Stormwater Management Plan

Permit No. CT0030279

City of Stamford

Stamford, Connecticut

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FUSS & O'NEILL

56 Quarry Road
Trumbull, Connecticut

About this Document

The City of Stamford's Stormwater Management Plan provides general guidance for developing a plan for non-structural and structural controls to reduce pollutants in stormwater runoff from post development activities in residential, commercial, industrial areas, and at public facilities. This Stormwater Management Plan (SMP) is written in an attempt to comply with the NPDES Permit for discharge of stormwater from Stamford's municipal separate storm sewer system (MS4) on issued June 4, 2013.

This SMP details requirements intended to address compliance with the NPDES Permit. The City of Stamford also has and/or may develop numerous other Planning, Zoning, Engineering, Environmental Protection Board and other regulations, guidelines and practices that apply to development within the City of Stamford. These may be more restrictive than those stated below, and it is the property owner and/or developer's responsibility to ensure compliance with all applicable requirements.

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Executive Summary

The City of Stamford was issued a NPDES Permit for discharge of stormwater from its municipal separate storm sewer system (MS4) on June 3, 2013. The permit requires many actions in order to reduce pollution coming from stormwater runoff. Common pollutants from stormwater runoff include pesticides, fertilizers, oils, salt, litter, debris, and sediment. These pollutants can cause water bodies to become impaired. Another concern is the possible illicit connections from sanitary sewers and other sources which can transport harmful bacteria and other pollutants to water bodies. A requirement of the permit is preparation and compliance with this Stormwater Management Plant (SMP.) The SMP provides a framework for the rest of the conditions and actions required by the NPDES permit. Key sections of the SMP are summarized below.

Public Education and Involvement

The City's residents can contribute to the pollution transported via stormwater by misapplying lawn pesticides, herbicides and fertilizers, littering, dumping pollutants into storm drains, failing to dispose of pet waste properly, and other actions which can be detrimental to the quality of stormwater discharging into water bodies. Many people are unaware that they are polluting when engaged in these activities. Therefore, public education and outreach and public involvement and participation will help minimize the amount of pollution contributed to Stamford's water bodies by local residents. Also, public education and outreach coupled with public involvement and participation allows Stamford residents to have a voice with regard to stormwater.

Illicit Discharge Detection and Elimination (IDDE)

Illicit discharge detection and elimination will lessen the amount of pollutants discharging to local water bodies. Some people unknowingly dump pollutants into the storm drain or have illegal connections to the drainage system. The permit requires inspection of outfalls during dry weather to determine whether illicit discharges are suspected and then extensive evaluation and follow-up to eliminate the illicit discharges that are found.

Controls on Stormwater from Land Disturbance and Development

Construction site runoff and post-construction site runoff should be reduced so that water bodies are not receiving additional pollutants or sediment. Sediment causes water bodies to become physically and biologically altered. Decreases in habitat quality can result from significant amounts of sediment covering these habitat areas.

Infrastructure Operations and Maintenance

Pollution prevention and good housekeeping is a critical minimum control measure because it concentrates on municipal operations including the maintenance of other control measures. These activities can make an immediate difference with local water body pollutant levels. Street sweeping and other maintenance activities reduce the amount of sediment, salt and pollutants entering the drainage system thereby minimizing pollutant loads to local water bodies.

Water Quality Monitoring

The permit requires that in-stream samples be collected four times per year at ten locations. It also includes extensive outfall monitoring that is detailed in the SMP. Monitoring includes both dry and wet weather events.

1 Introduction

1.1 Overview

The City of Stamford was issued a NPDES Permit for discharge of stormwater from its municipal separate storm sewer system (MS4) on June 3, 2013 (hereinafter called NPDES Permit). A copy of the NPDES Permit can be found in *Appendix A*. The NPDES Permit requires many actions in order to reduce pollution coming from stormwater. Common water pollutants include pesticides, fertilizers, oils, salt, litter, debris, and sediment. These pollutants can cause water bodies to become impaired. Another concern is the possible illicit connections from sanitary sewers and other sources which can transport harmful bacteria and other pollutants to water bodies.

One requirement of the NPDES Permit is the preparation and compliance with this Stormwater Management Plan (SMP.) This SMP provides a framework for the rest of the conditions and actions required by the NPDES Permit. These include:

1. Formation of a Pollution Prevention Team
2. Preparation of Mapping
3. Implementation of Control Measures including:
    a. Public Education and Involvement
    b. Pollution Prevention (Source Controls)
    c. Controls on Stormwater from Land Disturbance and Development
    d. Illicit Discharge Detection and Elimination (IDDE) Program
    e. Infrastructure Operations and Maintenance
4. Establishment of a Monitoring Program

The schedules and procedures for the above items are included in this SMP. In addition, a description of the legal authority that the City of Stamford is developing is detailed in the SMP.

1.2 Overview of Selected Components

A brief overview of some of the most important components of the SMP and the reasons they are critical is provided below.

Public Education and Involvement

The City's residents can contribute to the pollution transported via stormwater by applying lawn pesticides, herbicides and fertilizers, littering, dumping pollutants into storm drains, failing to properly dispose of pet waste, and other actions which can be detrimental to the quality of stormwater discharging into water bodies. Many people are unaware that they are polluting when engaged in these activities. Therefore, public education and outreach and public involvement and participation will help minimize the amount of pollution contributed to Stamford's water bodies by local residents. Also, public education and outreach coupled with public involvement and participation allows The City's residents to have a voice with regard to stormwater.

IDDE

Illicit discharge detection and elimination will lessen the amount of pollutants discharging to local water bodies. Some people unknowingly dump pollutants into the storm drain or have illegal connections to the storm drainage system. Once pollutants are present in a water body, or after a receiving water body's physical structure and habitat have been altered, it is much more difficult and expensive to restore it to its previous condition. Therefore, the use of a management system that relies first on preventing degradation of receiving waters is recommended.

Controls on Stormwater from Land Disturbance and Development

Construction site runoff and post-construction site runoff should be reduced so that water bodies are not receiving additional pollutants or sediment. Sediment causes water bodies to become physically and biologically altered. Decreases in habitat quality can result from significant amounts of sediment covering these habitat areas.

Infrastructure Operations and Maintenance

Pollution prevention and good housekeeping is a critical minimum control measure because it concentrates on municipal operations including the maintenance of other control measures. These activities can make an immediate difference with local water body pollutant levels. Street sweeping and other maintenance activities prevent sediment, salt and pollutants from entering the drainage system thereby minimizing pollutant loads to local water bodies.

2 Pollution Prevention Team

2.1 Pollution Prevention Team Function

The Pollution Prevention Team (PPT) consists of employees from the City of Stamford whom are in various job functions that have the potential to impact and improve stormwater quality. The team is responsible for implementing the SMP and assisting the implementation, maintenance, and development of revisions to the SMP as well as maintaining control measures and taking corrective actions where required. Each member of the team has ready access to either an electronic or paper copy of applicable portions of the NPDES Permit and the SMP.

2.2 Pollution Prevention Team Members

The PPT members are described below by job title and PPT responsibilities. Current team member names and contact information are included in *Appendix B*. Changes in PPT members will be documented by updating *Appendix B.*

Traffic and Road Maintenance Supervisor
This person is Team Coordinator and will coordinate functions and responsibilities of team members. He/she is responsible for oversight of SMP and compliance with the NPDES Permit. The Traffic and Road Maintenance Supervisor will delegate staff for Infrastructure Operations and Maintenance (street sweeping, catch basin cleaning, leaf pick-up, etc.).

Regulatory Compliance and Administrative Officer
This person will assist the team coordinator for oversight of SMP and compliance with the NPDES Permit. He/she will help develop and enforce the stormwater ordinance. The Regulatory Compliance and Administrative Officer will also coordinate and oversee public education and involvement, IDDE, the monitoring program and maintenance of the SMP.

Land Use Bureau Chief
This person, or a designated member of his/her staff, coordinates the development, adoption and administration of land use regulations pertinent to both the SMP and NPDES Permit.

Zoning Enforcement Officer
This person, or a designated member of his/her staff, coordinates the enforcement of the Zoning Regulations as they pertain to both the SMP and NPDES Permit.

Environmental Protection Board (Environmental Planner)
This person, or a designated member of its staff, assists in the receipt, review and evaluation of submitted Stormwater Management Plans to ensure consistency with both the SMP and NPDES Permit.

City Engineer
This person, or a designated member of his/her staff, assists in the review and evaluation of submitted Stormwater Management Plans, at the request of the members of the PPT, to ensure consistency with both the SMP and NPDES Permit.

GIS Coordinator
This person, or a designated member of his/her staff, coordinates the development and maintenance of mapping and other relevant data at the request of the members of the PPT, to ensure consistency with both the SMP and NPDES Permit.

Health Department (Director of Environmental Inspections)
This person, or a designated member of his/her staff, coordinates the enforcement of public health code as it pertains to both the SMP and NPDES Permit.

3 Mapping

3.1 Initial Mapping Requirements

Within two years of the effective date of the NPDES Permit (i.e., by June 3, 2015), the City of Stamford is required to prepare a city-wide map with enough detail to show the location of the following:

- Stormwater outfalls;

- Sampling points;
- City-owned roadways;
- City-designated business, commercial and special event areas;
- All receiving waters where MS4 discharges occur; and
- Watersheds of these receiving waters.

3.2 IDDE Mapping Requirements

The IDDE program requires additional mapping. Within three years of the effective date of the NPDES Permit (i.e., by June 3, 2016), the City of Stamford is required to prepare mapping to facilitate implementation of its Illicit Discharge Detection Protocol (IDDP) using geographic information systems (GIS) or other methodology. This mapping is required to provide a comprehensive depiction of key infrastructure and factors influencing proper system operation and the potential for illicit discharges. The mapping needs to be to an appropriate scale and detail to enable rapid understanding of the system and to show the following themes using colors and other methods:

- Key storm sewer infrastructure;
- Investigation and study findings;
- Monitoring data;
- Cleaning and repair activities;
- Capital projects;
- Water resources; and
- Topographic features.

Specific details to be included on the mapping include the following information and features, where currently available:

- Infrastructure
  - Municipal separate storm sewer system (including inter-municipal and private connections where available);
  - Thematic representation of sewer material, size, and age;
  - Storm sewer flow direction;
  - Select rim and invert elevations;
  - Aerial delineations of MS4 outfall drainage areas;
  - Areas served by on-site subsurface disposal; and
  - Storm sewer alignments to which known or suspected underdrain systems may discharge.

- Water Resources and Topographic Features
  - Water bodies and watercourses identified by name and water quality classification;
  - Impaired waters (including type of impairment);
  - Inland wetlands;
  - Tidal wetlands;
  - Topography; and
  - Orthophotography.

- O&M, Investigations, Remediation, and Capital Projects
  - Alignments, dates, and thematic representation of work completed (with legend) or past illicit discharge investigations (e.g. flow isolation, dye testing, closed-circuit television (CCTV));
  - Locations of suspected, confirmed, corrected illicit discharges (with dates and flow estimates);
  - Water quality monitoring locations with representation of water quality indicator concentrations;
  - Recent and planned storm sewer infrastructure cleaning and repair projects
  - Planned capital projects relative to utility and roadway rehabilitation or replacement; and
  - Proposed phasing of future illicit discharge investigations.

3.3 Mapping Status

To date, considerable progress has been made in developing mapping using a geographic information system (GIS). Currently the GIS mapping has the following:

- Many stormwater outfalls – more information is being gathered and added about the stormwater drainage system on an ongoing basis;
- The ten official in-stream sampling points have been mapped in the GIS system;
- All city-owned, as well as State-owned roadways are mapped on the GIS system; and
- Receiving waters.

The rest of the information is being added to the GIS system. The end result will be a GIS system that The City's employees can use to monitor, track and review the information described in *Section 3.2.* For the most part, this will information will be accessed on computers and electronic tablets rather than on extensive paper mapping so that it can stay current.

The City is working with Networkfleet (affiliated with Verizon) to provide GPS services in their trucks, snow plows and sweepers. This will enable tracking of much of the data needed to implement this SMP.

4 Control Measures

There are numerous control measures that are required by the NPDES Permit. These are detailed below by type.

4.1 Public Education and Involvement

Public education is a key component of effective stormwater management. By informing the public of potential risks to water quality caused by common activities, the potential for stormwater impacts can be reduced.

4.1.1 Program Elements

The public education program will include the following elements:

- Education to increase the public awareness about stormwater pollution, its causes and effects, and actions that can be taken to reduce the impact of stormwater pollution on water quality;
- Promotion of the Stormwater Management Plan ("SMP") through varied public education and involvement methods including making information available to non-English speaking residents;
- Dissemination of information to residents regarding the proper handling and disposal of used motor vehicle fluids, household hazardous waste, electronic waste, food preparation waste, clippings, car wash waters, proper use of fertilizers, pesticides, and herbicides and educational material emphasizing nitrogen and phosphorus control as it relates to lawn care to residents;
- Education of dog owners about the proper disposal of pet waste and by providing written information at the time of dog license renewal. The City of Stamford is also required to install signage, pet waste baggies, and disposal receptacles in recreational areas where dog walking is allowed;
- Education of owners and operators of commercial, industrial, and institutional facilities as to their responsibility to control pollutants in stormwater discharges from their property to the City of Stamford's MS4;
- Opportunities for the public to participate in the review, modification, and implementation of its SMP. This can be done through partnerships with environmental groups and civic organizations interested in water quality related issues; and
- Annual public informational meeting within sixty (60) days of the date of anniversary of the NPDES Permit to discuss and provide information in each annual report.

4.1.2 Progress to Date

The City of Stamford has performed the following tasks to meet the elements of the public education and involvement:

- They have created a Stormwater Management web site, located at http://www.stamfordct.gov/stormwater-management. This site contains the NPDES Permit and is frequently updated to include other information that the City of Stamford's residents and businesses need to know about stormwater management.
- They have sent out the literature found in *Appendix C*. These materials include the following:
  - A pamphlet, entitled "Preventing Stormwater Pollution & You" which details steps all residents can take to minimize stormwater pollution. This was sent out in all Stamford property tax bills.
  - A second pamphlet, entitled "Preventing Stormwater Pollution" focused on lawn care and low impact development (LID.) This was sent to all Stamford contractors registered with the State Department of Consumer Protection.
  - A "Pesticide Information Sheet" was prepared and sent to the same group of contractors.
- The City of Stamford has also teamed with local groups. The Mill River Collaborative has volunteers that annually spend approximately 8,000 hours making improvements to and creating programming for the Mill River Park. A letter documenting the planned collaboration with the City of Stamford is also included in *Appendix C*.
- The City of Stamford is also in the process of teaming with Sound Waters in Cove Park to collaborate on educational programming.

- The first public meeting was held on July 29, 2014. Despite extensive advertising, only one member of the general public attended the meeting. The presentation given is also included. in *Appendix C*. Public notification about the meeting included:
  - Notice of Meeting published in the Stamford Advocate July 17, 2014;
  - Notice of Meeting published in the Stamford Advocate July 24, 2014;
  - Notice of Meeting filed with Donna Loglici, Town Clerk and Recorder on July 16, 2014;
  - Notice of Meeting provided to Valerie Rosenson, Legislative Aide, forwarding meeting information to the full 38 member Board of Representative (BOR);
  - Email sent to leadership / director of Soundwaters on July 17, 2014 providing notice of meeting;
  - Email sent to leadership / director of Mill River Collaborative on July 17, 2014 providing notice of meeting;
  - Ten (10) postings of notice of meeting located throughout Government Center on 7/29/14 providing notice of meeting; and
  - Notice of Meeting posted on the City of Stamford's Stormwater Management Website on July 16, 2014.
- The City of Stamford has taken significant steps to prevent dog waste from entering the MS4. They have had a law requiring immediate removal of dog feces from City property and from all property not owned by the dog owner.
- Dog owner education has included the following:
  - Creation of a dog waste information pamphlet (also included in *Appendix C*).
  - This is given to dog owners at the time of dog license renewal (July 1 of each year.)
- One hundred dog waste bag dispensers have been ordered. These will be placed in the fifty municipal parks that allow dog walking. A list of dog waste dispenser locations is included in *Appendix C*.
- Water Pollution Control Authority (WPCA) staff also educate groups of adults and schoolchildren in preventing stormwater pollution. A copy of the brochure they give out, entitled, "What is Your Storm Drain IQ?" is included in *Appendix C.*

4.1.3 Future Plans

Public education will continue through a wide variety of methods. In addition to the methods, currently being used, the following additional actions will be taken:

- A press release entitled "The MS4 Permit and the Stormwater Management Department" has been written for incorporation into the Mayor's newsletter in the coming months (copy included in *Appendix C.*)
- Methods to increase attendance at the Annual Meetings are being considered. These include:
  - Reaching out to neighborhood groups and associations through phone calls, emails, written notice of meeting;
  - Blast email to all city employees; and
  - Reporter from the Stamford Advocate (local newspaper) to conduct an interview re: stormwater management prior to meeting; and
- The City of Stamford will work to translate key public education materials into Spanish.

4.2 Pollution Prevention (Source Controls)

4.2.1 Legal Authority

The City of Stamford has developed a Stormwater Ordinance, found in *Appendix D*. The ordinance is intended to do the following:

- Regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any user;
- Prohibit Illicit Connections and Discharges to the municipal separate storm sewer system;
- Establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this ordinance; and
- Ensure compliance with the NPDES Permit.

4.2.2 Motor Oil Recycling

The City of Stamford is required to provide and actively promote the use of used motor oil collection capabilities at The City-owned recycling facility(ies). Used motor oil is collected at the Katrina Mygatt Recycling Center. This facility is open Mondays through Fridays 7:30 a.m. to 3:00 p.m. and Saturdays 7:00 a.m. to 3:30 p.m. Use of these facilities is promoted by inclusion on the City of Stamford web site. http://www.stamfordct.gov/solid-waste-recycling/pages/hazardous-materials-recycling indicates that motor oil is to be taken to this facility. Information about motor oil recycling will also be added to the City of Stamford's Stormwater web site.

4.2.3 Household Hazardous Waste

The City of Stamford conducts an annual Household Hazardous Waste (HHW) day each year. It is promoted on the City of Stamford's Stormwater web site and with banners in front of the City of Stamford Government Center for weeks before the event. There are also flashing highway department signs around The City on the day of the event to remind residents to drop off their HHW. The City of Stamford's web site also lists the HHW days of surrounding communities, so residents have numerous opportunities to dispose of their HHW throughout the spring, summer and fall each year.

4.2.4 Spills and Leaks

The City of Stamford is required to develop and implement a Spill Prevention and Response Plan (SPRP) to prevent, contain and respond to spills entering the MS4. Stamford currently maintains SPRPs for several municipal facilities, including:

- Highway Department, Maintenance Department and Recycling Center (All three are under one plan)
- Town Yard
- Police Department
- Water Pollution Control Facility (WPCF)

For the rest of The City, the City of Stamford Fire Department (SFD) maintains the following Standard Operating Guidelines:

- Hazardous Materials Dispatch Guideline;
- Operations at a Hazardous Materials Incident; and
- Dike, Dam, and Divert procedures to prevent hazardous materials from entering the storm drainage system

The Hazardous Materials Dispatch Guidelines and the Operations at a Hazardous Materials Incident have been included in *Appendix E.* These documents will be updated by June 3, 2015 to include additional focus on keeping pollutants out of the MS4. A list of materials that The City maintains to respond to spills and keep them from entering the MS4 is also included in *Appendix E.*

The City of Stamford tracks spills that are reported to them or that they respond to. A list of spills of five gallons or more of petroleum and/or toxic or hazardous substances found in Regulations of Connecticut State Agencies (RCSA) 22a-430-4 Appendix B, Tables II, III and V and Appendix D as well as 40 CFR 116.4 that have been reported to The City or have been the action of a City employee are included in *Appendix E.* The above-referenced lists of toxic and hazardous substances are included in *Appendix F*.

4.2.5 Pesticides, Herbicides and Fertilizers

The City of Stamford is required to limit the use of pesticides, herbicides and fertilizers (PHF) in city owned or operated areas. The City has developed the Best Management Practices (BMPs) found in *Appendix G* for PHF application in city-owned or operated areas. Further development of standard operating procedures (SOPs) for the use of PHFs is ongoing. It is anticipated that they will be modelled on the CTDEEP Integrated Pest Management (IPM) Plans. Completion of the PHF SOPs is anticipated by July 1, 2016.

4.2.5.1 Athletic Fields and Green Space

Fertilizers and herbicides are used on the municipal athletic fields as described in *Appendix H.* In April, Dimension is used. This product contains both fertilizer and herbicides. In May, Propendi is used. This product also contains both herbicides and fertilizer. In September, just fertilizer is used. No PHFs are used on park green spaces.

The Mill River Park / Mill River Collaborative (MRC) completely avoids the use of synthetic fertilizers. They employ a "feed the soil ecology" program where the soil is infused with 16+ species of soil bacteria and fed with a fish emulsion / kelp / yucca liquid blend as a substitute for traditional fertilizers. The MRC maintains its lawns at 4" high to build deeper, more drought tolerant root systems. All grass clippings are returned to the lawns and they use organic products such as Soy Bean meal to add nitrogen to the soil. The MRC uses minimal herbicides per DEEP guidelines on invasive plants and that treatment program has been shrinking dramatically each year as they win the invasive plant battle. They spend 99% of our weed management efforts physically pulling weeds.

4.2.5.2 Golf Courses

The City of Stamford owns and operates the Sterling Farms and the E. G. Brennan Golf Courses. The City is required to implement practices which achieve a ten percent (10%) reduction in total nitrogen by June 3, 2018. The reduction is to be determined by the average annual usage, by weight, applied in 2010, 2011, and 2012. The average quantity used at Sterling Farms during 2010 – 2012 reporting period is 11.50 lbs./1000ft2/year. The average quantity used at E.G. Brennan during 2010 – 2012 period is 11.16 lbs./1000ft2/year. The City will also develop best management practices (BMPs) to reduce total nitrogen and phosphorus. This will be completed by July 1, 2016. Pesticide usage reports are included in *Appendix G.*

4.2.6 De-icing Materials

The City stores deicing liquids in the following locations:

- Highway Department (90 Magee Avenue) – this site has a sand/salt shed and a 5,000-gallon calcium chloride tank.
- Town Yard (106 Haig Avenue) – This site has a sand/salt dome, 5,000-gallon calcium chloride tank and 5,000-gallon salt brine tank.
- Scofieldtown Transfer Station (612 Scofieldtown Road) – This site has a sand/salt dome, and a 5,000 –gallon liquid calcium tank.

Both of these sites operate under the General Permit for the Discharge of Stormwater Associated with Industrial Activity.

There are also salt domes at the Highway Department, the Town Yard and the Scofield Transfer Station. All three of the salt domes are within GA areas, so they are stored on concrete and covered with a dome.

4.2.7 Unpermitted Discharges to MS4

The City of Stamford is required to track stormwater discharges from commercial, municipal, institutional or other facilities that contribute to stormwater pollution and includes inventory, mapping and prioritization as well as education. This requirement is addressed by other sections of the SMP. Inventory, mapping and prioritization are addressed within *Section 5* - Illicit Discharge Detection and Elimination (IDDE) Program. Education is addressed within *Section 4.1*.

4.3 Land Disturbance and Development

Managing future development using techniques to maximize infiltration and minimize stormwater run-off, also known as Low Impact Development (LID) is a key part of improving stormwater quality. The requirements described below are detailed herein to address compliance with the NPDES Permit. The City of Stamford also has and/or may develop numerous other Planning, Zoning, Engineering, and Environmental Protection Board regulations, guidelines and practices that still apply to development in The City. For example, the NPDES Permit only addresses projects with one-half acre or more of soil disturbance, but current Zoning regulations call for review of any project with more than 10,000 square feet of soil disturbance.

4.3.1 Program Requirements

The NPDES Permit requires the City of Stamford to develop and enforce a program to control stormwater discharges from development and redevelopment activities with one-half acre (21,780 sf) or more of soil disturbance. The one-half acre threshold applies both individually and collectively as part of a larger common plan.

4.3.2 Legal Authority

The first step for the City of Stamford is, by December 3, 2014, to establish legal authority to regulate activities related to stormwater discharge. Some of this is being done with the draft Stormwater Ordinance found in *Appendix D,* and some is being done through draft revisions to the Zoning Regulations, found in *Appendix I.* These requirements are described below with references to the appropriate draft regulations.

- Section 15 of the Zoning Regulations (*Appendix I*) has been redrafted to include Stormwater Management along with Soil Erosion and Sediment Control. This now includes, by reference, requirements that developers and construction site operators maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, and the 2004 Connecticut Stormwater Quality Manual, as amended.
- There are no known zoning, site planning or street design regulations that would be an impediment to using LID practices.
- The draft Stormwater Ordinance establishes authority to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with City regulations related to the management of the MS4.
- The proposed changes to the Zoning Regulations ensure that LID practices are allowable.
- The necessary regulations to comply with this section of the NPDES Permit have been drafted. If they cannot be implemented by December 3, 2014, a revised schedule will be included in the Annual Report.
- Access to privately-owned detention and retention ponds has been addressed in the draft Stormwater Ordinance.
- Interagency and inter-jurisdictional agreements have been addressed in *Section 4.4.5.*

4.3.3 Interdepartmental Coordination

The City has well-established procedures for coordinating municipal departments review and approval of land disturbance and development projects. Attached, in *Appendix J,* is the Department Approval for Building Permit, which requires sign-off from all agencies that have an interest in the project. Typically, for most development projects (which are often re-development due to the relatively developed nature of the City of Stamford), the Building Department, Environmental Protection Board (EPB), and Zoning Office provide much of the review. The Engineering Department is frequently consulted for technical and design review. No project can go forward without approval from all these groups and many require additional approvals such as the Health and Traffic Departments and other groups. The Building Department will not issue a Building Permit until all required approvals have been obtained.

4.3.4 Low Impact Development Measures

The NPDES Permit is very specific as to requirements for the way in which stormwater must be managed from new development and redevelopment projects. These requirements have been incorporated into the draft Zoning Regulations which are excerpted here for convenience.

- Land Development and Redevelopment Stormwater Standards

  - Developed parcels with an existing impervious cover of forty percent (40%) or more, and for which redevelopment is proposed, shall retain, on-site, one-half (1/2) the water quality volume for the site. When one-half (1/2) the water quality volume is not able to be retained, then the site shall be designed to retain runoff volume to the maximum extent achievable using available control measures. In such cases, the applicant shall provide additional stormwater treatment for sediment, floatables, and nutrients by using available control measures for the volume above that which can be retained up to the required water quality volume. Additionally, in cases where the runoff retention requirement cannot be met, the applicant shall submit a report detailing factors limiting the capability of achieving this goal. The report shall include:

    - Measures taken to maximize runoff reduction practices on the site;
    - Reasons why those practices constitute the maximum extent achievable;
    - The alternative retention volume; and
    - A description of the measures used to provide additional stormwater treatment above the alternate volume up to the water quality volume.

