

Munster, Indiana
NPDES Phase II Part C Implementation Plan

NPDES PHASE II
GENERAL PERMIT APPLICATION
STORM WATER QUALITY MANAGEMENT PLAN
PART C: PROGRAM IMPLEMENTATION



TOWN OF MUNSTER, INDIANA

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PERMIT # INR040017

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1.0 Introduction

The federal Clean Water Act (CWA), as stated by amendments made in 1987, requires stormwater discharges from certain types of urbanized areas to be permitted under the National Pollutant Discharge Elimination System (NPDES) program. In 1990, Phase I of these requirements became effective and municipalities with a municipal separate storm sewer system (MS4) and a population greater than 100,000 were regulated.

In 1999, Phase II expanded the existing NPDES Storm Water Program to include any size community with an MS4 or construction activities that disturb one or more acres of land. The Town of Munster met the criteria under Phase II regulations and was designated as an MS4 entity.

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. 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 Management Plans (SWQMPs) through a phased submittal process. 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

Munster's initial NOI and SWQMP Part A documents were submitted to IDEM on November 1, 2003, and the initial SWQMP Part B document was submitted to IDEM on May 1, 2004. The original Part C submittal date was March 1, 2005. Munster is now in its third permit cycle.

Exhibit 1 contains an organizational chart of Munster personnel responsible for administering the program.

In the past, Munster's MS4 program had not received priority. However, in 2015, Munster underwent major administrative changes. As a result, the changes in administration has led to the development of a completely revised Part C that represents Munster's commitment to the program, as well as making the MS4 program a priority.

2.0 MS4 Area Description

Rule 13 requires a narrative and mapped description of the MS4 area boundaries and an estimate of the linear feet of MS4 conveyances within the MS4 area. The following discussion provides an evaluation of the municipal stormwater conveyance system within the Town of Munster's MS4 area.

2.1 Narrative Description of MS4 Area

The Town of Munster is located in Lake County, Indiana. The Town is comprised of approximately 4,900 acres. The Town's MS4 boundary mirrors its jurisdictional boundary.

Exhibit 2 illustrates the MS4 area boundaries.

2.2 Description of MS4 Conveyance Systems

Conveyance is defined by IDEM as a constructed process for transferring stormwater between two points. The term includes piping, ditches, swales, curbs, gutter, catch basins, channels, storm drains, ponds and roadway. The point where these MS4 conveyances enter a receiving water is an outfall. Rule 13 requires that all conveyance systems with a pipe diameter of 12-inches or larger and open ditches with a 2-foot or larger bottom width be mapped. Although this definition includes only the main trunks of pipes or open ditches that lead to each regulated outfall, mapping of the total conveyance system (that would also include the tributaries to the main trunks) as budgets allow will aid in illicit discharge detection and elimination efforts. **Table 2-1** lists the estimated quantities of the conveyance system within Munster's MS4 area broken down by type.

Table 2-1	
Conveyance Systems for Munster's MS4 Area	
Conveyance Type	Estimated Quantity
Enclosed Pipe	122 mi
Catch Basins and Inlets	3,823
Outfalls	97

2.3 Current Program Evaluation

SWQMP- Part B (327 IAC 15-13-7) required the characterization of the MS4's waterways to identify receiving waters and associated outfalls, other pollutant sources and existing water quality problems that need to be addressed in the SWQMP. Characterization is one of the initial tools for planning, by identifying impacted receiving waters and prioritizing investigative and corrective programs.

Four receiving waters were identified by Munster in their SWQMP – Part B Baseline Characterization Report – Hart Ditch, Schoon Ditch, Little Calumet River, and the Lincoln-Lancing Ditch (in Illinois). None of these waters were considered sensitive areas for priority attention in 2004 when the first permit was submitted. However, little water quality data was found for the Hart, Schoon, and Lincoln-Lancing ditches. The water quality data from 1990 for the Little Calumet River was more abundant and showed elevated levels of several metals including mercury, and E. Coli.

Currently, the Hart and Schoon Ditches, as well as the Little Calumet River, all of which are a part of a system of highly industrialized rivers in northwest Indiana, are on IDEM's Section 303(D) List of Impaired Waters from 2014. According to the IDEM report, Hart and Schoon Ditches have elevated levels of chloride, E. Coli, nutrients, and both have impaired biotic communities. The Little Calumet River also has several impairments. These impairments include elevated levels of chloride, nutrients, and free cyanide. In addition, it suffers from impaired biotic communities, low levels of dissolved oxygen, and elevated levels of PCBS found in fish tissues. As new water quality information becomes available and updates are made to the data sources, Munster will review the information and adjust its program accordingly.

After the implementation of Munster's initial Part C submittal, Munster adopted numerous ordinances/amendments directed at reducing stormwater pollutants from entering receiving waters. These ordinances/amendments are codified in Chapter 58 in their Code of Ordinances.

[2.4 Utilization of Priority Watershed Information](#)

The Town of Munster finds itself in a unique situation where most of the Town land is already developed, and is bounded by all sides by similar municipalities. Therefore, when discussing priority watersheds, not much can be done above and beyond what is already included in this plan. In addition, each watershed in the Munster MS4 area has about the same level of water quality. Therefore, instead of targeting a specific watershed, the priority watersheds for Munster should be considered those watersheds that still have the opportunity for new development or are targeted for redevelopment. These areas will generally be required to install BMPs as a condition of approval.

3.0 Minimum Control Measure #1 – Public Education and Outreach

Rule 13 states that a reasonable attempt must be made to reach all constituents within the MS4 area that would have the potential to impact the quality of the stormwater. These constituents include residents, visitors, public service employees, commercial and industrial facilities, and construction site personnel. The purpose of public education and outreach is to inform these constituents about the impacts that polluted stormwater runoff can have on water quality and ways they can minimize their impact on stormwater quality. The following discussion provides information on the Town of Munster's MS4 area Public Education and Outreach Program.

Proposed Public Education and Outreach BMPs

Since the SWQMP was created, Munster had not engaged a stormwater coordinator specifically to manage the program. Instead, Munster engaged the services of Northwest Indiana Regional Planning Commission (NIRPC) to manage this MCM. However, due to changes in NIRPC's program, Munster intends to partner with the Lake County Soil and Water Conservation District (LCSWCD) to help carry out the requirements of this MCM. LCSWCD scope will include presentations in classrooms, gatherings and clubs within Munster, development of newsletters, promoting volunteerism, assisting in training, and other similar functions. With these new resources, Munster is in a better position to administer this MCM.

Munster's MS4 area, as discussed in Part B, is primarily residential and commercial. Munster's Education and Outreach Program is therefore designed to minimize stormwater impacts originating from residential and commercial land uses by informing citizens about the impacts of stormwater discharges on water bodies and the steps that they can take to reduce pollutants in stormwater runoff. Munster will continue implementation of a Storm Water Public Education and Outreach Program as part of this Part C Plan, which outlines the overall strategy for gradually implementing the program and its corresponding BMPs over the next permit term.

