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TOWN OF NEW PALESTINE

Water Quality Characterization Report
January 2023

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TOWN OF NEW PALESTINE
WATER QUALITY CHARACTERIZATION REPORT
TABLE OF CONTENTS

TABLES

FIGURES

ATTACHMENTS

WATER QUALITY CHARACTERIZATION REPORT

1 Introduction

The Town of New Palestine is located along US Highway 52 in Sugar Creek Township, Hancock County, Indiana, approximately fifteen (15) miles southeast of the City of Indianapolis. The Town of New Palestine 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 – New Palestine MS4 Boundaries** shows the location of Town of New Palestine and its MS4 boundaries. The MS4 boundaries coincide with 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:

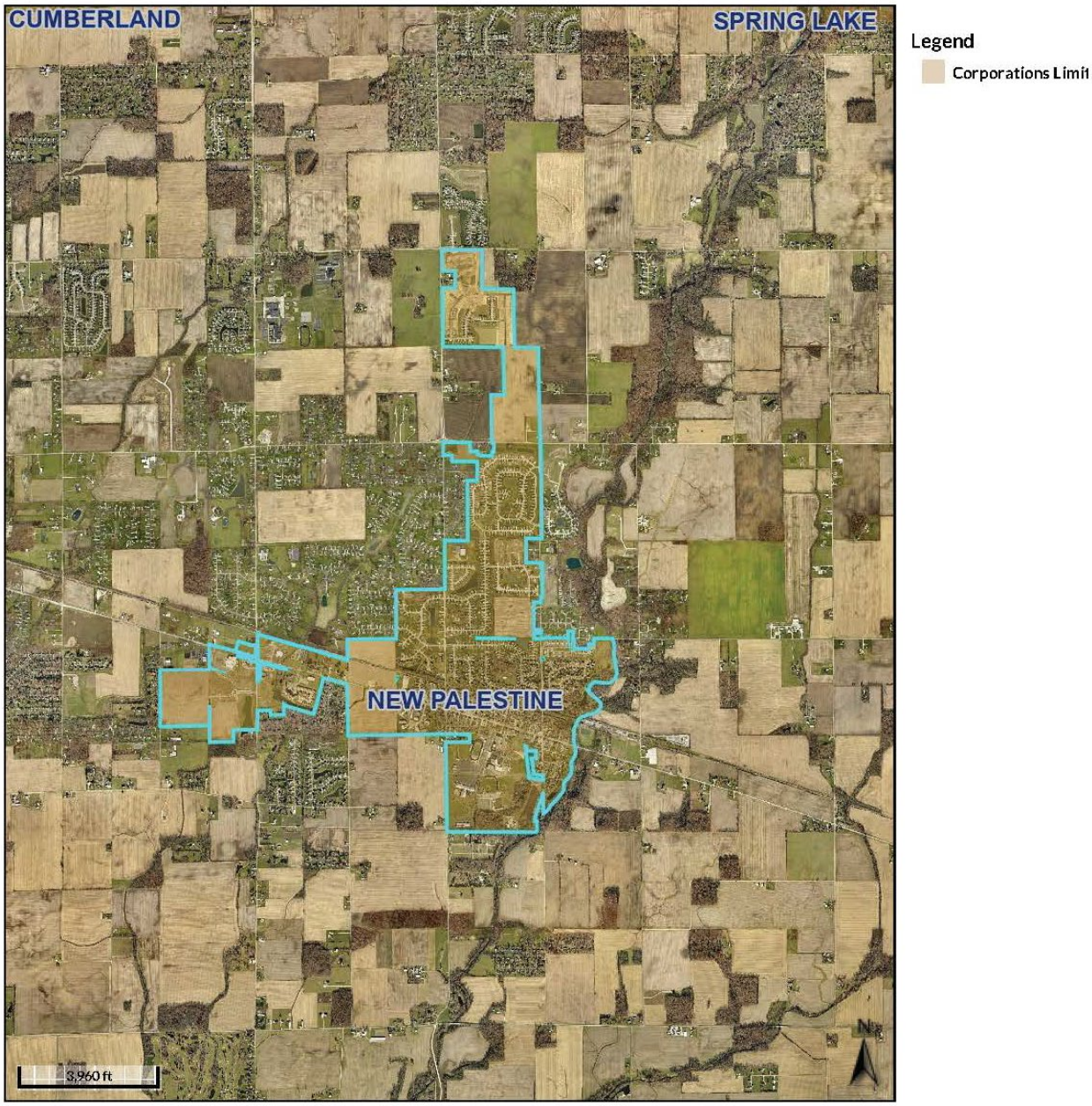
- **Section 3.1(c)(1)**: An assessment of land use
- **Section 3.1(c)(2)**: An inventory of MS4 owned and operated BMPs
- **Section 3.1(c)(3)**: Identification of all receiving waters, including wetlands and lakes
- **Section 3.1(c)(4)**: Identification of any 303d listed impaired waters, or TMDLs for 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.