  - For all new development and for redevelopment of parcels with existing impervious cover of less than forty percent (40%), the site shall be designed to retain the water quality volume for the site. If site constraints prevent retention of this volume onsite (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), documentation must be provided. The documentation shall include:

    - An explanation of site limitations;
    - A description of the runoff reduction practices implemented;
    - Reasons why those practices constitutes the maximum extent achievable;
    - The alternative retention volume; and
    - A description of the measures used to provide additional stormwater treatment above the alternate volume up to the water quality volume.

  - Limit land disturbance to areas necessary to construct buildings, utilities, stormwater management measures, parking, reasonable lawn and landscape areas, and contouring necessary to prevent future site erosion.

  - Linear redevelopment projects (e.g. roadway reconstruction, widening, and pipelines) for the developed portion of the right of way.
    - Retain on-site one half (1/2) the water quality volume for the site.
    - Projects unable to comply with the full retention standard are required to meet the alternate retention and treatment provisions as described in Section 15,a,1.

- For projects that will not increase impervious cover within a given watershed, additional stormwater treatment measures as described in Section 15,a,1 are required.
- Retention of one-half (1/2) the water quality volume is not required for projects which do not increase impervious cover.

4.3.5 Stormwater Management Implementation

By July 1, 2016, the City of Stamford is required to implement and enforce a program to address construction and post-construction stormwater discharges from land disturbing activities and after site stabilization has been achieved. This needs to be based on the Connecticut Guidelines for Soil Erosion and Sediment Control (latest edition) and the Connecticut Stormwater Quality Manual (as amended). The City is well on its way to achieving this goal, as both documents have been incorporated into the draft Zoning Regulations and the City of Stamford officials currently perform site inspections for some projects before, during and/or after construction.

4.3.6 Site Review and Inspection

The NPDES Permit requires The City to conduct site-plan review and pre-construction review meetings that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality. The City currently conducts such meetings internally as part of staff review of many projects. Meetings with developers occur when the project has significant potential for environmental impact. .

The NPDES Permit also requires site inspection and enforcement to assess the adequacy of the installation maintenance, operation, and repair of construction and post construction control measures. The City of Stamford's staff performs site visits when the project is in close proximity to a wetland or other water body. Current staffing levels limit the opportunities for site inspections to only those projects with the greatest potential for impact to stormwater quality. Site visits frequently occur prior to the issuance of a Certificate of Occupancy (CO). If more staff can be hired, the number of meetings will be increased.

4.3.7 Public Involvement

The NPDES Permit requires that there be a procedure for receipt and consideration of information submitted by the public concerning proposed and ongoing land disturbance and development activities. The easiest way for the public to get involved is to report stormwater issue/violation to the Citizens Service Center at (203) 977-4140. In addition, an online form is being developed. These reports are sent to the Regulatory Compliance and Administrative Officer who directs them to the appropriate city's staff member for response.

4.3.8 State Permit Notification

Development and redevelopment projects that disturb more than one acre are required to comply with authorization under the DEEP's General Permit for the Discharge of Storm Water and Dewatering Wastewaters Associated with Construction Activities ("construction general permit"). The City of

Stamford is required to implement a procedure to notify developers of this requirement. The procedure for notifying developers is:

- The EPB will determine if development / redevelopment either individually or collectively exceeds one acre or more of disturbance;
- The EPB to hand out State Permit Notification form in *Appendix I* for those sites exceeding one acre of disturbance;
- The EPB will track date and number of forms handed out; and
- The number of forms handed out will be included in the annual report.

4.3.9 Impervious Cover

The NPDES Permit requires that within four (4) years of the date of issuance of this permit, the City of Stamford must develop an estimate of the directly connected impervious area (DCIA) that contributes stormwater to each MS4 outfalls. This is required to be completed by June 3, 2017. This will be performed as part of the GIS mapping system that is being developed.

4.4 Infrastructure Operations and Maintenance

Infrastructure operations and maintenance are performed by the Traffic and Road Maintenance group and are a key part of protecting storm water quality.

4.4.1 Employee Training

The City of Stamford conducts regular formal training sessions for key employees to increase awareness of water quality issues. The staff members who have been trained include representatives from the following departments:

- Traffic and Road Maintenance;
- Stormwater Management;
- Police;
- Parks;
- Vehicle Maintenance;
- Fire; and
- Solid Waste.

Many of The City's staff are taught about stormwater quality in association with the General Permit for Stormwater Associated with Industrial Activity. For those whose jobs specifically include compliance with the NPDES permit, training includes:

- Overview of the NPDES MS4 Permit;
- Goals and objectives of the SMP;
- Identifying and reporting illicit discharges; and
- Spill response procedures.

All members or departmental designees of the Pollution Prevention Team (PPT) will attend stormwater training by June 3, 2015.

4.4.2 Infrastructure Repair and Rehabilitation

The City of Stamford will make repairs to the infrastructure of its MS4 system when it is determined that the infrastructure itself is the source of pollutants. The Traffic and Road Maintenance crews will make repairs that are caused by blockages of sediment or other material. These repairs can likely be made within 60 to 90 days. If the problem is the piping or appurtenances themselves, then this becomes a capital project and the Engineering Department takes the lead on making the repair. Priority will be given to those projects discharging pollutants to impaired waters or that have other concerns related to the mapping and IDDE process. However, in any municipal setting, funding for capital projects can sometimes take months to years. A schedule for implementation of the repair will be developed once the need for the repair is established.

4.4.3 Roadway Maintenance

Roadway maintenance is a critical part of pollution control within the MS4. Removal of potential pollutants from roadways prevents their introduction into the MS4 system.

4.4.3.1 Sweeping

As documented in *Appendix K*, according to the Connecticut Department of Transportation (ConnDOT), there are approximately 310 miles of streets accepted by the City of Stamford. During 2012, City employees swept 12,000 miles of streets, thereby making multiple passes on many of the roads. According to the NPDES Permit, sweeping is to be performed with the following frequencies:

- Main Lines – Weekly, except December 1 to March 1;
- Arteries – Monthly, except December 1 to March 1;
- Main Roads in Business and Commercial Districts – Daily;
- Residential Streets – quarterly;
- Other streets – twice/year;
- Municipal parking lots – monthly; and
- Sidewalks in central business district (CBD) – weekly.

The spring sweeping will be completed by June 30 each year. A list of the roads in each category is being developed for inclusion in *Appendix K*. The contract for weekly sidewalk cleaning is also in *Appendix K*. It shows that some sidewalks in the CBD are swept daily and some are swept twice per week.

The City tracks the following information for its Annual Report:

- Curb miles swept;
- Dates of street cleaning, by street;
- Cubic yards of material collected; and
- Method of material disposal or reuse.

4.4.3.2 Leaf Collection

The City collects leaves from all streets annually. The procedure breaks The City down into three areas; 1) Area north of the Merritt Parkway 2) area between Merritt Parkway and I-95, and 3) area south of I-95. Leaf pick-up typically begins in mid-November and is completed by December 15. The exact completion date depends on weather conditions and competing demands (snow removal and road salting for staff and equipment.) It is important to note that The City finishes leaf pick-up even after snow fall.
This process takes approximately four weeks of full time work (20 business days) for all available road maintenance crews. Approximately 40 full time and 50 seasonal employees are dedicated to complete the work. Details of The City's leaf collection program are posted on The City website and are included in *Appendix K.*

4.4.3.3 Snow Removal

The NPDES Permit requires that the City of Stamford implement and refine its standard operating practices regarding its snow and ice control operations to minimize the discharge of pollutants. Goals must be established for the optimization of chemical application rates through the use of automated equipment including zero velocity spreaders, anti-icing and pre-wetting techniques, implementation of pavement management systems and alternate chemicals.

The City of Stamford is already well on its way to meeting these goals. The Highway Crew performs anti-icing using liquid calcium chloride to pre-treat bridges and elevated roadways, the most susceptible for freezing, as well as city streets with the highest traffic volume. Once the storm begins, patrols are sent out throughout The City to monitor road conditions. Hills and intersections are spot-treated to minimize chemical usage.

The City tracks chemical usage; however, given the variability in the amount of snow and ice that needs to be treated each year, it is difficult to set goals for chemical optimization.

The City follows the CTDEEP's Best Management Practices for Disposal of Snow Accumulation from Roadways and Parking Lots, found in *Appendix L*. The purpose of these BMP's is to prevent accumulation of sand, other solids and pollutants in sensitive areas such as streams and wetlands. Snow is typically moved to the gravel parking lot at West Beach; where there are no catch basins in order to follow these BMPs.

4.4.3.4 Catch Basin Cleaning

During the life of the current NPDES Permit (through June 3, 2018), the goal is to establish optimal catch basin cleaning frequencies. The City of Stamford is in the process of developing a numbering system to track catch basin maintenance.

The City has over 11,000 catch basins in its MS4 system. With the exception of the Mianus River, all water bodies to which the City of Stamford's MS4 discharges are impaired. The catch basins that are tributary to all waters except the Mianus River and its tributaries are required to follow the protocol for impaired waters. This means that for the first four years of the NPDES Permit (until June 3, 2017), catch basins would have to be inspected annually. For those tributary to the Mianus River, the catch basins must be

inspected and cleaned if necessary twice within the first four years of the NPDES Permit. Catch basins will be cleaned if the sump is more than 50% full.

The following guidelines will be utilized to create standard operating procedures (SOP's) for catch basin cleaning in accordance with the NPDES Permit. The guidelines will be based on the following information:

- Prior to about 1970, catch basins did not typically have sumps. The bottom of the catch basin is likely to be at the invert of the lowest pipe.
- From about 1970 to 2004, the standard catch basin depth was two (2) feet.
- In 2004, coinciding with the publication of the Connecticut Stormwater Quality Manual, the standard catch basin depth was increased to four (4) feet.

For areas of town in which the roads and catch basins are older (pre-2004), the catch basin needs to be cleaned if there is sediment less than one foot (1') from the lowest invert. For newer areas in which roads and catch basins were constructed after 2004, the catch basin needs to be cleaned if there is sediment less than two feet (2') from the nearest invert. As it is developed, the list of SOP's, inspections, cleanings, and recommended cleaning frequency for each catch basin will be included in *Appendix M*.

During 2013, The City's crews cleaned 2,024 catch basins. Many of these were cleaned in response to complaints or flooding problems. The City currently has two (2) vacuum (vac) trucks it utilizes for catch basin cleaning, in response to storm drainage complaints. In an effort to meet NPDES Permit requirements, The City has secured funding to procure two (2) new vac trucks, which are planned to be used exclusively to clean catch basins as required per the NPDES permit. The cost of the vac trucks is in excess of $400,000, each. The City has also secured funding for four (4) heavy equipment operator positions and one (1) laborer position to provide the required manpower to operate the vac trucks. When these positions are filled, the cost for manpower within the Stormwater Management Department will exceed $300,000 annually. The total number of catch basins able to be inspected and cleaned with additional equipment and manpower is unknown, but will be included in subsequent annual reports to establish a cleaning frequency.

Once the cleaning frequencies have been established, if a catch basin is found to be more than 50% full during two consecutive cleaning events, road maintenance staff will investigate the drainage area for sources of sediment loading and take appropriate measures to reduce that loading. This may include increased street sweeping, stabilization practices or drainage modifications. If the source of the sediment loading is from private property, the problem will be reported to the Regulatory Compliance and Administrative Officer for enforcement action. If these measures are unsuccessful, then the catch basin cleaning frequency must be increased as needed to keep the sump less than 50% full.

Changes in cleaning frequency will be updated in *Appendix M* and noted in the Annual Report.

4.4.4 Detention and Retention Ponds

The City of Stamford staff is currently in the process of developing a list of detention and retention ponds that discharge to the MS4. The list of detention and retention ponds for which The City maintains an easement or legal authority is being prepared by staff from Environmental Protection Board (EPB). It is anticipated that the list of detention and retention ponds will be developed by December 1, 2014.

Once these lists are prepared, they will be maintained in *Appendix N* and The City will inspect these ponds annually. The first year of inspections is anticipated to be completed by July 31, 2015, which is later than required by the NPDES Permit. If they are City-owned, they will remove solids when they are found to be in excess of 50% of design capacity. If they are privately owned, the owner will be informed that the solids must be removed when they are found to be in excess of 50% of design capacity.

4.4.5 Interconnected MS4s

The City of Stamford has determined that the following municipalities and agencies may be contributing stormwater to the City of Stamford's MS4:

- State of Connecticut (ConnDOT); a complete list of roads can be found in Appendix O
- Town of New Canaan, CT
- Town of Darien, CT
- Town of Greenwich, CT
- Town of Pound Ridge, NY

Research by City staff has revealed that no formal interagency stormwater agreements exist at this time. Though no formal agreements exist, historically ConnDOT maintains all State roads, performing paving, snow removal, and cleaning catch basins. The City of Stamford staff is currently investigating whether the previously identified municipalities have interconnected MS4s. If interconnected MS4's are confirmed, then interagency agreements will be developed detailing responsibilities of the City of Stamford and each the interconnected MS4 municipality. If such agreements are developed, they will be included in *Appendix O.*

5 Illicit Discharge Detection and Elimination (IDDE) Program

Illicit discharges to the City of Stamford's MS4 are prohibited, and any such discharges are a violation to the NPDES Permit and will remain a violation until they are eliminated. However, before illicit discharges can be addressed, they must first be found. This section details finding and addressing illicit discharges.

5.1 Legal Authority

The NPDES Permit requires that the City of Stamford establish legal authority to do the following:

- Prohibit illicit discharges to the MS4 and require removal of any that are found;
- Control spills and discharges to and dumping in the MS4;
- Assess fines or penalties for anyone creating an illicit discharge or spilling or dumping into the MS4.

The draft Storm Sewer System Ordinance found in *Appendix D* establishes legal authority for all these measures. The NPDES permit required this ordinance to be finalized by June 3, 2014. It is expected to be finalized by December 31, 2014.

5.2 Program Elements

The IDDE program consists of outfall screening and discharge detection as described below. Once an illicit discharge is found, The City will immediately (within one week) contact the responsible party to have them eliminate the discharge within 30 days of being notified. Where it is not possible to eliminate the discharge within 30 days, The City will develop a schedule for the elimination to be completed and confirmed within 6 months.

The City will track illicit discharge abatements and include the following information in its Annual Reports:

- Location;
- Description;
- Method of discovery;
- Date(s) of inspection;
- Sampling data (if sampled);
- Action(s) taken;
- Date of removal or repair;
- Responsibly party;
- Costs associated with removal or repair; and
- Estimated flow removed.

5.3 Outfall Screening for Illicit Discharges

A major component of the IDDE program is outfall screening. Many illicit discharges can be detected through this method.

5.3.1 Known Illicit Discharges

The City of Stamford did not provide a list of known illicit discharges to the CTDEEP, so no outfalls are exempt from screening.

5.3.2 Priority Ranking of Outfall Screening

The City has developed a priority system to determine which outfalls should be screened first. The outfalls will be screened with the following priorities in mind:

- Known or suspected illicit discharges, including those reported by the public;
- Discharges to impaired waters (which includes every receiving stream in The City except the Mianus River and its tributaries); and
- Several water bodies in the City of Stamford where residents have recreational contact with water. These include:
  - Mill River Park (Monitoring Point 5 – see below) – though residents do not typically swim here, they may dip their feet in;
  - West Beach Pier – residents fish from the pier;
  - Mianus River (Monitoring Point 1) – people fish at this location as well; and

- Public beaches – there are several public beaches along Long Island Sound in the City of Stamford, including Cove Island Park and Cummings Park.

The water bodies described above will be prioritized for IDDE.

5.3.3 Priority Ranking for IDDE Investigation

The City has 154 "known" outfalls at the time of NPDES Permit issuance. Some of these were inaccurate locations, so some had to be eliminated. There are 92 remaining "known" outfalls that will likely be able to be sampled. These initial outfalls have been prioritized with a listing of "A", "B" or C" based on the factors in 5.3.2. The outfall list and map are included in *Appendix P.*

5.3.4 IDDE Investigation Schedule

The NPDES Permit requires that MS4 outfalls be screened at a rate of twenty five (25) percent of the outfalls known at the time of NPDES Permit issuance during each of the first four years of the permit in order to screen all outfalls so that the Illicit Discharge Detection Protocol (IDDP) implementation within the NPDES Permit life. The City of Stamford has been unable to begin the IDDE screening during the first year of the NPDES Permit, so every attempt will be made to accelerate the IDDE screening over the rest of the permit life. The current plan is to screen 46 outfalls by June 3, 2015, 23 outfalls by June 3, 2016, and 23 outfalls by June 3, 2017. Outfalls have been prioritized with an A, B or C rating. Completion dates are proposed as follows:

- Priority A Outfalls (46 outfalls) - June 3, 2015;
- Priority B Outfalls (23 outfalls) June 3, 2016; and
- Priority C Outfalls (23 outfalls)June 3, 2017.

5.3.5 IDDE Investigation Methodology

The methodology is explicitly specified in the NPDES Permit and repeated here for convenience.

- Outfall screening will proceed only during dry weather when no more than 0.1 inches of rainfall has occurred in the previous 48-hour period. The duration of the antecedent period may be shortened or lengthened as necessary or appropriate depending upon rainfall depth or the relative extent, slope, storage, and other influences to assure that any stormwater runoff has ceased from the particular drainage area served by the outfall. Screening will he performed according to the following procedures:
  - Locate the outfall, and take a photograph. At outfalls where photographs were previously taken, new photographs will be taken from the same approximate orientation to facilitate comparison and determination of any changes.
  - Collect data on physical condition of the outfall, including evidence of collapse and structural defects, and evidence of erosion or deposition in the vicinity of the outfall.
  - Record any indicators of illicit discharges such as odors, oil sheen, discoloration, foaming, soap suds, slimes, or presence of sanitary floatables or solids.
  - If the outfall is inaccessible or submerged, proceed to the first accessible upstream manhole or structure.

- Outfall observation - Observe the outfall for evidence of discharge and proceed as follows:
  - If no flow is observed and there is no evidence of an illicit discharge (e.g. a residue unrelated to a storm water discharge or color or algae), this outfall will be assigned a lower priority ranking and the screening will proceed to the next outfall.
  - If flow is observed, estimate flow using the product of flow area and velocity or the quotient volume discharged over time, perform the field analyses below, and collect a grab sample for enumeration of E. coli indicator bacteria in the laboratory.
  - If the outfall is not flowing, but shows evidence of an illicit discharge, return in 4 to 24 hours and screen again, completing flow estimation, field analyses, and grab sampling for indicator bacteria analysis if flow is subsequently observed. If no flow is observed initially and upon return, make note of the outfall to prioritize for future investigation and proceed to the next outfall.
- Field analyses of dry weather flow samples will include measurement of the following parameters:
  - Conductivity
  - Turbidity
  - Dissolved Oxygen
  - pH
  - Chlorine
  - Temperature
  - Surfactants as (MBAS)
  - Potassium
  - Ammonia

A screening checklist for outfalls has been developed and can be found in *Appendix Q.*
Benchmark values for screening are found below:

Analyte	Benchmark
Conductivity	Ambient benchmark to be established during initial round of testing (likely <100 µmhos/cm unless influenced by salt water)
Turbidity	Ambient benchmark to be established during initial round of testing (likely <10 NTUs)
Surfactants, as MBAS	>0.25 mg/L
Potassium	Ambient benchmark to be established during initial round of testing (likely <1 mg/L)
Ammonia	Ambient benchmark to be established during initial round of testing (likely <1 mg/L)
Ammonia/Potassium Ratio	>1.0 mg/L
Chlorine	>0.1 mg/L
Temperature	Significant departure from ambient; groundwater would be 50 -55 degrees F at source
pH	Ambient benchmark to be established during initial round of testing (5.5 - 9)

Based on these field analyses, evidence of the degree and severity of an illicit discharge will be taken into account in prioritizing outfalls for illicit discharge investigation. If the discharge does not exceed any benchmarks, and has no color, sheen or odor, and is in an area of high groundwater, it should be noted that the discharge may be groundwater and can be given a lower priority for further action in the IDDP process. However, if more than 80% of the outfalls are either dry with no evidence of illicit discharge or have suspected groundwater, then the suspected groundwater outfalls may be considered higher priority and selected for further evaluation in the IDDP process.

The conclusion of the screening step must be reported, whether the outfall should be considered for IDDP prioritization must be reported on the IDDE Screening Form in *Appendix Q.*

5.4 Illicit Discharges Detection Protocol (IDDP)

IDDP implementation involves more rigorous analysis of the source(s) of the contamination found in the IDDE screening. Using this methodology, the City of Stamford will attempt to find precise source of the illicit discharge and eliminate it.

5.4.1 IDDP Implementation

During the life of the NPDES Permit, The City is required to complete IDDP implementation for the highest 20% priority of the outfall drainage areas.

5.4.2 IDDP Prioritization

Based on the results of the outfall screening detailed in *Section 5.3.5*, the worst 20% of outfalls from the prior year will be selected for the more rigorous IDDP. If more than 20% of the outfalls screened through the processes described in *Section 5.3* are suspected of having illicit discharges, then selection of the worst 20% outfalls will be based on flows and water quality monitoring, and will only be done within drainage areas to impaired water bodies. Those outfalls that contain only suspected groundwater will be considered lower priority and will not be selected.

5.4.3 IDDP Mapping

Mapping is a key part of IDDE. The mapping that is being prepared is detailed in *Section 3* of this SMP.

5.4.4 IDDP Methodology

There are two phases to the IDDP methodology – field testing during dry weather and confirmation using more invasive methods such as internal plumbing inspections, dye or smoke testing, and closed circuit television (CCTV) inspections.

5.4.4.1 Notification

Prior to smoke or dye testing, The City will notify all residents, businesses and all other property owners or occupants within that drainage area of the impending testing. Smoke testing notification will include hanging notifications on doors for single family homes and posting notices in building lobbies for multi-

family dwellings. These notifications will be modeled on those used by the Water Pollution Control Authority (WPCA) and included in *Appendix R.*

5.4.4.2 Infrastructure Verification and Preparation

IDDE inspectors will check field records for each selected outfall prior to scheduling site visit. If the outfall has debris or blockages, it will need to be cleaned by Traffic and Road Maintenance Crews prior to further investigation.

5.4.4.3 Dry Weather Criteria

Outfall screening will proceed only during dry weather when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period. The duration of the antecedent period may be shortened or lengthened as necessary or appropriate dependent upon rainfall depth or the relative extent, slope, storage, and other influences to assure that any stormwater runoff has ceased from the particular drainage area under investigation.

5.4.4.4 Storm Sewer Inspection Methodology

The storm sewer inspection methodology section of the NPDES Permit specifies procedures for outfalls with no dry weather flow, groundwater dry weather flow and contaminated dry weather flow. However, if an outfall had no dry weather flow or evidence of one, it would have been assigned a lower priority during the screening step and would be evaluated further during the IDDP step, so those steps are not detailed here.

If an outfall was suspected to have only groundwater flow, it is also less likely to be considered for IDDP. However, if no outfalls are found with illicit discharges other than those outfalls with suspected groundwater, then the procedure is to follow the storm sewer (and its tributaries if necessary) to the most upstream point at which there is flow. This location should then be sampled to determine if the flow is likely only groundwater.

For those locations suspected of contaminated groundwater flow, the process is much more rigorous. The City of Stamford's investigators should proceed as follows:

- Inspect next upstream stormwater structure(s) to determine which ones show signs of dry weather flow. There may be several structures depending on the tributaries;
- For any tributary that shows signs of dry weather flow, continue to follow that upstream inspecting every structure including sub-tributaries until no structures show any indication of dry weather flow;
- Repeat for all tributaries that show signs of dry weather flow;
- Take samples whenever possible. Document all observations by taking photographs and including test results as part of the documentation. Indicate on a map structures have been inspected and include the map as part of the permanent documentation;
- For alignments that indicate an illicit discharge, the next step is to smoke test the area to the source of discharge following the notification procedures;

- If the location is identified, appropriate corrections, as described below will be made to stop the illicit discharge;
- If no location is determined, dye testing of potential upstream sources will be conducted and the violation corrected; and
- If no location is still identified, the area will be monitored twice per month to establish the cause this illicit discharge.

5.4.4.5 Field Monitoring

Where flow is observed that does not demonstrate obvious visual, sheen or odor, a sample will be collected and analyzed with the field kits described in *Section 5.3.5* and compared against the benchmarks in the same section. If surfactant concentrations are measured to be above 0.25 mg/L, the ammonia to potassium ratio should be considered. If the ammonia is less than the potassium, then the source may be from washwater such as a washing machine. If the ammonia is higher, then the source may be from a sanitary source containing bathrooms.

If surfactants are not detected above the benchmark, the discharge should be tested for chlorine. If chlorine is detected, the source is likely from tap water, pool water or irrigation water. If it is not, the source may be groundwater.

The NPDES Permit recommends, but does not require, sampling for caffeine and various pharmaceuticals to determine whether the illicit discharge is of human origin. Several local environmental laboratories were contacted to determine if they have the capabilities to run these analyses. All the laboratories contacted stated that they could not analyze these parameters. Testing for fecal coliform could help indicate whether an illicit discharge may be of human origin. Since waste from other warm-blooded animals can also contain fecal coliform, it is not an absolute guarantee of a human source.

5.4.4.6 Isolation and Confirmation of Illicit Discharges

Where physical evidence or field monitoring identifies storm sewer alignments influenced by illicit discharges, The City will isolate the tributary area for implementation of more detailed investigations. Additional manholes and/or catch basins along the alignment will be inspected to refine the location of potential contamination sources (e.g., an individual home or block of homes). Targeted internal plumbing inspections, dye or smoke testing, and/or CCTV inspection methods may be used to confirm the flow source(s).

5.4.4.7 Removal of Illicit Discharges

Once the illicit discharge is confirmed, The City will use the Stormwater Ordinance discussed in *Section 4.2.1* to require the property owner to eliminate the discharge.

5.4.4.8 Verification of Illicit Discharge Removals

After completing the removal of all illicit discharges from a particular MS4 segment or portion of an outfall drainage area, The City will confirm that no illicit discharges remain. Depending on the extent and timing of corrections made, verification monitoring may be accomplished at the original junction structure or the

closest downstream MS4 structure to each correction. Verification will be accomplished by using the same visual inspection and field monitoring techniques described previously. Investigations of other alignments in the same drainage area outfall cannot proceed until this verification has been completed.

5.4.4.9 Verification of IDDP Completion in MS4 Drainage Areas

A completed verification at the outfall (or the first accessible upstream structure from an inaccessible MS4 outfall) of an MS4 outfall drainage area will serve to demonstrate that the IDDP has been fully implemented for that entire drainage area. This drainage area verification will include a repeat of the previous steps to show that there is no longer dry weather flow or that it is groundwater (or permitted discharges) only. An additional round of screening is required as a verification of the completion of the IDDP within the drainage area of the outfall. Such verification screening will be completed no more than sixty (60) days after the City of Stamford has verified removal of such discharges contributing to the outfall's drainage.

