

CITY OF TROY



STORMWATER MANAGEMENT PLAN UPDATED FEBRUARY 2022

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1. STORMWATER PROGRAM OVERVIEW

WHY IS THIS IMPORTANT?

Stormwater runoff commonly transports pollutants through municipal separate storm sewer systems (MS4s), where it is discharged, often untreated, into local water bodies. To the public, the MS4 is more commonly known as a stormwater drainage system or simply as the “drain.” These stormwater drains have been constructed in developed areas to reduce the risk of flooding and damage to our built infrastructure. Unfortunately, stormwater drainage systems carry pollution during rain events and snow melt – this can include oil, trash, and any other materials found on lawns, streets, and parking lots.

In the City of Troy, stormwater runoff discharges that are conveyed by the MS4 to the environment are regulated under the Clean Water Act (CWA) and the Missouri Clean Water Law (MCWL) and require a Permit authorizing these discharges. Troy is one of thousands of communities and institutions across the country that must comply with these regulations. The stormwater drainage system discharge Permit is known as the “MS4 Comprehensive General Permit” and is issued and managed by both the State of Missouri Department of Natural Resources (MDNR) with overall regulatory program approval by the U.S. Environmental Protection Agency (EPA).

WHAT DOES TROY HAVE TO DO?

The City of Troy has had MS4 Permit coverage since 2016. As part of the Permit requirements, Troy is required to develop a written Stormwater Management Plan (SWMP). This SWMP (or Plan) is a “living” reference document that will guide the City’s implementation of requirements within the Permit. The City is required to keep records of, and report on, the activities and measures that are implemented and consistent with this Plan. MS4 Comprehensive General Permit requirements are summarized (and simplified) as follows:



Implement public education programs to help City residents, business owners, and developers understand their role in keeping stormwater clean.



Engage the public in decision-making throughout the City’s stormwater management program.



Find and fix leaky or unauthorized sanitary sewer lines that might be discharging into the drainage system.



Ensure that construction projects do not pollute stormwater runoff with sediments and debris.



Ensure that new development and redevelopment projects commit to treating and controlling stormwater runoff before it leaves the property.



Engage in pollution prevention actions like road and parking area best practices (cleaning catch basins and sweeping pavements), and ensure that municipal activities like vehicle washing, lawn maintenance, and materials storage do not contribute to stormwater pollution.

The City of Troy is located within the Cuivre River watershed, with the river forming part of the southeast boundary near Moscow Mills. Multiple tributaries to the Cuivre River run through the City of Troy including Town Branch, Buchanan Creek, Whitcomb Branch, and Crooked Creek. Troy Department of Public Works maintains miles of drainage pipe, culverts, drainage structures (catch basins and manholes), and discharges stormwater to the environment in many locations. Troy diligently pursues improvements to its stormwater management program every year to protect its water resources.

1.1 MINIMUM CONTROL MEASURES AND MEASUREABLE GOALS

The MS4 General Permit is structured around the following six minimum control measures (MCMs).

1. Public Education and Outreach on Stormwater Impacts
2. Public Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

Permittees are required to prepare a SWMP describing specific actions they will implement and that align with the Permit requirements for each MCM. These actions, called Best Management Practices (BMPs), are described in this Plan, along with the measurable goal for each BMP and deadline for development and implementation.

The MS4 General Permit categorizes MS4 communities into Groups, based on the population served as determined by the most recent Decennial Census at the time of permit issuance and the type of regulated MS4. As of the 2010 census, the City of Troy had over 10,000 residents, classifying the City as a Group B Permittee. The Permit defines specific requirements for BMPs to meet MCMs for each community based on their Group designation. The BMPs identified in this SWMP have been selected to meet the Group B requirements in accordance with the Permit. Section 1.5 of this Plan identifies the person(s) or department(s) responsible for the BMPs identified in this SWMP.

The Permit Year (PY) corresponds to each regulatory year starting on January 1, 2022. The original version of this SWMP will be updated as needed to reflect the City of Troy's stormwater management program achievements each permit year. Permit Years begin on January 1 and end on December 31. A revision log tracking these updates can be found in Appendix D.

The most recent revision of the SWMP is made available for public access on the City's website.

MCM 1: Public Education and Outreach on Stormwater Impacts (Permit Section 4.1)

Objective: Implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of stormwater discharges on waterbodies and the steps that the public can take to reduce pollutants in stormwater runoff.

Target Audience: Target specific audiences who are likely to have significant stormwater impacts, including residents and one other target audience, as selected by the City of Troy. Options for the second target audience include, but are not limited to: schools, educational organizations, businesses, institutions, developers, homeowner associations, industrial facilities, local government, contractors, and tourists.

Target Pollutants: Target specific pollutants for each target audience. Options for target pollutants include, but are not limited to: grass clippings and leaf litter, fertilizer and pesticides, litter, waste containment, illegal dumping, household hazardous waste, pet waste, septic system management, swimming pool discharges, winter road maintenance, fats, oils, and greases, sediment runoff from construction sites and land disturbance, and vehicle washing.

Outreach and Education BMPs: Utilize a variety of education and outreach (E&O) BMPs. Options for E&O BMPs include, but are not limited to: Website, Social Media, storm drain markings, Other Media or Signage type campaign, Newspaper, Educational webinars or trainings, Fact Sheets, Paid membership in a Regional watershed group, and targeted outreach campaign, such as direct mail. Troy must utilize at least 4 of these options each year and for each audience.

