

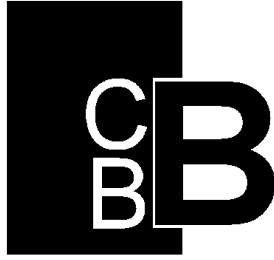
**NPDES PHASE II
GENERAL PERMIT APPLICATION
STORM WATER QUALITY MANAGEMENT PLAN
PART B: BASELINE CHARACTERIZATION REPORT**



**Allen County, Indiana
Town of Hometown
Town of Leo-Cedarville**

Permit #INR040131

May 2004



**NPDES PHASE II
STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)
PART B: BASELINE CHARACTERIZATION REPORT**

Prepared for:

**Allen County, Indiana
Town of Huntertown
Town of Leo-Cedarville**

May 2004

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Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

TABLE OF CONTENTS

	<u>Page #</u>
LIST OF TABLES	iii
LIST OF EXHIBITS	iii
LIST OF APPENDICES	iii
1.0 INTRODUCTION	1
2.0 LAND USE WITHIN MS4 AREA	3
2.1 DESCRIPTION OF MS4 AREA	3
2.2 POPULATION DATA	4
2.3 LAND USE DATA	4
2.4 WATERSHEDS WITHIN MS4 AREA	5
2.5 SUMMARY OF LAND USE EVALUATIONS	6
3.0 SENSITIVE AREAS	7
3.1 ERODIBLE SOILS	7
3.2 SOIL SUITABILITY FOR SEPTIC SYSTEMS	8
3.3 NATURAL HERITAGE DATA	9
3.4 WETLANDS	10
3.5 OUTSTANDING AND EXCEPTIONAL USE WATERS	10
3.6 ESTABLISHED TMDL WATERS	11
3.7 RECREATIONAL WATERS	11
3.8 PUBLIC DRINKING WATER SOURCES	11
3.9 SUPERFUND SITE	12
3.10 SUMMARY OF SENSITIVE AREA CONCLUSIONS	13

**Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report**

4.0 SUMMARY OF EXISTING MONITORING DATA	14
4.1 INDIANA 305(b) REPORT	14
4.2 INDIANA 303(d) LISTED IMPAIRED STREAMS	17
4.3 UNITED STATES GEOLOGIC SURVEY (USGS) STUDIES	18
4.4 STREAM REACH CHARACTERIZATION EVALUATION REPORT	19
4.5 LAKE AND RIVER ENHANCEMENT (LARE) PROGRAM	19
4.6 CLEAN WATER ACT CHAPTER 319 GRANT STUDIES	20
4.7 HEALTH DEPARTMENT STUDIES	21
4.8 SUMMARY OF EXISTING WATER QUALITY DATA EVALUATIONS	22
5.0 IDENTIFICATION AND ASSESSMENT OF EXISTING BMPs	23
5.1 ASSESSMENT OF EXISTING PUBLIC EDUCATION AND OUTREACH BMPs	23
5.2 ASSESSMENT OF EXISTING PUBLIC PARTICIPATION AND INVOLVEMENT BMPs	24
5.3 ASSESSMENT OF EXISTING ILLICIT DISCHARGE DETECTION AND ELIMINATION BMPs	25
5.4 ASSESSMENT OF EXISTING CONSTRUCTION SITE STORMWATER RUNOFF CONTROL BMPs	26
5.5 ASSESSMENT OF EXISTING POST-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL BMPs	28
5.6 ASSESSMENT OF EXISTING POLLUTION PREVENTION AND GOOD HOUSEKEEPING BMPs	29
5.7 SUMMARY OF EXISTING BMP ASSESSMENTS	30

**Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report**

6.0 POTENTIAL PROBLEM AREAS	31
6.1 LAND USES	31
6.2 SENSITIVE AREAS	31
6.3 EXISTING WATER QUALITY	32
6.4 SPECIFIC LOCATIONS REQUIRING STRUCTURAL BMPs	32
7.0 POTENTIAL BMPs BEING CONSIDERED	34
7.1 PUBLIC EDUCATION AND OUTREACH BMPs	34
7.2 PUBLIC PARTICIPATION AND INVOLVEMET BMPs	35
7.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION BMPs	36
7.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL BMPs	37
7.5 POST CONSTRUCTION STORMWATER RUNOFF CONTROL BMPs	38
7.6 POLLUTION PREVENTION AND GOOD HOUSEKEEPING BMPs	39
8.0 REFERENCES	41

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

LIST OF TABLES

2-1	MS4 AREA RECEIVING WATERS	3
2-2	2002 US CENSUS BUREAU STATISTICS	4
2-3	1998 USGS LAND USE DATA	5
2-4	14-DIGIT SUBWATERSHEDS	5
3-1	HIGHLY ERODIBLE SOILS	7
3-2	SOIL SUITABILITY FOR SEPTIC SYSTEMS	8
4-1	2002 305(b) RESULTS FOR THE ALLEN COUNTY SUBWATERSHEDS	14
4-2	2002 303(d) LISTED STREAMS WITHIN ALLEN COUNTY	17
4-3	SJRWI PRIORITY WATERSHEDS	20

LIST OF EXHIBITS

1. ALLEN COUNTY MS4 AREA
2. ALLEN COUNTY RECEIVING WATERS
3. ALLEN COUNTY LAND USE
4. ALLEN COUNTY 14-DIGIT HUC'S
5. ALLEN COUNTY HIGHLY ERODIBLE SOILS
6. ALLEN COUNTY SEVERELY LIMITED SOILS
7. ALLEN COUNTY WETLANDS
8. ALLEN COUNTY 305 (b) PRIORITY WATERSHEDS
9. ALLEN COUNTY 303 (d) IMPAIRED WATERS

LIST OF APPENDICES

1. SWQMP PART B: BASELINE CHARACTERIZATION AND REPORT CERTIFICATION CHECKLIST

As part of the 1987 amendments to the federal Clean Water Act (CWA), the United States Congress added Chapter 402(p) to the CWA to address the water quality impacts of stormwater discharges from industrial facilities and large to medium municipal separate storm sewer systems (MS4s). Large to medium MS4s were defined as communities serving populations of 100,000 or more and are regulated by the Environmental Protection Agency (EPA) under the National Pollutant Discharge Elimination System's (NPDES) Storm Water Phase I Program.

In addition to these amendments, Congress directed the Environmental Protection Agency (EPA) to issue further regulations to identify and regulate additional stormwater discharges that were considered to be contributing to national water quality impairments. On December 8, 1999, the EPA issued regulations that expanded the existing NPDES Storm Water Program to include discharges from small MS4s in "urbanized areas" serving populations of less than 100,000 and stormwater discharges from construction activities that disturb more than one acre of land. These regulations are referred to as the NPDES Phase II Storm Water Program. Allen County, the Town of Hometown, and the Town of Leo-Cedarville met this criterion and were consequently designated as MS4 entities.

In the State of Indiana, the Indiana Department of Environmental Management (IDEM) is responsible for the development and oversight of the NPDES Phase II Program. The IDEM initiated adoption of the Phase II Rules that were ultimately codified as 327 IAC 15-13 (Rule 13). Rule 13 became effective on August 6, 2003 and requires designated MS4 entities to apply for permit coverage by submitting a Notice of Intent (NOI) and developing Storm Water Quality Management Plans (SWQMPs) through a phased submittal process. The IDEM's phased submittal requirements for the SWQMP include the following three components:

- Part A: Initial Application
- Part B: Baseline Characterization Report
- Part C: Program Implementation Plan

All MS4s were required to submit NOI and SWQMP Part A documents to the IDEM by November 5, 2003. SWQMP Part B and Part C documents are required to be submitted by May 3, 2004 and November 4, 2004, respectively.

This report has been prepared to address Rule 13 requirements for completing the SWQMP Part B: Baseline Characterization Report and its corresponding certification form for Allen County, Town of Hometown, and Town of Leo-Cedarville. This report includes the following information:

- An investigation and assessment of the impacts of existing land uses on stormwater runoff within the MS4 area,
- An identification of sensitive areas within the MS4 area,
- A review of known existing and available water quality monitoring data for the MS4 area,
- An identification and assessment of structural and non-structural Best Management Practices (BMPs) within the MS4 area,
- An identification of priority areas for the implementation of BMPs, and

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

- Structural and non-structural BMPs for each of the six minimum control measures being considered for meeting the requirements of Rule 13.

In addition, the IDEM's SWQMP Part B: Baseline Characterization and Report Certification Checklist is included in **Appendix 1** of this report.

2.0 LAND USE WITHIN MS4 AREA

Rule 13 requires the investigation of land usage and the assessment of structural and non-structural stormwater BMP locations. The following discussion provides an evaluation of land uses within the Allen County’s MS4 area. Structural and non-structural BMPs are identified and assessed in Chapter 5.0 of this report.

2.1 DESCRIPTION OF MS4 AREA

Allen County, Hometown, and Leo-Cedarville are working under a joint permit to fulfill requirements of Rule 13. The MS4 area covered by this permit (herein referred to as the Allen County MS4 Area) includes all unincorporated areas of Eel River, Perry, Cedar Creek, Lake, Washington, St. Joseph, Aboite, Wayne, Adams, Pleasant, and Marion Townships. Hometown and Leo-Cedarville’s MS4 boundary mirrors its jurisdictional boundary, and is located primarily in Perry and Cedar Creek Townships, respectively. The MS4 area excludes the City of Fort Wayne and New Haven. **Exhibit 1** identifies the County’s MS4 boundary.

