Part A
NOI

Part B
Baseline Characterization Report

Part C
Program Implementation Plan

RULE 13 NOTICE OF INTENT (NOI) LETTER

State Form 51270 (R2 / 10-03)
Form Approved by State Board of Accounts, 2003
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

For questions regarding this form, contact:
IDEM – Rule 13 Coordinator
100 North Senate Avenue, Rm 1255
P.O. Box 6015
Indianapolis, IN 46206-6015
Phone: (317) 234-1601 or
(800) 451-6027, ext. 41601 (within Indiana)
Web Access:
http://www.in.gov/idem/water/npdes/permits/wetwthr/storm/rule13.html

NOTE:

- This form must be used to apply for a general NPDES permit pursuant to 327 IAC 15-13.
- **Please type or print in ink.**
- This completed form must be submitted with the **Rule 13 Storm Water Quality Management Plan (SWQMP) – Part A: Initial Application Certification Submittal and Checklist**, and proof of publication.
- Return this form, required addenda, and payment by mail to the IDEM Rule 13 Coordinator at the address listed in the box on the upper-right.

APPLICABILITY

Permit coverage under 327 IAC 15-13 applies to all entities that:

1. are not required to obtain an individual NPDES permit under 327 IAC 15-2-9(b);
2. meet the general permit rule applicability requirements under 327 IAC 15-2-3;
3. do not have coverage under an individual MS4 permit; and
4. operate, maintain, or otherwise have responsibility for an MS4 conveyance within a designated MS4 area.

APPLICATION TYPE (check one)

☐ Initial NOI letter

☒ Renewal NOI letter

PART A:GENERAL INFORMATION FOR MS4 OPERATOR

1. Operator Name: Mr.Tim Armstrong
2. Operator Title: Mayor
3. Represented Entity[1]: City of Madison
4. Mailing Address
   Address: City Hall
   101 W. Main Street

☒City ☐Town **Of:** Madison	Zip: 47250	County: Jefferson

5. Phone Number: (812) 265-8300
6. Facsimile Number (if applicable): (812) 265-3349
7. E-mail Address (if applicable): mayor@madison-in.gov

PART B: GENERAL INFORMATION FOR PRIMARY CONTACT PERSON FOR THE MS4 AREA

8. **Is the primary contact person for the MS4 area the same as the operator listed in Part A?**

   ☐**Yes*** ☒**No****

   *** If yes, omit items #9-15 below and skip to Part C.**
   **** If no, fill out items #9-15 below.**

9. Contact Person Name: Mr. Randy Eggenspiller
10. Contact Person Title: Utility Director/ City Engineer
11. Represented Entity[1]: City of Madison
12. Mailing Address
    Address: City Hall
    101 W. Main Street

☒City ☐Town **Of:** Madison	Zip: 47250	County: Jefferson

13. Phone Number: (812) 265-8326
14. Facsimile Number (if applicable): (812) 265-3349
15. E-mail Address (if applicable): utilitymanager@madison-in.gov

[1] The "Represented Entity" is the name of the facility and/or organization that you are representing for purposes of this application. This can be a business, municipality, university, etc.

PF Reason = NOI13

PART C: GENERAL INFORMATION FOR MS4 ENTITIES

16. Receiving Water: List all separate storm water outfall receiving waters for all entities seeking coverage under this NOI submittal and corresponding outfall designations. Attach separate sheets as necessary. If all receiving waters and outfalls are not known at the time of the NOI letter submittal, state known ones and provide the information in the corresponding annual report.

	Entity	Receiving Water	Outfall(s)
a.	City of Madison	Big Clifty Creek (HUC 05140101040050)	
b.	City of Madison	Crooked Creek (HUC 05140101040040)	
c.	City of Madison	Ohio River - Bee Camp/Eagle Hollow (HUC 051401040010)	
d.	City of Madison	Ohio River - Tiber Creek (HUC 05140101040030)	
e.	City of Madison	Ohio River - Gilmore Creek (HUC 05140101040060)	
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			
n.			
o.			
p.			

17. Do any outfalls discharge to another MS4 conveyance? *(These conveyances may either be regulated or non-regulated under Rule 13.)* **If yes, provide the name of the responsible individual for the storm sewer and provide the name of the initial receiving water.**

☐Yes* ☒No** *** If yes, fill in items #18-22 below.**
**** If no, omit items #18-22, and advance to item #23 below.**

18. Responsible Individual Name:

19. Responsible Individual Title:

20. Responsible MS4 Entity (e.g. municipality):

21. Phone Number:

22. Initial Receiving Water(s):

23. Has a TMDL study been completed on any of the receiving water(s)? *(To determine if a TMDL study has been completed, you may contact IDEM's TMDL program area by phone at 1-317-308-3173.)* **If yes, note which outfall(s) is subject to effluent limitations and identify the impairment parameter(s) in the table provided below. (attach separate sheets as necessary)**

☐Yes* ☒No** * If yes, fill in items a.-m. below.
** If no, omit items a.-m. and advance to Part D.

	Receiving Water	Outfall(s)	Parameter(s)
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			
k.			
l.			
m.			

PART D: MATERIALS TO BE SUBMITTED WITH THIS NOI LETTER

► **In addition to the information in Parts A ,B, and C, an MS4 operator must provide the following.**
(Check when completed, or check "NA" if an item is not applicable. For the first of the numbered items below, the requirement must be met and "not applicable" is not provided as an option.):

	X	NA	ITEM
1)	☒	----	A copy of the **Storm Water Quality Management Plan – Part A: Initial Application Certification Submittal and Checklist**.
2)	☒	----	Proof of publication in a newspaper of largest circulation in the affected area[1].
3)	☐	☒	Certification that appropriate legally-binding agreements or contracts between MS4 entities have been obtained (see APPENDIX A).

PART E: APPLICATION FEE

- Upon submission of this NOI letter, the MS4 Operator shall pay a fee in the amount of fifty dollars ($50). Make all checks and money orders payable to "IDEM".
- Pursuant to 327 IAC 15, the fee is **NOT**:
  - Transferable from one (1) MS4 operator to another;
  - Transferable from one (1) person to another;
  - Transferable to any other type of permit issued by IDEM; or
  - Refundable.

Unless requested by the MS4 operator and approved by IDEM within three (3) days of submittal to IDEM or prior to the NOI letter processing by IDEM, whichever is earlier.

PART F: CERTIFICATION AND SIGNATURE

- Allow a minimum of four (4) weeks for processing the NOI letter information and receipt of your Notice of Sufficiency.
- Make sure you have completed all appropriate sections of this NOI letter and have included all required addenda. Sign and date the NOI letter and return it to the address shown on page one (1) of this NOI letter. Incomplete or incorrect NOI letters may result in a delay in processing and issuance of your Notice of Sufficiency.
- All information requested in this NOI letter is MANDATORY for the administration and processing of your permit pursuant to 327 IAC 15-13. All data received will be regarded as a public record subject to disclosure in accordance with IC 5-14-3 and 327 IAC 12.1.

► **The Operator listed in "Part A: GENERAL INFORMATION FOR MS4 OPERATOR" must sign the following certification statement:**

"By signing this NOI letter, I hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Type or print Operator Name: Mr. Tim Armstrong, Mayor

Signature of Operator: _____ **Date:** 09/02/08 *(mm/dd/year)*

[1] The notice must be published one (1) time in at least one (1) newspaper of general circulation in each of the counties comprising the MS4 area represented by the entities seeking coverage under this NOI letter submittal. The publication of notice must, at a minimum, include the language specified in 327 IAC 15-13-6(a)(4).

APPENDIX A: LEGALLY-BINDING AGREEMENT/CONTRACT CERTIFICATION FOR IMPLEMENTATION OF A SWQMP

On _____ *(date)*,

1. _____ 2. _____
3. _____ 4. _____
5. _____ 6. _____
7. _____ 8. _____
9. _____ 10. _____
11. _____ 12. _____

(List entity names above)

Entered into an agreement or contract to satisfy the implementation requirements in Parts B and C of the Storm Water Quality Management Plan (SWQMP).

As stated in the agreement or contract, entities agree to the following responsibilities

Please check the boxes corresponding with responsibilities, or portions thereof, of each entity (entity numbers correspond to entity name numbers listed above) entering into this agreement in the table below:

RESPONSIBILITY	ENTITY 1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
a. Public Education and Outreach	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b. Public Involvement and Participation	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c. Illicit Discharge Detection and Elimination	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d. Construction Site Storm Water Run-off Control	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e. Postconstruction Storm Water Management in New Development and Redevelopment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f. Pollution Prevention and Good Housekeeping for Municipal Operations	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
g. Baseline Characterization and On-Going Monitoring Plan	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
h. Other: **Specify:**	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

If any entity(s) is agreeing to accomplish only a portion of an aforementioned responsibility in the table, please elaborate below on the exact responsibility portion (e.g. entity 1 is responsible for storm drain marking in the MS4 area, entity 2 is responsible for conducting behavioral phone surveys for item (a) in the table). Attach separate sheets as needed.

MCM 2: Public survey of stormwater knowledge and community feedback.
MCM 3: MS4 system mapping assistance..

The following statement and the accompanying signatures serve as the required certification that an agreement or contract has been developed and agreed upon per the requirements of 327 IAC 15-13.

"By signing this certification, I hereby certify under penalty of law that this document and all attachments are, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Entity	Authorized Signature	Date	Entity	Authorized Signature	Date
1.			2.		
3.			4.		
5.			6.		
7.			8.		
9.			10.		
11.			12.		

RULE 13 STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) -
PART A: INITIAL APPLICATION CERTIFICATION SUBMITTAL AND CHECKLIST

State Form 51277 (R2 / 11-03)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

For questions regarding this form, contact:
IDEM – Rule 13 Coordinator
100 North Senate Avenue, Rm 1255
P.O. Box 6015
Indianapolis, IN 46206-6015
Phone: (317) 234-1601 or
(800) 451-6027, ext. 41601 (within Indiana)
Web Access:
http://www.in.gov/idem/water/npdes/permits/wetwthr/storm/rule13.html

NOTE:
- This form must be used for compliance with a general NPDES permit pursuant to 327 IAC 15-13.
- This completed form must be submitted with a complete NOI letter.
- Return this form, and any required addenda by mail to the IDEM Rule 13 Coordinator at the address listed in the box on the upper-right.

PART A: STORM WATER QUALITY MANAGEMENT PLAN CHECKLIST

► **Please check the appropriate box when the requirements for each numbered item have been met.**

X	NA	ITEM
☒		1. On page 2 of this form (TABLE 1: RESPONSIBLE ENTITY), provide a listing of entities that are covered under the attached NOI letter submittal. Duplicate the table if more entries are necessary and attach to this form.
☒		2. On page 3 of this form (TABLE 2: SCHEDULE OF ACTIVITIES), provide an itemized schedule of activities related to SWQMP implementation, with a corresponding milestone date. Duplicate the table if more entries are necessary and attach to this form.
☒		3. At a minimum, the schedule complies with the compliance schedule found in 327 IAC 15-13-11.
☒	☐	4. On page 4 of this form (TABLE 3: PROPOSED BUDGET), provide an actual or estimated, proposed, itemized budget for the storm water program. Duplicate the table if more entity entries are necessary and attach to this form.
☐	☒	5. For NOI letter submittals covering multiple entities, the budget allocation is separated by each entity covered under this NOI letter submittal.
☒	☐	6. The budget identifies funding sources.
☒		7. The "SWQMP – Part A: Initial Application" was submitted within 90 days of Rule 13's effective date or within 180 days of becoming aware of changed entity designation conditions.
☒		8. The "SWQMP – Part A: Initial Application" has been certified by a Qualified Professional and the MS4 Operator.

PART B: CERTIFICATION AND SIGNATURE

► The Qualified Professional and MS4 Operator (referenced in PART A, Item #8 of this form) must sign the following certification statement and provide the pertinent NPDES permit number:

"By signing this form, I hereby certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name of Qualified Professional: Mr. Randy Eggenspiller, Utility Director/ City Engineer
(typed or printed)

NPDES Permit #: INR040061

Signature of Qualified Professional: Randy Eggenspiller

Date: 8-29-08
(mm/dd/year)

Name of MS4 Operator: Mr. Tim Armstrong, Mayor
(typed or printed)

Signature of MS4 Operator:

Date: 09/02/08
(mm/dd/year)

TABLE 1: RESPONSIBLE ENTITY							
	Represented Entity Name	Entity Representative Name	Entity Representative Title	Mailing Address	Phone Number:	Facsimile Number (if applicable)	E-mail Address (if applicable)
1.	City of Madison	Mr. Tim Armstrong	Mayor	Street address: City Hall, 101 W. Main Street ☒City ☐Town ☐Village Of: Madison Zip: 47250 County: Jefferson	(812) 265-8300	(812) 265-3349	mayor@madison-in.gov
2.	_____	_____	_____	Street address: _____ ☐City ☐Town ☐Village Of: _____ Zip: _____ County: _____	_____	_____	_____
3.	_____	_____	_____	Street address: ☐City ☐Town ☐Village Of: _____ Zip: _____ County: _____	_____	_____	_____
4.	_____	_____	_____	Street address: _____ ☐City ☐Town ☐Village Of: _____ Zip: _____ County: _____	_____	_____	_____
5.	_____	_____	_____	Street address: _____ ☐City ☐Town ☐Village Of: _____ Zip: _____ County: _____	_____	_____	_____
6.	_____	_____	_____	Street address: _____ ☐City ☐Town ☐Village Of: _____ Zip: _____ County: _____	_____	_____	_____
7.	_____	_____	_____	Street address: ☐City ☐Town ☐Village Of: Zip: _____ County: _____	_____	_____	_____

TABLE 2: SCHEDULE OF ACTIVITIES		
	Milestone Date	**Activity Name**
1.	**Ongoing**	**MCM 1 Public Education and Outreach:** Participate actively in the Southern Indiana Stormwater Advisory Committee. Continue to publish and distribute stormwater education materials to the public via hard copy and internet including using the City's stormwater qualilty website. Continue to update the stormwater quality website, educational flyers and pamphlets, displays in the City Hall lobby. Continue to ensure consistency with the CSO Long Term Control Plan.
2.	**Ongoing**	**MCM 2 Public Involvement and Participation**: Continue to implement the following BMPs: Public knowledge survey and provide public notification of stormwater meetings and events. Continue to label a minimum of 50 City owned storm drains annually. Continue to encourage collection of household hazardous waste and automotive fluids by the Southeastern Indiana Solid Waste District. Continue litter management in the MS4 system and encourage volunteer cleanup efforts. Continue to ensure consistency with the CSO Long Term Control Plan.
3.	**Ongoing**	**MCM 3 Illicit Discharge Detection and Elimination (IDDE):** Continue to implement the Illicit Discharge Ordinance. Continue to update the GIS database of the collection system and outfall locations. Continue to implement the IDDE Standard Operating Procedure to screen new outfalls, identify and eliminate illicit discharges. Continue IDDE education for the public and City employees. Continue to ensure consistency with the CSO Long Term Control Plan.
4.	**Ongoing**	**MCM 4 Construction Site Stormwater Run-Off Control:** Continue to implement the Construction Site Runoff Control Ordinance (i.e., plan review, permit issuance, inspections, enforcement and reporting). Continue to develop and implement procedures to receive and track public inquiries, concerns, and infromation regarding local construction activities. Continue to provide educational fact sheets to developers concerning erosion and sediment control practices for construction sites with all new construction permits.
5.	**Ongoing**	**MCM 5 Post-construction Stormwater Management in New Development and Redevelopment**: Continue to implement the Post-Construction Stormwater Management Ordinance, including post-construction BMP plan review and execution of Long Term Maintenance and Operations Agreements. Initiate post-construction stormwater management training and education for the construction industry and City employees.
6.	**Ongoing**	**MCM 6 Pollution Prevention and Good Housekeeping for Municipal Operations:** Continue to implement capital improvement projects, maintain the stormwater conveyance system and clean catch basins. Continue to conduct regular sweeping of streets, sidewalks, plazas and parking lots. Continue to maintain BMPs at salt storage facilities, maintenance garage, transfer stations, City owned and operated golf courses and parks and other City operations. Continue to inspect and maintain post-construction BMPs owned and operated by the City. Continue to provide weekly trash pick-up services. Continue stormwater education for City employees. Continue to ensure consistency with the CSO Long Term Control Plan.
7.	**Ongoing**	**Ongoing Water Quality Characterization** – Develop and implement the Stream Visual Assessment Protocol to assess stormwater receiving streams using a field form that supports collection of field data and GIS locations.
8.	**Ongoing**	**Reporting** –Submit a MS4 Program report in Year 2 and Year 4, as well as monthly construction site reports as required by 327 IAC 15-13-18.
9.	**Ongoing**	**Part B – Baseline Characterization Report** –Update the Stormwater Quality Management Plan Part B: Baseline Characterization Report to characterize the water quality of known receiving waters as required by 327 IAC 15-13-7.
10.	**Ongoing**	**Part C – Program Implementation Plan** – Update the Stormwater Quality Management Plan Part C: Program Implementation as required by 327 IAC 15-13-8.

TABLE 3: PROPOSED BUDGET

ENTITY: City of Madison INR040061

	Control Measure/Item	Proposed Budget (Five Year Budget)
1.	Public Education and Outreach	$40,000
2.	Public Participation/Involvement	$40,000
3.	Illicit Discharge Detection and Elimination	$80,000
4.	Construction Site Run-Off Control	$120,000
5.	Post-construction Run-Off Control	$80,000
6.	Municipal Operations Pollution Prevention and Good Housekeeping	$750,000
7.	On-Going Water Quality Characterization	$25,000
8.	Other (Reporting)	$25,000
9.	Funding Source(s)	Sewer and Street Funds

The Madison Courier:
310 Courier Square
Madison, Indiana 47250
Phone: 812.265.3641
Fax: 812.273.6903

This legal notice should run one time a week for at least two weeks. Please obtain a proof of publication or publisher's affidavit to submit to IDEM with the other renewal documents.

PUBLIC NOTICE

The City of Madison (101 W. Main Street, Madison, Indiana 47250) intends to discharge stormwater into Big Clifty Creek (HUC 05140101040050), Crooked Creek (HUC 05140101040040), Ohio River - Bee Camp/Eagle Hollow (HUC 051401040010), Ohio River - Tiber Creek (HUC 05140101040030), Ohio River - Gilmore Creek (HUC 05140101040060) watersheds, and is submitting a Notice of Intent letter to notify the Indiana Department of Environmental Management of our intent to comply with the requirements under 327 IAC 15-13 to discharge stormwater runoff associated with municipal separate storm sewer systems.

