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Town of Pendleton

Water Quality Characterization Report
January 2023

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TOWN OF PENDLETON
WATER QUALITY CHARACTERIZATION REPORT
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WATER QUALITY CHARACTERIZATION REPORT

1 Introduction

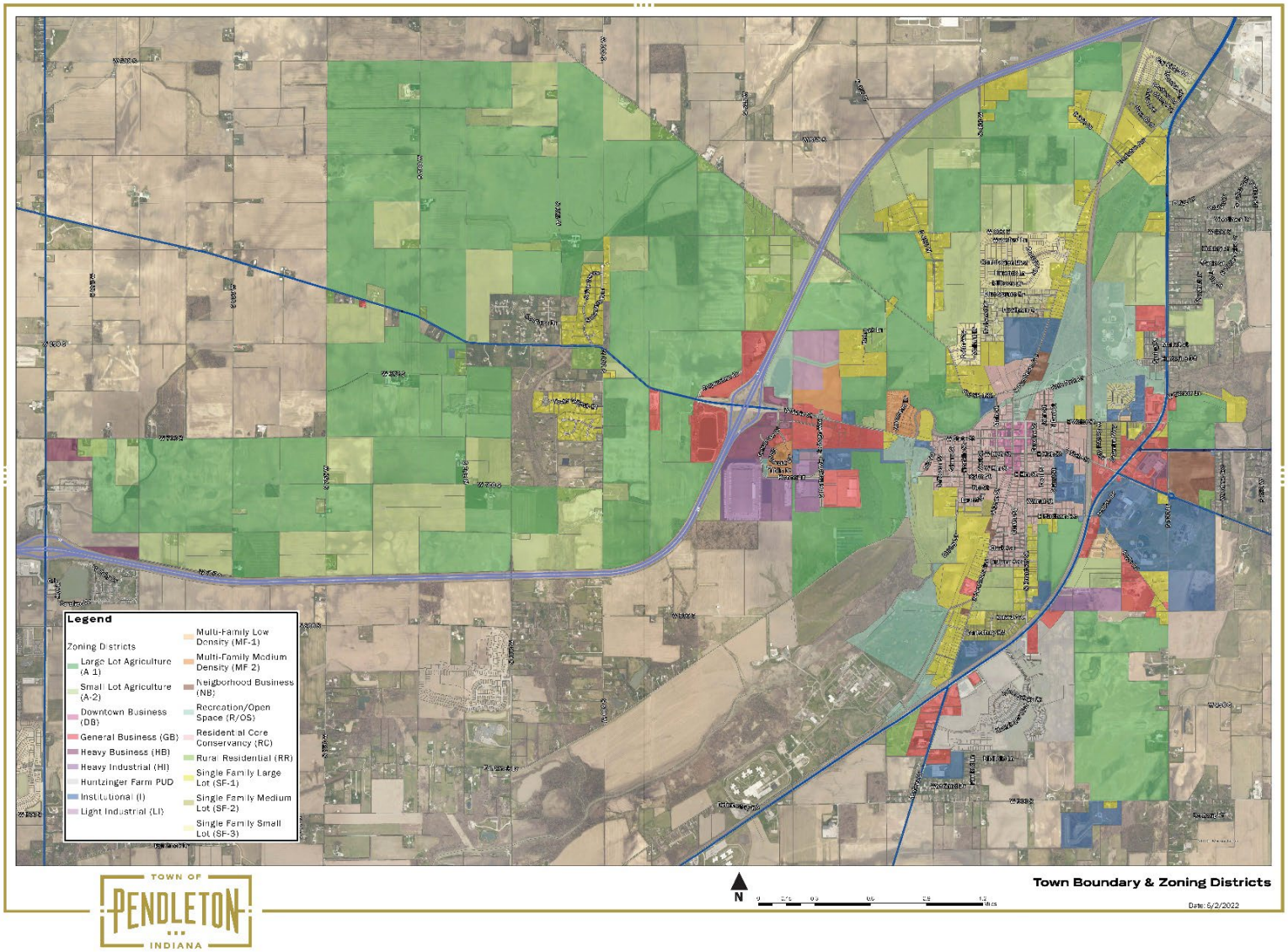
The Town of Pendleton is located in the southwest portion of Madison County. Major roadways through the Town of Pendleton include Interstate 69, US Route 36, and State Road 38. The Town of Pendleton is a Municipal Separate Storm Sewer System (MS4) and is required under the MS4 General Permit to develop this Water Quality Characterization Report. **Figure 1 – Town of Pendleton MS4 Boundary** shows the location of the Town of Pendleton and its MS4 boundaries, which coincide with the Town limits.