Table 3-1 provides a summary of the Education and Outreach BMPs to be implemented and identifies the associated measurable goals, programmatic indicator number, timeline, priority areas, and responsible parties associated with each BMP.

The following Education and Outreach BMPs are being developed and/or implemented by Munster and the LCSWCD to comply with the minimum requirements of this MCM.

Workshops for the General Public

Munster, with the partnership of LCSWCD, will conduct presentations regularly to increase awareness on stormwater quality issues and pollution prevention strategies to the general public (e.g., schools, environmental, and/or civic groups). LCSWCD has programs every year devoted to public education. This program and schedule will be approved by Munster's Town Council and will be implemented in order to comply with this MCM.

Newsletter Articles

The Town of Munster will include at least two (2) articles each reporting period within the local newsletter that discusses topics related to stormwater quality, and other relevant stormwater information designed the community's understanding of Munster's stormwater issues. Municipal staff will be responsible for drafting the articles. Munster will be responsible for disseminating the information and will document the total number of articles published, the topics of each article, and the total number of newsletters disseminated. This information will be included in the Rule 13 Annual Reports.

Stormwater MS4 Website

Munster will continue to update and improve its MS4 Web site which will include links to other stormwater related web sites and includes information pertaining to the Town's Stormwater Program. The MS4 Web site is designed to educate residents, visitors, public service employees, commercial and industrial facilities, and construction site personnel about the impacts polluted storm water runoff can have on water quality and the ways they can minimize their impacts on storm water quality. The MS4 Web site will include copies of Munster's SWQMP, stormwater related ordinances, IDDE Plan and other relevant information. The MS4 Web site will include a counter to identify the number of "hits" the site receives. The total number of hits the site receives along with any questions and answers provided will be submitted with the Rule 13 Annual Reports.

Stormwater Brochures

Munster will continue to develop different stormwater brochures designed to educate residents, visitors, public service employees, commercial and industrial facilities, and construction site personnel about the impacts of polluted stormwater runoff has on water quality and the ways they can minimize their impacts on stormwater quality. The brochures will include targeted outreach information on stormwater quality impacts within MCMs 3, 4, 5, and 6. Munster will create a no less than four (4) brochures within the next permit term and will distribute no less than one-hundred (100) brochures annually and include them within the MS4 Website. Additional brochures will be developed as topics and targeted activities necessitate

them. Brochures will be disseminated via mass mailings within MS4 areas, at local places of business, at Town offices, and at Town events. A description of the brochures along with the total number of brochures distributed will be documented and included in Munster's Rule 13 Annual Reports.

Lake County Solid Waste Management District (LCSWMD) Promotions

In order to educate community members on the importance of pollution prevention and recycling programs, Munster will advertise and promote the activities of the Lake County Solid Waste Management District (LCSWMD). Munster will offer no less than one hundred (**100**) promotional handouts at their municipal facilities. This will also help with eliminating illegal dumping activities and help to satisfy requirements of MCM #3. The SWMD develops a newsletter and sponsors hazardous waste disposal events, recycling sites, composting sites, and educational programs for local schools and civic groups. Advertisements and promotions will occur on Munster's MS4 Web-site and through the various stormwater brochures to be developed as part of Munster's Stormwater Program. The Town will coordinate with SWMD to estimate the total waste collected at their different facilities annually in order to target activities in priority watersheds. In addition, all SWMD stormwater related educational activities that occur within the Town's MS4 area will be documented. All of this information will be included in the Rule 13 Annual Reports.

Mass Media Opportunities

Mass media has been shown to be a means to gain a higher level of exposure of stormwater education information and to create a higher level of impressions, which will educate a greater number of individuals. Local radio, TV stations, and newspapers will be contacted about stormwater quality Public Service Announcements (PSAs). In addition, it is possible that LCSWCD will be able to help disseminate information using mass media as well. As this activity progresses, information will be included with Munster's Rule 13 Annual Reports.

Table 3-1 Public Education and Outreach BMPs

Best Management Practice (BMP)	Measurable Goals	Programmatic Indicators	Responsible Party
Workshops for the General Public	Conduct workshops as per the LCSWCD schedule	<ul style="list-style-type: none"> • Number or percentage of citizens that have an awareness of storm water quality issues • Number and description of meetings, training sessions, and events conducted to involve citizen constituents in the storm water program • Number or percentage of citizen constituents that participate in storm water quality improvement programs 	DPW and SWCD
Newsletter Articles	At least two (2) articles published each reporting period	<ul style="list-style-type: none"> • Number or percentage of citizens that have an awareness of storm water quality issues • Number and description of meetings, training sessions, and events conducted to involve citizen constituents in the storm water program • Number or percentage of citizen constituents that participate in storm water quality improvement programs • Number of articles written • Number of articles downloaded from website 	DPW and IT
Stormwater MS4 Website	Update Website by September 1, 2016	<ul style="list-style-type: none"> • Number or percentage of citizens that have an awareness of storm water quality issues • Number and description of meetings, training sessions, and events conducted to involve citizen constituents in the storm water program • Number or percentage of citizen constituents that participate in storm water quality improvement programs • Number of hits on the website • Number of downloads from the website 	DPW and IT

Stormwater Brochures	Create four (4) brochures within permit period,	<ul style="list-style-type: none"> • Number or percentage of citizens that have an awareness of storm water quality issues • Number of brochures disseminated 	DPW
Lake County Solid Waste Management District (LCSWMD) Promotions	Offer no less than one hundred (100) promotional handouts at municipal facilities	<ul style="list-style-type: none"> • Number or percentage of citizens that have an awareness of storm water quality issues • Number and description of meetings, training sessions, and events conducted to involve citizen constituents in the storm water program • Number or percentage of citizen constituents that participate in storm water quality improvement programs • Estimated or actual amount of material collected from HHW collections. • Number and location of constituent drop-off centers for automotive fluid recycling. • Number or percentage of constituents that participate in the HHW collections. 	DPW and SWCD
Mass Media Opportunities	Participate as necessary	<ul style="list-style-type: none"> • Number or percentage of citizens that have an awareness of storm water quality issues • Number of media events 	DPW

4.0 Minimum Control Measure #2 – Public Participation and Involvement

Munster is continuing to implement its Storm Water Public Participation and Involvement Program as part of this Part C Plan, which outlines the overall strategy for implementing the program and its corresponding BMPs. The program is designed to engage citizens, form partnerships, and gain greater support and compliance for the program. The presumptive approach of implementing this program assumes that overall stormwater quality will improve by better educating the public to reduce the amount of pollutants entering the conveyance system.

Proposed Public Participation and Involvement BMPs

In the past, as with MCM #1, Munster engaged the services of Northwest Indiana Regional Planning Commission (NIRPC) to manage this MCM. However, due to changes in NIRPC's program, Munster will partner with the LCSWCD to help carry out the requirements of this MCM.