2 Land Use Classifications

The majority of land in New Palestine is developed residential, including single family and multi-family residences. Commercial use makes up the second largest zoning category. There is a very minor amount of industrial development as well as some undeveloped space.

Figure 1
New Palestine MS4 Boundaries



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Developed by Schneider GEOSPATIAL

3 Stormwater Structural Management Measures

The Town of New Palestine has two (2) municipally owned stormwater outfalls that discharge to the receiving water, as shown in **Table 1**. The Town of New Palestine MS4 area also contains sixteen (16) privately owned stormwater detention ponds, or Best Management Practices (BMPs) that are inspected by the Town.

The detention 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.

Table 1
Structural Stormwater BMPs

Owner	Location	Coordinates	ID Number	Purpose
Town of New Palestine	Sugar Creek Bridge	39.714611, -85.885778	001	Outfall
Town of New Palestine	Seisert Creek Outfall	39.724306, -85.881139	002	Outfall
Gateway	Southeast of the Hancock Wellness Center	39.723144, -85.914609	GW1	Detention Pond
Sunrise Lake HOA	Bounded within Lakeway Dr and Meadows Ln	39.732443, -85.889397	SR1	Detention Pond
Stone Crossing HOA	South of Otway Ln	39.739623, -85.889613	SC1	Detention Pond
Stone Crossing HOA	North of Chert Dr	39.737954, -85.889448	SC2	Detention Pond
Stone Crossing HOA	Southwest pond north of Lawrence Way	39.736134, -85.891776	SC3	Detention Pond
Stone Crossing HOA	Southwest pond south of Lawrence Way	39.735781, -85.892235	SC4	Detention Pond
Stone Crossing HOA	Northeast pond of subdivision	39.741718, -85.888368	SC5	Detention Pond
Stone Crossing HOA	Northern Pond	39.741728, -85.890468	SC6	Detention Pond
Stone Crossing HOA	Northwest Pond	39.740944, -85.892018	SC7	Detention Pond
Cedar Creek HOA	Large pond splitting subdivision	39.731229, -85.895402	CC1	Detention Pond
Harting Farms HOA	Eastern Pond	39.727322, -85.897197	HF1	Detention Pond
Harting Farms HOA	Northern Pond	39.729946, -85.897050	HF2	Detention Pond
Harting Farms HOA	Southern Pond	39.725360, -85.898071	HF3	Detention Pond
Crystal Heights HOA	Western Pond	39.727277, -85.895231	CH1	Detention Pond
BridgeWood HOA	Eastern Pond	39.724653, -85.886082	BW1	Detention Pond
BridgeWood HOA	Northern Pond	39.727590, -85.888738	BW2	Detention Pond

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 watersheds listed in **Table 2** are located within the Town of New Palestine.

Table 2
New Palestine MS4 Watersheds

Hydrologic Unit Code (12 digit)	Watershed Name
051202040503	West Little Sugar Creek
051202040405	Boyd-Ditch Sugar Creek

Sugar Creek, Palestine Branch, Merlau Ditch, and West Little Sugar Creek are the receiving streams in New Palestine. Sugar Creek is the only receiving stream with stormwater outfalls.

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
Total Maximum Daily Load Watershed

Watershed Name (HUC 12)	TMDL Name	Approval Date	Pollutant
Boyd-Ditch Sugar Creek Watershed	Sugar Creek Watershed	2007	E. Coli

The current Section 303(d) list of impaired waters was reviewed to determine if any receiving streams were listed for impairments. No receiving streams in the Town of New Palestine are currently listed.

6 Sensitive Areas

The following section provides a review of the known sensitive areas in the Town of New Palestine. These sections represent updates to those areas presented in previous Stormwater Management Plans for the Town of New Palestine where available, as well as additional identified areas.

6.1 Public Access Sites

At this time, there are no public access sites, swimming areas, parks, or other recreational areas within or adjacent to Sugar Creek in the Town of New Palestine.