RULE 13 STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) -
PART B: BASELINE CHARACTERIZATION AND REPORT CERTIFICATION CHECKLIST

State Form 51275 (R2 / 11-03)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

For questions regarding this form, contact:
IDEM – Rule 13 Coordinator
100 North Senate Avenue, Rm 1255
P.O. Box 6015
Indianapolis, IN 46206-6015
Phone: (317) 234-1601 or
(800) 451-6027, ext. 41601 (within Indiana)
Web Access:
http://www.in.gov/idem/water/npdes/permits/wetwthr/storm/rule13.html

NOTE:

- This form must be used for compliance with a general NPDES permit pursuant to 327 IAC 15-13.
- Submit this completed form with a complete "SWQMP – Part B: Baseline Characterization and Report" in accordance with 327 IAC 15-13-7.
- Return this form, and any required addenda by mail to the IDEM Rule 13 Coordinator at the address listed in the box on the upper-right.

PART A: SWQMP CHECKLIST

► **Please check the appropriate box when the requirements for each numbered item have been met, or check "NA" if an item is not applicable. For some of the numbered items, the requirements must be met and "not applicable" is not provided as an option.**

X	NA	ITEM
☒		**1.** Plan submitted within one hundred eighty (180) days of the NOI letter submittal or the expiration date of the previous 5-year permit term
		2. Baseline characterization includes:
☒		a) An investigation of land usage within the MS4 area
☒		b) The identification and assessment of structural and nonstructural storm water BMP locations
☒		c) The identification of known sensitive water areas
☒		d) A review of known existing and available monitoring data of the MS4 area receiving waters
☒		e) The identification of areas having a reasonable potential for, or actually causing, storm water quality problems
☐	☒	f) Other (please specify):
		3. Characterization report includes:
☒		a) Conclusions, such as key observations or monitoring points in the MS4 conveyances, derived from the land usage investigation
☒		b) Characterization results of BMP locations and, as appropriate, the structural condition of the BMP, related to the BMP's potential or actual effectiveness in improving storm water quality
☐	☒	c) The characterization includes recommendations for placement and implementation of additional BMPs
☒		d) Identification of areas, such as public beaches or surface drinking water sources, that potentially or actually require added water quality protection considerations
☒	☐	e) Any correlative conclusions that can be drawn from a review of existing monitoring data that assists the MS4 Operator in identifying potential or actual storm water quality problem areas
☐	☒	f) The identification of areas or sources potentially or actually causing storm water quality problems
☐	☒	g) Other (please specify):
☒		**4.** SWQMP - Part B: Baseline Characterization and Report has been signed by a Qualified Professional and the MS4 Operator

PART B: CERTIFICATION AND SIGNATURE

► The Qualified Professional and the MS4 Operator (referenced in Part A, Item #4 of this form) must sign the following certification statement and provide the pertinent NPDES permit number:

"By signing this checklist, I hereby certify under penalty of law that this protocol was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name of Qualified Professional: **Mr. Randy Egginspiller, Utility Director/City Engineer, City of Madison, Indiana** **NPDES Permit #:** **INR040061**
(typed or printed)

Signature of Qualified Professional: _____ **Date:** _____
(mm/dd/year)

Name of MS4 Operator: **Mr. Tim Armstrong, Mayor, City of Madison, Indiana**
(typed or printed)

Signature of MS4 Operator: _____ **Date:** _____
(mm/dd/year)

Appendix A

Appendix B

Razor Fork

State Route 7

State Road 62

Big Clifty Creek Watershed (HUC 14)

Little Clifty Creek

Big Clifty Creek

Clifty

State Road 62

Deans Branch

Crooked Creek (Jefferson) Watershed (HUC 14)

Little Crooked Creek

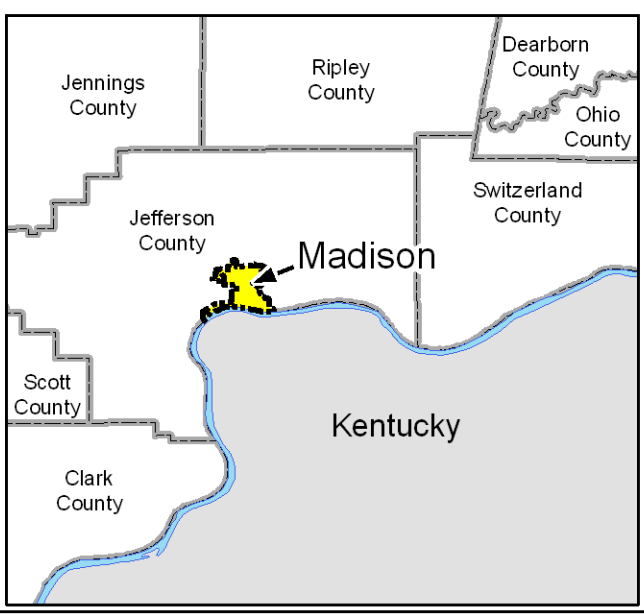
Crooked Creek

Ohio River-Gilmore Creek Watershed (HUC 14)

East Sr 56

OHIO RIVER

Ohio River-Tiber Creek/Madison Watershed (HUC 14)



City of Madison, Indiana

N

0 1,250 2,500 5,000 7,500 10,000 Feet

1 inch equals 2,500 feet
1:30,000

- Stormwater Outfall
- Impaired Stream/ River (2008 303d)

Stormwater Line

- Curb and Gutter
- Channel
- Culvert
- Ditch
- Pipe
- Sheet Flow

- Major Road
- Stream
- Sinkhole Area
- Municipal Boundary
- Wellhead Protection Area East
- Wellhead Protection Area West
- County Boundary
- National Wetland Inventory - Wetland/Pond/Lake

Stantec

Any use, reuse, or modification of the electronic media will be at the recipient's sole risk and full legal responsibility. The recipient will, to the fullest extent permitted by law, indemnify and hold harmless Stantec Consulting, Inc. from any and all claims, suits, liability, demands, or costs arising out of, or resulting from the use of the electronic media. The electronic media is provided as is without warranty of any kind.

V:\1756\active\175648008\engineering\GIS_MXD\SW_Part_B_11x17.mxd

Indiana County Endangered, Threatened and Rare Species List

County: Jefferson

Species Name	Common Name	FED	STATE	GRANK	SRANK
Platyhelminthes (Flatworms)					
Sphalloplana weingartneri	Weingartner's Cave Flatworm		ST	G3G4	S2
Crustacean: Malacostraca					
Crangonyx packardi	Packard's Cave Amphipod		SR	G5	S2
Mollusk: Bivalvia (Mussels)					
Epioblasma triquetra	Snuffbox		SE	G3	S1
Lampsilis teres	Yellow Sandshell			G5	S2
Ligumia recta	Black Sandshell			G5	S2
Obovaria subrotunda	Round Hickorynut		SSC	G4	S2
Plethobasus cyphyus	Sheepnose	C	SE	G3	S1
Pleurobema cordatum	Ohio Pigtoe		SSC	G3	S2
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Simpsonaias ambigua	Salamander Mussel		SSC	G3	S2
Toxolasma lividus	Purple Lilliput		SSC	G2	S2
Villosa lienosa	Little Spectaclecase		SSC	G5	S2
Insect: Coleoptera (Beetles)					
Pseudanophthalmus chthonius	Cave Beetle		SE	G2G3	S1
Insect: Odonata (Dragonflies & Damselflies)					
Archilestes grandis	Great Spreadwing		SR	G5	S3
Fish					
Ammocrypta pellucida	Eastern Sand Darter			G3	S2
Amphibian					
Cryptobranchus alleganiensis alleganiensis	Hellbender		SE	G3G4T3T4	S1
Plethodon electromorphus	Northern Ravine Salamander			G5	S2
Reptile					
Clonophis kirtlandii	Kirtland's Snake		SE	G2	S2
Tantilla coronata	Southeastern Crowned Snake		SE	G5	S1
Bird					
Aimophila aestivalis	Bachman's Sparrow			G3	SXB
Ammodramus henslowii	Henslow's Sparrow		SE	G4	S3B
Ardea herodias	Great Blue Heron			G5	S4B
Buteo platypterus	Broad-winged Hawk	No Status	SSC	G5	S3B
Cistothorus platensis	Sedge Wren		SE	G5	S3B
Coragyps atratus	Black Vulture			G5	S1N,S2B
Dendroica cerulea	Cerulean Warbler		SSC	G4	S3B
Lanius ludovicianus	Loggerhead Shrike	No Status	SE	G4	S3B
Tyto alba	Barn Owl		SE	G5	S2
Wilsonia citrina	Hooded Warbler		SSC	G5	S3B
Mammal					
Lynx rufus	Bobcat	No Status		G5	S1
Myotis sodalis	Indiana Bat or Social Myotis	LE	SE	G2	S1
Taxidea taxus	American Badger			G5	S2
Vascular Plant					
Asplenium ruta-muraria	Wallrue Spleenwort		SR	G5	S2
Aster oblongifolius	Aromatic Aster		SR	G5	S2
Baptisia australis	Wild False Indigo		SR	G5	S2
Carex eburnea	Ebony Sedge		SR	G5	S2
Carex pedunculata	Longstalk Sedge		SR	G5	S2
Carex seorsa	Weak Stellate Sedge		SR	G4	S2
Carex straminea	Straw Sedge		ST	G5	S2
Chaerophyllum procumbens var. shortii	Wild Chervil		ST	G5T3T4Q	S1
Cornus amomum ssp. amomum	Silky Dogwood		SE	G5T5	S1
Cyperus pseudovegetus	Green Flatsedge		SR	G5	S2
Dentaria multifida	Divided Toothwort		SE	G4?	S1

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

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting

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

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

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Indiana County Endangered, Threatened and Rare Species List

County: Jefferson

Species Name	Common Name	FED	STATE	GRANK	SRANK
Eleocharis wolfii	Wolf Spikerush		SR	G3G4	S2
Gonolobus obliquus	Angle Pod		SR	G4?	S2
Helianthus angustifolius	Swamp Sunflower		SE	G5	S1
Hydrocotyle americana	American Water-pennywort		SE	G5	S1
Hypericum frondosum	Golden St. John's-wort		SX	G4	SX
Juglans cinerea	Butternut		WL	G3G4	S3
Juniperus communis	Ground Juniper		SR	G5	S2
Lilium canadense	Canada Lily		SR	G5	S2
Ludwigia decurrens	Primrose Willow		WL	G5	S2
Lycopodium obscurum	Tree Clubmoss		SR	G5	S2
Oenothera perennis	Small Sundrops		SR	G5	S2
Oenothera triloba	Stemless Evening-primrose		SX	G4	SX
Orobanche ludoviciana	Louisiana Broomrape		SE	G5	S2
Oryzopsis racemosa	Black-fruit Mountain-ricegrass		SR	G5	S2
Panax trifolius	Dwarf Ginseng		WL	G5	S2
Panicum scoparium	Broom Panic-grass		SE	G5	S1
Phlox amplifolia	Large-leaved Phlox		SR	G3G5	S2
Poa alsodes	Grove Meadow Grass		SR	G4G5	S2
Ranunculus pusillus	Pursh Buttercup		SE	G5	S1
Rhexia mariana var. mariana	Maryland Meadow Beauty		ST	G5T5	S1
Sagittaria australis	Longbeak Arrowhead		SR	G5	S2
Scirpus purshianus	Weakstalk Bulrush		SR	G4G5	S1
Sida hermaphrodita	Virginia Mallow		SE	G3	S1
Strophostyles leiosperma	Slick-seed Wild-bean		ST	G5	S2
Sullivantia sullivantii	Sullivantia		ST	G4	S2
Thalictrum pubescens	Tall Meadowrue		ST	G5	S2
Tragia cordata	Heart-leaved Noseburn		WL	G4	S2
Valerianella chenopodiifolia	Goose-foot Corn-salad		SE	G5	S1
Viburnum molle	Softleaf Arrow-wood		SR	G5	S2
Wisteria macrostachya	Kentucky Wisteria		SR	G5	S2
Woodwardia areolata	Netted Chainfern		SR	G5	S2
High Quality Natural Community					
Forest - flatwoods bluegrass till plain	Bluegrass Till Plain Flatwoods		SG	G3	S2
Forest - upland dry	Dry Upland Forest		SG	G4	S4
Forest - upland dry-mesic	Dry-mesic Upland Forest		SG	G4	S4
Forest - upland mesic	Mesic Upland Forest		SG	G3?	S3
Primary - cliff limestone	Limestone Cliff		SG	GU	S1
Other					
Freshwater Mussel Concentration Area	Mussel Bed		SG	GNR	SNR

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

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting

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

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

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

City of Madison
Stormwater Quality Management Plan
MS4 Permit #: INR040061

Part B - Baseline Characterization

Stantec

February 2009

Executive Summary

The City of Madison located in Jefferson County in southeastern Indiana along the north shore of the Ohio River as shown on the MS4 map provided in **Appendix 1**. The City of Madison's MS4 area includes the 8.9 square miles (5,684 acres) of incorporated area. The population of the City of Madison was 12,004 (2000 Census), resulting in a population density of 1,349 people per square mile.

The watersheds that drain portions of the City of Madison include: Big Clifty Creek, Crooked Creek (Jefferson), Tiber Creek, Gilmore Creek and Bee Camp/Eagle Hollow, all tributaries to the Ohio River. Johnson Lake is located in Johnson Lake Park and there are small ponds at the Sunrise Golf Course. These waterbodies receive discharges from the City's MS4 system. During the first MS4 permit term, 137 stormwater outfalls and 703,603 feet (133.26 miles) of MS4 conveyances have been mapped by the City of Madison. This effort represents 100% of the stormwater system.

A portion of the City of Madison is currently served by combined sewers. Stormwater generated in this area is managed under the Combined Sewer Overflow (CSO) program, for which the City has developed a Long Term Control Plan (LTCP). The City's MS4 program is consistent with the CSO Long Term Control Plan.

The City of Madison has actively implemented the requirements of Rule 13. These efforts have lead to the education of citizens, students, the construction industry, elected officials and public employees regarding stormwater and the requirements and benefits of the MS4 program. Adoption and implementation of stormwater ordinances for Illicit Discharge, Construction, and Post-Construction have led to improved water quality through efforts eliminate illicit discharges, improve management of stormwater from construction sites, installation and improved long-term operation and maintenance of post-construction, structural Best Management Practices (BMPs).

Currently four (4) structural BMPs have been installed in the City of Madison. Two (2) of these structural BMPs are sediment/detention basins associated with new developments, and two (2) are retention ponds operated by the City at Johnson Lake Park and Sunrise Golf Course. Additionally, pollution prevention and good housekeeping procedures have been enhanced at municipal facilities and throughout the community.

Water quality protection considerations include wetlands, wellhead protection areas, boat launches and good quality streams (Clifty Creek, Eagle Hollow Creek and Crooked Creek). The MS4 program provides protections for wetlands and wellhead protection areas, in addition to protections provided by other Clean Water Act programs.

Water quality impairments have been identified in Dean's Branch, which drains a developed portion of the City. At this time, the relative contribution from the MS4 to these issues is not

understood. However the City of Madison has invested significantly in mapping, operating, and maintaining the MS4. In addition, the owners of approved BMPs maintain the facilities in accordance with the approved Stormwater Pollution Prevention Plan (SWPPP).

The findings of this Baseline Characterization were used to recommend that the City continue to implement and build upon the MS4 program initiated in Permit Term 1, which includes structural and non-structural BMPs. The following additional BMPs are recommended for consideration during the development of **Part C: Stormwater Quality Management Plan for Permit Term 2**:

- Implement the Qualified Professional program to require training and certification for those involved in construction site self-inspections.
- Formalize and implement the Stream Visual Assessment Protocol (SVAP) in streams within the City of Madison's MS4 area, including good quality streams and Dean's Branch which was identified as impaired by IDEM. Data gathered from the SVAP would allow the City to assess local streams, identify locations that could potentially benefit from maintenance or remediation activities and to identify strategies for improving water quality throughout the City of Madison's MS4.
- Work toward developing a dedicated funding source for the MS4 program, including consideration of the option of a stormwater utility.
- Continue to identify, analyze, design, and implement stormwater capital improvement projects. The City may benefit from a city-wide and/or watershed-based stormwater master planning to assist with systematic identification, prioritization, scheduling, and implementation of capital improvement projects.
- Enhance and expand public education efforts through website updates, additional stormwater education publications, display of the stormwater exhibit at at least one local event per year and encouraging and documenting participation from citizens and the construction/ development community in SWAC meetings, City Council meetings and other forums. Expand public education efforts to include Rule 6 facilities within the MS4 area.
- Formalize the stormwater management activities occurring and BMPs being implemented at municipal operations in order to develop a Good Housekeeping Improvement Plan (GHIP) operational manual.

Table of Contents

EXECUTIVE SUMMARY E.1

1.0 INTRODUCTION 1.1
1.1 GENERAL INFORMATION 1.1
1.1.1 Contact List 1.1
1.1.2 Acronym List 1.1
1.2 LOCATION AND DESCRIPTION 1.3
1.3 DRAINAGE SYSTEM DESCRIPTION 1.4

2.0 BASELINE CHARACTERIZATION 2.5
2.1 LAND USAGE WITHIN THE MS4 AREA 2.5
2.2 BEST MANAGEMENT PRACTICES (BMPS) 2.6
2.2.1 Structural BMPs 2.6
2.2.2 Non-Structural BMPs 2.7
2.3 KNOWN SENSITIVE AREAS 2.8
2.4 EXISTING AND AVAILABLE MONITORING DATA 2.10
2.5 ACTUAL OR POTENTIAL STORMWATER QUALITY PROBLEM AREAS 2.11

3.0 FINDINGS 3.12
3.1 KEY OBSERVATIONS AND FINDINGS 3.12
3.2 RESULTS OF BMP CHARACTERIZATION 3.13
3.3 WATER QUALITY PROTECTION CONSIDERATIONS 3.13
3.4 POTENTIAL OR ACTUAL STORM WATER QUALITY PROBLEM AREAS 3.14
3.5 STORM WATER QUALITY PROBLEM AREAS OR SOURCES 3.14

4.0 STORMWATER PROGRAM RECOMMENDATIONS: PERMIT TERM II 4.14

5.0 REFERENCES 5.15

1.0 Introduction

1.1 GENERAL INFORMATION

1.1.1 Contact List

Mr. Randy Eggenspiller
Utility Director/City Engineer
City Hall
101 W. Main Street
Madison, Indiana 47250
Tel: (812) 265-8326

1.1.2 Acronym List

BMP	Best Management Practice
CIP	Capital Improvement Project
CSO	Combined Sewer Overflow
HUC	Hydrologic Unit Code
IAC	Indiana Administrative Code
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
LTCP	(Combined Sewer Overflow) Long Term Control Plan
MCM	Minimum Control Measure
MOA	Memorandum of Agreement
MS4	Municipal Separate Storm Sewer System
NWI	National Wetland Inventory
ORSANCO	Ohio River Sanitation Commission
RBP	Rapid Bioassessment Protocol
SIC	Standard Industrial Code
SOP	Standard Operating Procedure
SQMP	Stormwater Quality Management Permit
SVAP	Stream Visual Assessment Protocol

SWAC	Storm Water Advisory Committee
SWCD	Soil and Water Conservation District
SWMD	Solid Waste Management District
SWQMP	Storm Water Quality Management Plan
UIC	Underground Injection Control
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WH-OL	Wellhead Protection Overlay District
WHPA	Wellhead Protection Area
WHPP	Wellhead Protection Plan

1.2 LOCATION AND DESCRIPTION

The City of Madison is located in Jefferson County in southeastern Indiana along the north shore of the Ohio River, as shown on the MS4 map provided in **Appendix 1**. The City of Madison's MS4 area includes the 8.9 square miles (5,684 acres) of incorporated area. The population of the City of Madison was 12,004 (2000 Census), resulting in a population density of 1,349 people per square mile.