Involvement BMPs: Create opportunities or support activities for residents and citizen groups to support the stormwater program. Involvement BMPs include, but are not limited to, Waterbody Clean Up, Habitat Improvement projects, Water Quality Monitoring, Educational Event, School Event, Speaker Series, Yard Waste or Household Hazardous Waste programs, and Citizen Survey.

BMP ID #	BMP Description	Permit Section Reference	Measurable Goal(s)	Deadline(s)
1.1	Develop Public Education and Outreach on Stormwater Impacts Program Plan (E&O Plan)	4.1 & 4.3.M	Develop a written E&O Plan which will outline an implementation approach that is inclusive of all education requirements across the Permit including Illicit Discharge and Detection provisions. <ul style="list-style-type: none"> • Identify 2 target audiences outlined in Table I of the Permit. • Identify target pollutants for each target audience from Table II of the Permit. • Identify 4 education and outreach BMPs from Table III of the Permit. • Identify 2 public involvement BMPs for each permit cycle. • Develop educational messages specific to the pollutants of concern in Troy's priority waters. Where applicable pollutants of concern can reference likely future pollutants of concern. • Consider needs specific to the community: language, types of businesses, etc. • Consider IDDE outreach requirements in selection of messages and audiences. • Outline methods to evaluate effectiveness of the messages and the overall educational program. 	End of Permit Year (PY) 1
1.2	Deliver targeted/timed educational messages	4.1.A & 4.1.B & 4.1.C & 4.3.M	Distribute a minimum of 1 educational message to each of the 2 target audiences using 4 E&O BMPs.	Annually
1.3	Deliver Public Involvement BMPs	4.1.D	Deliver two involvement activities each permit cycle.	End of Permit Term
1.4	Assess educational program and modify if needed	4.1.F	Assess effectiveness of the educational program per the E&O Plan and modify audience, pollutants, and/or messages if needed. Modify ineffective messages, if any, prior to next message delivery.	Annual

MCM 2: Public Involvement and Participation (Permit Section 4.2)

Objective: Develop and implement a comprehensive public participation program that provides opportunities for the public to participate in the implementation of the Stormwater Plan.

BMP ID #	BMP Description	Permit Section Reference	Measurable Goal(s)	Deadline(s)
2.1	Conduct public participation activities	4.2 & 4.1.D	Allow public participation in the implementation of the SWMP, and as associated with Involvement BMPs, annually. All public involvement activities shall comply with state public notice requirements. Document and report on activities.	Annual
2.2	Provide opportunity for public to review SWMP	4.2.A & 4.2.B	Allow public participation in review of the SWMP annually. Allow public to comment on SWMP, annually. All public involvement activities shall comply with state public notice requirements (as applicable). Document public review and public comments.	Annual
2.3	Make program documents available to the public	4.2	Post the SWMP and all Annual Reports on City website (following public notice requirements).	Annual
2.4	Present program progress to governing board	4.2.F	Present the progress of program implementation to the City Council.	Annual
2.5	Assess Public Participation program and modify if needed	4.2.I	Assess effectiveness of the public participation program and modify if needed. Modify ineffective programs, if any, prior to next Permit Year.	As-Needed

MCM 3: Illicit Discharge Detection and Elimination (IDDE) (Permit Part 4.3)

Objective: Implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to the municipal separate storm sewer system and implement procedures to prevent such discharges.

BMP ID #	BMP Description	Permit Section Reference	Measurable Goal(s)	Deadline(s)
3.1	Continue MS4 system mapping	4.3.A & 4.3.B	<ul style="list-style-type: none"> Update the system map to include: outfalls and receiving waters, boundary of regulated MS4 area, and a numbering system for all outfalls (Unique IDs) Attribute outfalls with outfall screening date and when new outfalls were added to the system. Update the system map opportunistically and as the following information becomes available during implementation of municipal operations and outfall inspections: outfall spatial location, open channel conveyances, municipally owned stormwater treatment structures, pipes, manholes, catch basins, and municipal sanitary sewer. 	Annual
3.2	Update IDDE Enforcement Authority	4.3.C	Update ordinance or other regulatory mechanism to provide enforcement authority to prohibit non-stormwater discharges from entering the MS4.	
3.3	Develop written IDDE Program Manual	4.3.D & 4.3.E & 4.3.F & 4.3.G & 4.3.I & 4.3.K & 4.3.L	Develop a written IDDE Program document that includes at a minimum: <ul style="list-style-type: none"> Reference to legal authority and statement of responsibilities. Dry Weather field screening strategy with a goal of 60% of outfalls screened during permit term. Outline of diagnostic monitoring procedures. Procedures of tracing the source of an illicit discharge. Procedures for removal of identified illicit discharges. Procedures for enforcement of illicit discharges. Description of the associated database for tracking of dry weather screening, investigations, spills/incidents, and any identified illicit discharges. 	End of PY 1 End of PY 1