The Notice of Intent (NOI) and Stormwater Quality Management Plan (SWQMP) Part A: Initial Application identified known receiving waters to which the MS4 entities directly discharge stormwater. Allen County MS4 area receiving waters are listed in **Table 2-1** and illustrated in **Exhibit 2**.

**Table 2-1
 MS4 Area Receiving Waters**

MS4 Area	Receiving Water
Allen County	Graham McCulloch Ditch
Allen County	Little River Ditch
Allen County	Little Indian Creek
Allen County	Big Indian Creek
Allen County	Beal Taylor Ditch
Allen County	Seegar Ditch
Allen County	Aboite Creek
Allen County	Flaugh Ditch
Allen County	Durnell Ditch
Allen County	Luther Neuhaus Ditch
Allen County	Bobay Ditch
Allen County	Spy Run Creek
Allen County	Becketts Run
Allen County	Geller Ditch
Allen County	Willow Creek
Allen County	Willow Creek Branch
Allen County	Ely Run
Allen County	Cedar Creek
Allen County	St. Joseph River

**Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report**

Allen County	Witmer Ditch
Allen County	Tiernan Ditch
Allen County	Koester Ditch
Allen County	Bullerman Ditch
Allen County	Maumee River
Allen County	Trier Ditch
Allen County	Houk Ditch
Allen County	St. Mary's River
Huntertown	Willow Creek Branch
Huntertown	Willow Creek Ditch
Huntertown	Willow Creek
Leo-Cedarville	Cedarville Reservoir
Leo-Cedarville	Cedar Creek
Leo-Cedarville	Alex Warner Ditch
Leo-Cedarville	Nettlehorst Ditch

2.2 POPULATION DATA

During 1990 and 2000, the US Census Bureau reported Allen County to be the third largest County in Indiana (US Census Bureau, 2002). Between 1990 and 2000, the County experienced a 10.3% population increase from 300,836 people to 331,836 people. The Town of Huntertown grew 33.2% during that same 10 year period from 1,330 people to 1,771 people. 1990 population data for the Town of Leo-Cedarville was not available as the community had not yet been incorporated; however, the 2000 population is ranked 169th in the state at 2,782 people.

**Table 2-2
2002 US Census Bureau Statistics**

MS4 Area	1990 Population (Rank)	2000 Population (Rank)	Percent Change
Allen County	300,836 (3)	331,836 (3)	10.3%
Town of Huntertown	1,330 (264)	1,771 (229)	33.2%
Town of Leo-Cedarville	N/A	2,782 (169)	N/A

2.3 LAND USE DATA

As illustrated in **Exhibit 3**, approximately 67% of Allen County's MS4 area is in agricultural production and 7% is considered to be urbanized. The U.S. Geological Survey - Biological Resources Division and the U.S Fish and Wildlife Service are overseeing the National Gap Analysis Program (GAP). In Indiana, Indiana State University and Indiana University are

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

carrying out the Indiana GAP Project, which involves an analysis of current vegetative land cover through remote sensing. This analysis provides vegetative land cover data in 30 by 30 meter grids. **Table 2-3** summarizes land use data within Allen County as determined by the 1998 data.

**Table 2-3
1998 USGS Land Use Data**

Land Use	Land Area (acres)	MS4 Area (%)
Agriculture	42,743.9	67.0
Urban High Density/ Highly Impervious Area	507.1	0.8
Urban Low Density	3,456.2	5.4
Developed Non Vegetated	438.3	0.7
Forest	15,795.4	24.7
Open Water	519.3	0.8
Herbaceous	383.9	0.6
Total	63,844.1	100

2.4 WATERSHEDS WITHIN MS4 AREA

Six different 8-digit Hydrologic Unit Code (HUC) watersheds drain into or out of parts of Allen County, including the St. Joseph, Upper Maumee, Auglaize, St. Mary's, Upper Wabash, and Eel River basins. As illustrated in **Exhibit 4** and listed in **Table 2-4**, twenty-four 14-digit HUC subwatersheds drain the MS4 area for Allen County, the Town of Leo Cedarville, and the Town of Huntertown.

**Table 2-4
14-Digit Subwatersheds**

Watershed Name	14 Digit HUC	Size* (ac)
St. Joseph River-Cedarville Reservoir	04100003070050	12911.75
Willow Creek-Willow Creek Ditch	04100003090080	10992.05
Cedar Creek-Cedar Canyons	04100003090090	6784.31
St. Joseph River-Ely Run	04100003100010	8867.51
St. Joseph River-Tiernan Ditch	04100003100020	9336.74
Becketts Run	04100003100030	6008.51
St. Joseph River-Schopman Drain	04100003100040	7127.62
St. Joseph River-Simmerman Drain	04100004060010	13798.62
Houk Ditch	04100004060020	11017.53
St. Mary's River-Snyder Ditch	04100004060030	12655.36
Fairfield Ditch-Harber/Deptmer Ditches	04100004060040	15636.25
St. Mary's River-Junk Ditch	04100004060050	11381.93

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

St. Mary's River-Spy Run Creek	04100004060060	9862.85
Maumee River-River Haven	04100005010010	9176.54
Trier Ditch	04100005010030	7580.00
Maumee River-Bullerman Ditch	04100005010040	5614.46
Maumee River Sixmile Creek	04100005010060	7769.58
Wilbur Ditch-Bottern Ditch	04100005010090	8870.19
Graham McCulloch Ditch #1	05120101100020	13852.41
Little River-Allen	05120101100030	8583.58
Seager Ditch	05120101100040	11099.82
Aboite Creek-Beal Taylor Ditch	05120101100050	11569.99
Aboite Creek-Big Indian/Little Indian Creeks	05120101100060	11058.03
Eel River-Berward/Shoaff Dawson Ditches	05120104010010	12244.37

*The acreages listed in Table 2-4 represents the entire subwatershed, and is not limited to the portion of the subwatershed within Allen County's MS4 area.

2.5 SUMMARY OF LAND USE EVALUATIONS

The effects of land use and land use change on surface runoff, streamflow, and groundwater recharge are fundamental considerations in the practice of stormwater management. Expansion of urban areas significantly impacts the environment in terms of groundwater recharge, water pollution, and stormwater drainage. Urbanization can lead to an expansion of impervious surfaces, which can in turn lead to increases in surface runoff volume, downstream flooding, and detrimental impacts to local waterways. Since each land use has a different impact on stormwater runoff, strategic land use planning can help minimize these impacts.

The US EPA's 2002 *National Water Quality Inventory* (NWQI) identified agricultural land uses as the leading source of non-point source (NPS) pollution and water quality impairments to surveyed rivers and lakes, and the third largest source of impairments to surveyed estuaries (EPA, 2002). Since agricultural land uses account for approximately 67% of land uses within the Allen County MS4 Area, Allen County should consider encouraging local agricultural producers to implement agricultural BMPs, including, but not limited to, conservation tillage, nutrient and pesticide management, buffer strips, and wetland restoration. This could be accomplished by working with the Allen County Soil and Water Conservation District (SWCD) to target local agricultural producers in the MS4 area.

In addition, the NWQI identified runoff from urban areas as the leading source of impairments to surveyed estuaries and the third largest source of water quality impairments to surveyed lakes (EPA, 2002). Since urban land uses account for 7% of land uses within the Allen County MS4 Area, and because the County is experiencing increased urbanization, it will be important for the County to manage growth and development in a way that minimizes potential impacts on water quality. As required by Rule 13, Allen County will need to adopt a comprehensive stormwater ordinance designed to minimize the impacts that urbanized areas have on water quality. Additionally, the BMP considerations discussed in Chapter 7 are anticipated to minimize the water quality impacts of Allen County's urban land uses on receiving waters.

3.0 SENSITIVE AREAS

Rule 13 requires the identification of “Sensitive Areas” as locations that should be given the highest priority for the selection of BMPs and the prohibition of new or significantly increased MS4 discharges. The following discussion provides an evaluation of potentially sensitive areas within the Allen County’s MS4 area.

3.1 ERODIBLE SOILS

The Natural Resources Conservation Service (NRCS) uses the soil erodibility index (EI) to provide a numerical expression of the potential for a soil to erode considering the physical and chemical properties of the soil and the climatic conditions where it is located. As a result, the basis for identifying highly erodible land (HEL) is the erodibility index of a soil map unit.

The erodibility index of a soil is determined by dividing the potential erodibility for each soil by the soil loss tolerance (T) value established for the soil. The T value represents the maximum “tolerable” annual rate of soil erosion that could take place without causing a decline in long-term productivity. As illustrated in **Exhibit 5** and **Table 3-1**, Allen County’s MS4 area contains approximately 23,736 acres (37%) of highly erodible and potentially highly erodible soils.

**Table 3-1
Highly Erodible Soils**

Soil Abbreviation	Soil Name	Acres
BhB	Belmore	75.3
BmB	Blount	1,164.9
BmB2	Blount	1,181.3
Bp	Borrow Pits	2.2
ChC	Chelsea	65.8
ChD	Chelsea	1.8
CsB	Crosby	64.5
CsB2	Crosby	8.3
FmB	Fox	113.0
FmC2	Fox	55.6
HaB	Haskins	148.6
HoB	Whitaker	44.5
Ma	Made Land	117.4
McB	Martinsville	303.1
McB2	Martinsville	111.6
McC2	Martinsville	53.9
MeB	Martinsville	114.8
MgC3	Martinsville	41.3
MmC3	Miami	24.1
MkB2	Miami	93.9
MIC2	Miami	19.7

**Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report**

MrC	Morley	271.8
MrD2	Morley	201.5
MrE2	Morley	48.5
MsC3	Morley	1,497.3
MsD3	Morley	429.2
MsE3	Morley	83.3
MrB	Morley	2,372.2
MrB2	Morley	11,860.4
MrC2	Morley	1,945.9
MsB3	Morley	236.9
OfC2	Oshtemo	83.2
OsB	Oshtemo	191.0
PIC	Plainfield	54.7
RaB	Rawson	54.9
RIB2	Rawson	519.4
RIC2	Rawson	79.9
ScB2	St. Clair	0.1
Total		23,736.0

Recognizing the potential water quality impacts associated with disturbing these soils, the County will consider these soils to be “sensitive areas” and will prioritize new/redevelopment occurring on these areas during the plan review, inspection, and enforcement process.