5.4.4.10 Work Progression & Schedule

Since the IDDP requires verification of illicit removals prior to progressing to affected portions of interconnected MS4 drainage areas, the City of Stamford will simultaneously perform investigations in other drainage areas or unaffected lateral alignments within the same drainage area, to facilitate suitable progress while awaiting correction of illicit discharges within the same outfall drainage area. Since work progress may be further constrained by the persistence of precipitation and snow melt events, The City will provide for adequate staffing and equipment resources to perform concurrent investigations in multiple areas as necessary to complete IDDP investigations in 20% of all known outfalls by June 4, 2018.

5.4.4.11 Reporting and Evaluation

The City of Stamford will document in the Annual Reports the progress made under the IDDP program progress. The report will include:

- Results and status of its outfall screening and monitoring, including percent of MS4 drainage areas or outfalls screened and/or monitored;
- Percent of structures inspected;
- Footage of MS4 cleaned and/or inspected by CCTV; and
- Mapping status.

5.4.4.12 Modifications

Stamford will modify the IDDP program as necessary to address situations where groundwater or backwater conditions or other issues preclude adequate implementation as described in the NPDES Permit. Any modifications will be documented as described in *Section 7* of this SMP.

6 Monitoring Program

6.1 Legal Authority

The draft Stormwater Ordinance described in *Section 4.2.11* is intended to provide the City of Stamford with the legal authority necessary to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with the NPDES Permit.

6.2 First Year - Description of Program

The NPDES Permit specifies that this SMP must include a description of the means, methods, quality assurance and control protocols, and schedule for implementing the required screening, field monitoring, laboratory analysis, investigations, and analysis and evaluation of the data collected. A description of meteorological resources that The City intends to use is also required. Much of this information is specifically prescribed by the NPDES Permit. It is repeated her for convenience.

6.2.1 Description of Methods

The methods by which monitoring will occur are detailed in *Section 6.3* of this SMP.

6.2.2 Description of Quality Assurance

Quality assurance will be performed by taking split samples of one sample of every twenty samples or one sample for the entire sampling event if the sampling event consists of less than twenty samples. Documentation of samples will be required through use of chains of custody. The analytical laboratory used will also be required to document the following:

- Quantification limits;
- Duplicates;
- Percent Recovery;
- Blanks; and
- Matrix Spikes.

6.2.3 Meteorological Resources that Will Be Used

Weather forecasting web sites will be the primary resource be used for prediction of rainfall events. They will also be used for confirmation of sufficient dry periods prior to sampling. Preferred web sites include weather.com, wunderground.com, and intellicast.com.

In addition, The City maintains rain gauges in the following locations:

- Highway Department; and
- Scofield Town Road Recycling Center.

These rain gauges will serve as the official rainfall readings for the City of Stamford's locations south and north of the Merritt Parkway, respectively.

6.3 In-stream Dry and Wet Weather Monitoring of Receiving Water Quality

The NPDES Permit requires both dry and wet weather monitoring within the MS4 as detailed below.

6.3.1 Location

Ten in-stream locations have been chosen and approved by the CTDEEP for in-stream monitoring. They are detailed in *Appendix S.*

6.3.2 Frequency

Monitoring will be performed four times per year as follows:

- Spring (March 1 to May 31) – Wet weather
- Summer (June 1 to August 30) – Wet weather – must include aquatic toxicity
- Summer (June 1 to August 30) – Dry weather
- Fall (September 1 to November 30) – Wet weather

6.3.3 Dry Weather Monitoring Conditions and Protocol

Dry weather monitoring will be performed only when an antecedent dry period of at least 48 hours after a rain event greater than 0.1 inch in depth is satisfied. Monitoring methodology will consist of collecting a minimum of four (4) grab samples spaced at a minimum interval of 5 minutes each. These grab samples will be combined into a single composite sample from each station, preserved, and delivered to the laboratory for analysis.

6.3.4 Wet Weather Monitoring Conditions

Wet weather monitoring will be performed only when the predicted rainfall depth of a storm event is greater than 0.25 inches and an antecedent dry period of at least 48 hours after a rain event greater than 0.1 inch in depth is satisfied. Monitoring methodology will consist of collecting a minimum of four (4) grab samples spaced at a minimum interval of 5 minutes each. These grab samples will be combined into a single composite sample from each station, preserved, and delivered to the laboratory for analysis.

6.3.5 Field Observations

During sampling, the person conducting the sampling will note any erosion of stream banks, scouring or sedimentation (such as sand bars or deltas). Field conditions will be noted on the In-stream Monitoring Field Data Sheet found in *Appendix T.*

6.3.6 Parameters for Analysis

The composite samples from the wet and dry weather monitoring will be analyzed for the following parameters, including the field parameters marked with an asterisk (*).

- Dissolved Oxygen (DO)*
- pH*
- Temperature*
- Conductivity*
- Hardness (as $CaCO_3$
- Total Suspended Solids (TSS)
- Oil & Grease, Total [1]
- Total Petroleum Hydrocarbons (TPH)
- Surfactants
- Total Phosphorus
- Ammonia
- Nitrate Nitrogen
- Nitrite Nitrogen
- Total Kjeldahl Nitrogen
- Total Copper
- Total Lead
- Total Zinc
- Chloride
- Biochemical Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)
- E. coli
- Fecal Coliform
- Enterococci
- Aquatic Toxicity (LC50) (required during summer wet weather event only)

6.3.7 Trend Analysis

The results of the above monitoring will be recorded and tracked and compared to previous data for the same monitoring location to observe any trends or changes in water quality.

6.4 Wet Weather Outfall Monitoring

Wet weather outfall monitoring is required at each MS4 outfall once during the first two years of the NPDES Permit (June 3, 3013 to June 3, 2015), and once during the last two years (June 3, 2016 to June 3, 2018).

[1] Oil & grease and TPH cannot be composited, so the analysis will be performed on the first grab.

6.4.1 Delineation of Outfalls to Be Monitored

The NPDES Permit requires that each MS4 outfall delineated in the SMP be monitored. A request for clarification from the DEEP has indicated that the intent is for all MS4 outfalls to be monitored. The total number of outfalls is unknown at this time; however a list is being developed and will be provided by June 3, 2015 and will be included in *Appendix U.*

6.4.2 Discharges to Impaired Waters

The City of Stamford discharges stormwater runoff to the following impaired water bodies:

- Long Island Sound
- Cove Harbor
- Westcott Cove
- Stamford Harbor
- Holly Pond
- Rippowam River
- Noroton River

The impairments to these waters are covered by chemical parameters already on the monitoring list so no additional chemical parameters need to be monitored.

6.4.3 Monitoring Methodology

For this monitoring, the only requirement in terms of rainfall quantity is that there be sufficient runoff to collect a sample. No minimum storm event size or preceding dry period is required.

6.4.4 Parameters for Analysis

Sample parameters are the same as in *Section 6.3.6*, repeated here for convenience. Aquatic toxicity is not required.

- Dissolved Oxygen (DO)*
- pH*
- Temperature*
- Conductivity*
- Hardness (as $CaCO_3$
- Total Suspended Solids (TSS)
- Oil & Grease, Total
- Total Petroleum Hydrocarbons (TPH)
- Surfactants
- Total Phosphorus
- Ammonia
- Nitrate Nitrogen
- Nitrite Nitrogen
- Total Kjeldahl Nitrogen
- Total Copper

- Total Lead
- Total Zinc
- Chloride
- Biochemical Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)
- E. coli
- Fecal Coliform
- Enterococci

6.5 Dry Weather Outfall Screening for Illicit Dischargers

Dry weather monitoring of outfalls is part of the IDDE program and is covered in *Section 5*.

6.6 Implementation Schedule

A summary of all monitoring required by the NPDES Permit is presented below:

	Year 1	Year 2	Year 3	Year 4	Year 5
1. In-stream Dry & Wet Weather Monitoring	One dry and three wet weather samples collected annually at the monitoring stations described in *Appendix R*.				
2. Wet Weather Outfall Monitoring	Two rounds of single grab samples at all outfalls during permit term analyzed for a suite of water quality parameters; completed once during the first two years of the permit term and once during the final two years of the permit term. Include monitoring for pollutant(s) of concern in direct discharges into impaired waters (with or without an approved TMDL).				
3. Dry Weather Outfall Prioritization Screening (Pre-IDDP)	Screen new or previously unknown outfalls a needed.				
Dry Weather Outfall Prioritization Screening (Pre-IDDP) (continued)	Complete Screening of 25% of known MS4 Outfalls	Complete Screening of 50% of known MS4 Outfalls	Complete Screening of 75% of known MS4 Outfalls	Complete Screening of 100% of known MS4 Outfalls	
4. Implementation of IDDP		Complete IDDP in 5% of MS4	Complete IDDP in additional 5% of MS4 (total 10%)	Complete IDDP in additional 5% of MS4 (total 15%)	Complete IDDP in additional 5% of MS4 (total 20%)
5. Dry Weather Outfall Verification Screening (Post-IDDP)	Dry weather screening for IDDP verification as needed.				

The proposed schedule is included below:

	Year 1	Year 2	Year 3	Year 4	Year 5
1. In-stream Dry & Wet Weather Monitoring	One dry and three wet weather samples collected annually at the monitoring stations described in *Appendix R*.				
2. Wet Weather Outfall Monitoring	Two rounds of single grab samples at outfalls indicated in *Appendix R*..				
3. Dry Weather Outfall Prioritization Screening (Pre-IDDP)	Screen new or previously unknown outfalls a needed.				
	No Screening	Complete Screening of 50% of known MS4 Outfalls	Complete Screening of 75% of known MS4 Outfalls	Complete Screening of 100% of known MS4 Outfalls	
4. Implementation of IDDP			Complete IDDP in 10% of MS4	Complete IDDP in additional 5% of MS4 (total 15%)	Complete IDDP in additional 5% of MS4 (total 20%)
5. Dry Weather Outfall Verification Screening (Post-IDDP)	Dry weather screening for IDDP verification as needed.				

6.7 Evaluation and Reporting

All data collected as required by *Sections 5* and *6* of this SMP will be evaluated each year and included in the Annual Report. This data will be compared to that previously collected under the 2005 NPDES Permit. It also must be reported to the CTDEEP using the Discharge Monitoring Report (DMR) and NetDMR procedures described in Section 8B of the NPDES Permit.

6.8 Program Modifications

Modifications, if needed, will be made in accordance with the procedures in *Section 7*.

6.9 Monitoring Recordkeeping

The NPDES Permit requires the following:

- Samples and measurements taken for the purpose of monitoring be representative of the monitored activity.
- The City will retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the NPDES Permit, and records of all data used to complete the application for this permit, for a period of at least 5 years from the date of the sample, measurement, report or application.

6.9.1 Monitoring Records

Records of monitoring information will include:

- The date, exact place, and time of sampling or measurements;
- The date off the most recent previous rain event greater than 0.1 inches and 0.25 inches;
- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed;
- The individual(s) who performed the analyses (this can be found on lab reports);
- The analytical techniques or methods used (this can be found on lab reports); and
- The results of such analyses (this can be found on lab reports).

The In-stream Monitoring Field Data Sheet found in *Appendix T* will include all of the information that is not included in the lab reports.

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6.9.2 Test Procedures

Test procedures required by the NPDES Permit are repeated here for convenience.

6.9.2.1 Chemical Parameters

Chemical analyses to determine compliance with conditions established in the NPDES Permit will be performed using the methods approved pursuant to the 40 CFR 136 unless an alternative method has been approved in writing pursuant to 40 CFR 136.4 or as provided in section 22a-430-30)(7) of the RCSA.

All metals analyses will be performed as Total Recoverable Metal as defined in 40 CFR 136. The value of each parameter for which monitoring is required under the NPDES Permit will be reported to the maximum level or accuracy and precision possible.

6.9.2.2 Acute Aquatic Toxicity

Samples for monitoring of Aquatic Toxicity will be collected and handled as prescribed in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012).

- Composite samples will be chilled as they are collected. Grab samples will be chilled immediately following collection. Samples will be held at 4 degrees Centigrade until Aquatic Toxicity testing is initiated.
- Stormwater samples will not be dechlorinated, filtered, or modified in any way, prior to Aquatic Toxicity testing unless specifically approved in writing by the commissioner for monitoring,
- Chemical analyses of the parameters identified in *Section 6.4.4* will be conducted on an aliquot of the same sample tested for Aquatic Toxicity,
- At a minimum, pH, specific conductance, total alkalinity, total hardness, and total residual chlorine will be measured in the effluent sample and, during Aquatic Toxicity tests, in the highest concentration of the test solution and in dilution (control) water at the beginning of the test and at test termination. If Total Residual Chlorine is not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, pH, and temperature

will be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination,
- Tests for Aquatic Toxicity will be initiated within 24 hours of sample collection.

Monitoring for Aquatic Toxicity will be conducted for 48-hours utilizing neonatal Daphnia pulex (less than 24-hours old).

Tests for Aquatic Toxicity will be conducted as prescribed for static non-renewal acute tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012), except as specified below:

- Definitive (multi-concentration) testing, with LC5O as the endpoint, will be conducted in accordance with the monitoring conditions and will incorporate, at a minimum, effluent concentrations of 100%, 50%, 25%, 12.5%, and 6.25%:
- Organisms will not be fed during the tests.
- Copper nitrate will be used as the reference toxicant in tests with freshwater organisms.
- Synthetic freshwater prepared with deionized water adjusted to a hardness of 50 mg/L (plus or minus 5 mg/L) as CaC03 will be used as dilution water in tests with freshwater organisms.

6.10 Monitoring Waiver

Should the City of Stamford is unable to collect a sample due to adverse climatic conditions, they will submit in lieu of sampling data, a description of why samples could not be collected, including available documentation of the storm event. Adverse climatic conditions that may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection or a sample dangerous or physically impossible. If more than one (1) sample is missed, the missed outfalls will be resampled as soon as possible or an alternate outfall designated and sampled as soon as possible.

7 SMP Review and Modifications

Each year, The City will review this SMP as part of the preparation of the annual report. This review may result in the need to revise the SMP.

7.1 SMP Modification by Permittee

The City of Stamford may modify the SMP during the term of the NPDES Permit in accordance with the following procedures. The approved SMP will not be modified by the City of Stamford without the prior written approval of the DEEP commissioner, except if:

- Modifications adding (but not subtracting or replacing) components, activities, controls, or requirements to the approved SMP are made at any time upon written notification to the commissioner summarizing the modifications.
- Modifications replacing an ineffective or impracticable BMP specifically identified in the Stormwater Management Plan with an alternate BMP will be documented in the Annual Report, with a justification for the modification.

7.2 Modifications Required By Commissioner

The commissioner may require modification of the SMP as needed to:

- Assess impacts and or correct adverse impacts that are causing or have the potential to cause pollution to surface waters receiving discharges from the City of Stamford MS4;
- Include more stringent requirements necessary to comply with new State or Federal statutory or regulatory requirements; or
- Include such other conditions deemed necessary by the commissioner to comply with the goals and requirements of the RCSA and the Clean Water Act, or
- the actions required by the Plan fail to ensure or adequately protect against pollution of the surface waters of the state; or
- The City is notified that a TMDL to which they is subject has been established for the stormwater water; or if actions are necessary to address any significant sources or potential sources of pollution identified as a result of any inspection or visual monitoring.

Modifications required by the commissioner pursuant to this subsection will be made in writing, set forth the time schedule for The City to develop the modification(s), and offer the opportunity to propose alternative SMP modifications to meet the objective of the required modifications. The commissioner will indicate a schedule by which the modifications must be made.

8 Plan Certification

"I certify that I have thoroughly and completely reviewed the Stormwater Management Plan prepared for the City of Stamford. I further certify, based on such review and site visit by myself or my agent, and on my professional judgment, that the Stormwater Management Plan meets the criteria set forth in this permit. I am aware that there are significant penalties for false statements in this certification, including the possibility of fine and imprisonment for knowingly making false statements."

This certification is made noting the following differences from the NPDES Permit:

- The Stormwater Management Ordinance that was required by June 3, 2014 is currently being developed.
- Detention and retention ponds were not inspected annually for the first year of the NPDES Permit. A list of these locations is currently being developed.
- The list of all outfalls is currently being developed.
- The proposed monitoring schedule has been adjusted as detailed in *Section 6.6.*

Christopher J. Ecsedy, P.E., LEP

18363
PE Number

September 2, 2014

FUSS & O'NEILL

Appendix A

NPDES Permit No. CT0030279

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

NPDES PERMIT

issued to

City of Stamford
888 Washington Blvd.
Stamford, CT 06901

Location Address:
Municipal Storm Sewer System

Permit ID: CT0030279

Receiving Stream: Long Island Sound, Cove Harbor, Westcott Cove, Stamford Harbor, Holly Pond, Rippowam River, Noroton River and Mianus River and their tributaries

Permit Expires: June 3, 2018

SECTION 1: GENERAL PROVISIONS

(A) This permit is issued in accordance with section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and section 402(b) of the Clean Water Act, as amended, 33 USC 1251, et. seq., and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer an N.P.D.E.S. permit program.

(B) **The City of Stamford**, ("Permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(10)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of section 22a-430-3.

Section 22a-430-3 General Conditions

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit
(e) Duty

(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(l) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)
(n) Enforcement
(o) Resource Conservation
(p) Spill Prevention and Control
(q) Instrumentation, Alarms, Flow Recorders
(r) Equalization

Section 22a-430-4 Procedures and Criteria

(a) Duty to Apply
(b) Duty to Reapply
(c) Application Requirements
(d) Preliminary Review
(e) Tentative Determination
(f) Draft Permits, Fact Sheets
(g) Public Notice, Notice of Hearing
(h) Public Comments
(i) Final Determination
(j) Public Hearings
(k) Submission of Plans and Specifications. Approval.
(l) Establishing Effluent Limitations and Conditions
(m) Case by Case Determinations
(n) Permit issuance or renewal
(o) Permit Transfer
(p) Permit revocation, denial or modification
(q) Variances
(r) Secondary Treatment Requirements
(s) Treatment Requirements for Metals and Cyanide
(t) Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action including, but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.

(D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section

22a-6, under section 53a-157b of the CGS.

(E) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner of Energy and Environmental Protection ("commissioner"). To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the commissioner, at least 30 days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.

(F) No provision of this permit and no action or inaction by the commissioner shall be construed to constitute an assurance by the commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.

(G) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

(H) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the Regulations of Connecticut State Agencies.

(I) This permitted discharge is consistent with the applicable goals and policies of the Connecticut Coastal Management Act (section 22a-92 of the Connecticut General Statutes).

(J) Any activity prescribed by this permit, if it is located within an aquifer protection area as mapped under section 22a-354b of the Connecticut General Statutes, must comply with regulations adopted pursuant to section 22a-354i of the Connecticut General Statutes.

SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and section 22a-430-3(a) and 22a-430-6 of the RCSA.

(B) In addition to the above, the following definitions shall apply to this permit:

"Alignment" in the context of sanitary and storm sewer systems means the system of pipes and structures within the catchment area of the given system.

"Annual" in the context of a sampling frequency means that the sample must be collected at least once during each calendar year.

"Coastal area" shall be the same as the definition contained in section 22a-94 of the Connecticut General Statutes.

"Coastal waters" shall be the same as the definition contained in section 22a-93(5) of the Connecticut General Statutes.

"Commercial activity" means the discharge from any point source conveying stormwater runoff from any activity or facility under SIC codes 50-59, 60-69 or 70-79.

"Commissioner" means the commissioner as defined by section 22a-2(b) of the Connecticut General Statutes.

"Construction activity" means activity including but not limited to clearing and grubbing, grading, excavation and dewatering.

"Department" means the Department of Energy and Environmental Protection.

"Directly Connected Impervious Area" or *"DCIA"* means that part of the total impervious area that is hydraulically connected to the Permittee's MS4. DCIA typically includes streets, sidewalks, driveways, parking lots, and roof tops. DCIA typically does not include isolated impervious areas that are not hydraulically connected to the MS4 or otherwise drain to a pervious area.

"DMR" means Discharge Monitoring Report.

"Fresh-tidal wetland" means a tidal wetland with an average salinity level of less than 0.5 parts per thousand.

"Guidelines" means the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, established pursuant to section 22a-328 of the Connecticut General Statutes.

"High Quality Waters" means surface waters where the water quality is better than necessary to meet the criteria established in the Connecticut Water Quality Standards Manual, as amended, for the applicable classification or which may sustain a sensitive use designated for a higher classification. This definition may be superseded by future amendments to the Water Quality Standards Manual.

"Illicit Discharge" means any discharge to the Permittee's MS4 that is not composed entirely of stormwater, with the exception of discharges authorized by another N.P.D.E.S. permit, or discharges described in the "Non-Stormwater Discharges" section (Section 4(A)(3)) of this permit.

"Impaired waters" means those surface waters of the state designated by the commissioner as impaired pursuant to Section 303(d) of the Clean Water Act and as identified in the most recent State of Connecticut Integrated Water Quality Report.

"Industrial Activity" refers to the definition of industrial activity in Section 2 of the General Permit for the Discharge of Stormwater Associated with Industrial Activity issued by the Department, as amended.

"Maximum Extent Practicable" means to reduce and/or eliminate the discharge of pollutants to the maximum extent practicable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

"Medium MS4", as it relates to the City of Stamford, means all municipal separate storm sewers that are located in an incorporated place (city) with a population greater than 100,000 and less than 250,000 as determined by the latest Deeennial Census by the Bureau of Census.

"MS4" or *"Municipal separate storm sewer system"* means a conveyance, or system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains, which is or are (i) owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as sewer districts, flood control districts or drainage districts, or similar districts, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the state; (ii) designed or used for collecting or conveying stormwater; (iii) which is not a combined sewer; and (iv) which is not part of a POTW.

"LC50" means the concentration of a substance, mixture of substances, or discharge which causes mortality to fifty percent of the test organisms in an acute toxicity test.

"NA" as a Monitoring Table abbreviation means "not applicable".

"NR" as a Monitoring Table abbreviation means "not required".

"Point Source" means any discernible, confined and discrete conveyance (including, but not limited to any pipe, ditch, channel, tunnel, conduit, 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.

"Quarterly", in the context of a sampling frequency, means that a representative sample of the discharge shall be collected during each of the following periods: January - March, inclusive; April - June, inclusive; July - September, inclusive, and October - December, inclusive.

"Retain" means to hold runoff on-site with no subsequent point source release to surface waters from a storm event defined in this general permit or as approved by the commissioner.

"Runoff reduction practices" means those post-construction stormwater management practices used to reduce post-development runoff volume delivered to the receiving water, as defined by retaining the runoff from a storm up to the first half inch or one inch of rainfall in accordance with Section 6(A)(3)(a)(iii) of this general permit. Runoff reduction is quantified as the total annual post-development runoff volume reduced through canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended filtration or evapo-transpiration.

"SIC Code" means Standard Industrial Classification (SIC) codes as identified by "Standard Industrial Classification Manual, Executive Office of the President, Office of Management and Budget 1987".

"Stamford MS4" means the medium MS4 owned or operated by the City of Stamford.

"Stamford MS4 Discharge(s)" means the point source discharge(s) of stormwater from the MS4 owned or operated by the City of Stamford.

"Stormwater" means waters consisting of rainfall runoff, including snow or ice melt during a rain event, and drainage of such runoff.

"Semi-Annual" in the context of a sampling frequency, means that a representative sample of the discharge shall be collected during each of the following periods: January - June, inclusive, and July – December, inclusive.

"Stormwater Quality Manual" means the Department's 2004 Connecticut Stormwater Quality Manual published, as may be amended.

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

"Total Maximum Daily Load" or *"TMDL"* means the maximum capacity of a surface water to assimilate a pollutant as established by the commissioner, including pollutants contributed by point and non-point sources and a margin of safety.

"ug/l" means micrograms per liter.

"Water Quality Standards or Classifications" means those water quality standards or classifications contained in the Connecticut Water Quality Standards published by the Department, as may be amended.

"Water Quality Volume" or *"WQV"* means the volume of runoff generated by one inch of rainfall on a site as defined in the 2004 Connecticut Stormwater Quality Manual, as amended.

SECTION 3: COMMISSIONER'S DECISION

(A) The commissioner has issued a final determination and found that the discharges will not cause pollution of any of the waters of the state. The commissioner's decision is based on **Application No. 201001035** for permit reissuance received on February 23, 2010 and the administrative record established in the processing of that application.

(B) (1) From the issuance of this permit through and including June 30, 2013, the commissioner hereby authorizes the Permittee to discharge in accordance with the terms and conditions of Permit No. CT0030279, issued by the commissioner to the Permittee on March 18, 2005, the previous application submitted by the Permittee on December 2, 1998, and all modifications and approvals issued by the commissioner or the commissioner's authorized agent for the discharge and/or activities authorized by, or associated with, Permit No. CT0030279, issued by the commissioner to the Permittee on March 18, 2005.

(2) From July 1, 2013 until this permit expires or is modified or revoked, the commissioner hereby authorizes the Permittee to discharge in accordance with the terms and conditions of Permit No. CT0030279, issued by the commissioner to the Permittee on June 4, 2013, Application No. 201001035 received by the Department on February 23, 2010, and all modifications and approvals issued by the commissioner or the commissioner's authorized agent for the discharge and/or activities authorized by, or associated with, Permit No.CT0030279, issued by the commissioner to the Permittee on June 4, 2013.

(C) The commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Clean Water Act or the CGS or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or CGS or regulations adopted thereunder which are then applicable.

SECTION 4: DISCHARGES AUTHORIZED UNDER THIS PERMIT

(A) This permit authorizes:

(1) **Existing** stormwater discharges to the surface waters of the state from all existing outfalls from areas, within the corporate boundary of the City of Stamford and served by, or otherwise contributing to, discharges from the existing MS4 owned and operated by the City of Stamford.

(2) **New** storm water discharges to the surface waters of the state, subject to the "New or Increased Discharges to High Quality Waters" and "New and Improved discharges to Impaired Waters" sections (subsections 4(A)(4) and 4(A)(5) below) of this permit.

(3) The following non-stormwater discharges provided they do not contribute to a violation of water quality standards and are not significant contributors of pollutants to the MS4:

- landscape irrigation, provided all pesticides, herbicides, and fertilizers have been applied in accordance with approved labeling;
- uncontaminated ground water discharges such as pumped ground water, foundation drains, water from crawl space pumps and footing drains;
- discharges of uncontaminated air conditioner or refrigeration condensate;
- for street sweeping activities conducted by the MS4, residual street wash waters that do not contain detergents and where no non-remediated spills or leaks of toxic or hazardous materials have occurred;
- lawn watering runoff, provided all pesticides, herbicides and fertilizers have been applied in accordance with approved labeling; and
- naturally occurring discharges such as rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), springs, diverted stream flows and flows from riparian habitats and wetlands.