BMP ID #	BMP Description	Permit Section Reference	Measurable Goal(s)	Deadline(s)
		4.3.H	IDDE Program will include designating priority areas based on high-risk areas for illicit discharges. Risk factors may include, but are not limited to, areas with evidence of or past history of illicit discharges, certain land uses more likely to have illicit discharges, areas of higher population density, known litter or dumping complaints, areas of known sewer collection defects and industrial areas. Include the priority area evaluation in the IDDE Program Manual and assess annually.	
3.4	Conduct dry weather outfall screening	4.3.D	<p>Conduct dry-weather Outfall screening annually to meet Permit requirement of 60% outfalls screened by the end of the Permit Term.</p> <ul style="list-style-type: none"> Complete dry-weather inspections annually starting in PY 1. Provide data annually. <p>Dry weather screening and sampling (72 hours after the last precipitation event):</p> <ul style="list-style-type: none"> Record condition and basic information for inventory. If flow, inspect for color, flow rate, odor, stains, turbidity, and other visual indicators. If no flow but evidence of illicit flow exists, revisit within one week to perform additional screening. 	End of the Permit Term
3.5	Conduct investigations (as needed)	4.3.J	<p>Investigate for illicit discharges in response to field screening discoveries, spills, or in response to complaints.</p> <ul style="list-style-type: none"> Immediately respond to situations that constitute imminent threat to human health or the environment. Investigate within 5 days of incident or complaint that does not constitute imminent threat. Notify adjacent MS4 operator (i.e., DOT or other community) if it is determined that an illicit discharge is issuing to or from their MS4. 	Annual, as needed.
3.6	Conduct expeditious removal of verified sources of illicit discharge or Sanitary Sewer Overflows (SSO), and confirmatory screening	4.3.G	Upon verification of an illicit discharge, locate, identify, and eliminate the illicit discharge as expeditiously as possible.	During Permit term, document annually

BMP ID #	BMP Description	Permit Section Reference	Measurable Goal(s)	Deadline(s)
3.7	Evaluate the overall effectiveness of the IDDE Program	4.3.N	Evaluate the overall effectiveness of the IDDE Program using the indicators for tracking program success as defined in the IDDE Program Manual. Indicators include: number of SSOs and illicit discharges identified and removed, number and percent of total outfalls inspected, dry weather screening results, and volume and/or quantity of illicit discharge removed. <ul style="list-style-type: none"> • Provide evaluation of IDDE program annually via annual report. 	During Permit term, document annually
3.8	Conduct employee training	4.3.Q	Provide annual training (at a minimum) to employees that handle hazardous materials or that may observe an illicit discharge as part of their normal job responsibilities. Report on the dates, attendance, type of employee training, and effectiveness in annual report.	Annually (at a minimum)

MCM 4: Construction Site Stormwater Runoff Control (Permit Section 4.4)

Objective: The objective of an effective construction stormwater runoff control program is to minimize or eliminate erosion on regulated construction sites within the regulated MS4 area and to ensure that sediments and other pollutants are not transported in stormwater from construction sites and allowed to discharge to a water of the U.S. through the MS4.

BMP ID #	BMP Description	Permit Section Reference	Measurable Goal(s)	Deadline(s)
4.1	Ensure construction stormwater runoff control ordinances for local site development applications are consistent with MS4 General Permit	4.4	<p>Review City Construction and Land Disturbance Control Ordinance(s) and regulations to ensure that site development applicants meet Missouri Construction or Land Disturbance General Permit (NPDES Construction Permit) obligations.</p> <ul style="list-style-type: none"> Continue to implement an effective construction stormwater runoff control program. Review and update if needed City ordinances and other regulatory mechanisms that requires the use of sediment and erosion control and waste management practices at construction sites that disturb greater than one acre (or common plan of development). Continue to require construction site operators performing land disturbance activities that exceed one acre (or common plan of development) to implement an erosion and sediment control program consistent with the NPDES Construction Permit. 	End of PY 1
4.2	Develop written construction site stormwater runoff control program procedures	4.4.A & 4.4.B. & 4.4.C & 4.4.D. & 4.4.E. & 4.4.F. & 4.4.G. & 4.4.J. & 4.4.L	<p>Develop written Construction and Post-Construction Program Manual.</p> <ul style="list-style-type: none"> Include references to local ordinance and any other relevant regulations. Include procedures and workflow for site plan review, pre-construction review, receipt and consideration of information submitted by the public, inspections, responsible parties, and data tracking. Include procedures for construction site prioritization, inspection program, and inventory of construction sites. Include procedures for enforcement of sediment and erosion control measures and an outline of escalating enforcement policy. Include procedures to consider potential water quality impacts to impaired waters, construction waste handling, and evaluation of opportunities for use of innovative erosion and sediment control procedures. 	End of PY 1

4.3	Conduct construction site runoff control training.	4.4.K	Provide or support access to construction site runoff control training for MS4 Inspectors and plan reviewers.	End of the Permit term
4.4	Track, inspect, document applicable construction projects and review program effectiveness.	4.4.F. & 4.4.G.	Track the number of erosion and sediment control plan reviews, construction site inspections, and enforcement actions and include in annual report. Conduct an annual review of program effectiveness and modify, as needed, annually.	Throughout Permit term, annually

MCM 5: Stormwater Management in New Development and Redevelopment (Post-Construction Stormwater Management) (Permit Section 4.5)

Objective: The objective of this control measure is to reduce the discharge of pollutants found in stormwater through the retention or treatment of stormwater on regulated new or redevelopment sites within the regulated MS4 area.