Table 4-1 provides a summary of the Public Participation and Involvement BMPs to be implemented and identifies the associated measurable goals, programmatic indicator number, timeline, priority areas, and responsible parties associated with each BMP.

The following Public Participation and Involvement BMPs are being developed and/or implemented by Munster and the SWCD to comply with the minimum requirements of this MCM.

NISWAG MS4 Partnership Meetings

Munster will attend Northwest Indiana Regional Advisory Group (NISWAG) MS4 Partnerships meetings to provide input and give direction for the local MS4 program. Munster will attend these meetings to provide input on the program as well as suggestions on the types of BMPs utilized and how to implement them. The Department of Public Works also plans on sending employees to these meetings for MS4 training purposes.

Annual MS4 Update to Town Council

Designated town staff will present an updated report on the MS4 program to the Munster Town Council during one of their regularly scheduled meetings which are open to the public.

Munster will track the number of attendees, as well as, document public comments and report this in its Rule 13 Annual Reports.

“Report-A-Polluter” Program

Munster will implement a “Report-A-Polluter” program to field complaints from the public on illegal dumping, illicit discharges, poor erosion control, and other activities that negatively impact stormwater quality. Citizens will have the opportunity to submit such complaints. This will be promoted on the MS4 web site under the section for public involvement and will also serve as an education tool to inform the public about hazards of illicit discharges and illegal dumping. Munster will document their follow up on citizen reports and corrections taken. Information will be compiled and included in the Rule 13 Annual Reports.

Household Hazardous Waste (HHW) Collection Event Promotions and Documentation

In order encourage local residents to participate in the proper disposal of hazardous materials, Munster will advertise and promote the activities of the Lake County Solid Waste Management District’s (SWMD) Household Hazardous Waste (HHW) Collection Program and Schedule. This will also help with eliminating illegal dumping activities and satisfy requirements of MCM #3. SWMD hosts HHW Collection events in several locations throughout Lake County. Advertisements and promotions will occur on Munster’s MS4 Web-site and through the various brochures developed by SWMD. Munster will coordinate with the SWMD to estimate the total waste collected at their different facilities. The quantities and types of material collected will be included in the Rule 13 Annual Reports.

Table 4-1 Public Participation and Involvement BMPs

Best Management Practice (BMP)	Measurable Goals	Programmatic Indicator(s)	Responsible Party
NISWAG MS4 Partnership Meetings	Participate as needed	<ul style="list-style-type: none"> • Number of meetings attended 	DPW
Annual MS4 Update to Town Council	Attend once (1) per year	<ul style="list-style-type: none"> • Number or percentage of citizens that have an awareness of storm water quality issues • Number and description of meetings, training sessions, and events conducted to involve citizen constituents in the storm water program • Number or percentage of citizen constituents that participate in storm water quality improvement programs • Number of attendees 	DPW and Town Council
"Report-A-Polluter" Program	Record number of responses	<ul style="list-style-type: none"> • Number or percentage of citizen constituents that participate in storm water quality improvement programs • Number and location of illicit discharges detected • Number and location of illicit discharges eliminated 	DPW and IT
Household Hazardous Waste (HHW) Collection Event Promotions and Documentation	At least one (1) event annually	<ul style="list-style-type: none"> • Number or percentage of citizens that have an awareness of storm water quality issues • Number and description of meetings, training sessions, and events conducted to involve citizen constituents in the storm water program • Number or percentage of citizen constituents that participate in storm water quality improvement programs • Amount of waste collected 	DPW and SWMD

5.0 Minimum Control Measure #3 – Illicit Discharge Detection and Elimination

Rule 13 requires the development and implementation of a strategy to detect and eliminate illicit discharges to the MS4 conveyance. A storm sewer system map showing the location of all outfalls and MS4 conveyances under the MS4 operator's control and the names and locations of all waters that receive discharges from those outfalls must be developed. Through an ordinance or other regulatory mechanism, illicit discharges must be prohibited from entering the MS4 conveyances and appropriate enforcement procedures and actions are required.

The Town currently has an ordinance that directly addresses illicit discharge to storm drains, located in Chapter 58 – Utilities, article III, subdivision VI. In addition, a plan must be developed to detect, address, and eliminate illicit discharges, including illegal dumping into the MS4 conveyance. This plan must locate problem areas via dry weather screening or other means, determine the source, remove or otherwise correct illicit connections, and document actions taken. The plan must also identify all active industrial facilities within the MS4 area that discharge into the MS4 conveyance.

All public employees, businesses, and the general public must be educated about the hazards associated with illicit discharges and the improper disposal of waste. The educational effort must include informational brochures and guidance for specific audiences and school curricula and the public reporting of illicit discharges and spills. In order to give the public alternatives to improper disposal of wastes, the MS4 entities must initiate or help coordinate existing recycling programs in the MS4 area for commonly dumped wastes, such as motor oil, antifreeze, and pesticides.

Proposed Illicit Discharge Detection and Elimination BMPs

The Town of Munster currently has an informal Illicit Discharge Detection and Elimination Program carried out almost exclusively by the Fire Department. For large scale problems, like spills, a call is made to 911 and the Fire Department handles the situation directly. However, there is currently no system for reporting non-emergency situations, like discarding paint down the storm drain. The goal for this permitting period is to formalize the IDDE Plan by including documentation and the opportunity for citizens to report pollution on the MS4 website.

Table 5-1 provides a summary of the IDDE BMPs listed below and identifies the associated measurable goals, programmatic indicators, tracking, timeline, priority areas, and responsible parties associated with each BMP.

The following Stormwater Illicit Discharge Detection and Elimination (IDDE) BMPs will be developed and implemented by the Town of Munster in order to comply with the minimum requirements of this MCM.

Stormwater System Map

Munster's stormwater utilities have been mapped in a GIS format. Maps will be updated as new infrastructure is installed or existing infrastructure is modified. Having accurate maps will supplement the Town's capabilities to respond to illicit discharges entering the storm sewer system. Conveyance is defined by IDEM as any constructed process for transferring stormwater between at least two points. The term includes piping, ditches, swales, curbs, gutters, catch basins, channels, storm drains, and roadway. IDEM further defines MS4 conveyance systems as outfall conveyance systems with a pipe diameter of 12-inches or larger and open ditches with a 2-foot or larger bottom width. Although this definition includes only the main trunks of pipes or open ditches that lead to each regulated outfall, mapping of the total conveyance system (that would also include the tributaries to the main trunks) as budgets allow will aid in illicit discharge detection and elimination efforts. Mapping activities will be documented and included in the Rule 13 Annual Reports.

Illicit Discharge Detection and Elimination (IDDE) Ordinance Update

Munster will continue developing, updating and enforcing its Illicit Discharge Detection and Elimination (IDDE) ordinance, which provides legal authority to keep illicit discharges out of the stormwater conveyance. IDDE regulations will continue to be a part of the comprehensive Stormwater Management Ordinance that addresses illicit discharges, construction runoff, and Post-construction runoff. Munster's stormwater staff will review the Stormwater Management Ordinance annually and recommend any changes to the Town Council. Munster's Code Enforcement Official will be responsible for enforcing the requirements of the IDDE regulations. Any activities towards revising the ordinance will be documented in the Rule 13 Annual Reports.

Illicit Discharge Detection and Elimination (IDDE) Plan and Dry Weather Screening

Currently, Munster's response to illicit discharge is almost exclusively handled by the Fire Department, with other departments being called in as necessary. When someone reports illicit discharge, they are supposed to call 911. In the next reporting period, Munster will aim to adopt a more formalized system of tracking complaints. The plan will include specifics on dry weather screening, methods for determining the source of illicit discharges, removing or correcting illicit connections and documenting actions taken. Documentation of making repairs to the stormwater system will also be included in the IDDE plan. Stormwater testing may be

incorporated into the IDDE plan. Munster will aim to add an online reporting system for citizens to report and track illicit discharges. The initiation of the Plan will be documented in Munster's Rule 13 Annual Reports.

MCM 3 Staff Training

Munster will conduct training for staff on the hazards associated with illicit discharges and improper disposal of waste and pollution prevention, including ways to manage activities to prevent substantial quantities of chemicals and water from entering the conveyance system. Appropriate MS4 entity staff will be trained initially and with short, periodic refresher sessions conducted at least once (1) a month. Munster will document training opportunities provided and attendees. Additional topics may include proper storage and disposal of hazardous wastes, material handling, identifying illicit discharges, fertilizers, and pesticide application, and BMP/SWP3 implementation. The number of trainings, number of staff attending trainings will be tracked and reported in the Town's Rule 13 Annual Reports submitted to IDEM.

Table 5-1 Illicit Discharge Detection and Elimination BMPs

Best Management Practice (BMP)	Measurable Goals	Programmatic Indicators	Responsible Party
Stormwater System Mapping	Update as necessary	<ul style="list-style-type: none"> • Number and location of storm drains marked or cast • Percentage of MS4 mapped and indicated on an MS4 area map • Number and location of MS4 area outfalls mapped • Number and location of MS4 area outfalls screened for illicit discharges 	DPW
Dry Weather Screening	Screen 100% of all outfalls within permit period	<ul style="list-style-type: none"> • Percentage of MS4 mapped and indicated on an MS4 area map • Number and location of MS4 area outfalls mapped • Number and location of MS4 area outfalls screened for illicit discharges • Number and location of illicit discharges detected • Number and location of illicit discharges eliminated • Number and/or percentage of outfalls screened 	DPW
Illicit Discharge Detection and Elimination (IDDE) Ordinance Update	Update/review ordinance once (1) per year	<ul style="list-style-type: none"> • Number and location of MS4 area outfalls screened for illicit discharges • Number and location of MS4 area outfalls mapped • Number and location of illicit discharges detected • Number and location of illicit discharges eliminated 	DPW and Town Council
IDDE Plan	Create plan by December 2016 , and then update accordingly	<ul style="list-style-type: none"> • Number of revisions made 	DPW and Fire Dept
Staff Training	Have at least three (3) illicit discharge	<ul style="list-style-type: none"> • Number of training sessions held • Number of attendees 	DPW and Fire Dept

6.0 Minimum Control Measure #4 – Construction Site Stormwater Runoff Control

Rule 13 requires the development of an ordinance or other regulatory mechanism and establishment of a construction program that controls polluted runoff from construction activities that disturb one or more acres of land in the MS4 area. This construction program must include a permitting process, erosion control plan review process, site inspections, and enforcement. The permitting process must include a requirement for the construction project site owner to submit a copy of the permit application directly to IDEM. MS4 entities must provide an opportunity to the local SWCD to provide comments and recommendations to the MS4 operator on individual projects.

The construction program must include requirements for the implementation of appropriate BMPs on construction sites to control sediment, erosion, and other waste. MS4 entities must review and approve construction plans submitted by the construction site operator before construction activity commences. Procedures must be developed for site inspection and enforcement to ensure that BMPs are properly installed. These procedures must include a means to identify priority sites for inspection and enforcement, as well as, a means to receive and consider public inquiries, concerns, and information submitted regarding local construction activities. A tracking process must be implemented in which submitted public information is documented and then give to appropriate staff for follow up.

MS4 personnel responsible for plan review, inspection, and enforcement of construction activities shall receive annual training.

Proposed Construction Site Stormwater Runoff Control BMPs

Construction Site Stormwater Runoff Control BMPs will continue to be developed/revised and implemented by the Building Department in the Town of Munster in order to comply with the minimum requirements of this MCM. BMPs include:

Plan Review

Munster currently carries out a developed and regulated construction site stormwater management program. The process begins with developers and contractors submitting plans and permits to the Building Department where qualified staff reviews them. According to Rule 5, any construction work that disturbs more than one acre of land, requires a Storm Water Pollution Prevention Plan (SWPPP). The Engineer for each project is currently required to develop the SWPPP for the site that the contractor is to carry out. In addition, Munster typically

requires a pre-construction meeting with the engineer and contractor to review and discuss the operation of the SWPPP. In the case where Munster is the developer, they will provide a SWPPP, the Lake County Soil and Water Conservation District for review and approval.

Inspection and Enforcement

Munster's Building Department carries out regular construction site inspections and issues any MS4 violations. While Rule 5 requires site inspections for construction sites greater than one acre, Munster's Building Department also provide inspections for sites less than one acre, including residential areas and Munster projects. If violations are noted, the Department will document the violation and discussed the violation with the contractor. The Department typically provides verbal and written warnings for violations, as well as a time frame in which to correct the violations. The Department will then re-inspect the site and issue citations if the violations are not corrected.

Tracking

Department tracks all inspections and citations. They have developed an inspection form entitled "Munster Building Department Construction Site Inspection Report." This form was developed in conjunction with IDEM personnel. It includes general information, descriptions of the site and the erosion and sediment control measures used, as well as a place to list any actions taken including verbal warnings, written warnings, and whether a citation was made after multiple offenses.

MCM 4 Staff Training

Munster will provide training for staff conducting construction site inspections, the MS4 ordinance, and its importance for the prevention of stormwater pollution. Appropriate MS4 staff will be trained initially and with short, periodic refresher sessions. Munster will provide the opportunity for all Munster employees, including clerical employees, to be informed about how MS4-related situations should be carried out. The purpose of this training will be so the clerical staff know how to properly document MS4 related inspections or situations. Munster will document training opportunities provided and attendees. These numbers will be tracked and reported in the Town's Rule 13 Annual Reports.

Table 6-1 Construction Site Storm Water Runoff Control BMPs

Best Management Practice (BMP)	Measurable Goals	Programmatic Indicator(s)	Responsible Party
Plan Review	Review plan annually or as needed	<ul style="list-style-type: none"> • Number of permits submitted • Number of permits approved • Number of permits rejected 	Building Department
Inspection and Enforcement	Review inspection regulations annually or as needed	<ul style="list-style-type: none"> • Number of inspection reports written • Number of verbal and written warnings issued • Number of citations given 	Building Department
Staff Training	Have at least two (2) building site MS4 related training per year	<ul style="list-style-type: none"> • Number of training sessions held • Number of attendees 	Building Department and DPW
Contractor Training	Develop training website for contractors by May 2016	<ul style="list-style-type: none"> • Number of Contractors trained • Number of videos viewed by contractors 	Building Department and IT

7.0 Minimum Control Measure #5 – Post-construction Stormwater Runoff Control

Rule 13 requires the development of an ordinance or other regulatory mechanism and establishment of a post-construction program that addresses runoff from new development and redevelopment areas that disturb one or more acres of land in the MS4 area. This program must include a permitting process, plan review process, site inspections, and enforcement. MS4 area personnel responsible for plan review, inspection, and enforcement of post-construction BMPs shall receive annual training.

Where appropriate, MS4 entities should utilize a combination of storage, infiltration, filtering, or vegetative practices to reduce the impact of pollutants in storm water runoff on receiving waters in areas that are the responsibility of the MS4 entity. A written Operational and Maintenance (O&M) Plan must be developed and implemented for all existing storm water structural BMPs, which are under the control of the MS4 entity. As new post-construction BMPs are added to areas under the control of the MS4 entity, the O&M Plan must be updated accordingly.

Proposed Post-Construction Site Stormwater Runoff Control BMPs

The following post-construction site stormwater runoff control BMPs will be developed and implemented by the Town of Munster in order to comply with the minimum requirements of this MCM.

BMPs

Pollutants deposited onto surfaces or are present within the surface material can be dislodged and entrained by the rainfall-runoff process. Usually the stormwater that initially runs off an area will be more polluted than the stormwater that runs off later, after the rainfall has “cleansed” the catchment. The stormwater containing this high initial pollutant load is called the “First Flush”.

The existence of this first flush of pollutants provides an opportunity for controlling stormwater pollution from a broad range of land uses. First flush collection systems are employed to capture and isolate this most polluted runoff, with subsequent runoff being diverted directly to the stormwater system.

The first flush can be addressed as a volume or a rate. Best management practices (BMPs) can be designed to address either. Generally, volume based BMPs are those that are constructed

on-site and utilize detention to settle material. Rate based BMPs (flow through) are manufactured and installed during development. The choice between volume based or rate-based BMPs must be addressed by the designer during the development of the Stormwater Management Plan with input from Munster as the potential owner of the final product.

Munster encourages developers to follow the guidelines set forth in the Indiana Stormwater Quality Manual when selecting appropriate construction and post-construction erosion control practices. Any of the BMPs suggested in the Manual are acceptable to Munster provided that they are appropriate for the situation they are being proposed. All proposed BMPs shall be approved by the Director of Public Works during the development of the Stormwater Management Plan.

Municipally Owned BMPs

Munster owns and maintains 10 the retention/detention ponds throughout the Town. They are currently mowed and inspected at least bi-monthly, but there is currently no formal framework for the documentation and maintenance of these BMPs. Munster will work to develop a set of standards for the maintenance of these BMPs. These standards should be developed so both the Parks Department and the Department of Public Works know the correct procedures for maintenance. Specific descriptions of maintenance are covered in MCM 6 Good Housekeeping and Pollution Prevention.

Privately-owned Structural BMPs

There is currently no record map of the privately-owned BMPs located within Munster. Munster will make it a priority to create a database of all of the publically and privately-owned BMPs located within the Town. The database will include location, type, owner and maintenance information of each BMP. Since Munster is not in responsible charge of the maintenance for privately-owned BMPs, they will need to be inspected annually to assess whether the BMP is working correctly. Once the database is created, the DWP will be able to more easily evaluate and inspect each BMP annually.

Little Calumet River Basin Development Commission

The Little Calumet River Basin Development Commission is in responsible charge of the Little Calumet River and its outfalls and levee walls. The river and its appurtenances are inspected annually by the Commission and the USACE. Any maintenance deficiencies are corrected by the Commission.

Table 7-1 Post-Construction Storm Water Runoff Control BMPs

Best Management Practice (BMP)	Measurable Goals	Programmatic Indicator(s)	Responsible Party
Staff Training	Have at least one (1) Post-Construction stormwater runoff training per year	<ul style="list-style-type: none"> • Number of training sessions held • Number of attendees 	DPW
Best Management Practices (BMPs)	Develop SOPs for BMPs by December 2016 , review as necessary	<ul style="list-style-type: none"> • Number of SOPs developed 	DPW
BMP Database	Create Database by December 2016 , update as necessary	<ul style="list-style-type: none"> • Number of Privately-owned BMPs • Number of Publically-owned BMPs • Type of BMPs installed 	DPW
Little Calumet River Basin Development Commission	Attend as required	<ul style="list-style-type: none"> • Number of meetings attended • Number of representatives 	Town of Munster

8.0 Minimum Control Measure #6 – Pollution Prevention and Good Housekeeping

Rule 13 requires the development and implementation of a program to prevent or reduce polluted runoff from municipal operations within the MS4 area. The program must include written documentation of maintenance activities, maintenance schedules, and long term inspection procedures for BMPs to reduce floatables and other pollutants discharged from the separate storm sewers.

Controls must be implemented for reducing or eliminating the discharge of pollutants from operational areas, including roads, parking lots, maintenance and storage yards, and waste transfer stations. Written procedures must be developed and implemented for the proper disposal of waste or materials removed from separate storm sewer systems and operational areas. New flood management projects must be assessed via written documentation for their impacts on water quality and existing flood management projects must be examined for incorporation of additional water quality protection devices or practices. MS4 entity employees must be properly trained on various topics, such as, fertilizer and pesticide application, and the function of BMPs. Such training must be documented in writing.

Proposed Pollution Prevention and Good Housekeeping BMPs

Munster (in this Section includes Munster Department of Public Works and Munster Parks Department) has initiated the implementation of a Pollution Prevention and Good Housekeeping Program as part of this Part C Plan, which outlines the overall strategy for implementing the program and its corresponding BMPs. Munster's program is designed to address the quality of stormwater discharges from Town activities to their MS4 conveyance system. A map of Munster municipally owned properties and facilities is included in Exhibit 1. A listing of Munster's municipally owned facilities are provided in **Exhibit 3**.

Table 8-1 provides a summary of the Pollution Prevention and Good Housekeeping BMPs to be implemented and identifies the associated measurable goals, programmatic indicators, tracking, timeline, priority areas, and responsible parties associated with each BMP. Detailed description of each BMP is provided below.

The following Pollution Prevention and Good Housekeeping BMPs are being developed and/or implemented by Munster to comply with the minimum requirements of this MCM. Existing

BMPs identified in Section 7.0 with any needed enhancements, as well as, any new BMPs are included in this section.

Standard Operating Procedures

Munster has developed numerous Standard Operating Procedures (SOPs) – written instructions to efficiently operate or perform a specific function – related to Good Housekeeping. Examples include:

- Chemical Application of Pesticides, Herbicides and Fertilizers,
- Sanitary Sewer Cleaning
- Chemical Handling
- Transporting Dry Excavated Materials and Spoils
- Wash Bay
- Fueling

These SOPs are kept in a master binder in the Public Works Office and at specific location where they can be reviewed and utilized if needed. Munster will continue to develop SOPs as necessary to ensure safe and efficient operations.

Stormwater Pollution Prevention Plans

Munster will develop SWPPPs for each municipal facility. These SWPPPs will include an aerial photo of each site and include topography and locations of stormwater, sanitary and potable water facilities. These SWPPPs will be useful in the case of an illicit discharge to contain the discharge and prevent it from entering the storm sewer system. SWPPPs will also include an inventory of materials stored at the facility. Inspection will be conducted at least bi-annually and documented.

Waste and Recycling Collection

Munster conducts an annual clean up event. The event is aimed at collecting litter and debris from roadsides, ditches, streams, etc. Munster utilizes an outside contractor to pick up trash weekly. This contractor also provides bi-monthly recycling pickup. LCSWMD, through the Lake Michigan District Household Collection Program, conducts an annual Household Hazardous Waste Collection day in Munster. LCSWMD also provides recycling dumpsters at various locations including the Public Works Building. LCSWMD provides annual reports totaling the quantities of materials collected. These quantities will be included in Munster's Rule 13 Annual Report.

MS4 Conveyance System Maintenance

Munster has implemented a program designed to inspect and maintain its MS4 conveyance system. Regular maintenance allows the conveyance system to work efficiently and remove pollutants. MS4 conveyance system maintenance activities and schedules will be documented.

Munster's Department of Public Works (DPW) will continue to conduct periodic BMP cleaning, stabilizing unvegetated portions of the conveyance system (ditches, swales and road side shoulders) and remediating of outfall scouring conditions. Munster will continue to repair and clean catch basins, trash racks and other structural components of the Town's conveyance system that it owns and operates. Inspection and maintenance activities will be performed by staff from DPW. Spoils gathered as a result of maintenance is delivered to Hammond Sanitary District (HSD) for proper disposal. Maintenance needs will be prioritized and improvement needs will be conducted as funding allows.

Munster will document the estimated or actual linear feet of its conveyance system that is cleaned and or repaired. In addition, Munster will estimate the amount of material collected from catch basins and trash racks. This information will be included in the Rule 13 Annual Reports.

Street Sweeping Program

Munster DPW strives to sweep all its streets twice per year to remove accumulated debris and to keep potential pollutants from entering the storm drains. Spoils gathered as a result of maintenance is delivered to Hammond Sanitary District (HSD) for proper disposal. Munster tracks all street sweeping activities. To ensure accurate reporting and documentation of its pollution prevention programs, Munster will track the estimated or actual amount of material by weight collected from street sweeping. This information will be consolidated and included in the Rule 13 Annual Reports.

Salt and Brine Management

Munster DPW manages their salt and brine storage and application in an effort to maintain public safety while minimizing the potential for salt and brine runoff. DPW typically limits its application of salt to intersections, areas of steep grade and pedestrian ways. Brine is added to the salt during times where the temperatures drop below 18 degrees and salting is not effective. The DPW will annually document the total weight/cubic yards of salt and brine applied. Also, DPW personnel will be instructed to contain salt and brine spilled during loading by utilizing machinery and hand tools to maintain cleanliness and minimize the risks of stormwater runoff.

Activities associated with salt and brine management will be included in Munster's Rule 13 Annual Report, including documenting the number and location of storage areas covered or otherwise improved to minimize stormwater exposure and the estimated or actual amount, in tons, of salt and brine used for snow and ice control.

Vehicle Maintenance Areas

Vehicle maintenance areas can be significant sources of stormwater pollutants. To minimize the impacts vehicles maintenance areas have on stormwater runoff, Munster has installed four catch basins in the maintenance area. These catch basins are connected to sanitary sewers to reduce stormwater pollution. The catch basins are cleaned and maintenance annually. Munster will document maintenance activities and estimate the amount of waste collected. Munster will also document the methods by which all materials collected were disposed of. This information will be included in the Rule 13 Annual Reports.

Spill Prevention and Clean Up

Munster will continue implementing spill prevention and clean up procedures at Town owned and operated facilities. The DPW will be the primary facility for which these measures will be implemented in order to reduce the impact of accidental spills of concentrated solutions, acids, fuels, salts, oils, or other polluting materials that could contaminate stormwater runoff from municipal facilities. Measures will continue to be utilized and maintained such as facility SWP3s, secondary containment, drip pans, updated MSDS binder, spill kits, hydrocarbon drop inlet protection, absorbents, and drain covers. Munster will document all activities associated with chemical spill response. This information will be included in Munster's Rule 13 Annual Reports.

Wash Water Management

All wash waters and wastewaters are currently prohibited from entering waters of the state without a valid NPDES Wastewater Permit. All municipal vehicles and equipment will continue to be washed indoors where rinse water drains to the sanitary system. Phosphate-free detergents will be utilized to the extent practical.

Fertilizer and Pesticide Management

Munster staff members that apply fertilizers and/or pesticides and are certified by the Office of the Indiana State Chemist (OISC). Munster will ensure that all activities associated with fertilizers and pesticides are documented. All information specific to fertilizer and pesticide management will be included in the Town's Rule 13 Annual Reports.

Waste Disposal

Munster will ensure that wastes removed from its MS4 are disposed of in a manner that prevents them from contaminating stormwater runoff. Munster will document the disposal of all waste generated from operational areas and from maintaining the Town's stormwater conveyance system. Such wastes include, but are not limited to, dredge spoil, accumulated sediments, floatables and debris. Munster staff will determine if the waste generated can be reused, recycled or requires disposal in a sanitary landfill. Munster will document all activities associated with waste disposal including the types of waste generated, the amount of waste generated and the method by which the waste was disposed. Required information will be included in Munster's Rule 13 Annual Reports.

Flood Management Projects

Munster will document that new Town-owned flood management projects are assessed for their impacts on water quality on an on-going basis. During the pre-construction phase for new projects, a determination will be made to see if a practice can be modified to address the reduction of pollutants associated with stormwater runoff or if additional BMPs can be designed into the watershed of the project to improve the water quality. This preliminary review will better use limited resources to plan for water quality BMPs before a project is constructed since water quality and water quantity issues are interrelated.

Fall Leaf Pickup

Munster collects leaves in the fall after citizens have raked them into piles. By picking up these leaves, they are preventing them from going into storm drains where they can easily get caught and decompose. The additional carbon loading on the watershed is prevented by Munster's leaf pick up program. Leaf and woody materials collected is delivered to the County's compost site in Gary. Required information will be included in Munster's Rule 13 Annual Reports.

MCM 6 Staff Training

Munster will conduct Good Housekeeping training for its staff quarterly. Munster will document training provided and attendees. The number of trainings, number of staff attending trainings, and information presented will be tracked and reported in Munster's Rule 13 Annual Reports submitted to IDEM.

Table 8-1 Pollution Prevention and Good Housekeeping BMPs

Best Management Practice (BMP)	Measurable Goals	Programmatic Indicator(s)	Responsible Party
Standard Operating Procedures (SOPs)	Review SOPs annually or as necessary	<ul style="list-style-type: none"> • Number of SOPs developed 	DPW
Stormwater Pollution Prevention Plans	Review SWPPPs annually or as necessary	<ul style="list-style-type: none"> • Number of SWPPPs • Number of municipal facilities 	DPW
Annual Litter Pickup Event	One (1) annual pickup event	<ul style="list-style-type: none"> • Number of attendees • Estimated amount of litter picked up 	DPW and Town Staff
Community Recycling Center	Provide annual reporting totaling collection amount	<ul style="list-style-type: none"> • Amount of recycling collected • Type of materials collected 	
Periodic BMP Structure Cleaning	Each BMP structure cleaned at least once (1) per year	<ul style="list-style-type: none"> • Number of BMP structures cleaned • Amount of material removed from structure 	DPW
Periodic Pavement Sweeping	At least two (2) times per year	<ul style="list-style-type: none"> • Amount of material collected from street sweeping • Number of pavement sweepings per year 	DPW
Roadside Shoulder and Ditch Stabilization	At least once (1) per year	<ul style="list-style-type: none"> • Estimated linear feet and location of roadside shoulders and ditches stabilized 	DPW
Planting and Proper Care of Roadside Vegetation	Maintenance occurs at least once (1) per year	<ul style="list-style-type: none"> • Number and location of vegetation maintained 	DPW
Remediation of Outfall Scouring	Outfalls cleaned at least once (1) per year	<ul style="list-style-type: none"> • Number of outfalls maintained • Amount of debris removed from each outfall 	DPW
Salt and Brine Management	Amount of salt and brine used reviewed at least once (1) per year	<ul style="list-style-type: none"> • Amount of salt and brine used, in tons 	DPW

Vehicle Maintenance Areas	Maintenance catch basins at least once (1) per year	<ul style="list-style-type: none"> • Number and location of refueling areas that have installed storm water BMPs 	DPW
Spill Prevention and Clean Up	Maintenance occurs at least once (1) per year	<ul style="list-style-type: none"> • Number and location of BMPs installed at DPW maintenance areas 	DPW
Leaf Pick Up	Occurs as necessary	<ul style="list-style-type: none"> • Amount of leaves picked up and removed 	DPW
Fertilizer and Pesticide Management	Record amount of fertilizer and pesticide used annually	<ul style="list-style-type: none"> • Estimated amount and location where pesticides and fertilizers are applied 	DPW
Waste Disposal	Training session held on waste disposal at least once (1) per year	<ul style="list-style-type: none"> • Estimated amount of waste disposed of 	DPW
Staff Training	Staff must attend at least three (3) training sessions per year pertaining to good housekeeping	<ul style="list-style-type: none"> • Number of training sessions held and number of attendees 	DPW

9.0 MS4 Program Costs

Rule 13 requires a summary of the current storm water budget, expected or actual funding sources, and a projection of the budget for each year within the five-year permit term.

Resources used for developing and implementing the storm water program should be documented in order to demonstrate that monies, equipment, and staff are being and will be utilized for the program.

Summary of the SWQMP Budget

Munster primarily utilizes funds from its Stormwater Management Budget, supplemented by Public Works, Sewer Maintenance and Parks Department to operate its MS4. Munster collects a monthly stormwater fee from its constituents.

Proposed Budget by MCM

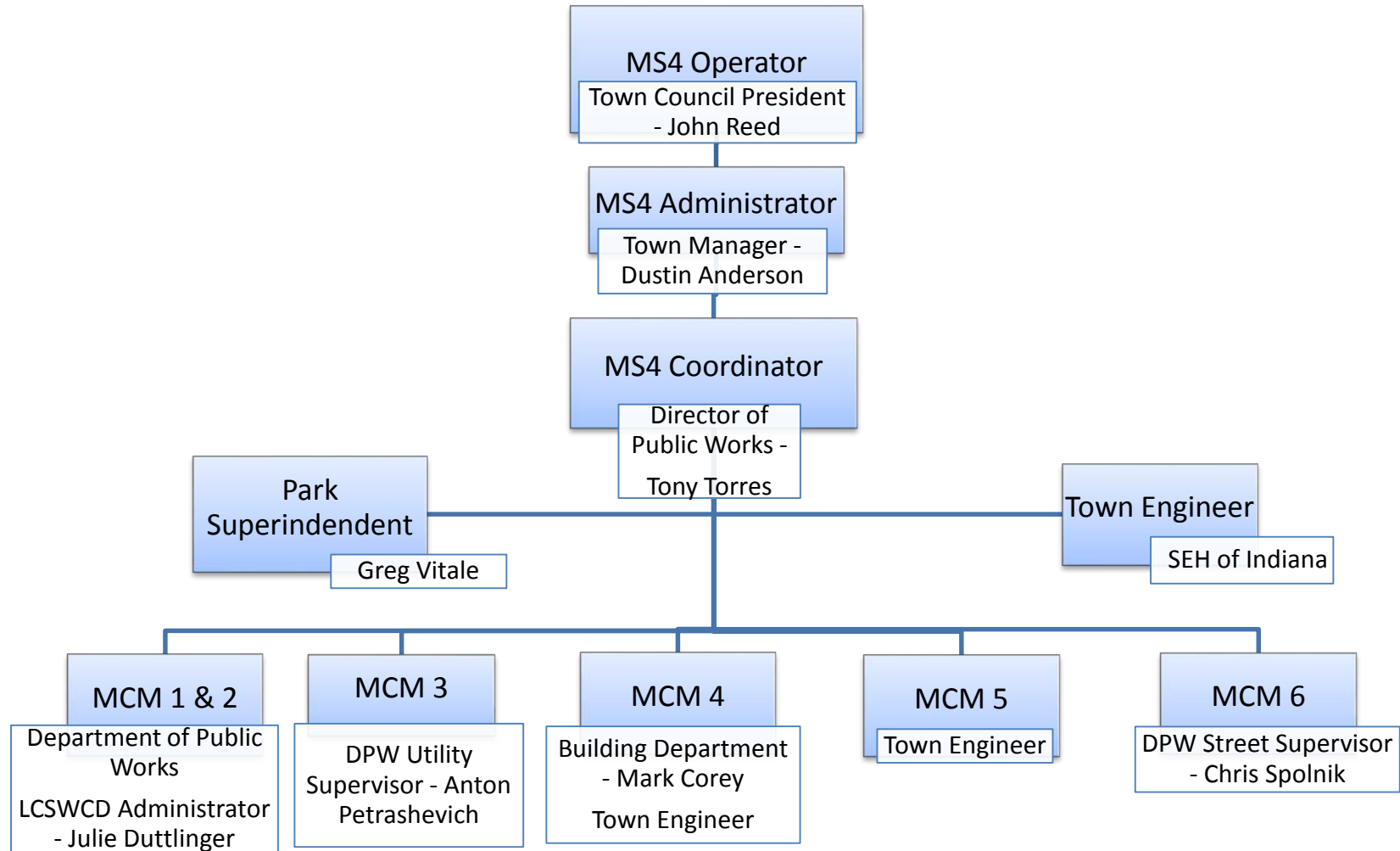
Munster's 2016 projected revenue from its stormwater fee is \$1,135,000.