(4) New or Increased Discharges to High Quality Waters

On or before thirty (30) days prior to the commencement of a new or increased discharge to High Quality Waters (as defined in Section 2(B)) from its MS4, the Permittee must provide to the commissioner a description of the discharge and information demonstrating that the discharge will satisfy the Connecticut Anti-Degradation Implementation Policy in the Water Quality Standards, as amended. Such discharge will become authorized thirty (30) days after the Permittee's notification to the commissioner unless the commissioner notifies the Permittee that it has failed to demonstrate satisfaction with the retention standards of the anti-degradation provisions. Before commencing any new or increased discharge, the Permittee shall identify in its Stormwater Management Plan ("SMP"), the best management practices ("BMPs") it will implement to ensure compliance with antidegradation provisions and the terms of this Permit.

(5) New or Increased Discharges to Impaired Waters

Any new or increased discharge to an impaired water will become authorized only if the Permittee demonstrates to the commissioner, before commencement of the discharge, that through the implementation of BMPs or other measures, the discharge is not expected to cause or contribute to an exceedance of a water quality standard for the pollutant(s) of concern. This provision does not apply to routine maintenance and repair of the storm sewer system provided such work does not significantly increase the discharge from a given storm sewer catchment area. The Permittee shall provide data and other technical information to the commissioner sufficient to demonstrate one or more of the following:

(a) the indicator pollutant(s) identified as causing the impairment will not be present in the discharge; or

(b) the discharge is not expected to cause or contribute to an exceedance of a water quality standard. To do this, the Permittee must provide data and other technical information to the commissioner sufficient to demonstrate:

(i) For discharges to waters without an established TMDL, that the discharge of the pollutant identified as an indicator of the impairment will meet in-stream water quality criteria at the point of discharge to the waterbody; or

(ii) For discharges to waters with an established TMDL, that there are sufficient remaining Waste Load Allocations in the TMDL to allow the discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards.

SECTION 5: GENERAL LIMITATIONS

(A) The stormwater discharges shall not contain, or cause in the receiving stream, a visible oil sheen, floating solids, visible discoloration or foaming. Excluded from this are naturally occurring substances such as leaves and twigs provided no person has placed such substances in or near the discharge.

(B) The stormwater discharges shall not cause acute or chronic toxicity in its receiving water bodies.

(C) A new Stamford MS4 discharge to a tidal wetland (that is not fresh-tidal) where such discharge is within 500 feet of the tidal wetland shall discharge through a system designed to retain the volume of stormwater runoff generated by 1 inch of rainfall from the MS4 within the discharge's drainage area. If there are site constraints that would prevent retention of this volume on-site (e.g., soil contamination, elevated ground-water, potential groundwater drinking supply area, etc.), documentation must be submitted, for the commissioner's review and written

approval, which explains the site limitations and offers an alternative retention volume and/or additional stormwater treatment. In such cases, the portion of 1 inch that cannot be retained must be provided with additional stormwater treatment so as to protect water quality. Any such treatment shall be designed, installed and maintained in accordance with the Stormwater Quality Manual.

(D) A Stamford MS4 discharge below the high tide line into coastal, tidal, or navigable waters for which a permit is required under the Structures and Dredging Act in accordance with section 22a-361(a) of the Connecticut General Statutes or into tidal wetlands for which a permit is required under the Tidal Wetlands Act in accordance with section 22a-32 of the Connecticut General Statutes, shall obtain such permit(s) from the commissioner.

SECTION 6: CONDITIONS OF THIS PERMIT

(A) CONTROL MEASURES

Control Measures are required Best Management Practices (BMPs) that the Permittee must implement to reduce the discharge of pollutants from Stamford's MS4 to the maximum extent practicable.

(1) Public Education and Involvement

The Permittee shall continue to implement a public education and involvement program, assess the overall success of the program, and document both direct and indirect measurements of program effectiveness. The program shall include elements that:

(a) increase the public awareness about stormwater pollution, its causes and effects, and actions that citizens, and commercial, industrial, and institutional entities can take to reduce the impact of stormwater pollution on water quality;

(b) promote, publicize and facilitate the various elements of its Stormwater Management Plan ("SMP") through varied public education and involvement methods and make information available for non-English speaking residents;

(c) disseminate information to residents regarding the proper handling and disposal of used motor vehicle fluids, household hazardous waste, electronic waste, food preparation waste, grass clippings, car wash waters, proper use of fertilizers, pesticides, and herbicides and educational material emphasizing nitrogen and phosphorus control as it relates to lawn care to residents;

(d) educate dog owners about the proper disposal of pet waste and by providing written information at the time of dog license renewal. The Permittee shall install signage, pet waste baggies, and disposal receptacles in recreational areas where dog walking is

allowed. In order to measure the effectiveness of education measures, the Permittee shall document in its annual report, information regarding the enforcement of the dog waste management ordinance (Section 11-7 of City Charter) including the number of violations and fines levied;

(e) educate owners and operators of commercial, industrial, and institutional facilities as to their responsibility to control pollutants in stormwater discharges from their property to the Permittee's MS4; and

(f) provide opportunities for the public to participate in the review, modification, and implementation of its SMP, and sustain partnerships with environmental groups and civic organizations interested in water quality related issues. The Permittee shall host an annual public informational meeting within sixty (60) days of the date of anniversary of this permit to discuss and provide information in each annual report required under Section 8(A) of this permit. The meeting notice shall comply with state public notice requirements, pursuant to CT Statute 7-3, and provide a forum for the education and involvement of interested public.

(2) Pollution Prevention (Source Controls)

Upon issuance of this permit, unless otherwise noted, the Permittee shall continue to implement, review and enhance its current pollution prevention practices and develop new source control procedures to include the elements listed below:

(a) Legal Authority

The Permittee shall, within eighteen months from the start of the Permittee's first fiscal year that begins after the effective date of this permit, ensure legal authority to:

(i) control the contribution of pollutants to the Stamford MS4 by permittees of the General Permit for the Discharge of Stormwater Associated with Industrial Activity and the General Permit for the Discharge of Stormwater Associated with Commercial Activity ("general permits"), issued pursuant to sections 22a-430b of the Connecticut General Statutes, by ensuring the City's stormwater rules and regulations contain requirements consistent with those of the general permits;

(ii) control the contribution of pollutants to the Stamford MS4 by commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by permit issued pursuant to Sections 22a-430 or 22a-430b of the Connecticut General Statutes;

(iii) regulate the discharge of pollutants from any site that may affect water quality to the Stamford MS4.

(b) The Permittee shall provide and actively promote the use of used motor oil collection capabilities at the city-owned recycling facility(ies) to facilitate the proper management, disposal, reuse and recycling of used motor vehicle fluids.

(c) The Permittee shall continue to promote and offer at least annually its municipal Household Hazardous Waste (HHW) Collection and Electronic Waste Programs for the reuse, recycling, and proper disposal of such waste. The Permittee shall establish as a goal, increasing the frequency of the collection days hosted. The Permittee shall report progress made towards reaching the goals of the program in each annual report.

(d) Spills and Leaks

The Permittee shall develop and implement a Spill Prevention and Response Plan to prevent, contain, and respond to spills entering its MS4. The Permittee shall maintain, for a period of three years past the term of this permit, a list of spills and leaks of five gallons or more of petroleum products, or of toxic or hazardous substances which could affect stormwater, as listed in section 22a-430-4 (Appendix B Tables II, III and V, and Appendix D) of the Regulations of Connecticut State Agencies, and 40 CFR 116.4, that have been reported to the City or occurred as a result of an activity conducted by a city employee.

(e) The Permittee shall limit the application of pesticides, herbicides and fertilizers ("PHFs") in city owned or operated areas. The Permittee shall develop and implement standard operating practices for the handling, storage, application, and disposal of PHFs in compliance with applicable state and federal laws, and maintain consistency with model Integrated Pest Management Plans ("IPMs") developed by the Department. The Permittee shall establish reduction goals in its SMP, including consideration of alternatives, for PHFs being used at city owned or operated areas. With respect to city-owned or -operated golf courses (such as Sterling Farms Golf Course and E. G. Brennan Golf Course), the Permittee shall implement practices that achieve a 10 percent reduction in total nitrogen by the expiration date of this permit. Such reduction shall be determined by the average annual usage, by weight, of the three years preceding this permit. Additionally, the MS4 shall identify BMPs to maximize reduction in total nitrogen and phosphorus.

(f) The Permittee must enclose or cover by a rigid or flexible roof, or other structural means all storage piles of de-icing materials (including pure salt, salt alternatives or either of these mixed with other materials) at city owned or operated sites, which are not otherwise regulated by the General Permit for the Discharge of Stormwater Associated with Industrial Activity. Such structure shall not allow for the migration or release of material outside of the structure through its sidewalls. In areas with a groundwater classification of GA or GAA, an impervious liner shall be utilized under

any de-icing material pile to prevent infiltration to groundwater. As a temporary measure (not to exceed two years from the effective date of this general permit), a waterproof cover may be used to prevent exposure to precipitation (except for exposure necessary to add or remove materials from the pile) until a structure can be provided. For temporary storage piles of de-icing materials in place for less than 180 days per year, a waterproof cover may be used to prevent exposure to precipitation (except for exposure necessary to add or remove materials from the pile).

In addition, no new road salt or de-icing materials storage facilities shall be located within a 100-year floodplain as defined and mapped for each municipality under 44 CFR 59 et seq. or within 250 feet of a well utilized for potable drinking water supply or within a Level A aquifer protection area as defined by mapping pursuant to section 22a-354c of the Connecticut General Statutes.

(g) If the Permittee determines that a stormwater discharge, from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by a permit issued pursuant to Sections 22a-430 or 22a-430b of the Connecticut General Statutes, is contributing a substantial pollutant loading to the MS4, it shall develop, implement, and enforce a program to control pollutants. The Permittee shall report progress made towards reaching the goals of the program in each annual report. The program shall include:

(i) an inventory, mapping, and prioritization of all facilities determined by the Permittee to be contributing a substantial pollutant loading to its MS4 through inspections, monitoring, or other methods conducted by the Permittee, facility operator, or others; and

(ii) an education program that informs these facility operators of their obligation to comply with the City's stormwater rules and regulations, encourages pollution prevention, and promotes facility-specific stormwater management practices, including appropriate operation and maintenance practices.

(3) Land Disturbance and Development

(a) Upon issuance of this permit, unless otherwise noted, the Permittee shall implement and enforce a program to control stormwater discharges to its MS4 associated with land disturbance or development (including re-development) activities from areas with one half acre or more of soil disturbance, whether considered individually or collectively as part of a larger common plan. Such program shall include the following elements:

(i) Legal Authority

The Permittee shall, within eighteen months from the start of the Permittee's first fiscal year that begins after the effective date of this permit, ensure legal authority to:

- establish an ordinance, bylaw, regulation, or other appropriate legal authority that requires developers and construction site operators to maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the 2004 Connecticut Stormwater Quality Manual, as amended, and all stormwater discharge permits issued by the DEEP within the City of Stamford pursuant to CGS 22a-430 and 22a-430b. Such ordinance, bylaw, regulation, or other appropriate legal authority may include the implementation of measures in addition to the Guidelines;

- identify existing municipal zoning, site planning, or street design regulations that address minimal dimensional criteria for the creation of roadways, parking lots, and other impervious cover that may represent barriers to implementing LID practices that involve minimization of impervious cover;

- carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with City regulations related to the management of the MS4;

- establish an ordinance, bylaw, regulation, or other appropriate legal authority to ensure that a developer's or construction site operator's proposed use of low impact development ("LID") practices are allowable by right or exception (e.g., special permit or variance) under its regulations;

- revise regulations necessary to eliminate or reduce potential barriers, or otherwise provide in its Annual Report(s) required by Section 8, a justification for why this schedule cannot be met and a revised schedule for implementation;

- optimize the performance and pollutant removal efficiency of privately-owned retention or detention ponds that discharge to or receive discharge from its MS4, by ensuring the performance of adequate inspection and maintenance activities;

- control through interagency or inter-jurisdictional agreements, the contribution of pollutants between the Permittee's MS4 and MS4s owned or operated by others.

(ii) Interdepartmental Coordination

A plan to coordinate all municipal departments and boards with jurisdiction over the review, permitting, or approval of land disturbance and development projects within the City of Stamford.

(iii) Low Impact Development ("LID") Measures

The Permittee shall incorporate the use of runoff reduction and low impact development ("LID") practices into their land use regulations to meet a goal of maintaining post-development runoff conditions similar to pre-development runoff conditions. These regulations shall require the following, at a minimum, of applicants for land development and redevelopment:

- For sites that are currently developed with an effective impervious cover of forty percent or more and for which the applicant is proposing redevelopment, the applicant shall design the site in such a manner as to retain on-site half the water quality volume for the site. In cases where the applicant is not able to retain this entire amount, the applicant shall design the redevelopment to retain runoff volume to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice. In such cases, the applicant shall provide additional stormwater treatment for sediment, floatables and nutrients to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice for the volume above that which can be retained up to the water quality volume. In cases where the runoff retention requirement cannot be met, the applicant shall submit, for the Permittee's review, a report detailing factors limiting the capability of achieving this goal. The report shall include: the measures taken to maximize runoff reduction practices on the site; the reasons why those practices constitute the maximum extent achievable; the alternative retention volume; and a description of the measures used to provide additional stormwater treatment above the alternate volume up to the water quality volume. In the case of linear redevelopment projects (e.g. roadway reconstruction or widening) for the developed portion of the right of way: (1) for projects that may be unable to comply with the full retention standard, the alternate retention and treatment provisions may also be applied as specified above, or (2) for projects that will not increase the effective impervious cover within a given watershed, the Permittee shall implement the additional stormwater treatment measures referenced above, but will not be required to retain half of the water quality volume.

- For all new development and for redevelopment of sites with a currently developed effective impervious cover of less than forty percent, the applicant shall design the site to retain the water quality volume for the site. If there are site constraints that would prevent retention of this volume on-site (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), documentation must be submitted, for the City's review and written approval, which: explains the site limitations; provides a description of the runoff reduction practices implemented; provides an explanation of why this constitutes the maximum extent achievable; offers an alternative retention volume; and provides a description of the measures used to provide additional stormwater treatment for sediment, floatables and nutrients above the alternate volume up to the water quality volume. Any such treatment shall be designed, installed and maintained in accordance with the Stormwater Quality Manual. In the case of linear projects that do not involve impervious surfaces (e.g. electrical transmission rights-of-way or natural gas pipelines), retention of the water quality volume is not required as long as the post-development runoff characteristics do not differ significantly from pre-development conditions.

- limit turf areas to areas of land disturbance,

- limit land disturbance to areas necessary to construct buildings, utilities, stormwater management measures, parking, access ways, reasonable lawn and landscape areas and contouring necessary to prevent future site erosion,

- maintain consistency with the Connecticut Stormwater Quality Manual (as amended), or if inconsistent, provide and explanation of why consistency is not feasible or practicable and information that the proposed plan of development is adequately protective.

(iv) Stormwater Management Implementation

Within three (3) years from the start of the Permittee's first fiscal year that begins after the effective date of this permit, the Permittee shall implement, upgrade (if necessary) and enforce a program that shall address construction and post-construction stormwater discharges from land disturbing activities (construction phase) and after site stabilization has been achieved (post-construction or operational phase). At a minimum, the City's land use regulations shall be consistent with the Connecticut Guidelines for Soil Erosion and Sedimentation Control (as amended) for construction activities and the Connecticut Stormwater Quality Manual (as amended) for post-construction stormwater management.

(v) Site Review and Inspection

- Conduct site plan review and pre-construction review meetings that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality; and

- Site inspection and enforcement to assess the adequacy of the installation, maintenance, operation, and repair of construction and post construction control measures.

(vi) Public Involvement

A procedure for receipt and consideration of information submitted by the public concerning proposed and ongoing land disturbance and development activities.

(vii) State Permit Notification

A procedure for notifying developers of their potential obligation to obtain authorization under the DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities ("construction general permit") if their development or redevelopment project disturbs one or more acres of land, either individually or collectively, as part of a larger common plan, and results in a point source discharge to the surface waters of the state directly or through the Permittee's MS4. The notification shall include a provision informing the project applicant of their obligation to provide a copy of the Storm Water Pollution Control Plan to the Permittee upon request pursuant to the construction general permit.

(viii)Impervious Cover

Within four (4) years of the date of issuance of this permit, the Permittee shall complete, and include in its SMP, an estimate of the DCIA that contributes stormwater to each of its MS4 outfalls. In its initial annual report, the Permittee shall describe the methodology and assumptions used to estimate the DCIA. Each annual report shall document the progress of this task until its completion in the fourth year. The Permittee shall revise its DCIA estimate as development, redevelopment, or retrofit projects effectively add or remove DCIA to its MS4.

(4) Illicit Discharges

The Permittee shall continue to implement their illicit discharge detection and elimination program and update such program in accordance with the Illicit Discharge Detection and

Elimination (IDDE) Program section (Section 6(D)).

(5) Infrastructure Operations and Maintenance

(a) Employee Training

The Permittee shall continue a formal employee training program to increase awareness of water quality related issues in management of its MS4. In addition to providing key staff with topical training regarding standard operating procedures and other activities necessary to comply with the provisions of this permit, the training program shall include establishing an awareness of the general goals and objectives of the SMP; identification and reporting of illicit discharges, and improper disposal; and spill response protocols and respective responsibilities of involved personnel.

(b) Infrastructure Repair and Rehabilitation

The Permittee shall repair and rehabilitate its MS4 infrastructure in a timely manner in order to reduce or eliminate the discharge of pollutants from its MS4 to receiving waters. Priority for repair and rehabilitation shall be based on existing information on outfalls discharging pollutants, impaired waters, inspection observations or observations made during outfall mapping pursuant to Section 6(D)(4)(c) of this permit. This shall include refinement of the Permittee's standard operating procedures and good housekeeping practices for management of its MS4.

(c) Roadway Maintenance

City-owned public streets, roads and highway rights-of-way shall be maintained by the Permittee in such a manner as to minimize the discharge of pollutants to its MS4.

(d) Sweeping

(i) The Permittee shall conduct a street sweeping program to remove sand, sediment and debris from: main lines and arteries on a minimum frequency of weekly and monthly, respectively, except during winter months (December 1-March 1); event gathering areas prior to the event and no later than 48 hours after the end of the event or within 24 hours if rain is forecast; main roads in business and commercial areas daily; city-wide residential sweeping at least quarterly, and all other streets at least twice annually. As a goal, the Permittee shall compress its spring residential sweeping schedule to maximize the quantity of material collected at the end of the winter season, but in no case later than June 30. The Permittee shall conduct street sweeping in a manner to minimize the amount of excess runoff of street sweeping water. The Permittee shall document results of its sweeping program including, at a minimum: curb miles swept, dates of

cleaning, cubic yards of material collected, and method(s) of reuse or disposal.

(ii) The Permittee shall sweep all publicly owned parking lots at least monthly.

(iii) The Permittee shall sweep sidewalks in the central business district at least weekly.

(e) Leaf Collection

The Permittee shall conduct a city wide leaf pickup program annually to be completed by December 15.

(f) Snow Removal

(i) The Permittee shall implement and refine its standard operating practices regarding its snow and ice control operations to minimize the discharge of pollutants. The Permittee shall establish goals for the optimization of chemical application rates through the use of automated application equipment (e.g. zero-velocity spreaders), anti-icing and pre-wetting techniques, implementation of pavement management systems, and alternate chemicals. The Permittee shall maintain records of the application of anti-icing and/ or de-icing chemicals to document the reduction of chemicals to meet established goals.

(ii) The Permittee shall maintain consistency with the DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots, as amended, for the stockpiling or disposal of post-plowing snow.

(g) Catch Basin Cleaning

The Permittee shall conduct routine cleaning of all catch basins. The Permittee shall track catch basin inspection observations. Utilizing information compiled through its inventory of catch basins, operational staff and public complaints, the Permittee shall optimize routine cleaning frequencies for particular structures or catchment areas as follows to maintain acceptable sediment removal efficiencies:

(i) For the first four years of this permit, those catch basins serving catchment areas tributary to a receiving water identified as impaired shall be inspected and cleaned, if necessary, at a minimum frequency of once a year in order to establish a cleaning frequency determined such that no sump shall become more than fifty percent (50%) full. Once this frequency has been determined, it shall be included in the SMP and noted in the Permittee's Annual Reports.

(ii) For all other catch basins, during the first four years of this permit, the Permittee

shall inspect and, if necessary, clean these catch basins at least twice to establish a cleaning frequency determined such that no catch basin sump is found to be more than fifty percent (50%) full during routine cleaning events. If any of these catch basins are found to be more than fifty percent (50%) full, such basins shall be cleaned and reinspected within a year to determine the appropriate cleaning frequency. Once this frequency has been determined, it shall be included in the SMP and noted in the Permittee's Annual Reports.

(iii) Following the establishment of appropriate cleaning frequencies pursuant to subparagraphs (i) and (ii) above, and notwithstanding extenuating circumstances (such as excessive erosion from an active construction site), if a catch basin sump is found to be more than fifty percent (50%) full during each of two consecutive routine cleaning events, the Permittee shall investigate the contributing drainage area for sources of excessive sediment loading, and to the extent practical, abate contributing sources through appropriate measures. Appropriate measures may include stabilization practices, drainage modifications, and increased frequencies of catch basin cleaning and street sweeping, and structural controls suitable for controlling the excessive loading. The Permittee shall describe in its annual report actions taken or its plans to abate areas of persistent sedimentation (including a timeframe for the implementation of such actions), including stabilization practices, structural improvements or operational modifications. After implementation of these measures, if subsequent inspections continue to find the sump more than fifty percent (50%) full, cleaning frequency shall be increased as appropriate to maintain levels below fifty percent (50%). Such changes in frequency shall be included in the SMP and noted in the Permittee's Annual Report.

(h) Detention and Retention Ponds

The Permittee shall ensure the performance of retention or detention ponds which discharge to, or receive stormwater from, its MS4. This shall include ponds that are owned by the Permittee and all privately-owned ponds where the Permittee maintains an easement or other legal authority pursuant to Section 6(A)(3)(a)(i) of this permit. At a minimum, the Permittee shall annually inspect all such retention or detention ponds and remove accumulated solids to restore full solids capture design capacity where found to be in excess of 50% design capacity.

(i) Interconnected MS4s

As part of interagency agreements established pursuant to Section 6(B)(4)(h) of this permit, the Permittee shall coordinate with operators of interconnected MS4s (such as neighboring municipalities and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater

control measures in the respective MS4s. This same coordination shall be conducted regarding operation and maintenance procedures utilized in the respective systems.

(B) STORMWATER MANAGEMENT PLAN

(1) The Permittee shall, within one year from the start of the Permittee's first fiscal year that begins after the date of issuance of this permit, submit to the commissioner for his/her review and approval a Stormwater Management Plan ("SMP"). The SMP shall set forth a program to provide for the implementation of specific control measures, stormwater monitoring, illicit discharge detection and elimination, and other appropriate means to control the quality of the authorized discharge. Notwithstanding the date of approval by the commissioner, the Permittee shall follow the timelines prescribed for these elements in this permit based on the effective date of the permit. Additionally, the Permittee must implement actions required to protect the surface waters of the state and to meet permit requirements.

(2) If the commissioner disapproves the SMP or any portion thereof, the Permittee shall revise and resubmit a revised SMP within a timeframe determined by the commissioner. The Permittee shall submit an approvable revised SMP, that addresses the requirements of this permit and any deficiencies identified by the commissioner, no later than two years from the date of issuance of this permit.

(3) Once the commissioner approves the SMP or any portion thereof, the Permittee shall implement it, and such SMP shall be deemed a condition of this permit and shall be enforceable as such.

(4) Contents of the SMP

The SMP must reflect current conditions and provide, at a minimum, the following components:

(a) Pollution Prevention Team

The Permittee shall identify a team of individuals for the City who shall serve as members of a Stormwater Pollution Prevention Team ("team"). The team shall be responsible for implementing the SMP and assisting in the implementation, maintenance, and development of revisions to the SMP as well as maintaining control measures and taking corrective actions where required. The SMP shall clearly identify the responsibilities of each team member. One individual shall function as the Team Coordinator and shall coordinate the functions and responsibilities of the team members. The Team Coordinator shall be responsible for oversight of the SMP and compliance with this permit. The activities and responsibilities of the team shall address all aspects of the SMP. Each member of the team must have ready access to either an electronic or paper copy of applicable portions of this permit and the SMP.

(b) Mapping

Through a geographic information system or other methods, within two years of the effective date of this permit the Permittee shall provide a general city-wide map with enough detail to identify the location of stormwater outfalls, the location of all sampling points pursuant to the Monitoring and Analyses section (Section 7), City-owned roadways, the location of city designated business, commercial, and special event areas, all receiving waters where Stamford MS4 discharges occur, and the watersheds of these receiving waters. The Permittee shall also comply with any mapping requirements pursuant the Illicit Discharge Detection and Elimination (IDDE) Program section (Section 6(D)(4)(c)). The Permittee may include any other mapping such as zoning, economic development, impervious cover, drainage areas, stormwater treatment facilities or other criteria that serve to clarify elements of the SMP or verify compliance with the permit. Where additional mapping is provided, the Permittee shall include a description of its purpose.

(c) Control Measures

The SMP shall include a description of the location and type of control measures installed and/or implemented in accordance with the "Control Measures" section (Section 6(A)). The Permittee shall discuss the appropriateness and priorities of control measures in the SMP and how they address potential sources of pollutants to receiving waters. The SMP shall include a schedule for implementing the control measures as well as maintaining them where appropriate.

(d) Illicit Discharge Detection and Elimination (IDDE) Program

The SMP shall include a program to detect and eliminate existing illicit discharges and to prevent future illicit discharges. The IDDE program shall include inspections, detection protocols, dry- and wet-weather monitoring, discharge removal protocols, and any other measures as required by Section 6(D) of this permit.

(e) Monitoring Program

The SMP shall include a description of the dry- and wet-weather monitoring programs and sampling data in accordance with the Monitoring and Analyses section (Section 7). The SMP shall also include a description of and sampling data from any monitoring necessary to implement the IDDE Program in Section 6(D). The Permittee shall include in the SMP any additional monitoring that may be conducted to clarify or comply with any other elements of this permit along with a description of its purpose.

(f) Schedules and Procedures

The Permittee shall document in the SMP the schedules and procedures for implementation of mapping, control measures, monitoring, inspections, IDDE, reporting and any other elements of this permit that require scheduling. These include, but are not limited to: sweeping, catch basin cleaning, waste management practices and other good housekeeping measures; regular inspection, maintenance, and repair/rehabilitation of stormwater infrastructure; procedures for preventing and responding to spills and leaks; maintenance practices for city-owned properties and buildings; employee training; all inspection programs; and any monitoring conducted pursuant to this permit.