The MS4 General Permit requires a Water Quality Characterization Report of all known waters that receive stormwater outfall discharges from the MS4 area. Under Section 3.1(c) of the MS4 General Permit, the characterization report must contain at minimum the following information:

- **Section 3.1(c)(1)**: An assessment of land use
- **Section 3.1(c)(2)**: An inventory of MS4 owned and operated BMPs
- **Section 3.1(c)(3)**: Identification of all receiving waters, including wetlands and lakes
- **Section 3.1(c)(4)**: Identification of any 303d listed impaired waters, or TMDLs for receiving waters
- **Section 3.1(c)(5)**: Identification of known sensitive areas (i.e. parks, swimming areas, and drinking water intakes)
- **Section 3.1(c)(6)**: A review of existing and available monitoring data of the MS4 receiving waters
- **Section 3.1(c)(7)**: Identification of areas that have a reasonable potential to contribute to stormwater quality problems
- **Section 3.1(c)(8)**: An evaluation of discharge points to prioritize for future planning and implementation of new stormwater measures or modification of existing measures

The following Water Quality Characterization Report includes the required information above from the MS4 General Permit.

Figure 1
Town of Pendleton MS4 Boundary



2 Land Use Classifications

The Town of Pendleton zoning classifications are identified in **Table 1 – Town of Pendleton Land Use**. The significant majority of land usage in Pendleton is residential and farmland, making up approximately 38% and 37% of the land use Town of Pendleton MS4 boundary, respectively.

Table 1
Town of Pendleton Land Use

Land Use Category	Area (Acres)	% of Town
Commercial	546	12%
Farm	1718	37%
Residential	1765	38%
Institutional	215	5%
Industrial	364	8%

3 Stormwater Structural Management Measures

Structural best management practices (BMPs) may include, but are not limited to, detention ponds and retention basins, or constructed wetlands. The following structural BMPs listed in **Table 2** are located within the Town of Pendleton's MS4 Boundary.

Table 2
Town of Pendleton Structural BMPs

Owner	Responsible Party	Location	Coordinates	Purpose
McCarty Storm Drain and Pond	Town of Pendleton	939 S Broadway St to 1,025 ft east of SR 38	39.98995, -85.73773	Detention
Falls Park "Lighthouse" Pond	Town of Pendleton	Falls Park Dr	40.00524, -85.74424	Detention
Pines of Deerfield Homeowners Association	Pines of Deerfield Homeowners Association	Pendleton Ave North	40.01082, -85.74683	Retention
Country Farms Homeowners Association	Country Farms Homeowners Association	Pendleton Ave South	39.98785, -85.74978	Retention
Pendle Pointe Homeowners Association	Pendle Pointe Homeowners Association	Pendleton Ave North & State Rd 67	40.029739, -85.728174	Retention
Tractor Supply	Tractor Supply	320 Enterprise	40.00069, -85.77189	Retention
Steve Paul	Steve Paul	Enterprise Dr East Side	40.00104, -85.76924	Retention
Marsh Supermarket	Marsh Supermarket	State Rd 36 & 300	40.00000, -85.730286	Retention
Guide Corp	Guide Corp	State Rd 38 & I-69		Retention
Huntzinger Farms Homeowners Association	Huntzinger Farms Homeowners Association	State Rd 67 & 9	39.97936, -85.74622	Retention
Ashbury Pointe	Ashbury Pointe	100 Ashwood Dr	39.99436, -85.73561	Detention
CVS / Pharmacy	CVS / Pharmacy	Corner of State Rd 67 & 38	39.99979, -85.73574	Retention
Starbucks / 3 Rivers Credit Union	Starbucks / 3 Rivers Credit Union	Corner of W State Rd 38 & Heritage Way	40.003858, -85.765458	Retention
Carrick Glen Homeowners Association	Carrick Glen Homeowners Association	Pendleton Ave North	40.016023, -85.742198	Retention

The detention and retention ponds slow down the discharge rate of stormwater runoff in the area, which prevents erosion downstream. The ponds also settle out some solids and may remove pollutants from the water before it reaches more sensitive aquatic habitats downstream.

4 Receiving Streams

MS4 outfalls include a point source discharge via a conveyance of stormwater run-off into a receiving stream or other body of water. The following water bodies are identified as receiving streams by the Town of Pendleton's stormwater outfalls.