BMP ID #	BMP Description	Permit Section Reference	Measurable Goal(s)	Deadline(s)
5.1	Develop written post-construction stormwater runoff program procedures	4.5.A & 4.5.B. & 4.5.C. & 4.5.F. & 4.5.G. & 4.5.H. & 4.5.I.	Develop written Construction and Post-Construction Program Manual. <ul style="list-style-type: none"> • Document procedures and workflow for pre-construction plan review, post-construction installation inspections, responsible parties, and stormwater control structure tracking. • Include references to City Stormwater Control Ordinance(s) and regulations. • Include procedures for post-construction inspection program and develop an inventory of water quality post-construction BMPs. • Include procedures for enforcement of post-construction policy, including long term Operations & Maintenance (O&M), and an outline of escalating enforcement policy. • Include procedures to consider potential water quality impacts to impaired waters, and evaluation of opportunities for use and promotion of innovative structural and non-structural control measures. • During development of the Program Manual: <ul style="list-style-type: none"> - Review City Stormwater Control Ordinance and regulations and local Permit application process to ensure that site development applicants meet Post-Construction General Permit obligations consistent with Permit requirements in Part 4.5. - Evaluate the effectiveness of City Stormwater Control Ordinance. - Recommend and implement changes to Ordinance (or Regulations), as necessary. 	End of PY 1

BMP ID #	BMP Description	Permit Section Reference	Measurable Goal(s)	Deadline(s)
5.2	Update Local Ordinance (or regulations) for Post-Construction Stormwater Management in New Development and Redevelopment	4.5.A. & 4.5.B. & 4.5.D.	Based on outcome of BMP 5.1, update the Ordinance or other regulatory mechanism (as needed). <ul style="list-style-type: none"> • Develop numeric or technical performance standards. • Develop an outline of preventative actions that involve management and source control policies and procedures. • Require BMP inspections during construction. • Require long-term O&M and annual reporting. 	End of PY 2
5.3	Conduct post-construction BMP inspections	4.5.E	Inspect a minimum of 60% of all water quality post-construction BMPs.	End of the Permit term
5.4	Conduct post-construction water quality BMP design and operation training.	4.5.L	Provide or support access to post-construction water quality BMP training for MS4 Inspectors and plan reviewers.	End of the Permit term
5.5	Track, inspect, and document applicable post-construction BMPs and review program effectiveness.	4.5.H. & 4.5.M.	Track the number of post-construction BMP plan reviews, facility inspections, and enforcement actions and include in annual report. Conduct an annual review of program effectiveness and modify, as needed, annually.	Throughout Permit term, annually

MCM 6: Pollution Prevention and Good Housekeeping for Municipal Operations (Permit Section 4.6)

Objective: To implement a multi-pronged approach to pollution prevention & good housekeeping for municipal operations that has a goal of preventing or reducing pollutant runoff and protecting water quality from all municipal operations and municipal facilities.

BMP ID #	BMP Description	Permit Part Reference	Measurable Goal(s)	Deadline(s)
6.1	Develop Operations & Maintenance (O&M) Program documentation	4.6.D. & 4.6.E. & 4.6.F. & 4.6.G. & 4.6.H. & 4.6.I & 4.6.J	Develop the Municipal Facilities and Operations Program written procedures to meet provisions of part 4.6 of the Permit. Develop the Storm and Drainage Water Best Practices Manual to be inclusive of all City facilities and drainage system operations activities, inspection, and training obligations. The manual shall include the following: <ul style="list-style-type: none"> - Training Materials for best practices and asset management - Municipal Facilities Inventory - Operations and Maintenance (O&M) Standard Operating Procedures (SOPs) Procedures 	End of PY 1
6.2	Implement Pollution Prevention Training Program	4.6.A & 4.6.B. & 4.6.C.	Storm and Drainage Water Best Practices (SDWBP) for internal training program documentation. Conduct employee training consistent with the Permit.	Throughout Permit term, annually
6.3	Conduct annual site inspections for municipal facilities	4.6.F.	Inspect all areas exposed to stormwater and all stormwater control measures at each facility at least once per year and document findings.	Throughout Permit term, annually
6.4	Track, inspect, document the Municipal Operations Program, and review program effectiveness.	4.6.M.	Conduct an annual review of program effectiveness and modify, as needed, annually.	Throughout Permit term, annually

1.2 WATER QUALITY STANDARDS

1.2.1 Impaired Waters

Any regulated MS4 identified in an EPA approved or established Total Maximum Daily Load (TMDL) has additional requirements in Part 6 of the MS4 General Permit. According to MDNR's 2020 Section 303(d) Listed Waters approved by the Clean Water Commission, the City of Troy MS4 does not currently discharge to waterbodies that have an approved TMDL. Therefore, an Assumptions and Requirements Attainment Plan (ARAP) is not required to be developed and incorporated into the SWMP. However, all of the waterbodies within the City of Troy MS4 eventually discharge to the Cuivre River, which is a waterbody that is considered impaired but does not have an approved TMDL. There is no requirement to develop and incorporate an ARAP into the SWMP, because no TMDL exists at this time. The City of Troy will benefit from awareness of the pollutants of concern for the Cuivre River as a criterion for prioritizing minimum control measures. A list of impaired waters upstream of the Cuivre River and their impairment causes is provided in Table 1-1 in this Section. A map showing the impaired waters listed in Table 1-1 in this Section is provided in Appendix B of this SWMP.

