

STORMWATER MANAGEMENT PLAN
TOWN OF MANCHESTER



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KEY DEFINITIONS

“*Authorized activity*” means any activity authorized under this general permit.

“*Best Management Practices (BMP)*” means those practices, which reduce pollution and which have been determined by the Commissioner to be acceptable based on, but not limited to, technical, economic, and institutional feasibility.

“*Coastal area*” means coastal area as defined in Section 22a-94 of the Connecticut General Statutes.

“*Coastal waters*” means coastal waters as defined in Section 22a-93 of the Connecticut General Statutes.

“*Department*” means the Department of Environmental Protection.

“*Fresh-tidal wetland*” means a tidal wetland with an annual average salinity of less than 0.5 parts per thousand.

“*Guidelines*” means the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, established pursuant to Section 22a-328 of the Connecticut General Statutes.

“*High tide line*” means high tide line as defined in Section 22a-359(c) of the Connecticut General Statutes.

“*Illicit Discharge*” means any unpermitted discharge to waters of the state that does not consist entirely of stormwater or uncontaminated ground water except those discharges identified in Section 3(a)(2) of this general permit when such non-stormwater discharges are approved, in writing, by the Commissioner as discharges that are not significant contributors of pollution to a discharge from an identified MS4.

“*Individual permit*” means a permit issued to a named permittee under Section 22a-430 of the Connecticut General Statutes.

“*Inland wetland*” means wetlands as that term is defined in Section 22a-38 of the Connecticut General Statutes.

“*Municipal separate storm sewer system (MS4)*” means conveyances for stormwater, including, but not limited to, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains owned or operated by any municipality, State agency or Federal agency and discharging directly to surface waters of the state.

“*Permittee*” means any municipality, that initiates, creates originates or maintains a discharge authorized by this general permit and that has filed a registration pursuant to Section 4 of this permit.

“*Point Source*” means 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.

“*Registration*” means a registration form filed with the Commissioner pursuant to Section 4 of the general permit.

“*Regulated Small MS4*” means any municipally-owned or municipally-operated Small MS4 (as defined below) authorized by this general permit including all those located partially or entirely within an Urbanized Area and those additional municipally-owned or municipally-operated Small MS4s located outside an Urbanized Area as may be designated by the Commissioner.

“Retain or retention” means to permanently hold stormwater runoff on-site with no subsequent point source release.

“Small MS4” means any MS4 that is not already covered by the Phase I MS4 stormwater program including state- and federally-owned systems, such as colleges, universities, prisons, and military bases. (Note: state- and federally-owned MS4s are authorized under separate general permits.)

“Stormwater” means waters consisting of precipitation runoff.

“Tidal wetland” means a wetland as that term is defined in Section 22a-29(2) of the Connecticut General Statutes.

“Urbanized Area (UA)” means the areas of the State of Connecticut so defined by the U.S. Census Bureau for the 2000 census.

“Total Maximum Daily Load (TMDL)” means the maximum capacity of a surface water to assimilate a pollutant as established by the Commissioner including pollutants contributed by point and non-point sources and a margin of safety.

ACRONYMS

BMP	Best Management Plan
CT-DEP	Connecticut Department of Environmental Protection
ConnDOT	Connecticut Department of Transportation
EPA	United States Environmental Protection Agency
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
NEMO	Nonpoint Education for Municipal Officials
PSA	Public Service Announcement
QLP	Qualifying Local Program
SWMP	Stormwater Management Plan

INTRODUCTION

A. Background

On December 8, 1999, the Environmental Protection Agency (EPA) published a regulation that implemented the Phase II Stormwater Program required by Section 402(p) of the Clean Water Act. The Program was created to improve the Nation's waterways by reducing the quantity of pollutants that stormwater transports into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and litter. When these pollutants are deposited, they can impair the waterways thereby discouraging recreational use of the resource, contaminating drinking water supplies, as well as interfering with the habitat for fish, other aquatic organisms, and wildlife.

The Connecticut DEP developed the *General Permit for the Discharge of Stormwater for Small Municipal Separate Storm Sewer Systems (General Permit)* to satisfy the requirements of the EPA' Program. This Stormwater Management Plan (SWMP) has been developed for the Town of Manchester, CT in accordance with the *General Permit*. The intent of the plan is to reduce the discharge of pollutants from small Municipal Separate Storm Sewer Systems (MS4) to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

The Town of Manchester (Manchester) is covered by the *General Permit* because the Town operates a Municipal Separate Storm Sewer System (MS4) that is located partially or entirely within an Urbanized Area (as defined by the 2000 Census). All other requirements for authorization listed under Section 3(a) of the *General Permit* are met by the project. A copy of the *General Permit* is included as Appendix A.

The *General Permit* is largely self-administered. It is incumbent upon the Town to be aware of, and to comply with, the conditions of the General Permit. The primary conditions of permit coverage are listed below.