3.2 SOIL SUITABILITY FOR SEPTIC SYSTEMS

As illustrated in **Exhibit 6**, Allen County’s MS4 area contains approximately 59,171 acres (92% of soils) considered to be “severely limited” for onsite wastewater treatment. The Allen County Health Department is charged with permitting and inspecting onsite wastewater disposal systems. Within the County, new developments and existing homes are required to connect to the sanitary sewer system, if service is available within 300 feet. However, when sanitary sewer service is not available, onsite wastewater treatment permits are issued by the Allen County Health Department, if site conditions meet State Department of Health standards.

**Table 3-2
Soil Suitability for Septic Systems**

Soil Series	Map Symbols	Moderate or Severe	Slope Dependent
Blount	BIA, BmA, BmB, BmB2	severe	
Bono	Bn, Bo	severe	
Brookston	Br, Bs	severe	
Carlisle	Ca	severe	

**Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report**

Crosby	CrA, CsA, CsB, CsB2	severe	
Del Rey	Dr	severe	
Eel	Ee, Es	severe	
Genesee	Ge, Gh, Gm, Gn	severe	
Gilford	Go	severe	
Haskins	HaA, HaB	severe	
Hoytville	Hs	severe	
Lenawee	Le, Ls	severe	
Linwood	Lw	severe	
Martinsville	McA, McB, McB2, McC2, MfA, MgC3	moderate	✓
Mermill	Mh	severe	
Miami	MkB2, MIC2, MmC3	severe	✓
Montgomery	Mn, Mo	severe	
Morley	MrB, MrB2, MrC, MrC2, MrD2, MrE2, MsB3, MsC3, MsD3, MsE3	severe	
Nappanee	Na, Np	severe	
Oshtemo	OfA, OfB, OfC2	moderate	✓
Pewamo	Pc, Pe	severe	
Plainfield	PIB, PIC	moderate	✓
Rawson	RaB, RIA, RIB2, RIC2	severe	
Rensselaer	Rm, Rn, Ro, Rs	severe	
St. Clair	SaB, ScB2, ScC2	severe	
Shoals	Sh	severe	
Tawas	Ta	severe	
Wallkill	Wa, Wc	severe	
Washtenaw	Wh	severe	
Westland	Ws, Wt	severe	
Whitaker	HnA, HoA, HoB, HpA	severe	
Willette	Wu	severe	

💧 Sufficient measures are in place to address on-site wastewater treatment in developing and redeveloping areas; however, priority will be given to those areas within the MS4 area with known septic system failures or inadequacies.

3.3 NATURAL HERITAGE DATA

The Indiana Department of Natural Resources (IDNR) Division of Nature Preserves maintains the Natural Heritage Data for the State of Indiana. National Heritage Data includes general information on endangered, threatened, and rare species for each Indiana County. In Allen County, there are 12 plants, 12 mussels, 3 fish, 1 amphibian, 4 reptiles, 15 birds, and 2

species of mammals listed on the State's endangered, threatened, and rare species list.

In Allen County, the following sensitive habitats are listed as a significant on the State endangered, threatened, and rare species list. These include: flatwood, floodplain, and upland forests; dry prairies; and forest and shrub wetlands.

- 💧 Allen County officials are unaware of any waters within the County's MS4 area that currently contain threatened or endangered species and their habitats. If endangered or threatened species and their habitats are identified in the future, Allen County will consider those locations to be sensitive areas and will update their Stormwater Program accordingly. Endangered, threatened, rare species, and habitats are not considered to be sensitive areas as part of current Allen County stormwater program.

3.4 WETLANDS

The National Wetland Inventory (NWI) Map, as illustrated in **Exhibit 7**, identifies potential wetlands within Allen County's MS4 area. According to NWI data, there are approximately 2,716 acres of wetlands in the County's MS4 area. It should be noted that the NWI data was generated from infrared photography and has not been field verified. The NWI map should be used only as a reference, not as a definitive answer of whether wetlands are present on a particular site. Finally, due to the resolution of the land use data described in Section 2.3, the land use information provided in Table 2-3 does not reflect the presence of wetlands. The NWI maps shown in Exhibit 3 serve as a more reliable reference for wetlands than land use data mapping.

Rule 13 requires MS4s to establish a construction program that contains, at a minimum, the requirements of 327 IAC 15-5 (Rule 5). Rule 5 requires all project site owners to develop construction plans that include an existing project site layout describing the location and name of all wetlands, lakes, and water courses on or adjacent to the project site (327 IAC 15-5-6.5(a)(3)).

- 💧 Since Rules 5 and 13 require the identification of wetlands in conjunction with planning for construction site stormwater runoff controls, wetlands will be considered sensitive areas in the County's Stormwater Program. The County's planned stormwater ordinance will mandate that developers meet, at a minimum, the requirements for identifying and protecting wetlands as outlined in 327 IAC 15-5-6.5(a)(3).

3.5 OUTSTANDING AND EXCEPTIONAL USE WATERS

- 💧 Cedar Creek is listed as an "outstanding state resource water" within the Allen County MS4 area. There are no other waters in Allen County that have been designated as "outstanding state resource waters" or as "exceptional use waters".

3.6 ESTABLISHED TMDL WATERS

Section 303(d) of the Clean Water Act requires States to identify waters that do not or are not expected to meet applicable water quality standards with federal technology based standards alone. States are also required to develop a priority ranking for these waters taking into account the severity of the pollution and the designated uses of the waters. Once this listing and ranking of waters is completed, States are required to develop Total Maximum Daily Loads (TMDLs) for listed waters in order to achieve compliance with state water quality standards.

There are thirteen waterbodies identified on the IDEM 303(d) list of impaired streams within the Allen County MS4 area. These waterbodies include: Cedar Creek, Flatrock Creek-Brown Ditch, Spy Run Basin, Black Creek, Willow Creek and tributary, Swartz-Carnahan Ditch, Gremeaux Ditch, St. Mary's River and tributary, Ham Interceptor Ditch, Bottern Ditch and tributaries, Maumee River, Cedarville Reservoir-Lower, and the St Joseph River-Mainstem. The parameters of concern include cyanide, E.coli, fish consumption advisory for PCB and Mercury, as well as impaired biotic communities.

💧 At this time, there have been no completed TMDLs in the Allen County MS4 area; however, the IDEM has scheduled TMDL development to occur from 2001 through 2023. This information will be discussed further in Section 4.2 of this report.

3.7 RECREATIONAL WATERS

No State listed Recreational Waters are located within the Allen County's MS4 area. In addition, according to County Officials, there are no known uses of MS4 area receiving waters for recreational purposes.

3.8 PUBLIC DRINKING WATER SOURCES

According to Indiana Code, a public water supply system is a public water supply for the provision to the public of piped water for human consumption, if such system has at least fifteen (15) service connections, or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days of the year. There are 105 active public drinking water suppliers within Allen County. Of these 105, most utilize ground water as their primary drinking water supply source.


The St. Joseph River is the sole source of drinking water for the City of Fort Wayne's Three Rivers Water Filtration Plant. An average of 34 million gallons of water is drawn from the river each day for treatment, filtration and distribution. The filtration plan provides drinking water to the residents of Fort Wayne, as well as residents of New Haven, Lutheran Hospital at Jefferson & I69, Parkview Hospital North, St. Joseph Hospital on Dupont Road, and AQUASOURCE customers in Aboite Township.

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

Water flows into the St. Joseph River from a watershed that covers more than 694,000 acres in Indiana, Ohio and Michigan. Water is brought to the Three Rivers Filtration Plant through the Cedarville and St. Joseph River dams. Raw water is pumped to the plant from the St. Joseph River Dam located near North Anthony and Coliseum boulevards, which is located within the City of Fort Wayne's MS4 area and approximately one mile downstream from Allen County's MS4 area.

According to the City of Fort Wayne's 2003 Drinking Water Quality Report, contaminants that were detected in untreated St. Joseph River water include:


- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural live stock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses.
- Organic chemical contaminants including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff and septic systems.

 The City of Fort Wayne's Three Rivers Water Filtration Plant is supplied source water from the St. Joe River. Therefore, the following watersheds will be considered priorities for Allen County's Stormwater Program:

- St. Joseph River-Ely Run (04100003100010)
- St. Joseph River-Schoppman Drain (04100003100040)
- St. Joseph River-Tiernan Ditch (04100003100020)
- St. Joseph River-Cedarville Reservoir (04100003070050)

3.9 Superfund Site

There is one (1) superfund site identified within Allen County, Indiana as documented on EPA's final National Priorities List. This site is identified as Fort Wayne Reduction Dump.