A portion of the City of Madison is currently served by combined sewers. Stormwater generated in this area is managed under the Combined Sewer Overflow (CSO) program, for which the City has developed a Long Term Control Plan (LTCP).

The City of Madison is located between two physiographic regions: the Dearborn Uplands to the east, and the Muscatatuck Flats to the west. The Dearborn Uplands Region is a dissected plateau underlain by Ordovician limestone and shale, while the Muscatatuck Flats Region is a gently sloping plain made up of Devonian bedrock (Hill, 1998). The City's uplands stand in bold relief to the floodplain of the Ohio River, which is approximately 430 feet above sea level (Hill, 1998).

Soils in the area of the City of Madison formed in widely diverse parent materials, including unconsolidated sand, silt and clay, as well as limestone, dolomite and shale bedrock (Nickell, 1985). These soils are defined by three (3) different soil series which are described below (Nickell, 1985).

Cobbsfork Series
The Cobbsfork Series consists of deep, poorly drained, very slowly permeable soils on glacial drift plains. These soils formed in loess and in the underlying glacial drift. Slopes range from zero (0) to two (2) percent.

Eden Series
The Eden Series consists of moderately deep, well drained, slowly permeable soils on uplands. These soils formed in material weathered from interbedded limestone and soft, calcareous shale. The shale predominates and slopes range from twelve (12) to fifty (50) percent.

Avonburg Series
The Avonburg Series consists of deep, somewhat poorly drained, very slowly permeable soils on glacial drift plains. These soils formed in a thin layer of loess and in the underlying glacial drift. Slopes range from zero (0) to four (4) percent.

These physiographic and soils characteristics influence stormwater generation and flow in the City of Madison. The City's uplands drain quickly and during larger storms can contribute to flooding in the lower areas along the Ohio River.

1.3 DRAINAGE SYSTEM DESCRIPTION

The watersheds that drain portions of the City of Madison include: Big Clifty Creek, Crooked Creek (Jefferson), Tiber Creek, Gilmore Creek and Bee Camp/Eagle Hollow, all tributaries to the Ohio River. Johnson Lake is located in Johnson Lake Park and there are small ponds at the Sunrise Golf Course.

During the first MS4 permit term, 137 stormwater outfalls were mapped. Big Clifty Creek receives discharges from 40 MS4 outfalls. Crooked Creek receives discharges from 60 MS4 outfalls. Tiber Creek receives discharges from 37 MS4 outfalls. During the first MS4 permit term, 703,603 feet (133.26 miles) of MS4 conveyances have been mapped by the City of Madison. This effort represents 100% of the conveyances and outfalls comprising the stormwater system. Nearly all of the mapped MS4 outfalls are structurally sound (124 of 137, 91%) and nearly all (134 of 137, 98%) were less than 50% obstructed.

A portion of the City of Madison is currently served by combined sewers. During dry weather, sewage is conveyed to the wastewater treatment plant. However, during wet weather, the collection system can become overloaded by the combination of sewage and stormwater, leading to the discharge of sewage and stormwater through combined sewer overflows (CSOs). The City has developed a Long Term Control Plan (LTCP) to address these overflows, which was submitted to the Indiana Department of Environmental Management (IDEM) in March 2006. In December 2007, IDEM and the City signed a State Judicial Agreement. The Stormwater Quality Management Plan (SWQMP) is consistent with the LTCP.

Stormwater discharges exposed to industrial activity are regulated under Rule 6 (*327 IAC 15-6*). Within the City of Madison, five (5) facilities hold Rule 6 permits to discharge stormwater from industrial activities (IDEM, 2008a). Three (3) of these permits are active or non-exempt (Exemption Status “No”), while two (2) permits are inactive (Exemption Status “Yes”). Permit exemption is typically due to facility closure, ownership change, or coverage under another permit. All facilities holding Rule 6 permits are shown in the table below.

Table 1. Rule 6 Facilities in the City of Madison

Permit Number	Facility Name	Address	SIC Code	SIC Code Detail	Exemption Status	Reason for Exemption
INR110059	Rotary Lift/A Dover	2700 Lanier Drive	3534	Elevators and Moving Stairways	No	
INR110105	Arvin Sango, Inc.	2905 Wilson Avenue	3714	Motor Vehicle Parts and Accessories	No	
INR200084	US Filter/Envirex	2753 Michigan Road	3441	Fabricated Structural Metal	No	No Exposure
INR00I047	Irving Materials, I	2020 Orchard St.	3273	Ready-Mixed Concrete	Yes	

Permit Number	Facility Name	Address	SIC Code	SIC Code Detail	Exemption Status	Reason for Exemption
INR11X066	Grote Industries LL	2600 Lanier Dr.	3647	Vehicular Lighting Equipment	Yes	No Discharge

Source: Indiana Department of Environmental Management, Stormwater Program, 2008, electronic communication, R. Braun.

2.0 Baseline Characterization

2.1 LAND USAGE WITHIN THE MS4 AREA

The City of Madison's municipal boundary consists of approximately 8.9 square miles (5,684 acres) of land. The entire downtown (over 2,000 structures) is on the National Historic Register. In 2006, the Secretary of the Interior presented the City with the designation of National Historic Landmark District. This downtown area is predominantly located in the CSO area. The Hilltop area includes a variety of residential, commercial and agricultural land uses.

The table below shows acreages of different land use types within the City of Madison (USGS, 2001). Nearly 40% of the City consists of forested areas, while developed areas account for about 27% of the area in the City. The City's downtown area is relatively densely developed with residential and commercial development, while the Hilltop area consists of newer developments. Though these data are the most current land use data available, recent changes are not reflected. Aerial imagery from 2005, shown on the map in **Appendix 1**, better highlights recent land use conditions in the City of Madison.

Table 2. 2001 City of Madison Land Use

Category	Acres	Percentage
Low Intensity Residential	812.6	14.3%
High Intensity Residential	475.5	8.4%
Commercial/Industrial/Transportation	233.6	4.1%
Urban/Recreational Grasses	803.5	14.1%
Agriculture	923.9	16.3%
Forest	2,130.3	37.5%
Wetlands/Water	304.1	5.4%
TOTAL	**5,683.6**	**100.0%**

Source: Land Cover for Indiana, USGS (2001)

The City currently manages 277 acres of public open space, including Sunrise Golf Course (160 acres). The City is leasing and maintaining the 52-acre Madison Country Club Golf Course. The City owns and maintains these smaller public open spaces: Rucker sports complex, Johnson Lake Park, Lamplighter Park and the Madison Dog Park. The Sunrise Golf Course features vegetated buffers between 10 feet and 80 feet wide that reduce erosion and runoff from this facility.

Land use beyond the boundaries of the City of Madison consists of the City of Hanover to the southwest. The north, east, and west of the City are primarily unincorporated, rural areas of Jefferson County.

2.2 BEST MANAGEMENT PRACTICES (BMPS)

The following chapter describes the City's efforts to improve stormwater quality through the MS4 program by implementing the six (6) Minimum Control Measures (MCMs), including structural and non-structural BMPs. The 6 MCMs include:

1. Public Education and Outreach
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Controls
5. Post-Construction Stormwater Management
6. Municipal Operations Pollution Prevention and Good Housekeeping

2.2.1 Structural BMPs

The City of Madison adopted the Post-Construction Stormwater Management Ordinance (2007-1) on February 20, 2007. This Ordinance includes the minimum post-construction requirements of Rule 5 (*327 IAC 15-5*) for all projects disturbing one (1) or more acres of land within the City.

The City of Madison adopted a Stormwater BMP Design Manual which includes design specifications and selection guidance for both construction and post-construction BMPs approved for installation by the City.

As part of the Post-Construction Stormwater Management Ordinance, the owners of approved BMPs maintain the facilities in accordance with the approved Stormwater Pollution Prevention Plan (SWPPP).

Within the City of Madison, there are four (4) post-construction BMPs (City of Madison, 2007 and 2008). Two (2) of these structural BMPs are sediment/detention basins associated with new developments, and two (2) are retention ponds located on City property. The City conducts

regular inspections and requires necessary maintenance to ensure that owners are in compliance with the Post-Construction Stormwater Management Ordinance.

The Sunrise Golf Course features vegetated buffers between 10 feet and 80 feet wide that reduce erosion and runoff from this facility. Sod and turf are used as natural erosion control on the riverfront and along roadway medians.

2.2.2 Non-Structural BMPs

The City of Madison has implemented many different types of non-structural BMPs during Permit Term 1. Non-structural BMPs included implementation of activities related to MCM 1 Public Education and Outreach and MCM 2 Public Participation and Involvement. The City's efforts on MCMs 1 and 2 are consistent with the CSO Long Term Control Plan.

The City of Madison recently joined the Southern Indiana Stormwater Advisory Committee (SWAC). The City has participated in activities organized by the SWAC throughout the first permit term. The SWAC has provided a forum for public education, outreach, participation and involvement as well as coordinated implementation of the MS4 program in participating communities. Participating communities to date include: the City of Madison, the City of Jeffersonville, the City of New Albany, the Town of Sellersburg, the Town of Clarksville, Floyd County, Clark County and the Oak Park Conservancy District.

The City has produced and distributed newsletters, flyers, brochures, posters and educational displays concerning various stormwater related topics to citizens in an effort to increase public awareness and education concerning stormwater related issues. The City of Madison maintains an informational stormwater webpage, which provides information on stormwater activities and dates, as well as a summary of the City's MS4 Program. The City discusses stormwater quality issues and concerns at regularly held city council meetings.

The City of Madison adopted an Illicit Discharge Detection and Elimination Ordinance on November 21, 2006, which defines and prohibits illicit discharges and establishes an escalating enforcement policy. The City has mapped 100% of the stormwater drainage system, including outfalls and conveyances. The City implemented a field assessment program to detect and eliminate illicit discharges and connections to the MS4 system.

The City has educated citizens and trained public employees from the Street, Water, Sewer and Parks Departments, as well as the Wastewater Treatment Plant, about the hazards associated with illicit discharges and improper waste disposal.

The City adopted the Construction Site Runoff Ordinance in November 21, 2006, in compliance with Rule 13 and amendments to Rule 5, which govern stormwater run-off associated with construction activity. The City continues to implement this ordinance, which specifies

requirements for review of construction site BMP plans, installation of erosion prevention and sediment control BMPs, inspection, and escalating enforcement procedures.

The City of Madison adopted a Stormwater BMP Design Manual which includes design specifications and selection guidance for both construction and post-construction BMPs approved for installation by the City. This manual will be available on the City's updated website. The City's Post-Construction Ordinance also references the use of the Indiana Drainage Handbook and the Indiana Storm Water Quality Manual.

The City of Madison reviews construction plans and associated storm water pollution prevention plans (SWPPP) and issues a Site Development Permit. The permit application may be approved, approved with conditions or disapproved. The City provides BMP information to permit applicants and conducts random inspections of construction sites to ensure compliance with the Construction Site Runoff Ordinance.

The City of Madison has implemented many good housekeeping practices to prevent or reduce polluted runoff from municipal operations, such as regular stormwater drainage system maintenance and cleaning, street sweeping, cleaning sidewalks, plazas and parking lots, medians, parks and other municipal areas. The City collects garbage, recycling and compost (i.e., leaf and woody debris). Controls for reducing discharges from municipal facilities and operations include use of a covered salt storage facility, containment and spill control measures at the Street Department's maintenance garage, and use of underground storage tanks with leak detection for fuel storage.

2.3 KNOWN SENSITIVE AREAS

Rule 13 (*327 IAC 15-13-5)* defines sensitive areas as follows:

- Public swimming areas
- Surface drinking water intakes
- Threatened or endangered species or their habitat
- State outstanding resource waters
- Exceptional use waters

Public Beaches/ Full Body Contact Recreation: There are no beaches or lakes with public swimming or recreational facilities other than enclosed public swimming pools. The City is currently not aware of any locations within the MS4 area where full body contact recreation occurs. Johnson Lake is a popular fishing area, an opportunity for secondary contact recreation.

Surface Drinking Water Intakes: Drinking water sources within the City are derived primarily from local groundwater resources.

Threatened Or Endangered Species Or Their Habitat: A list of Threatened, Endangered and Rare Species in Jefferson County from the Indiana Department of Natural Resources (IDNR) is found in **Appendix 2**. Information concerning Threatened, Endangered and Rare Species within the City of Madison is available upon request from IDNR. These species are protected under the Endangered Species Act, which is triggered for projects that utilize federal funds or require a federal permit.

Outstanding Resource Waters: According to IDNR's list of Outstanding Waters (http://www.in.gov/nrc/policy/outstand.html), there are no outstanding resource waters within the MS4 area.

Exceptional Use Waters: According to IDNR's list of Exceptional Use Waters (http://www.in.gov/dnr/water/files/Appdx_F-2.pdf), there are no exceptional use waters within the MS4 area.

In addition to these sensitive features specifically identified in Rule 13, the City of Madison also considered wetlands, wellhead protection areas, sinkhole areas, and boat launches in this evaluation.

Wetlands: Wetland areas are considered to be environmentally sensitive features and are protected by the Clean Water Act. National Wetland Inventory (NWI) data were used to estimate the extent and locations of wetlands and deepwaters in the City of Madison. Based on these data, there are 543 acres of wetlands and deepwater habitats within the City boundary, as shown in **Appendix 1**. The table below shows the different types of wetlands within the City of Madison, as classified by the NWI (Cowardin et. al., 1979).

Table 4. Types of wetland areas in the City of Madison

Wetland Type	Acres
Lacustrine (Lake systems)	448.5
Palustrine (Wetland and Marsh systems)	94.0
Total	**542.5**

Source: NWI, 2003.

Wellhead Protection Areas: There are two (2) wellhead protection areas (WHPAs) in the City of Madison, which include the Madison Water Department WHPA West and East, as shown in **Appendix 1**. The wellfields are located along the Ohio River and the associated WHPAs intersect the MS4 boundary. To date, seventeen (17) stormwater outfalls have been mapped in WHPA West One (1) Year Time of Travel (TOT1) area, and ten (10) stormwater outfalls have been mapped in WHPA East TOT1 area. Outfalls in both WHPAs drain residential areas into Crooked Creek and the Ohio River. The Madison Water Department has developed and is implementing a Wellhead Protection Plan (WHPP). The City also utilizes a BMP Design Manual that encourages the use of non-infiltrative BMPs within the WHPAs.

Sinkhole Areas: Within the City of Madison, no sinkhole areas were identified through a review of Indiana Geological Survey (IGS) data. IGS data show sinkhole areas to the east of the City near the Ohio River. Sinkholes are of special concern because surface runoff is typically transported rapidly to underground channels without the benefit of filtration through soil. If sinkholes are modified to provide stormwater drainage, they are regulated under the USEPA's Underground Injection Control (UIC) Program. The UIC program requires property owners to register the modified sinkhole as a Class V injection well.

If sinkholes are found within the City of Madison, the Stormwater BMP Design Manual states that BMPs such as infiltration trenches or dry wells, which allow water infiltration at a discrete point source, should be avoided. BMPs which provide infiltration opportunities over a very large area, such as filter strips, large bioretention facilities, and permeable pavement, mimic the natural process by which rainfall enters the subsurface, and may be suitable in some sinkhole areas.

Boat Launches: There is one (1) boat launch within the City of Madison in Riverfront Park, near the intersection of West Street and Vaughn Drive. Eighteen (18) MS4 outfalls are located within 0.5 miles upstream of the launch, and eleven (11) MS4 outfalls are located within 0.5 miles downstream of the launch.

2.4 EXISTING AND AVAILABLE 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 City of Madison's MS4 area receiving waters.

Database Review: A search for water quality and related data was performed using publicly accessible reports and databases published by the Indiana Department of Natural Resources (IDNR), U.S. Environmental Protection Agency (USEPA), and the United States Geological Survey (USGS). These agencies had not published water quality data for streams in the City of Madison.

The 2008 Integrated Water Monitoring and Assessment Report published by IDEM was reviewed. This report includes the 303(d) List of Impaired Waterbodies for Indiana. One (1) stream segment partially within the City of Madison was listed on the 2008 303(d) List of Impaired Waterbodies. A 2.14 mile segment of Dean's Branch in the Big Clifty Creek subwatershed is impaired for E. coli and impaired biotic communities, as shown on the map in **Appendix 1**.

IDEM Data: Physical, chemical, bacterial, metals and fish data were collected from Dean's Branch at State Road 62 in the City of Madison during the summer of 2005. Dissolved oxygen levels ranged from 4.1 to 6.5 mg/L, and E. coli levels ranged from 517 to over 2420 colony

forming units (CFU)/100mL. A habitat assessment was performed using the Qualitative Habitat Evaluation Index (QHEI). The QHEI score was 48 of 100, resulting in a fair category rating. An assessment of the fish community was performed using the Index of Biotic Integrity (IBI). The IBI score was 26 of 60, resulting in a poor category rating. These data led to the inclusion of a 2.14 mile segment of Dean's Branch on the 2008 303(d) List of Impaired Streams.

City of Madison Data: The City of Madison conducted a biological study of three sites in 2004 (City of Madison, 2004). Sites were located on Crooked Creek, Clifty Creek and Eagle Hollow Creek. Results are summarized below.

> **Crooked Creek**: This site was located west of the downtown area. Habitat was classified as "fair" and benthic macroinvertebrate communities were classified as "slightly impacted".
>
> **Clifty Creek:** This site was located north of the downtown area, near Highway 421. Habitat was classified as "excellent" and benthic macroinvertebrate communities were classified as "excellent".
>
> **Eagle Hollow Creek:** This site was located west of the downtown area near Clifty Falls State Park. Habitat was classified as "fair" and benthic macroinvertebrate communities were classified as "slightly impacted".