- Prairie Creek
- Fall Creek-Pendleton to Lick Creek
- Foster Branch

5 Impaired Waters

The following watersheds listed in **Table 3** contain receiving waters that have an approved IDEM Total Maximum Daily Load (TMDL). These watersheds and their corresponding TMDLs were determined using the IDEM WMP and TMDL Reports Search (WATRS) Tool.

Table 3
Town of Pendleton Approved TMDLs

Watershed Name (HUC 12)	TMDL Name	Approval Date	Pollutant
Prairie Creek-Fall Creek	Geist Reservoir-Upper Fall Creek WMP	2011	E. Coli
Foster Branch			
Flatfork Creek-Fall Creek			

The 2018 IDEM Section 303(d) list of impaired waters was reviewed to determine if any receiving streams were listed for impairments or water quality deficiencies. The following streams are listed for *E. coli*:

- Fall Creek
- Prairie Creek
- Foster Branch

6 Sensitive Areas

The following section provides a review of the known sensitive areas in the Town of Pendleton. These areas were identified as the most impacted for human and environmental health by stormwater pollution. The information presented concerning sensitive areas will be reviewed and updated as new information is available.

6.1 Public Access Sites

While determining the impacts to the receiving streams, it is important to note that some of the receiving streams are used by the public for recreation activities. This may include but is not limited to canoeing, wading, fishing, bird watching, hiking, and biking. Recreational areas within the Town of Pendleton that are associated with activities near or within waterbodies are listed below in **Table 4**.

Table 4
Town of Pendleton Sensitive Areas

Facility	Beach	Lake with Swimming	River Name	River Access
Falls Park	No	No	Fall Creek	No
Fall Creek Course	No	No	Fall Creek	No

6.2 Drinking Water Intakes

There is an inactive water intake at the Pendleton Correctional Center. There are no publicly owned surface water intakes for public water systems located within the jurisdiction of the Town of Pendleton MS4.

6.3 High Quality Habitats

A list of threatened and endangered species and high-quality natural habitats present in the Town of Pendleton was obtained from the DNR Nature Preserves Natural Heritage Data Center. This list is presented in **Attachment A**. A review of Indiana Map identified that many of the Town's wetlands and other high-quality habitats are located along the Fall Creek. This can be seen in **Figure 2 – Town of Pendleton Wetlands Map**.

6.4 Outstanding State Resource Waters

There are no outstanding rivers located within the Town of Pendleton MS4 Boundary.

7 Monitoring

A review of the available monitoring data for the Town of Pendleton receiving streams was completed as part of this baseline water quality characterization report.

7.1 USGS Monitoring Stations

There are no USGS Monitoring Stations located in the Town of Pendleton.

7.2 CSO Monitoring Data

The Town of Pendleton is not a Combined Sewer Overflow (CSO) Community and does not own or operate a wastewater treatment plant. As such, no monitoring information is available from sewer overflow points.

7.3 Indiana Water Quality Atlas

The Indiana Water Atlas GIS mapping service provided by IDEM was reviewed for fish sampling and chemical sampling sites in the Town of Pendleton. **Figure 3 – Town of Pendleton Fish and Chemical Sampling** shows the location of these sites. The GIS website provides the data obtained from each sampling sites and includes information from fish surveys, macroinvertebrate surveys, water quality sampling results.

