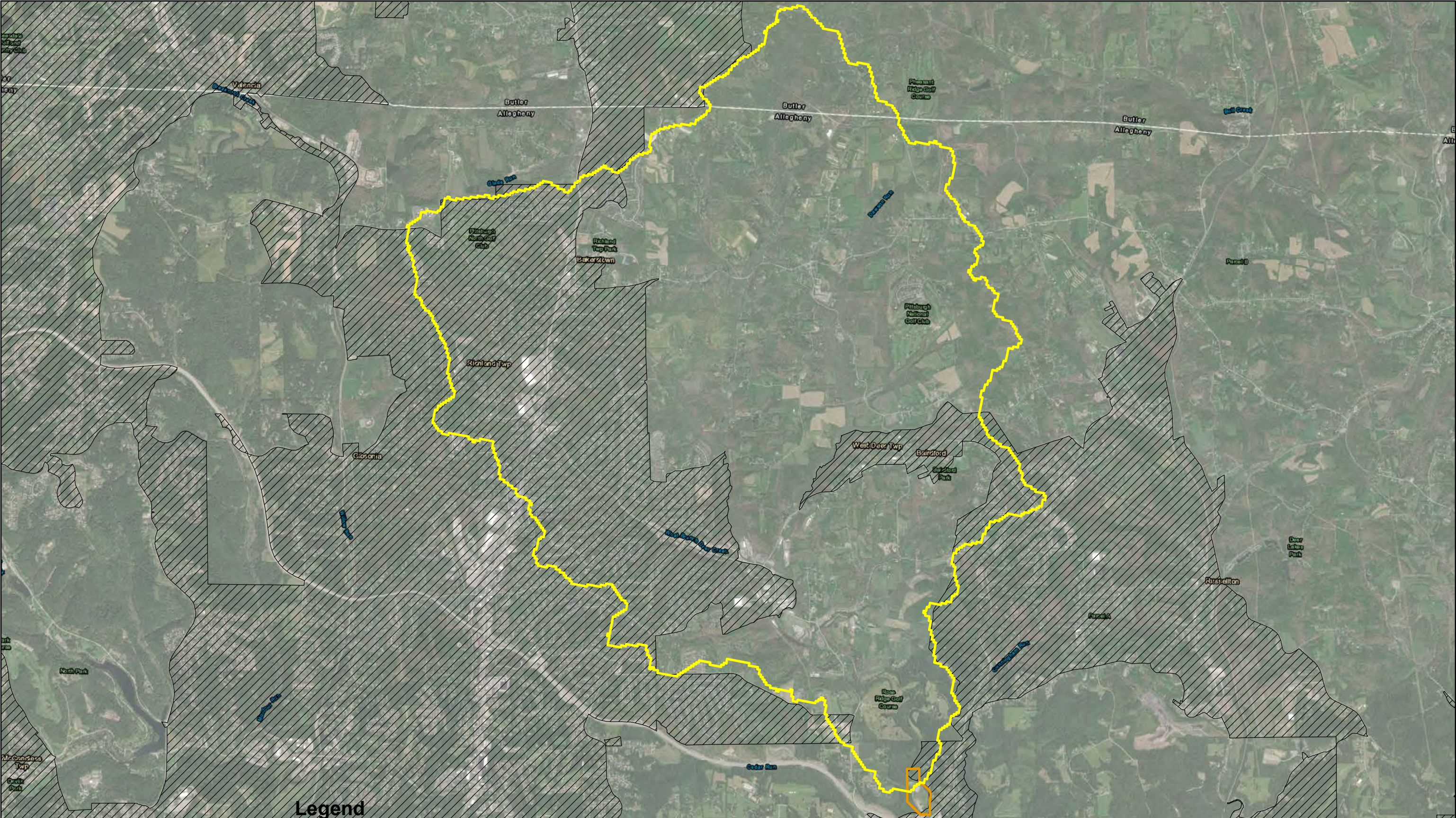
Photo Location 16






Photo 17



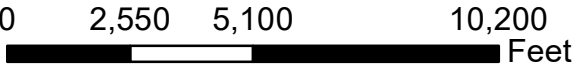
Photo Location 18



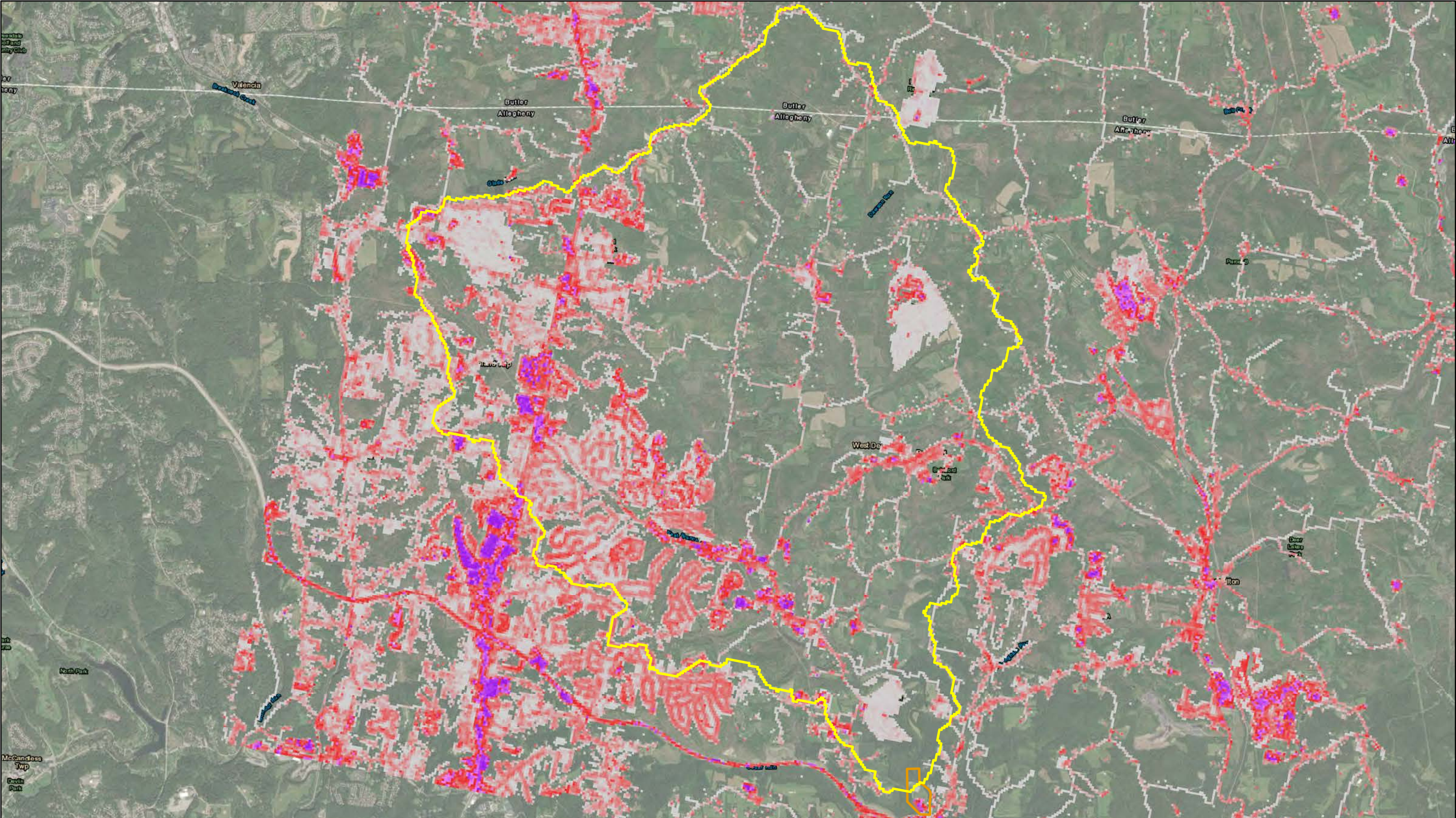
Legend

-  Delineated Watershed
-  Project Boundary
-  Urbanized Area

Deer Creek Watershed
Deer Creek Stream Restoration Site
Indiana Township, Allegheny County