 This superfund site is located within the Allen County MS4 area. Waste Management, the owner/operator of the site, entered into a Consent Decree with the U.S. EPA to fund the cleanup work. Construction was started in 1991, with the drum removal occurring in 1993. Over 27,000 drums were removed from the site. Final construction was completed in 1996. As a result of the completed clean up, the site will not be a priority for Allen County's Stormwater Program.

3.10 SUMMARY OF SENSITIVE AREA CONCLUSIONS

As discussed in the sections above, several sensitive areas have been identified as having the potential to impact or be impacted by stormwater runoff from the County's MS4 area. These areas include highly erodible soils, soils unsuitable for septic systems, wetlands, and watersheds containing waterbodies used for public water supply.

- St. Joseph River-Ely Run (04100003100010)
- St. Joseph River-Schoppman Drain (04100003100040)
- St. Joseph River-Tiernan Ditch (04100003100020)
- St. Joseph River-Cedarville Reservoir (04100003070050)

4.0 SUMMARY OF EXISTING MONITORING DATA

Rule 13 requires a review of known existing and available monitoring data for the MS4 area receiving waters, including, as applicable, data that can be correlated from chemical, biological, physical, land use, and complaint data. The following discussion provides an evaluation of known and available data for the Allen County's MS4 area receiving waters.

4.1 INDIANA 305(b) REPORT

The Office of Water Quality's surface water quality monitoring strategy is designed to describe the overall environmental quality of each major river basin and to identify monitored water bodies that do not fully support designated uses. The IDEM's surface water monitoring strategy was revised in 2001 to continue to meet the goal of assessing all waters of the State within five years, while enhancing support of other Office of Water Quality programs.

The 305(b) report is compiled by the IDEM at a frequency prescribed by the US EPA, at least every four years. The report provides a compilation and summary of all of the IDEM's water quality monitoring and assessment data (compiled from AIMS database and other datasets/reports within the IDEM). All IDEM water quality data is evaluated by the IDEM's 305(b) Coordinator and interpreted for each 14-digit HUC subwatershed. Subwatersheds are given a water quality rating relative its streams status in meeting Indiana's Water Quality Standards (WQS). WQS are set at levels necessary for protecting a waterway's designated use(s), such as swimmable, fishable, or drinkable. Each subwatershed is given a rating of fully, partially, or not supportive of its designated uses. **Table 4-1** shows the 2002 305(b) results for Allen County subwatersheds.

**Table 4-1
2002 305(b) Results for the Allen County Subwatersheds**

Watershed Name	14 Digit HUC	Use Support	Cause (stressor) Rating
St. Joseph River-Cedarville Reservoir	04100003070050	F – Contact	N/A
Willow Creek-Willow Creek Ditch	04100003090080	N – Contact	M – Pathogens
Cedar Creek-Cedar Canyons	04100003090090	F – Aquatic Life P – Fish Consum N – Contact	M – PCBs H – Pathogens
St. Joseph River-Ely Run	04100003100010	F – Aquatic Life P – Fish Consum	M – PCBs M – Mercury
St. Joseph River-Tiernan Ditch	04100003100020	N/A	
Becketts Run	04100003100030	N – Aquatic Life	M – Biotic Community Status
St. Joseph River-	04100003100040	P – Fish Consum	M – PCBs

**Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report**

Schoppman Drain			M – Mercury
St. Joseph River-Simmerman Drain	04100004060010	N/A	N/A
Houk Ditch	04100004060020	N/A	N/A
St. Mary's River-Snyder Ditch	04100004060030	F – Aquatic Life P – Fish Consum N – Contact	M – PCBs M – Mercury M – Other Inorganics H – Pathogens
Fairfield Ditch-Harber/Deptmer Ditches	04100004060040	N/A	N/A
St. Mary's River-Junk Ditch	04100004060050	P – Fish Consum	M – PCBs S – Mercury
St. Mary's River-Spy Run Creek	04100004060060	N – Aquatic Life	M – Pesticides
Maumee River-River Haven	04100005010010	F – Aquatic Life P – Fish Consum N – Contact	M – PCBs M – Mercury M – Pathogens
Trier Ditch	04100005010030	N/A	N/A
Maumee River-Bullerman Ditch	04100005010040	F – Aquatic Life P – Fish Consum N – Contact	M – PCBs M – Mercury M – Pathogens
Maumee River Sixmile Creek	04100005010060	F – Aquatic Life P – Fish Consum N – Contact	M – PCBs M – Mercury
Wilbur Ditch-Bottern Ditch	04100005010090	P – Aquatic Life	M – Biotic Community Status
Robinson Creek	05120101100010	N/A	N/A
Graham McCulloch Ditch #1	05120101100020	N/A	N/A
Little River-Allen	05120101100030	N/A	N/A
Seager Ditch	05120101100040	N/A	N/A
Aboite Creek-Beal Taylor Ditch	05120101100050	N/A	N/A
Aboite Creek-Big Indian/Little Indian Creeks	05120101100060	F – Aquatic Life N – Aquatic Life	M – Biotic Community Status
Little River-Calf/Cow Creeks	05120101100070	N/A	N/A
Eel River-Berward/Shoaff Dawson Ditches	05120104010010	N/A	N/A

Use Support: F=full support, P=partial support, N=non support, N/A – not assessed

Cause (stressor) Rating: H=high, M=moderate, S=slight, T=need more information, N/A – not applicable

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

According to the IDEM's monitoring and assessments data, the following subwatersheds are considered to be fully supporting of all designated uses or have not been assessed by IDEM. For the purposes of this report, these watersheds will not be considered to be substantially impacted by stormwater discharges from Allen County's MS4 area:

- St. Joseph River-Cedarville Reservoir (04100003070050)
- St. Joseph River-Tiernan Ditch (04100003100020)
- St. Joseph River-Simmerman Drain (04100004060010)
- Houk Ditch (04100004060020)
- Fairfield Ditch-Harber/Deptmer Ditches (04100004060040)
- Trier Ditch (04100005010030)
- Robinson Creek (05120101100010)
- Graham McCulloch Ditch #1 (05120101100020)
- Little River-Allen (05120101100030)
- Seager Ditch (05120101100040)
- Aboite Creek-Beal Taylor Ditch (05120101100050)
- Little River-Calf/Cow Creeks (05120101100070)
- Eel River-Berward/Shoaff Dawson Ditches (05120104010010)

In addition, the following subwatersheds receiving stormwater discharges from the Allen County MS4 area is impacted only by stressors that are considered legacy pollutants (mercury and PCB's) that have been transported to the stream from non-stormwater discharges (direct discharges) and air deposition. Consequently, the following subwatersheds will not be a priority for Allen County's Stormwater Program:

- St. Joseph River-Schoppman Drain (04100003100040)
- St. Joseph River-Ely Run (04100003100010)

💧 Some stressors such as impaired biotic communities and pathogens may be related to stormwater runoff. Based upon the IDEM's 305(b) assessments, the following subwatersheds should be considered as priorities for Allen County's Stormwater Program. These subwatersheds are highlighted in **Exhibit 8**.

- Willow Creek-Willow Creek Ditch (04100003090080)
- Cedar Creek-Cedar Canyons (04100003090090)
- Becketts Run (04100003100030)
- St. Mary's River-Snyder Ditch (04100004060030)
- St. Mary's River-Spy Run Creek (04100004060060)
- Maumee River-River Haven (04100005010010)
- Maumee River-Bullerman Ditch (04100005010040)
- Maumee River Sixmile Creek (04100005010060)
- Wilbur Ditch-Bottern Ditch (04100005010090)
- Aboite Creek-Big Indian/Little Indian Creeks (05120101100060)

4.2 INDIANA 303(d) LISTED IMPAIRED STREAMS

Section 303(d) of the Clean Water Act requires states to identify waters that do not or are not expected to meet applicable water quality standards with federal technology based standards alone. States are also required to develop a priority ranking for these waters, taking into account the severity of the pollution and the designated uses of the waters. Once this listing and ranking of waters is completed, the states are required to develop TMDLs for these waters in order to achieve compliance with the water quality standards.


 **Table 4-2** identifies 303(d) listed impaired waterbodies within the Allen County's MS4 area. In addition, the table identifies the 14-digit hydrologic unit code for each impaired stream, water quality parameters of concern, and the TMDL development schedule. Subwatersheds considered impaired by stormwater related stressors, as discussed in Section 4.1, are considered sensitive areas and are considered priorities for Allen County's Stormwater Program. **Exhibit 9** identifies impaired streams within Allen County's MS4 area.

Table 4-2
2002 303(d) Listed Streams within Allen County

Waterbody	HUC(s)	Parameter(s) of Concern	TMDL Development Schedule
Cedar Creek	04100003090090	E.coli	2002-2007
Cedar Creek	04100003090090	FCA for PCB	2015-2020
Bullerman Ditch and Tributaries	04100005010040	Impaired Biotic Communities	2012-2019
Spy Run Basin	04100004060060	Impaired Biotic Communities	2005-2012
Black Creek	04100003070050	Impaired Biotic Communities, Nutrients, Algae	2005-2012
Willow Creek and Tributary	04100003090080	E.coli	2010-2015
St. Mary's River	04100004060030 04100004060050 04100004060060	E.coli, FCA for PCB & Hg	2015-2020
Bottern Ditch and Tributaries	04100005010090	Impaired Biotic Communities	2012-2019
Maumee River	04100005010010 04100005010040 04100005010060	E.coli, FCA for PCB & Hg	2015-2020
Cedarville Reservoir	04100003070050	E.coli	2015-2020

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

St. Joseph	04100003070050 04100003100040 04100003100010 04100003100020	FCA for PCB & Hg	2015-2020
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4.3 UNITED STATES GEOLOGIC SURVEY (USGS) STUDIES

In 1991, the U.S. Geological Survey began implementation of the National Water-Quality Assessment (NAWQA) Program. The NAWQA program integrates monitoring of surface and ground water quality with the study of aquatic ecosystems. The goals of the NAWQA program are to (1) describe current water quality conditions for a large part of the Nations' freshwater streams and aquifers, (2) describe how water quality is changing over time, and (3) improve our understanding of the primary natural and human factors affecting water quality. NAWQA program studies are conducted within areas called study units. The Lake Erie-Lake St. Clair River Basin is one such study unit.

The Lake Erie River basin drains a 22,300 square mile area with 6 percent of this area being in northeastern Indiana. Approximately 75% of the land area is in agricultural production. Corn, soybeans, and wheat are grown predominantly in the western part of the basin.

Urban land uses compose nearly 11% of remaining land uses. Urban land uses are an important component of land use in the basin. Detroit and Pontiac, Michigan; Akron, Cleveland, Lima, and Toledo, Ohio; Fort Wayne, Indiana; Erie, Pennsylvania; and Buffalo, New York, were historically significant contributors to industrial America through the production of automobiles, rubber, steel, petroleum, and chemicals. These cities remain important industrial and manufacturing centers. Major urban centers rely on abundant supplies of water for shipping, electric power generation, Industry, domestic consumption, and waste assimilation.

The Maumee River drains an area of 6,608 square miles, or roughly one-third of the total drainage area of the study unit. The Maumee River Basin was selected for study because it is the largest source of nutrients, pesticides, and sediment to Lake Erie. About 70 percent of the Basin is used for agriculture. A network of 4 fixed sites was selected for the Maumee River Basin, including one site located at New Haven, Indiana. The Maumee River at New Haven was selected to characterize the upstream quality and to evaluate complex combinations of land use and geology in the St. Joseph River and St. Mary's River Basins. This site was sampled on a monthly basis from 1996 through 1998 and additional samples were collected during storm events. Water quality parameters sampled at this site included nutrients, pesticides, *E. coli* bacteria, suspended organic carbon, dissolved organic carbon, sediment, dissolved oxygen, pH, specific conductance, water temperature, and fish tissue.

The St. Joseph River is the second largest tributary to the Maumee River. Information about the discharge of nutrients, sediment, and currently used pesticides from this row-cropped agricultural basin is important because the St. Joseph River is the water supply for about 250,000 people in the City of Fort Wayne and Allen County. An additional fixed site is located

on the St. Joseph River near Newville, Indiana in Dekalb County.

Water quality in the Lake Erie-Lake Saint Clair River basins is greatly influenced by land use and human activities. A major pathway for contaminant transfer from the land surface to streams is storm runoff from urban and agricultural areas.

Storm water quality impairments identified in the Maumee River Basin include sediment, pesticides, and phosphorous. Cropland in the Maumee River Basin is the largest contributor to soil erosion and sediment in the Maumee River and the river is the largest tributary source of suspended sediments to Lake Erie. Excessive amounts of sediment discharged from the Maumee River to Lake Erie diminish the aquatic habitats of fish and other organisms. Suspended-sediment discharges from the Maumee River Basin decreased by 11.2% over the period 1970–98 and corresponded to increased use of conservation tillage to control soil erosion.

Between March 1996 and February 1998, 305 samples were collected from 10 streams in the basin. Every sample contained at least one pesticide, and most contained mixtures of several pesticides. The greatest numbers of concentrations of pesticides affecting aquatic life were detected in streams draining row crops and mixed-use land. Agricultural runoff is an important nonpoint source of phosphorus to small streams and major rivers and major rivers, like the Maumee River, provide a direct pathway to Lake Erie. Phosphorous concentrations in the Maumee River at New Haven are among the highest in the basin.

🌿 The USGS's Lake Erie-Lake Saint Clair River NAWQA study concluded that water quality issues in this basin are primarily related to agriculture. Since agricultural land uses account for approximately 67% of land uses within Allen County's MS4 Area, the County will consider agricultural areas within the MS4 area a priority. This can be accomplished by partnering with the Allen County Soil and Water Conservation District (SWCD) to encourage local agricultural producers to implement agricultural BMPs, such as conservation tillage, within the MS4 area.

4.4 STREAM REACH CHARACTERIZATION EVALUATION REPORT

No SRCERs were identified that were relevant to Allen County's MS4 area.

4.5 LAKE AND RIVER ENHANCEMENT STUDIES

After consulting Mr. Jim Ray, of the IDNR's Division of Soil Conservation, and a thorough review of the IDNR's Division of Soil Conservation project files by CBBEL staff, there are no recent LARE water quality studies identified that were relevant to Allen County's MS4 area.

4.6 CLEAN WATER ACT CHAPTER 319 AND 205(J) GRANT STUDIES

St. Joseph River Watershed Initiative - Watershed Management Plan

The St. Joseph River Watershed Initiative (SJRWI), formed in 1995, is a 501(c)(3) not-for-profit organization made up of local citizens, organizations, businesses and government agencies. From 1996-1998, through a Section 319 grant, the SJRWI developed the St. Joseph River Watershed Management Plan. To facilitate the planning process, the SJRWI implemented a water quality program to determine pesticide, sediment, nutrient, and bacteria concentrations from within the St. Joseph River and its tributaries.

The SJRWI collected water quality data from a combination of 27 different sites within the St. Joseph River Basin in Indiana, Ohio, and Michigan. Nineteen sites from within the St. Joseph River Watershed were sampled and eight within the Cedar Creek sub-watershed. The following Allen County MS4 area stormwater receiving waters were monitored by this program:

- Cedar Creek (Allen County and Leo-Cedarville)
- St. Joseph River (Allen County)
- Willow Creek (Huntertown)

The watershed management plan summarized monitoring results from 1996-1998. This data was also summarized in a matrix, which provides an evaluation of individual subwatersheds. **Table 4-3** describes the average concentrations of the different pollutants found within each stream. Subwatersheds are then prioritized based upon an evaluation of all water quality parameters; however, only subwatersheds listed with bold text are within the Allen County MS4 area. It is important to note that nitrate, phosphorus, and total suspended solids were monitored only in 1996 and all other parameters were monitored from 1996-1998.

**Table 4-3
SJRWI Priority Watersheds**

Site	E. coli (CFU/100ml)	N (ppm)	Total P (ppm)	TSS (ppm)	Atrazine (ppb)	Cyanazine (ppb)	Alachlor (ppb)	Site Priority
Cedar Creek	3.94	.31	1.23	4.6	.47	.28	.28	1.59
Willow Creek	2.65	.39	.9	6.53	.39	.12	.19	1.6
Black Creek	4.79	.43	.97	11.36	.58	.23	.22	2.65
Little Cedar	4.59	.21	1.8	7.2	.52	.26	.32	2.13
Diehl/Peckhar	4.94	.34	1.63	7.04	.51	.17	.26	2.13
Cedar Creek	5.81	.36	1.9	4.04	.65	.51	.66	1.99
Matson Ditch	3.97	.61	2.63	12.24	.77	.35	1.18	3.11

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

Cedar Creek	2.11	.22	1.6	1.75	.62	.58	.4	1.04
St. Joseph River	.79	.13	1.7	.7	.68	.79	.55	.76
St. Joseph River	.36	.18	1.00	5.4	.72	.82	.61	1.18
Shank Ditch	2.83	.35	1.10	4.13	.5	.43	.8	1.45
Fish Creek	2.38	.15	_____	4.13	.57	.33	.43	
St. Joe-West	1.03	.18	1.10	2.24	.5	.81	.33	1.14
St. Joe-East	3.88	.19	1.4	3.32	.39	.46	.29	.88
Big Run	10.53	.38	3.4	5.64	.61	.28	1.23	1.42
Bear Creek	3.87	.18	1.00	3.75	.61	.25	.64	3.15
Nettle Creek	2.93	.16	2.3	4.11	.7	.51	1.19	1.47
Eagle Creek	3.24	.20	2.1	3.36	.57	.64	.9	1.7
Bear Creek	4.31	.21	1.17	11.57	.9	1.25	1.04	1.57

In addition to prioritizing subwatersheds, the SJRWI watershed management plan identifies suspected sources of pollutants detected by their monitoring program. The watershed plan identified the following sources for parameters of concern:

- **E. coli** - faulty septic systems and/or mismanaged livestock waste.
- **Phosphorus** - faulty septic systems and surface runoff from agricultural lands.
- **Suspended Solids** - streambank erosion, erosion from agricultural lands, and urban runoff.

💧 The Cedar Creek-Cedar Canyons (04100003090090) subwatershed was identified as the sixth highest priority subwatershed due to elevated concentrations of total phosphorus and total suspended solids. This subwatershed will be considered a priority for Allen County's Stormwater Program.

4.7 HEALTH DEPARTMENT STUDIES

Allen County is located in an area with primarily moraine soils, which are not well suited for traditional septic systems. The Allen County Health Department has conducted significant monitoring activities to determine the level of impact failing septic systems are having on Allen County's surface water quality conditions. A request was made of the Allen County Health Department to submit the results of their monitoring activities, however, such information is not available at this time.

