

**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



**STORMWATER  
MANAGEMENT PLAN**

**DRAFT**

**February 2004**



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



**STORMWATER  
MANAGEMENT PLAN**

**DRAFT**

Prepared by



**Maguire Group Inc.**  
Architects / Engineers / Planners  
1 Court Street  
New Britain, Connecticut

**February 2004**

<b><u>TABLE OF CONTENTS</u></b>		<b><u>Page</u></b>
<b>INTRODUCTION / OVERVIEW</b>		
I.1	Introduction	I-1
I.2	Department Structure and Overview	I-2
I.3	Department Responsibilities and Limitations	I-3
I.4	NPDES Phase II Working Committee	I-3
I.5	State Information	I-4
<b>EXECUTIVE SUMMARY</b>		
ES.1	Introduction	ES-1
ES.2	Permitting Requirements	ES-1
ES.3	Public Education and Outreach	ES-1
ES.4	Public Involvement / Participation	ES-2
ES.5	Illicit Discharge Detection and Elimination	ES-4
ES.6	Construction Site Stormwater Runoff Control	ES-4
ES.7	Post Construction Site Stormwater Management	ES-6
ES.8	Pollution Prevention / Good Housekeeping	ES-8
ES.9	Additional Requirements	ES-9
<b>SECTION 1 PUBLIC EDUCATION AND OUTREACH</b>		
1.1	Requirements	1-1
1.2	Best Management Practices	1-1
1.2.1	Brochures or Fact Sheets	1-1
1.2.2	Alternative Information Sources	1-2
1.2.3	Library of Educational Materials	1-3
1.2.4	Storm Drain Marking / Stenciling	1-4
1.2.5	Tributary Signage	1-5
<b>SECTION 2 PUBLIC INVOLVEMENT / PARTICIPATION</b>		
2.1	Requirements	2-1
2.2	Best Management Practices	2-1
2.2.1	CTDOT NPDES Phase II Working Committee	2-1
2.2.2	Public Information Meetings	2-2
2.2.3	Brochures at Public Information Meetings	2-4
2.2.4	Storm Drain Marking / Stenciling	2-4

<b><u>TABLE OF CONTENTS-Continued</u></b>		<b><u>Page</u></b>
<b>SECTION 3 ILLICIT DISCHARGE DETECTION AND ELIMINATION</b>		
3.1	Requirements	3-1
3.2	Best Management Practices	3-2
3.2.1	Department Policy Regarding Non-Stormwater Discharges	3-2
3.2.2	Storm Sewer System Map (s)	3-2
3.2.3	Illicit Discharge Detection and Elimination Program	3-5
3.2.4	Future Illicit Discharge Detection and Elimination	3-9
<b>SECTION 4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL</b>		
4.1	Requirements	4-1
4.2	Best Management Practices	4-2
4.2.1	Requirements and Guidelines for Erosion and Sediment Controls	4-2
4.2.2	Procedures for Notifying Construction Site Developers and Operators of Requirements for Registration	4-6
4.2.3	Requirements for Construction Site Operators to Implement Appropriate Erosion and Sedimentation Control Best Management Practices	4-6
4.2.4	Requirements for Construction Site Operators to Control Waste at the Site	4-7
4.2.5	Procedures for Site Plan Review	4-10
4.2.6	Procedures for Receipt and Consideration of Information Submitted by the Public	4-10
4.2.7	Procedures for Site Inspection and Enforcement of Control Measures	4-11
<b>SECTION 5 POST-CONSTRUCTION STORMWATER MANAGEMENT</b>		
5.1	Requirements	5-1
5.2	Best Management Practices	5-2
5.2.1	Requirements for Structural and Non-Structural Best Management Practices	5-2
5.2.2	Procedures for Addressing Post Construction Runoff from Construction and Reconstruction Projects	5-6
5.2.3	Ensuring Long Term Operation and Maintenance of Best Management Practices	5-6

<b><u>TABLE OF CONTENTS-Continued</u></b>		<b><u>Page</u></b>
<b>SECTION 6 POLLUTION PREVENTION / GOOD HOUSEKEEPING</b>		
6.1	Requirements	6-1
6.2	Best Management Practices	6-2
6.2.1	Operation and Maintenance Program	6-2
6.2.2	Employee Training Program	6-6
6.2.3	Street Sweeping Program	6-8
6.2.4	Catch Basin Maintenance Program	6-10
6.2.5	Preventative Maintenance Program	6-11
<b>SECTION 7 ADDITIONAL REQUIREMENTS</b>		
7.1	Authorization Under This General Permit	7-1
7.1.1	Eligible Activities	7-1
7.1.2	Requirements for Authorization	7-1
7.2	Proper Operation and Maintenance	7-2
7.3	Availability of Information	7-2
7.4	Keeping Plans Current	7-2
7.5	Monitoring Requirements	7-3
7.6	Reporting and Record Keeping	7-3
7.7	General Discharge Requirements	7-4
7.8	Total Maximum Daily Load (TMDL) Allocations	7-4
7.9	Regulations of Connecticut State Agencies Incorporated Into the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems	7-4
7.10	Duty to Correct and Report Violations	7-5
7.11	Duty to Provide Information	7-5
7.12	Correction of Inaccuracies	7-5
7.13	Other Applicable Law	7-5
<b>SECTION 8 CERTIFICATION AND SIGNATURE</b>		
8.1	Certification Requirements	8-1
8.2	Plan Certification and Signature	8-1

**TABLE OF CONTENTS-Continued**

**Page**

**APPENDIX A – ABBREVIATIONS AND DESCRIPTIONS**

**APPENDIX B – CTDOT ROADWAYS AND RAILWAYS COVERED UNDER  
NPDES PHASE II MS4 GENERAL PERMIT**

**APPENDIX C – CTDOT FACILITIES COVERED UNDER NPDES PHASE II  
MS4 GENERAL PERMIT**

**APPENDIX D – CTDOT FACILITIES COVERED UNDER OTHER GENERAL  
PERMITS WITH CTDEP**

**APPENDIX E – CTDOT ORGINIZATIONAL CHART**

**APPENDIX F – STATE URBANIZED AREA MAP**

**APPENDIX G – DISTRICT AND TOWN URBANIZED AREA MAP LEGEND**

**APPENDIX H – DISTRICT 1 URBANIZED AREA MAPS**

**APPENDIX I – DISTRICT 2 URBANIZED AREA MAPS**

**APPENDIX J – DISTRICT 3 URBANIZED AREA MAPS**

**APPENDIX K – DISTRICT 4 URBANIZED AREA MAPS**

**APPENDIX L – AVERAGE DAILY TRAFFIC ZONES**

**APPENDIX M – TRIBUTARY SIGNAGE GUIDELINES AND STANDARDS**

## **INTRODUCTION / OVERVIEW**

### **I.1 INTRODUCTION**

This Stormwater Management Plan (SWMP) was developed by the Connecticut Department of Transportation (CTDOT) for the purpose of establishing, implementing and enforcing a stormwater management program to reduce the discharge of pollutants from the department'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 department's highways, roadways and railways located within Urbanized Areas (UA) as indicated by the 2000 Census. Additionally, all interstate highways within the state will be covered under this 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 Department 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.

The department 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.

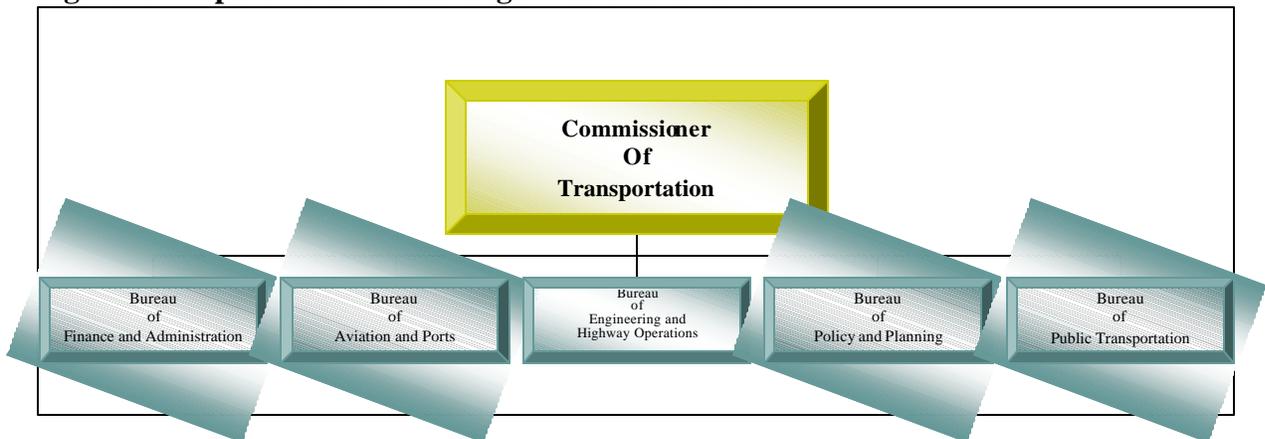
- Public education and outreach
- Public involvement / participation
- Illicit discharge detection and elimination
- Construction site stormwater runoff control
- Post-construction stormwater management
- Pollution prevention/good housekeeping

For each minimum control measure, the department 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 DEPARTMENT STRUCTURE AND INFORMATION

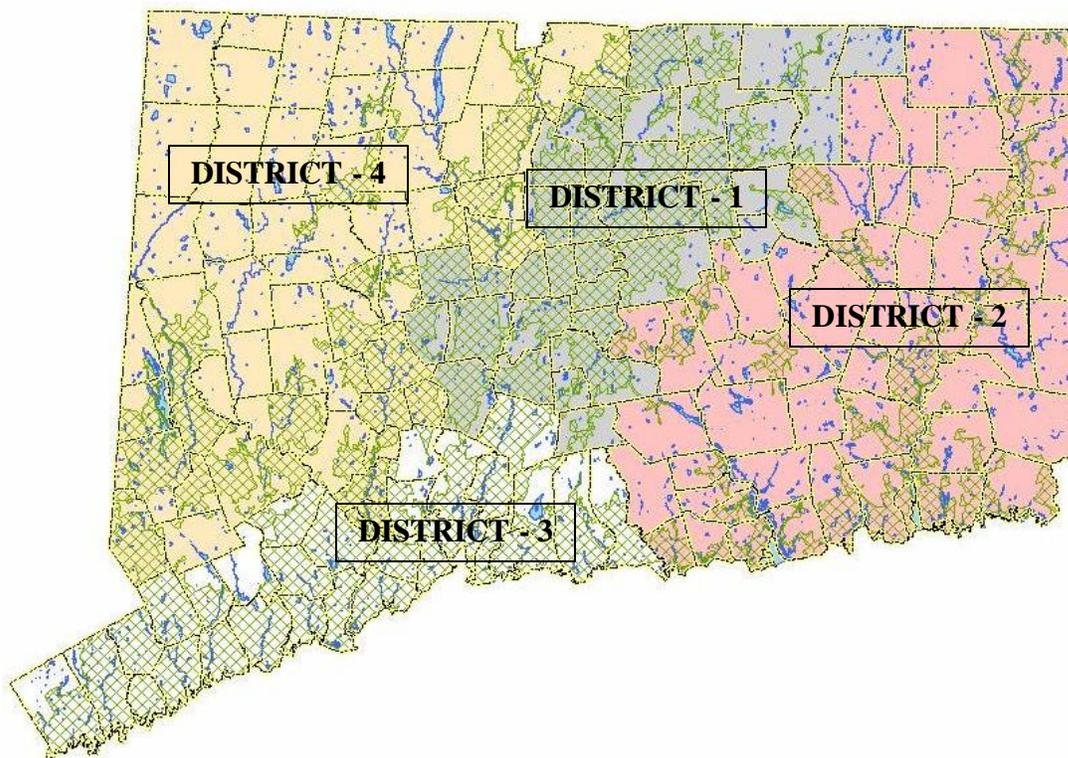
The department is divided into five bureaus including Finance and Administration, Aviation and Ports, Engineering and Highway Operations, Policy and Planning and Public Transportation. Within each bureau, the department is further divided into separate offices as indicated in the department organizational chart contained in the appendix of this plan.