Upstream Sources of Impairments to the Cuivre River

Several waterbodies upstream of Troy have been listed as impaired including the North Fork of the Cuivre River between approximately State Hwy Bb and 1 mile north of Troy's northern boundary, the edge of the Woods Fort Golf Course, which is listed for E. Coli. Another upstream impaired waterbody, the Tributary to Mill Creek, approximately 10.5 miles north of Troy, is listed for Aquatic Habitat Loss due to Sediment. Lake Lincoln, listed for Chlorophyll-A is located northeast of Troy in Cuivre River State Park. Each of these waterbodies contributes to the Cuivre River. The Cuivre River is listed in the 2020 303(d) Impaired Waters list proposed by the Missouri Department of Natural Resources and approved, pending comments, by the US EPA. However, the TMDL Priority for the Cuivre River is low with a TMDL Schedule Year of greater than 10 years.

Table 1-1: Impaired Waters in near and upstream of Troy, MO (Based on Approved 2020 Integrated List)

Segment ID	Waterbody	Impaired Use	Impairment Cause	TMDL Schedule Year	Source of Pollutant
0158.00	N. Fk. Cuivre River	Whole Body Contact (A – Designated Swimming Areas)	Escherichia Coli	2020	Rural Non-Point Source
0159.00	Tributary to Mill Creek	Protection of Warm Water Aquatic Life	Aquatic Habitat Loss due to Sediment	Completed in 2008	Agricultural Non-Point Source
7049.00	Lake Lincoln	Protection of Warm Water Aquatic Life	Chlorophyll-a	>10 years from 2020	Unknown
0152.00	Cuivre River	Whole Body Contact (A – Designated Swimming Areas)	Escherichia Coli	>10 years from 2020	Non-Point Source

Future reissuance and/or approval of the Missouri Integrated List of Waters may necessitate additional modifications to this Plan to maintain compliance with applicable requirements.

1.3 ANNUAL PROGRAM SELF-EVALUATION, RECORD KEEPING & ANNUAL REPORTING

Entities covered under the MS4 Comprehensive General Permit are required to collect and report information about the development and implementation of their Stormwater Management Plan (SWMP). The City of Troy conducts annual evaluations of its compliance with the Permit, the appropriateness of its identified BMPs, and progress towards achieving its identified measurable goals, which include reducing the discharge of pollutants to the maximum extent practicable (“MEP”).

The City of Troy will keep records required by the MS4 General Permit for at least three (3) years after they are generated. Records include but are not limited to: information used in the development of any written (hardcopy or electronic) program required by this Permit, any monitoring results, copies of reports, records of screening, follow-up, and elimination of illicit discharges; maintenance records; inspection records; and data used in the development of the notice of intent, SWMP and annual reports. Records will be available for public observation as requested. Records will be submitted to the Missouri DNR as requested.

Annual reports are due to Missouri DNR each year in February after the close of the previous Permit Year. The annual reports shall include the following content:

- Information regarding progress toward achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable.
- The status of the MS4's compliance with permit conditions.
- Assessment of the appropriateness of identified BMPs and corresponding measurable goals for each MCM.
- A summary of results of information collected and analyzed during the reporting period, including monitoring data or quantifiable values per the MS4's measurable goals.
- A summary of the TMDL Assumptions and Requirement Attainment Plan (ARAP), if applicable.
- A summary of the status of an integrated plan, if applicable.
- A statement if the permittee is relying on another entity to satisfy some of the permittee's permit obligations.
- Any change in identified BMPs or measurable goals and justification for those changes.

Changes to the City's stormwater permit compliance program will be included in the City's annual reports and in updates to this program document. Annual reports are also made available for public access on the City's website.

1.4 RESPONSIBLE PARTIES FOR STORMWATER PROGRAM IMPLEMENTATION

Title/ Position of Responsible Person	Name of Responsible Person	Role/Program Element(s)
Department of Public Works	Jeff Burkemper	MCM 6
Building Department	Marie Eggering	MCM 1, 2, 3, 4, 5 and elements of 6
Parks and Recreation	Ryan Howell	MCM 6
Wastewater Treatment	Jared Comer	Support of MCM 3 (as needed)
Water Treatment Facilities	Brian Mudd	MCM 6
Police	Jeff Taylor	MCM 6

2. PROGRAM DOCUMENTS: PLANS, PROCEDURES, INVENTORIES, AND MAPS

The Comprehensive General Permit requires certain documents to be included in the SWMP. These documents will be developed consistent with the schedule outlined in Section 1.1. This Section provides information on where these documents can be accessed. Some of these documents have been appended to this SWMP, while others are provided in a location external to the SWMP due to size or complexity. Documents will be on file at the Building Department unless otherwise noted.