- Register with DEP for permit coverage (Appendix B);
- Develop a SWMP;
- Implement SWMP;
- Sampling and analysis;
- Employee Training; and
- Annual Reporting

The SWMP is designed to outline the Town of Manchester's program of Best Management Practices (BMP's) and measurable goals for each of the six (6) Minimum Control Measures (MCM) required by the *General Permit*. The measurable goals are designed to gauge program effectiveness and determine compliance with the *General Permit*. In addition, a person and job title responsible for implementation, a time line for implementation, and measurable goals for each BMP have been designated. The six (6) MCM's that must be addressed by this SWMP are:

- MCM #1 Public Education and Outreach
- MCM #2 Public Participation/Involvement
- MCM #3 Illicit Discharge Detection and Elimination
- MCM #4 Construction Site Runoff Control

- MCM #5 Post-Construction Runoff Control
- MCM #6 Pollution Prevention/Good Housekeeping

A BMP Timeline (Part B Registration) has been included in Appendix B.

B. Qualifying Local Program

In accordance with Section 6(b)(1) of the *General Permit*, Manchester may utilize the efforts of a third party's Qualifying Local Program (QLP) to meet the requirements of a MCM. Each QLP must be noted in the SWMP and if the third party fails to implement the BMP, the Town remains responsible for its implementation. Manchester intends on utilizing activities conducted by the Hockanum River Linear Park Committee as some of the BMPs for MCM #'s 2, 3, and 6. The Committee's role is discussed further under each MCM.

C. Qualifying State Programs

Under Section 6(b)(2) of the *General Permit* a Qualifying State Program if a BMP is to be performed by a third party under another NPDES Stormwater Permit, an MS4 must reference such programs within its SWMP. In this case the MS4 is not responsible for implementing the BMP.

ConnDOT

As part of the Phase II Stormwater program, the Connecticut Department of Transportation (ConnDOT) is required to develop a SWMP with a goal to reduce the discharge of pollutants from its highways and roadways. The ConnDOT maintains seven highways and roadways in Manchester. These roadways are:

- | | |
|------------------|--------------|
| • Interstate 84 | • Route 30 |
| • Interstate 384 | • Route 6/44 |
| • Interstate 291 | • Route 502 |
| • Route 83 | • Route 534 |

The ConnDOT is responsible for conducting street sweeping and catch basin cleaning-under MCM #6 for all of these routes.

Municipal Phase I Stormwater Facilities

Manchester maintains two facilities that are covered under the CT-DEP's *General Permit for the Discharge of Stormwater Associated with Industrial Activities*. The Manchester Sanitary Landfill (GSI000502) and the Highway/Fleet/Recycling Facility (GSI000523) have been registered for the *Industrial Activity General Permit*.

Responsibilities under the *Industrial Activities General Permit* include developing a Stormwater Pollution Prevention Plan, training, good housekeeping, and stormwater monitoring. For the purposes of this SWMP, Manchester intends to expand the existing Industrial Activity training program, as discussed in Section 6.2.1.

D. Communications

Questions, comments or relevant information may be submitted to Manchester's Citizens Service Department so that they may be directed to appropriate town staff. The Citizen's Service Department may be contacted by phone or electronically via the Citizen Request System. The Customer Service and Information Center will also serve as the Stormwater Hotline associated with each of the MCMs.

Customer Service and Information Center
Town Hall
41 Center Street
Office Hours: Monday –Wednesday, Friday: 8 am – 5 pm
Thursday: 8 am – 6 pm
Phone: (860) 647-5235
Citizen Request System:
http://www.ci.manchester.ct.us/manager/public/public_entry.cfm

All communications associated with the administration of the SWMP should be directed to:

Mr. Mark F Carlino, P.E.
Director of Public Works/Town Engineer
Town of Manchester, Connecticut
494 Main St.
P.O. Box 191
Manchester, Connecticut 06045-0191
860-647-3067

E. Urbanized Areas

As defined by the 2000 Census, Manchester is comprised almost entirely of Urbanized Area. An urbanized area is defined as a land area comprising one or more places and the adjacent settled surrounding area that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile. A small portion in the southeastern corner of the town located primarily in the South Fork Hockanum River watershed is the only area that is not an urbanized area. This area is depicted on Figure 1 (Page 4).

F. Town Watersheds

Manchester is located within portions of six different (6) watersheds. Of these six watersheds, the Hockanum Regional Basin, the South Fork Hockanum River, and Salmon Brook are the three (3) largest basins.

G. Connecticut's Water Quality Standards

In preparing the SWMP, the CT-DEP's Water Quality Standards were reviewed in order to determine the Surface Water Quality Classifications for each town watercourse. Specific BMP's listed in Sections 1.0-6.0 were developed to address the watersheds that are associated with watercourses that have been designated as "impaired" by the CT-DEP. Table 1 shows the water quality classification for each watershed. Table 2 summarizes the water bodies in Manchester that are listed on the 2002 List of Connecticut Water Bodies not Meeting Water Quality Standards and are therefore designated as "impaired".