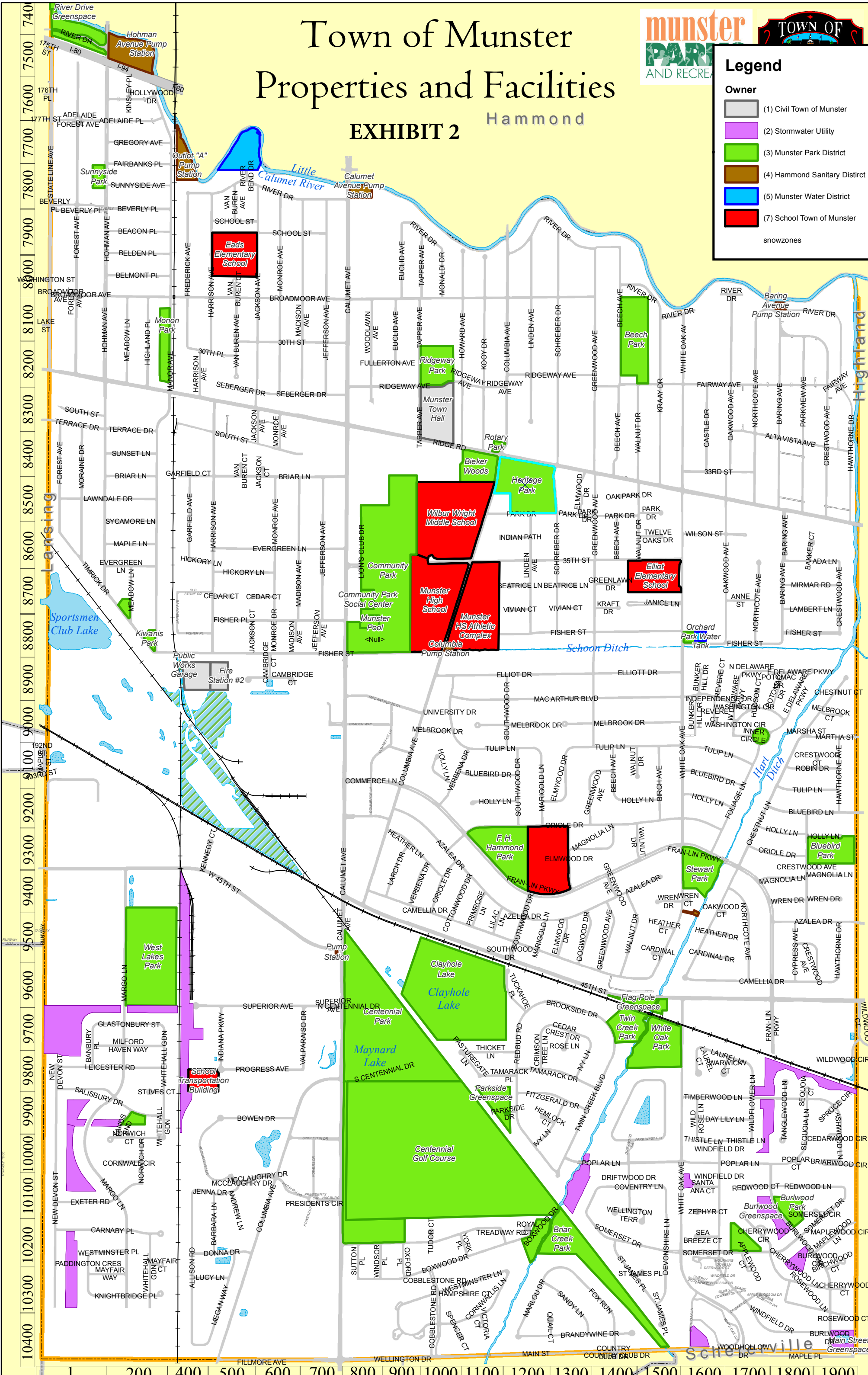
10.0 Summary

Implementation of Munster's stormwater quality program will improve the overall quality of stormwater discharges entering into its separate storm sewer system. In order to continue successfully implementing the Rule 13 program, Munster must:

- Munster continue to make the MS4 a priority,
- Update/create new items in this Part C as necessary to increase effectiveness and/or efficiency,
- Track MS4 related data as required,
- Adhere to mandated time lines,
- Participate in IDEM audits,
- Be creative in efforts to meet MCM goals.

Exhibit 1: Town of Munster – MS4 Organizational Chart





Town of Munster

Properties and Facilities

EXHIBIT 2



Legend

Owner

- (1) Civil Town of Munster
- (2) Stormwater Utility
- (3) Munster Park District
- (4) Hammond Sanitary District
- (5) Munster Water District
- (7) School Town of Munster
- snowzones

EXHIBIT 3

Municipal Owned and Operational Facilities

Town of Munster

Munster Town Hall	Munster Police Dept.	Fire Station 1
1005 Ridge Rd.	1001 Ridge Rd.	1007 Ridge Road
Munster, IN 46321	Munster, IN 46321	Munster, IN 46321
Munster Public Works	Fire Station 2	Fire Station 3
508 Fisher St.	550 Fisher St.	10121 Calumet Ave.
Munster, IN 46321	Munster, IN 46321	Munster, IN 46321
Centennial Park	Community Park	Municipal Business Center
900 N. Centennial Dr.	8701 Calumet Ave.	Mulitple Addresses Calumet
Munster, IN 46321	Munster, IN 46321	Munster, IN 46321