Volunteer Monitoring: A number of volunteer monitoring groups are active in Indiana, many organized as Hoosier Riverwatch. Hoosier Riverwatch has not collected monitoring data in streams near the City of Madison. Additional information about this program, monitoring methods and data downloads are available at this site: http://www.hoosierriverwatch.com/

ORSANCO: A Total Maximum Daily Load (TMDL) for bacteria in the Ohio River is currently being developed by USEPA, ORSANCO and state environmental agencies. Through this project, allowable point source and nonpoint source loads of bacteria from discharges to the mainstem and tributaries will be developed. The TMDL is anticipated to be implemented through regulatory mechanisms (e.g., permits) and voluntary, non-regulatory actions through each state bordering the Ohio River. Bacteria data have been collected for the Ohio River and many tributaries. Tributaries in the City of Madison were not included in the monitoring conducted thus far. Additional information about the project and monitoring data available at: http://www.orsanco.org/watqual/tmdl.asp.

2.5 ACTUAL OR POTENTIAL STORMWATER QUALITY PROBLEM AREAS

The City of Madison has made efforts to maintain and operate its MS4 throughout Permit Term 1. During 2007, MS4 maintenance and cleaning activities, including City street sweeping, removed an estimated 510 tons of debris from the MS4, improving system function and preventing these materials from discharging to receiving streams. Assessment of structural

integrity of outfalls conducted during MS4 mapping indicated that 97% of mapped outfalls were less than 50% obstructed.

Review of data and reports published by state and federal agencies revealed that water quality data were collected by IDEM in 2005. Biological impairment and elevated E. coli levels were found in Dean's Branch. Consequently, IDEM included Dean's Branch on the 2008 303(d) List of Impaired Waterbodies.

The City of Madison conducted a study of three streams in 2004. Crooked Creek and Eagle Hollow Creek exhibited "fair" habitat and "slightly impacted" benthic communities. Clifty Creek exhibited "excellent" habitat and "excellent" benthic communities.

These data indicate that one stream is impaired (Dean's Branch), two streams are slightly impacted (Crooked Creek and Eagle Hollow Creek) and one stream is in excellent condition (Clifty Creek).

Stream Visualization Assessment Protocol: Data on the quality of other streams in the MS4 area and recent data (i.e., within the last five years) on the monitored streams are currently unavailable. The City of Madison initiated development of the Stream Visual Assessment Protocol (SVAP) to provide an efficient and economical solution for On-Going Water Quality Characterization Activities required in the Storm Water Quality Management Plan (SWQMP). Data gathered from the SVAP will allow the City to identify locations that could potentially benefit from protection strategies, maintenance or remediation activities and to identify strategies for improving water quality throughout the City.

The protocol includes visually assessing stream flow, stream channel and riparian zone condition, as well as visual indicators of water pollution such as odor, color, turbidity, excessive algae and floatables. Stream channels are evaluated for evidence of channel alteration (e.g., straightening), erosion and sediment deposition. Riparian zone conditions are evaluated for the presence, extent and quality of riparian vegetation. Data can be recorded on paper forms or with a hand held GPS unit and further documented with digital photographs. This program is currently under development.

3.0 Findings

3.1 KEY OBSERVATIONS AND FINDINGS

The City of Madison continues to grow at a moderate pace, with an estimated 5% increase in population between 2000 and 2007. The City of Madison has made efforts to implement the requirements of Rule 5 and Rule 13. These efforts have lead to the education of citizens, students, the construction industry, elected officials and public employees regarding stormwater

and the requirements and benefits of the MS4 program. Adoption and implementation of stormwater ordinances for Illicit Discharge, Construction and Post-Construction are believed to lead to improved water quality through efforts to identify and eliminate illicit discharges, improve management of stormwater from construction sites, and develop and implement long-term operation and maintenance requirements for post-construction BMPs. Additionally, pollution prevention and good housekeeping procedures have been enhanced at municipal facilities throughout the community.

Diligent implementation of the MS4 program is required to continue and build upon these improvements over the next permit term. The City funds MS4 program implementation and capital improvement projects through Sewer and Street Funds and is exploring development of a dedicated funding source via a stormwater utility.

3.2 RESULTS OF BMP CHARACTERIZATION

Currently, four (4) structural BMPs have been installed in the City of Madison, including two (2) sediment/detention basins and two (2) retention ponds. These BMPs are capable of improving stormwater quality by removing sediment, heavy metals, toxic materials and floatable materials. Detention basins can also attenuate stormwater during a storm event, reducing the water velocity and erosion potential of the stormwater. These structural BMPs are well-maintained and may be effective in improving stormwater quality in the City of Madison.

The City of Madison has made efforts to implement non-structural BMPs throughout Permit Term 1. These are described in detail in **Section 2.2.2** and include numerous public education and outreach efforts. The City of Madison has adopted and is enforcing the necessary stormwater ordinances: the Illicit Discharge Ordinance, the Construction Site Runoff Control Ordinance, and the Post-Construction Stormwater Management Ordinance. The City has also developed a BMP Design Manual and a public concern process related to stormwater issues. Additionally, the City has produced educational stormwater materials which are distributed and displayed. Overall, the existing BMPs are believed to be effective in helping to improve water quality in the City of Madison.

3.3 WATER QUALITY PROTECTION CONSIDERATIONS

Wetlands: There are 543 acres of wetlands and deepwaters in the City of Madison, as per National Wetland Inventory data. Wetland areas are considered to be environmentally sensitive features and are protected by the Clean Water Act. Wetlands in the City of Madison are relatively small, and development in these areas complies with all Rule 5 and 13 requirements concerning the identification and protection of wetlands. The locations and names of all wetlands must be included in construction plans submitted prior to the initiation of construction activities. Wetlands must also be protected from pollutants associated with stormwater runoff as a part of the construction plan's required stormwater quality control measures.

Wellhead Protection Areas: Wellhead protection areas have been established for two (2) well fields located in the City of Madison. The wellfields are located along the Ohio River and the associated WHPAs intersect the MS4 boundary. To date, seventeen (17) stormwater outfalls have been mapped in WHPA West TOT1 area, and ten (10) stormwater outfalls have been mapped in WHPA East TOT1 area. The City utilizes a Stormwater BMP Design Manual that encourages the use of non-infiltrative BMPs in WHPAs.

Boat Launches: There is one (1) boat launch within the City of Madison in Riverfront Park, near the intersection of West Street and Vaughn Drive. Eighteen (18) MS4 outfalls are located within 0.5 miles upstream of the launch, and eleven (11) MS4 outfalls are located within 0.5 miles downstream of the launch.

Good Quality Streams: Monitoring conducted by the City of Madison in 2004 indicated excellent stream conditions in the City of Madison's portion of Clifty Creek and good conditions in Crooked Creek and Eagle Hollow Creek. A more detailed assessment of these streams may result in identification of measures to retain the good quality of these streams into the future.

3.4 POTENTIAL OR ACTUAL STORM WATER QUALITY PROBLEM AREAS

Available data from IDEM indicate that a segment of Dean's Branch has elevated levels of *E. coli* as well as impaired biotic communities. It is important to note that at this time, the relative contribution of stormwater versus historically acceptable development practices and CSO discharges are not understood.

3.5 STORM WATER QUALITY PROBLEM AREAS OR SOURCES

The sources of impairment in Dean's Branch were not identified by IDEM monitoring and assessments. More broadly, the relative contribution from the MS4 is not understood. The City of Madison has made efforts to map, operate and maintain the MS4 throughout Permit Term One. In addition, requirements for construction and post-construction stormwater management are in effect and being implemented.

4.0 Stormwater Program Recommendations: Permit Term II

Based on the findings of this Baseline Characterization, the City plans to continue to implement and build upon the MS4 program initiated in Permit Term 1, which includes structural and non-structural BMPs. The following additional BMPs are recommended for consideration during the development of Part C: Stormwater Quality Management Plan for Permit Term 2.

- Implement the Qualified Professional program to require training and certification for those involved in construction site self-inspections.

- Formalize and implement the Stream Visual Assessment Protocol (SVAP) in streams within the City of Madison's MS4 area, including good quality streams and Dean's Branch which was identified as impaired by IDEM. Data gathered from the SVAP would allow the City to assess local streams, identify locations that could potentially benefit from maintenance or remediation activities and to identify strategies for improving water quality throughout the City of Madison's MS4.

- Work toward developing a dedicated funding source for the MS4 program, including consideration of the option of a stormwater utility.

- Continue to identify, analyze, design, and implement stormwater capital improvement projects. The City may benefit from a city-wide and/or watershed-based stormwater master planning to assist with systematic identification, prioritization, scheduling, and implementation of capital improvement projects.

- Enhance and expand public education efforts through website updates, additional stormwater education publications, display of the stormwater exhibit at at least one local event per year and encouraging and documenting participation from citizens and the construction/ development community in SWAC meetings, City Council meetings and other forums. Expand public education efforts to include Rule 6 facilities within the MS4 area.

- Formalize the stormwater management activities occurring and BMPs being implemented at municipal operations in order to develop a Good Housekeeping Improvement Plan (GHIP) operational manual.

5.0 References

Buehler and Eakin, 2003. Monroe County Government Natural Features Inventory: Karst. August 2003. Monroe County Planning Department. 22 pp. http://www.co.monroe.in.us/planning/documents/Karst%20_NFI_.pdf

Cowardin, L.M., V. Carter, F.C. Golet, E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. US Fish and Wildlife Service. FWS/OBS-79/31. December 1979. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C. 20240.

Hill, J.R., 1998. Landscapes of Indiana. The Indiana Geological Survey. The Trustees of Indiana University. http://igs.indiana.edu/geology/topo/landscapes/index.cfm

Indiana Department of Environmental Management (IDEM), 2007. IDEM's Surface Water Quality Assessment Program, Fish Community Sampling Program Fact Sheet. B-004-OWQ-A-BS-06-0-R6. Revised March 2007. IDEM Office of Water Quality, Assessment Branch. 3 pp.

Indiana Department of Environmental Management (IDEM), 2008a. *List of Industrial Facilities Regulated Under Rule 6 (327 IAC 15-6).* Indiana Department of Environmental Management, Stormwater Program, 2008. R. Braun, personal communication.

Indiana Department of Environmental Management (IDEM), 2008b. *Indiana Integrated Water Monitoring and Assessment Report 2008*. Indiana Department of Environmental Management. Office of Water Quality, Watershed Branch, Indianapolis, Indiana. http://www.in.gov/idem/4679.htm

Madison, City of, 2004. *Stormwater Quality Management Plan, Part B Baseline Characterization Report.* Prepared by Commonwealth Engineers, Inc., Indianapolis, Indiana.

Madison, City of, 2007. *City of Madison Storm Water Quality Management Plan, Annual Report*, 2006.

Madison, City of, 2008. *City of Madison Storm Water Quality Management Plan, Annual Report*, 2007.

Nickell, A.K., 1985. *Soil Survey of Jefferson County, Indiana.* United States Department of Agriculture, Soil Conservation Service, Washington, DC. 170 pp.

United States Census Bureau (US Census) 2000. *United States Census 2000*. http://www.census.gov/main/www/cen2000.html Page Last Modified April 24, 2008.

United States Geological Survey (USGS) 2001. *Land Cover in Indiana*. A subset of the National Land Cover Data set. Derived from the USGS, version 06-03-1999. 30-meter grid. http://igs.indiana.edu/arcims/statewide/download.html.

RULE 13 STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) –
PART C: PROGRAM IMPLEMENTATION CERTIFICATION CHECKLIST

State Form 51280 (R3 / 4-04)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

For questions regarding this form, contact:
IDEM – Rule 13 Coordinator
100 North Senate Avenue, Rm 1255
P.O. Box 6015
Indianapolis, IN 46206-6015
Phone: (317) 234-1601 or
(800) 451-6027, ext. 41601 (within Indiana)
Web Access:
http://www.in.gov/idem/water/npdes/permits/wetwthr/storm/rule13.html

NOTE:

- This form must be used for compliance with a general NPDES permit pursuant to 327 IAC 15-13.
- Submit this completed form with a complete "SWQMP – Part C: Program Implementation" in accordance with 327 IAC 15-13-8.
- Return this completed and signed form, and any required addenda by mail to the IDEM Rule 13 Coordinator at the address listed in the box on the upper-right.

PART A: SWQMP CERTIFICATION CHECKLIST

► **Please check the appropriate box when the requirements for each numbered item have been met, or check "NA" if an item is not applicable. For some of the numbered items, the requirements must be met and "not applicable" is not provided as an option.**

X	NA	ITEM
☒		**1.** SWQMP – Part C: Program Implementation submitted within 1 year from the submission of the NOI letter or the expiration date of the previous 5-year permit term.
☒	☐	**2.** Approved TMDL established for any MS4 discharge receiving water.
☒	☐	* If yes, the SWQMP – Part C includes appropriate modifications to meet the TMDL
☒		**3.** SWQMP – Part C identifies that the required ordinances or similar regulatory mechanisms will be developed, revised, modified, and/or implemented within two (2) years from the submission of the NOI letter
		4. The SWQMP – Part C contains:
☒		a) An initial evaluation of the storm water program for the MS4 area
☒		* The initial evaluation includes all known structural and nonstructural storm water BMPs
☒		b) A detailed program description for each MCM
☒		c) A timetable for program implementation milestones and SWQMP-Part B conclusions
☒	☐	d) A schedule for on-going receiving water characterization to evaluate BMP effectiveness and receiving water quality
☒		e) A narrative and mapped description of the MS4 area boundaries
☒		*The boundary description includes the specific section(s), or, as appropriate, street name(s)
☒		f) An estimate of the linear feet of MS4, segregated by conveyance type
☒		g) A narrative summary of allowed structural BMP types in new development and redevelopment
☒		h) A summary on structural BMP selection criteria and performance standards
☒		i) A narrative summary of the current and projected storm water budget
☒		j) A narrative summary of measurable goals for each MCM
☒		* Measurable goals relate to an environmental benefit
☐	☒	k) Appropriate, completed state-issued certification forms (only required for the initial 5-year permit term)
☐	☒	i) Public education and outreach MCM
☐	☒	ii) Public participation and involvement MCM
☐	☒	iii) Illicit discharge detection and elimination MCM
☐	☒	iv) Construction site storm water run-off control MCM
☐	☒	v) Postconstruction storm water run-off control MCM (not required until end of second year of permit coverage)
☐	☒	vi) Pollution prevention and good housekeeping for operations MCM
☒		l) A listing of programmatic indicators for each MCM. These indicators include:
☒		i) Number or percentage of citizens that have an awareness of storm water quality issues
☒		ii) Number and description of meetings, training sessions, and events conducted to involve citizens
☒		iii) Number or percentage of citizens that participate in storm water quality improvement projects
☒	☐	iv) Number and location of storm drains marked or cast
☒		v) Estimated or actual linear feet or percentage of MS4 conveyances mapped
☒		vi) Number and location of MS4 area outfalls mapped
☒		vii) Number and location of MS4 area outfalls screened for illicit discharges
☒		viii) Number and location of illicit discharges detected
☒	☐	ix) Number and location of illicit discharges eliminated
☒	☐	x) Number of, and estimated amount of material collected from, HHW collections
☒	☐	xi) Number and location of citizen drop-off centers for automotive fluids

PART A: SWQMP CERTIFICATION CHECKLIST

► **Please check the appropriate box when the requirements for each numbered item have been met, or check "NA" if an item is not applicable. For some of the numbered items, the requirements must be met and "not applicable" is not provided as an option.**

X	NA	ITEM
☒	☐	xii) Number or percentage of citizens that participate in HHW collections
☒	☐	xiii) Number of construction sites permitted for storm water quality
☒	☐	xiv) Number of construction sites inspected
☒	☐	xv) Number and type of enforcement actions taken against construction site operators
☒	☐	xvi) Number of public informational requests received related to construction sites
☒	☐	xvii) Number, type, and location of structural BMPs installed
☒	☐	xviii) Number, type, and location of structural BMPs inspected
☒	☐	xix) Number, type, and location of structural BMPs maintained, or improved, to function properly
☒		xx) Type and location of nonstructural BMPs utilized
☒	☐	xxi) Estimated acreage or square footage of open space preserved and mapped
☒	☐	xxii) Estimated acreage or square footage of mapped pervious and impervious surfaces
☒	☐	xxiii) Number and location of retail gasoline outlets or municipal, state, federal, or institutional refueling areas with installed BMPs
☒	☐	xxiv) Number and location of entity facilities that have containment for accidental releases
☒	☐	xxv) Estimated acreage or square footage and location where pesticides and fertilizers are applied by the regulated MS4 entity
☒	☐	xxvi) Estimated linear feet or percentage and location of unvegetated swales and ditches that have an appropriately-sized vegetated filter strip
☒	☐	xxvii) Estimated linear feet or percentage and location of MS4 conveyances cleaned or repaired
☒	☐	xxviii) Estimated linear feet or percentage and location of roadside shoulders and ditches stabilized
☒	☐	xxix) Number and location of storm water outfall areas remediated from scouring conditions
☒	☐	xxx) Number and location of de-icing salt and sand storage areas covered or otherwise improved to minimize storm water exposure
☒	☐	xxxi) Estimated amount, in tons, of salt and sand used for snow and ice control
☒	☐	xxxii) Estimated amount of material by weight collected from catch basin, trash rack, or other structural BMP cleaning
☒	☐	xxxiii) Estimated amount of material by weight collected from street sweeping
☒	☐	xxxiv) Number or percentage and location of canine parks sited at least 150 feet away from a surface water body
☐	☒	xxxv) Other
☐		**5.** SWQMP – Part C identifies, as a minimum, the following compliance schedule for implementation from the submission day of the NOI letter:
☒		a) "SWQMP – Part B: Baseline Characterization and Report" submitted within 180 days
☒		b) Public education and outreach program developed and implemented within 1 year
☒		c) Public involvement and participation program developed and implemented within 1 year
☒		d) Illicit discharge plan and ordinance developed and program implemented and all major outfall conveyances mapped within 1 year
☒		e) 25% of storm water outfall conveyance systems mapped each year after 1 year
☒		f) All known storm water outfalls with a diameter greater than 12 inches and open ditches mapped within 5 years
☒		g) Construction site plan and ordinance developed and program implemented within 1 year
☒		h) O&M plan developed and program implemented within 2 years
☒		i) Postconstruction plan and ordinance developed and program implemented within 2 years
☒		j) Operations pollution prevention program developed and implemented within 1 year
		6. For the Public Education and Outreach MCM:
☒		a) Plan identifies and schedules implementation of an informational program for constituents
☒		b) Plan identifies initial assessment of constituents
☒		c) Plan identifies specific target outreach or reduction goal percentages and timetables
☐	☒	d) For CSS communities, the current LTCP has been reviewed for ensuring that there is consistency with this MCM
		7. For the Public Participation/Involvement MCM:
☒		a) Plan identifies and schedules implementation of a public participation program
☒		b) Plan identifies initial assessment of constituents
☒		c) Plan identifies specific public involvement and reduction goal percentages and timetables
☐	☒	d) For CSS communities, the current LTCP has been reviewed for ensuring that there is consistency with this MCM
		8. For the Illicit Discharge Detection and Elimination MCM:
☒		a) Plan schedules development of a storm sewer system map