(g) Legal Authority

The Permittee shall document in the SMP and in the Annual Reports the provisions implemented to ensure legal authority to control discharges to and from the Stamford MS4 as required in the various Legal Authority subsections of this permit. This legal authority may be a combination of ordinance, lawful delegation of authority from another agency, permit, or agreements with other entities.

(h) Coordination

Where a portion of the separate storm sewer system within a municipality is owned or otherwise the responsibility of another municipality, or a state or federal agency, the Permittee and entities shall coordinate the development and implementation of their respective Stormwater Management Plans to address all the elements of Section 6(B). A description of the respective responsibilities for these elements shall be included in the Stormwater Management Plan for each municipality and/ or agency.

(i) Consistency with Other Plans and Permits

Where applicable, the SMP may reference requirements contained in a Spill Prevention Control and Countermeasure (SPCC) plan or a plan prepared or approved under the Resource Conservation and Recovery Act (RCRA) and other plans required by state, federal or local law. A copy of the pertinent sections of any referenced plan must be kept with the SMP. The SMP shall identify all general and individual permits issued by the DEEP for which the Permittee is authorized.

(5) Stormwater Management Program Resources

The Permittee shall provide adequate finances, staff, equipment, and support capabilities necessary to implement all elements of the SMP. A summary of dedicated resources and support capabilities shall be documented in the SMP and the Annual Reports.

(6) Stormwater Management Plan Review and Modification

(a) SMP Review

The Permittee shall undertake an annual review of its current SMP in conjunction with preparation of the annual report required under Section 8(A) of this permit.

(b) SMP Modification by Permittee

The Permittee may modify the SMP during the term of this permit in accordance with the following procedures:

(i) The approved SMP shall not be modified by the Permittee without the prior written approval of the commissioner, unless in accordance with subparagraph (ii) below.

(ii) Modifications adding (but not subtracting or replacing) components, activities, controls, or requirements to the approved Stormwater Management Plan may be made by the Permittee at any time upon written notification to the commissioner summarizing the modifications.

(iii) Modifications replacing an ineffective or impracticable BMP specifically identified in the Stormwater Management Plan with an alternate BMP shall be documented in the Annual Report, with a justification for the modification.

(c) Modifications required by the commissioner

The commissioner may require modification of the SMP as needed to:

(i) Assess impacts and/or correct adverse impacts that are causing or have the potential to cause pollution to surface waters receiving discharges from the Stamford MS4;

(ii) Include more stringent requirements necessary to comply with new State or Federal statutory or regulatory requirements; or

(iii) Include such other conditions deemed necessary by the commissioner to comply with the goals and requirements of the RCSA and the Clean Water Act, or

(iv) the actions required by the Plan fail to ensure or adequately protect against pollution of the surface waters of the state; or

(v) the Permittee is notified that a TMDL to which the Permittee is subject has been established for the stormwater receiving water; or

(vi) actions are necessary to address any significant sources or potential sources of pollution identified as a result of any inspection or visual monitoring.

Modifications required by the commissioner pursuant to this subsection shall be made in writing, set forth the time schedule for the Permittee to develop the modification(s), and offer the Permittee the opportunity to propose alternative SMP modifications to meet the objective of the required modification. All required modifications must be made in accordance with the required time schedule.

(7) Plan Certification

The SMP shall contain the following certification, signed by a professional engineer licensed to practice in the State of Connecticut:

"I certify that I have thoroughly and completely reviewed the Stormwater Management Plan prepared for the City of Stamford. I further certify, based on such review and site visit by myself or my agent, and on my professional judgment, that the Stormwater Management Plan meets the criteria set forth in this permit. I am aware that there are significant penalties for false statements in this certification, including the possibility of fine and imprisonment for knowingly making false statements."

(C) MONITORING

The Permittee shall implement a monitoring program to monitor Stamford MS4 discharge and existing water quality, wet-weather impacts to water quality, possible illicit discharges to the MS4 or waters of the state, track compliance with this permit, and track progress in reducing negative impacts to surface waters of the state. Monitoring of dry and wet weather conditions shall be conducted in accordance with Section 7 of this permit. Monitoring for the detection of illicit discharges shall be conducted in accordance with Section 6(D) of this permit.

(D) ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

The Permittee shall develop an Illicit Discharge Detection and Elimination (IDDE) program designed to: provide the legal authority to prohibit and eliminate illicit discharges to the MS4; find the source of any illicit discharges; eliminate those illicit discharges; and ensure ongoing screening and tracking to prevent and/or eliminate future illicit discharges.

(1) IDDE Program Elements

(a) Illicit discharges to the MS4 are prohibited, and any such discharges are a violation of this permit and remain a violation until they are eliminated. The Permittee shall prohibit all illicit discharges from entering its MS4. Upon detection, the Permittee

shall eliminate illicit discharges as soon as possible and require the immediate cessation of such discharges upon confirmation of responsible parties in accordance with its enforceable legal authorities established pursuant to subsection (b) below. Where elimination of an illicit discharge within thirty (30) days of its confirmation is not possible, the Permittee shall establish a schedule for its elimination; such schedule not to exceed six (6) months. No later than six (6) months after confirmation, such discharges shall be eliminated or the Permittee shall initiate appropriate enforcement actions. In the interim, the Permittee shall take all reasonable and prudent measures to minimize the discharge of pollutants to its MS4.

(b) The Permittee shall implement outfall screening and an illicit discharge detection protocol pursuant to subsections (3) and (4) below to identify, prioritize, and investigate separate storm sewer catchments for suspected illicit discharges of pollutants.

(c) The Permittee shall maintain a record of illicit discharge abatement activities including, at a minimum: location, description, method of discovery, date(s) of inspection, sampling data (if applicable), action(s) taken, date of removal or repair, responsible party(ies), costs associated with removal or repair, and estimated daily flow or total volume removed. This information shall be included in the Permittee's annual reporting pursuant to the "Annual Report" section (Section 8) of this permit.

(2) Legal Authority

Within one (1) year of the effective date of this permit, the Permittee shall ensure that it obtains or maintains the necessary and enforceable legal authority established by statute, ordinance, rules and regulations, permit, easement, contract, order and any other means, to:

(a) prohibit illicit discharges to its MS4 and require removal of such discharges consistent with subsection (1)(a), above, of this permit; and

(b) control the discharge of spills and prohibit the dumping or disposal of materials including, but not limited to, industrial and commercial wastes, trash, used motor vehicle fluids, food preparation waste, leaf litter, grass clippings, and animal wastes into its MS4; and

(c) assess fines or penalties and/or recoup costs incurred by the City from anyone creating an illicit discharge or spilling or dumping as specified in subsections (2)(a) and (2)(b), above.

(3) Outfall Screening for Illicit Discharges

The Permittee shall screen its MS4 outfalls during dry weather conditions for physical, chemical, and biological indicators of the presence of illicit discharges.

(a) Known Illicit Discharges

Whether documented by the commissioner, the Permittee, or others, outfalls from drainage areas with known or highly suspected contributions of illicit discharges may have already been identified. Screening of outfalls serving such portions of the MS4 is not required for the purpose of prioritization as required in subsection (c) below, and the Permittee shall continue or initiate identification and removal procedures for illicit discharges in these areas based on the Permittee's priority ranking established pursuant to subsection (c) below. Within one hundred eighty (180) days of the effective date of this permit the Permittee shall submit to the commissioner an inventory of all MS4 outfalls for which the Permittee deems screening is not required pursuant to this subsection. For each such drainage area, the Permittee shall provide:

(i) all available documented evidence, including monitoring results, of illicit discharges;

(ii) completed, ongoing or planned corrective measures addressing the documented illicit discharges; and

(iii) a schedule for completing and verifying measures correcting the documented illicit discharges.

(b) Priority Ranking of Outfall Screening

The Permittee shall develop a priority ranking for the purpose of scheduling its outfall screening activities required by this part. The commissioner recommends that the Permittee consider the current or intended designated uses of receiving waters, existence of impaired waters, and the relative likelihood of the presence of illicit discharges in the development of its priority ranking.

(c) Priority Ranking for IDDE Investigation

Screening of outfalls (in the priority ranking developed in subsection (b) above) shall be completed to facilitate the priority ranking of individual separate storm sewer drainage areas for investigation using the Permittee's Illicit Discharge Detection Protocol ("IDDP") described in subsection (4) below. Analysis of screening results, including comparisons with benchmark values for parameters in Table 1 and Figure 1 in subsection (4)(d)(iv) below, shall support such prioritization. Screening of outfalls

after implementation of the Permittee's IDDP shall serve to verify that the correction of all illicit discharges has been completed.

(d) Schedule

Except where excluded by subsection (3)(a) above, MS4 outfalls shall be screened at a rate of twenty five (25) percent of the outfalls known at the time of permit issuance during each of the first four years of the permit in order to permit timely execution of the Permittee's IDDP as described in subsection (4) below. For MS4 outfalls first identified after the date of issuance of this permit, the Permittee shall submit to the commissioner a schedule for screening these outfalls. As described in subsection (4)(d)(viii) below, an additional round of screening is required as a verification of the completion of the IDDP within the drainage area of the outfall. Such verification screening shall be completed no more than sixty (60) days after the Permittee has verified removal of all such discharges contributing to the outfall's drainage area in accordance with subsection (4)(d)(vii) below.

(e) Methodology

Outfall screening shall proceed only during dry weather when no more than 0.1 inches of rainfall has occurred in the previous 48-hour period. The duration of the antecedent period may be shortened or lengthened by the Permittee as necessary or appropriate dependent upon rainfall depth or the relative extent, slope, storage, and other influences to assure that any stormwater runoff has ceased from the particular drainage area served by the outfall. Screening shall be performed according to the following procedures:

(i) Locate the outfall, and take a photograph. At outfalls where photographs were previously taken, new photographs shall be taken from the same approximate orientation to facilitate comparison and determination of any changes.

(ii) Collect data on physical condition of the outfall, including evidence of collapse and structural defects, and evidence of erosion or deposition in the vicinity of the outfall.

(iii) Record any indicators of illicit discharges such as odors, oil sheen, discoloration, foaming, soap suds, slimes, or presence of sanitary floatables or solids.

(iv) If the outfall is inaccessible or submerged, proceed to the first accessible upstream manhole or structure.

(v) Outfall observation

Observe the outfall for evidence of illicit discharge and proceed as follows:

- If no flow is observed and there is no evidence of an illicit discharge (e.g. a residue unrelated to a stormwater discharge), this outfall will be assigned a lower priority ranking and the screening shall proceed to the next outfall.

- If flow is observed, estimate flow using the product of flow area and velocity or the quotient of volume discharged over time, perform the field analyses described in subparagraph (vi) below, and collect a grab sample for enumeration of *E.coli* indicator bacteria in the laboratory.

- If the outfall is not flowing, but shows evidence of an illicit discharge, return in 4 to 24 hours and screen again, completing flow estimation, field analyses, and grab sampling for indicator bacteria analysis if flow is subsequently observed. If no flow is observed initially and upon return, make note of the outfall to prioritize for future investigation and proceed to the next outfall.

(vi) Field analyses of dry weather flow samples shall include measurement of the following parameters:

Conductivity
Turbidity
Dissolved Oxygen
pH
Chlorine
Temperature
Surfactants as (MBAS)
Potassium
Ammonia

Based on these field analyses, evidence of the degree and severity of an illicit discharge shall be taken into account in prioritizing outfalls for illicit discharge investigation pursuant to subsection (4)(b) below.

(4) Illicit Discharge Detection Protocol ("IDDP")

(a) Implementation

The Permittee shall implement an IDDP according to the priorities developed pursuant to subparagraph (b) below, and consistent with the methodology described in

subparagraph (d) below. The Permittee shall complete implementation of its IDDP for twenty (20) percent of the MS4 outfall drainage areas no later than **five (5) years** from the effective date of this permit. The drainage areas investigated shall include the highest 20 percent of the priority areas as determined by subparagraph (b) below. The IDDP shall be completed in minimum increments of twenty-five percent (25%) of these drainage areas no later than **2, 3, 4, and 5 years**, respectively, from the effective date of this permit. The Permittee shall eliminate all identified illicit discharges pursuant to the "IDDE Program Elements" section (Section 6(D)(1)(a)).

(i) Impaired Waters

If more than twenty (20) percent of the outfall drainage areas in the MS4 discharge to impaired waters, the Permittee shall include in their SMP a discussion of the criteria by which those areas in the highest 20 percent of prioritized drainage areas were chosen. The remaining drainage areas to impaired waters that are not included in the highest 20 percent of prioritized areas shall receive highest priority for future investigation. If the Permittee completes the initial 20 percent of highest priority areas ahead of the schedule in subsection (4)(a) above, the IDDP investigations shall proceed immediately to these remaining high priority areas discharging to impaired waters.

(b) Prioritization

The Permittee shall use the results from its dry weather outfall screening required by Section 6(D)(3) to develop a priority ranking of outfall drainage areas for the purpose of scheduling its IDDP implementation. The commissioner recommends that the Permittee consider the perceived severity of the pollution, the current or intended uses of receiving waters, impairment status, and any planned infrastructure improvements, in the development of its priority ranking. Drainage areas discharging to impaired waters will receive primary consideration when prioritizing.

(c) Mapping

Through a geographic information system or other methods, the Permittee shall, within three years of the effective date of this permit, prepare mapping to facilitate implementation of its IDDP. Mapping shall provide a comprehensive depiction of key infrastructure and factors influencing proper system operation and the potential for illicit discharges. Mapping themes shall include: key storm sewer infrastructure, investigation and study findings, monitoring data, cleaning and repair activities, capital projects, and water resource and topographic features. The required number, scale and detail of the maps shall be appropriate to facilitate a rapid understanding of the system by the Permittee and the commissioner. In addition, the mapping shall serve as a planning tool for the implementation and phasing of the IDDP, a

demonstration of the extent of complete and planned investigations and corrections, and other related capital projects. Mapping shall proceed at a rate that will not impede implementation of the IDDP. To ensure legible mapping, information shall be grouped appropriately and represented thematically (e.g. by color) with legends or schedules where possible. Mapping shall be updated as necessary to reflect new information, corrections or modifications, and progress made. The following information and features, where currently available, shall be included in the mapping:

(i) Infrastructure

- Municipal separate storm sewer system (including inter-municipal and private connections where available)
- Thematic representation of sewer material, size, and age
- Storm sewer flow direction
- Select rim and invert elevations
- Aerial delineations of MS4 outfall drainage areas
- Areas served by on-site subsurface disposal systems
- Storm sewer alignments to which known or suspected underdrain systems may discharge

(ii) Water Resources and Topographic Features

- Water bodies and watercourses identified by name and water quality classification
- Impaired waters (including type of impairment)
- Inland wetlands
- Tidal wetlands
- Topography
- Orthophotography

(iii) O&M, Investigations, Remediation, and Capital Projects

- Alignments, dates, and thematic representation of work completed (with legend) of past illicit discharge investigations (e.g. flow isolation, dye testing, closed-circuit television (CCTV))
- Locations of suspected, confirmed, and corrected illicit discharges (with dates and flow estimates)
- Water quality monitoring locations with representation of water quality indicator concentrations
- Recent and planned storm sewer infrastructure cleaning and repair projects
- Planned capital projects relative to utility and roadway rehabilitation or replacement
- Proposed phasing of future illicit discharge investigations

(d) IDDP Methodology

The IDDP shall utilize methodologies described in this subsection to perform a thorough investigation of MS4 outfall drainage areas that relies on results from visual observation, field test kits, and portable instrumentation during dry weather conditions to isolate areas or alignments with likely illicit discharges. Internal plumbing inspections, dye or smoke testing, CCTV inspections, or other methods consistent with the Permittee's established procedures shall then be employed to confirm the illicit and non-stormwater flow sources.

(i) Notification

Prior to beginning an IDDP investigation that may involve smoke testing in a given drainage area, the Permittee shall notify all residents, businesses and all other property owners or occupants within that drainage area of the impending testing.

(ii) Infrastructure Verification and Preparation

Infrastructure mapping and drainage area delineations shall be verified in the field and corrected, as necessary, prior to investigations. MS4 infrastructure shall be evaluated for the need to be cleaned to remove debris or blockages that could compromise investigations. Such material shall be removed prior to investigation, where possible. However, some cleaning may occur concurrently.

(iii) Dry Weather Criteria

In order to prevent or limit the influence of stormwater runoff during the investigations, inspections and field monitoring shall not begin for at least 24 hours after any previous storm event greater than 0.1 inches. The duration of this dry weather period may be shortened or lengthened by the Permittee as necessary or appropriate dependent upon rainfall depth or the relative extent, slope, storage, and other influences on the particular drainage area under investigation.

(iv) Storm Sewer Inspection Methodology

Visually inspect outfalls in dry weather conditions to determine the possible presence of dry weather flows. Depending on the findings, conduct one of the procedures below. Table 1 indicates which analytes will be used for the determination of illicit discharges.

- **No Dry Weather Flow**: If no dry weather flow is observed at an outfall and there is no evidence of one (color, algae, etc.), no further inspection of the outfall or its contributing drainage alignment is required during the term of this permit.

  If there is no dry weather flow but there is evidence of one (color, algae, etc.), proceed as follows:

  - Partially dam the outfall when no rain is forecast for at least 48 hours;

  - Re-inspect the outfall within 24 to 48 hours of damming (prior to any precipitation or snow melt) for evidence of the capture of periodic or intermittent flows behind the inlet dam. If, upon reinspection, there is no evidence of dry weather flows, re-inspect within six months. If, upon re-inspection, there is evidence of dry weather flows, visual observations and field testing pursuant to the procedures below shall be completed on any captured flow to identify alignments for additional inspections.

- **Groundwater Dry Weather Flow** – If a dry weather flow is observed, test the flow for the analytes in Table 1 (pursuant to subsection (iv) below) and inspect the flow for evidence of an illicit discharge (color, odor, sheen, etc). If discharge is determined to be groundwater:

  - Inspect upstream stormwater structures to determine the source of the groundwater infiltration. For all inlets to upstream structures, follow the procedures of this subsection for determination of dry weather flows.

Take samples at the most upstream structure which has flows to ensure the flow is only groundwater;

- Go to the next upstream structures including those on tributary lines. Ensure that there is no evidence of dry weather flow, including discoloration or other indications that there may have been a dry weather flow at one time. Once the next upstream structure exhibits no dry weather flow or evidence of one, no further upstream inspection of that alignment is required.

- Document all observations, take photographs and include test results as part of the documentation. Indicate on a map which structures have been inspected. The map will also be part of the permanent documentation.

- Re-inspect within six months.

- **Contaminated Dry Weather Flow**: If a dry weather flow is observed and testing or visual inspection indicates that the discharge is other than groundwater:

  - Inspect next upstream stormwater structure(s) to determine which ones show signs of dry weather flow. There may be several structures depending on the tributaries;

  - For any tributary that shows signs of dry weather flow, continue to follow that upstream using the procedures of this subsection, inspecting every structure including sub-tributaries until no structures show any indication of dry weather flow;

  - Repeat for all tributaries that show signs of dry weather flow.

  - Take samples whenever possible. Document all observations, take photographs and include test results as part of the documentation. Indicate on a map which structures have been inspected. The map will also be part of the permanent documentation.

  - For alignments that indicate an illicit discharge, the next step is to smoke test the area to determine the source of the discharge following the notification procedures.

  - If the location is identified, appropriate corrections will be made to stop the illicit discharge.

- If no location is determined, dye testing of potential upstream sources shall be conducted and then the violation corrected.

- If no location is still identified, the area will be monitored twice per month to establish the cause of this illicit discharge.

(v) Field Monitoring

Where flow is observed that does not demonstrate obvious physical or olfactory evidence of the type and source of an illicit discharge, a sample shall be collected and analyzed with the field kits and instrumentation as identified in Table 1. The Permittee shall compare the measured values with benchmark values using the flow chart in Figure 1 to determine the likely source of the flow. Where surfactant concentrations are measured in the flow above the benchmark, ammonia and potassium shall be measured and results used in a ratio analysis to determine if the flow is likely to be governed by a sanitary or wash water component. Where surfactants are not detected above the benchmark concentration, a flow sample shall be analyzed for chlorine in an attempt to determine if the likely source is natural surface water or groundwater, or possibly a potable water source, a swimming pool, or an industrial discharge. However, the results of this analysis may not always prove conclusive as the chlorine demand found in the storm sewer may diminish or eliminate any chlorine present. The Permittee may need to adjust benchmark values found in Table 1 during the course of investigations after a comparison and calibration of data with actual incidences of observed flow sources.

If the results of field monitoring are not conclusive or additional data is needed to confirm that the source of an illicit discharge is human-generated, alternate parameters for Pharmaceutical and Personal Care Products (PPCP) may be monitored as indicated in Table 2. Any or all of these parameters may be analyzed. These samples must be analyzed by a laboratory with the appropriate capability. Advance notice to the lab may be required. Levels of these parameters above the Reporting Limit indicate the presence of human-generated contamination.

Table 1 - Field Measurements, Benchmarks, and Instrumentation

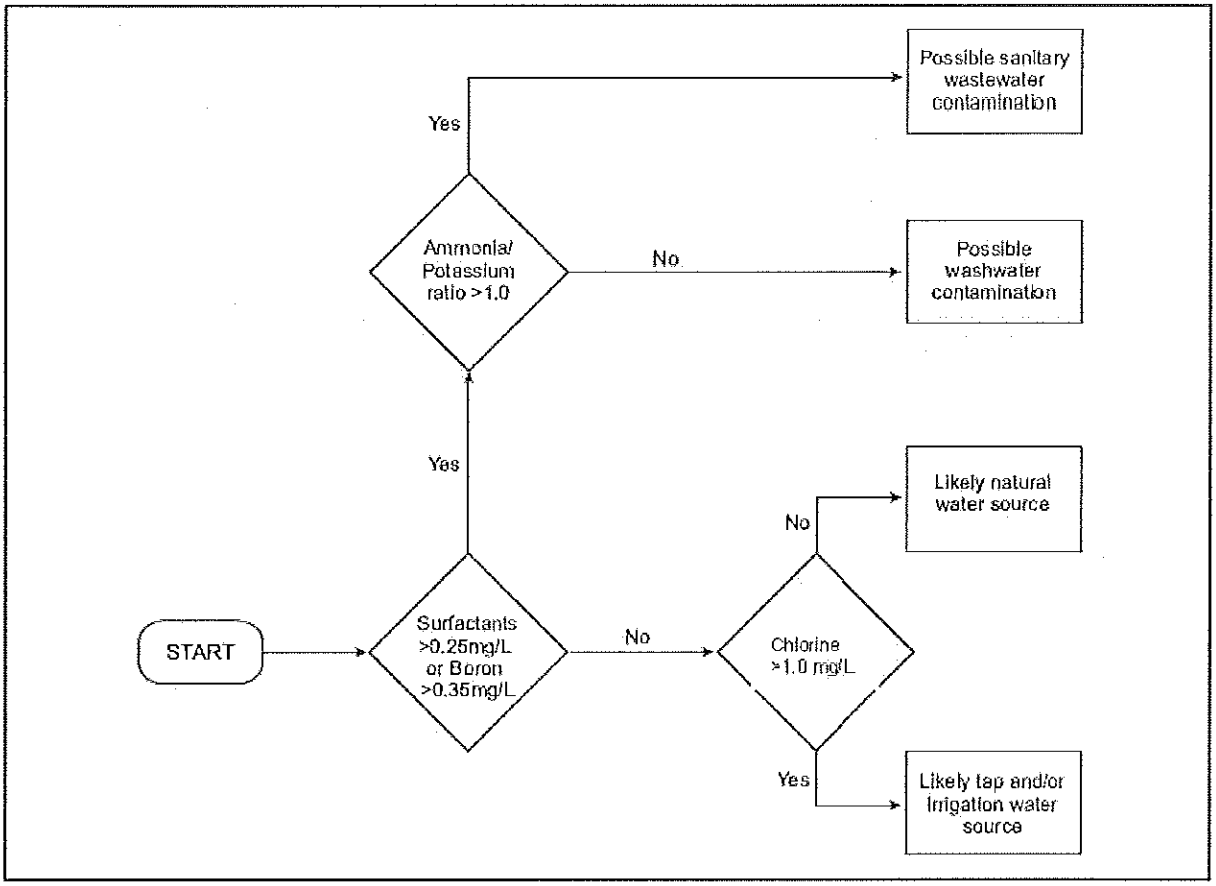
Analyte	Benchmark	Instrumentation[1]
Surfactants (as MBAS)	>0.25 mg/L	MBAS Test Kit (e.g. CHEMetrics K-9400)
Potassium (K)	(ratio below)	Portable Ion Meter (e.g. Horiba Cardy C131)
Ammonia (NH3)	NH3/K > 1.0	Portable Colorimeter or Photometer (e.g. Hach DR/890, CHEMetrics V-2000)
Chlorine	>0.1 mg/L	Portable Colorimeter or Photometer (e.g. Hach DR/890, CHEMetrics V-2000)
Temperature	Abnormal	Thermometer
pH	Abnormal	pH Meter

[1] Instrumentation manufacturers and models provided for informational purposes only. Mention of specific products does not constitute or imply DEEP endorsement of same.

Table 2 – Compounds for Pharmaceutical and Personal Care Products Analysis

Compound	Major Use	Reporting Limit (ng/L)
Caffeine	Natural Stimulant	5.0
1,7 DMX	Metabolite of caffeine	2.5
Acetaminophen	Pain reliever	2.5
Carbamazepine	Anti-depressant, Anti-convulsant	0.5
Primidone	Anti-epilepsy drug	5.0
Atenolol	Beta blocker, high blood pressure medicine	2.5
Cotinine	Metabolite of nicotine	0.5
Urobilin	By-product of hemoglobin breakdown	5.0
Azithromycin	Antibiotic	1.6

Figure 1. Flow Chart - Determining Likely Source of Discharge (Adapted from Pitt, 2004)



(vi) Isolation and Confirmation of Illicit Discharges

Where physical evidence or field monitoring has identified storm sewer alignments influenced by illicit discharges, the Permittee shall isolate the tributary area for implementation of more detailed investigations. Additional manholes and/or catch basins along the alignment shall be inspected to refine the location of potential contamination sources (e.g., an individual home or block of homes). Targeted internal plumbing inspections, dye or smoke testing, CCTV inspections, or other methods consistent with the Permittee's established procedures shall then be employed to confirm the flow source(s).

(vii) Removal of Illicit Discharges

Where an illicit discharge is verified, the Permittee shall exercise its authority as necessary to require its removal pursuant to Sections 6(D)(1)(a) and 6(D)(2) of

this permit, including prompt notification and any appropriate cost-sharing arrangements.

(viii)Verification of Illicit Discharge Removals

After completing the removal of all illicit discharges from a particular alignment or portion of an MS4 outfall drainage area, the Permittee shall verify that no illicit discharges remain. Depending on the extent and timing of corrections made, verification monitoring may be accomplished at the original junction structure or the closest downstream MS4 structure to each correction. Verification shall be accomplished by using the same visual inspection, field monitoring, and/or damming techniques as described in subparagraphs (iii) through (v) above. Investigation of those portions of any other alignments confounded by the identified illicit discharge(s) shall not proceed until removal or elimination has been verified.

(ix)Verification of IDDP Completion in MS4 Drainage Areas

A completed verification at the outfall (or the first accessible upstream structure from an inaccessible MS4 outfall) of an MS4 outfall drainage area shall serve to demonstrate that the IDDP has been fully implemented for that entire drainage area. This drainage area verification shall include both the techniques described in subparagraphs (iii) through (v) above, as well as completion of the dry weather screening methodology described in Section 6(D)(3)(e).

(x) Work Progression & Schedule

Since the IDDP requires verification of illicit discharge removals prior to progressing to affected portions of interconnected MS4 drainage areas, the Permittee shall maintain capacity to mobilize investigations to other drainage areas or unaffected lateral alignments within the same drainage area, to facilitate suitable progress while awaiting correction of illicit discharges confounding investigations within the same outfall drainage area. Since work progress may be further constrained by the persistence of precipitation and snow melt events, the Permittee shall provide for adequate staffing and equipment resources to perform concurrent investigations in multiple areas as necessary to complete all investigations, as specified in subsection (4)(a) above, within **five (5) years** from the effective date of this permit.

(xi) Reporting and Evaluation

The Permittee shall document in its Annual Reports required by Section 8 its progress implementing the provisions of Section 6(D)(4), including the results

and status of its outfall screening and monitoring, mapping, and IDDP implementation. The Permittee shall evaluate its progress by tracking, at a minimum, the percentage of MS4 outfall drainage areas or outfalls screened and/or monitored, percentage of structures inspected, and the footage or percentage of MS4 cleaned and inspected by CCTV.

(xii) Modifications

Though the IDDP is applicable to most storm sewers, modifications to methods and materials may be required to address situations where groundwater or backwater conditions or other issues preclude adequate implementation as described herein. In such instances, the Permittee shall make necessary modifications to the IDDP in accordance with Section 6(B)(6)(b) of this permit.

SECTION 7: MONITORING REQUIREMENTS

(A) Legal Authority

The Permittee shall, within eighteen months from the start of the first fiscal year that begins after the effective date of this permit, ensure legal authority to:

(1) carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with this permit;

(B) Monitoring and analysis activities shall include in-stream dry and wet weather monitoring of receiving waters; wet weather outfall monitoring for storm water quality; dry and wet weather outfall screening for illicit discharges and implementation of an illicit discharge detection protocol.

(C) Upon the effective date of this permit, the Permittee shall begin implementation of activities described in this part. Within one year from the start of the Permittee's first fiscal year that begins after the effective date of this permit the Permittee shall submit as part of its SMP submission pursuant to Section 6(B)(1) of this permit, a description of the means, methods, quality assurance and control protocols, and schedule for successfully implementing the required screening, field monitoring, laboratory analysis, investigations, and analysis and evaluation of data collected. The submission shall include a description of meteorological resources the Permittee intends to utilize to facilitate the required activities.

(D) In-stream Dry and Wet Weather Monitoring of Receiving Water Quality

(1) Location

In-stream dry and wet weather monitoring shall be conducted at a minimum total of ten

(10) stream locations consisting of one location in the Mianus River (7407), East Mianus River (7406), Mill River (7404), and Noroton River (7403) watersheds, three locations in the Rippowam River (7405) watershed, and three (3) among the Long Island Sound coastal watersheds. Specific monitoring locations shall be established by the Permittee through consideration of monitoring stations utilized by Permittee during the 2005 – 2010 MS4 permit term and collaboration with DEEP, and representative watershed groups such as the Mill River Collaborative. A list of these monitoring stations and a paragraph of text on why each was chosen shall be submitted within three (3) months of the issuance of this permit for approval by the commissioner. These stations, or any alternate stations approved by the commissioner, shall be included in the Permittee's Stormwater Management Plan.

(2) Frequency

The Permittee shall perform annual in-stream monitoring in a total of four rounds, performed once in the summer during dry weather conditions, and once each in the spring, summer, and fall during wet weather conditions. For the purposes of this permit, spring shall be March 1 to May 31, summer shall be June 1 to August 30 and fall shall be September 1 to November 30.

(a) Aquatic toxicity

Wet weather monitoring for aquatic toxicity shall be conducted once annually during the summer. Samples for aquatic toxicity may be taken at the same time as the summer round of wet weather sampling for chemical criteria. No dry weather monitoring is required for aquatic toxicity.

(3) Dry Weather Monitoring

Dry weather monitoring shall be performed only when an antecedent dry period of at least 48 hours after a rain event greater than 0.1 inch in depth is satisfied. Monitoring methodology shall consist of collecting a minimum of four (4) grab samples spaced at a minimum interval of 5 minutes each. Grab samples will be combined into a single composite sample from each station, preserved, and delivered to the laboratory for analysis. No dry weather monitoring is required for aquatic toxicity, pursuant to subsection (2)(a) above.

(4) Wet Weather Monitoring

Wet weather monitoring shall be performed only when the predicted rainfall depth of a storm event is greater than 0.25 inches and an antecedent dry period of at least 48 hours after a rain event greater than 0.1 inch in depth is satisfied. Monitoring methodology will consist of collecting a minimum of four (4) grab samples spaced at a minimum interval of 15 minutes each. Grab samples will be combined into a single composite sample from each

station, preserved, and delivered to the laboratory for analysis. Wet weather monitoring for aquatic toxicity shall be conducted annually during the summer round of samples only, pursuant to subsection (2)(a) above.

(5) At the time of sampling, the Permittee shall record any observed erosion of stream banks, scouring, or sedimentation in streams, such as sand bars or deltas.

(6) Samples collected during the dry and wet weather monitoring shall be analyzed for the following parameters in the field (indicated by "*") or laboratory:

Dissolved Oxygen (DO)*
pH*
Temperature*
Conductivity*
Hardness (as $CaCO_3$)
Total Suspended Solids (TSS)
Oil & Grease, Total
Total Petroleum Hydrocarbons (TPH)
Surfactants
Total Phosphorus
Ammonia
Nitrate Nitrogen
Nitrite Nitrogen
Total Kjeldahl Nitrogen
Total Copper
Total Lead
Total Zinc
Chloride
Biochemical Oxygen Demand (BOD)
Chemical Oxygen Demand (COD)
E. coli
Fecal Coliform
Enterococci

Aquatic Toxicity (LC50) (required annually during summer wet weather event)

(7) The Permittee shall analyze all monitoring results in combination with relevant data collected during the 2005 – 2010 permit term to assess any changes or trends in observed receiving water quality.

(E) Wet Weather Outfall Monitoring

(1) Permittee shall perform stormwater monitoring at each of its MS4 outfalls delineated in the

Stormwater Monitoring Plan a minimum of twice during the permit term. The first round of outfall monitoring shall be completed within the first two (2) years after the effective date of this permit. The second round of outfall monitoring shall be completed within the final two (2) years prior to the expiration date of this permit.

(2) In addition to the monitoring required by subsection (E)(1) above, for stormwater discharges into water bodies identified as impaired by a known pollutant with or without an approved TMDL, the Permittee shall include in that monitoring the indicator pollutant(s) of concern (or appropriate precursors) identified as contributing to the impairment(s). For the purposes of this part, a "storm water discharge to an impaired water" includes any discharge from the Permittee's MS4 flowing directly into the impaired water, and does not include discharges from its MS4 located in the upstream tributary area to an impaired water. The Permittee may combine implementation of the monitoring required in this subsection with the monitoring required by subsection (D)(1) above to simultaneously satisfy requirements of both parts during a singular storm event by choosing a sampling location in an impaired reach of the stream designated in subsection (D)(1).

(3) Monitoring methodology at each outfall shall consist of a single grab sample, collected during any portion of the outfall's discharge hydrograph (i.e., first flush, rising limb, peak, and falling limb). In order to accommodate the timely completion of all required monitoring, no minimum rainfall depth or antecedent dry period criterion need be established beyond the requirement that qualifying storm events be sufficient in depth to generate storm water runoff and resultant discharge at the outfalls to be monitored.

(4) Individual grab samples collected pursuant to subsection (3) above shall be analyzed using field (indicated by "*") and laboratory instrumentation to measure the following physical, chemical, and biological water quality indicator parameters:

Dissolved Oxygen (DO)*
pH*
Temperature*
Conductivity*
Hardness (as $CaCO_3$)
Total Suspended Solids (TSS)
Oil & Grease, Total
Total Petroleum Hydrocarbons (TPH)
Surfactants
Total Phosphorus
Ammonia
Nitrate Nitrogen
Nitrite Nitrogen
Total Kjeldahl Nitrogen
Copper

Lead
Zinc
Chloride
Biochemical Oxygen Demand (BOD)
Chemical Oxygen Demand (COD)
E. coli
Fecal Coliform
Enterococci

(F) Dry Weather Outfall Screening for Illicit Discharges

Outfall screening shall be conducted during dry weather conditions as described in the Illicit Discharge, Detection and Elimination (IDDE) Program section (Section 6(D)).

(G) Implementation Schedule

The Permittee shall implement the activities required by Section 6(C) of this permit in accordance with the following schedule:

	Year 1	Year 2	Year 3	Year 4	Year 5
1. **In-stream Dry & Wet Weather Monitoring**	One dry and three wet weather composite samples collected annually from each of ten (10) stations located as follows: one each location in the Mianus (7407), East Mianus (7406), Mill (7404), and Noroton (7403) watersheds, three locations in the Rippowam (7405) watershed, and three (3) among the Long Island Sound coastal watersheds.				
2. **Wet Weather Outfall Monitoring**	Two rounds of single grab samples at all outfalls during permit term analyzed for a suite of water quality parameters; completed once during the first two years of the permit term and once during the final two years of the permit term. Include monitoring for pollutant(s) of concern in direct discharges into impaired waters (with or without an approved TMDL)				
3. **Dry Weather Outfall Prioritization Screening (Pre-IDDP)**	Screen new or previously unknown outfalls as needed				
	Complete Screening of 25% of known MS4 Outfalls	Complete Screening of 50% of known MS4 Outfalls	Complete Screening of 75% of known MS4 Outfalls	Complete screening of 100% of known MS4 Outfalls	
4. **Implementation of IDDP**		Complete IDDP in 5% of MS4	Complete IDDP in additional 5% of MS4 (total 10%)	Complete IDDP in additional 5% of MS4 (total 15%)	Complete IDDP in additional 5% of MS4 (total 20%)
5. **Dry Weather Outfall Verifieation Screening (Post-IDDP)**	Dry weather screening for IDDP verification as needed				

(H) Evaluation and Reporting

All data collected related to activities required by Section 6(D) and Section 7 of this permit shall be evaluated and presented with findings in the Permittee's annual reports required by Section 8. This shall include a comparison with data collected by the Permittee in each prior year, including those data collected pursuant to the 2005 permit (e.g., City of Stamford, NPDES Permit Phase I Stormwater Quality Annual Report, January, 2009).

(I) Program Modifications

Modifications to the monitoring and analysis activities required by Section 6(D) and Section 7 shall be made pursuant to the Section 6(B)(6)(b) of this permit.

(J) Monitoring Recordkeeping

(1) Monitoring Records

(a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(b) The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 5 years from the date of the sample, measurement, report or application.

(c) Records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The date of the most recent previous rain event greater than 0.1 inches and 0.25 inches;
- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed;
- The individual(s) who performed the analyses;
- The analytical techniques or methods used; and
- The results of such analyses.

(2) Test Procedures

(a) Chemical Analysis

(i) Chemical analyses to determine compliance with conditions established in this permit shall be performed using the methods approved pursuant to the 40 CFR 136 unless an alternative method has been approved in writing pursuant to 40

CFR 136.4 or as provided in section 22a-430-3(j)(7) of the RCSA. Chemicals which do not have methods of analysis defined in 40 CFR 136 shall be analyzed in accordance with methods specified in this permit.

(ii) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal as defined in 40 CFR 136, unless otherwise specified.

(iii) The value of each parameter for which monitoring is required under this permit shall be reported to the maximum level of accuracy and precision possible consistent with the requirements of this section of the permit.

(b) Acute Aquatic Toxicity Test

(i) Samples for monitoring of Aquatic Toxicity shall be collected and handled as prescribed in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012).

- Composite samples shall be chilled as they are collected. Grab samples shall be chilled immediately following collection. Samples shall be held at 4 degrees Centigrade until Aquatic Toxicity testing is initiated.

- Stormwater samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for Aquatic Toxicity unless specifically approved in writing by the commissioner for monitoring.

- Chemical analyses of the parameters identified in Section 7(D)(6) shall be conducted on an aliquot of the same sample tested for Aquatic Toxicity.

    - At a minimum, pH, specific conductance, total alkalinity, total hardness, and total residual chlorine shall be measured in the effluent sample and, during Aquatic Toxicity tests, in the highest concentration of test solution and in the dilution (control) water at the beginning of the test and at test termination. If Total Residual Chlorine is not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, pH, and temperature shall be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination.

- Tests for Aquatic Toxicity shall be initiated within 24 hours of sample collection.

(ii) Monitoring for Aquatic Toxicity shall be conducted for 48-hours utilizing neonatal Daphnia pulex (less than 24-hours old)

(iii) Tests for Aquatic Toxicity shall be conducted as prescribed for static non-renewal acute tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012), except as specified below.

- Definitive (multi-concentration) testing, with LC50 as the endpoint, shall be conducted in accordance with the monitoring conditions and shall incorporate, at a minimum, effluent concentrations of 100%, 50%, 25%, 12.5%, and 6.25%:

- Organisms shall not be fed during the tests.

- Copper nitrate shall be used as the reference toxicant in tests with freshwater organisms.

- Synthetic freshwater prepared with deionized water adjusted to a hardness of 50 mg/L (plus or minus 5 mg/L) as CaCO3 shall be used as dilution water in tests with freshwater organisms.

(K) Monitoring Waiver

If the Permittee is unable to collect a sample required by Sections 7(D) or 7(E) due to adverse climatic conditions, the Permittee must submit in lieu of sampling data a description of why samples could not be collected, including available documentation of the storm event. Adverse climatic conditions that may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample dangerous or physically impossible. However, if more than one (1) sample is missed, the missed outfalls must be resampled as soon as possible or an alternate outfall designated and sampled as soon as possible.

SECTION 8: REPORTING AND RECORD KEEPING REQUIREMENTS

(A) Annual Report

The Permittee shall prepare an annual report each year summarizing the activities conducted and measures taken to comply with this permit in the previous year.

(1) Schedule

The first Annual Report shall be submitted no later than one (1) year plus ninety (90) days from the effective date of this permit. Subsequent Annual Reports shall be submitted no later than ninety (90) days after the anniversary of the effective date of this permit.

(2) Public Availability

The Annual Report shall be made available to the public for review and comment thirty (30) days after the anniversary of the effective date of this permit. The Permittee shall make the Annual Report available to the public electronically (i.e. city website) and in "hard copy" for at least thirty (30) days at a minimum of one City office and one public library branch. Notice of availability of the Annual Report shall be published in at least one newspaper with circulation throughout the City of Stamford and also posted on the City website. A summary of any public comments, the Permittee's response to such comments, and any proposed modifications to the SMP as a result of comment shall be included in the Annual Report submitted to the commissioner.

(3) Contents of the Annual Report

The Annual Report shall include the following sections: Contacts List; Program Evaluation; Summary Table; Narrative Report; Summary of Proposed Program Modifications; Resource Analysis; and Appendices. The following paragraphs describe in more detail the specific requirements for the Annual Report.

(a) Contacts List

Provide a list of all those, with their names, employers, addresses and phone numbers, who had input to or responsibility for the preparation of the Annual Report.

(b) Program Evaluation

Describe the objective of the SMP, major findings (water quality improvements or degradation), overall SMP strengths and weaknesses, and the future direction of the Stormwater Management Program.

(c) Summary Table of SMP Components

The Permittee shall submit a summary table of the SMP's yearly activities. The purpose of the Table is to document in a concise form the program activities and Permittee's compliance with specific program requirements. Program elements that are administrative (e.g. planning procedures, program development and pilot studies) are inappropriate for the Summary Table and shall be reported on in the Narrative

section of the Annual Report. The summary table shall indicate the Permittee's SMP's activities and accomplishments. The table shall include all major elements of the SMP including control measure BMPs, monitoring, legal authority, IDDE and other appropriate additional program items. Items that shall be reported for each program activity are:

(i) Activity Description.

(ii) Number of actions (with frequency) that were *scheduled* for implementation and/or accomplishment in the SMP (e.g. once/6 months, 20% of the activity completed/year, 10 sites monitored 4 times/year, etc.). Enter "not applicable" if no specific schedule was presented in the SMP.

(iii) Status of schedule for the reporting year (yes-schedule was adhered to, or no-schedule was not adhered to).

(iv) Number of activities that *were* accomplished.

(v) Permittee's comments on the activity.

(vi) Public comments on the activity and Permittee's response.

(d) Narrative Report

The narrative report provides an opportunity for the Permittee to discuss in further detail any of the elements of the SMP that may require clarification beyond that of the summary table. It may include a discussion of such items as scheduling issues, climate conditions as they might affect monitoring or IDDE, unforeseen circumstances, legal authority issues, or public input. A discussion of issues resulting in modifications to the SMP should be included in subsection (5) below.

(e) Summary of Proposed SMP Modifications

The Permittee shall report on any SMP modifications proposed and/or implemented by the Permittee either at the Permittee's discretion or as a modification required by the commissioner pursuant to Sections 6(B)(6)(b) or (c), respectively. This narrative shall discuss the reasons for the modification, the nature of the modification, any approvals or requirements by the commissioner, the progress of implementing the modification, and the results of implementation.

(f) Program Resource Analysis

The Permittee shall report on the status of obtaining or developing the resources necessary to fully implement the SMP.

(i) Fiscal Analysis

The Permittee shall provide a complete fiscal analysis for the Permittee's SMP implementation, both for the past calendar year and the next. The analysis shall indicate budgets and funding sources for implementation of the Stormwater Management Program and the requirements of this permit.

(ii) Staff and Resources

The Permittee shall also provide annually updated information on the staff, equipment and support capabilities used to implement the Permittee's SMP, demonstrating that all items are adequate to ensure full permit compliance.

(iii) Legal Authority

Provide documentation supporting the Permittee's legal authority to administer this program and all elements of the Stormwater Management Plan.

(g) Appendices

The following information shall be included as Appendices to the Annual Report:

(i) Results of wet weather in-stream monitoring.

(ii) Results of wet weather outfall monitoring.

(iii) Results of the dry weather in-stream monitoring.

(iv) Results of dry weather outfall screening.

(v) Results of illicit discharge monitoring.

(vi) Any ordinances, permits, contracts, orders or other legal authority used by the Permittee to regulate discharges to the MS4.

(vii) Any other data required to substantiate statements and conclusions reached in the Annual Report.

(4) Report Submission

The Annual Report shall be submitted to:

Stormwater MS4 Permit Coordinator
Bureau of Materials Management & Compliance Assurance
Connecticut Department of Energy and Environmental Protection
79 Elm St.
Hartford, CT 06106-5127

(B) Monitoring

(1) In-Stream and Outfall Monitoring

(a) The results of chemical analyses and any aquatic toxicity test required by Section 7 of this permit shall be entered on the Discharge Monitoring Report (DMR), provided by this office, and reported to the Bureau of Materials Management and Compliance Assurance (Attn: DMR Processing) at the address below. Any additional monitoring conducted in accordance with 40 CFR 136 or other methods approved by the commissioner shall also be included on the DMR, or as an attachment, if necessary. The DMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(b) Complete and accurate aquatic toxicity test data, including percent survival of test organisms in each replicate test chamber, LC50 values and 95% confidence intervals for definitive test protocols, and all supporting chemical/physical measurements performed in association with any aquatic toxicity test shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR) and sent to the Bureau of Water Protection and Land Reuse at the address below. The ATMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity)
Connecticut Department of Energy and Environmental Protection
79 Elm St.
Hartford, CT 06106-5127

(c) Where this permit requires monitoring of a discharge on a calendar basis (e.g.

seasonally), but a discharge has not occurred within the frequency of sampling specified in the permit, the Permittee must submit the DMR and ATMR, as scheduled, indicating "NO DISCHARGE".

(d) NetDMR Reporting Requirements

(i) Prior to one-hundred and eighty (180) days after the issuance of this permit, the Permittee may either submit monitoring data and other reports to the Department in hard copy form or electronically using NetDMR, a web-based tool that allows Permittees to electronically submit discharge monitoring reports (DMRs) and aquatic toxicity monitoring reports (ATMRs) through a secure internet connection. Unless otherwise approved in writing by the commissioner, no later than one-hundred and eighty (180) days after the issuance of this permit the Permittee shall begin reporting electronically using NetDMR. Specific requirements regarding subscription to NetDMR and submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

- Submittal of NetDMR Subscriber Agreement

  On or before fifteen (15) days after the issuance of this permit, the Permittee and/or the person authorized to sign the Permittee's discharge monitoring reports ("Signatory Authority") as described in RCSA Section 22a-430-3(b)(2) shall contact the Department at deep.netdmr@ct.gov and initiate the NetDMR subscription process for electronic submission of Discharge Monitoring Report (DMR) information. Information on NetDMR is available on the Department's website at www.ct.gov/deep/netdmr. On or before ninety (90) days after issuance of this permit the Permittee shall submit a signed and notarized copy of the ***Connecticut DEEP NetDMR Subscriber Agreement*** to the Department.

- Submittal of Reports Using NetDMR

  Unless otherwise approved by the commissioner, on or before one-hundred and eighty (180) days after issuance of this permit, the Permittee and/or the Signatory Authority shall electronically submit DMRs and ATMRs required under this permit to the Department using NetDMR in satisfaction of the DMR and ATMR submission requirements of Sections 8(B)(1)(a) and (b) of this permit.

  DMRs and ATMRs shall be submitted electronically to the Department no later than the 30th day of the month following the completed reporting period. Any additional monitoring conducted in accordance with 40 CFR 136 shall be submitted to the Department as an electronic attachment to the

DMR in NetDMR. Once a Permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or ATMRs to the Department. The Permittee shall also electronically file any written report of non-compliance described in Section 6 of this permit as an attachment in NetDMR. NetDMR is accessed from: http://www.epa.gov/netdmr.

- Submittal of NetDMR Opt-Out Requests

  If the Permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for electronically submitting DMRs and ATMRs, the commissioner may approve the submission of DMRs and ATMRs in hard copy form ("opt-out request"). Opt-out requests must be submitted in writing to the Department for written approval on or before fifteen (15) days prior to the date a Permittee would be required under this permit to begin filing DMRs ATMRs using NetDMR. This demonstration shall be valid for twelve (12) months from the date of the Department's approval and shall thereupon expire. At such time, DMRs and ATMRs shall be submitted electronically to the Department using NetDMR unless the Permittee submits a renewed opt-out request and such request is approved by the Department.

  All opt-out requests and requests for the NetDMR subscriber form should be sent to the following address or by email at deep.netdmr@ct.gov:

  Attn: NetDMR Coordinator
  Connecticut Department of Energy and Environmental Protection
  79 Elm Street
  Hartford, CT 06106-5127

(2) IDDE Monitoring

Any monitoring conducted pursuant to the IDDE section (Section 6(D)) of this permit shall be recorded on IDDE monitoring forms. This recording shall include the results of laboratory testing and any field testing conducted. These forms shall be included in the Annual Report appendices pursuant to subsection (A)(3)(g) above and submitted as part of the Annual Report.

(C) Records Retention

The Permittee shall keep records required by this permit for at least 5 years following its expiration or longer if requested by the commissioner in writing. Such records, including the

Stormwater Management Plan, shall be available to the public at reasonable times during regular business hours.

SECTION 9: COMPLIANCE SCHEDULE AND ADDITIONAL REQUIREMENTS

(A) The Permittee shall perform the actions in the approved Stormwater Management Plan in accordance with the schedules in Sections 6 and 7 of this permit.

(B) The Permittee shall use best efforts to submit to the commissioner all documents required by Sections 6, 7 and 8 of the permit in a complete and approvable form. If the commissioner notifies the Permittee that any document or other action is deficient, and does not approve it with conditions or modifications, it is deemed disapproved, and the Permittee shall correct the deficiencies and resubmit it within the time specified by the commissioner or, if no time is specified by the commissioner, within thirty days of the commissioner's notice of deficiencies. In approving any document or other action, the commissioner may approve the document or other action as submitted or performed or with such conditions or modifications as the commissioner deems necessary to carry out the purposes of this section of the permit. Nothing in this paragraph shall excuse noncompliance or delay.

(C) Dates. The date of submission to the commissioner of any document required by the permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under the permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this section of the permit means calendar day. Any document or action which is required by the permit to be submitted or performed by a date which falls on, Saturday, Sunday, or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or Connecticut or federal holiday.

(D) Notification of noncompliance. In the event that the Permittee becomes aware that it did not or may not comply, or did not or may not comply on time, with any requirement of this section of the permit or of any document required hereunder, the Permittee shall immediately notify the commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the commissioner, the Permittee shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the commissioner, dates by which compliance will be achieved, and the Permittee shall comply with any dates which may be approved in writing by the commissioner. Notification by the Permittee shall not excuse noncompliance or delay, and the commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically so stated by the commissioner in writing.

(E) Notice to commissioner of changes. Within fifteen days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under the permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.

(F) Submission of documents. Any document, other than a DMR or ATMR, required to be submitted to the commissioner under the permit shall, unless otherwise specified in writing by the commissioner, be directed to:

Stormwater MS4 Permit Coordinator
Bureau of Materials Management & Compliance Assurance
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

This permit is hereby issued on the 6/4/2013

Macky McCleary
Deputy Commissioner

FUSS & O'NEILL

Appendix B

Pollution Prevention Team Members

FUSS & O'NEILL

Pollution Prevention Team Members

Stormwater Management Plan
Stamford, Connecticut

Name	Title	Department	e-mail	Phone
Thomas Turk	Traffic & Road Maintenance Supervisor	Operations	tturk@stamfordct.gov	203-977-5919
Tyler Thedar	Regulatory Compliance & Administrative Officer	Operations	ttheder@stamfordct.gov	203-977-5281
Norman Cole	Land Use Bureau Chief	Land Use Bureau	ncole@stamfordct.gov	203-977-4714
James Lunney	Zoning Enforcement Officer	Land Use Bureau - Zoning Office	jlunney@stamfordct.gov	203-977-5944
Rick Talamelli	Environmental Planner	Land Use Bureau - Environmental Planning Board (EPB)	rtalamelli@stamfordct.gov	203-977-4965
Lou Casolo	City Engineer	Engineering	lcasolo@stamfordct.gov	203-977-5796
Cindy Barber	GIS Coordinator	Information Technology	CBarber@StamfordCT.gov	203-977-5360
Ronald Miller	Director of Environmental Health Inspections	Health Department	rmiller@stamfordct.gov	203-977-4363

FUSS & O'NEILL

Appendix C

Stormwater Management Public Information

Helpful Information

Connecticut Department of Energy and Environmental Protection (DEEP)
Stormwater Management:
www.ct.gov/dep/cwp/view.asp?a=2721&q=325702&depNav_GID=1654

US Environmental Protection Agency (EPA)
Greening EPA
Stormwater Management:
www.epa.gov/oaintrnt/stormwater/index.htm

US EPA National Pollutant Discharge Elimination System (NPDES)
Stormwater Program:
http://cfpub.epa.gov/npdes/home.cfm?program_id=6

This informational pamphlet provided to you by:

The City of Stamford

Michael A. Pavia, *Mayor*

Ernie Orgera, *Director of Operations*
EOrgera@ci.stamford.ct.us

Karen Cammarota, *Grants Officer*
KCammarota@ci.stamford.ct.us

Thomas Turk, *MS4 Permitting*
TTurk@ci.stamford.ct.us

Stamford Government Center
888 Washington Boulevard
Stamford, Connecticut
203-977-4140
www.ci.stamford.ct.us/

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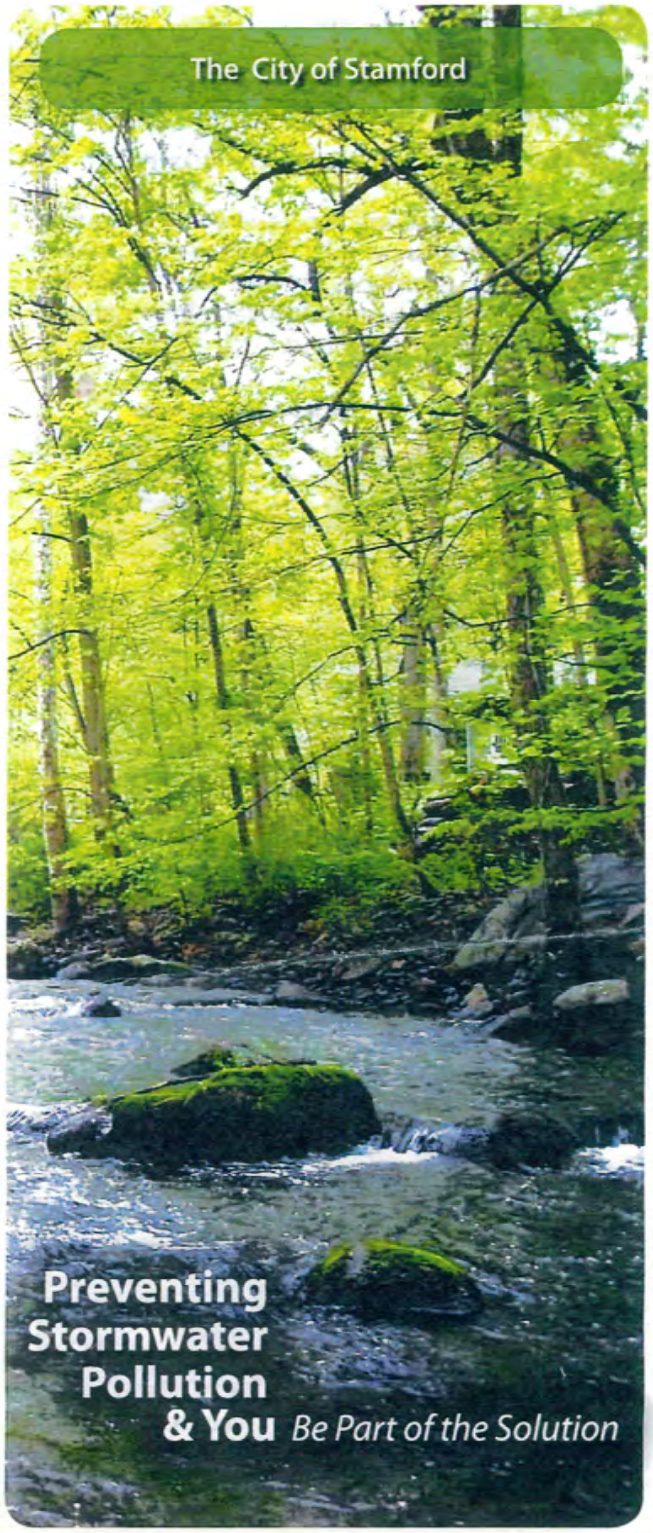
Printing and graphics provided courtesy of: CDM Smith

The City of Stamford

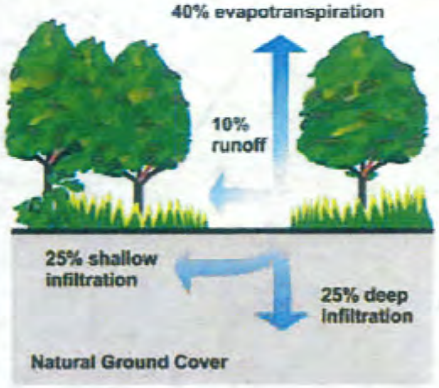


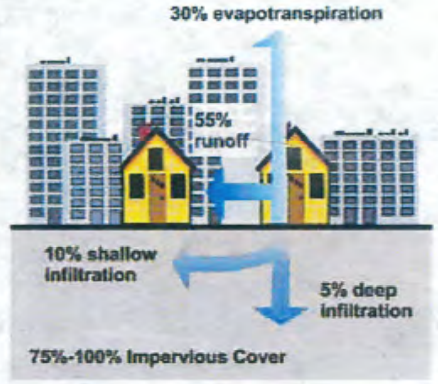
Preventing Stormwater Pollution & You *Be Part of the Solution*

Preventing Stormwater Pollution

What is Stormwater Runoff?

Stormwater runoff occurs when precipitation from rain or snow melt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.






Impervious pavement


Porous pavement

Typical Pollutants Include:

- Nutrients from fertilizers
- Oil and grease from cars
- Sediment from construction
- Soaps from car washing
- Sand from deicing
- Pet waste

What are the Effects of Stormwater Pollution?

- Stormwater runoff enters drainage systems and streams, bringing with it debris and pollutants.

- Debris such as garbage, dirt, and yard clippings can block catch basins, pipes and streams, causing flooding.

- Polluted water can affect drinking water sources, raising treatment costs and threatening human health.

- Excess nutrients from fertilizers and pet wastes can lead to algae blooms which threaten aquatic life.

Be Part of the Solution

Easy-to-follow Guidelines

- Never dump anything down storm drains or in streams
- Pick up after your pet

- Check your car for leaks and recycle motor oil
- Wash your car on your lawn or take it to a car wash
- Sweep driveways sidewalks and gutters instead of using the garden hose

- Use fertilizers sparingly
- Consider a rain garden or rain barrel for roof runoff

- Direct downspouts away from paved surfaces
- Use less toxic pesticides on your lawn, garden and in your home and always read label instructions for proper use

- Vegetate bare spots in your yard
- Have your septic tank pumped and the system inspected regularly

- Compost kitchen and yard waste

Helpful Information

Connecticut Department of Energy and Environmental Protection (DEEP)
Stormwater Management:
www.ct.gov/dep/cwp/view.asp?a=2721&q=325702&deNav_GID=1654

US Environmental Protection Agency (EPA)
Greening EPA
Stormwater Management:
www.epa.gov/oaintrnt/stormwater/index.htm

US EPA National Pollutant Discharge Elimination System (NPDES)
Stormwater Program:
http://cfpun.epa.gov/npdes/home.cfm?program_id=6

City of Stamford Stormwater Management:
http://www.stamfordct.gov/stormwater-management

The Connecticut Agriculture Experiment Station:
http://www.ct.gov/caes/cwp/view.asp?a=2815&q=376936

This informational pamphlet provided to you by:

The City of Stamford

David Martin, *Mayor*

Ernie Orgera, *Director of Operations*
Eorgera@StamfordCT.gov

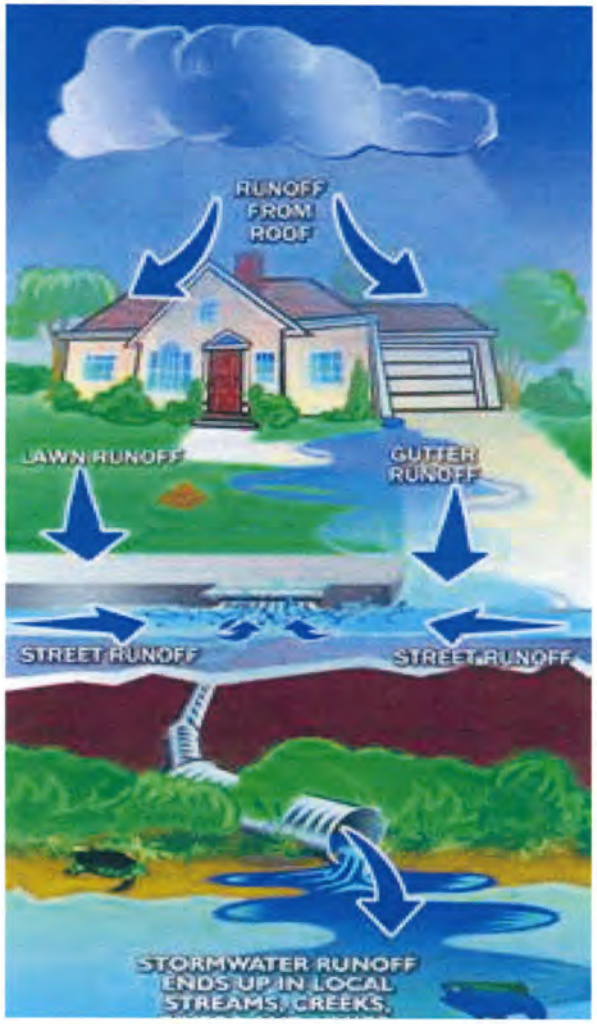
Thomas Turk, *MS4 Permitting*
Tturk@StamfordCT.gov

Tyler Theder, *MS4 Permitting*
Ttheder@StamfordCT.gov

888 Washington Boulevard
Stamford, Connecticut
Phone: 203.977.4140
www.stamfordct.gov

The City That Works!

Preventing Stormwater Pollution



Preventing Stormwater Pollution

City of Stamford has a separate storm and sanitary system. This means that what goes in the catch basins goes directly, untreated into Stamford's waterways.

Stormwater is the result of precipitation from rain, snowmelt, and other weather events that eventually makes its way into our surface waters, including the water we drink. As it flows across impervious surfaces such as roads, sidewalks, parking lots, and driveways, stormwater runoff eventually makes its way into the City's stormwater system.

Stormwater carries pollutants such as oil, bacteria from pet waste, sediment, and **all** lawn chemicals to our local water-ways.

Since the inlets to the stormwater system are located all around the City, stormwater runoff can sometimes pick up substances such as:

- Fertilizers, pesticides, and lawn chemicals
- Water contamination, leading to reduced water quality
- Erosion and increased sedimentation in water bodies
- Sediment from construction sites
- Trash and debris
- Micro-organisms and bacteria
- Gasoline, oil and other hydrocarbons

Pervious vs. Impervious

Ideas to Help Manage & Reduce Stormwater Pollution

Cistern is a large tank that collects rain water from your roof. Cisterns are most appropriate when you have significant out door water needs.

Conservation Landscapes are designed to benefit local streams by using native plants as a low-cost alternative to traditional landscapes.

Downspout Redirection is a slow runoff and help water soak into the ground.

Drywell is gravel-filled areas that store rainwater underground.

Green Roof is a roof made up of layers of soil and plants on its surface. As a result, less rainwater – and accompanying pollutants run off the roof and into nearby storm drains and streams.

Pavement Removal increases the amount of permeable ground on the property.

Pervious Surfaces can be used for driveways, walkways and patios, and are as functional as traditional materials.

Rain Barrels are containers connected to your downspouts to collect runoff from your roof.

Rain Gardens are a cost effective option to solve drainage problems and reduce runoff from your yard.

Tree Planting provides many benefits to a community. Among other benefits, tree roots stabilize stream banks and absorb rainwater.

Lawn Care

- Minimize use of pesticides and lawn chemicals
- Do not blow or rake leaves, grass clippings, brush and tree branches in the streets

The City of Stamford recommends a minimal maintenance program for liming and lawn fertilization, which includes only one application per year. The best time to make the application is in late summer. The Connecticut Agricultural Experimental Station recommends an approximate fertilizer ratio of 3 parts nitrogen, 1 part phosphorus and 2 parts potassium (3:1:2). Do not over apply fertilizers!

Liming should be done in either spring or fall. If large amounts are suggested, it is best to apply half in the spring and the other half in the fall. Limestone should not be applied within 2 weeks of applying fertilizer. This avoids a chemical reaction between the two which could result in the loss of some of the fertilizer nitrogen to the atmosphere.

Pesticides, including insecticides and herbicides, are intentionally toxic substances. Studies of major rivers and streams have documented that 100 percent of all surface water samples contained one or more pesticides at detectable levels.

For Pesticide Best Management Practices, please refer to the City of Stamford website.

MILL RIVER COLLABORATIVE

Milton Puryear
Executive Director
milton@millriverpark.com

CONTACT

1010 Washington Blvd.
Stamford, CT 06901
P:203.977.4713

www.millriverpark.com

May 30, 2014

Tyler L. Theder
Regulatory Compliance and Administrative Officer
City of Stamford Office of Operations - Highway Department
90 Magee Ave
Stamford CT 06902

Dear Tyler:

We are pleased that you have selected the west overlook of Mill River Park for one of the water sampling sites and look forward to working with you in engaging the public in understanding how water quality is impacted through our education, volunteer and public outreach programs.

Best regards,

Milton Puryear

PESTICIDE INFORMATION SHEET

PESTICIDE BEST MANAGEMENT PRACTICES (BMP's)

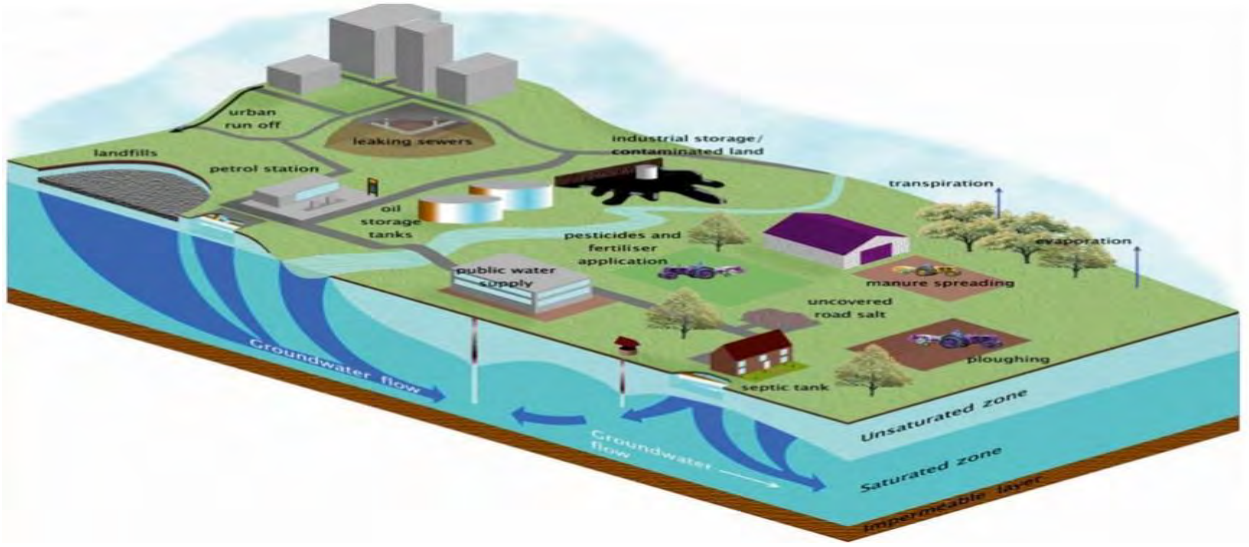
The protection of the nation's surface water and groundwater resources has become one of the primary environmental issues facing pesticide applicators. This is especially true in Connecticut with the on-going efforts to restore the City of Stamford. Connecticut is also comprised of a diverse geological make up that ranges from the sandy soil and shallow water tables of the Eastern Shore to the fractured limestone areas.

Pesticides can reach surface water by running off the application sire following a heavy rainfall and into neighboring streams and rivers or sink holes. Pesticides can also leach through the soil profiled into the groundwater. Contamination resulting from either of these sources is classified as "non-point source" contamination. Water contamination can also be the result of a direct or specific source, such as spill or backsiphoning during filling of pesticide application equipment. This type of contamination is referred to as "point source" contamination.

It is the responsibility of all pesticide applicators to ensure that they are using every means available to prevent pesticides from contaminating Connecticut's surface water and groundwater resources. Pesticide applicators can greatly reduce the risk of either point or non-point source contamination from pesticides by utilizing Best Management Practices (BMP's). BMP's are effective, common sense practices that emphasize proper mixing, loading and application of pesticides and also include methods that should be used before, during and after application.

When these recommended Best Management Practices are followed the potential to cause and adverse effect on the environment will greatly be reduced.

Identify The Vulnerability Of The Area



- **Know The Application Site** – Scout the area to evaluate the extent of the pest problem in order to select the appropriate control method. Identify environmentally sensitive areas and learn how the soil types and the layout of each application site affect the movement of water, both through and across soil.

- **Read And Follow Label Direction**s – Pesticide labels contain important information about applicator and environmental safety, including water quality protection. Always follow label directions.

- **Match Application Rate To The Pest Problem** – Every pesticide label specifies application rates. Carefully consider all aspects of the pest problem such as the pest or pests, level of infestation, location, and environmental consideration (i.e., soil type, organic matter).

- **Do Not Mix and Load Near Water** – Pesticides can reach groundwater and surface water as a result of discharges or spills that occur during mixing and loading operations. Mixing and loading should be done as far as possible (at least 50 feet) from wells, lakes, streams, rivers and storm drains. When possible, mix and load the pesticides at the sire of application. Applicators should also consider the use of liquid-tight mixing and loading pad. Be sure all containers being transported are secured.

- **Prevent Backsiphoning** – When filling any pesticide spray tank from a well or other water source, be sure the end of the hose stays above the \spray solution in the tank. Backsiphoning can occur when the end of the fill hose or pipe falls below the level of the solution in the tank and there is a drop in water pressure. Use an approved anti-backsiphoning devise or an air break in the water system.

- **Calibrate Application Equipment Properly** – Frequently check and maintain spray nozzles, hoses, gauges and tanks. Proper calibration is the key to applying accurate rates of pesticides. Improper calibration can result in too much or too little product applies, irregular distribution and poor pest control. Inaccurate tank volumes and pressure gauges or worn nozzles also may cause improper application. Inspect application equipment before every use.

- **Delay pesticide Application If Heavy Rain Is Forecast** – Pesticides are most susceptible to runoff from heavy rains during the first several hours after application.

- **Avoid Overspray And Drift** – Check the pesticide label for application precautions or restrictions during windy conditions. Wind speed, temperature and humidity all affect pesticide spray drift. Drift can be reduced by lowering boom heights and using nozzles that produce large droplet sizes.

- **Store Pesticides In A Safe Place** – Pesticides need to be stored in a secure place and should be stored in their original containers with the labels clearly visible. Pesticides must be stored at least 50 feet from any well unless they are stored in secondary containment.

- **Properly Dispose Of Pesticide Containers** – Information about container disposal is on the pesticide label. Containers should be triple or pressured-rinsed thoroughly after use, punctured and disposed of the in accordance with label directions or offered for recycling as part of the Connecticut Department of Agriculture's program. Sprayers should be cleaned at the application sire whenever possible and at a safe distance from wells, lakes, streams and storm drains. The rinsate should be sprayed on site that is listed on the pesticide label or used as makeup water in the next tank mix. Be sure label rates are not exceeded.

- **Develop An Emergency Response Plan** – Anyone who stores, handles or uses pesticides should have an emergency response plan in case an accident occurs.

For further information on BMP's, contact the Department of Energy and Environmental Protection Bureau of Materials Management and Compliance Assurance, Pesticide Management Program, 79 Elm Street, Hartford, Connecticut 06106-5127. (http://www.ct.gov/deep/cwp/view.asp?a=2710&q=324266&deepNav_GID=1712%20)

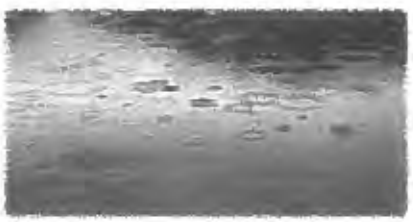
Stormwater Management Department
Annual Public Meeting
July 29, 2014
7:00 pm

City of Stamford
Office of Operations
90 Magee Ave.
Stamford, CT 06904
203-977-5281

Introduction

What is Stormwater?

Stormwater is the result of precipitation from rain, snowmelt, and other weather events that eventually makes its way into surface waters, including the water we drink.



Introduction

You Should Know...

- The City of Stamford has separate stormwater and sanitary drainage systems.
- All sanitary water is collected and treated by the Water Pollution Control Authority (WPCA).
- All stormwater is collected through surface drainage infrastructure (curbs, catch basins, culverts) and is then discharged, **UNTREATED**, into local watercourses and ultimately into Long Island Sound.

Presentation Overview

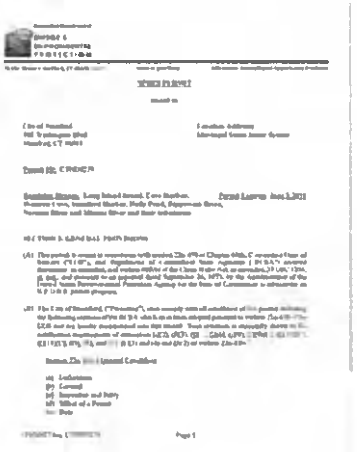
1. City of Stamford - Stormwater Management Department
2. State of Connecticut Department of Energy and Environmental Protection (DEEP) Permit #0030279
3. 2012 City of Stamford Annual Report
4. City of Stamford - Stormwater Management Plan (SMP)

Stormwater Management Dept.

- Tyler Theder, Regulatory Compliance and Administrative Officer
- Works closely with existing departments, including: Traffic and Road Maintenance, Engineering, EPB
- Receives and acts on stormwater complaints.

State of CT DEEP permit# CT0030279

- Issued June 4, 2013.
- Requires annual public informational meeting.
- Regulates entire storm drainage system owned and operated by the City of Stamford.



2012 Annual Report

Reporting Period:
January 1, 2012 – December 31, 2012

Objective:

To educate and heighten public awareness, to improve the management of stormwater and thereby reduce pollution from runoff throughout the City of Stamford in order to improve water quality of all receiving waters.

2012 Annual Report

Major Findings:

- Still a great need to educate City Departments.
- Still a great need to educate the public.
- Budgeting and staffing needs must be met.

2012 Annual Report

Reporting Period:
January 1, 2012 – December 31, 2012

Street Sweeping Activities:

- 3,803 total tons of debris collected.
- 11,992 miles of streets swept.
- Downtown area swept min. of twice / wk.

2012 Annual Report

Reporting Period:
January 1, 2012 – December 31, 2012

Catch Basin Cleaning Activities:

- 1,081 Catch Basins pumped.
- 1,111 tons of material collected.

2012 Annual Report

Available to the public at:

- City of Stamford – Stormwater Mgt. Dept. Website:www.stamfordct.gov/stormwater-management
- Ferguson Library,1 Public Library Pl.
- Highway Department
  90 Magee Ave.

2013 / 2014 Annual Report

Reporting Period:
January 1, 2013 – June 30, 2014

Required Contents:

- Contact List
- Program Evaluation
- Summary Table of SMP Components
- Narrative Report
- Summary of Proposed SMP Modifications
- Program Resource Analysis

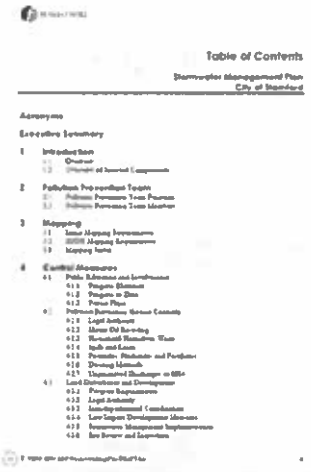
Stormwater Management Plan

Stormwater Management Plan
Permit No. CT0338279

City of Stamford
Stamford, Connecticut

July 1, 2014

FUSS & O'NEILL



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City of Stamford

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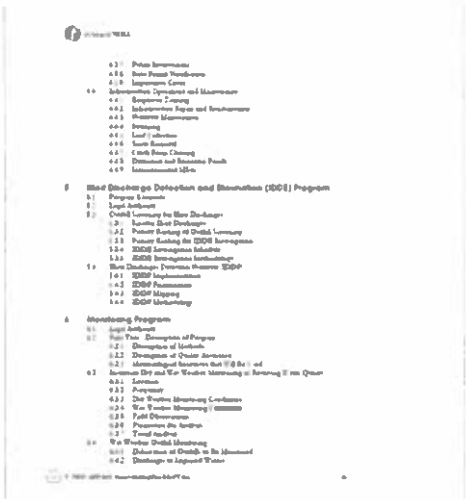
Stormwater Management Plan



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E Stormwater Management Impervious Design Document

Stormwater Management Plan

What Pollutes Stormwater?

Over-application of Pesticides and Herbicides

What Can I do?

- Always read and follow the label directions.
- Do not mix and load near water.
- Delay application if heavy rain is forecast.

Stormwater Management Plan

What Pollutes Stormwater?

Over-application of Fertilizer.

What Can I do?

- Minimize use of fertilizer to the greatest extent possible.
- Do not blow or rake leaves, grass clippings, or brush in the street.

Stormwater Management Plan

What Pollutes Stormwater?

Dumping Pollutants Directly Into Catch Basins.

What Can I do?

- Dispose of Pollutants and Hazardous Wastes at an approved collection facility
- Dispose of trash in refuse containers.

Stormwater Management Plan

Household Hazardous Waste Collection Days

<u>Items Accepted (partial list)</u>:

- Ammonia
- Antifreeze
- Bleaches
- Brake Fluid
- Drain Cleaners
- Dry Cleaning Fluids
- Engine and Radiator Flushes
- Herbicides
- Pesticides
- Oil Based Paints
- Paint Thinners
- Pool Chemicals
- Rodent Killers
- Sealants
- Solvents
- Transmission Fluids
- Wood Preservatives

Stormwater Management Plan

Household Hazardous Waste Collection Days - Cooperating Communities:

Remaining 2014 Dates:

- Norwalk – September 6, Norwalk High School
- New Canaan – September 20, Wastewater Treatment Plant
- Westport – October 4, 180 Bayberry Lane
- Wilton – October 25, Miller / Driscoll School

These events are FREE and open to the Public!

Stormwater Management Plan

What Pollutes Stormwater?