7.4 Existing Studies and Reports

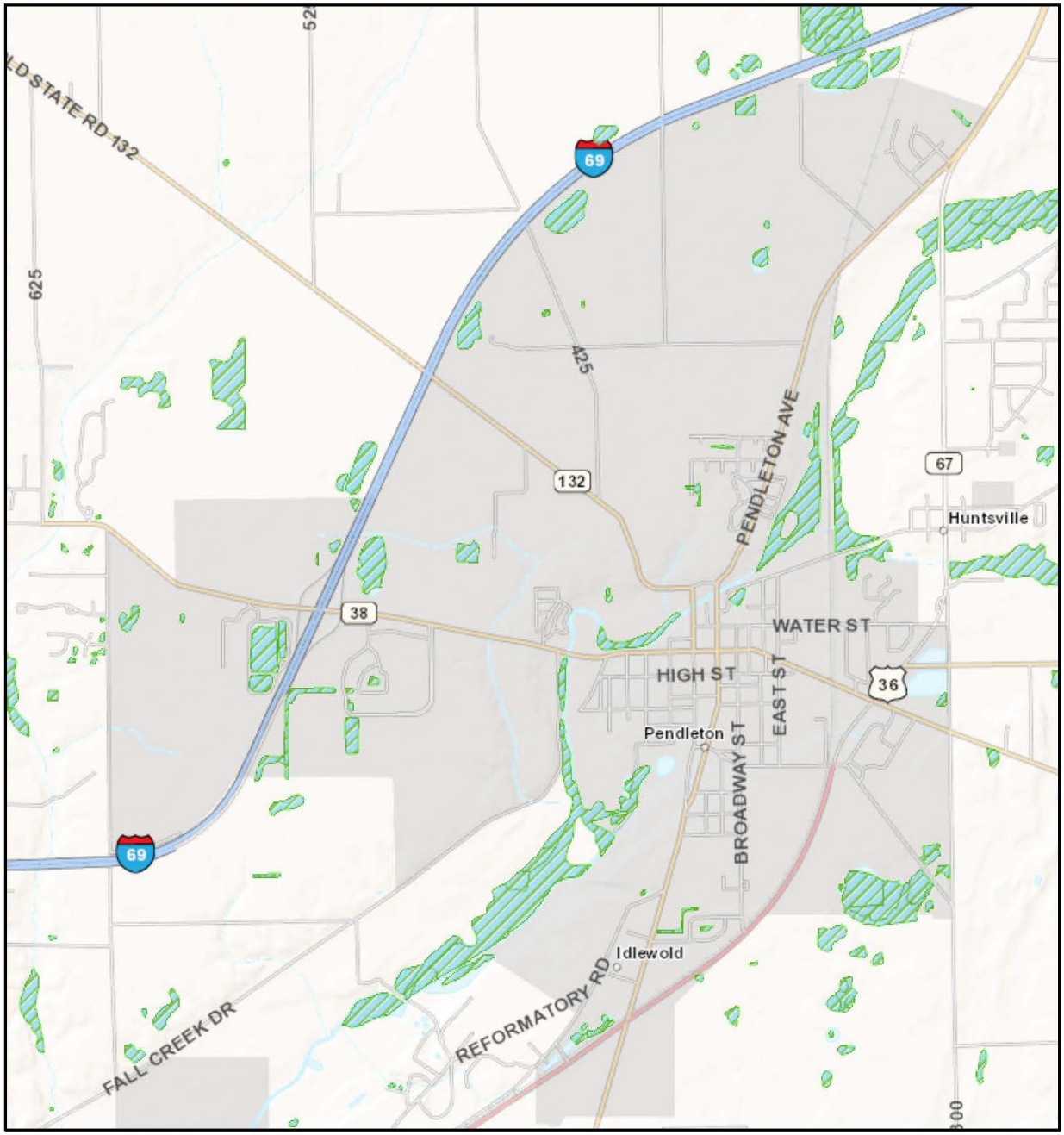
The current approved TMDL for the Town of Pendleton MS4 receiving streams was identified in **Table 5**. Pollution sources in the watershed include nonpoint sources from agriculture and pastures, land application of manure and urban and rural run-off, as well as point sources from straight pipe discharges, home sewage treatment system disposal and combined sewer overflow outlets. Recommended controls in this TMDL include stormwater runoff programs and habitat improvements. The watershed has been given the following numeric target for *E. coli*:

- During the Recreational Season (April 1 through October 31) *E. coli* count shall not exceed one hundred twenty-five (125) per one hundred (100) milliliters.

Table 5
Town of Pendleton Approved TMDLs

Watershed Name (HUC 12)	TMDL Name	Approval Date	Pollutant
Prairie Creek-Fall Creek	Geist Reservoir-Upper Fall Creek WMP	2011	E. Coli
Foster Branch			
Flatfork Creek-Fall Creek			

Figure 2 – Wetlands Map



November 29, 2022

1:32,000

Wetlands NWI (USFWS)