PART A: SWQMP CERTIFICATION CHECKLIST

► **Please check the appropriate box when the requirements for each numbered item have been met, or check "NA" if an item is not applicable. For some of the numbered items, the requirements must be met and "not applicable" is not provided as an option.**

X	NA	ITEM
☒		b) Plan schedules development and implementation of an ordinance or other regulatory mechanism that prohibits illicit discharges into the storm sewer system
☒		c) Plan identifies and schedules implementation of a plan to detect, address, and eliminate illicit discharges, including illegal dumping, into the storm sewer system
☒		i) This plan requires that problem areas be located via dry weather screening or other means
☒		ii) This plan requires that the source of the problem be located, the illicit connection be removed or corrected, and the actions taken be documented
☒		iii) This plan identifies all known active industrial facilities that discharge into a regulated MS4 conveyance
☒		d) Plan identifies and schedules implementation of an education program for public employees, businesses, and the general public about the hazards associated with illicit discharges and improper disposal of waste
☒		e) Plan establishes a recycling program for commonly dumped wastes
☒		f) Plan identifies specific outreach and reduction goal percentages and timetables
☐	☒	g) For CSS communities, the current CSOOP and LTCP have been reviewed for ensuring that there is consistency with this MCM
		9. For the Construction Site Storm Water Run-off Control MCM:
☒		a) Plan schedules development and implementation of an ordinance or other regulatory mechanism that controls polluted run-off from construction sites with a land disturbance of greater than or equal to one (1) acre
☒	☐	b) Plan established written agreement or process to allow local SWCD input
☒		c) Plan identifies and schedules implementation of a requirement to use appropriate BMPs on construction sites to control sediment and erosion and other waste at a site
☒		d) Plan identifies and schedules implementation of procedures for plan review, site inspection (including prioritization of sites) and enforcement of control measures to deter infractions
☒		e) Plan identifies procedures for plan review of projects operated by the MS4 operator
☒		f) Plan requires annual training for MS4 personnel responsible for implementing this MCM
☒		g) Plan identifies and schedules implementation of procedures for receipt and consideration of public inquiries, concerns, and information submitted regarding local construction activities
☒		h) Plan identifies specific outreach, compliance, and implementation goals and timetables
		10. For the Postconstruction Storm Water Run-off Control MCM:
☒		a) Plan schedules development and implementation of an ordinance or other regulatory mechanism that requires the implementation of planning procedures to promote improved water quality
☒		i) Plan procedures include the postconstruction requirements of 327 IAC 15-5-6.5(a)(8)
☒	☐	ii) Where appropriate, procedures include buffer strip and riparian zone preservation
☒	☐	iii) Where appropriate, procedures include filter strip creation
☒	☐	iv) Where appropriate, procedures include minimization of land disturbance and surface imperviousness
☒	☐	v) Where appropriate, procedures include maximization of open space
☒	☐	vi) Where appropriate, procedures include directing community physical growth away from sensitive areas and towards areas that can support it without compromising water quality
☒		b) Plan identifies the use of any storage, infiltration, filtering, and/or vegetative practice to reduce the impact of pollutants on storm water run-off to meet narrative water quality standards on receiving waters
☒		i) Plan prohibits using infiltration practices in well head protection areas
☒		ii) As site conditions allow, plan requires an appropriately-sized vegetated filter strip width along unvegetated swales/ditches
☒		iii) Plan prohibits discharges directly to sinkholes or fractured bedrock, without appropriate treatment to meet Indiana ground water quality standards
☒		iv) Plan requires any discharge from a storm water practice that is a Class V injection well to meet Indiana ground water quality standards
☒		v) Plan requires installation of appropriate BMPs to reduce metals and hydrocarbons at new retail gasoline outlets or municipal/institutional refueling areas
☒		vi) As site conditions allow, plan regulates the rate of storm water flow through the MS4 conveyances
☒		vii) Plan requires annual training for MS4 personnel responsible for implementing this MCM
☒		viii) Plan identifies and schedules implementation of a written O&M plan for structural BMPs.
☒		c) Plan identifies specific goals for reduction percentages and timetables
		11. For the Municipal Operations Pollution Prevention and Good Housekeeping MCM:
☒		a) Plan identifies and schedules implementation of a written program to ensure that existing municipal, State or Federal operations are performed in ways that will minimize contamination of storm water discharges
☒		i) Program addresses written documentation of maintenance activities, maintenance schedules, and long-term inspection procedures for BMPs to reduce floatables and other pollutants discharged from the storm sewer system
☒		ii) Program addresses controls for reducing or eliminating the discharge of pollutants from operational areas, including roads, parking lots, maintenance and storage yards, and waste transfer stations
☐	☒	iii) Program requires a minimum distance of 150 feet for canine parks to be sited away from a surface water body
☒		iv) Program addresses written procedures for the proper disposal of waste removed from MS4 conveyances and operational areas
☒		v) Program addresses written documentation to ensure that new flood management projects assess their impacts on water quality and examine existing projects for incorporation of additional water quality protection devices or practices
☒		vi) Program addresses documentation for MS4 area personnel to attend annual training regarding this MCM
☒		b) Plan identifies specific reduction goal percentages and timetables

PART A: SWQMP CERTIFICATION CHECKLIST

► **Please check the appropriate box when the requirements for each numbered item have been met, or check "NA" if an item is not applicable. For some of the numbered items, the requirements must be met and "not applicable" is not provided as an option.**

X	NA	ITEM
☐	☒	c) For CSS communities, the current CSOOP and LTCP have been reviewed for ensuring that there is consistency with this MCM
☒		**12.** "SWQMP – Part C: Program Implementation" has been certified by a Qualified Professional and the MS4 Operator.

PART B: CERTIFICATION AND SIGNATURE

► The Qualified Professional and MS4 Operator (referenced in Part A, Item #12 of this form) must sign the following certification statement: and provide the pertinent NPDES permit number:

"By signing this checklist, I hereby certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name of Qualified Professional: **Mr. Randy Egginspiller, Utility Director/City Engineer, City of Madison, Indiana** **NPDES Permit #:** **INR040061**
(typed or printed)

Signature of Qualified Professional: _____ **Date:** _____
(mm/dd/year)

Name of MS4 Operator: **Mr. Tim Armstrong, Mayor, City of Madison, Indiana**
(typed or printed)

Signature of MS4 Operator: _____ **Date:** _____
(mm/dd/year)

City of Madison, Indiana
Stormwater Quality Management Plan
MS4 Permit: INR040061

Part C: Program Implementation Plan

Stantec

February 2009

Acknowledgements

The following individuals and organizations have participated in the development of the City's Stormwater Quality Management Plan:

Mayor
Tim Armstrong

Madison City Council
Bob Schoenstein, President
Pete Backus, Sr.
Rick Berry
Darrell Henderson
Laura Hodges
Jim Lee
Damon Welch

City of Madison Public Works and Utilities Director
Randy Eggenspiller, Public Works Director / City Engineer

Executive Summary

In 1987, amendments to the Clean Water Act (CWA) established a legal framework and requirements for the United States Environmental Protection Agency (USEPA) to develop a comprehensive, phased program for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) permit program. In response, the USEPA instituted Phase I of the NPDES Stormwater Program in November 1990. The Phase I program required medium to large communities with populations of at least 100,000 people and with municipal separate storm sewer systems (MS4s) to develop programs to address the quality of their stormwater discharges. These amendments to the CWA also placed stormwater management requirements on many industries based upon standard industrial classification (SIC) codes, including stormwater permitting requirements on construction activities that disturbed five or more acres of land.

The NPDES Phase II Stormwater regulations were promulgated in December 1999. The Phase II stormwater requirements affect smaller communities with municipal separate storm sewer systems (MS4s) serving populations of less than 100,000 people, as well as construction activities that disturb one or more acres of land. Only those small MS4s located in "urbanized areas", as defined by the U.S. Bureau of the Census, are required to apply for a stormwater NPDES permit and develop a Stormwater Quality Management Program (SWQMP). The City of Madison was designated as a regulated MS4 community.

The designated Stormwater Phase II permitting authority in the State of Indiana is the Indiana Department of Environmental Management (IDEM). IDEM was responsible for developing a rule making work group to support the agency's efforts to adopt federally mandated stormwater regulations under *327 IAC 15-13*, which is commonly known as "Rule 13". Rule 13 requires regulated MS4s to apply for permit coverage and develop a SWQMP. Components of the SWQMP include: Notice of Intent, Part A: Initial Application, Part B: Baseline Characterization and Part C: SWQMP Program Implementation Plan. The Stormwater Management Plan must address 6 (six) Minimum Control Measures (MCMs), including:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management
6. Pollution Prevention and Good Housekeeping for Municipal Operations

Stormwater Advisory Committee

The City of Madison's SWQMP was developed, in part, through partnerships with neighboring MS4 entities in southern Indiana, including Clark County, Floyd County, the City of Jeffersonville, the City of New Albany, the Town of Clarksville, the Town of Sellersburg, and the Oak Park Conservancy District (OPCD). These partnerships were established to ensure consistency and minimize duplication of effort among neighboring MS4 jurisdictions. Local MS4s also partnered to establish a joint Stormwater Advisory Committee (SWAC) to guide the development of each MS4's SWQMP. SWAC membership consisted of key MS4 stakeholders and members of various local constituencies, including members of the public and the construction/development community, as well as local Health Departments and Soil and Water Conservation Districts.

SWAC meetings are used as a forum for receiving and discussing public input and comment on the issues critical to each community's SWQMP. The City of Madison's Stormwater Coordinator actively participates on the Southern Indiana Stormwater Advisory Committee (SWAC). In these meetings, challenges and solutions are discussed which aid the stormwater coordinator in implementing the six (6) MCMs for the City of Madison. This approach has allowed the City to consolidate many stormwater functions that were being implemented by various departments in the City and provides the City with a single point of contact for the Stormwater Program.

Partnership with the Southeastern Indiana Solid Waste Management District

The City of Madison will continue to partner with the Southeastern Indiana Solid Waste District (SISWD) on household hazardous waste collections. Through this program, materials such as automotive fluids and batteries, household chemicals, and other environmentally harmful products are collected and disposed of properly. The SISWD provides data on materials and amounts collected at the end of each calendar year.

Description of the MS4 Area

The City of Madison is located in Jefferson County in southeastern Indiana along the north shore of the Ohio River as shown on the MS4 map provided in Figure 1. The City of Madison's MS4 area includes the 8.9 square miles (5,684 acres) of incorporated area. The population of the City of Madison was 12,004 (2000 Census), resulting in a population density of 1,349 people per square mile.

A portion of the City of Madison is currently served by combined sewers. Stormwater generated in this area is managed under the Combined Sewer Overflow (CSO) program, for which the City has developed a Long Term Control Plan (LTCP).

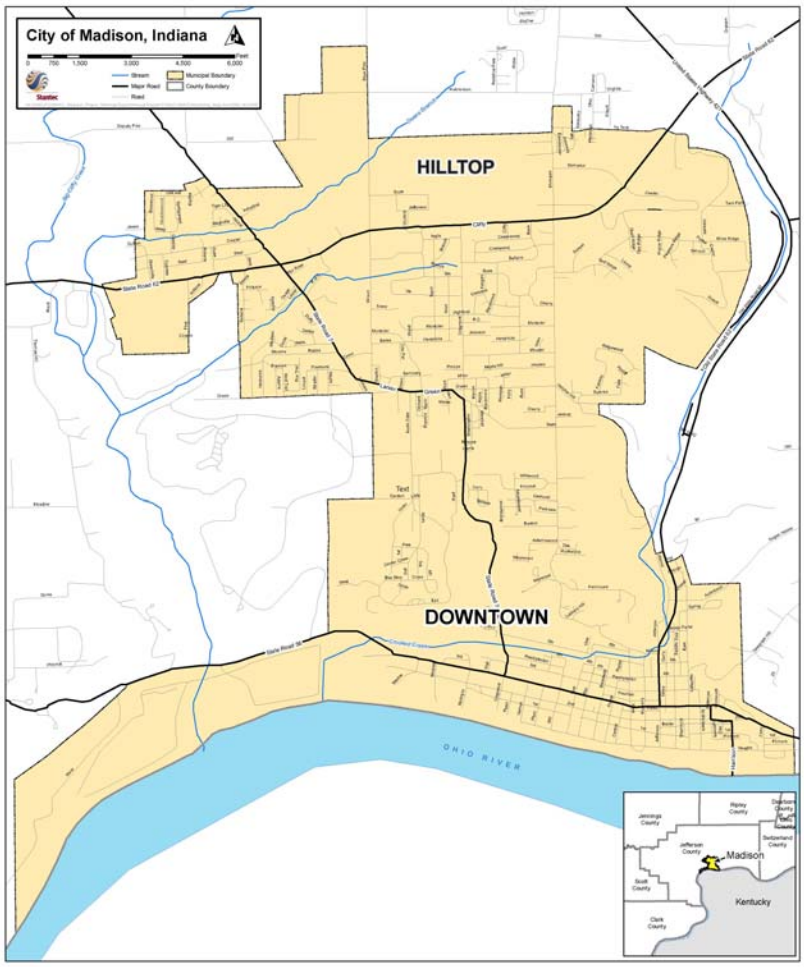


Figure 1: City of Madison MS4 Boundary

Evaluation of the Stormwater Program

Prior to submittal of the Notice of Intent (NOI) and the Part A: Initial Application, the City of Madison conducted an evaluation of its stormwater management activities to evaluate its needs for compliance with Rule 13. This assessment found that the City of Madison is in compliance with provisions of Rule 13 and has accomplished significant improvements in stormwater management during the first permit term. Key accomplishments through 2008 are summarized below.

MCM 1 – Public Education and Outreach

The City of Madison developed a stormwater web page accessible from the City's homepage to communicate the goals and objectives of the City's stormwater program. The City adapted an educational brochure developed by USEPA and distributed the brochure to educate citizens about stormwater pollution. The City developed an educational poster, and displayed it in high visibility entrances to the City Hall.

MCM 2 – Public Involvement and Participation

The City of Madison cooperated with the Jefferson County Highway Department on the Lower West End Beautification Project, which enlisted volunteers to collect and recycle scrap metal, tires, trash and brush. The City cooperated with the Southeastern Indiana Solid Waste District to collect and properly dispose of household hazardous wastes and used oil. The City discussed stormwater quality at city council meetings which provide an opportunity for public involvement.

MCM 3 – Illicit Discharge Detection and Elimination

The City of Madison adopted the IDDE Ordinance on November 21, 2006 (Ord. 2006-20) and this ordinance is being implemented and enforced. The City completed mapping of its stormwater conveyance system as of November 1, 2008. In order to develop a geographic information system (GIS) that describes the connections between MS4 components, conveyance system mapping included pipes and ditches that were smaller than those required to be mapped under Rule 13. As a result of this more comprehensive approach to mapping, the GIS will further assist tracking illicit discharges and illegal dumping. The City of Madison screened all mapped outfalls for illicit discharges during Permit Term 1. The City provided IDDE training for city employees, including Street, Water, Sewer, Wastewater and Parks Departments.

MCM 4 – Construction Site Stormwater Runoff Controls

The City of Madison adopted a Construction Site Runoff Control Ordinance on November 21, 2006 (Ord. 2006-20) and this ordinance is being implemented and enforced. The City of Madison reports monthly to IDEM on all construction permits. This report includes active job sites, permits (issued or terminated), and any enforcement action taken. The City provides educational materials to all construction permit applicants. The City developed a mechanism to receive, track and address citizen inquiries and complaints.

A Qualified Professional Program is being developed in cooperation with the SWAC. This program is designed to train individuals in erosion prevention and sediment control measures to enable them to be competent inspectors for construction sites. The program includes a certification and licensure process similar to that of a licensed plumber in Indiana.

MCM 5 – Post-Construction Stormwater Management

The City of Madison's Post-Construction Stormwater Management Program was established via Ordinance 2007-1 on February 20, 2007 and this ordinance is being implemented. The ordinance requires appropriate plan submittal, plan review, site inspections, compliance and enforcement authorities required by Rule 13. During 2007, two (2) post construction BMPs were installed and were inspected by the site owner.

MCM 6 – Municipal Operations Pollution Prevention and Good Housekeeping

The City of Madison has been proactive in the maintenance of its storm water system. The City swept downtown streets weekly and other streets as needed, cleaned sidewalks, plazas and parking lots, cleaned and maintained street medians, parks (including two golf courses) and other municipal landscaped areas. Pesticide applications were performed as needed by certified pesticide applicators. Stream buffers, between 10 and 80 feet wide, were maintained along waterways on golf courses. In 2007, the City cleaned 90 percent of catch basins and grates and removed 12,040 pounds of material. Road salt is stored in a covered building and containment and spill control measures were in place at the Street Department's maintenance garage.

Part B: Baseline Characterization Findings

Water quality protection considerations include wetlands, wellhead protection areas, boat launches and good quality streams (Clifty Creek, Eagle Hollow Creek and Crooked Creek). Water quality impairments have been identified in Dean's Branch, which drains a developed portion of the City. At this time, the relative contribution from the MS4 to these issues is not understood. However the City of Madison has invested significantly in mapping, operating and maintaining the MS4. In addition, the owners of approved post-construction BMPs maintain the facilities in accordance with the approved Stormwater Pollution Prevention Plan (SWPPP). The City continues to invest in Capital Improvement Projects such as installation of storm drains and other drainage improvements. Additional Capital Improvement Projects are anticipated to be implemented during Permit Term 2.

The City of Madison plans to continue to implement and enhance the MS4 program initiated in Permit Term 1. The following additional BMPs are included in Part C: Stormwater Quality Management Plan for Permit Term 2.

- Implement the Qualified Professional program to require training and certification for those involved in construction site self-inspections.
- Formalize and implement the Stream Visual Assessment Protocol (SVAP) in streams within the City of Madison's MS4 area, including good quality streams and Dean's

Branch which was identified as impaired by IDEM. Data gathered from the SVAP would allow the City to assess local streams, identify locations that could potentially benefit from maintenance or remediation activities and to identify strategies for improving water quality throughout the City of Madison's MS4.