**Figure I.1 Department Bureau Organizational Chart**



For construction and maintenance purposes, the department is divided into four districts numbered 1 through 4.

**Figure I.2 CTDOT Maintenance Districts**



As of December 31, 2001, the department's facilities within the state included the following:

- 3,732 miles of state maintained highways and roads
- 235 miles of railroad right of way
- 6 Airport facilities
- 1 Port facility
- 2 Ferry facilities
- 5 Office facilities (1 Headquarters, 4 District offices)
- 3 Rail facilities
- 65 maintenance facilities (garages, sign shops, repair facilities, etc.)
- 37 salt storage facilities

When compared to the total mileage of all roads within the state, including those maintained by the towns, the portion maintained by the department represents approximately 18% of the total.

### **I.3 DEPARTMENT RESPONSIBILITIES AND LIMITATIONS**

It is the mission of the Connecticut Department of Transportation to provide a safe, efficient and cost-effective transportation system that meets the mobility needs of its users.

The department is a state agency established and governed by the General Statutes of Connecticut responsible for all aspects of the planning, development, maintenance and improvement of transportation in the state. The department does not possess statutory enforcement or taxing powers similar to those of the one hundred and sixty nine municipalities within the state. Additionally, the department does not have the authority to regulate land use, zoning, building/development permits beyond the state owned right of way associated with the highways and roadways owned and operated by the State.

The department relies upon the legislative and enforcement authority of other state agencies and municipalities to regulate storm water quality and establish water policy throughout the state for any land outside of the department's control. Specifically, the CTDEP is relied upon to protect and/or restore the State's surface and ground waters, water related resources regarding public water supply, human health and safety, provide hazard mitigation, river restoration, preserve and enhance water based recreation, propagation of fish and aquatic life, and the natural character and economic well being of the State.

### **I.4 NPDES PHASE II WORKING COMMITTEE**

As part of the development of the SWMP, a working committee was established with representatives of various units within the department including, Construction, Consultant Design, Environmental Compliance, Environmental Planning, Hydraulics and Drainage, Maintenance, Property and Facilities, Public Relations, Public Transportation, State Design,

Rights of Way, Surveys and the department's consultant for this assignment, Maguire Group Inc.

During the development of the plan, the committee met on a regular basis to discuss relevant issues and provide input and guidance in the development of the plan. A list of the members of the working committee is provided below.

**Table I.1 NPDES Phase II Working Committee Members**

<b>Name</b>	<b>Office / Division or Organization</b>
Judith S. Cantwell	Environmental Planning
Paul N. Corrente	Environmental Planning
Daniel A. Gladowski	State Design
Colin F. Goegel	Aviation and Ports
James E. Hamilton	Construction
Thomas A. Harley	Consultant Design
Edgar T. Hurlle	Environmental Planning
Richard T. Jankovich	Environmental Compliance
Derek A. Kohl	Maguire Group Inc.
David L. Labossiere	Rights of Way
Michael E. Masayda	Hydraulics and Drainage
Russell Morin	Maintenance
Stephen G. Scholz	Consultant Design
Daniel J. Smachetti	Property and Facilities
Steven Sokolowski	Central Surveys
David R. Stock	Maguire Group Inc.
John J. Wallace	Communications
Jay Young	Office of Rails

## **I.5 STATE INFORMATION**

### **General Information**

The state covers an area of approximately 5,554 square miles, including 161 square miles of inland water and 538 square miles of coastal water under state jurisdiction.

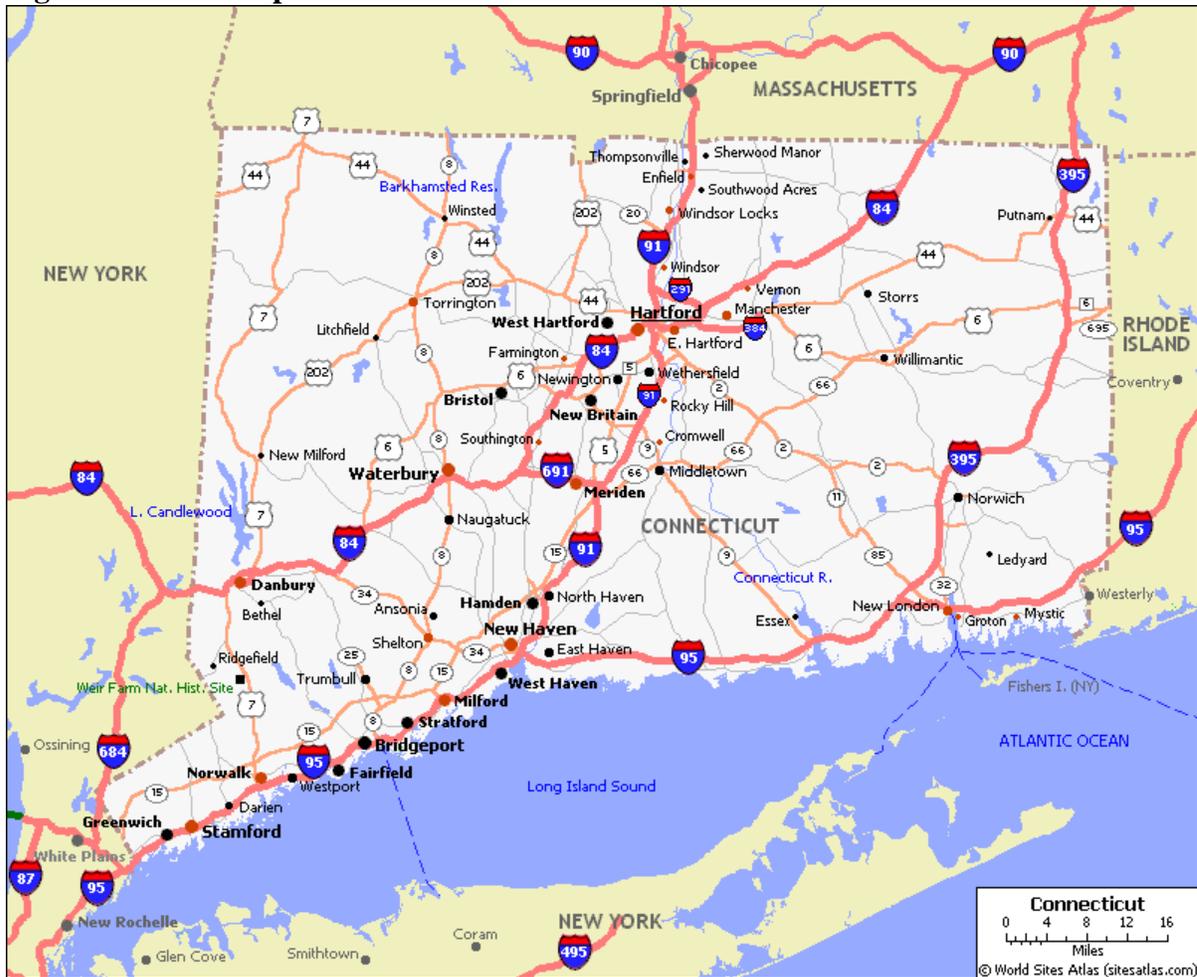
Three major rivers including the Connecticut River, the Housatonic River and the Thames River drain Connecticut flowing southward to Long Island Sound. Other principal rivers include the Naugatuck River, Yantic River, Quinebaug River, Willimantic River and Shetucket River. In addition, there are approximately 6,000 lakes and ponds within the state.

The largest lake is Candlewood Lake, and the largest natural lake and water supply reservoir is Bantam Lake.

Precipitation in the state is for the most part evenly distributed throughout the year with most of the state receiving forty to fifty inches of rainfall per year.

Approximately 1880 square miles of the state is considered to be Urbanized Area (UA).

**Figure I.3 State Map**



## **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 Bureau Chief of the Bureau of Engineering and Highway Operations 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 March 10, 2003 (Registration Date Postponed by CTDEP) while the SWMP associated with this general permit must be submitted by September 8, 2003 (Tentative Date). Complete implementation of the stormwater management program is required by the end of the first term of the general permit, typically 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 department employees and the public of the impacts of stormwater discharges on waterbodies, 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 will be developed and evaluated by the department and made available to municipalities for implementation through town or community programs.

Tributary signage is already used by the department and will continue to be used in the future as part of the 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:

- CTDOT NPDES Phase II Working Committee
- Public Information Meetings
- Brochure at Public Information Meetings
- Storm Drain Marking/Stenciling

A working committee was established, consisting of a diverse range of department disciplines, for the purposes of assisting in and participating in the development of the SWMP for the department. Meetings began in July of 2002 and continued on a regular basis through the completion of this plan.

Public information meetings were held in each of the department's four districts to educate and involve the public in the development of the SWMP. The meetings were held at the following locations and dates:

- **District 1**  
February 20, 2003 at 10:00 a.m.  
Connecticut Department of Transportation  
Conference A-B  
2800 Berlin Turnpike  
Newington, CT
- **District 2**  
February 18, 2003 at 10:00 a.m.  
Waterford Town Hall  
15 Rope Ferry Road  
Waterford, CT
- **District 3**  
February 27, 2003 at 10:00 a.m.  
Stratford Town Hall  
2<sup>nd</sup> Floor Council Chambers  
2725 Main Street  
Stratford, CT
- **District 4**  
February 25, 2003 at 10:00 a.m.  
Council of Governments of Central  
Naugatuck Valley  
Lombard Building, Room 300  
20 East Main Street  
Waterbury, CT

The public information meetings were conducted by the CTDOT along with the department's consultant for this assignment, Maguire Group Inc. The meetings were attended primarily by municipal representatives including public works directors, town engineers and town management from many towns within the districts. Employees of the regional planning agencies, as well as CTDOT employees and some environmental groups also attended.

A presentation outlining the department'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. The attendees were informed that the CTDOT would make information and materials available in the future to aid in the development of their own stormwater management plans. Upon completion, a digital copy of the department's SWMP was provided upon request.

The selected BMP's will also require the development of a brochure to be displayed at construction and design public information meetings conducted by the department. The brochure will provide information on stormwater management and quality as it affects the environment.

The storm drain marking / stenciling program detailed in the Public Education and Outreach minimum control measure will be made available to municipalities. This will encourage public participation and involvement at the community level.

## **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 waterbodies.

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

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

The department 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 interstate highways. This will require the acquisition 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 sixteen (16) different outfalls each year. Each of the four (4) districts will test four (4) outfalls per year. One test will be performed for each of the established Average Daily Traffic (ADT) groups per district. The sampling based upon ADT classification will allow for different types of roadways and levels of traffic to be accounted for. This will ensure that all classifications of roadways will be sampled / monitored from arterials with 30,000 and under ADT of traffic to interstate roadways with over a 100,000 of ADT. Levels of pollution in stormwater runoff typically increase with increased volumes of traffic.

The department will continue to monitor its stormwater discharges in an effort to detect and address future non-stormwater discharges, and will coordinate with 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 department requires erosion and sediment controls and registration of permits for all state construction projects. The requirements associated with these items are detailed in several documents / publications developed by the department 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 department's Environmental Planning unit, 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 appropriate unit within the department for consideration. Information related to construction site runoff is forwarded to and considered by the Environmental Planning unit.

Site inspection and enforcement of control measures are utilized on all of the 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 Environmental Planning unit and the District construction offices.

## **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 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 dissipators; 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 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 department units, stormwater management BMP's are required for all projects.

The department is divided into four maintenance districts across the state. Each maintenance district will be responsible for the long term operation and maintenance of the department's facilities in each of the respective districts.

## **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, feet 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 department's operation and maintenance program.

Training will continue to be provided for the proper operation and maintenance of the department's facilities and roadways. Additional training will be developed to directly address stormwater 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 interstates and interchange zones 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 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. 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
- Regulations of Connecticut State Agencies
- Duty to Correct and Report Violations
- Duty to Provide Information
- Correction of Inaccuracies
- Other Applicable Law

## **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 waterbodies 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.

The benefits associated with this BMP include reaching a diverse audience covering a large geographic area. Public information meetings are conducted by the department at various locations throughout the state 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	Position Responsible
Year 1	Develop brochure / fact sheet	Bureau Chief Arthur W. Gruhn
Year 2	Display and distribute brochure/fact sheet at 5 public information meetings	Bureau Chief Arthur W. Gruhn
Year 3	Display and distribute brochure/fact sheet at 10 public information meetings	Bureau Chief Arthur W. Gruhn
Year 4	Display and distribute brochure/fact sheet at 20 public information meetings	Bureau Chief Arthur W. Gruhn
Year 5	Display and distribute brochure/fact sheet at all public information meetings	Bureau Chief Arthur W. Gruhn

**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 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 bus and train stations 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 developed (print, radio, or television) 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.

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**

<b>Target Date</b>	<b>Activity</b>	<b>Position Responsible</b>
Year 1	Develop brochure, develop website Evaluate and select media type for PSA's	Bureau Chief Arthur W. Gruhn
Year 2	Develop brochure, develop website Develop PSA	Bureau Chief Arthur W. Gruhn
Year 3	Display / distribute brochure at 5 bus and train stations Website accessible to public Initial broadcast of PSA	Bureau Chief Arthur W. Gruhn
Year 4	Display / distribute brochure at 10 bus and train stations Evaluate website and implement changes as required Increase PSA broadcast times per year	Bureau Chief Arthur W. Gruhn
Year 5	Display / distribute brochure at all bus and train stations Evaluate website and implement changes as required Increase PSA broadcast times per year	Bureau Chief Arthur W. Gruhn

### 1.2.3 Library of Educational Materials

A library of educational materials will be developed and maintained at the department's headquarters in Newington, Connecticut. The library will consist of data, information, fact sheets and guidelines pertaining to stormwater management. The library will be available to the department's employees and available to the public and consultant community on request. Copies will also be distributed to the state library in Hartford. 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.

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

<b>Target Date</b>	<b>Activity</b>	<b>Position Responsible</b>
Year 1	Collect data and information	Bureau Chief Arthur W. Gruhn
Year 2	Collect data and information	Bureau Chief Arthur W. Gruhn
Year 3	Catalog / organize collected materials	Bureau Chief Arthur W. Gruhn
Year 4	Establish library and make materials available to CTDOT employees	Bureau Chief Arthur W. Gruhn
Year 5	Access to library made available to the public and consultant community	Bureau Chief Arthur W. Gruhn

#### **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 waterbodies and that illegal dumping pollutes those waters.

Storm drain marking / stenciling products will be developed and evaluated by the department for future distribution to municipalities. They will be 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 department's roadways since traffic volumes are high and pedestrian access is limited, making installation difficult and limiting visibility of the marking / stenciling. Therefore, the department will develop these markings / stencils primarily for distribution to municipalities for use on appropriate roadways within each community. The markings / stencils will be ready for limited distribution during the 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 can provide a lead-in to volunteer monitoring projects and increase community participation in a variety of other stormwater-related activities.

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.	Bureau Chief Arthur W. Gruhn
Year 2	Begin trial program on V.I.P. projects	Bureau Chief Arthur W. Gruhn
Year 3	Evaluate trial program Distribute materials to towns on a limited basis	Bureau Chief Arthur W. Gruhn
Year 4	Distribute materials to towns on a limited basis	Bureau Chief Arthur W. Gruhn
Year 5	Distribute materials to towns on a limited basis	Bureau Chief Arthur W. Gruhn

### 1.2.5 Tributary Signage

A tributary signage program is already in place within the department. The Division of Traffic Engineering has guidelines and standards for the placement of various signs at a variety of waterbodies and watercourses throughout the state, including public water supply areas. These guidelines and standards can be found in the appendix of this document. The signs include bridge and river information signs and public drinking water protection signs. A significant number of water resources have already been signed along the department's highways and roadways. Maintenance and placement of additional signs will occur during construction and maintenance projects throughout the state.

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 department's roadways.

*Examples of tributary signage utilized by the department*

CONNECTICUT  
RIVER

ENTERING  
PUBLIC  
DRINKING  
WATER  
PROTECTION  
AREA

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**

<b>Target Date</b>	<b>Activity</b>	<b>Position Responsible</b>
Year 1 to 4	Continue tributary signage program	Bureau Chief Arthur W. Gruhn
Year 5	Complete tributary signage in urbanized areas	Bureau Chief Arthur W. Gruhn

## **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 CTDOT NPDES Phase II Working Committee**

As part of the development of the stormwater management plan, a working committee was established with representatives of several units within the department including, Aviation and Ports, Construction, Consultant Design, Environmental Compliance, Environmental Planning, Hydraulics and Drainage, Maintenance (Highway Operations), Property and Facilities, Public Relations, Public Transportation, State Design, Rights of Way, Surveys and the department's consultant for this assignment, Maguire Group Inc.

During the development of the plan, the committee met on a regular basis to discuss relevant issues and provide input and guidance in the development of the plan. The committee met on a biweekly basis beginning in July 2002 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.

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

Public information meetings were held during the development of the stormwater management plan to allow for public participation and comment. The meetings were held at the following locations and dates in each of the department's four districts, in the spring of 2003.

- **District 1**  
February 20, 2003 at 10:00 a.m.  
Connecticut Department of  
Transportation  
Conference A-B  
2800 Berlin Turnpike  
Newington, CT
- **District 2**  
February 18, 2003 at 10:00 a.m.  
Waterford Town Hall  
15 Rope Ferry Road  
Waterford, CT
- **District 3**  
February 27, 2003 at 10:00 a.m.  
Stratford Town Hall  
2<sup>nd</sup> Floor Council Chambers  
2725 Main Street  
Stratford, CT
- **District 4**  
February 25, 2003 at 10:00 a.m.  
Council of Governments of Central  
Naugatuck Valley  
Lombard Building, Room 300  
20 East Main Street  
Waterbury, CT

The public information meetings were conducted by the CTDOT along with the department's consultant for this assignment, Maguire Group Inc. The purpose of the meetings was to provide information, answer questions, and receive comments on CTDOT'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 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 a total of 74 people including municipal representatives, public works directors, town engineers and town management from many towns within the districts. Employees of the regional planning agencies, as well as CTDOT employees 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 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.

The attendees were informed that the CTDOT would make information and materials available in the future to aid in the development of their own stormwater management plans. A digital copy of the department's SWMP was provided upon request.

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.

*SWMP Public  
Information Meetings*



### 2.2.3 Brochures at Public Information Meetings

Brochures addressing the effects of stormwater quality on the environment will be developed. The brochures will be available to the public at public information meetings for design/construction projects conducted by the department. The brochure will be developed by the end of the first year of the program with distribution occurring at the public meetings during the second year.

The benefits associated with this BMP include reaching a diverse audience covering a large geographic area. Public hearings / information meetings are conducted by the department at various locations throughout the state on a continuous basis as part of the department's design process. This will allow the public the opportunity to comment and participate in the development of stormwater management plans for specific projects during the design development process.

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

**Table 2.1 Public Information Meeting Brochure BMP  
Measurable Goals and Implementation Dates**

Target Date	Activity	Position Responsible
Year 1	Develop brochure	Bureau Chief Arthur W. Gruhn
Year 2	Display / distribute brochures at 5 public information meetings	Bureau Chief Arthur W. Gruhn
Year 3	Display / distribute brochures at 10 public information meetings	Bureau Chief Arthur W. Gruhn
Year 4	Display / distribute brochures at 20 public information meetings	Bureau Chief Arthur W. Gruhn
Year 5	Display / distribute brochures at all public hearings / information meetings	Bureau Chief Arthur W. Gruhn

### 2.2.4 Storm Drain Marking/Stenciling – Give Stencil to Towns

The storm drain marking / stenciling program developed for Section 2 “Public Education and Outreach will be made available to towns and municipalities, beginning the third year of the program, at which time the stencils will have been tested and evaluated. The materials will be available to all towns on a limited first come, first served basis.

The benefits associated with this BMP include increased public participation in local stormwater management programs and increased awareness by the general public. It will educate and demonstrate to the public the direct link between the storm sewer system and the surface waters to which it drains.

*Example of storm drain marking/stenciling participation on a community level.*



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

**Table 2.2 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.	Bureau Chief Arthur W. Gruhn
Year 2	Begin trial program on V.I.P. projects	Bureau Chief Arthur W. Gruhn
Year 3	Evaluate trial program Distribute materials to towns on a limited basis	Bureau Chief Arthur W. Gruhn
Year 4	Distribute materials to towns on a limited basis	Bureau Chief Arthur W. Gruhn
Year 5	Distribute materials to towns on a limited basis	Bureau Chief Arthur W. Gruhn

## **SECTION 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 waterbodies. 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**

#### **Department Wide**

- 3.1.1 Implementation of an ordinance or other regulatory mechanism (Department policy, guidelines or procedures) 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 15” or greater where such outfalls are located anywhere on department property.

#### **Urbanized Areas**

- 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”=2000’ and maximum 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 department. 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 waterbody (if available) or wetland to which the stormwater runoff discharges within 500’.
  - c. If the outfall does not discharge directly to a named waterbody, the name of the nearest named waterbody 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 Department Policy Regarding Non-Stormwater Discharges**

The department does not allow non-stormwater discharges into storm sewer systems owned and maintained by the department. Department policy and guidelines requires action by the Attorney General for discharges of this type that are discovered. Upon identifying a non-stormwater discharge, the source of the discharge shall be determined and if found to be beyond or outside the department’s system, the MS4 will be notified along with the Attorney General. If the non-stormwater discharge is from a department facility, the source location shall be confirmed and corrective actions taken to eliminate the non-stormwater discharge. The department will continue to prohibit these discharges and will use all available resources for its enforcement.

Training will be provided to 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 state owned facilities (including buildings, highways, roadways, railways and commuter lots) within urbanized areas and all limited access expressways within the state. The map(s) scale will be a minimum of 1”=2000’ and a maximum 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 waterbody or wetland discharged into, or name of nearest named waterbody 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 department will obtain aerial photogrammetry (Year 2000), 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
- Major Traffic Generators
- Town mapping
- MDC mapping
- Video Log

Field surveys will be performed by the Districts and Central Surveys, using GPS (mapping grade), to verify existing structure locations and locate missing structures. Due to the size of the department's storm drainage facilities and the extent of the mapping needed, the map will be completed within eight years. It will take an extended period of time to complete this statewide map covering the urbanized areas. The mapping will be completed one district at a time (4 phases), starting with District 2. The remaining districts will be completed as follows: District 4, then District 1 and finishing with District 3. This phased approach will allow for any unforeseen problems to be worked out in the initial district to be mapped.

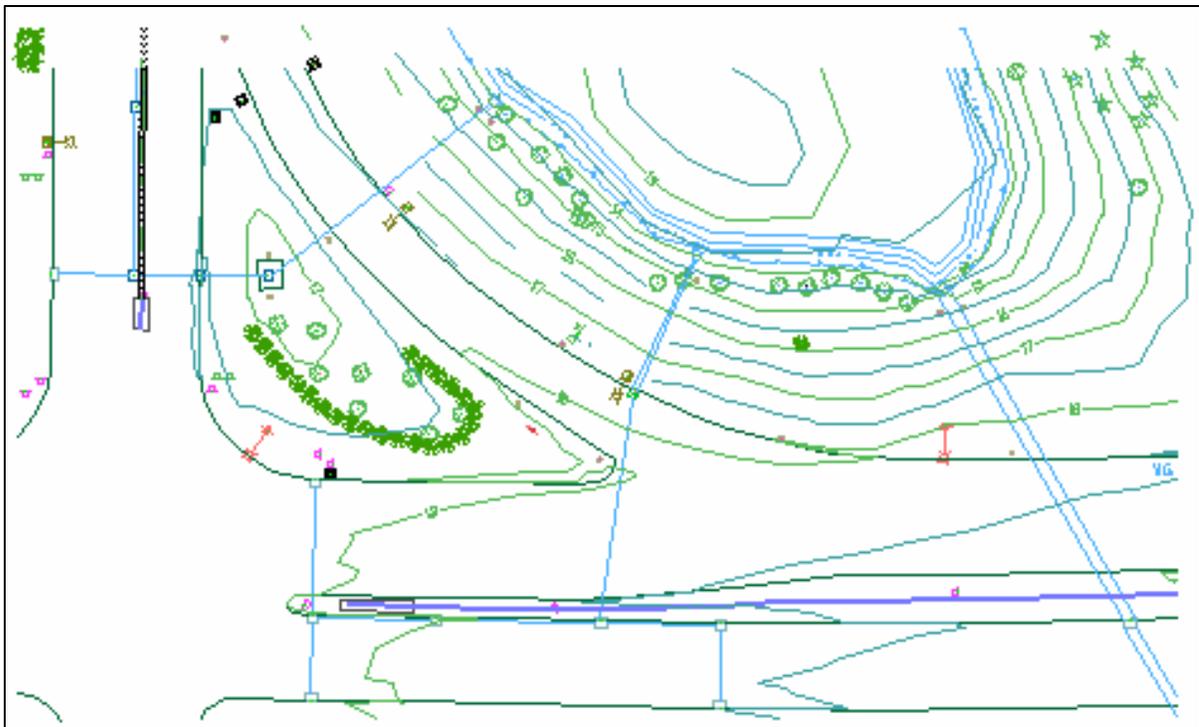
The department will establish a system (database) to manage all of the information associated with the map(s). The database will utilize a Geographical Information System (GIS) to build and query the information, which will be accessible to all offices of the department. The database will include but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

- |             |                          |
|-------------|--------------------------|
| • ID number | • Direction              |
| • Town      | • Associated structures  |
| • Size      | • Associated waterbodies |
| • Shape     | receiving stormwater     |
| • Elevation | discharges               |
| • Flow      |                          |

The storm sewer map is a component of the program that will require continuous maintenance after its initial development. The 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 department's systems. This information will be helpful in determining the extent of dry weather flows, potential sources and the particular waterbodies that these flows may be affecting. The map will also be useful in identifying the responsible parties associated with specific illicit discharges.

*Example of Storm Sewer System Mapping. 1"=40' topographic mapping showing contours, storm sewer system and outfalls.*



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

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

Target Date	Activity	Position Responsible
Year 1	Acquire initial 25% of base mapping (Aerial Photogramtry.) Perform initial 10% of Field Data Collection Purchase workstation and software	Bureau Chief Arthur W. Gruhn
Year 2	Acquire 25% of base mapping (Aerial Photogramtry.) Perform 22% of Field Data Collection Modify and maintain database (GIS)	Bureau Chief Arthur W. Gruhn
Year 3	Acquire 25% of base mapping (Aerial Photogramtry.) Perform 22% of Field Data Collection Modify and maintain database (GIS)	Bureau Chief Arthur W. Gruhn
Year 4	Acquire final 25% of base mapping (Aerial Photogramtry.) Perform 23% of Field Data Collection Modify and maintain database (GIS)	Bureau Chief Arthur W. Gruhn
Year 5	Perform final 23% of Field Data Collection Modify and maintain database (GIS)	Bureau Chief Arthur W. Gruhn
Year 6	Continue compiling GIS information / preparing map(s)	Bureau Chief Arthur W. Gruhn
Year 7	Continue compiling GIS information / preparing map(s)	Bureau Chief Arthur W. Gruhn
Year 8	Complete initial layout of storm sewer system map	Bureau Chief Arthur W. Gruhn

**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 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. 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

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 department will sample/monitor sixteen (16) different outfalls annually. Each of the four (4) districts will test four (4) outfalls per year. The districts are defined in maps contained in the appendix of this document. Outfalls will be selected for monitoring based upon road type and average daily traffic (ADT) grouping associated with a particular outfalls drainage area. One test will be performed for each of the following four (4) ADT groups per district:

- 0 to 30,000
- 30,000 to 60,000
- 60,000 to 100,000
- over 100,000

A state-wide map showing the “Average Daily Traffic Zones” for various classifications of roadways can be found in the appendix of this report.

The sampling based upon ADT classification will allow for different types of roadways and levels of traffic to be accounted for. This will ensure that all classifications of

roadways will be sampled / monitored from arterials with 30,000 and under ADT of traffic to interstate roadways with over a 100,000 of ADT. Levels of pollution in stormwater runoff typically increase with increased volumes of traffic.

Facilities with lease operations (rest areas with fuel or food, commuter parking lots, ect.) would be eligible for testing if they fall within one of the ADT groups scheduled for testing.



*Typical storm sewer system outfalls.*

For multi-facility locations and locations where state owned property is leased and/or operated by public or private entities (abutting MS4), the department and the 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 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 Attorney General.

The department'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. The following list contains the types of facilities and transportation structures covered under the general permit for the Discharge of Stormwater from Small Municipal Storm Sewer Systems.

### Facilities

- Rest Area
- Rest Area & Service Station “Gas” (Rest Area Only)
- Rest Area & Service Station “Gas & Restaurant” (Rest Area Only)
- Commuter Parking Lots (within U.A.’s and along Interstates)

### Roadways

- Interstate Routes
- U.S. Routes (within U.A.’s)
- State Routes (within U.A.’s)

### Railways

- Active rail lines owned and maintained by CTDOT or Metro North

Several lists describing the individual facilities, roadways and railways are located in the appendix.

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 a typical illicit stormwater discharge.*



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**

<b>Target Date</b>	<b>Activity</b>	<b>Position Responsible</b>
Year 1	Purchase monitoring equipment Personnel training Select outfalls to be tested in Year 2	Bureau Chief Arthur W. Gruhn
Year 2	Begin outfall monitoring 4 Outfalls tested ( 4 per District 2 ; 1 per ADT Type)	Bureau Chief Arthur W. Gruhn
Year 3	8 Outfalls tested ( 4 per District 2 & 4 ; 1 per ADT Type)	Bureau Chief Arthur W. Gruhn
Year 4	12 Outfalls tested ( 4 per District 1, 2 & 4 ; 1 per ADT Type)	Bureau Chief Arthur W. Gruhn
Year 5	16 Outfalls tested ( 4 per District 1,2 ,3 & 4 ; 1 per ADT Type)	Bureau Chief Arthur W. Gruhn

**3.2.4 Future Illicit Discharge Detection and Elimination**

The department 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 forest lands. 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.

### **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 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

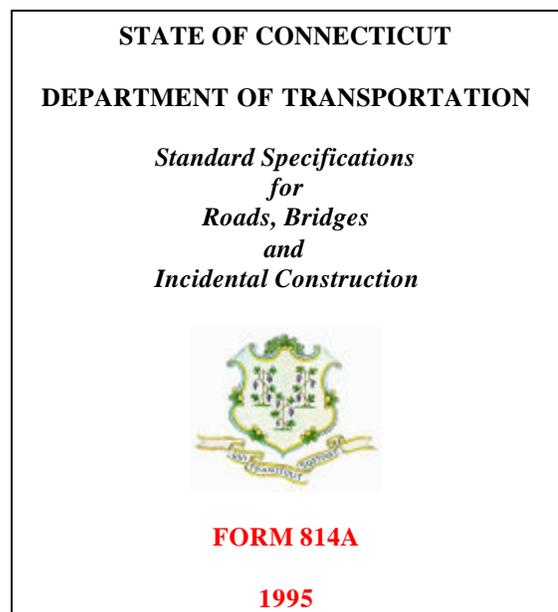
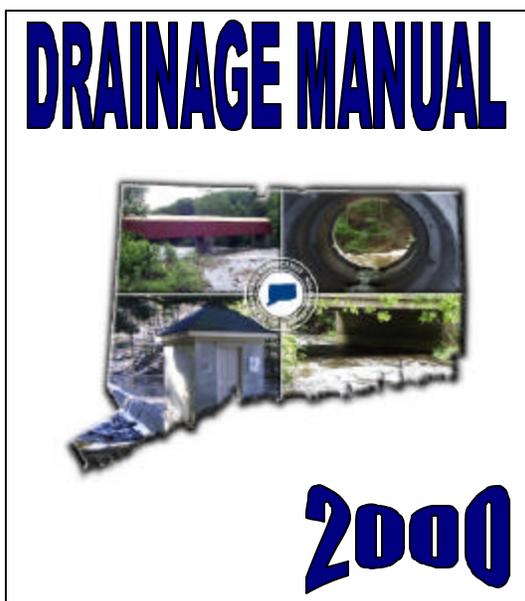
The following BMP's will be utilized in the implementation of the program to address the minimum control measure for Construction Site Runoff Control.

### 4.2.1 Requirements and Guidelines for Erosion and Sediment Controls

The 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 department relating to erosion and sediment 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.

**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 department is not authorized by state statutes to impose sanctions for non-compliance 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 department to ensure compliance by contractors with sediment and erosion control plans for specific projects. The department shall notify and coordinate with the attorney general'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

*Photograph of land grading activities with exposed soils*



*Photograph of hay mulch for temporary soil stabilization*



*Photograph of grass lined channel stone dike/check dam*



**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 Erosion Control Matting used for Slope Protection*

**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



*Photograph of Sedimentation Control System*



*Photograph of Sediment Basin*

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

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

Target Date	Activity	Position Responsible
Year 1	Revise Consultant Engineer’s Manual, Drainage Manual and Standard Specifications to Implement 1 Acre Disturbance Threshold	Bureau Chief Arthur W. Gruhn
Year 2 - 5	Continue Requirements and Guidelines for Erosion and Sediment Controls on all Projects	Bureau Chief Arthur W. Gruhn

**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	Bureau Chief Arthur W. Gruhn
Year 2 - 5	Continue Compliance with Registration Requirements	Bureau Chief Arthur W. Gruhn

**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 department’s Standard Specifications

for Roads, Bridges and Incidental Construction, Form 814A 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.

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	Bureau Chief Arthur W. Gruhn

**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 waterbody.

- 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 department 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	Bureau Chief Arthur W. Gruhn

**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 department. Construction plans and specifications are reviewed by the department’s Environmental Planning unit for conformance to the 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	Bureau Chief Arthur W. Gruhn

**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 unit within the department for consideration. Information related to construction site runoff is forwarded to and considered by the Environmental Planning unit.

**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	Bureau Chief Arthur W. Gruhn

**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 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 Environmental Planning unit and the District construction offices.

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	Bureau Chief Arthur W. Gruhn

## **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 has been shown to significantly affect receiving waterbodies. 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 waterbody 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 waterbody. 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 departments 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 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 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 dissipators; 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 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.

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

*Photograph of Dry Extended Detention Pond*

**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 Grassed Swale*



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

*Photograph of Outlet Structure  
Requiring 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
- Connecticut Guidelines for Soil Erosion and Sediment Control, DEP Bulletin 34, 2002 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 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.

**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.

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	Bureau Chief Arthur W. Gruhn

**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	Bureau Chief Arthur W. Gruhn

**5.2.3 Ensuring Long Term Operation and Maintenance of Best Management Practices**

The department is divided into four maintenance districts across the state. Each maintenance district will be responsible for the long term operation and maintenance of the department’s facilities in each of the respective districts. Maintenance for rails will be handled by the Office of Rails. 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 Section 6 – Good Housekeeping / Pollution Prevention 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**

<b>Target Date</b>	<b>Activity</b>	<b>Position Responsible</b>
Year 1 - 5	Continue operation and maintenance of BMP's	Bureau Chief Arthur W. Gruhn

## **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 department facility operations.

This measure requires the 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.

#### **Urbanized Areas**

- 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 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 Section 6.2.2.

#### 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 district level for information pertaining to that district, and will be conducted at the department level (headquarters) for information relating to the permit document. Within the districts records may be kept at individual facilities, providing greater accessibility to personnel that would need immediate information. For example, training logs for the weekly tailgate meetings held by each district's

Office of Maintenance, are kept at the maintenance garages where the meetings are held. The following list of topics are 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 7 "Additional Requirements" of this plan.

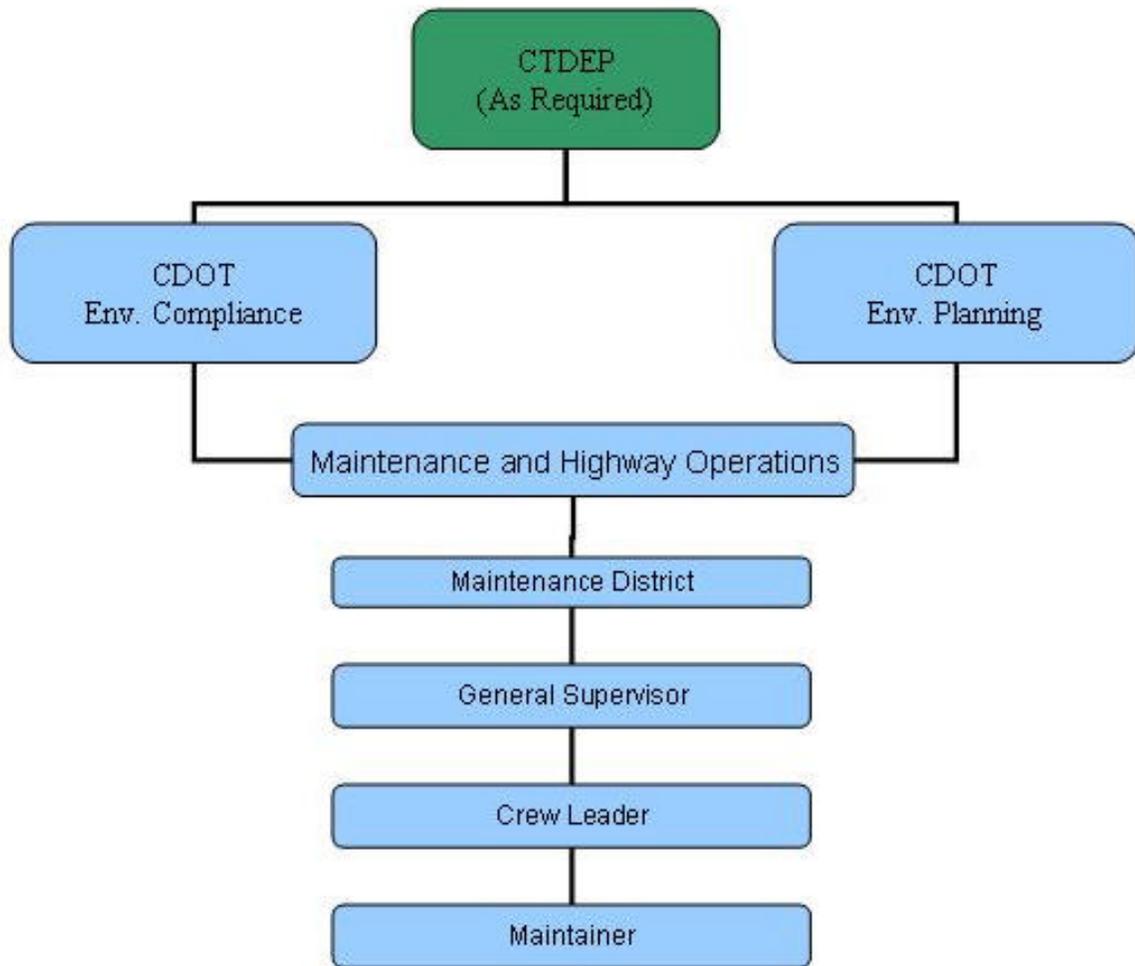
### Internal Reporting

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, district manager and headquarters and then to the office of Environmental Planning and Environmental Compliance 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 stormwater 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 departments 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 waterbodies as a result of the failure and deterioration of ageing systems. Preventative measures utilized by the department include the following:

- 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
- Railroad Inspection - Inspections of 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	Bureau Chief Arthur W. Gruhn
Years 2-5	Continue Operation and Maintenance requirements	Bureau Chief Arthur W. Gruhn

## **6.2.2 Employee Training Program**

The department'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 department. 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. One seminar will be held for each of the Offices of Design, Construction and Maintenance, and a second seminar for the Division of Property and Facility Services. 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 Construction**

The Office of Construction will continue to annually conduct a "Project Engineer School" to 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.

### **Office of Maintenance**

The Office of Maintenance will provide training for General Supervisors, Crew Leaders, Drainage Crews, Drainage Engineers and Managers 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
- Maintenance Directors' Meetings
- Bi-Weekly Managers' Meetings
- Tailgate Meetings

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

### **Office of Design**

The Office of Design will continue to conduct Senior's 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.

### **Division of Property and Facilities Services**

The Division of Property and Facility Services will continue to conduct an annual hazardous materials refresher. This training session will include the handling, storage and containment of hazardous materials such as asbestos. Stormwater management topics including, cleaning product restrictions, vehicle washing, and pest control will also be discussed. Training will continue in the first year of the program and proceed annually throughout the program.

### **Public Transportation**

Public Transportation will continue to conduct an annual hazardous materials refresher. This training session will include the handling, storage and containment of hazardous materials such as asbestos. Stormwater management topics including, cleaning product restrictions, vehicle washing, and pest control will also be discussed. Training will continue in the first year of the program and proceed annually throughout the program.

The employee training program is intended to train new employees and remind current employees of operations and procedures.

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**

<b>Target Date</b>	<b>Activity</b>	<b>Position Responsible</b>
Year 1	Develop Employee Training Curriculum	Bureau Chief Arthur W. Gruhn
Years 2	Implement Employee Training requirements	Bureau Chief Arthur W. Gruhn
Years 3-5	Continue Employee Training requirements	Bureau Chief Arthur W. Gruhn

### **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 conduct street sweeping on a scheduled basis to minimize pollutant export to state and local waterbodies. 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 waterbodies. 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:

#### **Department 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.

#### **Urbanized Areas**

The department will perform multiple sweeps per year for priority areas, where sediment/debris has been known to accumulate in higher quantities. These priority areas will be based upon the department's knowledge and

experience of the degree of sediment accumulation during the year. Geographical location, climate, traffic patterns and surface geometry may also be factors in determining priority areas. The first sweep will be performed as soon as possible after snowmelt.

The following locations generally receive multiple sweeps per year:

- Interstates
- Interchange Zones
- Urbanized Areas within environmentally sensitive areas such as public watershed areas

Facilities operated and maintained by other leasees, located on department 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 CTDOT street sweeping equipment.*



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	Bureau Chief Arthur W. Gruhn
Years 2-5	Continue Street Sweeping requirements	Bureau Chief Arthur W. Gruhn

#### **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 a catch basin maintenance program that will consist of inspecting and if necessary cleaning catch basins on a regularly scheduled basis. 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 leasees, located on department 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.

*Photographs of typical 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	Bureau Chief Arthur W. Gruhn
Years 2-5	Continue Catch Basin Maintenance requirements	Bureau Chief Arthur W. Gruhn

### 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 Aviation and Ports, Design, Construction, Maintenance, Facilities, Public Transportation, and Bridge Maintenance. In general,

the preventative maintenance of drainage systems is 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 rail inspections.

For new construction / reconstruction projects, the department requires 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 department's "Drainage Manual 2000", appendix 4.A.
- Existing department 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 Drainage Engineer of the appropriate Departmental District 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:

#### Office of Maintenance

Catch basin inspections will be conducted during the regularly scheduled cleaning, as described in Section 6.2.4

### Rails

Drainage structures over 4' in height or width beneath rails will be inspected every two years.

### Bridge Maintenance

The department's Bridge Safety and Evaluation section will conduct biennial inspections on drainage structures greater than 20' in width of structure opening, as part of their bridge inspection program defined by the National Bridge Inspection Standards (NBIS). The state is required to inspect and evaluate local bridges and structures, and record structure inventory and appraisal information. The Federal Highway Administration (FHWA), U.S. Department of Transportation, is assigned the responsibility for collecting and storing the data reported by the state, and for administering the National Bridge Inventory. For detailed information regarding the inspection of these structures, refer to the department's Bridge Inspection Manual.

For drainage structures less than 20' in width of structure opening, the maintenance unit will inspect these structures biennially as defined by the NBIS.

### V.I.P. Projects

The project supervisor and district drainage engineer 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	Bureau Chief Arthur W. Gruhn
Years 2-5	Continue Preventative Maintenance requirements	Bureau Chief Arthur W. Gruhn

---

## **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 this general permit, 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 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 department 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 department will provide such information, as the Commissioner of CTDEP requires to evaluate the SWMP and its implementation.

## **7.5 MONITORING REQUIREMENTS**

The department 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 waterbody into which the department discharges, the 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 department 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 department 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 department 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 department's authorization under this general permit, the department 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 department 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 department 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.”

**Preparer's Signature**

Arthur W. Gruhn., P.E.  
 Bureau Chief  
 Bureau of Engineering and Highway Operations  
 State of Connecticut, Department of Transportation

\_\_\_\_\_  
 Signature and Date

**Preparer's Signature**

Edgar J. Hurle  
 Director of Environmental Planning  
 Bureau of Policy and Planning  
 State of Connecticut, Department of Transportation

\_\_\_\_\_  
 Signature and Date

**Preparer's Signature**

Derek A. Kohl, P.E.  
 Principal Transportation Engineer  
 Maguire Group Inc.

\_\_\_\_\_  
 Signature and Date

**APPENDIX A**

**ABBREVIATIONS AND DEFINITIONS**

## **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, underdrains, 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 waterbodies.

“*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, underdrains, 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.

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

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

“*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**

**CTDOT ROADWAYS AND RAILWAYS  
COVERED UNDER THE GENERAL PERMIT FOR THE  
DISCHARGE OF STORMWATER FROM SMALL  
MUNICIPAL SEPARATE STORM SEWER SYSTEM**

**List of CTDOT Roadways & Railways Covered Under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems.**

**INTERSTATE ROUTE<sup>1</sup>**

I-84  
I-91  
I-95  
I-291  
I-384  
I-395  
I-691

**U.S. ROUTE<sup>2</sup>**

1  
5  
6  
7  
44  
202

**STATE ROUTE<sup>2</sup>**

	53	102	153
2	55	104	154
3	57	106	155
4	58	107	156
8	59	108	159
9	61	109	160
10	63	110	161
11	64	111	162
12	66	113	163
14	67	114	165
14A	68	116	167
15	69	117	168
16	70	120	169
17	71A	122	171
19	72	123	175
20	73	124	177
21	74	126	178
22	75	127	179
25	77	131	181
30	79	132	182
31	80	133	183
32	81	135	184
33	82	136	185
34	83	137	186
35	85	138	187
37	87	140	188
39	89	145	189
41	94	146	190
42	97	148	191
45	99	149	192
47	100	150	195
49	101	151	196

<b><u>STATE ROUTE</u></b> <sup>2</sup>	215	263	337
197	217	272	341
198	219	275	343
199	222	286	354
201	229	309	361
203	234	313	364
205	243	316	372
207	244	317	
213	254	320	
214	262	322	

**RAILWAYS OWNED BY CTDOT**<sup>3</sup>

- BERKSHIRE LINE - New Milford to MA State Line (Operated by Housatonic Railroad)
- TORRINGTON SECONDARY RAILLINE - Waterbury to Torrington (Operated by Naugatuck Railroad/  
Railroad Museum of New England)
- SUFFIELD LINE - Suffield to Windsor Locks (Operated by Connecticut Southern Railroad)
- MIDDLETOWN SECONDARY - Middletown to Middletown (Operated by P & W Railroad)
- MIDDLETOWN SECONDARY - Durham to Middletown (Operated by P & W Railroad)
- WETHERSFIELD SECONDARY - Hartford to Middletown (Operated by P & W Railroad)
- PORTLAND INDUSTRIAL TRACK - Middletown to Portland (Operated by P & W Railroad)
- WINDSOR LINE - Hartford to Windsor (Operated by Central New England Railroad)
- ENFIELD LINE - S. Windsor to MA State Line (Operated by Central New England Railroad)
- WILLIMANTIC BRANCH - Windham to Sprague (Operated by P & W Railroad)
- WILLIMANTIC BRANCH - Plainfield to Plainfield (Operated by P & W Railroad)
- NEW HAVEN MAIN LINE - Greenwich to New Haven (Operated by Metro North Railroad)
- NEW CANAAN BRANCH - Stamford to New Canaan (Operated by Metro North Railroad)
- DANBURY BRANCH - Norwalk to Danbury (Operated by Metro North Railroad)
- WATERBURY BRANCH - Milford to Waterbury (Operated by Metro North Railroad)

Notes: <sup>1</sup> Interstate Routes within urbanized and non-urbanized areas, are covered under the department's General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems.

<sup>2</sup> U.S. and State Routes within urbanized areas only, are covered under the department's General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems.

<sup>3</sup> Railroad stations and related facilities including parking facilities are covered under other general permits for the discharge of stormwater.

**APPENDIX C**

**CTDOT FACILITIES**

**COVERED UNDER THE GENERAL PERMIT FOR THE**

**DISCHARGE OF STORMWATER FROM SMALL**

**MUNICIPAL SEPARATE STORM SEWER SYSTEMS**

**List of CTDOT Facilities Covered Under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems.**

**REST AREAS**

Route I-84 E.B. Danbury Exit 2  
Route I-84 E.B. Southington Exit 28  
Route I-84 E.B. West Willington Exit 69  
Route I-84 W.B. West Willington Exit 70  
Route I-91 S.B. Wallingford Exit 15  
Route I-91 N.B. Middletown Exit 19  
Route I-95 S.B. North Stonington Exit 93

**REST AREAS & SERVICE STATIONS (GAS)<sup>1</sup>**

Route 15 N.B. (Wilbur Cross Parkway) North Haven Exit 63  
Route 15 S.B. (Wilbur Cross Parkway) North Haven Exit 64  
Route 15 N.B. (Merritt Parkway) Orange Exit 55  
Route 15 S.B. (Merritt Parkway) Orange Exit 56  
Route 15 N.B. (Merritt Parkway) Fairfield Exit 45  
Route 15 S.B. (Merritt Parkway) Fairfield Exit 46  
Route 15 N.B. (Merritt Parkway) New Canaan Exit 37  
Route 15 S.B. (Merritt Parkway) New Canaan Exit 38  
Route 15 N.B. (Merritt Parkway) Greenwich Exit 27  
Route 15 S.B. (Merritt Parkway) Greenwich Exit 28  
Route I-395 S.B. Montville Exit 79A  
Route I-395 N.B. Plainfield Exit 89  
Route I-395 S.B. Plainfield Exit 90

**REST AREAS & SERVICE STATIONS (GAS & RESTAURANTS)<sup>2</sup>**

Route I-95 N.B. Darien Exit 12  
Route I-95 S.B. Darien Exit 10  
Route I-95 N.B. Fairfield Exit 21  
Route I-95 S.B. Fairfield Exit 22  
Route I-95 N.B. Milford Exit 40  
Route I-95 S.B. Milford Exit 41  
Route I-95 N.B. Branford Exit 53  
Route I-95 S.B. Branford Exit 54  
Route I-95 N.B. Madison Exit 61  
Route I-95 S.B. Madison Exit 62

**COMMUTER PARKING LOTS**

All state owned and operated commuter parking lots within urbanized areas and along interstates, not covered under other general permits for the discharge of stormwater, will be covered under the department's General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems.

**WEIGH STATIONS**<sup>3</sup>

I-84 Danbury  
I-84 Union  
I-91 Middletown  
I-95 Waterford

- Notes:
- <sup>1</sup> The rest area, including parking area, entrance and exit ramps and grounds will be covered under the department's general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. The areas associated with the gas station, including parking areas, fueling area and grounds will be covered under that facilities individual permit for the discharge of stormwater.
  - <sup>2</sup> The rest area, including parking areas, entrance and exit ramps and grounds will be covered under the department's general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. The areas associated with the gas station, including parking areas, fueling area and grounds will be covered under that facilities individual permit for the discharge of stormwater. The areas associated with the restaurant facility, including buildings, sidewalks and grounds will be covered under that facilities individual permit for the discharge of stormwater.
  - <sup>3</sup> Weigh stations not included in this list will be covered under other general permits for the discharge of stormwater.

**APPENDIX D**

**CTDOT FACILITIES  
COVERED UNDER OTHER GENERAL PERMITS  
WITH CTDEP**

**List of CTDOT Facilities Covered Under Other General Permits with CTDEP.**

**MAINTENANCE / REPAIR / GARAGE**

Avon Maintenance Facility  
Beacon Falls Maintenance Facility  
Bolton Maintenance Facility  
Branford Maintenance Facility  
Brookfield Repair Facility  
Canterbury Maintenance Facility  
Colchester Maintenance Facility  
Cornwall Maintenance Facility  
Danbury Maintenance Facility  
Darien Repair & Maintenance Facility  
East Granby Repair Facility  
East Hartford Signs and Markings Facility  
East Haven Repair Facility  
East Windsor Maintenance Facility  
Farmington Maintenance Facility  
Glastonbury Maintenance Facility  
Groton Maintenance Facility  
Guilford Maintenance Facility  
Haddam / Tylerville Maintenance Facility  
Hartford Bridge & Electric Facility  
Higganum Repair Facility  
Lisbon Repair Facility  
Litchfield Maintenance Facility  
Mansfield Maintenance Facility  
Marlborough Maintenance Facility  
Meriden Maintenance Facility  
Middletown Maintenance Facility  
Milford Maintenance & Repair Facility  
Electrical Maintenance Garage (Montville)  
New Canaan Maintenance Facility  
New Haven Boulevard Maintenance Facility  
New Milford Maintenance Facility  
Newington Headquarters \ Maintenance Garage  
  \ Motor Pool \ Data Center \ Training Center  
Norfolk Maintenance Facility  
North Canaan Maintenance Facility  
North Haven Maintenance Garage  
Norwich Maintenance Facility (Salem Tpk.)  
Occum Maintenance Facility #68 (Norwich)  
Old Saybrook Maintenance & Repair Facility  
Orange Maintenance Facility  
Plainfield Signs & Markings  
Pomfret Maintenance Facility

Portland Machine Shop  
Putnam Maintenance & Repair Facility  
Rocky Hill - CT DOT Sign Shop / Garage  
Simsbury Maintenance Facility  
Southbury Maintenance Facility  
Southington Maintenance Facility  
Stratford Maintenance Facility  
Thomaston Maintenance Facility  
Torrington Bridge Facility  
Trumbull Maintenance Garage  
Union Maintenance Facility  
Vernon Maintenance Facility  
Wallingford Maintenance Facility  
Waterbury Maintenance & Repair Facility  
Waterford Maintenance Facility  
Westbrook Maintenance Facility  
Westport Maintenance Facility  
Wethersfield Maintenance & Repair Facility  
Willington Maintenance Facility  
Winchester Maintenance & Repair Facility  
Windsor Maintenance Facility  
Wolcott Electric Garage

**SALT STORAGE**

Ashford Satellite Salt Storage Facility  
Barkhamsted Satellite Salt Storage Facility  
Berlin Satellite Salt Storage Facility  
Bethlehem Satellite Salt Storage Facility  
East Hampton Satellite Salt Storage Facility  
East Lyme Satellite Salt Storage Facility  
Farmington Satellite Salt Storage Facility  
Franklin Salt Storage & Bridge Facility  
Greenwich Satellite Salt Storage Facility  
Griswold Satellite Salt Storage Facility  
Hartland Salt Storage  
Hebron Satellite Salt Storage Facility  
Mansfield Satellite Salt Storage Facility  
Middletown Satellite Salt Storage Facility  
New Haven District III Sand and Salt Storage  
Newtown Salt Storage Facility  
North Haven Satellite Salt Storage Facility  
Preston Satellite Salt Storage Facility

**SALT STORAGE CONT'**

Central Warehouse and Salt Storage Facility  
(Rocky Hill)

Salem Satellite Salt Storage Facility  
Seymour Salt Storage Facility  
Sharon Satellite Salt Storage Facility  
Stafford Satellite Salt Storage Facility  
Stamford Salt Storage Facility  
Stratford Salt Storage and Maintenance Facility  
Thomaston Satellite Salt Storage Facility  
Thompson Satellite Salt Storage Facility  
Trumbull Satellite Salt Storage Facility

(RTE 111 & 25)

Wallingford Reserve Salt Storage Facility  
Washington (New Preston) Satellite Salt Storage  
Facility  
Wilton Satellite Salt Storage Facility  
Woodstock Satellite Salt Storage Facility

**MIX PILE STORAGE**

New London Mix Pile Storage Location  
Stonington Mix Pile Storage Location

**PORT / FERRY**

Port of New London  
C.T. River Ferry - Chester / Hadlyme  
C.T. River Ferry - Rocky Hill / Glastonbury

Block Island / New London Ferry  
Bridgeport / Port Jefferson Ferry  
Chester Ferry Slip

**AIRPORT**

Danielson Airport  
Groton - New London Airport Terminal  
Hartford - Brainard Airport Maintenance Facility  
Groton / New London Airport Maintenance Facility  
Oxford Airport  
Windham Airport  
Bradley International Airport

**TRANSIT**<sup>1</sup>

Connecticut Transit (Hartford)  
Connecticut Transit (New Haven)  
Connecticut Transit (Stamford)

**RAIL**<sup>2</sup>

Diesel Shop / New Haven Rail Yard  
Railroad Station (New Haven)  
Stamford Rail Yard

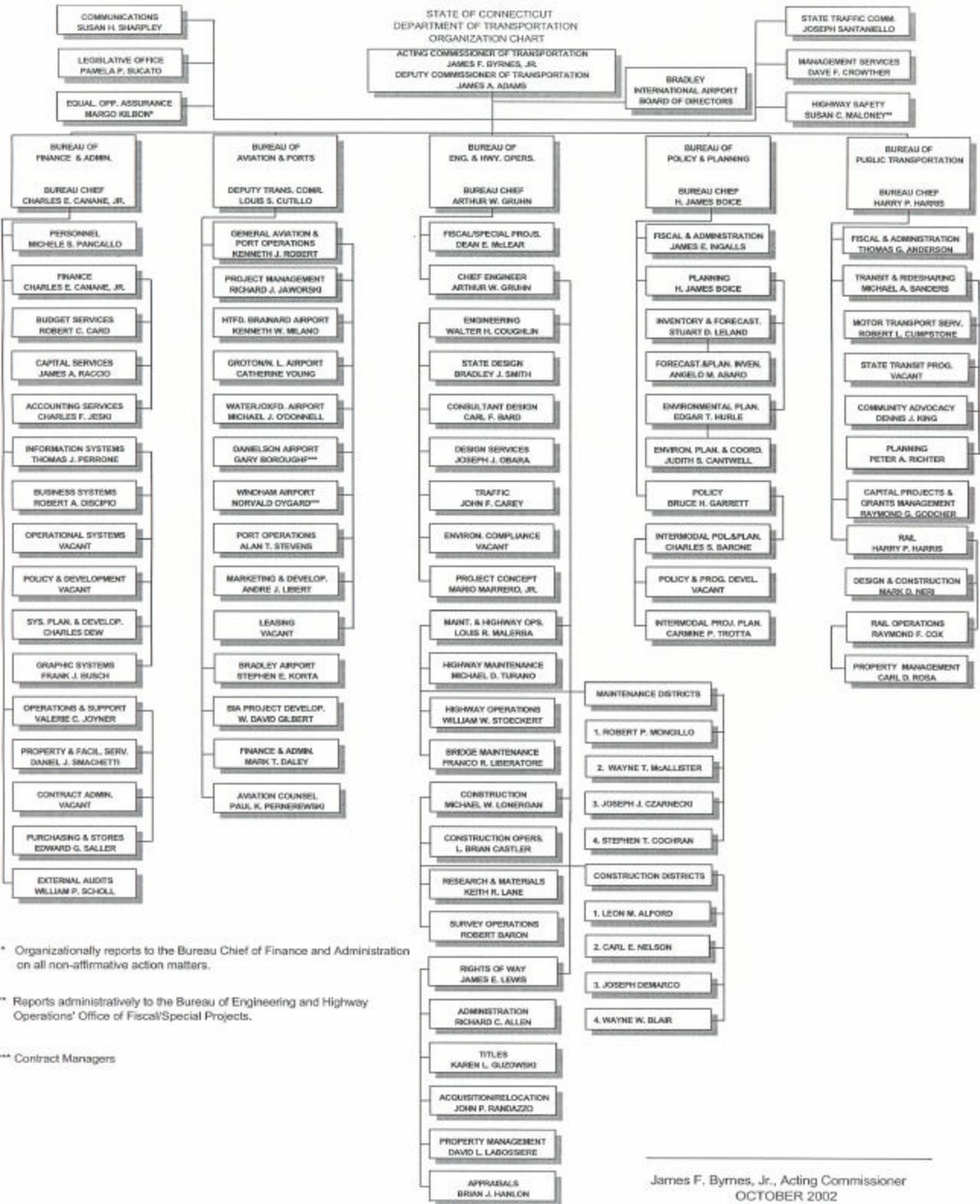
Notes: This is a general list compiled during the development of this document. The actual number of CTDOT facilities covered under other general permits may be different from the total number listed in this appendix.

<sup>1</sup> The CT Transit Company is responsible for acquiring and maintaining coverage under the general permit for the discharge of stormwater.

<sup>2</sup> The company/agency operating and maintaining railroad facilities including stations, parking lots and garages, and maintenance buildings shall be responsible for acquiring and maintaining an individual permit for the discharge of stormwater.

**APPENDIX E**

**CTDOT ORGANIZATIONAL CHART**



**APPENDIX F**

**STATE URBANIZED AREA MAP**

**APPENDIX G**

**DISTRICT AND TOWN  
URBANIZED AREA MAP  
LEGEND**

## APPENDIX H

### DISTRICT 1 URBANIZED AREA MAPS

**ANDOVER**

**BERLIN  
BLOOMFIELD  
BOLTON  
BRISTOL**

**CHESHIRE  
COVENTRY  
CROMWELL**

**DURHAM**

**EAST HARTFORD  
EAST WINDSOR  
ELLINGTON  
ENFIELD**

**GLASTONBURY**

**HARTFORD**

**MANCHESTER  
MERIDEN  
MIDDLEFIELD**

**MIDDLETOWN**

**NEW BRITAIN  
NEWINGTON**

**PLAINVILLE**

**ROCKY HILL**

**SOMERS  
SOUTHINGTON  
SOUTH WINDSOR  
STAFFORD**

**TOLLAND**

**VERNON**

**WEST HARTFORD  
WETHERSFIELD  
WILLINGTON  
WINDSOR  
WINDSOR LOCKS  
WOLCOTT**

NOTE: All of the State roadways are not labeled or displayed on the following district and town maps due to the map scale. A complete listing of the State roadways covered under the General permit for the Discharge of Stormwater from Small Municipal Separate Stormwater systems is located in Appendix B of this storm water management plan.

## APPENDIX I

### DISTRICT 2 URBANIZED AREA MAPS

<b>BOZRAH</b>	<b>MANSFIELD</b>
<b>BROOKLYN</b>	<b>MARLBOROUGH</b>
	<b>MONTVILLE</b>
<b>CANTERBURY</b>	
<b>CHESTER</b>	<b>NEW LONDON</b>
<b>CLINTON</b>	<b>NORTH STONINGTON</b>
<b>CHOLCHESTER</b>	<b>NORWICH</b>
<b>DEEP RIVER</b>	<b>OLD LYME</b>
	<b>OLD SAYBROOK</b>
<b>EAST HADDAM</b>	
<b>EAST HAMPTON</b>	<b>PLAINFIELD</b>
<b>EAST LYME</b>	<b>PORTLAND</b>
<b>ESSEX</b>	<b>PRESTON</b>
	<b>PUTNAM</b>
<b>GRISWOLD</b>	
<b>GROTON</b>	<b>SALEM</b>
	<b>SPRAGUE</b>
<b>HADDAM</b>	<b>STONINGTON</b>
<b>HEBRON</b>	
	<b>THOMPSON</b>
<b>KILLINGLY</b>	
	<b>WATERFORD</b>
<b>LEDYARD</b>	<b>WESTBROOK</b>
<b>LISBON</b>	<b>WINDHAM</b>
<b>LYME</b>	<b>WOODSTOCK</b>

NOTE: All of the State roadways are not labeled or displayed on the following district and town maps due to the map scale. A complete listing of the State roadways covered under the General permit for the Discharge of Stormwater from Small Municipal Separate Stormwater systems is located in Appendix B of this storm water management plan.

## APPENDIX J

### DISTRICT 3 URBANIZED AREA MAPS

**BETHANY  
BRANFORD  
BRIDGEPORT**

**DARIEN**

**EAST HAVEN  
EASTON**

**FAIRFIELD**

**GREENWICH  
GUILFORD**

**HAMDEN**

**MADISON  
MILFORD  
MONROE**

**NEW CANAAN  
NEW HAVEN  
NORTH BRANFORD  
NORTH HAVEN  
NORWALK**

**ORANGE**

**SHELTON  
STAMFORD  
STRATFORD**

**TRUMBULL**

**WALLINGFORD  
WEST HAVEN  
WESTON  
WESTPORT  
WILTON  
WOODBRIAGE**

NOTE: All of the State roadways are not labeled or displayed on the following district and town maps due to the map scale. A complete listing of the State roadways covered under the General permit for the Discharge of Stormwater from Small Municipal Separate Stormwater systems is located in Appendix B of this storm water management plan.

## APPENDIX K

### DISTRICT 4 URBANIZED AREA MAPS

<b>ANSONIA</b>	<b>NEW HARTFORD</b>
<b>AVON</b>	<b>NEW MILFORD</b>
	<b>NEWTOWN</b>
<b>BARKHAMSTED</b>	
<b>BEACON FALLS</b>	<b>OXFORD</b>
<b>BETHEL</b>	
<b>BROOKFIELD</b>	<b>PLYMOUTH</b>
<b>BURLINGTON</b>	<b>PROSPECT</b>
<b>CANTON</b>	<b>REDDING</b>
	<b>RIDGEFIELD</b>
<b>DANBURY</b>	
<b>DERBY</b>	<b>SEYMOUR</b>
	<b>SHERMAN</b>
<b>EAST GRANBY</b>	<b>SIMSBURY</b>
	<b>SOUTHBURY</b>
<b>FARMINGTON</b>	<b>SUFFIELD</b>
<b>GRANBY</b>	<b>THOMASTON</b>
	<b>TORRINGTON</b>
<b>HARWINTON</b>	
	<b>WASHINGTON</b>
<b>LITCHFIELD</b>	<b>WATERBURY</b>
	<b>WATERTOWN</b>
<b>MIDDLEBURY</b>	<b>WINCHESTER</b>
	<b>WOODBURY</b>
<b>NAUGATUCK</b>	
<b>NEW FAIRFIELD</b>	

NOTE: All of the State roadways are not labeled or displayed on the following district and town maps due to the map scale. A complete listing of the State roadways covered under the General permit for the Discharge of Stormwater from Small Municipal Separate Stormwater systems is located in Appendix B of this storm water management plan.