Table 1 Surface Water Quality Classifications Manchester, CT			
Drainage Basin Number	Name	Surface Water Quality Classification	Impaired per Water Quality Standards
4004	Podunk River	A	No
4006	Salmon Brook	A	No
4500	Hockanum River	C/B	Yes
4503	Tankerhoosen River	A	Yes
4504	South Fork Hockanum River	A	No
N/A	Union Pond	C/B	Yes

TABLE 2 LIST OF MANCHESTER'S IMPAIRED WATER BODIES				
<u>Water Segment Description</u>	<u>Water Segment Length (miles)</u>	<u>Impaired Use Designation</u>	<u>Cause/Potential Source</u>	
Hockanum River – Surface Water Quality Classification – C/B				
From Confluence with the South Fork of the Hockanum River (just south of "Laurel Lake") to Union Pond	3.60	Aquatic Life Support	Source Unknown	Urban Runoff/Storm Sewers
From inlet to Union Pond, Manchester to one mile downstream of Dart Hill Road, Vernon	2.50	Aquatic Life Support	Source Unknown	Urban Runoff/Storm Sewers
Union Pond – Surface Water Quality Classification – C/B				

TABLE 2

LIST OF MANCHESTER'S IMPAIRED WATER BODIES

<u>Water Segment Description</u>	<u>Water Segment Length (miles)</u>	<u>Impaired Use Designation</u>	<u>Cause/Potential Source</u>	
Impoundment of Hockanum River in Manchester at Union Street	50.00 Acres	Aquatic Life Support	Organic Enrichment/Low Dissolved Oxygen	Contaminated Sediments, Erosion and Sedimentation, Urban Runoff/Storm Sewers
		Fish Consumption	Pesticides	
		Primary Contact Recreation	Algal growth	
Tankerhoosen River – Surface Water Quality Classification – A				
From mouth at Hockanum River near Vernon/Manchester border to Tankerhoosen Lake, Vernon	1.70	Aquatic Life Support	Cause Unknown	Source Unknown

The surface water classifications currently assigned to Manchester watercourses are defined below.

Class A

Surface water is known or presumed to meet Water Quality Criteria which support designated uses, which may include potential drinking water supply; fish and wildlife habitat; recreational use; agricultural, industrial supply and other legitimate uses, including navigation.

Class C/B

Due to point or non-point sources of pollution, certain Water Quality Criteria or one or more designated uses assigned to Class B waters are not currently met. The water quality goal is achievement of Class B Criteria and attainment of Class B designated uses. Surface water known or presumed to meet Water Quality Criteria which support designated uses, which may include recreational use; fish and wildlife habitat; agricultural and industrial supply and other legitimate uses including navigation.

Based upon the DEP Surface Water Quality Classifications, the Hockanum River and Union Pond were identified as the surface waters that should take the highest priority in Manchester's efforts to address stormwater impacts. This was taken into consideration as the BMP's were developed.

1.0 MCM #1 – PUBLIC EDUCATION AND OUTREACH

1.1 MCM #1 Requirements

Goal: Raise awareness among the citizens of Manchester that their individual personal actions can have a significant effect on the quality of their local waterways.

Manchester must implement an outreach program to distribute educational materials to the community to inform the public on the following key points.

- Impacts of stormwater discharges on local water bodies.
- Steps that the public may take to reduce stormwater pollution.
- Provide specific & appropriate Best Management Practices to a diversity of groups.

1.2 Best Management Practices

The following Best Management Practices will be employed by Manchester to educate the public regarding water quality issues within the Town.

1.2.1 Webpage Development

A Webpage that is devoted to public education has been developed and will be hosted on Manchester's website (www.ci.manchester.ct.us). The webpage will contain:

- useful links
- calendar of events
- brochures
- permit documents
- contact information

By July 2005, mapping of the Town's drainage systems will be placed on the Town's Intranet for use by town staff. The mapping will be made available through Manchester's website for public viewing in January 2006.

The webpage will be updated periodically, as new documents and educational materials become available, and as scheduled events change.

The goal of the informational webpage is to generally educate the public and to make the public aware of their personal responsibilities with respect to protection of Manchester's watercourses.

	<u>Activity/Measurable Goal</u>	<u>Person Responsible</u>
Year 1:	<ul style="list-style-type: none">• Webpage hosted on www.ci.manchester.ct.us	GIS Coordinator
Year 2:	<ul style="list-style-type: none">• Provide link to stormwater website from Town's homepage• Update Website as appropriate	
Years 3 -5:	<ul style="list-style-type: none">• Post electronic versions of relevant new educational materials• Update Website as appropriate	

1.2.2 Educational Materials

Brochures and fact sheets that have been developed by the EPA, NEMO, and other sources will be made available to the public as handouts at neighborhood meetings, via the town’s website, and by direct mailings.

In order to serve Manchester’s Hispanic community, electronic and hard copies of brochures printed in Spanish will be made available at the Puerto de Fe Spanish Mission in Manchester.

The goal of the educational materials is to reach the residents of Manchester and educate them on what they can do to prevent stormwater pollution.