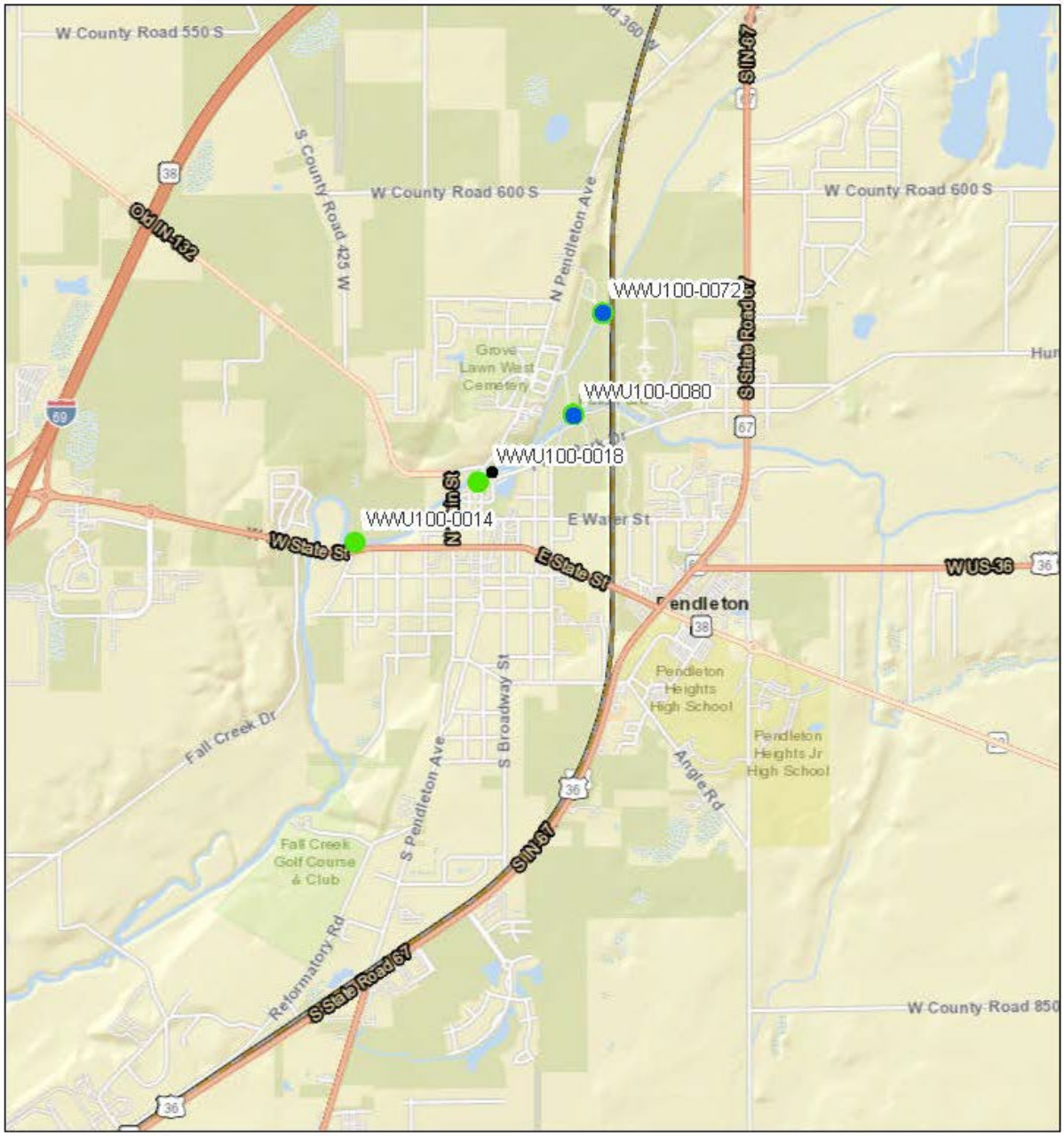
Wetlands Project Metadata NWI (USFS)

0 0.275 0.55 1.1 mi

0 0.425 0.85 1.7 km

U.S. Fish and Wildlife Service (USFWS),National Standards and Support Team,National Wetlands Inventory (NWI)
Indiana Department of Transportation (INDOT), U.S. Census Bureau (USCB), Indiana Geographic Information Council (IGIC), UITS, Indiana Spatial Data Portal

Figure 3 – Town of Pendleton Fish and Chemical Sampling



8 Potential Pollution Sources

As discussed previously, the primary land use in the Town of Pendleton is residential. *E. coli* is the primary pollutant in the Town's watersheds, and a major source of this pollutant is agricultural runoff. Runoff from adjacent farmland may have a significant impact on the water quality of the MS4. Additional sources of *E. coli* include Combined Sewer Overflows from the municipality and wastewater discharges from failing septic systems. While the Town of Pendleton has neither residential septic systems nor CSOs, there are large CSO communities upstream of the Town of Pendleton. As shown in **Figure 1 – MS4 Boundary Map,** Prairie Creek, Foster Branch, and Fall Creek also receive direct discharges from the Town of Pendleton MS4 conveyances, which may also contribute to water quality impairments.