- Work toward developing a dedicated funding source for the MS4 program, including consideration of the option of a stormwater utility.
- Continue to identify, analyze, design, and implement stormwater capital improvement projects. The City may benefit from a city-wide and/or watershed-based stormwater master planning to assist with systematic identification, prioritization, scheduling, and implementation of capital improvement projects.
- Enhance and expand public education efforts through website updates, additional stormwater education publications, display of the stormwater exhibit at at least one local event per year and encouraging and documenting participation from citizens and the construction/ development community in SWAC meetings, City Council meetings and other forums. Expand public education efforts to include Rule 6 facilities within the MS4 area.
- Formalize the stormwater management activities occurring and BMPs being implemented at municipal operations in order to develop a Good Housekeeping Improvement Plan (GHIP) operational manual.

Implementation Timeline

The implementation timeline is included in the description of each minimum control measure. Implementation of the SWQMP is scheduled to be completed over the second permit term, November 4, 2008 to November 3, 2013. This SWQMP includes stormwater program activities that are continued from the first permit term, adjusted based on lessons learned, and new activities designed to further reduce stormwater pollution and protect water quality.

Conclusions

This SWQMP has been prepared to meet the goals of *327 IAC 15-13*, specifically the requirements for Part C: Program Implementation Plan. This submittal includes a narrative summary of the City of Madison's SWQMP that includes measurable goals and timelines. The plan is intended to reduce pollutant loadings from stormwater runoff to the maximum extent practical under current state law, to protect water quality, and to comply with the requirements of the NPDES Phase II Stormwater Program**.**

Table of Contents

EXECUTIVE SUMMARY E.1

1.0 MCM 1: PUBLIC EDUCATION AND OUTREACH 1.1
1.1 ASSESSING PUBLIC AWARENESS 1.1
1.2 STORMWATER ADVISORY COMMITTEE 1.1
1.3 MAINTAIN AND UPDATE THE STORMWATER WEBSITE 1.2
1.4 PUBLIC EDUCATION PUBLICATIONS 1.3
1.5 CONSISTENCY WITH CSO LONG TERM CONTROL PLAN 1.3

2.0 MCM 2: PUBLIC PARTICIPATION AND INVOLVEMENT 2.4
2.1 STORMWATER ADVISORY COMMITTEE 2.4
2.2 CITY COUNCIL MEETINGS 2.4
2.3 VOLUNTEER CLEAN-UP ACTIVITIES 2.5
2.4 STORMWATER QUALITY EXHIBIT 2.5
2.5 STORM DRAIN MARKING 2.6
2.6 SOLID WASTE MANAGEMENT DISTRICT 2.6
2.7 STORMWATER HOTLINE 2.7
2.8 CONSISTENCY WITH CSO LONG TERM CONTROL PLAN 2.7

3.0 MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION 3.8
3.1 IMPLEMENTATION OF THE IDDE ORDINANCE 3.8
3.2 MAINTENANCE OF THE STORMWATER SYSTEM MAP 3.8
3.3 DRY WEATHER SCREENING OF NEW OUTFALLS 3.9
3.4 ELIMINATION OF ILLICIT DISCHARGES 3.9
3.5 IDDE TRAINING AND EDUCATION 3.10
3.6 RECYCLING PROGRAM FOR COMMONLY DUMPED WASTES 3.10
3.7 CONSISTENCY WITH CSO LONG TERM CONTROL PLAN 3.11

4.0 MCM 4: CONSTRUCTION SITE RUNOFF CONTROL 4.11
4.1 IMPLEMENTATION OF THE CONSTRUCTION SITE RUNOFF CONTROL ORDINANCE 4.11
4.2 IMPLEMENTATION OF THE STORMWATER BMP DESIGN MANUAL 4.12
4.3 PLAN REVIEW AND PERMITTING PROCESS 4.12
4.4 INSPECTIONS AND ENFORCEMENT 4.12
4.5 ANNUAL ESPC TRAINING AND EDUCATION 4.13
4.6 QUALIFIED PROFESSIONAL PROGRAM 4.13

5.0 MCM 5: POST CONSTRUCTION STORMWATER MANAGEMENT 5.15
5.1 POST-CONSTRUCTION SITE MANAGEMENT ORDINANCE 5.15
5.2 IMPLEMENTATION OF THE STORMWATER BMP DESIGN MANUAL 5.15

Table of Contents

5.2.1 Post-Construction BMP Selection and Performance Standards 5.16
5.3 LONG-TERM BMP OPERATION AND MAINTENANCE 5.16
5.4 ANNUAL TRAINING AND EDUCATION 5.17
5.5 QUALIFIED PROFESSIONAL PROGRAM 5.17

6.0 MCM 6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING 6.18
6.1 FLOATABLES AND OTHER POLLUTANT CONTROLS 6.19
6.1.1 Drainage System Maintenance and Cleaning 6.19
6.1.2 Street Sweeping 6.19
6.1.3 Trash Collection 6.20
6.1.4 Leaf Collection 6.20
6.2 CONTROLS FOR REDUCING DISCHARGES FROM MUNICIPAL OPERATIONS 6.20
6.2.1 Fueling Station BMPs 6.21
6.2.2 Minimizing Use of Herbicides, Pesticides and Fertilizers 6.21
6.2.3 De-Icing Materials Storage and Utilization 6.22
6.3 MADISON DOG PARK 6.22
6.4 ANNUAL POLLUTION PREVENTION TRAINING AND EDUCATION 6.22
6.5 CONSISTENCY WITH CSO LONG TERM CONTROL PLAN 6.23

7.0 ON-GOING RECEIVING WATER CHARACTERIZATION 7.23
7.1 STREAM VISUAL ASSESSMENT PROTOCOL 7.23

8.0 REPORTING AND RECORDS RETENTION 8.24
8.1 PERMIT REPORTS 8.24
8.2 MS4 PROGRAM REPORTS 8.24

9.0 STORMWATER PROGRAM BUDGET 9.24
9.1 CURRENT AND PROJECTED PROGRAM BUDGET 9.24

10.0 PROGRAMMATIC INDICATORS 10.26

1.0 MCM 1: Public Education and Outreach

The goal of the Public Education and Outreach Minimum Control Measure (MCM 1) is to inform MS4 constituents about the consequences of polluted stormwater runoff and ways that they can minimize their impact on stormwater quality. The City has initiated practical efforts to educate constituencies within our MS4 and provide opportunities and mechanisms for those parties to participate in minimizing the impacts of their daily activities on water quality.

The City of Madison has taken a proactive approach to leveraging public education and outreach opportunities by partnering with neighboring MS4's and other local organizations to achieve the objective of this MCM. This partnering approach avoids duplication and provides a consistent stormwater message throughout the area. The City of Jeffersonville will continue to work with its partners to implement the education and outreach BMPs discussed below.

1.1 ASSESSING PUBLIC AWARENESS

The City of Madison conducted a public awareness survey in 2006 and used the results to asses the level of understanding about stormwater quality management within the community and to focus stormwater education efforts. During Permit Term 2, the City will conduct public awareness surveys during Permit Year 2 (2010) and Permit Year 5 (2013). Results of the surveys will be used to assess the increase in public awareness and to continue to tailor stormwater messages and educational efforts.

Measurable Goals: The City of Madison will track and report the number of surveys distributed, the number of respondents and the percent increase in knowledge as determined by comparison to the previous survey. An average increase in public awareness of 5% over the previous survey will be considered indicative of successful implementation of the Public Education and Outreach minimum control measure (MCM).

Implementation Schedule: The City of Madison will conduct surveys of public awareness regarding stormwater management issues in Permit Years 2 and 5. Results will be reported in Permit Years 2 and 4.

1.2 STORMWATER ADVISORY COMMITTEE

The City of Madison recently joined the Southern Indiana Stormwater Advisory Committee (SWAC). The SWAC was formed in 2004 and participants include neighboring MS4 entities, including Clark County, Floyd County, the City of Jeffersonville, the City of New Albany, the Town of Sellersburg, the Town of Clarksville, the Oak Park Conservancy District (OPCD).

SWAC meetings provided a public forum to distribute educational materials, such as brochures and handouts. These meetings were conducted in conjunction with neighborhood/ targeted

audience meetings. Benefits of this approach include providing stormwater education to local constituencies by focusing on a particular topic and highlighting specific stormwater quality issues and innovative solutions.

Measurable Goals: The City of Madison plans to participate in SWAC meetings. All meetings will be publicly noticed and documented as opportunities for the public to participate in the ongoing development and implementation of City of Madison's stormwater program. Sign-in sheets will be utilized as further documentation of the SWAC participants in attendance at each meeting.

Implementation Schedule: The City of Madison plans to participate throughout the permit term with four (4) SWAC meetings scheduled annually. Participation will be reported in Permit Years 2 and 4.

1.3 MAINTAIN AND UPDATE THE STORMWATER WEBSITE

The City of Madison developed a website to educate the residents of Madison about stormwater quality issues. The website includes basic information about stormwater pollution and facts about activities that homeowners and other constituencies can do to minimize the impacts of their daily activities on water quality. The website includes contact information for the City of Madison's Stormwater Program and an email address that can be used for stormwater inquiries and complaints. The website is being updated, so the previously developed content has not yet been reposted. Upon completion of the updates, the stormwater website will be accessible at this address: www.madison-in.gov.

The goal of developing this educational website is to provide the public with a valuable tool for learning about stormwater quality issues. Successful implementation of the website will be quantified by tracking use of the website via a counter. The counter will allow the City to track the number of users accessing the site. During Permit Term 2, the goal is to achieve 500 website visits in Permit Year 1 (2009) and to increase website visits by 5% in each subsequent year of the permit term.

Measurable Goals: The City of Madison will update the website as needed, and at least annually over the permit term. During Permit Term 2, the goal is to achieve 500 website visits in Permit Year 1 (2009) and to increase website visits by 5% in each subsequent year of the permit term.

Implementation Schedule: Annual updates to the website and annual tracking of web hits over the five-year permit term will be performed. Results will be reported in Permit Years 2 and 4.

1.4 PUBLIC EDUCATION PUBLICATIONS

During Permit Term 1, the City of Madison adapted educational materials developed by USEPA and distributed these materials via the stormwater website and available in the lobby of City Hall.

During Permit Term 2, the City will develop one additional educational brochure or other materials each year. One or more educational materials will be developed and distributed to educate Rule 6 facilities which hold an industrial stormwater permit. Brochures will be available on the City's stormwater website and in City Hall. The goal is to distribute 500 publications annually. The number of brochures distributed and location of distribution sites will be documented each year.

Measurable Goals: Continue to educate households, citizens, the construction industry and Rule 6 facilities in the City of Madison via distribution of 500 stormwater education publications annually.

Implementation Schedule: Implementation of stormwater education publications will be conducted in an on-going manner. Reports will be provided in Permit Years 2 and 4.

1.5 CONSISTENCY WITH CSO LONG TERM CONTROL PLAN

A portion of the City of Madison is currently served by a combined sewer system. During dry conditions, sewage is conveyed through the sewers to the wastewater treatment plant. However, during wet weather, the sewer system can become overloaded by the combination of sewage and stormwater, leading to combined sewer overflows (CSO). The City has developed a Long Term Control Plan (LTCP) to address these overflows. The City of Madison submitted the CSO LTCP to IDEM in March 2006. In December 2007, IDEM and the City of Madison signed the State Judicial Agreement. At this time, the CSO LTCP and MS4 programs are consistent and are not resulting in duplication of efforts.

Measurable Goals: The City of Madison will review the LTCP and MS4 program to ensure consistency and will report results in Permit Years 2 and 4.

Implementation Schedule: The City of Madison will review the LTCP and MS4 program to ensure consistency and will report results in Permit Years 2 and 4.

2.0 MCM 2: Public Participation and Involvement

This chapter outlines the approach by the City of Madison to allow citizens and other constituencies within the City to participate in the development and implementation of the SWQMP. The City has taken a proactive approach to partnering with neighboring MS4s and other local organizations to achieve the objectives of this control measure. The City will continue to work with their partners to implement the public participation and involvement BMPs discussed below.

2.1 STORMWATER ADVISORY COMMITTEE

The City of Madison recently joined the Southern Indiana Stormwater Advisory Committee (SWAC). The SWAC was formed in 2004 and participants include neighboring MS4 entities, including Clark County, Floyd County, the City of Jeffersonville, the City of New Albany, the Town of Sellersburg, the Town of Clarksville, the Oak Park Conservancy District (OPCD).

SWAC meetings provided a public forum to distribute educational materials, such as brochures and handouts. These meetings were conducted in conjunction with neighborhood/ targeted audience meetings. Benefits of this approach include providing stormwater education to local constituencies by focusing on a particular topic and highlighting specific stormwater quality issues and innovative solutions. Training on public education (i.e., social marketing) will be conducted at one or more SWAC meetings during Permit Term 2.

Measurable Goals: The City of Madison plans to participate in SWAC meetings, anticipated to be held four (4) times per year during Permit Term 2. Meeting topics will include social marketing, implementation of the qualified professional program and implementation of the stream visual assessment protocol. Meetings will continue to be documented as opportunities for the public to participate in the ongoing implementation of City's stormwater program. Sign-in sheets will be utilized as further documentation of attendance at each meeting.

Implementation Schedule: The City of Madison plans to participate throughout the permit term with four (4) SWAC meetings scheduled annually. Participation will be reported in Permit Years 2 and 4.

2.2 CITY COUNCIL MEETINGS

The City of Madison uses City Council meetings as a public forum to discuss the stormwater program. During the City Council meetings, the stormwater coordinator will communicate the goals and objectives of the stormwater program and answer related questions for elected officials, municipal employees, regulated entities, and citizens of the City.

The stormwater coordinator plans to participate in four (4) City Council meetings per year during Permit Term 2. Meeting topics are anticipated to include status of MS4 program implementation.

Measurable Goals: The stormwater coordinator plans to participate in four (4) City Council meetings per year during Permit Term 2. City Council meetings will continue to be publicly noticed and documented as opportunities for the public to participate in the ongoing implementation of City's stormwater program. Meeting minutes will be used to document stormwater discussions at City Council meetings.

Implementation Schedule: The stormwater coordinator plans to participate in four (4) City Council meetings per year during Permit Term 2. Reports will be provided in Permit Years 2 and 4.

2.3 VOLUNTEER CLEAN-UP ACTIVITIES

The City of Madison encourages and participates in several local clean-up activities that provide an opportunity to educate volunteers about stormwater and the benefits of clean up efforts. In addition, these clean-up efforts prevent litter and debris from entering the MS4 and potentially degrading streams. During Permit Term 1, the City encouraged and participated in the Lower West End Beautification Project and the River Sweep program. These efforts resulted in the removal, recycling and proper disposal of scrap metal, tires, trash and woody debris. The City of Madison provided trucks to haul litter and debris collected by volunteers during the River Sweep program

Measurable Goals: The City will encourage and participate in at least one volunteer clean-up activity each year during Permit Term 2. The City will report the amount of materials collected and the number of groups and/or individuals participating in the clean-up activity.

Implementation Schedule: The City will encourage and participate in at least one volunteer clean-up activity each year during Permit Term 2. Reports will be provided in Permit Years 2 and 4.

2.4 STORMWATER QUALITY EXHIBIT

During Permit Term 1, the City of Madison developed a stormwater education exhibit to communicate the goals and objectives of the stormwater program and to generate interest for public participation. The stormwater education exhibit was displayed in the lobby of City Hall, a high traffic area.

During Permit Term 2, the City will continue to display stormwater education exhibit in the City Hall lobby. In addition, the City will display the stormwater education exhibit at least one local event each year.

Measurable Goals: During Permit Term 2, the City will continue to display stormwater education exhibit in the City Hall lobby and at least one local event each year. The City will estimate the number of people reached through these efforts.

Implementation Schedule: Implementation of stormwater education exhibit will be conducted in an on-going manner. Reports will be provided in Permit Years 2 and 4.

2.5 STORM DRAIN MARKING

Storm drain marking provides a valuable tool for educating local MS4 constituencies, especially residents, about the presence of waterbodies, the connectivity of storm drains to those waterbodies and the negative consequences of illegal dumping. In addition, storm drain marking events will be utilized as a public participation opportunity. To date, one hundred (100) storm drains have been marked in the City of Madison. During Permit Term 2, the City of Madison will continue to encourage volunteers to sign up for storm drain marking.

Measurable Goal: The City will track the number and location of storm drains marked each year.

Implementation Schedule: Installation of storm drain markers will be conducted in an on-going manner. Reports will be provided in Permit Years 2 and 4.

2.6 SOLID WASTE MANAGEMENT DISTRICT

The Southeastern Indiana Solid Waste District (SISWD) operates a recycling program and Household Hazardous Waste (HHW) collection and disposal program. Their main collection facility is located approximately three (3) miles north of Madison on the former Jefferson Proving Grounds military property. This facility serves seven (7) counties: Jefferson, Franklin, Jennings, Ohio, Ripley, Scott and Switzerland. The SISWD also operates a separate automotive fluid collection facility in the Jefferson County Highway Garage which is located approximately two (2) miles west of Madison. Several local businesses also accept automotive fluids.

During 2008, the City of Madison and the Southeastern Indiana Solid Waste District (SISWD) presented a Recycling Magic Show to nine (9) Madison area schools. The show raised awareness among students of the benefits of recycling and protecting the environment. These efforts are scheduled to continue during Permit Term 2.

Measurable Goal: Each year, the City of Madison will encourage recycling efforts for residents and businesses. The City will also report on the estimated amount of material collected from recycling and/or HHW collections, the number of drop-off centers for automotive fluids, and the estimated number of residents participating in the HHW program.

Each year, the City of Madison and the Southeastern Indiana Solid Waste District (SISWD) will provide stormwater related presentations to area schools. The number of schools and the number of students reached will be documented in Permit Years 2 and 4.

Implementation Schedule: Coordination with the Solid Waste Management District will be conducted in an on-going manner. Presentations to area schools will be conducted annually. Reports will be provided in Permit Years Two and Four.

2.7 STORMWATER HOTLINE

The City of Madison operates a stormwater hotline which is available 24 hours a day and calls typically receive a response within 24 hours. The hotline number can be found on the City's website. Comments and questions regarding stormwater can also be submitted online through the City's Action Line. This site can be accessed through the City's main webpage (www.madison-in.gov) by clicking "E-Government" and "Action Line".

Measurable Goal: The City of Madison will continue to make the stormwater hotline available 24 hours a day. The City will report on the number of calls received each year.

Implementation Schedule: Continuation of the stormwater hotline will be operated in an on-going manner. Reports will be provided in Permit Years Two and Four.

2.8 CONSISTENCY WITH CSO LONG TERM CONTROL PLAN

A portion of the City of Madison is currently served by a combined sewer system. During dry conditions, sewage is conveyed through the sewers to the wastewater treatment plant. However, during wet weather, the sewer system can become overloaded by the combination of sewage and stormwater, leading to combined sewer overflows (CSO). The City has developed a Long Term Control Plan (LTCP) to address these overflows. The City of Madison submitted the CSO LTCP to IDEM in March 2006. In December 2007, IDEM and the City of Madison signed the State Judicial Agreement. At this time, the CSO LTCP and MS4 programs are consistent and are not resulting in duplication of efforts.

Measurable Goals: The City of Madison will review the LTCP and MS4 program to ensure consistency and will report results in Permit Years 2 and 4.

Implementation Schedule: The City of Madison will review the LTCP and MS4 program to ensure consistency and will report results in Permit Years 2 and 4.

3.0 MCM 3: Illicit Discharge Detection and Elimination

This chapter outlines the approach by the City of Madison to continue to identify and eliminate illicit discharges to the City's MS4. This approach includes measurable goals and timelines for on-going implementation of the Illicit Discharge Ordinance, maintaining and updating the stormwater system map, responding to illicit discharge complaints, continued implementation of the Illicit Discharge Detection and Elimination (IDDE) Standard Operating Procedure to screen new outfalls, identify and eliminate illicit discharges, and continued IDDE education for the public and City employees.

3.1 IMPLEMENTATION OF THE IDDE ORDINANCE

The City of Madison adopted the Illicit Discharge Ordinance on November 21, 2006. The ordinance defines and prohibits illicit discharges from commercial, industrial and residential sources, including illegal dumping, and establishes a regulatory process for administration by City staff or others as authorized by the City of Madison for applying escalating fines and penalties. The Ordinance continues to be implemented.

Measurable Goals: The City of Madison will continue to implement the Illicit Discharge Ordinance during Permit Term 2. The City will track and report the number of illicit discharges identified which result in compliance and/or enforcement actions in Permit Years 2 and 4.

Implementation Schedule: The City of Madison will continue to implement the Illicit Discharge Ordinance during Permit Term 2. The City will track and report the number of illicit discharges identified which result in compliance and/or enforcement actions in Permit Years 2 and 4.

3.2 MAINTENANCE OF THE STORMWATER SYSTEM MAP

The City of Madison completed mapping of the stormwater drainage system, including outfalls and conveyances required via *327 IAC 15-13-14* in November 2008. This includes 703,603 linear feet (133.26 miles) of conveyances and 137 outfalls. Mapping was consistent with the accuracy requirements and standards outlined in Rule 13.

During Permit Term 2, the City of Madison will maintain and update the GIS database of MS4 conveyances, outfalls and other features. Ongoing mapping may include conversion of existing CADD data, development of GIS services and requirements for digital submittals of plans.

Measurable Goal: During Permit Term Two, the City will update the stormwater system map with new conveyances and outfalls as needed and at least annually. The City will report upon updates to the stormwater system map in Permit Years 2 and 4, as required by *327 IAC 15-13-18*.

Implementation of Schedule: During Permit Term Two, the City will update the stormwater system map with new conveyances and outfalls as needed, and at least annually. The City will report upon updates to the stormwater system map in Permit Years 2 and 4.

3.3 DRY WEATHER SCREENING OF NEW OUTFALLS

During Permit Term 1, the City of Madison conducted field assessments to detect and eliminate illicit discharges and connections to the stormwater system. Field assessments included outfall and manhole inspections and site inspections to track flows back to potential discharges. All mapped stormwater outfalls (100%) were screened during Permit Term 1.

During Permit Term 2, the City of Madison will continue to conduct dry weather screening of new outfalls and will conduct field assessments as needed to detect and eliminate illicit discharges.

Measurable Goals: During Permit Term Two, the City of Madison will continue to utilize field assessments to screen new outfalls and to investigate citizen complaints regarding potential illicit discharges. Results will be reported in Permit Years 2 and 4.

Implementation Schedule: During Permit Term 2, the City of Madison will continue to utilize field assessments to screen new outfalls and to investigate citizen complaints regarding potential illicit discharges. Results will be reported in Permit Years 2 and 4.

3.4 ELIMINATION OF ILLICIT DISCHARGES

The City of Madison will continue to utilize field assessments to eliminate illicit discharges. During Permit Term 2, efforts will focus on illicit discharges identified at newly mapped outfalls and in response to investigations of potential illicit discharges identified by public employees, businesses and citizens.

If a dry weather discharge is determined to originate as an illicit discharge, the City will work to remove the source of the illicit discharge. Removal of illicit discharges is anticipated to require both voluntary and compliance based tactics, which may include civil fines and penalties.

Measurable Goals: Illicit discharge removal/elimination activities will be implemented in response to screening for dry weather flows discussed in the previous section. The goal of this activity will be to remove 100% of illicit discharges identified each year.

The City will track the number of illicit discharges identified, actions taken to remove the discharge and compliance and/or enforcement actions taken each year. The City will provide reports in Permit Years 2 and 4.

Implementation Schedule: Efforts to identify and remove illicit discharges will be conducted in an on-going manner, focused on newly mapped outfalls and complaint response. Reports on these activities will be provided in Permit Years 2 and 4.

3.5 IDDE TRAINING AND EDUCATION

As identified under the Public Education MCM 1, the City of Madison will educate the public about the impacts of illicit discharges via brochures, workshops, SWAC meetings and City Council meetings. In addition, the City will implement training for employees with an involvement in stormwater management activities, including the Street Department, Water Department, Sewer Department, Parks Department, Police Department, Fire Department and the Wastewater Treatment Plant.

The City of Madison will document and report on the date, location, and number of public education activities specifically focused on the IDDE program. The City will document and report on the date, location and number of municipal employees trained about the hazards associated with illicit discharges and improper waste disposal.

Measurable Goals: The City of Madison continue to provide training and education for citizens and public employees. The City will document and report the date, location and number of citizens educated regarding the IDDE program. The City will document and report on the date, location and number of staff trained about the hazards associated with illicit discharges and improper waste disposal.

Implementation Schedule: Some IDDE education efforts are conducted in an on-going manner (e.g., website, brochures). Workshops and training for public employees will be conducted annually during Permit Term 2. Reports will be provided in Permit Years 2 and 4.

3.6 RECYCLING PROGRAM FOR COMMONLY DUMPED WASTES

The Southeastern Indiana Solid Waste District (SISWD) operates a recycling program and Household Hazardous Waste (HHW) collection and disposal program. The SISWD also provides a reuse program at some of its recycling centers. These facilities are provided for citizens to share and exchange items that are in good condition/working order. Even though there is not a location within Jefferson County, residents are encouraged to donate their reusable items to a charitable organization, such as the Salvation Army, Goodwill Industries, or church pantries if traveling to another center is not feasible.

Measurable Goals: The SISWD and the City of Madison will report on the estimated amount of material collected from recycling and/or HHW collections, the number of drop-off centers for automotive fluids, and the number of residents or households participating in the HHW program.

Implementation Schedule: The City will report upon collected material from the recycling and Household Hazardous Waste programs in Permit Years 2 and 4.

3.7 CONSISTENCY WITH CSO LONG TERM CONTROL PLAN

The City of Madison has implemented a field assessment program to identify illicit discharges via a dry weather screening program, identify the source of an illicit discharge and eliminate confirmed illicit discharges. The Illicit Discharge Ordinance specifies the compliance and enforcement actions.

Measurable Goals: The City of Madison will review the LTCP and MS4 program to ensure consistency and will report results in Permit Years 2 and 4.

Implementation Schedule: The City of Madison will review the LTCP and MS4 program to ensure consistency and will report results in Permit Years 2 and 4.

4.0 MCM 4: Construction Site Runoff Control

This chapter outlines the approach by the City of Madison to develop and implement an erosion prevention and sediment control (EPSC) program within the City's MS4 area. This approach includes measurable goals and timelines for establishing the regulatory authority to enforce an EPSC program, reviewing EPSC plan submittals, issuing permits, and conducting site inspections ensure compliance with the program.

4.1 IMPLEMENTATION OF THE CONSTRUCTION SITE RUNOFF CONTROL ORDINANCE

The City of Madison adopted the City of Madison Construction Site Runoff Control Ordinance on November 21, 2006 in compliance with Rule 13 and amendments to Rule 5, which govern stormwater run-off associated with construction activity. The City continues to implement this ordinance for all projects disturbing one or more acres of land within the MS4 area. The ordinance specifies requirements for submittal of a Stormwater Pollution Prevention Plan (SWPPP) and establishes the regulatory mechanism for applying fines and penalties for those person's responsible for violating the requirements of the Ordinance.

Measurable Goals: The City will track and report upon the number plans submitted, reviewed, approved and denied, as well as the number of active construction sites that have been inspected and the number of compliance and enforcement actions initiated by the City.

Implementation Schedule: The City of Madison's Construction Site Runoff Control Ordinance will continue to be implemented in an on-going manner. Permit activity will be reported monthly and progress of the program will be reported in Permit Years Two and Four.

4.2 IMPLEMENTATION OF THE STORMWATER BMP DESIGN MANUAL

The City of Madison developed and adopted a Stormwater Best Management Practice (BMP) Design Manual, which includes design specifications and selection guidance for both construction and post-construction BMPs. This manual is available by the City of Madison to members of the local construction/development community as a guide to BMP selection and design for all projects disturbing one or more acres of land within the City. The Stormwater BMP Design Manual was developed and adopted in April of 2008.

Measurable Goals: During Permit Term Two, the City of Madison will continue to implement the Stormwater BMP Design Manual and will make the manual available to local construction and development community. The City will track the type and location of all BMPs.

Implementation Schedule: The Stormwater BMP Design Manual will continue to be implemented in an on-going manner. The City will report on implementation of the Manual in Permit Years 2 and 4.

4.3 PLAN REVIEW AND PERMITTING PROCESS

The City of Madison will accept and review construction plans and associated stormwater pollution prevention plans (SWPPP). Plans will be approved or denied based upon their compliance with the requirements of Construction Site Runoff Control Ordinance and their appropriate usage of stormwater BMPs.

Measurable Goal: The City of Madison reports monthly to IDEM on the status of all construction permits. Each month, the City will track and report upon the number of plans submitted, reviewed, approved, and denied, as well as the number of active construction sites that have been inspected and the number of compliance and enforcement actions initiated by the City.

Implementation Schedule: Plan review and processing will continue to be implemented in an on-going manner. Results will be reported during Permit Years 2 and 4. Monthly reports will be submitted to IDEM as required.

4.4 INSPECTIONS AND ENFORCEMENT

The City of Madison, via Construction Site Runoff Control Ordinance, has implemented requirements for self-inspection by construction site operators and oversight inspections by the

City to ensure compliance with the Construction Site Runoff Control Ordinance. These requirements include an appropriate records retention policy.

The City of Madison will conduct random inspections of construction sites to ensure compliance. Construction sites that are determined to be out of compliance with the requirements of this ordinance may be issued a range of compliance and/or enforcement actions, including a notice of violation, a stop work order, or the withdrawal of building permits.

Measurable Goal: Each month, the City of Madison will track and report upon the number plans submitted and reviewed, as well as the number of active construction sites that have been inspected and the number of compliance and enforcement actions.

Implementation Schedule: Inspections and enforcements will continue to be implemented in an on-going manner. Results will be reported during Permit Years 2 and 4. Monthly reports will be submitted to IDEM as required.

4.5 ANNUAL ESPC TRAINING AND EDUCATION

As identified under the Public Education MCM 1, the City of Madison will educate the public about the impacts of construction site runoff via brochures, workshops, and SWAC meetings. In addition, the City will implement training for employees with an involvement in EPSC plan reviews and inspections.

The City of Madison will document and report upon the date and location of public education activities focused upon the EPSC program. In addition, the City will document and report on the date, location and number of employees trained about the EPSC program.

Measurable Goals: In Permit Years 2 and 4, the City of Madison will document and report the date, location and number of people educated regarding the EPSC program. The City will document and report on the date, location and number of staff trained about the EPSC program.

Implementation Schedule: Some ESPC education efforts are conducted in an on-going manner (e.g., website, brochures). Workshops and training for public employees will be conducted annually. Reports will be provided in Permit Years 2 and 4.

4.6 QUALIFIED PROFESSIONAL PROGRAM

In order to provide consistent training for active construction site inspectors, the SWAC partnered to initiate development of a Qualified Professional (QP) program. The QP program will provide a system to qualify persons to inspect construction sites as required by local ordinances and will provide a means for consistent and comprehensive inspections throughout this region.

The goal of the program is to be self–sufficient with minimal oversight costs for the host communities. The training course is tailored to address stormwater concerns and key issues of Indiana Department of Environmental Management (IDEM) and includes, but is not limited to, the following SWAC communities: Clark County, Floyd County, the City of Jeffersonville, the City of New Albany, the City of Madison, the Town of Clarksville, the Town of Sellersburg, and the Oak Park Conservancy District. The course will focus on inspection of stormwater best management practices (BMPs).

The QP program consists of three major elements: training, qualifying examination and program administration. A QP Training Manual was developed and includes training materials related to stormwater permitting, stormwater hydrology, procedures for BMP selection, installation, maintenance and inspection. The first training course is anticipated to be offered in the first year of the upcoming permit term.

Upon completion of the course, a standardized examination is required to fairly and thoroughly assess the qualifications of course applicants to conduct EPSC plan inspections on construction sites in participating communities. During Permit Term 1, the examination questions were drafted and an on-line examination system was developed. During Permit Term 2, the examination questions will be finalized, the on-line system tested, and the examination will be made available to those successfully completing the course.

Qualified Professional certification will be issued to persons who achieve a passing grade on the examination and licenses will be issued to certified individuals. A list of Qualified Professionals will be maintained. The ESPC ordinance will be evaluated and updated as needed to formalize requirements of the QP program. During Permit Term 2, the course fees will be utilized to maintain the QP program (i.e., training manual, on-line examination, certification).

Measurable Goals: The City of Madison will work in partnership with SWAC communities to complete development of the QP program (i.e., finalize QP examination questions, test on-line QP examination, certification, licensure, and ESPC regulation review and amendment as necessary). The City of Madison will work in partnership with SWAC communities to implement and administer the QP program as described above in an on-going manner and will track and report upon the number of people trained and certified.

Implementation Schedule: The City of Madison will continue the Qualified Professional program in an on-going manner and will track and report upon the number of trained and licensed personal within the Town in Permit Years 2 and 4.

5.0 MCM 5: Post Construction Stormwater Management

This chapter outlines the approach by the City of Madison to develop and implement a program to address discharges of post-construction stormwater runoff from new development and redevelopment projects disturbing one or more acres of land within the City's MS4 area. This approach includes measurable goals and timelines for establishing the regulatory authority to enforce a post-construction stormwater management program, reviewing SWPPP submittals, issuing permits, enforcing BMP operation and maintenance requirements, and conducting BMP inspections to ensure compliance with the program.

5.1 POST-CONSTRUCTION SITE MANAGEMENT ORDINANCE

On February 20, 2007, the City of Madison adopted the Post-Construction Stormwater Management Ordinance. This Ordinance includes the minimum post-construction requirements of Rule 5 (*327 IAC 15-5*) for all projects disturbing one or more acres of land within the City. A copy of the ordinance is available on the City's website. The program includes appropriate plan submittal, plan review, site inspections, compliance BMP maintenance responsibilities, and enforcement authorities as required by Rule 13.

Measurable Goals: The City will track the number and condition of permanent structural BMPs installed and inspected, the types of non-structural BMPs utilized, the amount of open space preserved and mapped and the square footage of mapped pervious and impervious areas within the City's MS4 area. Data will be tracked annually and reported in Permit Years 2 and 4.

Implementation Schedule: The Post-Construction Stormwater Management Ordinance will be implemented in an on-going manner. The City will report on post-construction permit activities in Permit Years 2 and 4.

5.2 IMPLEMENTATION OF THE STORMWATER BMP DESIGN MANUAL

The City of Madison developed and adopted a Stormwater Best Management Practice (BMP) Design Manual, which includes design specifications and selection guidance for both construction and post-construction BMPs. This manual is available by the City of Madison to members of the local construction/development community as a guide to BMP selection and design for all projects disturbing one or more acres of land within the City. The Stormwater BMP Design Manual was developed and adopted in April of 2008.

Measurable Goals: During Permit Term Two, the City of Madison will continue to implement the Stormwater BMP Design Manual and will make the manual available to local construction and development community. The City will track the type and location of all BMPs.

Implementation Schedule: The Stormwater BMP Design Manual will continue to be implemented in an on-going manner. The City will report on implementation of the Manual in Permit Years 2 and 4.

5.2.1 Post-Construction BMP Selection and Performance Standards

As part of the Post-Construction Stormwater Management Ordinance the owners of approved BMPs are required to implement post-construction BMPs. The BMPs are identified by using the Stormwater BMP Design Manual, which includes fact sheets for each post-construction BMP approved for installation by the City of Madison. The fact sheets include written BMP operations and maintenance requirements that must be implemented and maintained by the final site owner. The post-construction ordinance includes requirements for maintenance of BMPs to be conducted by the owner, such as Homeowners Associations or commercial facilities. The City will conduct annual inspections to ensure that owners are maintaining BMPs in compliance with the Post-Construction Stormwater Management Ordinance.

Measurable Goal: The City will continue to implement the Post-Construction section of the Stormwater Management Ordinance, require long term operation and maintenance agreements and conduct annual inspections of post construction BMPs and implement corrective actions in an on-going manner. The City will report on the number and condition of permanent structural BMPs installed and inspected within the City's MS4 area in Permit Years Two and Four.

Implementation Schedule: The City will continue to implement the Post-Construction section of the Stormwater Management Ordinance, require long term operation and maintenance agreements and conduct annual inspections of post construction BMPs and implement corrective actions in an on-going manner. The City will report on permit activity in Permit Years Two and Four.

5.3 LONG-TERM BMP OPERATION AND MAINTENANCE

The City will continue to utilize the BMP design manual discussed in Section 5.2 above, which includes written BMP operations and maintenance requirements that must be implemented and maintained by the final site owner. The Post-Construction Ordinance includes requirements for maintenance of BMPs to be performed by the final site owner, such as Homeowners' Associations and commercial facilities.

As identified under the Public Education MCM 1, the City of Madison will educate the public about post-construction stormwater management via fliers and workshops. In addition, the City will implement training for employees with an involvement in post-construction inspections. Through participation in the SWAC, the City will assist in the planning and implementation of post-construction stormwater management training and education.

Measurable Goal: The City will track and report annually upon the number and condition of permanent structural BMPs installed and inspected within the City's MS4 area.

Implementation Schedule: The City will continue to implement the Post-Construction Ordinance, conduct annual inspections of post-construction BMPs and implement corrective actions as needed. The City will report on the number, condition, and area of permanent structural BMPs installed and inspected within the City's MS4 area in Permit Years 2 and 4.

5.4 ANNUAL TRAINING AND EDUCATION

As identified under the Public Education MCM 2, the City of Madison will educate the public about post-construction stormwater management via brochures, workshops, and future targeted audience workshops. In addition, the City will implement regular training for public employees involved in post-construction plan reviews and inspections. Training will include appropriate control measures, plan review procedure, inspection protocols and enforcement procedures.

Measurable Goals: The City of Madison will document and report on the date and location of public education activities focused upon the post-construction stormwater management program. In addition, the City will document and report on the date, location and number of public employees trained about the post-construction program.

Implementation Schedule: Some post-construction education efforts will be conducted in an on-going manner (e.g., website, fliers). Workshops and training for public employees will be conducted regularly. Results will be reported in Permit Years 2 and 4.

5.5 QUALIFIED PROFESSIONAL PROGRAM

In order to provide consistent training for active construction site inspectors, the SWAC partnered to initiate development of a Qualified Professional (QP) program. The QP program will provide a system to qualify persons to inspect construction sites as required by local ordinances and will provide a means for consistent and comprehensive inspections throughout this region.

The goal of the program is to be self–sufficient with minimal oversight costs for the host communities. The training course is tailored to address stormwater concerns and key issues of Indiana Department of Environmental Management (IDEM) and includes, but is not limited to, the following SWAC communities: Clark County, Floyd County, the City of Jeffersonville, the City of New Albany, the City of Madison, the Town of Clarksville, the Town of Sellersburg, and the Oak Park Conservancy District. The course will focus on inspection of stormwater best management practices (BMPs).

The QP program consists of three major elements: training, qualifying examination and program administration. A QP Training Manual was developed and includes training materials

related to stormwater permitting, stormwater hydrology, procedures for BMP selection, installation, maintenance and inspection. The first training course is anticipated to be offered in the first year of the upcoming permit term.

Upon completion of the course, a standardized examination is required to fairly and thoroughly assess the qualifications of course applicants to conduct EPSC plan inspections on construction sites in participating communities. During Permit Term 1, the examination questions were drafted and an on-line examination system was developed. During Permit Term 2, the examination questions will be finalized, the on-line system tested, and the examination will be made available to those successfully completing the course.

Qualified Professional certification will be issued to persons who achieve a passing grade on the examination and licenses will be issued to certified individuals. A list of Qualified Professionals will be maintained. The ESPC ordinance will be evaluated and updated as needed to formalize requirements of the QP program. During Permit Term 2, the course fees will be utilized to maintain the QP program (i.e., training manual, on-line examination, certification).

Measurable Goals: The City of Madison will work in partnership with SWAC communities to complete development of the QP program (i.e., finalize QP examination questions, test on-line QP examination, certification, licensure, and ESPC regulation review and amendment as necessary). The City of Madison will work in partnership with SWAC communities to implement and administer the QP program as described above in an on-going manner and will track and report upon the number of people trained and certified.

Implementation Schedule: The City of Madison will continue the Qualified Professional program in an on-going manner and will track and report upon the number of trained and licensed personal within the Town in Permit Years 2 and 4.

6.0 MCM 6: Pollution Prevention and Good Housekeeping

This chapter outlines the approach by the City of Madison to develop and implement a program to prevent or reduce polluted runoff from municipal operations. This approach includes documenting maintenance activities and schedules, implementing pollution controls in operational areas, developing procedures for proper waste management, and implementing employee training.

6.1 FLOATABLES AND OTHER POLLUTANT CONTROLS

The City of Madison has historically been proactive in the area of maintenance activities that reduce floatables and other pollutants that could be discharged to the MS4. The City ensures that existing municipal operations are performed in ways that will minimize contamination of stormwater discharges, including the following activities:

6.1.1 Drainage System Maintenance and Cleaning

The City of Madison is responsible for maintaining the stormwater conveyance system including underground stormwater conveyance piping, curb and gutter roadways, and side ditches and swales with a bottom width of two feet or more. In addition, the City cleans and maintains a large number of catch basins.

Measurable Goals: The City will track and report the number of linear feet of pipe, curb and gutter roadways, and side ditches and swales maintained each year. The City will estimate the linear feet and location of roadside shoulders and ditches stabilized and MS4 conveyances cleaned or repaired each year. The City will also track and report the number and location of stormwater outfall areas remediated from scouring conditions and estimate the amount of material collected from catch basin cleaning each year. The City will continue to identify the total linear feet and location of unvegetated swales and ditches that have an appropriately sized vegetated filter strips.

Implementation Schedule: The City will continue to implement drainage system maintenance and cleaning in an on-going manner. Implementation of the drainage system cleaning and maintenance of BMPs will be reported in Permit Years 2 and 4.

6.1.2 Street Sweeping

During Permit Term 1, the City of Madison conducted street sweeping to reduce pollutants in stormwater runoff by removing residuals, debris and litter from roads, streets and parking areas. The City owns and operates on a Vac-All street sweeper and conducts weekly sweeping of all downtown streets and monthly or as needed sweeping of Hilltop area streets. This program covers 65 miles of City streets and is in operation from April through November. During Permit Term 1, the City of Madison routinely swept four city owned parking lots, cleaned downtown sidewalks and utilized Department of Corrections labor to remove tract from city property. Leaf pick-up was conducted each December.

The City will continue to the street sweeping and leaf pick-up programs as outlined above during Permit Term 2. As needed, routes and schedules may be adjusted to accommodate new roads and other considerations.

Measurable Goal: The City will track and report the tonnage collected and miles swept each year. In addition, the City will re-evaluate, and adjust street sweeping routes as needed to ensure high traffic areas are maintained.

Implementation Schedule: The City will continue to implement the street sweeping BMP in an on-going manner. Results will be reported in Permit Years 2 and 4.

6.1.3 Trash Collection

The City of Madison provided weekly trash collection services for all residential customers within the City limits. The trash collection service reduces the amount of illegal trash disposal and protects surface waters. The trash is hauled to a transfer station where it is stored in a covered building prior to being hauled to a landfill. The transfer station features an on-site drainage system that routes runoff from the property to the sanitary sewer system. The City will continue this service during Permit Term 2.

Measurable Goal: The City will track and report the tonnage of trash collected each year.

Implementation Schedule: The City will continue to implement the trash collection BMP in an on-going manner. Results will be reported in Permit Years 2 and 4.

6.1.4 Leaf Collection

Each year, the City of Madison collects and disposes of leaf debris from properties within the MS4 area. As a service to all residents, leaf debris is collected each December. The leaf collection program is seen as a proactive activity for maintaining the operational capacity of the storm sewer system.

Measurable Goal: The City will track and report the tonnage collected each year. Implementation will be reported in Permit Years 2 and 4.

Implementation Schedule: The City will continue to implement the leaf collection BMP in an on-going manner. Implementation will be reported in Permit Years 2 and 4.

6.2 CONTROLS FOR REDUCING DISCHARGES FROM MUNICIPAL OPERATIONS

The City of Madison has many programs and activities in place which benefit the stormwater program. In addition, several activities have been scheduled to further evaluate and refine the City's ability to minimize the potential for stormwater contamination from municipal activities:

6.2.1 Fueling Station BMPs

Gasoline and Diesel fuel distributed by the Street Department was stored in modern underground storage tanks (USTs) that feature leak detection equipment. The tanks are registered through IDEM. The City's wastewater treatment plant features above ground storage spill containment. In addition, two (2) retail outlets feature electronic spill and inventory control systems.

Measurable Goal: The City of Madison will track and report on the municipal fueling station BMPs each year. Implementation will be reported in Permit Years 2 and 4.

Implementation Schedule: The City will continue to implement the municipal fueling station BMPs in an on-going manner. Results will be reported in Permit Years 2 and 4.

6.2.2 Minimizing Use of Herbicides, Pesticides and Fertilizers

During Permit Term 1, the City of Madison minimized the use of herbicides, pesticides, and fertilizers by only applying such chemicals on an as-needed basis using spot treatments, rather than scheduling multiple applications each year. The City stored herbicides, pesticides, and fertilizers as required and utilized Certified Pesticide Applicators employed by the Street Department and the Road Department. The Street Department maintains written procedures for herbicide application.

The City maintains vegetated buffers between 10 and 80 feet wide along all waterways on City owned and operated golf courses. These buffers serve as natural erosion control and also can protect the waterways from runoff. Additionally, sod and turf are used as natural erosion control on the riverfront and roadway medians.

The City will continue to minimize chemical applications, use required storage, utilize Certified Pesticide Applicators and maintain vegetated buffers on golf courses during Permit Term 2.

Measurable Goals: The City will continue to implement this BMP to minimize the use of herbicides, pesticides and fertilizers in an on-going manner. The City will continue to track and report on the number of certified applicators utilized to apply pesticides. The City will continue to estimate the total acreage and/or location where pesticides and fertilizers are applied and report on chemical usage in Permit Years 2 and 4.

Implementation Schedule: The City will continue to implement this BMP to minimize the use of herbicides, pesticides and fertilizers in an on-going manner and will report on implementation in Permit Years 2 and 4.

6.2.3 De-Icing Materials Storage and Utilization

The City of Madison has been very proactive in minimizing the impact of deicing activities on water quality. All salt storage areas are covered and sand is not utilized. The City of Madison will track and report on the tonnage of salt usage.

Measurable Goals: The City will continue to maintain the covered salt storage facility and work to minimize the amount of salt applied in an ongoing manner. The City will report on salt usage in Permit Years 2 and 4.

Implementation Schedule: The City will continue to maintain the covered salt storage facility and work to minimize the amount of salt applied in an ongoing manner. The City will report on salt usage in Permit Years 2 and 4.

6.3 MADISON DOG PARK

The City has a one-acre canine park, the Madison Dog Park, located downtown approximately one hundred fifty (150) feet away from the Ohio River. The area between the park and the river is a vegetated riparian buffer consisting of mature hardwood trees. The success of this park and the ability of local citizens to keep it clean will be monitored by the City.

Measurable Goal: The City will continue to monitor pet waste management in the park in an ongoing manner. Results will be reported in Permit Years 2 and 4.

Implementation Schedule: The City will continue to monitor pet waste management in the park in an ongoing manner. Results will be reported in Permit Years 2 and 4.

6.4 ANNUAL POLLUTION PREVENTION TRAINING AND EDUCATION

As identified under the Public Education MCM 1, the City of Madison will educate the public about pollution prevention and recycling via brochures, workshops, and SWAC meetings. In addition, the City will implement annual training for employees actively involved in the City's operational divisions.

The City of Madison will document and report upon the date and location of public education activities focused upon pollution prevention. In addition, the City will document and report on the date, location, and number of public employees trained about pollution prevention.

Measurable Goals: The City of Madison will continue to document and report on the date and location of public education activities as well as staff training events focused upon the pollution prevention and good housekeeping MCM.

Implementation Schedule: Some pollution prevention and good housekeeping education efforts will be conducted in an on-going manner (e.g., website, brochures). Workshops and training for public employees will be conducted annually. Results will be provided in Permit Years 2 and 4.

6.5 CONSISTENCY WITH CSO LONG TERM CONTROL PLAN

The City of Madison submitted the CSO LTCP to IDEM in March 2006. In December 2007, IDEM and the City of Madison signed the State Judicial Agreement. At this time, the CSO LTCP and MS4 programs are consistent and are not resulting in duplication of efforts.

Measurable Goals: The City of Madison will review the LTCP and MS4 program to ensure consistency and will report results in Permit Years 2 and 4.

Implementation Schedule: The City of Madison will review the LTCP and MS4 program to ensure consistency and will report results in Permit Years 2 and 4.

7.0 On-Going Receiving Water Characterization

7.1 STREAM VISUAL ASSESSMENT PROTOCOL

During Permit Term 2, the City of Madison will implement the Stream Visual Assessment Protocol (SVAP). The goal of the SVAP is to provide an efficient and economical solution for On-Going Water Quality Characterization Activities required in the Storm Water Quality Management Plan (SWQMP). Data gathered from the SVAP will allow the City of Madison to assess MS4 receiving streams, identify locations that could potentially benefit from maintenance or remediation activities and to identify strategies for improving water quality throughout the City‘s MS4 area. During Permit Term 2, the City of Madison will work in coordination with the SWAC to select SVAP sites, participate in training and implement the program.

SVAP monitoring sites are being selected using the MS4 map, aerial photography, watershed maps, land use and other spatial data within each drainage area. Site selection considerations include streams receiving stormwater discharges, streams adjacent to high public use areas such as parks and sensitive areas such as wetlands.

The training includes development of the SVAP manual and participation in a class and field training session. The SVAP manual outlines the procedures to be used to collect data. The protocol includes visually assessing stream flow, stream channel and riparian zone condition, as well as visual indicators of water pollution such as odor, color, turbidity, excessive algae and floatables. Stream channels will be evaluated for evidence of channel alteration (e.g., straightening), excessive erosion and/or sediment deposition. Riparian zones will be evaluated

for the presence, extent and quality of riparian vegetation. Data will be recorded on a paper form or hand held GPS unit and further documented with digital photographs. The City of Madison plans to conduct the SVAP monitoring twice per year, during summer low flows when nutrient and sedimentation issues become apparent and during fall/winter when the lack of vegetation allows better assessments of stream bank and in-stream habitat conditions.

The City of Madison will analyze SVAP data to identify locations and streams in need of remediation or maintenance activities, such as bank stabilization, riparian buffer improvements, or litter pickup. More broadly, the City of Madison will use these data to develop strategies for improving or maintaining water quality throughout the MS4 area. Results will be reported Permit Years 2 and 4.

8.0 Reporting and Records Retention

8.1 PERMIT REPORTS

The City of Madison will submit monthly construction site reports as required by *327 IAC 15-13-18*. Records will be retained for at least five (5) years.

8.2 MS4 PROGRAM REPORTS

The City of Madison will submit MS4 Program Implementation Reports in Permit Years Two and Four as required by *327 IAC 15-13-18*. These reports will describe progress on implementing the Stormwater Quality Management Plan, achieving measurable goals as well as implementation schedules.

9.0 Stormwater Program Budget

9.1 CURRENT AND PROJECTED PROGRAM BUDGET

The City of Madison has estimated that full development and implementation of its proposed stormwater program will cost approximately $1,160,000 over the course of the five-year permit term. To ensure program compliance and longevity of the stormwater program, the Madison City Council will utilize its existing stormwater user fees to fund development and implementation of this program. The City is exploring options for a Stormwater Utility and if approved, anticipates initiating implementation during Permit Term 2.

Minimum Control Measure	Description	Estimated Five-Year Budget (2008 Dollars)
MCM 1: Public Education and Outreach	Stormwater Survey, Stormwater Advisory Committee, Website, Publications	$40,000
MCM 2: Public Involvement and Participation	Stormwater Advisory Committee, City Council Meetings, Volunteer Clean Up, Stormwater Exhibit, Hotline, Stormdrain Marking	$40,000
MCM 3: Illicit Discharge Detection and Elimination	IDDE Ordinance Implementation, MS4 System Mapping, Dry Weather Screening, IDDE Elimination, Education and Training	$80,000
MCM 4: Construction Site Run-Off Control	ESPC Ordinance Implementation, Stormwater BMP Manual Implementation, Plan Review and Permitting, Inspections and Enforcement, Education and Training, Qualified Professional Program	$120,000
MCM 5: Post-Construction Run-Off Control	Post Construction Ordinance Implementation, Stormwater BMP Manual Implementation, Plan Review and Permitting, Inspections and Enforcement, Education and Training, Qualified Professional Program	$80,000
MCM 6: Municipal Operations Pollution Prevention and Good Housekeeping	MS4 System Cleaning and Maintenance, Education and Training, Capital Improvements to the MS4	$750,000
On-Going Water Quality Characterization	Implement the Stream Visual Assessment Protocol	$25,000
Subtotal: Program Implementation		**$1,135,000**
Other	Reporting	$25,000

Minimum Control Measure	Description	Estimated Five-Year Budget (2008 Dollars)
Estimated Annual MS4 Program Budget (2008 Dollars)		**$1,160,000**

10.0 Programmatic Indicators

The City of Madison will report the following programmatic indicators in Permit Years Two and Four. Programmatic indicators will be reported as per IDEM.

1. Number or percentage of citizens that have an awareness of storm water quality issues
2. Number and description of meetings, training sessions, and events conducted to involve citizens
3. Number or percentage of citizens that participate in storm water quality improvement projects
4. Number and location of storm drains marked
5. Estimated or actual linear feet or percentage of MS4 conveyances mapped
6. Number and location of MS4 area outfalls mapped
7. Number and location of MS4 area outfalls screened for illicit discharges
8. Number and location of illicit discharges detected
9. Number and location of illicit discharges eliminated
10. Number of, and estimated amount of material collected from, HHW collections
11. Number and location of citizen drop-off centers for automotive fluids
12. Number or percentage of citizens that participate in HHW collections
13. Number of construction sites permitted for storm water quality
14. Number of construction sites inspected
15. Number and type of enforcement actions taken against construction site operators
16. Number of public informational requests received related to construction sites
17. Number, type, and location of structural BMPs installed
18. Number, type, and location of structural BMPs inspected
19. Number, type, and location of structural BMPs maintained, or improved, to function properly

20. Type and location of non-structural stormwater quality BMPs utilized
21. Estimated acreage, or square footage, of open space preserved and mapped
22. Estimated acreage, or square footage, of mapped pervious and impervious surfaces
23. Number and location of retail gasoline outlets or municipal, state, federal, or institutional refueling areas with installed BMPs
24. Number and location of entity facilities that have containment for accidental releases
25. Estimated acreage, or square footage, and location where pesticides and fertilizers are applied by the regulated MS4 entity
26. Estimated linear feet, or percentage, and location of unvegetated swales and ditches that have an appropriately-sized vegetated filter strip
27. Estimated linear feet, or percentage, and location of MS4 conveyances cleaned or repaired
28. Estimated linear feet, or percentage, and location of roadside shoulders and ditches stabilized
29. Number and location of storm water outfall areas remediated from scouring conditions
30. Number and location of de-icing salt and sand storage areas covered or otherwise improved to minimize storm water exposure
31. Estimated amount, in tons, of salt and sand used for snow and ice control
32. Estimated amount of material by weight collected from catch basin, trash rack, or other structural BMP cleaning
33. Estimated amount of material by weight collected from street sweeping
34. Number or percentage and location of canine parks sited at least 150 feet away from a surface water body