	<u>Activity/Measurable Goal</u>	<u>Person Responsible</u>
Year 1:	<ul style="list-style-type: none"> • Make electronic and hard-copy of brochures in Spanish available at the Puerto de Fe and its computer lab • Investigate the possibility of including stormwater message on town issued envelopes (e.g. Water/Sewer Bills) • Present information in “Manchester Matters” 	Director of Economic Development and Neighborhood Services
Year 2:	<ul style="list-style-type: none"> • Reproduce EPA brochures for target audiences <ul style="list-style-type: none"> ○ Bookmark ○ “Make Your Home the Solution to Stormwater Pollution” ○ Proper septic system operation • Develop New Homeowner Packet Insert • Develop presentation to be used as part of “Government Academy” 	
Years 3-5:	<ul style="list-style-type: none"> • Distribute brochures in both English and Spanish at all Neighborhood Meetings • Stormwater Presentation as part of “Government Academy” 	

1.2.3 Stormwater Education Program for School Children

In order to reach the children of Manchester, an education program will be developed in Year 1 with a goal to establish appropriate materials, including videos, live presentations, brochures, and other media that will be directed towards Manchester’s ten elementary schools. The goals of the educational program are to reach children at an early age with the concepts of water pollution and its prevention, and to generally foster greater public awareness.

	Activity/Measurable Goal	Person Responsible
Year 1:	<ul style="list-style-type: none"> • Conduct meeting in Fall 2004 with Planning Department and School system representatives to develop presentations starting Fall 2005 (Year 2) • Develop educational program <ul style="list-style-type: none"> ○ Video ○ Live presentations ○ Stickers ○ Use 3-D Model of drainage system in presentations ○ Distribute stormwater stickers • 	Assistant Town Engineer
Years 2-5	Conduct presentations at two elementary schools	

2.0 MCM #2 – PUBLIC PARTICIPATION/INVOLVEMENT

2.1 MCM #2 Requirements

Goal: To promote the active participation of the Manchester citizenry in the stormwater program.

In accordance with the General Permit, Manchester must:

- Develop a public involvement/participation program that includes the public in developing, implementing, and reviewing the stormwater management program; and
- Comply with State and local public notice and Freedom of Information requirements when implementing a public involvement/participation program.

Where State and local notice requirements are inconsistent, the notice provisions providing for the most notice and opportunity for public comment shall be followed.

2.2 Best Management Practices

2.2.1 Public Comment

In order for residents of Manchester to have an active role in the stormwater program, Manchester will provide a 30-day public comment period for the SWMP and the Part “B” Permit Registration. The SWMP will be finalized with input from the public. The annual reports required by the *General Permit* will also be made available electronically through the Town’s website and a hard copy will be available at the Manchester Public Library for review.

	<u>Activity/Measurable Goal</u>	<u>Person Responsible</u>
Year 1:	<ul style="list-style-type: none">• 30-Day public comment period	Assistant Town Engineer
Years 2 - 5:	<ul style="list-style-type: none">• Make the annual report available to the public<ul style="list-style-type: none">○ Advertise in the Manchester Journal Inquirer○ Post report at the Manchester Public Library• Post annual report on website• Invite public comments	Director of Public Works/Town Engineer

2.2.2 Public Participation

Manchester will implement a stormwater telephone hotline which will be directed to the Customer Service and Information Center. The callers will either be directed to appropriate personnel or the information will be recorded and provided to the Highway or Engineering Department for appropriate action.

A campaign to promote the hotline will be conducted. Information regarding the hotline will be placed on the stormwater webpage, and distributed via

“Manchester Matters” and other appropriate material. The hotline number will also be placed on appropriate town brochures.

	<u>Activity/Measurable Goal</u>	<u>Person Responsible</u>
Year 1:	<ul style="list-style-type: none"> • Provide e-mail & hotline telephone contacts on stormwater webpage which are directed to Customer Service • Provide link to stormwater webpage on Town's homepage 	Director of Public Works/ Town Engineer
Year 2:	<ul style="list-style-type: none"> • Implement a stormwater telephone hotline which is directed to Customer Service 	
Year 3:	<ul style="list-style-type: none"> • Evaluate effectiveness of hotline/e-mail systems 	

2.2.3 River/Pond Clean-up Days

As indicated in the Introduction, Manchester intends to use the activities of the Hockanum River Linear Park Committee as a Qualifying Local Program. The Committee, which is part of Manchester’s Conservation Commission, maintains trails along approximately 7 miles of the Hockanum River.

The committee walks the trails on Monday, Wednesday, and Friday mornings to inspect and maintain the trails. In the process, the committee members pick up any debris that they see. Any large debris is placed in designated locations for pick-up by the Highway Department.

	<u>Activity/Measurable Goal</u>	<u>Person Responsible</u>
Year 1:	Contact/establish volunteer groups	Field Services Superintendent
Year 2:	Conduct one clean-up day on the Hockanum River	Hockanum River Linear Park Committee
Year 3:	Conduct one clean-up day on the Hockanum River	“
Year 4:	Conduct one clean-up day on Union Pond	“
Year 5:	Conduct one clean-up day on Union Pond	“

3.0 MCM #3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION

Goal: Reduce the number of illegal discharges to the MS4.