In addition to discharges from the sanitary system, the receiving streams are also sensitive to industrial user discharges, emergency spills, and toxicity impacts. According to the IDEM NPDES Permit list, there are three (3) entities within the Pendleton MS4 boundary with an active Industrial Stormwater Permit under 327 IAC 15-6 (Rule 6). These industries have the potential to directly discharge pollutants to the receiving streams. The industries within the Pendleton MS4 Boundary with active Industrial Stormwater Permits are listed below.

Table 6
Town of Pendleton Industrial Stormwater Permits

NPDES Permit No.	Permit Name	Latitude	Longitude	Address
INRM00275	Newco Metals Incorporated	39.998444	-85.839178	7268 S SR 13
INRM01246	Fall Creek Waste Water Treatment Plant	39.964794	-85.796181	9378 S CR 650 W
INRM01876	Pendleton Correctional Facility	39.982292	-85.758931	4490 W REFORMATORY RD

The industrial facilities list may also be updated from the Rule 6 permit to an Industrial Stormwater General Permit. If any industries within Madison County obtain this permit, the industrial facilities database will be updated accordingly.

Additional sources of pollution in Pendleton may be sourced from brownfield remediation sites. Indiana Map was searched for these sites and the results are listed in **Table 7** below. There was only one (1) brownfield remediation site identified within MS4 boundaries.

Table 7
Town of Pendleton Brownfield Sites

Name	Address	Status
Ricker-Swifty Service Station #240 4181105	6933 S SR 67	Active

9 High Risk Areas

Based on the review of the information provided in this baseline water quality characterization report, some of the areas that may require more intensive monitoring include Falls Park, wetland areas along Fall Creek, brownfield remediation sites, and MS4 stormwater conveyances on Prairie Creek, Foster Branch, and Fall Creek.

Attachment A

DNR Nature Preserves Threatened and Endangered Species List

Indiana County Endangered, Threatened and Rare Species List

County: Madison

Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Alasmidonta viridis	slippershell mussel		SSC	G4G5	S3
Epioblasma rangiana	northern riffleshell	E	SE	G1	S1
Eurynia dilatata	spike		SSC	G5	S4
Lampsilis fasciola	wavyrayed lampmussel		SSC	G5	S3
Plethobasus cyphyus	Sheepnose	E	SE	G3	S1
Pleurobema clava	Clubshell	E	SE	G1G2	S1
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Theliderma cylindrica	Rabbitsfoot	T	SE	G3G4	S1
Toxolasma lividus	Purple Lilliput		SSC	G3	S2
Villosa fabalis	Rayed Bean	E	SE	G2	S1
Villosa iris	Rainbow		SSC	G5	S3
Villosa lienosa	Little Spectaclecase		SSC	G5	S3
Insect: Odonata (Dragonflies & Damselflies)					
Somatochlora tenebrosa	Clamp-tipped Emerald		SR	G5	S2S3
Bird					
Botaurus lentiginosus	American Bittern		SE	G5	S2B
Haliaeetus leucocephalus	bald eagle			G5	S3
Lanius ludovicianus	loggerhead shrike		SE	G4	S2B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Rallus elegans	King Rail		SE	G4	S1B
Mammal					
Lasiurus borealis	Eastern red bat		SSC	G3G4	S4
Lasiurus cinereus	hoary bat		SSC	G3G4	S4
Mustela nivalis	Least Weasel		SSC	G5	S2?
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Deschampsia cespitosa	tufted hairgrass		ST	G5	S3
Eriophorum gracile	slender cotton-grass		ST	G5	S2
Hypericum pyramidatum	great St. John's-wort		ST	G4T4	S2
Juglans cinerea	butternut		ST	G3	S2
Lithospermum parviflorum	shaggy false-gromwell		SE	G4G5T4	S1
Magnolia acuminata	cucumber magnolia		SE	G5	S1
Poa paludigena	bog bluegrass		ST	G3G4	S3
Spiranthes lucida	shining ladies'-tresses		ST	G4	S3
High Quality Natural Community					
Forest - upland mesic Central Till Plain	Central Till Plain Mesic Upland Forest		SG	GNR	S3
Wetland - fen	Fen		SG	G3	S3
Wetland - marsh	Marsh		SG	GU	S4

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: E = Endangered; T = Threatened; C = candidate; PDL = proposed for delisting

State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant

GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long-term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; S4 = widespread and abundant in state but with long-term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked