

TOWN OF WETHERSFIELD CONNECTICUT

STORMWATER MANAGEMENT PLAN

June 2004



Prepared by:

Town Of Wethersfield
Department Of Public Works
Engineering Division

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Introduction / Overview

I.1 INTRODUCTION

This Stormwater Management Plan (SWMP) was developed by the Town of Wethersfield Connecticut, Department of Public Works for the purpose of establishing, implementing and enforcing a stormwater management program to reduce the discharge of pollutants from the Town's highways, roadways, railways and facilities to the maximum extent practicable, to protect water quality, and to satisfy the appropriate requirements of the Clean Water Act. The SWMP will cover all of the Town's highways, roadways and facilities located within Urbanized Areas (UA) as indicated by the 2000 Census. Note that all interstate highways within the state will be covered under the State of Connecticut Department of Transportation's SWMP regardless of location. Individual facilities such as airports, maintenance garages, ports, salt sheds and other miscellaneous facilities are or will be covered under general permits (industrial) with the Connecticut Town of Environmental Protection (CTDEP).

The U.S. Environmental Protection Agency (EPA) published the regulation entitled "National Pollutant Discharge Elimination System - Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges on December 8, 1999 as required by Section 402(p) of the Clean Water Act (CWA). This is commonly referred to as the National Pollutant Discharge Elimination System (NPDES) Phase II program. This SWMP also directly addresses the requirements of the NPDES Phase II program as implemented and administered by the CTDEP as the regulatory authority for the State of Connecticut. The NPDES Phase II program is implemented by the CTDEP through the use of the General Permit for the Discharge of Stormwater from Small Municipal Storm Sewer Systems, that was issued on January 9, 2004.

The Town currently has many practices and programs in place relating to stormwater management and pollution prevention. This plan will coordinate and incorporate these programs, policies, guidelines and practices into the SWMP document by reference.

The plan outlines a program of best management practices (BMPs) and measurable goals for the following six minimum control measures:

- Public education and outreach
- Public involvement / participation
- Illicit discharge detection and elimination
- Construction site stormwater runoff control
- Post-construction stormwater management
- Pollution prevention/good housekeeping

For each minimum control measure, the Town will define appropriate BMP's, designate a person(s) and job title responsible for each BMP, define a time frame for implementation for each BMP, and define measurable goals for each BMP.

I.2 TOWN STRUCTURE AND INFORMATION

The Town of Wethersfield Connecticut covers 13.0 square miles on the west bank of the Connecticut River, immediately south of Hartford. The Berlin Turnpike (State Route 5/15) and Interstate I-91 connect the town to the regional highway system. It has a population of 25,095 according to the 2000 census. It is bordered to the north by Hartford, the east by Glastonbury, the south by Rocky Hill and the west by Newington.

The Town has four major drainage basins: the Connecticut River, Goff Brook, Folly Brook, and the Park River. There are two insignificantly sized components which are tributary to Piper Brook and Salmon Brook drainage basins. Present land use is mostly residential, farmland, commercial and some industrial. Growth potential is limited to a few farmland parcels. The growth of the town is outlined in the 2000 Plan of Conservation & Development.

Residential development consists of lots which range from 6000 square feet up to 20000 square feet. Nearly all of Wethersfield has public water supply and public sanitary sewer provided by the Metropolitan District Commission (MDC).

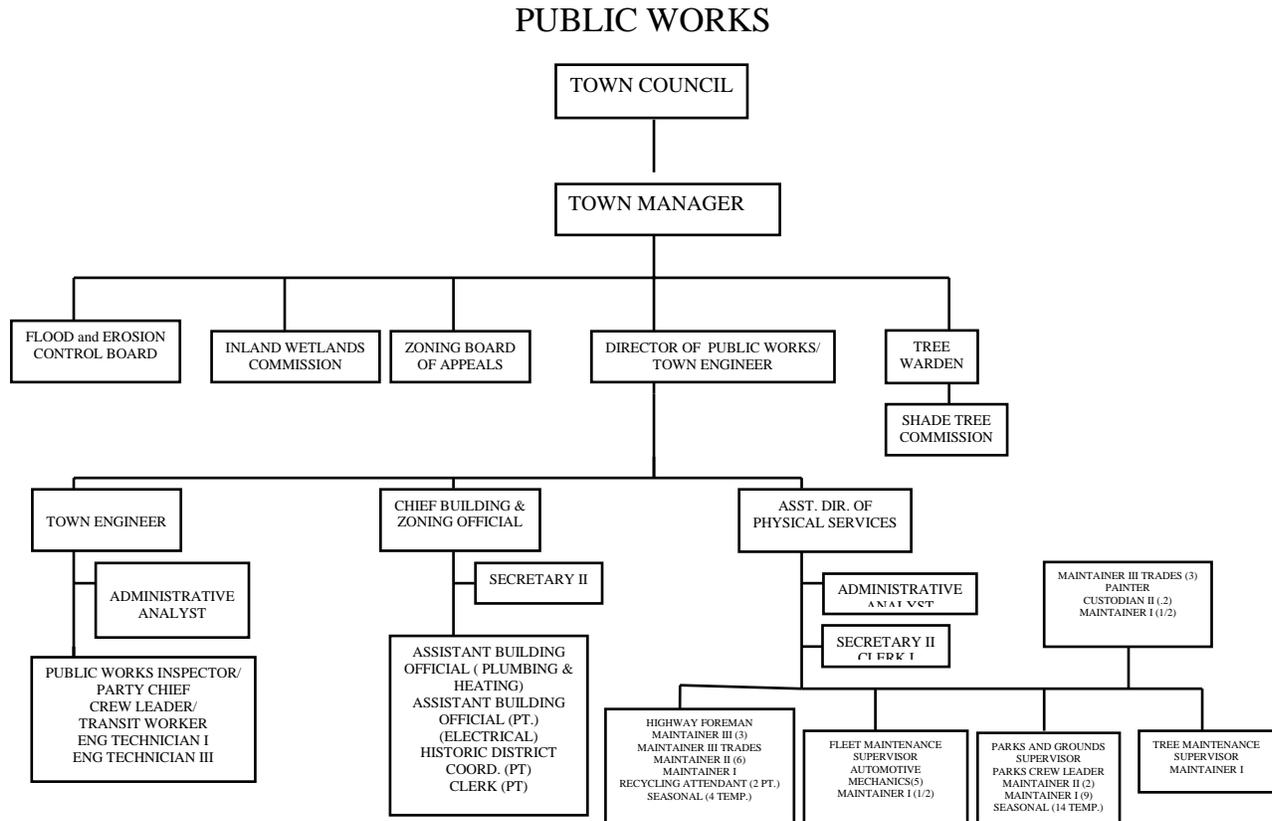
The transportation system of the Town consists of about 103 miles of improved roadways. There is an additional 3 miles of unimproved roadways in the meadows. The Physical Services Division of the Public Works Department is responsible for winter maintenance of this roadway network. In the winter of 2003-04, the Division used about 3000 cubic yards of sand and about 2000 cubic yards of salt. It is estimated the Town recovers about 50% of the sand by street sweeping program and catch basin cleaning. There are about 4000 catch basins within the Town system. The roadway and drainage system is maintained by the Physical Services Division under the direction of the Director of Public Works/Town Engineer.

The Physical Services Division headquarters is a combination town garage, fleet maintenance garage, sand/salt storage facility and transfer station at 100 Marsh Street. This facility presently operates under a General Permit of Industrial Activity (Permit No. GSI001214, Site 159-022) and has participated in the US Environmental Protection Agency volunteer audit program.

I.3 TOWN RESPONSIBILITIES AND LIMITATIONS

It is the mission of the Town of Wethersfield Public Works Department to provide mechanical and custodial maintenance of the entire Town infrastructure, including buildings, grounds, parks and roads. The Town has a Town Council/Town Manager form of government. The Town Manager is the Chief Executive Officer of the Town and reports to a nine member Town Council elected biannually. The chairperson of the Town Council is referred to as the mayor.

The Director of Public Works/Town Engineer reports to the Town Manager. The Director oversees the operations of Building, Engineering and Physical Services Divisions of Public Works. The Physical Services Division consists of the Highway Maintenance crew, Trades workers, Fleet Maintenance, Parks & Grounds, Tree Maintenance and the Transfer Station. The Department of Public Works organizational chart follows.



I.4 NPDES PHASE II WORKING COMMITTEE

A Town Committee consisting of representatives of various departments and divisions was established in 2004 to provide guidance and address Stormwater management issues during the development and implementation phase of this plan. Membership in the committee is as follows:

Name	Title/Department
Michael Turner	Director of Public Works/Town Engineer
Don Moisa	Wetlands Agent
Jim McDonald	Asst. Director/Physical Services
Paul Hutcheon	Director of Health
Peter Gillespie	Town Planner
Gary Santoro	Fire marshal
Kathy Bagley	Director of Recreation and Parks
Bill Holler	GIS Administrator

I.5 TOWN INFORMATION

General Information

The Town of Wethersfield Connecticut covers 13.0 square miles on the west bank of the Connecticut River, immediately south of Hartford. The Berlin Turnpike (State Route 5/15) and Interstate I-91 connect the town to the regional highway system. It has a population of 25,095 according to the 2000 census. It is bordered to the north by Hartford, the east by Glastonbury, the south by Rocky Hill and the west by Newington.

The Town has four major drainage basins: the Connecticut River, Goff Brook, Folly Brook, and the Park River. There are two insignificantly sized components which are tributary to Piper Brook and Salmon Brook drainage basins. Present land use is mostly residential, farmland, commercial and some industrial. Growth potential is limited to a few farmland parcels. The growth of the town is outlined in the 2000 Plan of Conservation & Development. The entire town lies within the Urbanized Area per the 2002 census.

There are six major water bodies within the Town, specifically the Wethersfield Cove, the 1860 Reservoir, Griswold Pond, Bell Pond, Murphy Pond and Millwood's Pond. There are about 18 miles of brooks and streams thru the town. Precipitation in the state is for the most part evenly distributed throughout the year with Wethersfield receiving about 45 inches of rainfall per year.

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

Six minimum control measures are required to be included in the SWMP, to satisfy the requirements of the NPDES Phase II program and CTDEP's General Permit for the Discharge of Stormwater from Small Municipal Storm Sewer Systems. Specific BMP's for each minimum control measure must be selected and incorporated into the plan, and eventually implemented as part of the department's stormwater management program.

This SWMP outlines a plan of BMP's and measurable goals for each of the six (6) minimum control measures including Public Education and Outreach, Public Involvement / Participation, Illicit Discharge Detection and Elimination, Construction Site Stormwater Runoff Control, Post Construction Stormwater Management and Pollution Prevention / Good Housekeeping. The plan requires that a combination of tasks be undertaken to carry out the BMP's selected for each measure. This includes documentation of policies, procedures and training, development of specific programs and products, conducting public information meetings, development of a storm sewer system map, outfall testing, development of new training and additional maintenance requirements.

The BMP's selected for each minimum control measure are summarized and briefly described in this section. Specific details for each BMP including measurable goals, implementation dates and positions responsible, are stated in each of the respective sections for each control measure in this plan. The Director of Public Works/Town Engineer will be responsible for implementation and future enforcement of each of the BMP's for the six minimum control measures.

ES.2 PERMIT REQUIREMENTS AND IMPLEMENTATION DATES

Registration for the General Permit for the Discharges of Stormwater from Small Municipal Storm Sewer Systems must be submitted to the CTDEP by April 9, 2004 while the SWMP associated with this general permit must be submitted by June 9, 2004. Complete implementation of the stormwater management program is required by the end of the first term of the general permit, which is five years after its issuance. Annual reports to the CTDEP are also required by the permit and must include information such as stormwater outfall testing, implementation and adequacy of selected BMP's and status of measurable goals.

ES.3 PUBLIC EDUCATION AND OUTREACH

This minimum control measure will outline a program to educate Town employees and the public of the impacts of stormwater discharges on water bodies, and inform them of the steps that can be taken to reduce stormwater pollution.

The following BMP's have been selected to address the Public Education and Outreach minimum control measure:

- Brochures / Fact Sheets
- Alternative Information Sources – Web Site, Brochures / Posters for bus and train stops,
- Public Service Announcements
- Library of Educational Materials
- Storm Drain Marking / Stenciling
- Tributary Signage

These BMP's will require the development and distribution of informational materials such as brochures / fact sheets, a web site, brochures and posters for bus and train stops and public service announcements. This broad range of materials is expected to reach a diverse audience covering a large geographic area, as well as targeting specific groups, with the use of slogans, graphics, and catchy phrases. Additionally, the BMP's will require that educational materials be collected and / or developed and maintained in the department's library for employee and public use.

Storm drain marking and stenciling products were developed and provided by the Department of Environmental protection and made available to municipalities for implementation through town community programs in which Wethersfield participated.

Tributary signage is currently used by the CT DOT and will continue to be used in the future as part of the State stormwater management program.

ES.4 PUBLIC INVOLVEMENT / PARTICIPATION

This minimum control measure will outline a program to ensure public support as well as provide community knowledge of pollution problems, by taking a proactive approach and encouraging department employees and the public to get personally involved with monitoring and improving the quality of the environment.

The following BMP's have been selected to address the Public Participation / Involvement minimum control measure:

- Town NPDES Phase II Working Committee
- Public Information Meetings
- Brochure at Public Information Meetings
- Storm Drain Marking/Stenciling
- Hazardous Waste Collection Day
- Library Display Boards

An NPDES Phase II working committee was established, consisting of a diverse range of Town departments and disciplines, for the purposes of assisting in and participating in the development of the SWMP for the department. Initial staff briefings began in December 1999; Meetings began in May of 2004 and have continued on a regular basis through the completion of this plan.

Public information meetings were conducted by the Town in June 2004. The meetings were attended primarily by municipal representatives including public works staff, committee members and interested community groups. A presentation outlining the Town's draft stormwater management plan was given, followed by a comment period where individuals could discuss specific topics in detail. Information including presentation slides, the stormwater management plan executive summary and introduction, and a copy of the state contract for laboratory services was provided to all attendees, and made available on the Town's web page. The attendees were informed that the Town would make information and materials available in the future to aid in the compliance with the adopted stormwater management plan.

ES.5 ILLICIT DISCHARGE DETECTION AND ELIMINATION

This minimum control measure will outline a program that will detect and eliminate potential point sources of contaminants, leaking or discharging into storm sewer systems and ultimately to receiving water bodies.

The following BMP's have been selected to address the Illicit Discharge Detection and Elimination minimum control measure:

- Town Policy Regarding Non-Stormwater Discharges
- Storm Sewer System Map
- Illicit Discharge Detection and Elimination Program
- Future Illicit Discharge Detection and Elimination

The Town does not allow non-stormwater discharges into its storm sewer systems. This policy and guideline will continue as part of this plan.

The development of a storm sewer system map will be required to identify and locate department outfalls greater than or equal to 15" in diameter within urbanized areas and along all roadways. This will require the use of aerial photogrammetry for base mapping and additional survey through GPS techniques to locate outfalls. Further maintenance and development of the mapping will be accomplished through the use of Geographical Information System (GIS) computer software.

The BMP's will also require the development of an illicit discharge detection and elimination program. The program will include testing six (6) different outfalls each year. Each of the three land use categories (residential, commercial and industrial) districts will test two (2) outfalls per year.

The Public Works department will continue to monitor its stormwater discharges in an effort to detect and address future non-stormwater discharges, and will coordinate with the CT Department of Transportation and with adjoining Municipal Separate Storm Sewer Systems (MS4) municipalities and other state agencies in identifying illegal discharge / dumping.

ES.6 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

This minimum control measure will outline a program that will reduce pollutants in any stormwater runoff to MS4's from construction activities that result in a land disturbance of greater than or equal to one acre.

The following BMP's have been selected to address the Construction Site Runoff Control minimum control measure:

- Requirements and Guidelines for Erosion and Sediment Controls
- Procedures for Notifying Construction Site Developers and Operators of Requirements for Registration
- Requirements for Construction Site Operators to Implement Appropriate Erosion and Sediment Control Best Management Practices
- Requirements for Construction Site Operators to Control Waste at the Site
- Procedures for Site Plan Review
- Procedures for Receipt and Consideration of Information Submitted by the Public
- Procedures for Site Inspection and Enforcement of Control Measures

The Town requires erosion and sediment controls and registration of permits for all Local municipal construction projects. The requirements associated with these items are detailed in several documents / publications developed by the State of Connecticut including the CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction, Form 814A, the CTDOT Consultant Engineers Manual and the CTDOT Drainage Manual. Direct reference to the Connecticut Guidelines for Soil Erosion and Sediment Control is made in these documents to provide additional guidance and procedures to be utilized as it relates to this minimum control measure.

All projects with land disturbance of greater than or equal to one (1) acre associated with construction activities shall be registered under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities with the CTDEP. Registration shall be submitted a minimum of thirty (30) days prior to the start of construction as required by the general permit

Construction site operators are required to implement appropriate erosion and sediment control best management practices as outlined in contract plans, contract specifications and standard specifications. The operators are required to control the above-mentioned waste by contract specifications, the department's standard specifications, Form 814A and all pertinent state and federal regulations.

Construction plans and specifications are reviewed for site runoff control by the Engineering Department for conformance to department, federal and state permit requirements. Procedures for receipt and consideration of information submitted by the public are utilized by the department. Information submitted by the public is forwarded to the Engineering department for consideration. Information related to construction site runoff is forwarded to and considered by the Inland Wetlands & Watercourses Commission.

Site inspection and enforcement of control measures are utilized on the entire department's projects and private projects. Inspectors employed by the Town are authorized to inspect all work performed and materials furnished for each project. The inspection may extend to all or any part of the work, and to the preparation or manufacture of the materials to be used including work and materials relating to construction site runoff control.

ES.7 POST CONSTRUCTION STORMWATER MANAGEMENT

This minimum control measure will outline a program that will address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development, that discharge into small MS4's.

The following BMP's have been selected to address the Post Construction Site Runoff Control minimum control measure:

- Requirements for Structural and Non-Structural BMP's
- Procedures for Addressing Post Construction Runoff from Construction and Reconstruction Projects
- Ensuring Long Term Operation and Maintenance of Best Management Practices
-

The Public Works Department will require structural and non-structural BMP's for projects disturbing greater than or equal to one (1) acre. For drainage systems containing four to ten catch basins which discharge within fifty feet of a regulated area where applicable;

- Eliminate curbing, design for sheet flow and utilize natural vegetation to help filter particulates. On steep embankment slopes, erosion protection measures should be employed.
- Utilize oversized catch basins with four-foot deep sumps. (It may be justified to provide six-foot sumps at the last two catch basins in the system if there are no conflicts with groundwater, ledge rock, rights-of-way or underground utilities.)
- If end treatments such as hydrodynamic separators (gross particle separators) wet ponds or detention basins are constructed at the terminus of the drainage system, deep catch basin sumps can be eliminated.

- Additionally, sumps (any depth) should not be specified for any manholes or for catch basins on storm drainage systems which are 36 inches or greater in diameter. At all locations where deep sumps are specified, the maximum depth of structure shall not exceed twelve feet as measured from the top-of-grate elevation.
- Utilize outlet protection such as riprap energy dissipaters; scour holes, stone check dams erosion control matting and vegetative linings in outlet channels.

For drainage systems containing ten or more catch basins which discharge within fifty feet of a regulated area where applicable;

- Outlet areas shall be designed so that an open channel with check dams, a sediment basin, or a combination of both is specified; these shall be designed to accommodate the peak runoff associated with the “first flush”, known as Water Quality Flow (WQF).

The last option is to specify a Hydrodynamic Separator also known as a Gross Particle Separator. Studies related to the efficiency of these chambers with respect to storm water treatment are ongoing.

Pending the publication and review of specific performance data, the following guidelines shall be applied:

- Hydrodynamic separators shall be designed to accommodate the peak runoff associated with the “first flush”, known as the Water Quality Flow (WQF). The WQF shall be determined using the procedures outlined in Chapter 11, Appendix C of the CT DOT Drainage Manual.
- Chambers shall be placed “off-line” and a bypass system shall be designed to convey the peak flow rate for the design storm.
- Hydrodynamic separators are best suited for the treatment of storm runoff from site drainage related to transportation facilities such as bus or train stations, maintenance garages, rest areas or commuter parking lots. Roadway applications should be limited primarily to urban areas. The number of catch basins refers to the combined total of existing and proposed State maintained structures.

The following items describe situations wherein catch basin inlets need not be included in the overall structure count:

- Inlets on town maintained systems or within private developments adjoining State highways which connect to the State system, as long as a distinct separation point (catch basin or manhole) exists or will be

constructed at the junction of the two facilities. This will allow access for testing purposes should water quality issues arise at the discharge point of the State system.

- Catch basins located in grassed areas 20 feet or more from the pavement edge.
- Ancillary catch basins that are internal to the drainage area and contribute no additional runoff to the storm sewer system such as flanker basins, basins intended to improve intersection drainage or inlets placed on steep grades to increase interception.

By issue of internal memorandum to all Public Works Divisions, stormwater management BMP's are required for all projects.

ES.8 POLLUTION PREVENTION / GOOD HOUSEKEEPING

This minimum control measure will outline an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

The following BMP's have been selected to address the Pollution Prevention / Good Housekeeping minimum control measure:

- Operation and Maintenance Program
- Employee Training Program
- Street Sweeping Program
- Catch Basin Maintenance Program
- Preventative Maintenance Program
-

These BMP's will require the continuation of the Town's operation and maintenance program. Training will continue to be provided for the proper operation and maintenance of the Town's facilities and roadways. Additional training will be developed to directly address storm water management and this SWMP. Record keeping will continue to be performed and will be modified to incorporate additional information associated with the SWMP.

Sweeping of all roadways, parking lots and facilities will be performed at least once every year. Selected urbanized areas such as low spots will receive multiple sweeps per year based upon priority areas, where sediment/debris has been known to accumulate in higher quantities. The sweeping will be performed as soon as possible after snowmelt.

The Town will attempt to annually clean at least one third (1/3) of their catch basins that have reached at least half of the capacity of the sump. These catch basins may be selected based upon routine scheduled field inspections and also inspections resulting from

other program requirements. The department will conduct routine inspections by selecting a representative number of catch basins for each stretch of roadway, parking lot and facility, once every year. If a catch basin sump is found to be more than one half (1/2) full, the catch basin will be cleaned.

The department will continue to operate its preventative maintenance program and will incorporate all of the requirements of this general permit.

ES.9 ADDITIONAL REQUIREMENTS

The following topics are also required for compliance with the General Permit for the Discharge of Stormwater from Small Municipal Storm Sewer Systems. A detailed explanation of each of these requirements is located in Section 7 of this plan.

- Authorization Under this General Permit
- Proper Operation and Maintenance
- Availability of Information
- Keeping Plans Current
- Monitoring Requirements
- Reporting and Record Keeping
- General Discharge Requirements
- Total Maximum Daily Load (TMDL) Allocations if applicable
- Regulations of Connecticut State Agencies
- Duty to Correct and Report Violations
- Duty to Provide Information
- Correction of Inaccuracies
- Other Applicable Law

MIMINUM CONTROL MEASURES SUMMARY

Target Date (year)

PUBLIC EDUCATION AND OUTREACH	1	2	3	4	5
Develop brochure/fact sheet					
Display and distribute brochure/fact sheet public information meetings					
Develop brochure, develop website					
Develop/ broadcast of PSA on Channel 16					
Establish library and make materials available to PW employees public and consultant community					

PUBLIC INVOLVEMENT/PUBLIC PARTICIPATION

Catch basin stenciling					
Tributary Signage					
Brochure/Fact Sheet					

ILLCIT DISCHARGE DETECTION & ELIMINATION

Storm sewer mapping					
Detection and elimination program					

CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Review and update manuals					
Implement registration and compliance requirements					
Develop BMPs for construction site operators					
Develop site plan review BMPs					
Develop receipt consideration for public input					
Develop site inspection and enforcement BMPs					

POST CONSTRUCTION STORMWATER MANAGEMENT

Implement Structural and non structural BMPS sites > 1ac					
Address post construction BMP procedures					
Address long term operation and maintenance of BMPs					

POLLUTION PREVENTION/GOOD HOUSEKEEPING

	1	2	3	4	5
Develop O&M BMPs					
Employee training program					
Street sweeping program					
Catch basin inspection and cleaning program					
Preventative maintenance BMP					

SECTION 1 – PUBLIC EDUCATION AND OUTREACH

This minimum control measure is critical to the success of the stormwater management program as it helps to ensure greater support for the program and greater compliance. Support for the program by the public and department employees results in a better understanding of the reasons why the program is necessary and how the human environment affects water quality.

1.1 REQUIREMENTS

Implementation of a public education program is required to distribute educational materials to the public or conduct equivalent outreach activities regarding the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

Appropriate BMP's and measurable goals for this minimum control measure must be determined. These must include the persons(s) or position(s) responsible and implementation dates for each BMP.

1.2 BEST MANAGEMENT PRACTICES

The following BMP's will be utilized in the implementation of the program to address the minimum control measure for Public Education and Outreach.

1.2.1 Brochures / Fact Sheets

Brochures / fact sheets or electronic media will be developed that addresses the effects of stormwater quality on the environment and how to improve stormwater quality. The brochure or fact sheet will be available to the public at public information meetings and public hearings during the department's design process. The brochure will be developed by the end of the first year of the program with distribution occurring at the public meetings during the following years on an incremental basis. This phased approach will allow for revisions to the brochure and distribution methods prior to full implementation.



Photograph of Brochures/Fact Sheets for Distribution

The benefits associated with this BMP include reaching a diverse audience covering a large geographic area. Public information meetings are conducted by the Town Public Works Department at various locations throughout the Town on a continuous basis as part of the department's design process.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

**Table 1.1 Brochure / Fact Sheet BMP
Measurable Goals and Implementation Dates**

Target Date	Activity	Responsible Person
Year 1	Develop brochure/fact sheet	Michael Turner
Year 2	Display and distribute brochure/fact sheet at 5 public information meetings	Don Moisa
Year 3	Display and distribute brochure/fact sheet at 10 public information meetings	Don Moisa
Year 4	Display and distribute brochure/fact sheet at 20 public information meetings	Don Moisa
Year 5	Display and distribute brochure/fact sheet at all public information meetings	Don Moisa

1.2.2 Alternative Information Sources – Web Site, Brochures / Posters for bus and train stops, Public Service Announcements

A web site will be developed that addresses the effects of stormwater quality on the environment. The web site will be a part of the Engineering Department's web page and will be available to the public by means of Internet access and the intranet for department personnel. The web site will be developed during the first and second year of the program with access to the public and department personnel beginning in the third year of the program. Links to additional web sites including CTDEP, EPA and other stormwater resources will be incorporated into the web site.

A brochure or poster to be placed in library/town hall entrance lobby will also be developed that heightens awareness on stormwater quality on the environment. The brochure or poster will be developed during the first and second year of the program with distribution and placement of the display in the third year.

Public service announcement's (PSA's) will be broadcast on Local Government Access channel to educate targeted or mass audiences about problems and solutions, build support for remediation and retrofit projects, and / or generate awareness and interest in stormwater management. The PSA's will be developed by the end of the second year and distributed / broadcast in the third year.



Photograph of Community Access
Television Broadcast

The benefits associated with these BMP's include creating awareness and making information available to a very large, diverse audience. A web site will take advantage of current technology reaching an audience using Internet access, while brochures and posters displayed at bus and train stations will reach users of mass transit systems in the state at various locations. PSA's will reach a large, diverse audience as well including users of the department's roadways and mass transit systems in the state.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

**Table 1.2 Alternative Information Sources BMP
Measurable Goals and Implementation Dates**

Target Date Activity	Activity	Responsible Person
Year 1	Develop brochure, develop website Evaluate and select media type for PSA's	Michael Turner
Year 2	Develop brochure, develop website	Don Moisa
Year 3	Display brochure at 505	Don Moisa

	Silas Lobby. Website accessible to public Initial broadcast of PSA on Channel 16	
Year 4	Display / distribute brochure Town Hall Lobby. Evaluate website and implement changes as required . Increase PSA broadcast 2 times per year	Don Moisa
Year 5	Display brochure at Town Hall Lobby entrance. Evaluate website and implement changes as required Increase PSA broadcast 2 times per year	Don Moisa

1.2.3 Library of Educational Materials

A small library of educational materials will be developed and maintained at the Engineering Department's at Town Hall, Wethersfield, Connecticut. The library will consist of data, information, fact sheets and guidelines pertaining to stormwater management. The library will be available to the Public Work's department's employees and available to the public and consultant community on request. Collection of materials and resources will occur during the first and second years, cataloged / organized in the third year, and the materials in the library being made available in the fourth year.

The benefits associated with this BMP include establishing a library within the Department for data and information relating to stormwater management and quality, accessible to department employees and the public for reference.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.



Photograph of Education Material Library

Target Date Activity	Activity	Position Responsible
Year 1	Collect data and information	Michael Turner
Year 2	Collect data and information	Chris Zibbideo
Year 3	Catalog / organize collected materials	Chris Zibbideo
Year 4	Establish library and make materials available to PW employees	Chris Zibbideo
Year 5	Access to library made available to the public and consultant community	Chris Zibbideo

Table 1.3 Library of Educational Materials BMP Measurable Goals and Implementation Dates

1.2.4 Storm Drain Marking / Stenciling

Storm drain marking / stenciling involves labeling storm sewer inlets with painted messages or prefabricated plaques, warning citizens not to dump pollutants into the inlets. The messages are generally a simple phrase or picture to remind the public that inlets and storm sewers systems connect to local water bodies and that illegal dumping pollutes those waters.

Storm drain marking / stenciling products have been developed and evaluated by the Department of Environmental Protection for distribution to municipalities. They have been tested to ensure that the message is effective and that the materials and installation methods are capable of withstanding weather conditions and vehicular/pedestrian traffic. Use of these markings / stencils is not prudent for most of the CT DOT roadways since traffic volumes are high and pedestrian access is limited, making installation difficult and limiting visibility of the marking / stenciling. However, the Town Public Works Department will develop these markings / stencils primarily for use on appropriate roadways within each community.

The markings / stencils will be ready for limited installation during the first thru third year of the program.

The benefits associated with this BMP include increased public awareness. It will

educate and demonstrate to the public the direct link between the storm sewer system and the surface waters to which it drains. Additionally, stenciling projects will provide a lead- in to volunteer monitoring projects and increase community participation in a variety of other stormwater-related activities.



Photograph of Catch basin Stenciling Program

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

**Table 1.4 Storm Drain Marking / Stenciling BMP
Measurable Goals and Implementation Dates**

Target Date	Activity	Position Responsible
Year 1	Evaluate stenciling / marking materials and installation methods. Select preferred material, installation method and graphic / message. Install on 1/3 local roads.	Michael Turner
Year 2	Complete Install program on second 1/3 local roads	Lonnie Davis
Year 3	Complete install remaining 1/3 Town roads. Evaluate program effectiveness.	Lonnie Davis
Year 4	Install missing stencils	Lonnie Davis
Year 5	Evaluate Program	Michael Turner

1.2.5 Tributary Signage

A tributary signage program is already in place within the CT Department of Transportation. The DOT Division of Traffic Engineering has guidelines and standards for the placement of various signs at a variety of water bodies and watercourses throughout the state, including public water supply areas.

The signs include bridge and river information signs and public drinking water protection signs. It is the Town's intention of continuing this program at the local level to install signs along town local routes which cross brooks and streams.

The benefits associated with this BMP include public awareness of local water resources. These include public water supplies areas, rivers, streams and tributaries along the Town's roadways.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

**Table 1.5 Tributary Signage BMP
Measurable Goals and Implementation Dates**

Target Date	Activity	Position Responsible
Year 1 to 4	Continue tributary signage program	Jim McDonald
Year 5	Complete tributary signage	Jim McDonald



SECTION 2 – PUBLIC INVOLVEMENT / PARTICIPATION

This minimum control measure is a key component to the stormwater management program as it helps to ensure broader public support, and shorter implementation schedules, as well as provide a broader base of knowledge. Persons who are personally involved with the decision making process are less likely to challenge the program and can provide a valuable resource of knowledge that will be beneficial to the development, implementation and enforcement of the program.

2.1 REQUIREMENTS

Compliance with applicable State and local public notice and Freedom of Information regulations are required when implementing a public involvement/participation program. Where notice requirements are inconsistent, the notice provisions providing for the most notice and opportunity for public comment shall be followed.

The development of a public involvement/participation program that includes the public in developing, implementing, and reviewing the stormwater management program is required.

Appropriate BMP's and measurable goals for this minimum control measure must be determined. This must include the persons(s) or position(s) responsible and implementation dates for each BMP.

2.2 BEST MANAGEMENT PRACTICES

The following BMP's will be utilized in the implementation of the program to address the minimum control measure for Public Participation and Involvement.

2.2.1 NPDES Phase II Working Committee

As part of the development of the stormwater management plan, a working committee was established with representatives of several Town Departments and Divisions including, Engineering, Physical Services, Recreation & parks, health, Fire marshal, Data Services, Geographic Information System, Economic Development and Planning.

During the development of the plan, the committee met to discuss relevant issues and provide input and guidance in the development of the plan. The committee met on a biweekly basis beginning in 2004 through the completion of the Stormwater Management Plan. A list of the members of the working committee can be found in the appendix of this document, Section I.4.

The benefits associated with this BMP include the participation and knowledge of representatives of the units involved in planning, design, construction and maintenance within the department, which covers a wide range of disciplines.

2.2.2 Public Information Meetings – Stormwater Management Plan Development

A Public information meeting was held during the development of the Stormwater Management Plan to allow for public participation and comment. The meeting was held at the Wethersfield Town Hall in June 2004.

The public information meetings were conducted by the Public Works Department. The purpose of the meetings was to provide information, answer questions, and receive comments on Town's Draft Stormwater Management Plan (SWMP). A handout was provided that included copies of presentation slides, the SWMP executive summary and introduction, and a copy of the State of Connecticut contract for laboratory services. The presentation was followed by a comment period, where individuals could discuss specific topics in detail.

The meetings were attended by numerous people including municipal representatives, public employees, the general public and some environmental groups also attended. Generally, the comments resulting from the presentation related to specific details about how the department would coordinate with the State and adjoining towns in situations where there was overlap between state and municipal facilities. Questions pertaining to the requirements of the CTDEP general permit (state and municipal) including specific dates and deadlines were also posed. In addition, there was an interest in the availability of state resources for use with municipal general permits and storm water management plans.



Photograph of Public Involvement Meeting

The public comments resulting from the information meetings were recorded, reviewed and implemented as appropriate.

The benefits associated with this BMP include the accumulation of ideas from a diverse audience and all interests who can share their knowledge and concerns. Public meetings are an excellent way to inform the public about stormwater impacts in addition to gaining support for the proposed stormwater management plan and program. Key issues, especially those that directly affect the public, can be described during these meetings to increase awareness of the departments and public's role in the program including responsibility, implementation dates, and expected benefits.

2.2.3 Brochures at Public Information Meetings

Brochures / fact sheets or electronic media will be developed that addresses the effects of stormwater quality on the environment and how to improve stormwater quality. The brochure or fact sheet will be available to the public at public information meetings and public hearings during the department's design process. The brochure will be developed by the end of the first year of the program with distribution occurring at the public meetings during the following years on an incremental basis. This phased approach will allow for revisions to the brochure and distribution methods prior to full implementation.

The benefits associated with this BMP include reaching a diverse audience covering a large geographic area. Public information meetings are conducted by the Town Public Works Department at various locations throughout the Town on a continuous basis as part of the department's design process.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

**Table 2.1 Brochure / Fact Sheet BMP
Measurable Goals and Implementation Dates**

Target Date	Activity	Responsible Person
Year 1	Develop brochure/fact sheet	Michael Turner
Year 2	Display and distribute brochure/fact sheet at 5 public information meetings	Don Moisa
Year 3	Display and distribute brochure/fact sheet at 10 public information meetings	Don Moisa
Year 4	Display and distribute brochure/fact sheet at 20 public information meetings	Don Moisa
Year 5	Display and distribute brochure/fact sheet at all public information meetings	Don Moisa

2.2.4 Storm Drain Marking / Stenciling

Storm drain marking / stenciling involves labeling storm sewer inlets with painted messages or prefabricated plaques, warning citizens not to dump pollutants into the inlets. The messages are generally a simple phrase or picture to remind the public that inlets and storm sewers systems connect to local water bodies and that illegal dumping pollutes those waters.

Storm drain marking / stenciling products have been developed and evaluated by the Department of Environmental Protection for distribution to municipalities. They have been tested to ensure that the message is effective and that the materials and installation methods are capable of withstanding weather conditions and vehicular/pedestrian traffic. Use of these markings / stencils is not prudent for most of the CT DOT roadways since traffic volumes are high and pedestrian access is limited, making installation difficult and limiting visibility of the marking / stenciling. However, the Town Public Works Department will develop these markings / stencils primarily for use on appropriate roadways within each community.

The markings / stencils will be ready for limited installation during the first thru third year of the program. The installation will involve the use of civic groups such as Boy Scouts or local conservation groups under direction of Town staff.

The benefits associated with this BMP include increased public awareness. It will educate and demonstrate to the public the direct link between the storm sewer system and the surface waters to which it drains. Additionally, stenciling projects will provide a lead- in to volunteer monitoring projects and increase community participation in a variety of other stormwater-related activities.



Photograph of Catch Basin Stenciling

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

**Table 2.4 Storm Drain Marking / Stenciling BMP
Measurable Goals and Implementation Dates**

Target Date	Activity	Position Responsible
Year 1	Evaluate stenciling / marking materials and installation methods. Select preferred material, installation method and graphic / message. ID public group and train for installs. Complete 1/3 local roads.	Michael Turner
Year 2	Complete Install program on second 1/3 local roads	Lonnie Davis
Year 3	Complete install remaining 1/3 Town roads. Evaluate program effectiveness.	Lonnie Davis
Year 4	Install missing stencils	Lonnie Davis
Year 5	Evaluate Program	Michael Turner

3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION

This minimum control measure is critical to the success of the stormwater management program as it will identify and reduce untreated discharges that contribute high levels of pollutants, including heavy metals, toxic materials, oil and grease, solvents, nutrients, viruses and bacteria to receiving water bodies. Pollutant levels from these illicit discharges have been shown to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

3.1 REQUIREMENTS

Town wide

- 3.1.1 Implementation of a Town ordinance or other regulatory mechanism to effectively prohibit non-stormwater discharges.
- 3.1.2 Inform public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste.
- 3.1.3 By the end of the third year of the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, expand the map detailed below in Section 3.1.4. to identify on such map all outfalls of 12” or greater where such outfalls are located anywhere on Town property.
- 3.1.4 By the end of the second year of the general permit, develop a map or series of maps at a minimum scale of 1”=100’ showing all stormwater discharges from a pipe or conduit with a diameter of 15” or greater (or equivalent cross-sectional area) owned or operated by the Town. For each discharge the following information shall be included:
 - a. Type, material, and size of conveyance, outfall or channelized flow (e.g. 24” concrete pipe).
 - b. The name and Surface Water Quality Classification of the immediate surface water body (if available) or wetland to which the stormwater runoff discharges within 500’.
 - c. If the outfall does not discharge directly to a named water body, the name of the nearest named water body to which the outfall eventually discharges.
 - d. The name of the watershed in which the discharge is located.
- 3.1.5 By the end of the fourth year of the general permit, extend the map detailed in Section 3.1.4. to identify on the map all outfalls 12” or greater that are located within an urbanized area.

- 3.1.6 Develop, implement and enforce a program to detect and eliminate existing illicit discharges, as defined in 40CFR 122.26(b)(2).
- 3.1.7 Develop and implement a plan to detect and address future non-stormwater discharges, including illegal dumping.

Appropriate BMP's and measurable goals for this minimum control measure must be determined. This must include the persons(s) or position(s) responsible and implementation dates for each BMP.

3.2 BEST MANAGEMENT PRACTICES

The following BMP's will be utilized in the implementation of the program to address the minimum control measure for Illicit Discharge Detection and Elimination.

3.2.1 Town Policy Regarding Non-Stormwater Discharges

The Town does not allow non-stormwater discharges into storm sewer systems owned and maintained by the Town. Upon identifying a non-stormwater discharge, the source of the discharge shall be determined and if found to be beyond or outside the public work's department's system, the appropriate MS4 will be notified along with the Town Attorney.

If the non-stormwater discharge is from a State of Connecticut Department facility, the source location shall be confirmed and corrective actions taken to eliminate the non-stormwater discharge. The Town will continue to prohibit these discharges and will use all available resources for its enforcement.

Training will be provided to Town department personnel regarding the hazards associated with illegal discharges and improper disposal of wastes.

3.2.2 Storm Sewer System Map(s)

A storm sewer system map(s) will be developed, showing the location of all outfalls greater than or equal to 15" in diameter and the names and locations of all waters of the United States that receive discharges from those outfalls. The map will include, but not be limited to, all town owned facilities (including buildings, highways, roadways) within urbanized areas. The map(s) scale will be a minimum of 1"=100' and will include the following information at a minimum:

- Type, material and size of conveyance
- Type of discharge (i.e. outfall or channelized)
- Name and Surface Water Quality Classification of immediate surface
- Water body or wetland discharged into, or name of nearest named water body downstream
- Name of drainage basin discharge is located in, as per June 1982 Atlas of the Public Water Supply Source and Drainage Basins of Connecticut

The map(s) will be developed using three main components, base mapping, existing data records and field surveys. The Engineering Department will obtain aerial photogrammetry (Year 2003 flight from MDC), to establish a base map on which the storm sewer information will be overlaid. All existing information for drainage systems and outfall locations will be collected from state, regional and local government including, but not be limited to:

- Digital and Non-Digital existing surveys
- As-Built plans
- Construction plans
- ROW maps
- Town mapping
- MDC mapping
- Video Log

Field surveys will be performed by the Engineering Department using GPS (mapping grade), to verify existing structure locations and locate missing structures. Due to the size of the Public Work's Department's storm drainage facilities and the extent of the mapping needed, the map will be completed within five years.

The Engineering Department will establish a system (database) to manage all of the information associated with the map(s). The database will utilize a Geographical Information System (GIS) to build and query the information, which will be accessible to all offices of the department. The database will include but not limited to the following information associated with outfalls:

- ID number
- Town
- Size
- Shape
- Elevation
- Flow
- Direction
- Associated structures
- Associated water bodies receiving stormwater discharges

The storm sewer map is a component of the program that will require continuous maintenance after its initial development. The Engineering Department will allocate the necessary personnel and materials needed to keep the map up to date with the latest storm sewer system configurations and information.

The benefits associated with this BMP include providing awareness of the intake and discharge areas of the Town's systems. This information will be helpful in determining the extent of dry weather flows, potential sources and the particular water bodies that these flows may be affecting. The map will also be useful in identifying the responsible parties associated with specific illicit discharges.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Example of Storm Sewer System Mapping. 1"=200' topographic mapping showing contours, storm sewer system and outfalls.



**Table 3.1 Storm Sewer System Map
BMP Measurable Goals and Implementation Dates**

Target Date	Activity	Position Responsible
Year 1	Acquire initial base mapping (Aerial Photogrammetry.) Perform initial 25% of Field Data Collection Purchase workstation and software	Michael Turner
Year 2	Perform 25% of Field Data Collection Modify and maintain database (GIS)	Don Moisa
Year 3	Perform 25% of Field Data Collection Modify and maintain database (GIS)	Don Moisa
Year 4	Perform Final 25% of Field Data Collection Modify and maintain database (GIS)	Don Moisa
Year 5	Complete initial layout of storm sewer system map	Don Moisa

3.2.3 Illicit Discharge Detection and Elimination Program

A program will be developed and implemented to detect, locate and eliminate illicit discharges (to the maximum extent practicable) into the department's storm sewer systems. The plan will utilize sampling/monitoring techniques, personnel and equipment, along with the storm sewer map (Section 3.2.2) for locating sources of illicit discharge.

Stormwater monitoring shall be conducted by the Engineering Department annually starting in the second year of the program. Samples shall be collected from discharges resulting from a storm event that is greater than 0.1 inch in magnitude and that occurs at least 72 hours after any previous storm event of 0.1 inch or greater. Runoff events resulting from snow or ice melt cannot be used to meet the minimum annual monitoring requirements. Grab samples shall be used for all monitoring. Grab samples shall be collected during the first (6) hours of a storm event discharge by Town staff or our consulting Environmental Engineer. A field sample of ph, turbidity and conductivity will be taken at the site.

The following information shall be collected for the storm events monitored:

- Date
- Air Temperature
- Time of the start of the discharge
- Time of sampling
- Magnitude (in inches) of the storm event sampled
- Duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event



Photograph of Water Quality Sampling

Unless otherwise specified, all pollutant parameters shall be tested according to methods prescribed in Title 40, CFR, Part 136 (1990). Testing of these parameters shall be performed at certified state laboratories. The parameters to be tested at each discharge point shall include:

- pH(SU) (Taken with field equipment)
- Hardness (mg/l)
- Conductivity (umhos) (Taken with field equipment)
- Oil and grease (mg/l)
- Chemical Oxygen Demand (mg/l)
- Turbidity (ntu) (Taken with field equipment)
- 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/100ml)
- In addition to this list of parameters, uncontaminated rainfall pH shall be measured at the time the runoff sample is taken (Taken with field equipment).

The Engineering Department will sample/monitor six (6) different outfalls annually. Each of the three land use types (residential, commercial and industrial) will have two (2) samples from outfalls annually. The initial sample points will be defined in maps contained in the appendix of this document. Outfalls will be selected for monitoring

based upon land use type, road type and average daily traffic (ADT) grouping associated with a particular outfalls drainage area.

Levels of pollution in stormwater runoff typically increase with increased volumes of traffic. For multi- facility locations and locations where state owned property is leased and/or operated by public or private entities (abutting MS4), the Engineering Department and the adjoining MS4 would be co-permittees. The department would be responsible for its system up to the tie in or connection point, while the MS4 would be responsible from the connection point upstream.

If an illicit discharge is identified within a state-owned system, the Engineering Department will be responsible for determining whether the sources origin is located within its system. If the illicit discharge is determined to be from a point beyond the department's system, the MS4 will be notified as well as a copy of the notification also being sent to the Town Attorney.

The Town's facilities that are currently covered under the General Permit for the Discharge of Stormwater Associated with Industrial Activity will remain under that permit, and therefore will not be subject to the requirements of this permit or covered under this stormwater management program. These facilities will be covered and operated under their respective Stormwater Pollution Prevention Plans.

Documentation, including annual reports, will be performed, and will include information such as: the number of outfalls tested, complaints received and addressed, and the number of illicit discharges and quantities of flow eliminated. Refer to Section- 7 "Additional Requirements" for specific details regarding annual reports to CTDEP.

The benefits associated with these BMP's include the identification and elimination of point sources of pollutant discharges and establishing a working database of information that will be useful in locating problematic areas.



Photograph of Illicit Discharge Detected

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Table 3.2 Detection and Elimination Program

BMP Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1	Purchase monitoring equipment Personnel training Select outfalls to be tested	Michael Turner
Year 2	Perform outfall monitoring 4 Outfalls tested (4 per land use District)	Paul Hutcheon
Year 3	Perform outfall monitoring 4 Outfalls tested (4 per Land use District)	Paul Hutcheon
Year 4	Continue outfall monitoring 4 Outfalls tested (4 per land use District)	Paul Hutcheon
Year 5	Continue outfall monitoring 4 Outfalls tested (4 per land use District)	Paul Hutcheon

3.2.4 Future Illicit Discharge Detection and Elimination

The Engineering and Health departments will continue to monitor its stormwater discharges in an effort to detect and address future non-stormwater discharges and will coordinate with MS4's, municipalities and other state agencies in identifying illegal dumping.

SECTION 4 – CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

This minimum control measure is a critical component of the Stormwater Management Program because polluted stormwater runoff from construction sites often flows to storm sewer systems and ultimately is discharged into local rivers and streams. Sediment is typically the main pollutant of concern but other pollutants include solid and sanitary wastes, phosphorous (fertilizer), pesticides, nitrogen (fertilizer), oil and grease, concrete truck washout, construction chemicals and construction debris.

Sediment runoff rates from construction sites are typically greater than those of agricultural lands, and significantly greater than those of forestlands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation, and the contribution of other pollutants from construction sites can cause physical, chemical, and biological harm to the state's waters.



Photograph of Fill Placement for
Road Construction

4.1 REQUIREMENTS

The development, implementation and enforcement of a program, or modification of an existing program, is required to reduce pollutants in any stormwater runoff to the Municipal Separate Storm Sewer System (MS4) from construction activities that result in a land disturbance of greater than or equal to one (1) acre. Reduction of stormwater discharges from construction activity disturbing less than one acre shall be included in the program if that construction activity is part of a larger common plan of development that would disturb one acre or more.

The program shall include but not be limited to the following requirements:

- 4.1.1 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.
- 4.1.2 Procedures for notifying construction site developers and operators of the

requirements for registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities.

- 4.1.3 Requirements for construction site operators to implement appropriate erosion and sediment control best management practices in accordance with the “2002 Connecticut Guidelines for Soil Erosion and Sediment Control”.
- 4.1.4 Requirements for construction site operators to control waste at the site such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.
- 4.1.5 Procedures for site plan review, which incorporate consideration of potential water quality impacts.
- 4.1.5 Procedures for receipt and consideration of information submitted by the public.
- 4.1.6 Procedures for site inspection and enforcement of control measures.

Appropriate BMP’s and measure goals for this minimum control measure must be determined. This must include the persons(s) or position(s) responsible and implementation dates for each BMP.

4.2 BEST MANAGEMENT PRACTICES

The following BMP’s will be utilized in the implementation of the program to address the minimum control measure for Construction Site Runoff Control.

4.2.1 Requirements and Guidelines for Erosion and Sediment Controls

The Engineering Department requires erosion and sediment controls for all projects in accordance with all state and federal regulations. Several documents are utilized for establishing guidelines and procedures for the use of erosion and sediment controls in planning, design and construction for state owned or state funded projects. These documents include the following:

- CTDOT Consultant Engineers Manual, March 1998 and supplements thereto
- CTDOT Drainage Manual, October 2000 and supplements thereto
- CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction, Form 814A, 1995 and supplements thereto
- Connecticut Guidelines for Soil Erosion and Sediment Control, DEP Bulletin 34, 2002 and supplements thereto

Examples of guidance, documents, design manuals and standard specifications utilized by the Town Department relating to erosion and sediment control Construction Site Stormwater Runoff Control

CTDOT Consultant Engineers Manual

Chapter 700, titled “Completion of Plans”, Section 718 of the Consultant Engineers Manual outlines requirements for sediment and erosion control plans. Chapter 800, titled “Environmental Activities” outlines various permit requirements which the department is subject to by state Statutes and federal regulations.

The manual also directly refers to the Connecticut Guidelines for Soil Erosion and Sediment Control requiring that erosion and sediment control plans be prepared in accordance with the guidelines.

CTDOT Drainage Manual

Erosion and sediment control is addressed in Chapter 8.5.4 of the department’s Drainage Manual. The design of outlet protection for all projects being designed or funded by the department shall be in accordance with the Drainage Manual versus the Connecticut Guidelines for Soil Erosion and Sediment Control. Outlet protection is discussed and the procedures for designing outlet protection are contained in chapter 11.13 of the Drainage Manual. The methodology outlined in the Drainage Manual has been accepted by the CTDEP for use by the department.

CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction, Form 814A

The standard specifications directly refer to the Connecticut Guidelines for Soil Erosion and Sediment Control requiring that erosion and sedimentation control plans be prepared in accordance with the guidelines. This is outlined in Section 1.10, Environmental Compliance under Best Management Practices.

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

These guidelines are referenced by the department’s design manuals and made part of contracts by inclusion in the department’s standard specifications.

Ordinances, Regulatory Mechanisms and Sanctions

The Public Work’s department is not authorized by state statutes to impose sanctions for noncompliance with regard to erosion and sediment control. The department does have the authority to force corrective actions on behalf of the contractor to comply with appropriate regulations and controls. In case of failure by the contractor to perform pollution control work, the department shall arrange for the performance of required work by approved forces. The cost of such work shall be deducted from any monies due or which may become due to the contractor under the contract or under any State contract.

Appropriate measures shall be employed by the Engineering Department to ensure compliance by contractors with sediment and erosion control plans for specific projects. The department shall notify and coordinate with the Town Attorney's office as required for compliance and sanction issues beyond the department's control.

Site specific BMP's to be utilized on projects may include the following:

Runoff Control

- Minimize Clearing
- Land Grading
- Permanent Diversions
- Preserving Natural Vegetation
- Construction Entrances
- Check Dams
- Filter Berms
- Grass Lined Channels
- Riprap

Erosion Control

- Mulching
- Permanent Seeding
- Sodding
- Soil Roughening
- Geotextiles
- Gradient Terraces
- Soil Retention
- Temporary Slope Drain
- Temporary Stream Crossings
- Vegetated Buffer
- Construction Sequencing
- Dust Control



Photograph of Silt Fence Sediment Barrier

Sediment Control

- Temporary Diversion Dikes

- Brush Barriers
- Silt Fence
- Sediment Basins and Stone Check Dams
- Sediment Filters and Chambers
- Sediment Traps
- Storm Drain Inlet Protection

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.



Photograph of Silt Fence Tree Protection Barrier

Table 4.1 Requirements and Guidelines for Erosion and Sediment Controls BMP, Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1	Review Consultant Engineer's Manual, Drainage Manual and Standard Specifications to Implement 1 Acre Disturbance Threshold	Don Moisa
Year 2 - 5	Continue Requirements and Guidelines for Erosion and Sediment Controls on all Projects	Don Moisa

4.2.2 Procedures for Notifying Construction Site Developers and Operators of Requirements for Registration

All projects with land disturbance of greater than or equal to one (1) acre associated with construction activities shall be registered under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction

Activities with the CTDEP. Registration shall be submitted a minimum of thirty (30) days before the initiation of construction activities as required by the General Permit.

Section 804.09 of the Consultant Engineer's Manual outlines the requirements associated with the General Permit. Construction activities as defined in the general permit include, but are not limited to, clearing, grubbing, grading, excavation, placement of fill and dewatering activities.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Table 4.2 Procedures for Notifying Construction Site Developers and Operators of Requirements for Registration BMP, Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1	Implement Registration Requirements for all projects exceeding 1 acre threshold	Don Moisa
Year 2 - 5	Continue Compliance with Registration Requirements	Don Moisa

4.2.3 Requirements for Construction Site Operators to Implement Appropriate Erosion and Sediment Control Best Management Practices

Construction site operators are required to implement appropriate erosion and sediment control best management practices as outlined in contract plans, contract specifications and standard specifications.

The Engineering Department references the CTDOT department's "Standard Specifications for Roads, Bridges and Incidental Construction, Form 814A" which outlines the environmental protection requirements in Section 1.10 Environmental Compliance, including sediment and erosion control, which a construction site operator or contractor for the department is bound to meet under the terms of its contract, and under federal and state laws and regulations.

The contractor is required at all times to conduct his operations in conformity with all Federal and State permit requirements concerning water, air, noise pollution and the disposal of contaminated, or hazardous materials.



Photograph of Erosion from Storm Outfall

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Table 4.3 Requirements for Construction Site Operators to Implement Appropriate Erosion and Sediment Control Best Management Practices BMP, Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1 - 5	Continue Requirements for Construction Site Operators to Implement Appropriate Erosion and Sediment Control Best Management Practices	Don Moisa

4.2.4 Requirements for Construction Site Operators to Control Waste at the Site

Building materials and other construction site wastes must be properly managed and disposed of to reduce the risk of pollution from materials such as surplus or refuse building materials or hazardous wastes. Practices such as trash disposal, recycling, proper material handling, and spill prevention and cleanup measures can reduce the potential for stormwater runoff to mobilize construction site wastes and contaminate surface or ground water.

Construction site operators shall be required to control waste including discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

The operators are required to control the above-mentioned waste by contract

specifications, the department's standard specifications, Form 814A and all pertinent local, state and federal regulations.

The proper management and disposal of wastes must be practiced at any construction site to reduce contamination of stormwater runoff. Waste management practices can be used to properly locate refuse piles, to cover materials that may be displaced by rainfall or stormwater runoff, and to prevent spills and leaks from hazardous materials that were improperly stored.

The following are examples of steps that should be taken to ensure proper storage and disposal of construction site wastes:

Waste Collection

Designate a waste collection area onsite that does not receive a substantial amount of runoff from upland areas and does not drain directly to a water body.

- Ensure that containers have lids so they can be covered before periods of rain, and keep containers in a covered area whenever possible.
- Schedule waste collection to prevent the containers from overflowing.
- Clean up spills immediately. For hazardous materials, follow cleanup instructions on the package. Use an absorbent material such as sawdust or kitty litter to contain the spill. Handling and disposal of all hazardous material shall be in accordance with all state and federal regulations.
 - During the demolition phase of construction, provide extra containers and schedule more frequent pickups.
 - Collect, remove, and dispose of all construction site wastes at authorized disposal areas. The CTDEP can be contacted to identify these disposal sites.

Contaminated / Hazardous Materials

Materials will be disposed of by the various departments as solid waste in accordance with the Standard Specifications, contract specifications and all applicable federal, state, and local regulations. Contract specifications for the excavation, transporting, stock piling, securing, disposal of contaminated / hazardous materials and decontamination of equipment will include but not limited to the following:

- Environmental Health and Safety
- Contaminated / Hazardous Materials Excavation
- Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area
- Disposal of Hazardous Waste
- Environmental Work – Solidification
- Disposal of Contaminated Railroad Ties
- Controlled Materials Handling

- Disposal of Contaminated Timber Piles
- Disposal of Controlled Materials
- Management of Reusable Controlled material
- Abandonment of Wells
- Handling and Disposal of Contaminated Concrete
- Handling Contaminated Groundwater

Pesticides

The following practices should be used to reduce risks associated with pesticides or to reduce the amount of pesticides that come in contact with stormwater:

- Follow all federal, state, and local regulations that apply to the use, handling, or disposal of pesticides.
- Do not handle the materials any more than necessary.
- Store pesticides in a dry, covered area.
- Construct curbs or dikes to contain pesticides in case of spillage.
- Follow the recommended application rates and methods.
- Have equipment and absorbent materials available in areas where pesticides are stored and used in order to contain and clean up any spills that occur.

Petroleum

The following management practices should be followed to reduce the contamination risk associated with petroleum products:

- Store petroleum products and fuel for vehicles in covered areas with dikes in place to contain any spills.
- Immediately contain and clean up any spills with absorbent materials.
- Have equipment available in fuel storage areas and in vehicles to contain and clean up any spills that occur.

Fertilizers

Phosphorous- and nitrogen-containing fertilizers are used on construction sites to provide nutrients necessary for plant growth, and phosphorous- and nitrogen containing detergents are found in wash water from vehicle cleaning areas. Excesses of these nutrients can be a major source of water pollution.

Management practices to reduce risks of nutrient pollution may include the following:

- Apply fertilizers at the minimum rate and to the minimum area needed.
- Work the fertilizer deeply into the soil to reduce exposure of nutrients to stormwater runoff.
- Ensure that erosion and sediment controls are in place to prevent fertilizers

- and sediments from being transported off-site.
- Use detergents only as recommended, and limit their use onsite. Wash water containing detergents should not be dumped into the storm drain system—it should be directed to a sanitary sewer or be otherwise contained so that it can be treated at a wastewater treatment plant.

Maintenance Considerations

Containers or equipment that may malfunction and cause leaks or spills should be identified through regular inspection of storage and use areas. Equipment and containers should be inspected regularly for leaks, corrosion, support or foundation failure, or any other signs of deterioration and should be tested for soundness. Any found to be defective should be repaired or replaced immediately.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Table 4.4 Requirements for Construction Site Operators to Control Waste at the Site BMP, Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1 - 5	Continue Requirements for Construction Site Operators to Control Waste at the Site	Don Moisa

4.2.5 Procedures for Site Plan Review

Procedures for site plan review which incorporate consideration of potential water quality impacts are utilized by the Engineering Department. Construction plans and specifications are reviewed by the department’s Town Engineer and by the Town’s Planning Department for conformance to the Public Work’s department’s requirements and federal and state permit requirements relating to construction site runoff control.

Projects requiring registration under the General Permit for the Discharge of Stormwater Associated with Construction Activities shall include site plans along with the permit application and a site specific stormwater pollution control plan for review and registration by the CTDEP.

Table 4.5 Site Plan Review BMP, Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1 - 5	Continue Site Plan Review Procedures	Don Moisa

4.2.6 Procedures for Receipt and Consideration of Information Submitted by the Public

Procedures for receipt and consideration of information submitted by the public are utilized by the department. Information submitted by the public is forwarded to the appropriate staff within the department or Board and Commission for consideration. Information related to construction site runoff is forwarded to and considered by the Wetlands Agent and the Inland Wetlands & Watercourses Commission..

Table 4.6 Procedures for Receipt and Consideration of Information Submitted by the Public BMP, Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1 - 5	Continue Procedures for Receipt and Consideration of Information Submitted by the Public	Don Moisa

4.2.7 Procedures for Site Inspection and Enforcement of Control Measures

Site inspection and enforcement of control measures are utilized on all of the Public Work's Department's projects. Inspectors employed by the department are authorized to inspect all work performed and materials furnished for each project. The inspection may extend to all or any part of the work, and to the preparation or manufacture of the materials to be used including work and materials relating to construction site runoff control.

Additional inspection is also provided by the CT DEP, DOT Environmental Planning unit and the local CT DOT District construction offices where a state funded construction project is underway.

The measurable goals, target dates and responsible position associated with this BMP

are detailed in the following table.

**Table 4.7 Site Inspection and Enforcement of Control Measures BMP
Measurable Goals and Implementation Dates**

Target Date	Activity	Position Responsible
Year 1 - 5	Continue Site Inspection and Enforcement of Control Measures	Don Moisa

SECTION 5 – POST CONSTRUCTION SITE RUNOFF CONTROL

This minimum control measure is a critical component of the stormwater management program because stormwater runoff from developed sites often flows to storm sewer systems and ultimately is discharged into local rivers and streams. Runoff from these development and/or redevelopment areas have been shown to significantly affect receiving water bodies. Many studies indicate that prior planning and design for the minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management.

There are two significant water quality impacts generally associated with post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in stormwater runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans.

The second significant water quality impact occurs due to the increased quantity of water delivered to the water body during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water body. The effects of this process include stream bank scouring and downstream flooding, which often leads to a loss of aquatic life and damage to property.

An effective post construction site runoff control program will minimize water quality impacts and attempt to maintain pre-development runoff conditions.

5.1 REQUIREMENTS

The development, implementation and enforcement of a program, or modification of an existing program is required to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development, that discharge into the Town's storm sewer systems or directly to the waters of the State. The program shall ensure that controls are implemented to require appropriate infiltration practices, reduction of pervious 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 and including the following.

- 5.1.1 The development and implementation or modification of strategies which include a combination of structural and / or non-structural best management

practices.

- 5.1.2 Use of an ordinance, regulatory mechanism or procedures to address post construction runoff from new development and redevelopment projects to the extent allowable under State law.
- 5.1.3 Ensure long-term operation and maintenance of Best Management Practices. Appropriate BMP's and measurable goals for this minimum control measure must be determined. These must include the persons(s) or position(s) responsible and implementation dates for each BMP.

5.2 BEST MANAGEMENT PRACTICES

The following BMP's will be utilized in the implementation of the program to address the minimum control measure for Post Construction Site Runoff Control.

5.2.1 Requirements for Structural and Non-Structural BMP's

The Engineering Department will require structural and non-structural BMP's for projects disturbing greater than or equal to one (1) acre.

The criteria are intended to help evaluate stormwater discharges and the methods that may be used for the treatment of stormwater before it reaches an outlet.

The following is a summary of the memorandum which indicates recommended design guidelines and possible BMP's / treatment measures. Storm sewer systems will be designed in accordance with the Town Subdivision Regulations and the CTDOT Drainage Manual and supplements thereto.

For drainage systems containing four to ten catch basins, which discharge within fifty feet of a regulated area where applicable;

- Eliminate curbing, design for sheet flow and utilize natural vegetation to help filter particulates. On steep embankment slopes, erosion protection measures should be employed.
- Utilize oversized catch basins with four-foot deep sumps. It may be justified to provide six-foot sumps at the last two catch basins in the system if there are no conflicts with groundwater, ledge rock, rights-of way or underground utilities. If end treatments such as hydrodynamic separators (gross particle separators) wet ponds or detention basins are constructed at the terminus of the drainage system, deep catch basin sumps can be eliminated. Additionally, sumps (any depth) should not be specified for any manholes or for catch basins on storm drainage systems which are 36 inches or greater in diameter.

At all locations where deep sumps are specified, the maximum depth of structure shall not exceed twelve feet as measured from the top-of-grate elevation.

- Utilize outlet protection such as riprap energy dissipaters; scour holes, stone check dams erosion control matting and vegetative linings in outlet channels.

For drainage systems containing ten or more catch basins, which discharge within fifty feet of a regulated area where applicable;

Outlet areas shall be designed so that an open channel with check dams, a sediment basin, or a combination of both is specified; these shall be designed to accommodate the peak runoff associated with the “first flush”, known as Water Quality Flow (WQF). The last option is to specify a Hydrodynamic Separator also known as a Gross Particle Separator.

Studies related to the efficiency of these chambers with respect to stormwater treatment are ongoing. Pending the publication and review of specific performance data, the following guidelines shall be applied:

- Hydrodynamic separators shall be designed to accommodate the peak runoff associated with the “first flush”, known as the Water Quality Flow (WQF). The WQF shall be determined using the procedures outlined in Chapter 11, Appendix C of the Drainage Manual.
- Chambers shall be placed “off-line” and a bypass system shall be designed to convey the peak flow rate for the design storm.
- Hydrodynamic separators are best suited for the treatment of storm runoff from site drainage related to transportation facilities such as bus or train stations, maintenance garages, rest areas or commuter parking lots.
- Roadway applications should be limited primarily to urban areas.

The number of catch basins refers to the combined total of existing and proposed Town maintained structures. The following items describe situations where catch basin inlets need not be included in the overall structure count:

- Inlets on town maintained systems or within private developments adjoining State highways which connect to the State system as long as a distinct separation point (catch basin or manhole) exists or will be constructed at the junction of the two facilities. This will allow access for testing purposes should water quality issues arise at the discharge

point of the State system.

- Catch basins located in grassed areas 20 feet or more from the pavement edge.
- Ancillary catch basins that are internal to the drainage area and contribute no additional runoff to the storm sewer system such as flanker basins, basins intended to improve intersection drainage or inlets placed on steep grades to increase interception.

Additional BMP's may include the following:

Structural BMP's

Ponds

- Dry Extended Detention Ponds
- Sedimentation Basin
- Wet Ponds

Infiltration Practices

- Infiltration Basin
- Infiltration Trench

Filtration Practices

- Bioretention

Vegetative Practices

- Stormwater Wetland
- Grassed Swales
- Grassed Filter Strip
- Interlocking Reinforced Grass Panels (Limited to Merritt Parkway)

Runoff Pretreatment Practices

- Manufactured Products
(Swirl separators,
or hydrodynamic structures)



Photograph of Detention Facility

Detention and retention structures will be utilized to limit increases in peak flow rates and volumes when required by CTDEP Inland Water Resource permit requirements. These facilities will be designed and constructed in accordance with the CTDOT Drainage Manual and Connecticut Guidelines for Soil Erosion and Sediment Control.

Non-Structural BMP's

- Urban Forestry (Use of trees, plantings and landscaped areas around parking lots)
- Limiting Curbs and Gutters for roadways
- BMP Inspection and Maintenance

Several documents are utilized for establishing guidelines and procedures for addressing post construction runoff in planning, design and construction for state owned, state funded projects or projects tying into a state owned system. These documents include the following:

- CTDOT Drainage Manual, October 2000 and supplements thereto
- 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, DEP Bulletin 34, and supplements thereto

CTDOT Drainage Manual

This document contains guidelines and procedures for the design of several of the structural BMP's including roadside channels, outlet protection, bank protection, rock riprap design and storage facilities as well as detention and retention ponds.

The design of outlet protection for all projects being designed or funded by the department shall be in accordance with the Drainage Manual rather than the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. Outlet protection is discussed and the procedures for designing outlet protection are contained in chapter 11.13 of the Drainage Manual. The methodology outlined in the Drainage Manual

has been accepted by the CTDEP for use by the department.



Photograph of outlet structure requiring maintenance.

2002 Connecticut Guidelines for Soil Erosion and Sediment Control

These DEP guidelines are referenced by the Town’s design manuals and made part of Bid contracts by inclusion or reference to CT DOT standard specifications.

The guidelines contain information / procedures for the design of several BMP’s for stabilization structures, drainage ways and watercourses, detention structures and energy dissipaters.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Table 5.1 Requirements for Structural and Non Structural BMP’s, Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1 - 5	Continue implementation of BMP’s including projects with greater than or equal to 1 acre in disturbance area	Michael Turner

5.2.2 Procedures for Addressing Post Construction Runoff from Construction and Reconstruction Projects

By issue of internal memorandum to all department units, stormwater management BMP's are required for all projects.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Table 5.2 Procedures for Addressing Post Construction BMP, Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1 - 5	Continue procedures for addressing post construction BMP's including projects with greater than or equal to 1 acre in disturbance area	Michael Turner

5.2.3 Ensuring Long Term Operation and Maintenance of Best Management Practices

The Public Work's Department is divided into Building, Engineering and Physical Services. The Physical Services Maintenance Division will be responsible for the long-term operation and maintenance of the Town's facilities. This will include storm sewer maintenance including cleaning and maintenance of catch basins, stormwater treatment systems and detention / retention and sedimentation structures.

Long term operation and maintenance of best management practices shall be in accordance with Good Housekeeping / Pollution Prevention Section of this plan.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Table 5.3 Ensuring Long Term Operation and Maintenance of Best Management Practices, Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1 - 5	Continue operation and maintenance of BMP's	Jim McDonald

SECTION 6 – POLLUTION PREVENTION / GOOD HOUSEKEEPING

This minimum control measure is critical to the success of the Stormwater Management Program as it helps to improve or protect receiving water quality by evaluating, altering and maintaining Town facility operations.

This measure requires the Public Work's Department to examine and subsequently alter its own actions to help ensure a reduction in the amount and type of pollution that collects on roadways, parking lots, open spaces, storage and vehicle maintenance areas, and all department maintained facilities, and any other department owned or leased operation which ultimately discharge into local waterways. This measure will also address pollution that results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems.

6.1 REQUIREMENTS

Department Wide

- 6.1.1 The development and implementation of an operation and maintenance program that includes a training component for department employees and contractors and has the ultimate goal of preventing or reducing pollutant runoff from department operations.
- 6.1.2 Utilize training materials that are available from the EPA, the State or other organizations. This program shall include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.
- 6.1.3 The development and implementation of a program to sweep all streets at least once a year as soon as possible after snowmelt.
- 6.1.4 The development and implementation of a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once a year including a provision to identify and prioritize those structures that may require cleaning more than once a year.
- 6.1.5 The development and implementation of a program to evaluate and, if necessary, prioritize for repairing, retrofitting or upgrading the conveyances, structures and outfalls of the MS4.
- 6.1.6 The development and implementation of a program to evaluate and prioritize those streets that may require sweeping more than once a year.

Appropriate BMP's and measurable goals for this minimum control measure must be determined. These must include the persons(s) or position(s) responsible and implementation dates for each BMP.

6.2 BEST MANAGEMENT PRACTICES

The following BMP's will be utilized in the implementation of the program to address the minimum control measure for Pollution Prevention / Good Housekeeping.

6.2.1 Operation and Maintenance Program

Operation and maintenance is an integral component of all storm water management programs. This measure is intended to improve the efficiency of these programs through appropriate maintenance practices, internal procedures and scheduling. Proper development and implementation of these programs reduces the risk of water quality problems. There are several elements that are essential for the success of an operation and maintenance program including, training, record keeping, internal reporting, maintenance and preventative maintenance. The department will include the following elements in the development and implementation of their program.

Employee Training

The Public Work's Department will continue a program to provide education and training to its employees, regarding stormwater management and how it relates to the department's design, construction and maintenance operations. The training will focus on pollution prevention, best management practices and good housekeeping. Training may also include topics such as illicit discharge detection, water quality monitoring, inspection, record keeping, internal reporting, general maintenance, preventative maintenance and other topics relating to proper stormwater management and the requirements of the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. Employee training will be discussed in greater detail in later Sections.

Record Keeping

The department's procedures for record keeping will incorporate the documentation of information and data, resulting from the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems procedures. Keeping records of spills, leaks, and other discharges provide useful information for ensuring proper maintenance of facilities and equipment, and improving best management practices to prevent future spills. Generally record keeping will be conducted on a division level for information pertaining to that division, and will be conducted at the Department level (headquarters) for information relating to the permit document. Within the divisions, records will be kept at Headquarters facility,

providing greater accessibility to personnel that would need immediate information.

The following list of topics is essential for a successful records keeping program, some of which are required for General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems annual reports to CTDEP:

- Public Education
- Public Participation
- Illicit Discharges (including corrective measures)
- Water Quality Monitoring
- Employee Training
- Drainage Facility Inspections
- Street Sweeping
- Catch Basin Cleaning

The key to a successful records keeping program is to maintain records through regularly scheduled updates. The department will utilize the following techniques to document and report their data and results:

- Field notebooks
- Timed and dated photographs
- Drawings and maps
- Computer spreadsheets and database programs

Record keeping will be coordinated with internal reporting and other BMP's as it is integrated into the development of the department's stormwater pollution prevention plan.

The department will submit annual reports containing records required by the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, to the CTDEP. These annual reports will include the information as described in the Section entitled "Additional Requirements" of this plan.

Internal Reporting

Internal reporting provides a framework for "chain-of-command" reporting of stormwater management issues, and is an essential part of any good records keeping program. When properly employed, an internal reporting program can clearly define individual's roles and responsibilities for implementing and maintaining the stormwater pollution prevention program, thereby making it easier to prevent and contain potential stormwater contamination.

The department's internal reporting procedures will incorporate the additional effort needed with this stormwater management program, and the position(s) responsible for each stormwater management task. In general, the position(s) responsible for each

BMP are listed in a table at the end of each section of this stormwater management plan. Typically stormwater management issues will follow similar internal routing procedures for the offices of maintenance, construction and facilities. Stormwater problems identified in the field will be relayed from the maintainer (field personnel) to the crew leader, then the immediate supervisor, Assistant Director and the Director of Public Work’s as required. If the issue requires special attention, the department will notify the CTDEP. The following figure depicts the typical interdepartmental reporting hierarchy that may be followed for issues relating to storm water management.

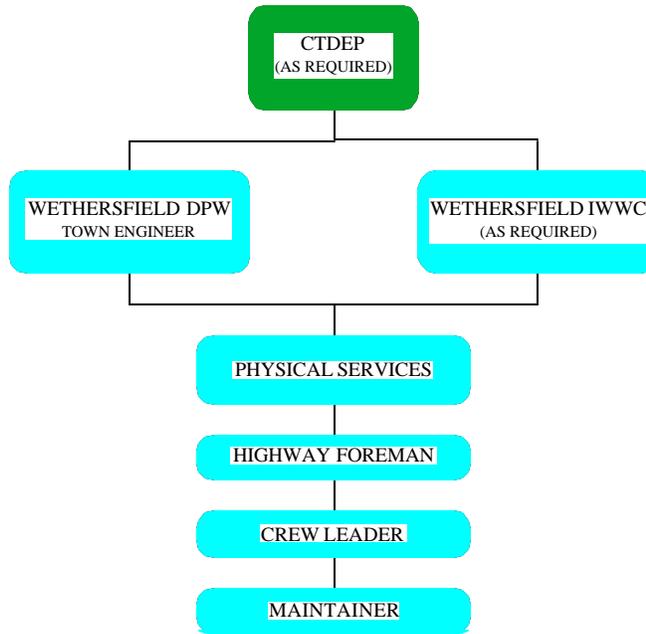


Figure 6.1 Typical Internal Reporting Flow Chart for Maintenance Maintenance Program

Maintenance involves pollution prevention techniques that reduce or eliminate pollutant loadings from existing roadways, parking lots and facility surfaces as part of the operation and maintenance program. Substantial amounts of sediment and pollutants are generated during daily roadway and facility use, and these pollutant loadings can threaten local water quality by contributing heavy metals, hydrocarbons, sediment, and debris to stormwater runoff. Good cleaning practices including street sweeping and catch basin cleaning can help limit impacts to stormwater runoff.

Sweeping of heavily traveled roadways to remove sediment and debris can reduce the amount of pollutants in runoff. Regular cleaning of runoff control structures such as catch basins can help improve the overall quality of stormwater discharges.

The department’s maintenance plan for sweeping roadway, parking lot and facility surfaces and cleaning catch basins will meet the requirements of this stormwater management program.

Street sweeping and catch basin cleaning will be discussed in greater detail in Sections 6.2.3 & 6.2.4 respectively.

Preventative Maintenance Program

Preventative maintenance will be utilized by the department for eliminating potential problems associated with drainage systems, facilities and equipment. These measures are intended to reduce the frequency and quantity of pollutants that are discharged to water bodies as a result of the failure and deterioration of ageing systems.

Preventative measures utilized by the department include the following:



Photograph of Debris Clogged Catch Basin

- Catch basin inspection during routine maintenance
- Drainage system inspection for new construction / reconstruction projects
- Drainage system inspection for V.I.P. projects
- Bridge Inspection - Biennial inspections for large drainage culverts as defined by the NBIS

Preventative maintenance will be discussed in greater detail in Section 6.2.5.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

**Table 6.1 Operation and Maintenance BMP
Measurable Goals and Implementation Dates**

Target Date	Activity	Position Responsible
Year 1	Implement Operation and Maintenance requirements	Michael Turner
Years 2-5	Continue Operation and Maintenance requirements	Jim McDonald

6.2.2 Employee Training Program

The Town's existing continuing education employee training program will add a stormwater management component, discussing potential sources of contaminants, and best management practices. This program will provide personnel with an understanding of the department's stormwater management plan, including BMP's, processes and materials with which they are working, safety hazards, practices for preventing discharges, and procedures for responding quickly and properly to toxic and hazardous material incidents. They will also be informed of the proper procedures for reporting and documenting any potential pollutants discovered.

The program will consist of scheduled training for its design, construction, maintenance, and facility personnel, including both office and field positions. Topics will include sedimentation and erosion control, permanent BMP's, and permit requirements. Training will also be implemented for employees working for non-department agencies/businesses operating and maintaining facilities located on property owned by the Town. A schedule describing the locations and dates for these training sessions will be provided to them. The following sub-sections summarize the departments annually scheduled training per office:

General

Training seminars will be held to inform department employees of the requirements associated with the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. Employees will be advised of modifications to current practices and the incorporation of new procedures along with their anticipated implementation dates and the position(s) responsible. The seminars will be held in the first year of the program.

Office of Physical Services

The Physical Services Division will continue to annually instruct the department's front line construction supervisors on policies and procedures, including stormwater management topics and General Permit requirements. The training sessions will continue in the first year of the program and proceed annually throughout the program.

Highway Maintenance Division

The Highway Maintenance Crew coupled with the Engineering Division will provide training for General Supervisors, Crew Leaders, Drainage Crews, concerning the latest information and techniques pertaining to stormwater management, BMP's, permit requirements and water quality issues. The training sessions for this office will be scheduled as follows:

- Annually
- Paycheck Meetings
- Bi-Weekly Foreman's' Meetings
- Tailgate Meetings

The training sessions will continue in the first year of the program and proceed annually throughout the program.

Engineering Office

The Engineering Division Office will continue to conduct Department Meetings at least annually, or as required throughout the year. These meetings are intended to inform and remind personnel from the design unit, of the current design standards. These meetings will incorporate the General Permit requirements. Training will continue in the first year of the program and proceed annually throughout the program. Subsequent meetings will be conducted as refresher courses.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

**Table 6.2 Employee Training Program BMP
Measurable Goals and Implementation Dates**

Target Date	Activity	Position Responsible
Year 1	Develop Employee Training Curriculum	Michael Turner
Years 2	Implement Employee Training requirements	Michael Turner
Years 3-5	Continue Employee Training requirements	Michael Turner

6.2.3 Street Sweeping Program

Street sweeping is practiced in most urban areas, to remove sediment buildup and large debris from curb gutters. Street sweeping is also used during the spring snowmelt to reduce pollutant loads from road salt and to reduce sand export to receiving waters.

The department will coordinate street sweeping on a scheduled basis to minimize

pollutant export to state and local water bodies. Street sweeping is performed by an outside contractor under the direction of Physical Services. These cleaning practices will remove sediment, large debris from curb gutters and other pollutants, from roadways, parking lots and facility surfaces, which are a potential source of pollution impacting state and local water bodies. Street sweeping frequency will range from one time per year, to multiple times per year for areas with heavier concentrations of sediment and debris.

The department will utilize the following criteria for street sweeping frequency:

Town wide

The department will sweep all roadways, parking lots and facilities at least once every year. The sweeping will be performed as soon as possible after snowmelt.

Facilities operated and maintained by other lessees, located on Town property, shall be subject to the requirements of this section if not already covered under the General Permit for the Discharge of Stormwater Associated with Industrial Activity.



Photograph of Sanding for Snow Control

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

**Table 6.4 Street Sweeping Program BMP
Measurable Goals and Implementation Dates**

Target Date	Activity	Position Responsible
Year 1	Implement Street Sweeping requirements	Jim McDonald
Years 2-5	Continue Street Sweeping requirements	Jim McDonald



Photograph of Street Sweeping Equipment

6.2.4 Catch Basin Maintenance Program

Catch basins fitted with sumps are intended to retain coarse sediment by trapping this material in a chamber or low area below the invert of the outlet pipe. By trapping sediment, the catch basin prevents solids from clogging the storm sewer and being washed into receiving waters. Catch basins must be cleaned to maintain their ability to trap sediment, and consequently their ability to prevent flooding. The removal of sediment, decaying debris and highly polluted water from catch basins has both aesthetic and water quality benefits. These include reducing foul odors, reducing suspended solids, and reducing the load of oxygen-demanding substances that reach receiving waters.

The department will institute and oversee a catch basin maintenance program that will consist of inspecting and if necessary cleaning catch basins on a regularly scheduled basis. The catch basin cleaning will be performed by an outside contractor under the supervision of Physical Services. The department will use the following criteria for inspecting and cleaning their catch basins:

- The department will attempt to annually clean at least one third (1/3) of their catch basins that have reached at least half of the capacity of the sump. These catch basins may be selected based upon routine scheduled field inspections and also inspections resulting from other program requirements.

Priority areas will be established to maximize the effectiveness of the department’s available resources for the routine inspections. These priority areas will be developed using the department’s knowledge of problem areas, where sediment/debris has been known to accumulate in higher quantities. Geographical location, climate, traffic patterns and vertical sag locations may also be factors in determining priority areas.

- The department will conduct routine inspections by selecting a representative number of catch basins for each stretch of roadway, parking lot and facility, once every year. If a catch basin sump is found to be more than one half (1/2) full, the catch basin will be cleaned. Additional catch basins will be inspected, and cleaned if necessary, for that given stretch to ensure that the cleaning is completed to the maximum extent practicable. Facilities operated and maintained by other lessees, located on Town property, shall be subject to the requirements of this section if not already covered under the General Permit for the Discharge of Stormwater Associated with Industrial Activity.



Photograph of Debris Clogged catch basin



Photograph of Catch basin Cleaning Equipment

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Table 6.5 Catch Basin Maintenance Program BMP Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1	Implement Catch Basin Maintenance requirements	Jim McDonald
Years 2-5	Continue Catch Basin Maintenance requirements	Jim McDonald

6.2.5 Preventative Maintenance Program

Preventative maintenance takes a proactive approach to stormwater management and seeks to prevent problems before they occur. This measure involves the inspection, evaluation and replacement or repair of equipment and operational systems.

Inspection can identify cracks, leaks, and other conditions that could cause breakdowns or failures of stormwater structures and equipment, which in turn could result in discharges of pollutants to surface waters either by direct overland flow or through storm drainage systems.

The department's preventative maintenance program requires the participation of several internal offices including Physical Services, Engineering, Recreation, Physical Services.

In general, the preventative maintenance of drainage systems will be accomplished through visual inspections conducted as a result of new construction projects, routine maintenance such as catch basin cleaning, or inspections of larger scale proportions such as culvert inspections.

For new construction / reconstruction projects, the Town will require that a condition survey be conducted for the existing drainage facilities that are to remain in place within the project limits to ensure their condition is sound and replacement is not warranted.

The guidelines for this survey are summarized below, and are provided in greater detail in the department's "Drainage Manual", Section 3.6.3 and appendices 4.A & B.

Culvert inspection shall be conducted for existing department culverts to remain in use, as part of a project. Culvert inspection shall follow the guidelines as outlined in the CT DOT's "Drainage Manual 2000", Appendix 4.A.

Existing Town drainage facilities including pipes, catch basins, manholes, junction chambers, sedimentation/gross particle separators, cross culverts and ditches/swales, which are scheduled to remain in use as part of a project should be inspected to verify their general condition early in the design process. A condition survey must be conducted for drainage systems, which have been in service for 10 years or more. Available previous condition reports should be reviewed prior to inspection to identify critical areas that may require special attention. The drainage facility inspection shall follow the guidelines as outlined in the department's "Drainage Manual", appendix 4.B.

The designer should also consult with the Town Engineer for past problems, site conditions and proposed future improvements.

In addition to the requirements of the "Drainage Manual", several of the department's offices will provide additional inspection measures and procedures for the

preventative maintenance of existing department storm sewer systems. The following is a list of the additional measures:

V.I.P. Projects

The Engineering Division project supervisor will inspect the storm drainage systems prior to construction. Maintenance reports and public comments will also be reviewed and implemented as applicable. Preventative maintenance is also required by public and private agencies disturbing or effecting department storm sewer systems through new development or modifications to adjacent existing developments. These agencies are also required to conduct an “Existing Drainage Facility Conditions Survey” for the portion of the department’s drainage system(s) that they will be tying into or affecting as a result of additional discharges. The guidelines for this survey are detailed in the department’s “Drainage Manual 2000”, appendices 4.A&B.

The measurable goals, target dates and responsible position associated with this BMP are detailed in the following table.

Table 6.6 Preventative Maintenance Program BMP Measurable Goals and Implementation Dates

Target Date	Activity	Position Responsible
Year 1	Implement Preventative Maintenance requirements	Jim McDonald
Years 2-5	Continue Preventative Maintenance requirements	Jim McDonald

SECTION 7 – ADDITIONAL REQUIREMENTS

7.1 AUTHORIZATION UNDER THIS GENERAL PERMIT

7.1.1 Eligible Activities

The discharge of stormwater from or associated with a Regulated Small MS4 is authorized by General Permit No. GSM000031, issued by CT DEP on April 13, 2004, provided the requirements of Section 7.13.2 are satisfied and the activity is conducted in accordance with the conditions of this storm water management plan.

This permit authorizes the following non-stormwater discharges provided they do not contribute to a violation of water quality standards:

- Landscape irrigation
- Uncontaminated ground water discharges such as pumped ground water, foundation drains, water from crawl space pumps and footing drains
- Irrigation water
- Lawn watering runoff
- Residual street wash water
- Discharges or flows from fire fighting activities (except training)
- Naturally occurring discharges such as rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR35.2005(20)), springs, diverted stream flows and flows from riparian habitats and wetlands

7.1.2 Requirements for Authorization

This general permit authorizes the activity listed in Section 7.13.1 provided:

Coastal Management Act

Such activity is consistent with all applicable goals and policies in Section 22a-92 of the Connecticut General Statutes, and shall not cause adverse impacts to coastal resources as defined in Section 22a-93(15) of the Connecticut General Statutes.

Endangered and Threatened Species

Such activity shall not threaten the continued existence of any species listed as endangered or threatened pursuant to Section 26-306 of the Connecticut General Statutes and shall not result in the destruction or adverse modification of habitat designated as essential to such species.

National Historic Preservation Act

Stormwater discharges or implementation of the registrant's stormwater management program shall not adversely affect properties listed or eligible for listing in the National Register of Historic Places, unless the registrant is in compliance with requirements of the National Historic Preservation Act and has coordinated with the appropriate State Historic Preservation Officer to avoid or minimize impacts from any necessary activities.

7.2 PROPER OPERATION AND MAINTENANCE

The Town Physical Services Department will properly operate and maintain all facilities and systems of treatment and control, including related appurtenances, which are installed or used by the department to achieve compliance with the conditions of the general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by the department when necessary to achieve compliance with this permit. Section 6 of this document contains detailed information for specific operation and maintenance measures.

7.3 AVAILABILITY OF INFORMATION

The department will make a copy of the Stormwater Management Plan available to the following immediately upon request:

- The Commissioner of CTDEP
- In the case of an MS4 adjacent to or interconnected with the department's storm sewer system, to the operator of that MS4
- In the case of a department stormwater discharge to a water supply watershed, to the public water supply company

7.4 KEEPING PLANS CURRENT

The department will amend the Stormwater Management Plan whenever; (1) there is a change which has the potential to cause pollution of the waters of the state; or (2) the actions required by the SWMP fail to ensure or adequately protect against pollution of the waters of the state; or (3) the Commissioner of CTDEP requests modification of the SWMP. The amended Plan will be completed and all actions required by such SWMP will be completed within a time period determined by the Commissioner of CTDEP.

The Commissioner of CTDEP may notify the department at any time that the SWMP does not meet one or more of the requirements of this general permit. Within 30 days of such notification, unless otherwise specified by the Commissioner of CTDEP in writing, the department will respond to the Commissioner of CTDEP indicating how they plan to modify the SWMP to address these requirements. Within 90 days of this response or within 120 days of the original notification, whichever is less, unless otherwise specified by the

Commissioner of CTDEP in writing, the Town will then revise the SWMP, perform all actions required by the revised SWMP, and shall certify to the Commissioner of CTDEP that the requested changes have been made and implemented. The Town will provide such information, as the Commissioner of CTDEP requires to evaluate the SWMP and its implementation.

7.5 MONITORING REQUIREMENTS

The Town will perform monitoring in accordance with the requirements of Section 3.2.3 of this Stormwater Management Plan.

7.6 REPORTING AND RECORD KEEPING

Records required by the general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems will be kept for at least 5 years following its expiration or longer if requested by the Commissioner of CTDEP in writing. Such records, including the Storm Water Management Plan, will be available to the public at reasonable times during regular business hours.

The department will submit an Annual Report to CTDEP by January 1, of each year beginning in 2004. The reports will be submitted to:

STORMWATER PERMIT COORDINATOR
BUREAU OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

The annual reports will include the following:

- The status of compliance with the general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, an assessment of appropriateness of the identified best management practices and progress towards achieving the implementation dates and measurable goals for each of the Minimum Control Measures.
- All monitoring data collected and analyzed pursuant of Section 3, Illicit Discharge Detection and Elimination, of this Storm Water Management Plan.
- All other information collected and analyzed, including data collected under Section 3 of this Storm Water Management Plan.
- A summary of the stormwater activities the department plans to undertake during the next reporting cycle.
- A change in any identified measurable goals or implementation dates that apply to the program elements.

7.7 GENERAL DISCHARGE REQUIREMENTS

- There will 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.
- The stormwater discharge will 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.

7.8 TOTAL MAXIMUM DAILY LOAD (TMDL) ALLOCATIONS

If a TMDL is approved for any water body into which the Town discharges, the Engineering Department will review its Stormwater Management Plan if the TMDL includes requirements for control of stormwater discharges. If the stormwater discharge(s) do not meet the TMDL allocations, the department will modify its Stormwater management Plan to implement the TMDL within four months of the TMDL's approval and notify the Commissioner if CTDEP of this modification.

7.9 REGULATIONS OF CONNECTICUT STATE AGENCIES INCORPORATED INTO THE DISCHARGE OF STORMWATER FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

The Town will comply with all laws applicable to the subject discharges, including but not limited to, the following Regulations of Connecticut State Agencies which are hereby incorporated into this general permit, as if fully set forth herein:

Section 22a-430-3:

- Subsection (b) General – subparagraph (1)(D) and subdivisions (2), (3), (4) and (5)
- Subsection (c) Inspection and Entry
- Subsection (d) Effect of a Permit – subdivisions (1) and (4)
- Subsections (e) Duty to Comply
- Subsections (f) Proper Operation and Maintenance
- Subsection (g) Sludge Disposal
- Subsection (h) Duty to Mitigate
- Subsection (i) Facility Modifications, Notification – subdivisions (1) and (4)
- Subsection (j) Monitoring, Records and Report Requirements – subdivisions (1), (6), (7), (8), (9) and (11) (except subparagraphs (9) (A) (2) and (9) (c))
- Subsection (k) Bypass
- Subsection (m) Effluent Limitations Violations
- Subsection (n) Enforcement
- Subsection (p) Spill Prevention and Control

- Subsection (q) Instrumentation, Alarms, Flow Recorders
- Subsection (r) Equalization

Section 22a-430-4

- Subsection (t) Prohibitions
- Subsection (p) Revocation, Denial, Modification
- Appendices

7.10 DUTY TO CORRECT AND REPORT VIOLATIONS

Upon learning of a violation of a condition of the general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, the Town will immediately take all reasonable action to determine the cause of such violation, correct and mitigate the results of such violation and prevent further such violation. The Town will report in writing such violation and such corrective action to the Commissioner of CTDEP within five (5) days of the department's learning of such violation. Such information will be filed in accordance with the certification requirements of this general permit.

7.11 DUTY TO PROVIDE INFORMATION

If the Commissioner of CTDEP requests any information pertinent to the authorized activity or to compliance with the general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems or with the Town's authorization under this general permit, the Town will provide such information within thirty (30) days of such request. Such information shall be filed in accordance with the certification requirements of this general permit.

7.12 CORRECTION OF INACCURACIES

Within fifteen days after the date the Town becomes aware of a change in any information in any material submitted pursuant to this general permit, or becomes aware that any such information is inaccurate or misleading or that any relevant information has been omitted, the department will correct the inaccurate or misleading information or supply the omitted information in writing to the Commissioner of CTDEP. Such information will be filed in accordance with the certification requirements of this general permit.

7.13 OTHER APPLICABLE LAW

Nothing in the general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems will relieve the Town of the obligation to comply with any other applicable federal, state and local law, including but not limited to the obligation to obtain any other authorizations required by such law.

SECTION 8 - CERTIFICATION AND SIGNATURE

8.1 CERTIFICATION REQUIREMENTS

This plan and any document, including but not limited to any notice, information or report, which is submitted to the commissioner of the CTDEP under the general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems shall be signed by the chief elected official or principal executive officer, and by the individual or individuals responsible for preparing such document as defined in Section 22a-430-3(b) (2) of the Regulations of Connecticut State Agencies.

8.2 PLAN CERTIFICATION AND SIGNATURE

“I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute.”

Chief Executive Officer's Signature:

Bonnie L. Therrien
Town Manager
Town of Wethersfield CT

Signature & Date

Preparer's Signature:

Michael J. Turner, PE-LS
Director of Public Works/
Town Engineer
Town of Wethersfield CT

Signature & Date

ABBREVIATIONS AND DEFINITIONS

The definitions of terms used in this general permit shall be the same as the definitions contained in Sections 22a-423 and 22a-207 of the Connecticut General Statutes and Section 22a-430-3(a) of the Regulations of Connecticut State Agencies. As used in this general permit, the following additional definitions shall apply:

“**ADT**” means average daily traffic

“**Attorney General**” means the chief law officer and legal counsel of the State of Connecticut.

“**Authorized activity**” means any activity authorized under the General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems.

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

“**Catch Basin**” means any structure designed and constructed to collect storm water runoff and convey the flows through a storm sewer system.

“**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-29 of the Connecticut General Statutes.

“**ConnDOT**” means the Connecticut Department of Transportation.

“**Co-permittee**” means any adjacent or adjoining (to the department) municipality, state agency/institution or private entity required to register under the General Permit.

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

“**CTDOT**” means the Connecticut Department of Transportation.

“**CWA**” means Clean Water Act.

“**Department**” means the Connecticut Department of Transportation.

“**Drainage System**” means any structure(s) or facility, including inlets, catch basins, storm drains, under drains, ditches, channels, culverts, designed and constructed for the removal of storm water from streets, highway sections, parking areas, and other drainage areas.

“**Dry Weather Flows**” means flows that exist within storm sewer systems during dry weather periods experiencing little or no precipitation.

“**EPA**” means the United States Environmental Protection Agency.

“**Facility**” may be defined by the following, but not be limited to buildings, parking lots, highways, roadways and railways.

“**First Flush**” Pollutants deposited on to exposed areas can be dislodged and entrained by the rainfall-runoff process. Usually the stormwater that initially runs off an area will be more polluted than the stormwater that runs off later, after the rainfall has “cleansed” the catchment. The stormwater containing this high initial pollutant load is called the “first flush”.

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

“**Hazardous Substance**” means any substance, other than oil, which, when discharged in any

quantities into waters of the U.S., presents an imminent and substantial danger to the public health or welfare, including but not limited to fish, shellfish, wildlife, shorelines and beaches (Section 311 of the CWA); identified by EPA as the pollutants listed under 40 CFR Part 116.

“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 groundwater except those discharges identified in Section 3.1.6 of the CTDOT General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems.

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

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

“Minimum Control Measure” means the measures as described by EPA, when implemented in concert, are expected to result in significant reductions of pollutants discharged into receiving water bodies.

“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.

“NBIS” means the National Bridge Inspection Standards

“NPDES” means the National Pollution Discharge Elimination System.

“Outfall” means the mechanism or structure by which a storm sewer, storm drain, stream or water course discharges to a receiving water body.

“Permittee” means any municipality, State agency or Federal agency which initiates, creates, originates or maintains a discharge authorized by this general 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.

“Pollutants” means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

“PSA” means Public Service Announcement.

“Public Water Supply Areas” means any area that may have the potential to drain and deliver stormwater to any reservoir or storage area which is used for supplying public drinking water.

“Registrant” means a municipality, State agency or Federal agency, which files a registration pursuant to Section 4 of the NPDES Phase II MS4 general permit.

“Registration” means a registration form filed with the Commissioner pursuant to Section 4 of the NPDES Phase II MS4 general permit.

“Regulated Small MS4” means any Small MS4 (as defined below) authorized by this general

permit including all those located partially or entirely within an Urbanized Area and those additional Small MS4s located outside an Urbanized Area which, as of the issuance of this general permit, have been designated by the Commissioner as Regulated Small MS4s. A list of these MS4s is included in Appendix A of the NPDES Phase II MS4 general permit.

“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 authorized by the Phase I MS4 stormwater program including State and Federally owned systems, such as colleges, universities, prisons, and military bases. State and Federally-owned MS4’s are authorized under separate general permits.

“State Operated Separate Storm Sewer System (SOS4)” means conveyances for stormwater (including roads with drainage systems, public streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) owned or operated by the State and discharging directly to surface waters of the state.

“State” means the State of Connecticut

“Storm Drain” means inlet, including catch basins, which capture stormwater runoff for conveyance through a storm sewer system.

“Storm Sewer System” means any structure(s) or facility, including inlets, catch basins, storm drains, under drains, ditches, channels, culverts, designed and constructed for the removal of water from streets, highway sections, parking areas, and other drainage areas.

“Stormwater” means waters consisting of precipitation runoff.

“Stormwater Management Plan (SWMP)” means a stormwater management program required under the general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, designed to reduce the discharge of pollutants from the Small MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

“SWPPP” means a Stormwater Pollution Prevention Plan, usually associated with an individual permit for the discharge of storm water.

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

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

“Town” means the Town of Wethersfield, Connecticut

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

“Water Bodies” means any natural or artificial inland body of water or expanded part of a water course, including lakes, ponds and reservoirs.

“Water Courses” means any natural or artificial channel including, rivers, creeks, streams, wash, arroyo, channels or other topographic feature on or over which waters flow at least periodically.

“WQF” means Water Quality Flow as described in chapter 11, appendix C, of the CTDOT

Drainage Manual 2000.

“**Waterways**” means any navigable body of water, such as a river, channel, or canal.

APPENDIX B
STATE URBANIZED AREA MAP

APPENDIX C
DISTRICT AND TOWN URBANIZED AREA MAP LEGEND

APPENDIX D
TRIBUTARY SIGNAGE GUIDELINES AND STANDARDS