The requirements of MCM #3 are different for urbanized areas within the town than they are for the town as a whole. Both sets of requirements are outlined below:

3.1 MCM #3 Requirements

3.1.1 Urbanized Area Requirements

Develop a map or series of maps at a minimum scale of 1"=200' and maximum scale of 1"=100' showing all stormwater discharges from a pipe or conduit with a diameter of 12" or greater (or equivalent cross-sectional area) operated by the Town. For each discharge the following information shall be included:

- Type, material, and size of conveyance, outfall or channelized flow;
- The name and Surface Water Quality Classification of the immediate surface waterbody or wetland to which the stormwater runoff discharges;
- If the outfall does not discharge directly to a named waterbody, the name of the nearest named waterbody to which the outfall eventually discharges; and
- The name of the watershed in which the discharge is located.

Develop, implement and enforce a program to detect and eliminate existing illicit discharges, as defined in 40 CFR 122.26(b)(2) into the Town (see Section 3.1.2 below).

Develop and implement a plan to detect and address future non-stormwater discharges, including illegal dumping to the Town.

If the municipality or CT-DEP identifies any of the non-stormwater discharges or flows listed in Section 3.1.2 as significant contributors of pollutants to the MS4, they must be addressed.

Town Wide Requirements

The following requirements must be implemented by Manchester throughout the entire town:

- Implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater discharges into the town, except as provided in Section 3(a)(2) of the general permit;
- Establish sanctions to ensure compliance to the extent allowable under State or local law; and
- Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

The allowable discharges to the MS4 include:

- Landscape irrigation
- Irrigation water
- Lawn watering runoff
- Discharges or flows from fire fighting activities (except training)
- Residual street wash water
- Uncontaminated ground water
- Naturally occurring discharges such as rising groundwater, springs, diverted stream flows , and flows from riparian habitats and wetlands

3.2 Best Management Practices

The following BMP's will be implemented by the Town to meet the requirements for MCM#3. Education of Town residents regarding illicit discharges will be conducted under MCM#1.

3.2.1 Revise Town Sewer Ordinances

Manchester's Sewer Use Ordinance shall be modified to give Manchester a regulatory mechanism to prohibit certain discharges to the Town-owned storm drainage system and surface waters within the Town.

	Activity/Measurable Goal	Person Responsible
Year 1-2:	<ul style="list-style-type: none"> • Review Model Ordinances • Identify Necessary Changes 	Town Attorney
Year 3-4:	Modify Stormwater Ordinances	

3.2.2 Stormwater Discharge Mapping

The Town will continue to update, verify and amend the storm system component of the Town's GIS mapping as necessary.

	Activity/Measurable Goal	Person Responsible
Year 1:	<ul style="list-style-type: none"> • Update GIS mapping with new storm drainage system • Verify with as-built plans where available 	Assistant Town Engineer
Year 2:	<ul style="list-style-type: none"> • Update GIS mapping with new storm drainage system every three months • Verify with as-built plans where available 	Assistant Town Engineer
Years 3 - 5	<ul style="list-style-type: none"> • Update GIS mapping with new storm drainage system every three months • Verify with as-built plans where available 	Assistant Town Engineer

3.2.3 Dry Weather Discharge Inspection

Together with comprehensive stormwater sewer system mapping, field investigations of discharges occurring during dry weather periods can assist in detecting sources of illicit discharges contributing to the degradation of local water quality.

Town staff will conduct dry weather inspections, possibly with the aid of a summer intern, along specified river reaches. The staff member will record the location of each dry weather discharge on a form prepared by the Town. The form should indicate an approximate location (e.g. cross-street, GPS location, etc.) so that the discharge can be tracked to its source using the Town's storm sewer mapping. The form will be made available to clean-up groups to be used during river clean-up days. The dry weather inspections will be completed during or soon after clean-up activities to the maximum extent practicable. In addition to Town staff, the Hockanum River Linear Park Committee will use the prepared form to report any dry weather discharges discovered during their weekly walks to appropriate town staff.

The results of the dry weather discharge inspections can be compared and further investigations can be coordinated per section 3.2.5.

	Activity/Measurable Goal	Person Responsible
Year 1:	<ul style="list-style-type: none"> • Prioritize dry weather inspection areas • Prioritize areas to utilize TV Inspection systems available from water/sewer department • Develop inspection checklist 	Assistant Town Engineer
Year 2:	Inspect Hop Brook between State Route 502 and State Route 83	Assistant Town Engineer
Year 3:	Inspect Hop Brook between State Route 83 and Porter St.	Assistant Town Engineer
Year 4:	Inspect Bigelow Brook between the Hockanum River and Broad St.	Assistant Town Engineer
Year 5:	Inspect Bigelow Brook between Broad St. and Woodbridge St.	Assistant Town Engineer

3.2.4 Dry Weather Inspection Follow-ups

Using information gathered from field investigations of dry weather discharges and sewer mapping, sources of illicit discharges will be identified and corrected to the maximum extent practicable. Follow-up inspections to the Dry Weather Inspections will include tracing from the outfall to the suspected source by following the storm discharge system mapping as well as field inspections of drainage structures. Video inspection and dye or smoke testing may be used if applicable. Once detected, the Town will follow up with inspections and notices in accordance with the ordinance.

4.0 MCM #4 – CONSTRUCTION SITE RUNOFF CONTROL

Goal: To reduce pollutants in stormwater runoff from construction activities.

4.1 MCM #4 Requirements

The Town is required to modify and enforce its existing program to reduce pollutants in any stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The program must be designed to reduce stormwater discharges from construction activities disturbing less than one acre if the construction is part of a larger common plan of development or sale that would disturb one acre or more. The program must include at least the following:

- An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions for non-compliance, to the extent allowable under State or local law;
- Procedures for notifying construction site developers and operators of the requirements for registration under the CT-DEP's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (revised April 2004)*;
- Requirements for construction site operators to implement appropriate erosion and sediment control best management practices in accordance with the 2002 Edition of Connecticut's *Guidelines for Soil Erosion & Sediment Control*;
- Requirements for construction site operators to control waste at the site such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste that may cause adverse impacts to water quality impacts;
- Procedures for receipt and consideration of information submitted by the public; and
- Procedures for construction site inspection and enforcement of control measures.

4.2 Best Management Practices

The Town currently employs several BMP's that meet MCM#4. Sites that are being developed and disturb 0.5 acres or larger are already being reviewed by the Planning & Zoning Commission (PZC) for erosion and sediment (E&S) control requirements.

In addition, sites that are being developed must post a Bond or other financial surety to cover the cost of maintenance of E&S controls. Periodic inspections of the construction sites are on-going during the construction process. The Bond cannot be released until the Zoning Enforcement Officer inspects the site and determines that site conditions have been completely stabilized.

4.2.1 Ordinance/Regulation Revisions

Under MCM#4 the Town plans on modifying its current regulations to meet the *General Permit's* requirements. Specifically, the Town's Inland Wetlands and

Watercourses, Subdivision, and Zoning Regulations will be revised as appropriate.

The regulations will be revised in order to incorporate the 2002 *Guidelines for Soil Erosion & Sediment Control* and the April 2004 modification of the *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities*.

The latest revisions to the CT-DEP's Construction Activities General Permit include requirements for land disturbances of greater than or equal to one acre during construction activities. During Site Plan Review, the Inland Wetlands and Planning & Zoning Commissions will be tasked with:

- Ensuring the applicant will register for the Construction General Permit prior to issuance of a building permit;
- Certifying that the application is consistent with the *Guidelines*; and
- Providing either a letter to the CT-DEP or language in the local application approval that the permittee would forward to the CT-DEP certifying that the applicant's plans are consistent with the *Guidelines* and that the applicant is aware of and plans to comply with requirements of the CT DEP Construction Activities General Permit.

4.2.2 Enforcement

The revised regulations will give the Town more regulatory enforcement authority. An increase in Town staff may be necessary to conduct more frequent site inspections in order to document compliance, offer additional guidance and education, issue warnings, and assess penalties (if necessary).

4.2.3 Receipt of Public Information

In order to get the public more involved in SWMP implementation, Manchester intends to establish a stormwater reporting hotline. The hotline will allow residents to provide input to Town staff regarding potential Erosion & Sediment Control violations occurring throughout the town. Resident involvement is an important component of the stormwater program because residents can provide an additional layer of visual inspection and reporting of potential E&S violations that may otherwise go un-noticed.

	Activity/Measurable Goal for Sections 4.2.1 – 4.2.3	Person Responsible
Year 2:	<ul style="list-style-type: none"> • Hotline for public information submittal established • Review current ordinances/regulations along with appropriate revision options. 	Assistant Town Engineer
Year 3:	<ul style="list-style-type: none"> • Update Town's Development Handbook to include a summary of the Construction General Permit requirements. • Revise Ordinances/Regulations 	Director of Economic Development and Neighborhood Services

	Activity/Measurable Goal for Sections 4.2.1 – 4.2.3	Person Responsible
Years 4 & 5:	<ul style="list-style-type: none"> • Inspect construction sites: <ul style="list-style-type: none"> ○ ≥5 acre: 1/month ○ Between 1 and 5 acres: 1/quarter ○ <1 acre: 1/year or as appropriate 	Zoning Enforcement Officer

5.0 MCM #5 – POST-CONSTRUCTION RUNOFF CONTROL

Goal: To reduce pollutants in stormwater from new construction and reconstruction through improved site design.

5.1 MCM #5 Requirements

The Town is required to develop a plan to ensure that permanent erosion & sediment controls and other water quality control features are provided in site design and to encourage or require:

- appropriate infiltration practices,
- reduction of impervious surface,
- creation of or conversion to sheet flow,
- measures and/or structures to reduce sediment discharge, and
- any other innovative measures that will prevent or minimize water quality impacts.

In addition the following are required:

- Develop and implement strategies which include a combination of structural and/or non-structural BMP's appropriate for the Town;
- Use an ordinance or other regulatory mechanism to address the elements of the innovative measures listed above regarding post construction runoff from new development and redevelopment projects;
- Ensure adequate long-term operation and maintenance of BMP's

5.2 Best Management Practices

Manchester currently employs several BMP's associated with MCM#5. The Town's Public Improvement Standards set forth a framework of both Stormwater quantity and quality requirements from all new developments. The Public Improvement Standards provide the Planning and Zoning Commission with the regulatory support to promote infiltration and other non-structural erosion and sediment control Best Management Practices. The Public Improvements Standards currently meet the requirements of the *General Permit*.