**APPENDIX L**

**AVERAGE DAILY TRAFFIC ZONES**

**APPENDIX M**

**TRIBUTARY SIGNAGE GUIDELINES  
AND STANDARDS**

DIVISION OF TRAFFIC ENGINEERING

SUBJECT:

Public Drinking Water Protection Area

STATEMENT OF PURPOSE:

To identify to emergency personnel, responding to incidences on State highways involving accidental dispersal of materials which could pose contamination to public water supplies, that special precaution should be taken in containing these materials.

DESCRIPTION:

The Division of Traffic Engineering will evaluate requests from water authorities and the DEP for placement of signs indicating when entering or leaving public drinking water (watershed/wellhead) areas. Accommodation of requests will take into consideration whether the addition of these signs to the roadway signing pattern can be accomplished without lessening the effectiveness of other signs or detracting the motorist's attention away from the tasks essential to driving.

Additionally, smaller signs, not facing traffic, may be erected along State highways at other appropriate points in watershed/wellhead areas. These secondary sign locations may be selected at points along State highways by the appropriate water agency, where their purpose will be best realized by emergency personnel.

Signs facing traffic at locations found to be acceptable for installation by the Division of Traffic Engineering shall be installed by the Department. The type and corresponding catalog numbers of the signs to be used are as shown:

<u>Sign Cat. No.</u>	<u>Size</u>		
51-5928	24" x 36" (600 mm x 900 mm)	<div style="border: 1px solid black; padding: 5px; text-align: center;">                     PUBLIC DRINKING WATER PROTECTION AREA NEXT 0 MI                 </div> (SILVER/GREEN)	
51-5929	60" x 72" (1500 mm x 1800 mm)		
<u>Sign Cat. No.</u>	<u>Size</u>		
51-5930	24" x 36" (600 mm x 900 mm)	<div style="border: 1px solid black; padding: 5px; text-align: center;">                     LEAVING PUBLIC DRINKING WATER PROTECTION AREA                 </div> (SILVER/GREEN)	
51-5931	60" x 72" (1500 mm x 1800 mm)		

Signs not facing traffic should be installed by the appropriate water authority, under permit obtained from the appropriate Department District Office. The signs should be of a reasonable size, as determined by the appropriate District Office when a permit application is filed.

<p>STATE &amp; TOWN LINE SIGNS (CONT)</p>	<p>2400X1200 96"X48" 4200X1800 168"X72" 51-2021 52-2022</p>	<p>ENTERING (TOWN NAME) CONNECTICUT</p>	<p>1200 (48") (NAME) Connecticut</p>	<p>1900X450 72"X18" 2400X600 96"X24" 51-2048 51-2049</p>	<p>TOWN OF (TOWN NAME) OR CITY OF (TOWN NAME)</p>	<p>1500 (66") NEW BRITAIN CITY LINE 51-2055</p>
<p>3300X1950 132"X78" 3600X1950 144"X78" 3750X1950 150"X78" 3900X1950 156"X78" 4500X1950 180"X78" 51-2072 51-2068 52-2059 52-2052 52-2070</p>	<p>(TOWN NAME) NEXT 0 EXITS TOWN LINE OR (TOWN NAME) NEXT 0 EXITS CITY LINE</p>	<p>(TOWN NAME) EXITS 00-00 TOWN LINE OR (TOWN NAME) EXITS 00-00 CITY LINE</p>	<p>3000X1950 120"X78" 3150X1950 126"X78" 3300X1950 132"X78" 52-2096 52-2090 52-2089</p>	<p>3300 (132") TRUMBULL EXITS 48-49-51 (142") 51-2098</p>	<p>600 (24") YANKEE DODDLE BRIDGE 51-2028</p>	
<p>BRIDGE &amp; RIVER INFORMATION SIGNS</p>	<p>450 (18") (VARIABLE) 300 RIVER (12") 51-2009</p>	<p>1200 (48") STILES BRIDGE 600 FIRST ERCTED 1791 51-2019</p>	<p>1650 (60") MICHAEL L MORGAN 600 BRIDGE (24") 51-2025</p>	<p>2400 (96") MILITARY ORDER OF THE PURPLE HEART BRIDGE 1500 (60") 51-2026</p>	<p>1500 (60") MILITARY ORDER OF THE PURPLE HEART BRIDGE 1350 (54") 51-2027</p>	<p>675 (27") CHARTER OAK BRIDGE (27") 51-2033</p>
<p>DEXTER D COFFIN BR CONNECTICUT RIVER 51-2029</p>	<p>2550 (102") 3500 (144") 51-2029</p>	<p>675 (27") BUCKLEY BRIDGE (18") 51-2031</p>	<p>675 (27") FOUNDERS BRIDGE (18") 51-2032</p>	<p>2850 (114") PUTNAM BRIDGE NEXT RIGHT 1500 (60") 51-2038</p>	<p>51-2033</p>	<p>51-2038</p>
<p>BY ORDER OF US COAST GUARD BRIDGE SHALL ON SIGNAL EXCEPT MAY 1 - OCT 31 7:15 AM - 7:15 PM ONCE HOURLY 15 MIN PAST THE HOUR NOV 1 - APR 30 7:15 PM - 5:15 AM 8 HR ADV NOTICE REQUIRED CALL 203-593-1411 51-2039</p>	<p>2250 (90") CONNECTICUT RIVER 900 (36") 51-2043</p>	<p>51-2032</p>	<p>51-2032</p>	<p>51-2032</p>	<p>51-2033</p>	<p>51-2038</p>

BRIDGE & RIVER INFORMATION SIGNS (CON'T)	2100X900 84"x38" 51-2041 FARMINGTON 51-2042 HOCKANUM 51-2044 HOUSATONIC 51-2045 QUINNIPIAC 51-2046 SAGATUCK	1500(60") THAMES RIVER 900(36")	1500(60") DRAWBRIDGE AHEAD DELAYS POSSIBLE SAVE GASOLINE SHUT OFF ENGINE 1200(48")	2700X1050 106"x42" 51-2076 3600X1350 144"x54" 51-2077	POSITIVELY NO STOPPING ON BRIDGE CHECK YOUR VEHICLE
	VARIABLE RIVER	51-2047	51-2074		
SCHOOL & CHURCH SIGNS	2700(108") QUINNIPIAC COLLEGE EXIT 62 3600(144") ALBERTUS MAGNUS COLLEGE EXIT 61	2400(96") EXIT 46 1600(24") SOUTH CENTRAL COMMUNITY COLL 4800(192")	2400(96") S. C. C. C. NEXT RIGHT 900(36")	2400(96") EXIT 44 1600(24") HARTFORD STATE TECH COLLEGE 4650(186")	2400(96") EXIT 31 1600(24") BRIARWOOD COLLEGE 1500(60") 3300(132")
	52-2118	52-2120	51-2121	52-2126	52-2127
	3150(126") HIGHER EDUCATION CENTER 900(36")	3150(126") HIGHER EDUCATION CENTER EXIT 18 1500(60")	2700(108") UCORN WATERBURY CAMPUS EXIT 21 1500(60")	3150(126") BRIARWOOD COLLEGE 600(24")	1200(48") TRINITY COLLEGE 1200(48")
	51-2129	51-2130	51-2132	51-2134	51-2135
	2700(108") UNIV OF CORN AT STAFFORD EXIT 35 1500(60")	3150X750 126"x30" 51-2137 3600X750 144"x30" 51-2138	2100(84") BARTLETT ARBORETUM EXIT 35 1200(48")	2700(108") TRINITY COLL BUSHNELL MEM NEXT RIGHT 1350(54")	2400(96") EXIT 44 800(24") UNIV OF HARTFORD 1500(60") 2850(114")
	51-2136	51-2142	51-2139	52-2140	52-2141
	3300(132") ALBERTUS MAGNUS COLLEGE NEXT RIGHT 1200(48")	3300(132") ALBERTUS MAGNUS COLLEGE SECOND RIGHT 1200(48")	3000(120") TRINITY COLL THIS EXIT 1200(48")	2400(96") EXIT 43 600(24") ST. JOSEPH COLLEGE UCORN HTFD CAMPUS 6150(246")	3000(120") GREATER HARTFORD 750 COMMUNITY COLL (30")
	51-2142	51-2143	51-2145	52-2146	51-2147

SPECIAL PURPOSE & CONVENIENCE SIGNS (CONT)	600x900 24"x36" 1500x1800 60"x72"	51-5930 51-5931	LEAVING PUBLIC WATER SUPPLY WATERSHED AREA	900(136") BUSINESS ACCESS	1200(148") \$1000 FINE FOR LITTERING	450(18") DO NOT LITTER	600(124") BUCKLE UP! IT'S THE LAW CT. DEPT. OF TRANSPORTATION
	2100(184") FOR SAFETY BUCKLE UP STATE LAW	1200(48") 600(24")	450(18") FIRE HYDRANT	2400(96") MAXIMUM FINE \$1000	450(18") DANGER HIGH VOLTAGE GROUND	750(30") VEHICLES SHOULD BE LOCKED WHEN NOT OCCUPIED NOT RESPONSIBLE FOR STOLEN ARTICLES	450(18") KEEP CONNECTICUT QUIET NOISE LAWS ENFORCED
COMMUTER PARKING and PARK & RIDE SIGNS	600(24") ENTER HERE	51-5941		600(24") PARK & RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 525-VANS	1500(160") RIDESHARE LOGO CALL METROPOOL 1-800-FIND-RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 1-800-842-2150
	600(24") PARK & RIDE	51-5942	600(24") PARK & RIDE	600(24") PARK & RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 525-VANS	1500(160") RIDESHARE LOGO CALL METROPOOL 1-800-FIND-RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 1-800-842-2150
	600(24") PARK & RIDE	51-5943	600(24") PARK & RIDE	600(24") PARK & RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 525-VANS	1500(160") RIDESHARE LOGO CALL METROPOOL 1-800-FIND-RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 1-800-842-2150
	600(24") PARK & RIDE	51-5944	600(24") PARK & RIDE	600(24") PARK & RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 525-VANS	1500(160") RIDESHARE LOGO CALL METROPOOL 1-800-FIND-RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 1-800-842-2150
	600(24") PARK & RIDE	51-5945	600(24") PARK & RIDE	600(24") PARK & RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 525-VANS	1500(160") RIDESHARE LOGO CALL METROPOOL 1-800-FIND-RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 1-800-842-2150
	600(24") PARK & RIDE	51-5946	600(24") PARK & RIDE	600(24") PARK & RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 525-VANS	1500(160") RIDESHARE LOGO CALL METROPOOL 1-800-FIND-RIDE	1500(160") RIDESHARE LOGO CALL RIDESHARE 1-800-842-2150