2.1 EDUCATION & OUTREACH PROGRAM

2.1.1 Public Education and Outreach on Stormwater Impacts Program Plan

Consistent with the requirements of Section 4.1 of the MS4 Comprehensive General Permit, the City will develop a written Public Education and Outreach on Stormwater Impacts Program Plan in Permit Year 1. The Program Plan will include:

- Target audiences for educational messages
- Target pollutants for each target audience
- Message distribution methods
- Public involvement opportunities
- Responsible parties for Education and Outreach implementation

Once developed, the City of Troy will review their Public Education and Outreach on Stormwater Impacts Program Plan annually and will update implementation procedures and BMPs as necessary to meet the requirements of the Permit.

2.2 IDDE PROGRAM

2.2.1 IDDE Regulations

Consistent with the requirements of Section 4.3.C of the MS4 Comprehensive General Permit, the City will develop an ordinance or other regulatory mechanism to effectively prohibit non-stormwater discharges into the City's storm sewer system. This regulation will establish regulatory authority for the City of Troy to investigate suspected illicit discharges to the City's MS4 and will establish actions and enforcement procedures for removing any verified illicit discharges.

2.2.2 IDDE Program Manual

Consistent with the requirements of Section 4.3 of the MS4 Comprehensive General Permit, the City will develop a written IDDE Program Manual in Permit Year 1. This Manual will include:

- Responsible parties and contact information
- Regulatory authority
- Implementation schedule to detect and address non-stormwater discharges

- Dry weather outfall field screening strategy and procedures
- Diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows
- Procedures for tracing the source of illicit discharges
- Procedures for removing the source of illicit discharges
- Enforcement procedures
- Priority areas for future illicit discharge screenings
- Tabular summary of dry weather field screenings, spills, incidents, and investigations
- City staff training resources and modules

Once developed, the City of Troy will review their IDDE Program Manual annually and will update implementation procedures as necessary to meet the requirements of the Permit.

2.2.3 Storm Sewer System Map

The City has developed a Storm Sewer System Map consistent with the requirements of Section 4.3.A of the MS4 Comprehensive General Permit. The map, provided in Appendix A of this SWMP, includes the following information:

- The location of all MS4 outfalls
- The name and locations of all receiving waterbodies of the state that receive discharges from the MS4 outfalls
- The boundary of the regulated MS4 area

The map will be updated annually and/or upon receipt of new information relating to the MS4 drainage network.

2.3 CONSTRUCTION AND POST-CONSTRUCTION STORMWATER MANAGEMENT PROGRAM

2.3.1 Erosion and Sediment Control, Site Plan Review, and Site Inspection Regulations

Consistent with the requirements of Section 4.4.A of the MS4 Comprehensive General Permit, the City will update a regulatory mechanism to require construction site runoff control BMPs at construction/land disturbance sites greater than or equal to one acre or less than one acre if the construction activity is part of a larger common plan or development that would disturb one acre or more. The regulatory mechanism will also require City review of pre-construction plans, establish the City's authority for site inspections and enforcement of control measures, require construction site operators to complete site inspections, and will have written procedures to ensure compliance with the regulatory mechanism and establish an escalating enforcement policy.

2.3.2 Land Disturbance Project and Site Inspection Inventory

Consistent with the requirements of Section 4.4.F and 4.4.G of the MS4 Comprehensive General Permit, the City will develop an inventory to track active public and private land disturbance project sites and the City's inspections of these sites. This inventory will include:

- Relevant contact information for each project
- Size of the project/area of disturbance
- Inspection dates and times
- Inspector name(s)
- Inspection findings
- Follow up actions and dates
- Corrective actions and enforcement actions

Once developed, the City of Troy will update their Land Disturbance Project and Site Inspection Inventory on an ongoing, as-needed basis as projects are reviewed and completed.

2.3.3 New Development/Redevelopment Regulations

Consistent with the requirements of Section 4.5.A of the MS4 Comprehensive General Permit, the City will update a regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law for sites equal to or greater than one acre or less than one acre if the construction activity is part of a larger common plan or development that would disturb one acre or more. The regulatory mechanism will incorporate a strategy to minimize water quality impacts by adopting or developing:

- Numeric, technical performance, or design standards to control post-construction stormwater discharges with structural BMPs including, but not limited to: extended detention basins, grass swales, bioretention, permeable surfaces, sand filter basins, stormwater planters, and proprietary BMPs.
- Preventative actions that involvement management and source controls with non-structural BMPs including, but not limited to: stream buffers, no mow zones, preservation of open spaces, tree preservation, impervious cover reduction, land use planning, and low impact development.

The regulatory mechanism will also include enforcement actions to ensure adequate, long-term operation and maintenance (O&M) of the developer's selected structure and non-structural BMPs, will require the inspection of BMPs during construction, prior to final project completion, and annually by the owner or operator following construction.

2.3.4 Post-Construction BMP and Inspection Inventory

Consistent with the requirements of Section 4.5.H and 4.5.I of the MS4 Comprehensive General Permit, the City will develop an inventory to track post-construction BMPs and inspections of these BMPs. This inventory will include:

- Relevant contact information for the BMP's responsible person or entity
- Type of post-construction BMP
- Applicable O&M documents
- Date the City approved the construction site plan
- Maintenance activities completed
- Inspection dates and times
- Inspector name(s)
- Inspection findings
- Follow up actions and dates
- Corrective actions and enforcement actions

Once developed, the City of Troy will update their Post-Construction BMP and Inspection Inventory on an ongoing, as-needed basis as new development and redevelopment projects and inspections are completed.