6.2 Drinking Water Intakes

There are no surface water intakes for public water systems located within the MS4 jurisdiction of the Town of New Palestine.

6.3 High Quality Habitats

A review of Indiana Map identified that the majority of the wetlands in New Palestine are located along Sugar Creek. Palestine Branch, and West Little Sugar Creek. This can be seen in **Figure 2 – New Palestine Wetlands Map**. A list of potentially affected species can be found in **Attachment A**.

6.4 Outstanding Resource Waters

There are no water bodies located in the Town of New Palestine that are on Indiana's Outstanding Rivers List. Sugar Creek is on the list for a portion of the stream south of New Palestine, but not within corporate limits.

7 Monitoring

A review of the available monitoring data for Town of New Palestine receiving streams was completed as part of this baseline water quality characterization report. This section presents updates to the monitoring data from previous Hancock County Stormwater Management Plans where available and lists additional data sources.

7.1 USGS Monitoring Stations

There is one (1) USGS Monitoring Station located in Sugar Creek, south of New Palestine. This station provides real-time data including streamflow and gage height, which is available on the USGS website for data site information (https://waterdata.usgs.gov/nwis). The gage locations and available monitoring information is listed in **Table 4** below.

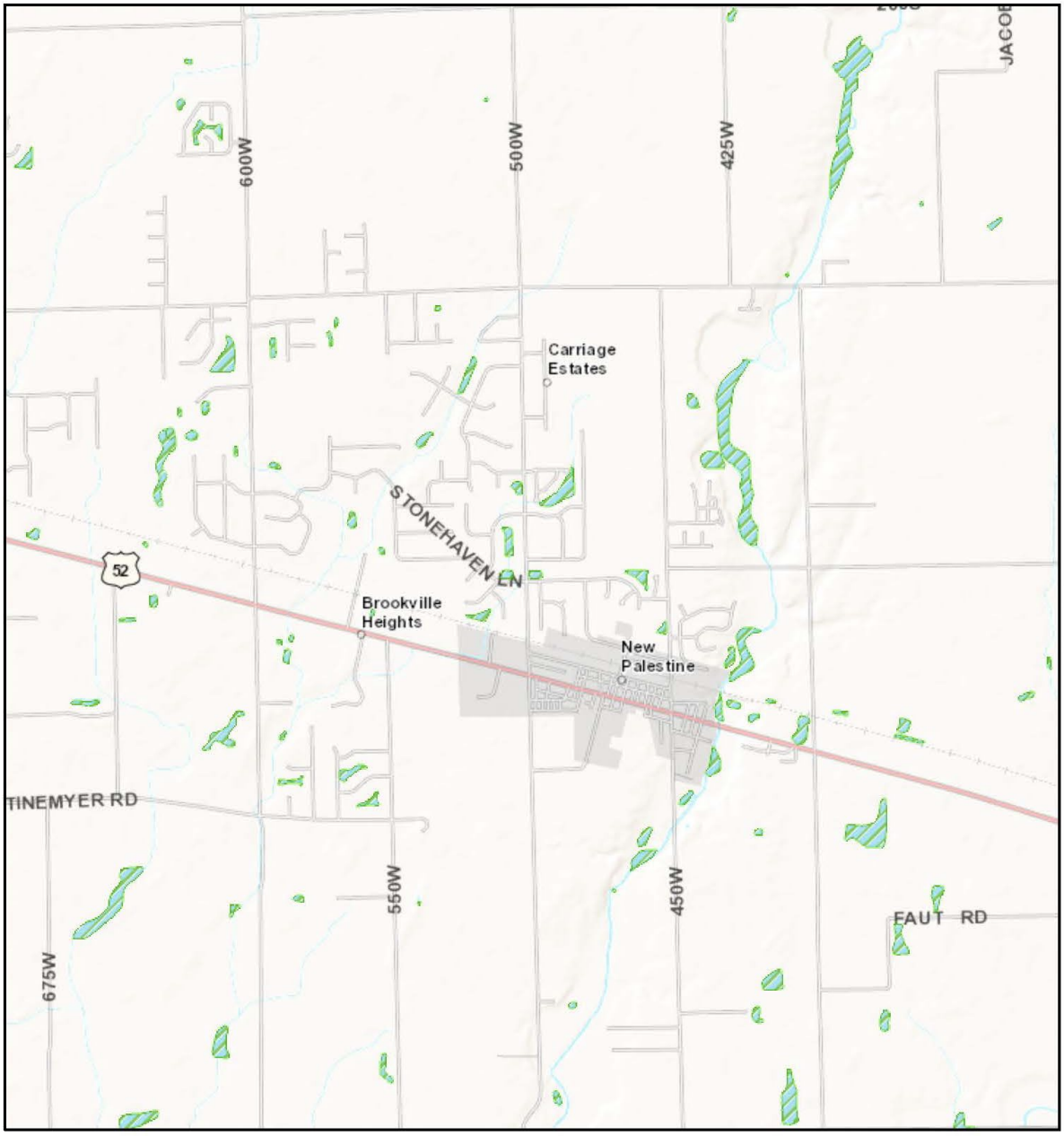
Table 4
New Palestine USGS Stream Gage