4.8 SUMMARY OF EXISTING WATER QUALITY DATA EVALUATIONS

As discussed in the above sections, existing water quality data and studies related to Allen County's MS4 area receiving waters have identified multiple instances of stormwater related pollutants in the County's MS4 area receiving waters. Based upon the data evaluated for this report, the following subwatersheds will be considered priorities for BMP implementation through Allen County's Stormwater Program:

- Willow Creek-Willow Creek Ditch (04100003090080)
- St. Joseph River-Cedarville Reservoir (04100003070050)
- Cedar Creek-Cedar Canyons (04100003090090)
- Becketts Run (04100003100030)
- St. Mary's River-Snyder Ditch (04100004060030)
- St. Mary's River-Spy Run Creek (04100004060060)
- Maumee River-River Haven (04100005010010)
- Maumee River-Bullerman Ditch (04100005010040)
- Maumee River Sixmile Creek (04100005010060)
- Wilbur Ditch-Bottern Ditch (04100005010090)
- Aboite Creek-Big Indian/Little Indian Creeks (05120101100060)

5.0 IDENTIFICATION AND ASSESSMENT OF EXISTING BMPs

Rule 13 requires the assessment of structural and nonstructural stormwater BMPs and locations. The following discussion provides an inventory of BMPs identified for the Allen County. Structural and non-structural BMPs are identified and discussed according to each of the six required Minimum Control Measures (MCMs).

5.1 ASSESSMENT OF EXISTING PUBLIC EDUCATION AND OUTREACH BMPs

Compliance with this MCM requires MS4s to demonstrate that residents, visitors, public service employees, commercial and industrial facilities, and construction site personnel within the MS4 are educated about the impacts of polluted stormwater runoff on MS4 area receiving waters.

Existing Public Education and Outreach programs and activities performed by Allen County are as follows:

- Multi-jurisdictional coordination has been established among members of local cities, County, state, and federal agencies via “Watershed Management Teams”. The purpose of the teams is to coordinate water resource management efforts, such as educational websites and developing brochures, in an effort to reduce duplication.
- Allen County, in partnership with the City of Fort Wayne, the City of New Haven, the Maumee River Basin Commission (MRBC), and SJRWI have been coordinating their resources and efforts to provide public education and outreach opportunities to residents throughout the County via the “Allen County Partnership for Water Quality (ACPWQ)”.
- The ACPWQ hired a full-time Water Education Specialist in the summer of 2002. This position is funded by Allen County, Fort Wayne, and New Haven. The Water Education Specialist is responsible for creating water quality brochures, providing nonpoint source information, and conducting workshops addressing nonpoint source pollution.
- The Maumee River Basin Partnership of Local Governments (MRBPLG), which includes representatives from Allen County and surrounding counties in Michigan and Ohio, has been established as a regional multi-jurisdictional coordination effort for addressing water resource issues. The MRBPLG is an advocacy group that seeks solutions to common water resource issues among communities on a variety of federal and state rules and regulations.
- Educational workshops and informative brochures addressing storm drain stenciling activities, adopt-a-river programs, septic system maintenance, development within the floodplain, runoff control issues, and effective BMPs are conducted by the Allen County Surveyor’s Office (ACSO), SWCD, MRBC, SJRWI, Allen County Health Department (ACHD), and/or the IDNR.

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

- The Allen County Parks Department maintains a Compost Education site at Fox Island Park.
 - The Allen County Parks Department conducts environmental education through staff members and volunteers at selected park facilities.
 - The Allen County Parks Department sponsors the Little River Wetlands project, which offers clean-up and water quality testing opportunities to volunteers and students.
 - The Purdue Cooperative Extension Service (CES) Master Gardener program touches on water quality through education of proper application and ways to reduce herbicides, pesticides, and other chemical applications in lawns and gardens.
 - The Horticulture newsletter, sent out by the CES, occasionally contains articles pertaining to water quality through subjects such as reduction of pesticides.
 - Currently, the County is developing a website that will include water quantity and quality information and will link with other municipalities throughout the County. Additionally, the City of Fort Wayne maintains a website that includes volunteer information for stream clean-ups and tips for reducing impacts of floodwaters; however, it lacks specific stormwater information.
 - The SJWRI's website has information on watershed boundaries, land use conversion, and water quality data.
- 💧 Allen County's existing Public Education and Outreach activities will help ensure the County's compliance with requirements of Rule 13; however, at present these activities are not sufficient to address the requirements of Rule 13.

5.2 ASSESSMENT OF EXISTING PUBLIC PARTICIPATION AND INVOLVEMENT BMPs

Compliance with this MCM requires MS4s to demonstrate that opportunities were provided for stakeholders to participate in the development and implementation of the MS4s SWQMP.

Existing Public Participation and Involvement programs performed by Allen County are as follows:

- The County conducts joint Drainage Board meetings with other municipalities, such as Hometown and Leo-Cedarville. The monthly drainage board meetings, and quarterly meetings, with CES are open to public.
- Public meetings, sponsored by the SWCD, address land use conservation and water quality improvement topics.

- The Allen County Solid Waste Management District encourages public participation in proper disposal of solid wastes to reduce the volume that enters landfills.
- The Allen County Parks Department supports stream-side and road-side clean-ups as well as water quality testing opportunities for volunteers and students through the Little River Wetlands project
- The MRBC maintains a website with information on volunteer opportunities for land use conversion, flood proofing, buyouts, and floodplain mapping.

Existing Public Participation and Involvement activities performed by Hometown are as follows:

- The Town of Hometown's Street Department conducts an annual leaf/litter collection day. The Street Department collects leaves and other debris placed in front of residences throughout the Town.

Allen County's existing Public Participation and Involvement activities will help ensure the County's compliance with requirements of Rule 13. However, these activities are currently not sufficient to address the requirements of Rule 13.

5.3 ASSESSMENT OF EXISTING ILLICIT DISCHARGE DETECTION AND ELIMINATION BMPs

Compliance with this MCM requires MS4s to develop and implement a strategy to detect and eliminate illicit discharges to the MS4 conveyance system. To this end, the County, Hometown, and Leo-Cedarville will need to develop a storm sewer system map that identifies specified conveyances and outfalls. In addition, to maximize effectiveness, it will be important for all field staff to receive training and education regarding illicit discharges to ensure that staff identify and respond to illicit discharges appropriately.

Existing Illicit Discharge Detection and Elimination activities performed by Allen County are as follows:

- The ACHD follows the state statute regarding health hazards, such as septic tie-in with stormwater sewers. Additionally, the ACHD follows the state regulation, which prohibits open discharge of sanitary sewers, such as discharge into a stormwater sewer.
- The ACHD has performed dye testing and water quality testing for e.coli at various locations throughout the County to identify failing septic systems.
- The ACHD has partially identified effluent pipes discharging into stormwater conveyance structures.

- Complaints of non-stormwater discharges into stormwater conveyance systems are handled by staff at the ACHD. The ACHD works with land owners or businesses to eliminate the non-stormwater discharge. If the violation is not remedied, then the ACHD has the authority to assess fines.
 - Based on previous studies conducted by IDEM, the ACHD has prioritized some illegal discharge areas and are working with regional sewer districts to install sanitary sewers.
 - ACHD works with the Allen County Partnership for Water Quality to develop educational materials and programs to educate residences and businesses regarding illicit discharges and proper maintenance of septic systems.
 - The Allen County SWCD hosts several workshops for homeowners regarding proper septic maintenance.
 - The Allen County Solid Waste Management District enforces illegal dumping that occurs within the County through County and State ordinances.
- 💧 The existing Illicit Discharge Detection and Elimination activities discussed above will help ensure Allen County's compliance with requirements of Rule 13. However, these activities are currently not sufficient to address the requirements of Rule 13.

5.4 ASSESSMENT OF EXISTING CONSTRUCTION SITE STORMWATER RUNOFF CONTROL BMPs

Compliance with this MCM requires MS4s to develop, implement, manage, and enforce an erosion and sediment control program for construction activities that disturb one or more acres of land within the MS4 area. In Allen County, Stormwater Runoff Controls for all construction activities are currently regulated under the Allen County Drainage and Sediment Control ordinance. In the Town of Hometown and Town of Leo-Cedarville, Stormwater Runoff Controls for all construction activities are currently regulated via the Allen County's Drainage and Sediment Control ordinance. Additionally, Allen County relies on the SWCD and the IDNR Division of Soil Conservation for implementation of Indiana's Rule 5 program for minimizing stormwater runoff from construction activities.

Existing local Construction Site Runoff Control activities implemented by Allen County are as follows:

- The Allen County Drainage and Sediment Control ordinance contains enforcement language relating to runoff control, but not for site inspections. The ordinance states that all erosion control measures required by the ordinance shall meet the design criteria, standards, and specifications for erosion control measures outlined in "Indiana Handbook for Erosion Control in Developing Areas, Guidelines for Protecting Water Quality Through the Control of Soil Erosion and Sedimentation on Construction Sites",

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

published by the Division of Soil Conservation, IDNR (October, 1992). If the requirements of the ordinance are not met, no building permit will be issued.

- The ACSO conducts plan review items regarding new construction, including plat reviews, detention requirements, construction plans, and permit applications.
- The SWCD reviews and approves erosion and sediment control plans according to Rule 5 requirements (sites disturbing 5 acres or more of land) for Allen County.
- The Complaint Section of ACSO handles complaints received by the general public. A representative follows up with the complaint by performing a site visit and assessing the issue. The ACSO handles the complaint if it pertains to agricultural drainage issues or water quantity issues within subdivisions. If the complaint relates to erosion control within subdivisions, then the complaint is redirected to the NRCS, which has enforcement capabilities through the issuance of fines.