Hunt Valley Environmental
632 Hunt Valley Circle
New Kensington, PA 15068



Hunt Valley Environmental
632 Hunt Valley Circle
New Kensington, PA 15068

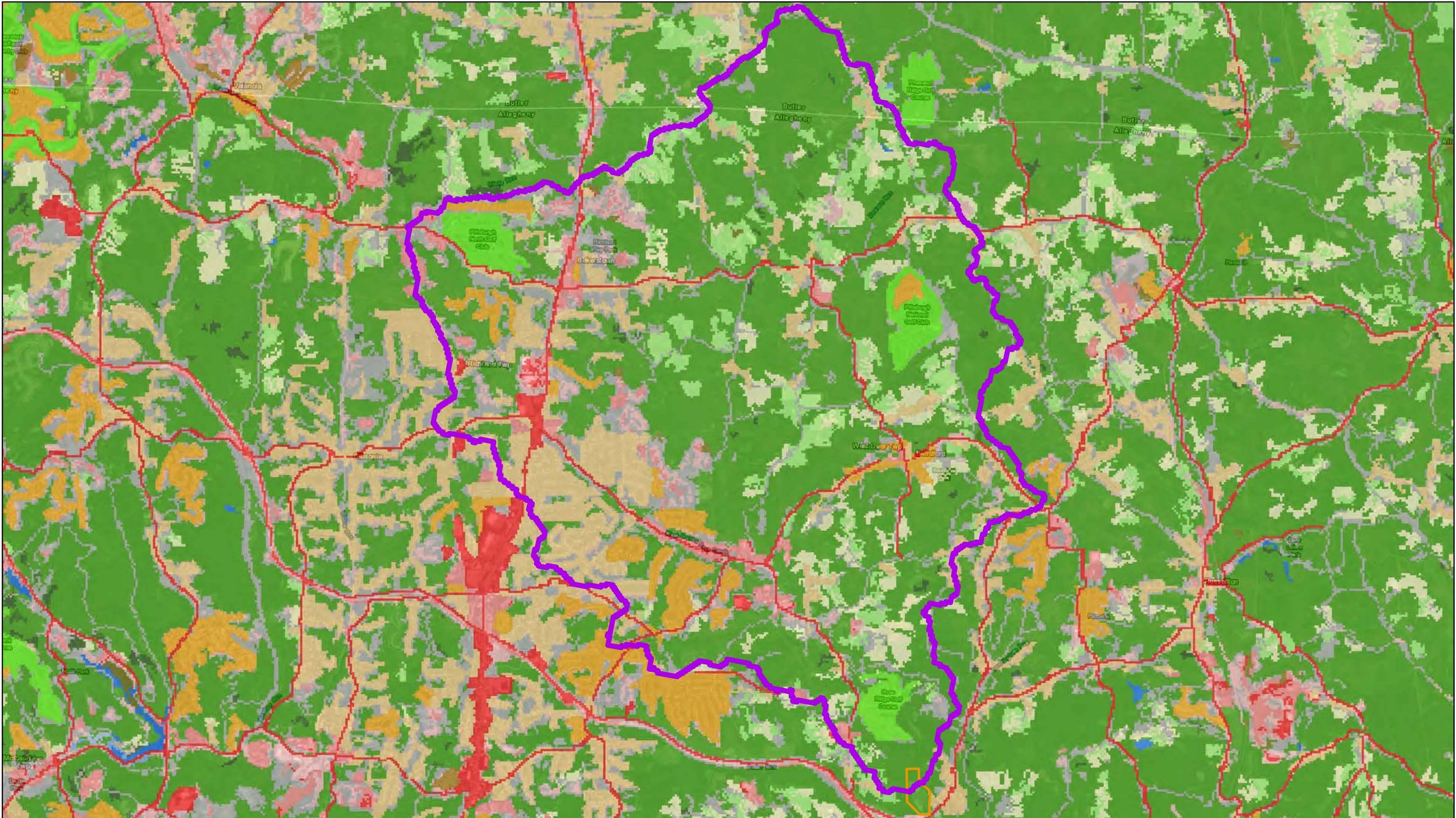
Legend

-  Delineated Watershed
-  Project Boundary
-  Impervious Surface 0-100%

Deer Creek Watershed Impervious Surfaces
Deer Creek Stream Restoration Site
Indiana Township, Alleghent County

0 2,550 5,100 10,200
Feet





Hunt Valley Environmental
632 Hunt Valley Circle
New Kensington, PA 15068

Legend		
Water	Wooded Wetland	Medium Density Residential
Low Density Mixed	Emergent Wetland	High Density Residential
High Density Mixed	Conif Forest	Medium Density Mixed
Mixed Forest	Disturbed	Open Land
Decid Forest	Turf Grass/Golf courses	Delineated Watershed
Low Density Residential	Project Boundary	

Deer Creek Watershed Land Usage Cover
Deer Creek Stream Restoration Site
Indiana Township, Alleghent County