USGS Gage Identification	Coordinates	Available Data
USGS 03361650 Sugar Creek at New Palestine, IN	Latitude 39°42'51" Longitude 85°53'08"	Discharge, gage height

7.2 CSO Monitoring Data

The Town of New Palestine does not own or operate a sewer system that contains Combined Sewer Overflows (CSOs).

Figure 2
New Palestine Wetlands Map



December 14, 2022

1:32,000

0 0.275 0.55 1.1 mi

0 0.425 0.85 1.7 km

Wetlands NWI (USFWS)

Wetlands Project Metadata NWI (USFS)

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

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 New Palestine. **Figure 3 – New Palestine Fish and Chemical Sampling** shows the location of these sites. THe GIS website provides the data obtained from each sampling site and includes information from fish surveys, macroinvertebrate surveys, and water quality sampling results.

7.4 Existing Studies and Reports

The current approved TMDL for New Palestine's receiving stream was reviewed and the previous **Table 5** is reproduced below. The primary pollutant address in the Sugar Creek Watershed TMDL is *E. Coli*. Pollution sources in the watershed include nonpoint sources from agriculture and pastures, land application of manure, and urban and rural runoff, as well as point sources from straight pipe discharges, septic systems, and CSO discharges. Recommended controls in the TMDL include storm water runoff management, point source controls, manure management, and habitat improvements.

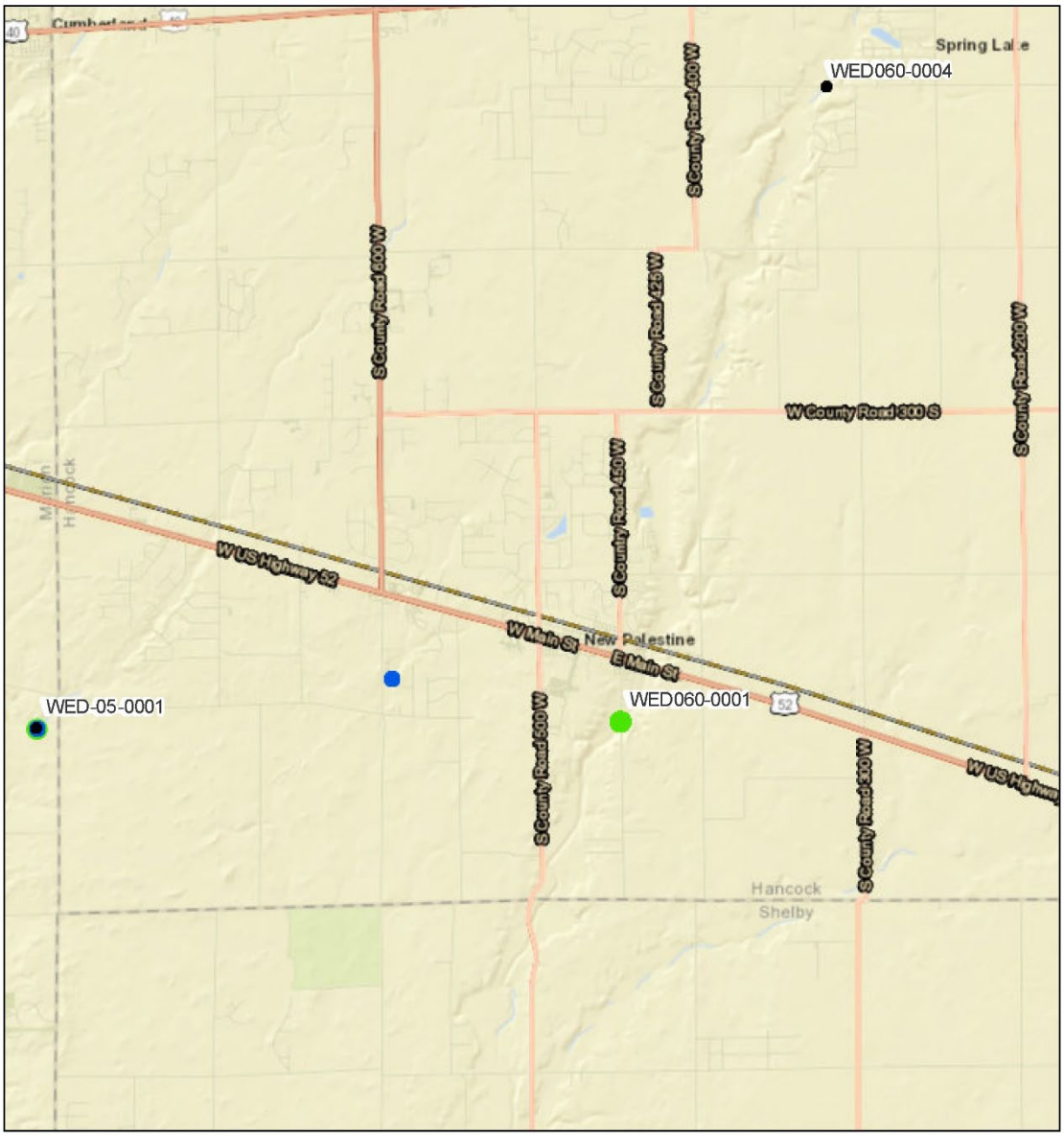
Table 5
Total Maximum Daily Load Watersheds