Existing local Construction Site Runoff Control activities implemented by Hometown are as follows:

- All plan reviews for the Town are conducted by the Allen County Plan Commission.
- All new construction plans are submitted to the ACSO, which conducts plan review items regarding new construction, including plat reviews, detention requirements, construction plans, and permit applications.
- Inspection of sites is performed at the recommendation of the ACSO or through citizen complaints.

Existing local Construction Site Runoff Control activities implemented by Leo-Cedarville are as follows:

- All new construction plans are submitted to the ACSO, which conducts plan review items regarding new construction, including plat reviews, detention requirements, construction plans, and permit applications.
- All street projects are submitted to the Allen County Highway Department for review.
- Citizen complaints regarding construction activities are handled by the Clerk Treasurer or Town Council. The Town Council reviews the complaint and directs it toward the Town Engineer or ACSO.

• The existing Construction Site Stormwater Control activities discussed above will help ensure the County's compliance with requirements of Rule 13. However, these activities are currently not sufficient to address the requirements of Rule 13.

5.5 ASSESSMENT OF EXISTING POST-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL BMPs

Compliance with this MCM requires MS4s to develop a program for managing post-construction BMPs that will ensure adequate, long-term stormwater quality benefits in new development and redevelopment activities. Once construction is complete, post-construction practices specified by the MS4 must be implemented to ensure stormwater quality is maintained from the developed site via an enforceable ordinance or other regulatory mechanism.

Existing Post-Construction Site Stormwater Runoff Control activities implemented by Allen County are as follows:

- The ACSO requires the following structural controls for post construction runoff:
 - excavated excess spoil from detention basins shall have a slope no steeper than 4:1 for safety, erosion control, stability, and ease of maintenance
 - grass or other suitable vegetative cover shall be provided throughout the entire detention storage basin area
 - safety ledge and maintenance ledge required for wet-bottom basins
 - for detention ponds with a normal pool greater than 3.0 acres, material such as stone, riprap, or other material/planting is required to prevent erosion due to wave action
 - periodic maintenance is required in lakes to control weeds
 - debris removal from stormwater detention basins is required
 - if required, aeration facilities to prevent pond stagnation should be provided
 - open channels side slopes shall be no steeper than 3:1 and flatter slopes may be required to prevent erosion and ease of maintenance
 - channel stability inspection of open channels created to convey stormwater runoff is required after construction is complete
- The ACSO has established guidelines for managing files pertaining to the County's stormwater management program. Data sets including design plans, reports, previously approved projects, and as-builts. All files are kept on-site and indefinitely in hard copy format. The ACSO also maintains the Rule 5 plans, applications, and correspondence. These too are kept on-site in hard copy format indefinitely.
- The ACSO requires a permanent erosion control plan of all graded and non-hard surface areas within the proposed development, as planned for completion.
- The ACSO requires maintenance procedures by responsible parties to keep all of the land under adequate cover and erosion at an acceptable minimum.
- The ACSO requires As-Built plans, which include storm drainage and erosion control systems, before final acceptance of the proposed project.
- A MicroStation GIS database is maintained by the County. The ACSO uses ArcView for

its GIS data, which contains descriptions of known BMPs in the St. Joseph Watershed.

Existing Post-Construction Site Stormwater Runoff Control activities implemented by Leo-Cedarville are as follows:

- Once the project has been constructed, as-builts are required to be submitted to the Town.
- The existing Post-Construction Stormwater Runoff Control activities discussed above will help ensure Allen County's compliance with requirements of Rule 13. However, these activities are currently not sufficient to address the requirements of Rule 13.

5.6 ASSESSMENT OF EXISTING POLLUTION PREVENTION AND GOOD HOUSEKEEPING BMPs

Compliance with this MCM requires MS4s to develop and implement a program to prevent or reduce pollutant runoff from municipal operations within the MS4 Area. Allen County and Hometown are currently implementing a number of recommended Stormwater Pollution Prevention BMPs. The Town of Leo-Cedarville does not own any municipal operation facilities at this time.

Existing Pollution Prevention and Good Housekeeping BMPs implemented by Allen County are as follows:

- The Allen County Parks Department has in-service employee training for chemical handling.
- The Allen County Highway Department maintains three (3) barns, which house road salt.
- The Highway Department employees attend annual training on the handling and application of herbicides utilized in roadside spraying.
- The Highway Department notifies the Allen County Emergency Agency regarding any roadside spills.
- The Highway Department submits a Rule 5 plan to the ACSO and SWCD for all road projects.

Existing Pollution Prevention and Good Housekeeping BMPs implemented by the Town of Hometown are as follows:

- The Hometown Street Department performs vehicle wash downs at a car wash facility.

- The Street Department purchases salt from the Allen County Highway Department, which is stored in barns.

5.7 SUMMARY OF EXISTING BMP ASSESSMENTS

Although Allen County and the Town of Hometown have already implemented numerous BMPs that address the mandates of the NPDES Phase II Program, as a whole, Allen County's existing BMPs do not fully address the requirements of Rule 13. The existing BMPs discussed in this section provide the foundation from which the County will begin to develop its program for complying with Rule 13.

6.0 POTENTIAL PROBLEM AREAS

Rule 13 requires the identification of areas having reasonable potential for or actually causing stormwater quality problems based upon relevant land use data and identified sensitive areas, as well as existing and available water quality data. These areas are required to be given the highest priority for the selection of BMPs and the prohibition of new or significantly increased MS4 discharges. The following discussion summarizes potential problem areas identified for Allen County. Potential BMPs being considered for implementation are discussed in Chapter 7 of this report.

6.1 LAND USES

Agricultural land uses account for approximately 67% of land uses within Allen County. The County will need to consider encouraging local agricultural producers to implement agricultural BMPs, including, but not limited to, conservation tillage, nutrient and pesticide management, buffer strips, and wetland restoration.

Urban land uses account for 7% of land uses within Allen County. However, growth in the County's MS4 area is occurring at an increasing pace. This trend towards urbanization will likely continue in the near future and it will be important for the County to manage growth and development in a way that minimizes the potential impacts on water quality. As required by Rule 13, the County will need to adopt a comprehensive stormwater ordinance designed to minimize the impacts of the County's urbanized areas on water quality. Additional BMPs listed in Chapter 7 should also minimize the water quality impacts of the County's urban land uses on receiving waters.

6.2 SENSITIVE AREAS

Highly Erodible Soils

As discussed in Chapter 3, approximately 23,736 acres in the County's MS4 area are classified as highly erodible or potentially highly erodible. Recognizing the potential water quality impacts associated with disturbing these soils, the County will consider these soils to be "sensitive areas" and will prioritize new/redevelopment occurring on these sites during the plan review, inspection, and enforcement process.

Soil Suitability for Septic Systems

The soil suitability data illustrated in Exhibit 6 suggests a high probability for septic system failures within the County's MS4 area. Since existing controls are in place to address wastewater treatment in new/redeveloping areas, priority will be given to those areas within the County's MS4 area with known septic system failures or inadequacies.

Public Drinking Water Sources

The City of Fort Wayne's Three Rivers Water Filtration Plant is supplied source water from the St. Joseph River. Therefore, the following watersheds will be considered priorities for Allen

County's Stormwater Program:

- St. Joseph River-Ely Run (04100003100010)
- St. Joseph River-Schoppman Drain (04100003100040)
- St. Joseph River-Tiernan Ditch (04100003100020)
- St. Joseph River-Cedarville Reservoir (04100003070050)

6.3 EXISTING WATER QUALITY DATA

Existing water quality data and studies related to Allen County's MS4 area receiving waters have identified multiple instances of stormwater related pollutants in the County's MS4 area receiving waters. Based upon the data evaluated for this report, the following subwatersheds will be considered priorities for BMP implementation through Allen County's Stormwater Program:

- Willow Creek-Willow Creek Ditch (04100003090080)
- St. Joseph River-Cedarville Reservoir (04100003070050)
- Cedar Creek-Cedar Canyons (04100003090090)
- Becketts Run (04100003100030)
- St. Mary's River-Snyder Ditch (04100004060030)
- St. Mary's River-Spy Run Creek (04100004060060)
- Maumee River-River Haven (04100005010010)
- Maumee River-Bullerman Ditch (04100005010040)
- Maumee River Sixmile Creek (04100005010060)
- Wilbur Ditch-Bottern Ditch (04100005010090)
- Aboite Creek-Big Indian/Little Indian Creeks (05120101100060)

6.4 SPECIFIC LOCATIONS REQUIRING STRUCTURAL BMPS

Rule 13 requires MS4s to identify areas having reasonable potential for causing stormwater quality problems. In order to minimize potential problems associated with the County's various maintenance facilities, the facilities listed below will be targeted for BMP implementation as part of the County's Stormwater Program.

Allen County Highway Department

The Allen County Highway Department has two maintenance facilities, which are located at 2234 Carroll Road and 8317 E. Tillman Road in Fort Wayne, Indiana. These sites have been identified as locations potentially in need of structural BMPs due the types of materials and activities used and stored on-site. In particular, stockpiles of sand need to be covered and BMPs need to be implemented to prevent vehicle wash waters from accessing stormwater. The Highway Department's maintenance facilities will be further evaluated as part of the County's Stormwater Program. A list of BMPs being considered for implementation at this facility can be found in Section 7.6.

Allen County Parks Department

The Parks Department maintenance facility, located at Fox Island Park in Fort Wayne, Indiana, was identified as a location potentially in need of structural BMPs due the types of chemicals used and stored on-site. The Park's maintenance facility will be further evaluated as part of the County's Stormwater Program. A list of BMPs being considered for implementation at this facility can be found in Section 7.6.