2.4 MUNICIPAL FACILITIES AND OPERATIONS PROGRAMS

2.4.1 Storm and Drainage Water Best Practices Manual

The City has developed a Storm and Drainage Water Best Practices (SDWBP) Manual consistent with the requirements of Parts 4.6.A and 4.6.B of the MS4 General Permit. The objectives of the SDWBP Manual are to provide a training manual to the City detailing best practices which reduce stormwater-transported pollution during typical activities on municipally-owned properties and which promote behavior that will improve water quality in the City of Troy. The manual includes training material and general best practices for the following topics:

- MS4 infrastructure including road maintenance
- Proper review for new construction and land disturbances
- Fluid disposal, chemical handling, illicit discharges, and spills
- Fueling
- Municipal Facilities including parks, pools, open space, buildings, solid waste disposal, equipment, vehicles, and vehicle washing
- O&M Standard Operating Procedures
- Stormwater Pollution Prevention Plan

The SDWBP Manual can be accessed at the Building Department.

2.4.2 Municipal Facilities Inventory

The City will develop a Municipal Facilities Inventory consistent with the requirements of Part 4.6.D and 4.6.E of the MS4 General Permit. The inventory will include all municipally-owned facilities with the potential for stormwater polluting activities, including, but not limited to:

- Parks and open space, including the municipal aquatic center
- Buildings where pollutants are exposed to runoff (e.g., schools, City Hall, police department, fire stations, parking lots, etc.)
- Vehicle, supplies, and equipment storage areas
- Any MS4 owned or operated facilities with an NPDES permit

The Municipal Facilities Inventory is located in Appendix A of the SDWBP Manual, which can be accessed at the Building Department.

2.4.3 O&M Standard Operating Procedures

The City will develop written Operations and Maintenance (O&M) Standard Operating Procedures (SOPs) consistent with the requirements of Part 4.6. (G thru I) of the MS4 General Permit. The objectives of the O&M SOPs are to establish procedures for MS4 infrastructure maintenance that will help reduce the discharge of pollutants from municipally-owned facilities. The O&M SOPs include:

- Winter road maintenance procedures targeting minimal use and proper storage of sodium chloride and other salts
- Catch basin inspection, cleaning, and maintenance procedures, and a plan for optimization of these routine activities
- Street sweeping and cleaning procedures to provide regular maintenance for all City-owned roadways
- Management and disposal of catch basin cleanings and street sweepings to avoid discharge into receiving waters

The O&M SOPs are located in Appendix B of the SDWBP Manual, which can be accessed at the Building Department.



CERTIFICATION

Signature

Date

Name

Appendices



APPENDIX A: SEPARATE STORM SEWER MAP





APPENDIX B: MAP OF IMPAIRED WATERS



APPENDIX C: DEFINITIONS, ABBREVIATIONS, AND ACRONYMS

Definitions, Abbreviations and Acronyms

Best Management Practices (BMPs) - Schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Common Plan of Development - A "larger common plan of development or sale" is a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan. For example, if a developer buys a 20-acre lot and builds roads, installs pipes, and runs electricity with the intention of constructing homes or other structures sometime in the future, this would be considered a larger common plan of development or sale. If the land is parceled off or sold, and construction occurs on plots that are less than one acre by separate, independent builders, this activity still would be subject to stormwater Permitting requirements if the smaller plots were included on the original site plan.

Control Measure - Refers to any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

Discharge - When used without qualification, means the "discharge of a pollutant."

Discharge of a Pollutant - Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source". This includes additions of pollutants into waters of the United States from surface runoff which is collected or channeled by man; or discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

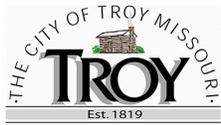
Disturbance - Action to alter the existing vegetation and/or underlying soil of a site, such as clearing, grading, site preparation (e.g., excavating, cutting, and filling), soil compaction, and movement and stockpiling of top soils.

Existing Discharger - An operator applying for coverage under this Permit for discharges covered previously under an NPDES general or individual Permit.

Facility or Activity - Any NPDES "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

Illicit Discharge - Any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES Permit (other than the NPDES Permit for discharges from the municipal separate storm sewer) and discharges resulting from firefighting activities.

Impaired Water - A water is impaired if it does not meet one or more of its designated use(s). For purposes of this Permit, "impaired" refers to categories 4 and 5 of the five-part categorization approach used for classifying the water quality standards attainment status for water segments under the TMDL program. Impaired waters compilations are also sometimes referred to as "303(d) lists." Category 5 waters are impaired because at least one designated use is not being supported or is threatened and a TMDL is needed. Category 4 waters indicate that at least one designated use is not being supported but a TMDL is not needed (4a indicates that a TMDL has been approved or established by EPA; 4b indicates other required control measures are expected in result in the attainment of water quality standards in a reasonable period of time; and 4c indicates that the non-attainment of the water quality standard is the result of pollution (e.g. habitat) and is not caused by a pollutant). See USEPA's 2006



Integrated Report Guidance, July 29, 2005 for more detail on the five part categorization of waters [under EPA National TMDL Guidance <http://www.epa.gov/owow/tmdl/policy.html>].