In order to ensure long-term operation and maintenance of drainage structures that are under the authority of the Town, Manchester intends to track each structure through their GIS system. These structures will be maintained as appropriate in response to the results of the inspections.

	<u>Activity/Measurable Goal</u>	<u>Person Responsible</u>
Year 1:	Review Town's Public Improvement Standards for compliance with new regulations and technologies	Assistant Town Engineer
Year 2:	Update Public Improvement Standards as required	"
Year 3:	Develop priority listing of structures requiring maintenance	"
Years 4 and 5:	Continue inspections and prioritize cleaning and maintenance needs (See MCM #6)	"

6.0 MCM #6 – POLLUTION PREVENTION/GOOD HOUSEKEEPING

Goal: To reduce pollutants discharged via stormwater runoff from municipal operations.

6.1 MCM #6 Requirements

In order to address the requirements of MCM #6 the Town must develop and implement an operation and maintenance program that includes a training component for municipal employees and contractors and has the ultimate goal of reducing pollutant runoff from municipal operations.

The Town's stormwater training must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, vehicle fleet and building maintenance, new construction and land disturbance, and stormwater system maintenance. Such training should utilize existing materials that are available from the EPA, the State or other organizations.

In addition to the training requirements of this MCM, the General Permit requires that the Town develop and implement specific programs for:

1. Street sweeping;
2. Catch basin cleaning; and
3. Repairing, retrofitting, or upgrading stormwater conveyance systems.

The street sweeping program must include sweeping all streets in the Town at least once a year as soon as possible after snowmelt. Within the urbanized areas of the Town, the need for additional sweepings in problem areas must also be addressed.

All catch basins or other stormwater structures that have been identified to have accumulated sediment must be cleaned at least once per year. The catch basin cleaning program must identify and prioritize those structures that may require cleaning more than once a year. In addition, a program to prioritize for repairing, retrofitting or upgrading the town's storm water conveyances must be established and implemented.

6.2 Best Management Practices

6.2.1 Municipal Employee Training

Manchester currently trains municipal employees working in the Parks Division, Fleet Maintenance, Landfill/Sanitation, & Highway Departments under the Phase I *Industrial Activity General Permit*. Additionally, employees of the Parks Division will also be trained on stormwater related topics.

Grounds maintenance and landscaping crews can use substantial quantities of water and chemicals, the combination of which can lead to elevated levels of nutrients and toxics in receiving waters. Training sessions will emphasize the benefits of recycling organic material; reducing the use and planning the timing of application of chemicals and water; selecting native vegetation to reduce

water, nutrient, and maintenance demand; and achieving cost savings through reduced labor and material inputs.

	Activity/Measurable Goal	Person Responsible
Year 1:	Expand existing annual stormwater training (under Phase I Stormwater – Parks Division, Fleet Maintenance, Landfill/Sanitation, & Highway) to stormwater pollution associated with new construction, land disturbances, and stormwater system maintenance.	Director of Public Works
Year 2:	Send selected engineering and planning & zoning staff to outside professional development training (e.g. Innovative stormwater treatment techniques, Erosion and Sediment Control Compliance, etc.)	Director of Public Works
Years 3- 5:	Continue/Improve annual training sessions	Director of Public Works

6.2.2 Street Sweeping Plan

This management measure involves employing pavement-cleaning practices such as street sweeping on a regular basis to minimize surface sediment, debris, and other pollutant discharges to receiving waters. By capturing pollutants via street sweeping before they are solubilized and/or transported by rainwater, the need for structural storm water control measures (e.g., particle separators, filters, etc.) can be reduced.

	Activity/Measurable Goal	Person Responsible
Year 1:	Develop a written Street Sweeping Plan	Field Services Superintendent
Years 2 - 5:	<p>Urbanized Area:</p> <ul style="list-style-type: none"> • Sweep the streets contained in the Urbanized Areas as soon as possible after snowmelt • Identify/Prioritize streets/areas that may require sweeping within Urbanized Area to sweep more than once per year <p>Non-Urbanized Area:</p> <ul style="list-style-type: none"> • Sweep streets outside of Urbanized Area once per year as soon as possible after snowmelt. 	Field Services Superintendent

6.2.3 Catch Basin Cleaning Program

Storm drain systems need to be cleaned regularly. Routine cleaning reduces the amount of pollutants, trash, and debris both in the storm drain system and in receiving waters. Clogged drains and storm drain inlets can cause the drains to overflow, leading to increased erosion and containment transport. Areas with relatively flat grades or low flows will be given special attention because they rarely experience high enough flows for effective flushing.