Huntertown Street Department

The Street Department's maintenance facility is located at the intersection of Cedar Canyons Road and State Road 3 in Huntertown, Indiana. The facility was identified as a location potentially in need of structural BMPs due the types of chemicals used and stored on-site. The Town's maintenance facility will be further evaluated as part of the County's Stormwater Program. A list of BMPs being considered for implementation at this facility can be found in Section 7.6.

7.0 POTENTIAL BMPs BEING CONSIDERED

Allen County is still in the process of determining which structural and nonstructural BMPs will provide for the most efficient and effective implementation of their SWQMP. The following discussion summarizes BMPs currently being considered by the County. Potential BMPs are summarized for each of the six minimum control measures. These considerations include new BMPs and potential enhancements to existing BMPs, and are in addition to the existing BMPs discussed in Chapter 5. It is anticipated that many, if not all, of the BMPs identified below will be included in the County's final SWQMP Part C.

The following sections are based upon the following considerations:

- Requirements of Rule 13
- Assessments of existing BMPs
- Identification of potential problem areas

7.1 PUBLIC EDUCATION AND OUTREACH BMPs

The following BMPs are being considered by the Allen County in order to comply with the minimum requirements of this MCM.

Best Management Practice (BMP)	Location/ Application	Purpose/ Objective
Develop a survey designed to assess initial constituent knowledge and practices as they relate to stormwater quality.	Distribute via utility bills, the Allen County Parks, Town hall meetings, and other local events.	Assess initial constituent knowledge and practices as they relate to stormwater quality.
Create a series of stormwater educational brochures targeting citizens, visitors, the construction and development community, and businesses and commercial facilities. Expand the existing Allen County Partnership for Water Quality programs to include more stormwater quality information and facets of the SWQMP	Distribute via utility bills, the Allen County Parks, Allen County Partnership for Water Quality, Town hall meetings, and other local events.	Educate community members on the need for a stormwater management program and the impacts that stormwater runoff can have on water quality.
Work with the Allen County Solid Waste Management District to publicize the County's Household Hazardous Waste Programs.	Distribute brochures and fliers via utility bill inserts.	Educate community members on the importance of pollution prevention and recycling programs.

7.2 PUBLIC PARTICIPATION AND INVOLVEMENT BMPs

The following BMPs are being considered by the Allen County in order to comply with the minimum requirements of this MCM.

Best Management Practice (BMP)	Location/ Application	Purpose/ Objective
Develop a "Stormwater Management Citizen Advisory Committee (CAC)" consisting of key MS4 staff and appropriate citizen representatives to participate in the development and implementation of the County's stormwater program.	City-County Building Fort Wayne, Indiana	Ensure adequate citizen involvement in the development and implementation of Allen County's SWQMP.
Implement a Storm Drain Inlet Marking Program.	All storm sewer inlets in priority areas.	Increase citizen awareness of the County's stormwater program through public participation.
Formalize and advertise consistent community cleanup programs. Expand cleanup programs that currently exist through the Allen County Parks Department.	County, City, and Town Parks and other common areas	Increase citizen awareness of the County's stormwater program through public participation.
Develop an educational training program focusing on the local construction and development community.	Allen County, Indiana	Increase the construction and development community's awareness of changing erosion and sediment control standards.

7.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION BMPs

The following BMPs are being considered by the Allen County in order to comply with the minimum requirements of this MCM.

Best Management Practice (BMP)	Location/ Application	Purpose/ Objective
Develop an illicit discharge detection and elimination ordinance.	Allen County, Indiana	Establish enforceable restrictions on non-stormwater discharges to the County's storm sewer system.
Develop a plan for identifying and eliminating illicit storm sewer connections.	Allen County, Indiana	Ensure effective detection and elimination of illicit discharges to the County's storm sewer system.
Develop a stormwater system map.	Allen County, Indiana	Increase effectiveness of County responses to illicit discharges entering the storm sewer system.
Develop an educational program for all County employees, businesses and general public regarding illegal discharges and improper disposal of hazardous waste.	Allen County, Indiana	Ensure County staff is trained in proper storage and disposal of hazardous chemicals.

7.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL BMPs

The following BMPs are being considered by the Allen County in order to comply with the minimum requirements of this MCM.

Best Management Practice (BMP)	Location/ Application	Purpose/ Objective
Expand the existing Allen County Drainage and Sediment Control ordinance to include a comprehensive Erosion and Sediment Control (ESC) Program fulfilling requirements of Rule 13.	Allen County, Indiana	Minimize water quality impacts of development occurring within the Allen County. Ensure that new/redevelopment within the County's MS4 area is managed as efficiently as possible.
Train staff to conduct ESC plan reviews and site inspections within the County's MS4 area.	Allen County, Indiana	Ensure adequate funding to account for increased workloads associated with performing ESC plan review, inspection, and enforcement as mandated by Rule 13.
Develop and implement a system to track the status of development projects and ESC complaints.	Allen County, Indiana	Ensure efficient management and accurate reporting on the status of development within the County.
Develop an educational training program focusing on the local construction and development community.	Allen County, Indiana	Increase the construction and development community's awareness of changing erosion and sediment control standards.
Develop written procedures for prioritizing construction sites for inspection and enforcement.	Allen County, Indiana	Ensure that construction and development site inspections are as effective as possible.
Conduct review of ESC Program to determine overall effectiveness and adequacy.	Allen County, Indiana	To correct deficiencies or make updates based on new information or technology.

7.5 POST-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL BMPs

The following BMPs are being considered by the Allen County in order to comply with the minimum requirements of this MCM.

Best Management Practice (BMP)	Location/ Application	Purpose/ Objective
Expand the existing Allen County Drainage and Sediment Control ordinance to include a comprehensive ESC Program fulfilling requirements of Rule 13 addressing post-construction stormwater runoff from new/redevelopment areas and fulfilling requirements of Rule 13.	Allen County, Indiana	Minimize the water quality impacts of new development within the Allen County, and ensure that new/redevelopment within the County's MS4 area is managed as efficiently as possible.
Train staff to conduct ESC plan review and inspection staff regarding post-construction BMP control measures.	Allen County, Indiana	Ensure adequate funding to account for increased workloads associated with performing plan review, inspection, and enforcement as mandated by Rule 13.
Develop and implement operational and maintenance plans for County-owned Post-Construction BMPs.	Allen County, Indiana	Ensure long-term effectiveness and adequacy of newly installed BMPs.
Implement a development tracking system, which tracks the number and types of post-construction BMPs installed in new/redevelopment projects.	Allen County, Indiana	Ensure consistent inspections and record keeping regarding the number and condition of newly installed BMPs.
Develop a Floodplain Management Plan.	Allen County, Indiana	Ensure preservation of floodplain storage and prevention of flood damages.
Limit septic-dependent development by encouraging development where sanitary sewers exist.	Allen County, Indiana	Minimize the likelihood of failing septic systems within Allen County.

7.6 POLLUTION PREVENTION AND GOOD HOUSEKEEPING BMPs

The following BMPs are being considered by the Allen County in order to comply with the minimum requirements of this MCM.

Best Management Practice (BMP)	Location/ Application	Purpose/ Objective
Implement primary and secondary containment for areas of chemical storage.	Allen County Maintenance Facilities	Reduce the impact of accidental spills that could contaminate stormwater runoff from the maintenance facilities.
Initiate reclamation and proper storage for used oil/fluids from vehicle maintenance activities and contract with a waste hauling company to dispose of stored fluids.	Allen County Maintenance Facilities	Prevent waste oil/fluids from accumulating at the County vehicle maintenance facilities.
Install hydrocarbon and sediment removing catch basin inserts in all storm drains at the street department facility.	Allen County Maintenance Facilities	Prevent contaminants associated with daily operations from contaminating stormwater runoff from maintenance facilities.
Construct storage bays for sand.	Allen County Sand Storage Facilities.	Prevent stockpiles of sand from contaminating stormwater runoff.
Perform regular street sweeping of County maintenance facility lots.	Allen County Maintenance Facilities	Prevent contaminants associated with daily operations from contaminating stormwater runoff from maintenance facilities.
Develop and post a spill response plan at all County facilities where hazardous material and chemicals are used or stored.	Allen County Maintenance Facilities	Ensure efficient and effective response to accidental chemical spills.
Contract with a waste disposal company to dispose of all materials collected via County street sweeping program.	Allen County Maintenance Facilities	Ensure that waste collected via County street sweeping programs are disposed of in a manner that prevents them from contaminating stormwater runoff.

**Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report**

Develop a system for tracking street sweeping and other litter pickup efforts.	Allen County, Indiana	Ensure accurate reporting and documentation of the County's pollution prevention programs.
Develop and implement a mechanism to prevent untreated vehicle wash waters from leaving County facilities.	Vehicle Maintenance Facilities	Prevent vehicle wash waters from contaminating stormwater runoff or discharging directly into receiving waters.
Expand methods to minimize the use of salt for de-icing purposes.	Highways and roads within the Allen County Highway Department's jurisdiction	Minimize pollutants entering with the County's stormwater runoff.
Develop inspection procedures for legal drain maintenance activities and provide means of enforcement of Technical Specifications as detailed in the Terms and Conditions of any local, state, or federal permits.	Legal drains within the Allen County MS4 area	Reduce the amount of pollutants entering the County's MS4 system.

Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

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Allen County, Indiana
NPDES Phase II SWQMP Part B: Baseline Characterization Report

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