Impervious Surface - Any surface that prevents or significantly impedes the infiltration of water into the underlying soil. This can include but is not limited to: roads, driveways, parking areas and other areas created using non porous material; buildings, rooftops, structures, artificial turf and compacted gravel or soil.

Industrial Activity - The ten categories of industrial activities included in the definition of “stormwater discharges associated with industrial activity,” as defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi).

Interconnection - The point (excluding sheet flow over impervious surfaces) where the Permittee’s MS4 discharges to another MS4 or other storm sewer system, through which the discharge is eventually conveyed to a water of the United States. Interconnections shall be treated similarly to outfalls throughout the Permit.

Municipal Separate Storm Sewer - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man- made channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the CWA that discharges to waters of the United States;
- (ii) Designed or used for collecting or conveying stormwater;
- (iii) Which is not a combined sewer; and
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

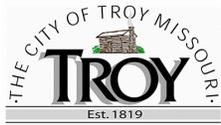
Municipal Separate Storm Sewer System (MS4) - Means all separate storm sewers that are defined as “large” or “medium” or “small” municipal storm sewer systems pursuant to paragraphs 40 CFR 122.26 (b)(4) and (b)(7), or designated under paragraph 40 126.26(a) (1)(v). For the purposes of this Permit “MS4” may also refer to the Permittee with jurisdiction over the sewer system.

New Development - Any construction activities or land alteration resulting in total earth disturbances greater than 1 acre (or activities that are part of a larger common plan of development disturbing greater than 1 acre) on an area that has not previously been developed to include impervious cover. (see part 2.3.6. of the Permit)

Outfall Catchment - The land area draining to a single outfall or interconnection. The extent of an outfall’s catchment is determined not only by localized topography and impervious cover but also by the location of drainage structures and the connectivity of MS4 pipes.

Owner or Operator - The owner or operator of any “facility or activity” subject to regulation under the NPDES program.

Point Source - Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This



term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant - Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal and agricultural waste discharged into water.

Pollutant of Concern - A pollutant which causes or contributes to a violation of a water quality standard, including a pollutant which is identified as causing an impairment in a State's 303(d) list.

Redevelopment - For the purposes of this plan, any construction, land alteration, or improvement of impervious surfaces resulting in total earth disturbances greater than 1-acre (or activities that are part of a larger common plan of development disturbing greater than 1 acre) that does not meet the definition of new development (see above).

Site - For the purposes of this plan, the area extent of construction activities, including but not limited to the creation of new impervious cover and improvement of existing impervious cover.

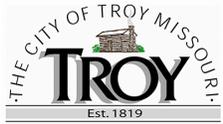
Stormwater - Stormwater runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Discharges Associated with Construction Activity - A discharge of pollutants in stormwater runoff from areas where soil disturbing activities (e.g., clearing, grading, or excavating), construction materials, or equipment storage or maintenance (e.g., fill piles, borrow areas, concrete truck washout, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located. (See 40 CFR 122.26(b)(14)(x) and 40 CFR 122.26(b)(15).

Total Maximum Daily Loads (TMDLs) - A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes waste load allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources and/or natural background and must include a margin of safety (MOS) and account for seasonal variations. (See Section 303(d) of the Clean Water Act and 40 CFR 130.2 and 130.7).

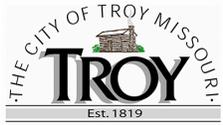
Urbanized Area - US Census designated area comprised of a densely settled core of census tracts and/or census blocks that meet minimum population density requirements, along with adjacent territory containing non-residential urban land uses as well as territory with low population density included to link outlying densely settled territory with the densely settled core. For the purposes of this Permit, Urbanized Areas as defined by any Census since 2000 remain subject to stormwater regulation even if there is a change in the reach of the Urbanized Area because of a change in more recent Census data.

Water Quality Standards - A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses. States and EPA adopt WQS to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (See CWA Sections 101(a)2 and 303(c)).

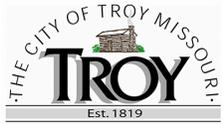


Abbreviations and Acronyms

BMP – Best Management Practice
CGP – Construction General Permit
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DCIA – Directly Connected Impervious Area
EPA – U. S. Environmental Protection Agency
ESA – Endangered Species Act
USFWS – U. S. Fish and Wildlife Service
IA – Impervious Area
IDDE – Illicit Discharge Detection and Elimination
LA – Load Allocations
MOS – Margin of Safety
MS4 – Municipal Separate Storm Sewer System
MSGP – Multi-Sector General Permit
NHPA – National Historic Preservation Act
NMFS – U. S. National Marine Fisheries Service
NOI – Notice of Intent
NPDES – National Pollutant Discharge Elimination System
NRHP – National Register of Historic Places
POTW – Publicly Owned Treatment Works
SHPO – State Historic Preservation Officer
SPCC – Spill Prevention, Control, and Countermeasure
SSO – Sanitary Sewer Overflow
SWMP – Stormwater Management Plan
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
USGS – United States Geological Survey
WLA – Waste load Allocation
WQS – Water Quality Standard



APPENDIX D: REVISION LOG



Revision No.	Revision Date	Section of SWMP	Revision(s) Made/Reasoning