Watershed Name (HUC 12)	TMDL Name	Approval Date	Pollutant
Boyd-Ditch Sugar Creek Watershed	Sugar Creek Watershed	2007	E. Coli

Sugar Creek was given the following numeric targets for *E. coli*, as intended for full body recreational use:

- 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.

Figure 3
New Palestine Fish and Chemical Sampling Stations



8 Potential Pollution Sources

As discussed previously, the primary land use in the Town of New Palestine is residential. *E. Coli* is the primary pollutant in the Sugar Creek watershed, and a major source of this pollutant is agricultural and urban runoff. Additional sources of *E. Coli* may include Combined Sewer Overflows from municipalities upstream of New Palestine, as well as failing septic systems within the County.

Currently, the Town of New Palestine has no industries discharging to the stormwater conveyance system. This information was gathered from the IDEM List of NPDES Permits, specifically for active industrial stormwater permits within the MS4 Boundaries of the Town of New Palestine.

Additional sources of pollution in Town of New Palestine may be sourced from brownfield remediation sites. Indiana Map was searched for these sites and the results are listed in **Table 6** below.

Table 6
New Palestine Brownfield Remediation Sites

Name	Address	Status
Mattingly Shell 4190303	46 E Main St	Active
Innis Property 4091201	56 W Main St	Inactive

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 wetland areas along receiving streams, brownfield remediation sites, and MS4 stormwater conveyances that discharge into Sugar Creek. The Town should also monitor water quality through the existing USGS stream gage on Sugar Creek located south of Town.

Attachment A

Hancock County Endangered, Threatened, and Rare Species

Indiana County Endangered, Threatened and Rare Species List

County: Hancock

Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Alasmidonta viridis	slippershell mussel		SSC	G4G5	S3
Epioblasma triquetra	Snuffbox	E	SE	G3	S1
Lampsilis fasciola	wavyrayed lampmussel		SSC	G5	S3
Pleurobema clava	Clubshell	E	SE	G1G2	S1
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Toxolasma lividus	Purple Lilliput		SSC	G3	S2
Venustaconcha ellipsiformis	Ellipse			G4	S2
Villosa lienosa	Little Spectaclecase		SSC	G5	S3
Bird					
Bartramia longicauda	Upland Sandpiper		SE	G5	S3B
Haliaeetus leucocephalus	bald eagle			G5	S3
Ixobrychus exilis	Least Bittern		SE	G4G5	S3B
Lanius ludovicianus	loggerhead shrike		SE	G4	S2B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Setophaga cerulea	Cerulean Warbler		SE	G4	S3B
Mammal					
Mustela nivalis	Least Weasel		SSC	G5	S2?
Myotis sodalis	Indiana Bat	E	SE	G2	S1
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Magnolia acuminata	cucumber magnolia		SE	G5	S1
Sanguisorba canadensis	Canada burnet		SE	G5	S1

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