	<u>Activity/Measurable Goal</u>	<u>Person Responsible</u>
Year 1:	<ul style="list-style-type: none"> • Develop a written Catch Basin Cleaning Plan <ul style="list-style-type: none"> ○ Tracking ○ Cleaning Logs 	Field Services Superintendent
Years 2 -5:	Entire Town <ul style="list-style-type: none"> • Prioritize catch basin cleaning based upon known problem/sediment loading areas • Identify need for & feasibility of more frequent cleaning. 	Field Services Superintendent

6.2.4 Stormwater Conveyance System Upgrades

Conduct study to identify stormwater system failures and improvement requirements (e.g., areas of flooding, high sediment loading areas, etc.). Prioritize, budget, schedule and implement system improvements.

	<u>Activity/Measurable Goal</u>	<u>Person Responsible</u>
Year 1:	Hire outside consultant to model existing storm sewer system	Assistant Town Engineer
Year 2:	Use the model to evaluate <ul style="list-style-type: none"> • Capital improvement planning • Applications for system additions • Repairs 	Assistant Town Engineer
Year 3:	<ul style="list-style-type: none"> • Identify problem areas - Plan/budget for improvements • Carry out Capital improvements and repairs 	Assistant Town Engineer
Years 4 and 5:	<ul style="list-style-type: none"> • Carry out Capital improvements and repairs • Identify improvements in Annual Reports 	Director of Public Works

7.0 MONITORING PLAN

7.1 Parameters to be Monitored

The General Permit requires annual storm water monitoring. At least two (2) outfalls from each of the following categories must be sampled for a total of six (6) samples:

- Primarily Industrial Development;
- Commercial Development; and
- Residential Development.

Parameters for which stormwater analyses are required are listed on Table 1.

TABLE 1 STORMWATER MONITORING PARAMETERS
Parameter
Rainfall pH (measured on-site, if possible)
Discharge pH (measured on-site, if possible)
Hardness (mg/l)
Conductivity (mg/l)
Total Oil & Grease (mg/l)
Chemical Oxygen Demand (mg/l)
Total Suspended Solids (mg/l)
Total Phosphorous (mg/l)
Ammonia (mg/l)
Total Kjeldahl Nitrogen (mg/l)
Nitrate plus Nitrite Nitrogen (mg/l)
E. coli (col/100 ml)

7.2 Sampling Locations

Each outfall that is monitored must be selected based on an evaluation by the municipality that the drainage area of such outfall is representative of the overall nature of its respective land use type. For the purposes of compliance with the General Permit, the Town of Manchester has selected the following monitoring locations:

TABLE 2 Stormwater Monitoring Locations
<i>Industrial Development</i>
1. Buckland Industrial Park - Town Owned Property
2. Progress Drive Industrial Park
<i>Commercial Development</i>
1. Hale Road Extension
2. Buckland Hills Drive (discharge from Buckland Mall)
<i>Residential Development</i>
1. Discharge to Sunnybrook at Gardner St. and Haystack Rd.
2. Discharge to Pewterpot brook at Hillstown Rd.

7.3 Stormwater Monitoring Procedures

Appendix C contains detailed stormwater sampling instructions including the following items:

- Event Selection
- Sample Submission
- Sample and Data Collection Procedure
- Sample Containers
- General Procedures

These procedures should be reviewed each year before sampling and analyses are completed.

7.4 Other Discharge Requirements

The General Permit contains the following additional discharge requirements.

1. There should be no distinctly visible floating scum, oil or other matter contained in the stormwater discharge. Excluded from this are naturally occurring substances such as leaves and twigs provided no person has placed such substances in or near the discharge.
2. The stormwater discharge should not result in pollution due to acute or chronic toxicity to aquatic and marine life, impair the biological integrity of aquatic or marine ecosystems, or result in an unacceptable risk to human health.

8.0 PLAN AMENDMENT, REPORTING AND RECORDKEEPING

8.1 Amendments to Plan

The Stormwater Management Plan will be amended whenever:

- a. There is a change which has the potential to cause pollution of the waters of the State (e.g. change in BMP's selected, identification of contaminated discharge listed in section 3.1, etc.);
- b. The actions identified in this SWMP fail to ensure or adequately protect against pollution of waters of the State;
- c. The Commissioner requests modification of the plan;

8.2 Retention of Records

All records and information resulting from the SWMP, including all reports, cleaning records, and records of analyses performed and any applicable calibration and maintenance of instrumentation, must be retained on-site for a minimum of five years following the expiration of the Permit, or longer if required by the DEP.

8.3 Reporting Requirements

By January 1, 2005, and annually thereafter by January 1st, the Town must submit to the following address an Annual Report:

Stormwater Permit Coordinator
Bureau of Water Management
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

The Annual Report must include the following:

- 1) A plan review fee of \$187.50;
- 2) The status of compliance with this general permit, an assessment of the appropriateness of the identified best management practices and progress towards achieving the implementation dates and measurable goals for each of the Minimum Control Measures;
- 3) All stormwater monitoring data;
- 4) All illicit discharge detection information obtained in the previous year;
- 5) A summary of the activities the Town plans to undertake during the next year; and
- 6) A change in any identified BMP's, measurable goals or implementation dates that apply to the program elements.

APPENDIX A

**GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER
FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS**

APPENDIX B
GENERAL PERMIT REGISTRATION
(PARTS A AND B)

APPENDIX C
STORMWATER MONITORING PROCEDURES