Failing to Clean Up Pet Waste.

What Can I do?

- Dispose of pet waste in an approved refuse container.
- Stamford Charter 111-7 applies to public and private property.
- Punishable by $75 fine.

Stormwater Management Plan

What Pollutes Stormwater?

Automotive Washing on Paved Surfaces.

What Can I do?

- DO wash cars on gravel or lawn areas.
- DO NOT wash cars in the street or paved areas.

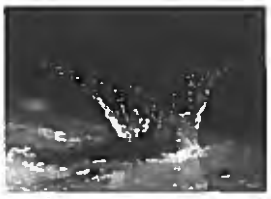
Stormwater Management Plan

Illicit Discharge Detection and Elimination Program (IDDE)

- In-Stream Monitoring has started at ten (10) locations throughout the City.
- IDDE program has started and the City will be investigating sources of illicit discharge.
- The City will be imposing fines for violations and will take corrective action to eliminate illicit discharges at the owner's expense.

Stormwater Management Plan

What **Can** go Down a Storm Drain?

- Rain 
- Snowmelt 

Goal:

To Improve Water Quality

For recreational and environmental purposes:

- swimming
- fishing
- watersports
- wildlife

Stormwater Management Dept.

Thank You!

Helpful Information

Connecticut Department of Energy and Environmental Protection (DEEP)
Stormwater Management:
www.ct.gov/dep/cwp/view.asp?a=2721&q=325702&deNav_GID=1654

US Environmental Protection Agency (EPA)
Greening EPA
Stormwater Management:
www.epa.gov/oaintrnt/stormwater/index.htm

US EPA National Pollutant Discharge Elimination System (NPDES)
Stormwater Program:
http://cfpun.epa.gov/npdes/home.cfm?program_id=6

City of Stamford Stormwater Management:
http://www.stamfordct.gov/stormwater-management

This informational pamphlet provided to you by:

The City of Stamford

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Ernie Orgera, *Director of Operations*
Eorgera@StamfordCT.gov

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Ttheder@StamfordCT.gov

888 Washington Boulevard
Stamford, Connecticut
Phone: 203.977.4140
www.stamfordct.gov

The City That Works!

Preventing Stormwater Pollution

What is Stormwater

Stormwater runoff occurs when precipitation from rain or snow melt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Beware of Dog Waste:

Dog waste does not make a good fertilizer. It is actually toxic to your lawn, causing burns and unsightly discoloring.

More importantly, it has been estimated that a single gram of dog feces can contain 23 million fecal coliform bacteria, which are known to cause cramps, diarrhea, intestinal illness, and serious kidney disorders in humans.

The Environmental Protection Agency (EPA) estimates that two or three days' worth of droppings from a population of about 100 dogs would contribute enough bacteria to temporarily close a bay, and all watershed areas within 20 miles of it, to swimming and shellfishing.

Dog feces are one of the most common carriers of the following diseases:

- Heartworms
- Whipworms
- Hookworms
- Roundworms
- Tapeworms
- Parvo
- Corona
- Giardiasis
- Salmonellosis
- Cryptosporidiosis
- Campylobacteriosis

Children, puppies and kittens are most susceptible to pet-borne illnesses because they have weaker immune systems than adults.

Be Part of the Solution:

- Never Dump anything down storm drains or in streams
- Pick up loose trash
- Pick up after your pet
- Utilize pet waste stations

The most responsible thing pet owners can do for their family, community and environment is to make sure their pets are picked up after.

Penalty for violation of City Charter Sec. 111-7 shall be subject to a fine of $75.00 for either public or private property.

City of Stamford
Dog Waste Dispenser Locations

Park Name	Park Location	Currently At Location	Requesting At Location
Barrett Park	Newfield Avenue, Burdick Street, Upland Road		2
Carpinella Park	Strawberry Hill and Hoyt Street		1
Carwin Park	Spruce Street and Main Street		1
Cedar Street	Cedar Street		
Chestnut Hill Bird Sanctuary	Chestnut Hill Road and Eagle Drive		
Chestnut Hill Park	Chestnut Hill Road and Webbs Hill Road		2
Columbus Park	Washington Boulevard and Main Street and West Park Place		1
Cove Island Park	Cove Road and Weed Avenue	1	4
Cummings Park West	Shippan Avenue		2
Cummings Park	Shippan Avenue and Cummings Park Road	1	4
Czescik Park	Harbor Drive across from Cummings Park West		2
Daskam Park	Glenbrook Road and Daskam Place	1	1
Depreta Park	Cove Road and Ranson Road		
Dorothy Heroy Recreation Complex	High Ridge Road and Riding Stable Trail		1
E.A. Connell Park	Main Street and Bank Street		
Edward Hunt Recreation Complex	Courtland Avenue and East Main Street	2	4
Fort Stamford	Westover Road and Confield Drive		2
Gerli Park	Weed Avenue and East Main Street		1
Greenbelt Park	Tresser Boulevard and Main Street		
Greenwich Avenue Park	Greenwich Street and Pulaski Street		
Gus Edson Park	Weed Avenue		1
Haig Avenue Court	Haig Avenue and Crestview Avenue		
Hatch Field	Richmond Hill Avenue and Fairfield		1
Heritage	Atlantic Street and Main Street		
Hormer Wise Park	Bedford Street and Prospect Park		1
Hope Street Island Park	Hope Street across from Union		
Jackie Robinson Park	Richmond Hill and West Main Street and Fairfield Avenue		1
John Latham Park	Bedford Street and Prospect Park		1
Kane Avenue	Kane Avenue		
Kiwanis Park	Atlantic Street		1
Kosciuszko Park	200 Elem Croft Road		2
McKeithen Park	Lawn Avenue		1
Mianus River Park	Merriebrook Lane	2	2
Michael F. Lione Park	Stillwater Avenue and Merrill Avenue		1
Michael J. Drotar Park	Hope Street and Mead Street		1
Mill River Park	Mill River Street and Broad Street		

City of Stamford
Dog Waste Dispenser Locations

Newman Mill Park	Riverbank Road and June Road		
Northrop Park	Glenbrook Road and Scofield Avenue		1
Potters Field	Scofieldtown Road		
Rippowam Park	Washington Boulevard and Main Street		
Rogers Smith Park	Washington Boulevard, Whitabke and Broad Street		
Rosa Hartman Park	Brown House Road at City Line	1	1
Rotary Park	Tresser Boulevard and Greenwich Avenue		
Scalzi Park	Bridge Street and Washington Boulevard		3
Scofieldtown Park	Scofeldtown Road and Rockrimmon Road		
Sleepy Hollow Park	Haig Avenue and Gray Farms Road	1	1
Southfield Park	Southfield Avenue across from West Main Street	1	1
Saint John's Park	Main Street and Grove Street		
US 1 Park	East Main Street		
Veteran's Park	Atlantic Street		
Vincent Horan Park	Washington Boulevard and Waterford Lane		1
Vine Road Little League Field	Vine Road across from Pamlynn Road		
Waterside Park	Pulaski Street and Water Street		1
Woodley Road Bird Sanctary	Woodley Road		

** Parks tht don't have a dispenser scheduled for installation has been assigned to a private company or collaboration.

Test Your Storm Drain IQ!

1. Which of the following is safe to pour into a storm drain?
   - A. Motor Oil
   - B. Medication
   - C. Paint
   - D. None of the above
2. Storm water flows to...
   - A. Water Treatment plant
   - B. Sanitary Sewer System
   - C. Oceans, Rivers, and Lakes
   - D. None of the above
3. Washing your car with soap in the driveway may be harmful to aquatic life.
   - True
   - False
4. Raking leaves and grass clippings into storm drains is a proper disposal method.
   - True
   - False
5. Which of these do impact water quality?
   - A. Septic tanks
   - B. Road run-off
   - C. Fertilizers
   - D. All of the above
6. Flushing organic matter down a storm sewer (leaves, sticks, animal droppings) results in which of the following?
   - A. Algae "blooms"
   - B. Closure of downstream beaches due to high coliform counts
   - C. Fish kills due to the depletion of dissolved oxygen caused by the decomposition of organic matter
   - D. All of the above

Answers: 1.D 2.C 3.True 4.False 5.D 6.D

How You Can Help

- Never pour household hazardous waste materials, such as motor oil, paints, solvents and other chemicals down the drain, onto sidewalks or into catch basins. Take these materials to a hazardous waste materials collection center or round-up event.
- Use pesticides, herbicides, and fertilizers according to the label instructions. Remember not to apply them before heavy rain and avoid over watering your plants or lawn.
- Clear debris from catch basins near your home or business.
- Never put yard waste such as grass clippings, tree trimmings, and leaves into a catch basin. This organic material can be composted and used for fertilizer around the yard.
- Do not dispose of unused medication in either the storm drain or sanitary sewer system. For more information about disposal go to: http://www.whitehousedrugpolicy.gov/publications/pdf/prescrip_disposal.pdf .

STAMFORDWPCA

Information provided by the
Stamford WPCA
111 Harbor View Avenue
Stamford, CT 06902
203-977-4964

Brochure created by Elisabeth Smith for her Girl Scout Gold Award; 2011

girl scouts of connecticut

What Is Your Storm Drain System IQ?

What's wrong with this picture?

What Is A Storm Drain?

Storm drain systems are designed to drain excess rain from paved streets, parking lots, sidewalks, and roofs. When rainfall is heavy, streets, parking lots, and other paved and impervious surfaces can flood. In addition to the water falling directly on these surfaces, gutters also discharge large amounts of water into the street. Flooding can pose a hazard to homes and businesses, which is why storm drains are installed. Catch basins, which collect the rain water and bring it into the storm drain, are frequently located on either side of a street, at a low point in the roadway where water would naturally collect. In Stamford, there are over 15,000 catch basins.

Where Does the Water Go?

Water enters the catch basin through the grate on top, and then enters into a system of storm water pipes. The water then flows through the pipes, and is conveyed to an outlet, which is usually a lake, ocean, or other major body of water. In Stamford, the majority of the water ends up in Long Island Sound.

Is the Water Treated?

No, water runoff that enters the storm drain system is not treated. It is not commingled with the sanitary sewer system and does not receive treatment at the wastewater treatment plant operated by the Water Pollution Control Authority. The sheer volume of water runoff is too great to be treated.

Harmful Items Often Dumped

- Fertilizers-affect aquatic life by mutating animal and fish genes, creating deformities.
- Pesticides/ Herbicides– also cause mutations in animals or can cause death.
- Motor Oil– can poison animals or become attached to their skin/feathers
- Paint– Toxic to animals and people.
- Antifreeze– a highly toxic chemical that is poisonous to people as well as fish, birds and pets.
- Medication– creates mutations in animals if ingested and can enter the food chain.
- Litter– pollutes the water; plastic bags can be ingested by fish and turtles.
- Construction Debris– also a major pollutant
- Household Cleaning Products– another type of toxin for animals
- Cigarette Butts– pollutant that can be ingested by aquatic life and enter the food chain.

FUSS & O'NEILL

Appendix D

Draft Stormwater Management Ordinance

ARTICLE III. MUNICIPAL SEPARATE STORM SEWER SYSTEM ["MS4"]

Sec. 201-1. Purpose/Intent

The purpose of this Ordinance is to provide for the health, safety, and general welfare of the citizens of Stamford through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable, as required by federal and state law. This Ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this Ordinance are:

(1) To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any user

(2) To prohibit Illicit Connections and Discharges to the municipal separate storm sewer system

(3) To establish legal authority of the City to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this Ordinance

(4) To ensure compliance with the Connecticut Department of Environmental Protection ["DEEP"] Permit for the operation of the City's Municipal Storm Sewer System ["the Permit"], NPDES Permit No. CT 0030279, issued on June 6, 2013.

Sec. 201-2. Definitions.

For the purposes of this Ordinance, the following shall mean:

Authorized Enforcement Agency: The Office of Operations or designees of the Director of Operations who are designated to enforce this Ordinance, including but not limited to the Regulatory Compliance and Administrative Officer, and Operations Supervisors and Foremen in the Traffic and Road Maintenance Department.

Best Management Practices (BMPs): schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act. The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity. Activities subject to National Pollutant Discharge Elimination ["NPDES"] Construction Permits, including but not limited to NPDES Storm Water Phase II permits required for construction projects resulting in land disturbance of 1 acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Hazardous Materials. Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illicit Discharge. Any direct or indirect discharge to the storm drain system that is not entirely composed of stormwater, except as exempted in Section 7 of this Ordinance.

Illicit Connections. An Illicit Connection is defined as either of the following:

(a) Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system, and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by the Authorized Enforcement Agency or,

(b) Any drain or conveyance connected to the storm drainage system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Industrial Activity. Refers to the definition of Industrial Activity in Section 2 of the General Permit for the Discharge of Stormwater Associated with Industrial Activity issued by the Connecticut DEEP, as amended.

National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit. A permit issued by the EPA (or by a State under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-Storm Water Discharge. Any discharge to the storm drain system that is not composed entirely of storm water.

Permit. The Connecticut Department of Environmental Protection ["DEEP"] Permit for the operation of the City's Municipal Storm Sewer System, NPDES Permit No. CT 0030279, issued on June 6, 2013.

Person. Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the Owner or as the owner's agent.

Pollutant. Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from

constructing a building or structure; noxious or offensive matter of any kind; industrial and commercial wastes, trash, used motor vehicle fluids, food preparation waste, leaf litter, and grass clippings.

Premises. Any building, lot, parcel of land, or portion of land, whether improved or unimproved,including adjacent sidewalks and parking areas.

Storm Drainage System [also known as Municipal Separate Storm Sewer System or MS4]. Publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures. Additionally included are retention and detention basins which are privately owned where the City maintains an easement or other legal authority pursuant to Section 6(A)(3)(a)(i) of the Permit.

Storm Water. Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Stormwater Pollution Prevention Plan. A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.

Wastewater. Any water or other liquid, other than uncontaminated storm water, discharged from a facility.

Sec. 102-3. Applicability.

This Ordinance shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by the Authorized Enforcement Agency.

Sec. 102-4. Responsibility for Administration.

The Director of Operations, as he/she so delegates to the Authorized Enforcement Agency, shall administer, implement, and enforce the provisions of this Ordinance. Any powers granted or duties imposed upon the Director of Operations may be delegated in writing by the Director of Operations to the Authorized Enforcement, acting in the beneficial interest of or in the employ thereof.

Sec. 102-5. Severability.

The provisions of this Ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Ordinance.

Sec. 102-6. Ultimate Responsibility.

The standards set forth herein and promulgated pursuant to this Ordinance are minimum standards; therefore this Ordinance does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

Sec. 102-7. Discharge Prohibitions.

A. Prohibition of Illicit Discharges.

No person shall discharge or cause to be discharged into the municipal storm drainage system or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

B. Exceptions

1. The following non-stormwater discharges, provided that they do not contribute to a violation of water quality standards and are not significant contributors of pollutants to the MS4: landscape irrigation and lawn watering runoff, provided that all pesticides, herbicides, and fertilizers have been applied in accordance with approved labeling; uncontaminated ground water discharges such as pumped ground water, foundation drains, water from crawl space pumps and footing drains; discharges of uncontaminated air conditioner or refrigeration condensate; for street sweeping activities conducted by the MS4, residual street wash waters that do not contain detergents and where no non-remediated spills or leaks of toxic or hazardous materials have occurred; and naturally occurring discharges such as rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), springs, diverted stream flows and flows from riparian habitats and wetlands.

2. Discharges specified in writing by Regulatory Compliance and Administrative Officer as being necessary to protect public health and safety.

3. Dye testing is an allowable discharge, but requires a verbal notification to the Regulatory Compliance and Administrative Officer prior to the time of the test.

4. The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system by the appropriate authority.

C. Prohibition of Illicit Connections.

1. The construction, use, maintenance or continued existence of Illicit Connections to the storm drainage system is prohibited.

2. This prohibition expressly includes, without limitation, Illicit Connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

3. A person is considered to be in violation of this Ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

Sec. 102-8. Suspension of MS4 Access.

A. Suspension Due to Illegal Discharges in Emergency Situations

The Regulatory Compliance and Administrative Officer may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the Regulatory Compliance and Administrative Officer may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the United States, or to minimize danger to persons.

B. Suspension due to the Detection of Illegal Discharge

Any person discharging to the MS4 in violation of this Ordinance may have their MS4 access terminated if such termination would abate or reduce an illegal discharge. The Regulatory Compliance and Administrative Officer shall notify a violator of the proposed termination of its MS4 access. The violator may petition the Director of Operations for a reconsideration and hearing. Any hearing shall be conducted in accordance with the provisions of the Uniform Administrative Procedure Act, C.G.S. Sections 4-166 through 4189g.

A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this Section, without the prior written approval of the Regulatory Compliance and Administrative Officer.

Sec. 102-9. Industrial or Construction Activity Discharges.

Any person subject to an industrial or construction activity NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the Regulatory Compliance and Administrative Officer prior to the allowing of discharges to the MS4.

Sec. 102-10. Monitoring of Discharges.

A. Applicability.

This Section applies to all Premises that have storm water.

B. Access to Premises.

(a) The Authorized Enforcement Agency shall be permitted to enter and inspect Premises to regulation under this Ordinance as often as may be necessary to determine compliance with this Ordinance. If a discharger has security measures in force which require proper identification and clearance before entry into its Premises, the discharger shall make the necessary arrangements to allow access to representatives of the

(b) All property owners shall allow Authorized Enforcement Agency ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

(c) The Authorized Enforcement Agency shall have the right to set up on any Premises such devices as are necessary in the opinion of the Authorized Enforcement Agency to conduct monitoring and/or sampling of the Premises's storm water discharge.

(d) The Authorized Enforcement Agency has the right to require the discharger to install monitoring equipment as necessary. The Premises' sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.

(e) Any temporary or permanent obstruction to safe and easy access to the Premises to be inspected and/or sampled shall be promptly removed by the Owner at the written or oral request of the Authorized Enforcement Agency and shall not be replaced. The costs of clearing such access shall be borne by the Owner.

(f) Unreasonable delays in allowing the Authorized Enforcement Agency access to a Premises is a violation of this Ordinance. A person who is the Owner of such Premises commits an offense if the person denies the Authorized Enforcement Agency reasonable access to the Premises for the purpose of conducting any activity authorized or required by this Ordinance.

(g) If an Authorized Enforcement Agent has been refused access to any part of the Premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this Ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this Ordinance or any Order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the Authorized Enforcement Agency may seek issuance of a search warrant from any court of competent jurisdiction.

Sec. 102-11. NOTIFICATION OF SPILLS.

Notwithstanding other requirements of law, as soon as any person who is the Owner of or who is responsible for a Premises has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or water of the United States, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the Regulatory Compliance and Administrative Officer in person or by telephone or facsimile no later than the next business day. Notifications in person or by telephone shall be confirmed by written notice addressed and mailed to the Regulatory Compliance and Administrative Officer within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the Owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

Sec. 102-12. Enforcement.

A. Notice of Violation.

Whenever an Authorized Enforcement Agent finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, he or she may order compliance by written notice of violation to the responsible person or persons. Such notice may require without limitation:

(1) The performance of monitoring, analyses, and reporting;

(2) The elimination of illicit connections or discharges;

(3) That violating discharges, practices, or operations shall cease and desist;

(4) The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; and

(5) Payment of a fine to cover administrative and remediation costs; and

(6) The implementation of source control or treatment BMPs.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

B. Fines. The fines shall not exceed the maximum permitted under state law, and the amount shall be determined in accordance with this Subsection B.

Fine Schedule: The fine for violations involving more than one activity shall be equal to the sum of the fines for each applicable activity class.

Activity Class	Fine
First violation	$ 250.00
Second violation	$ 500.00
Third violation	$ 750.00

Any fine collected by the City of Stamford pursuant to this article shall be deposited into the City of Stamford's general fund account.

C. Issuance of Citations

1. An Authorized Enforcement Agent, with prior advice and consent of the Director of Operations, may issue a citation to any person who commits a violation or a continuing violation of this Ordinance. Any such citation may be issued either by hand delivery or by certified or by certified mail to the person named in such citation. In such instances, each citation shall apply jointly and severally to the Owner of the property in question and his/her agents, contractors and subcontractors. An original or certified copy of the initial citation issued by the issuing official shall be filed and retained by the City of Stamford and shall be deemed to be business record within the scope of Section 52-180 of the Connecticut General Statues and evidence of the facts contained therein. In addition, a copy of the initial citation shall be reported to The Connecticut Department of Energy & Environmental Protection, pursuant to Section 22a-31-14 of the Connecticut General Statues.

2. The citation shall inform such person:

(a) Of the allegations against him or her for which the citation is issued pursuant to this Section and the amount of the fines, penalties and costs, as fees due;

(b) That the person has a period of 30 days from the date of the citation (i.e., the date of hand delivery or the date the citation was mailed) to make an uncontested payment of the fines;

(c) That payments shall be submitted to the Regulatory Compliance and Administrative Officer by check or money order made payable to The City of Stamford.

(d) The citation notice shall also inform the person cited that he/she may contest his liability before a citation Hearing Officer by delivering in person or by mail written notice within ten (10) days of the date thereof. The notice shall also inform the person cited that if he/she does not demand such a hearing, an assessment and judgment shall be entered against him/her and that such judgment may issue without further notice.

3. Each violation shall be a separate and distinct offense. In the case of the continuing violation, at the discretion of the Regulatory Compliance and Administrative Officer and with the prior consent of the Director of Operations, daily citations may be issued commencing two calendar days from receipt of the notice of violation.

D. Admission of liability by payment of fine.

If any person who is sent notice pursuant to this Section wishes to admit to liability for any alleged violation, he/she may, without requesting a hearing, pay the full amount of the fines, penalties, costs or fees admitted to in person or by mail to the City of Stamford. Checks or money orders should be made payable to the City of Stamford and mailed to Cashiering & Permitting, City of Stamford, P.O. Box 10152, Stamford, CT 06904-2152.

E. Any person may demand a hearing on any Notice of Violation and/or any fine by delivering a written request for the same to the Regulatory Compliance and Administrative Officer within ten (10) calendar days of the date of the first notice provided for in this section. Any person who does not deliver such written request shall be deemed to have admitted liability, and the Regulatory Compliance and Administrative Officer shall certify such person's failure to respond to the Hearing Officer. The Hearing Officer shall thereupon enter and assess the fines, penalties, costs or fees provided for by this Section and shall follow the procedures set forth in the Uniform Administrative Procedure Act, C.G.S. Sections 4-166 through 4189g.

F. Any person who requests a hearing shall be given written notice by certified mail of the date, time and place for the hearing. Such hearing shall be held not less than fifteen (15) calendar days or more than thirty (30) days from the date of the mailing of notice, provided that the Hearing Officer shall grant upon good cause shown a postponement or continuance for any reasonable request by any interested party. Once a hearing has been requested, no additional citations shall be issued.

G. The presences of the issuing official shall be required at the hearing if such person so requests. A person wishing to contest his/her liability shall appear at the hearing and may present evidence in his/her behalf.

H. If the person who demanded a hearing fails to appear, the Hearing Officer may enter an assessment by default against him/her upon finding of proper notice and liability under this Section.

I. A designated municipal official, other than the Hearing Officer, may present evidence on behalf of the municipality.

J. The Hearing Officer may accept from the designated municipal official, copies of police reports, investigatory and citation reports and other official documents by mail and may determine thereby that the appearance of the municipal official not necessary.

K. The Hearing Officer shall conduct the hearing in the order and form and with such methods of proof as he/she deems fair and appropriate. The rules regarding the admissibility of evidence shall not be strictly applied, but all testimony shall be given under oath or affirmation.

L. The Hearing Officer shall announce his/her decision at the end of the hearing.

(1) If the Hearing Officer determines that the person is not liable, he/she shall dismiss the matter and enter his/her determination, in writing, accordingly.

(2) If the Hearing Officer determines that a violation has occurred and that the person is liable for the violation, he/she shall then enter a determination that a violation has been committed and, as applicable, assess the fines, penalties, costs or fees against such person as provided by this Section, in writing, with a copy to the violator.

Sec. 102-13: Failure to Pay Fine

If such assessment is not paid on the date of entry, the Hearing Officer shall send first class mail a notice of the assessment to the person found liable and shall file, not less than thirty (30) calendar days nor more than twelve (12) months after such mailing, a certified copy of the notice of assessment with the Clerk of the Superior Court for the Small Claims Session in Stamford, together the required entry fee . The certified copy of the notice of assessment against the same person may be accrued and filed as one record assessment. Within such twelve-month period, assessments against the same person may be accrued and filed on record of assessment. The Clerk of the Court shall enter a judgment, in the amount of the assessment plus court costs against such person in favor of the City of Stamford. Notwithstanding any other provisions of the Connecticut General Statutes, the Hearing Officer 's assessment, when so entered as a judgment, shall have the effect of a civil money judgment, and a levy of execution on such judgment may be issued without further notice to such person.

Sec. 102-14: Appeals.

A person against whom a determination of violation and/or an assessment has been entered is entitled to judicial review by way of appeal. An appeal shall be instituted within 30 days of the mailed of notice of violation and/or notice of assessment by filing a petition to reopen a determination of a violation and/or an assessment, together with the required entry fee pursuant to Section 52-259 of the Connecticut General Statues, in the Superior Court, which shall entitle such person to a hearing in accordance with the rules of the Superior Court.

Sec. 102-15. Measures After Appeal.

If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or in the event of a decision of a Hearing Officer or of court in the case of an appeal, within five (5) calendar days of the decision upholding the action of the Regulatory Compliance and Administrative Officer, then representatives of the Authorized Enforcement Agency shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, Owner, agent or person in possession of any Premises to refuse to allow the Authorized Enforcement Agency or designated contractor to enter upon the Premises for the purposes set forth above.

Sec. 102-16. Cost of Abatement of the Violation.

Within five (5) calendar days after abatement of the violation, the owner of the property shall be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within five (5) calendar days. If the amount due is not paid within a timely manner as determined by the decision of the Regulatory Compliance and Administrative Officer or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

Any person violating any of the provisions of this Section shall become liable to the City by reason of such violation. The liability shall be paid in not more than twelve (12) equal installments . Interest at the rate of set by the Superior Court for interest on judgments shall be assessed on the balance beginning on the first day following discovery of the violation.

Sec. 102-17. Injunctive Relief.

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Ordinance. If a person has violated or continues to violate the provisions of this ordinance, the Regulatory Compliance and Administrative Officer may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

Sec. 102-18. Compensatory Action.

In lieu of enforcement proceedings, penalties, and remedies authorized by this Ordinance, the Regulatory Compliance and Administrative Officer may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, and creek cleanup.

Sec. 102-19. Violations Deemed a Public Nuisance.

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this Ordinance which is a threat to public health, safety, and welfare, and which is declared and deemed a nuisance, may be summarily abated or restored at the violator's expense, and/or a civil action may be brought to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

Sec. 102-22. Remedies Not Exclusive.

The remedies listed in this Ordinance are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the Regulatory Compliance and Administrative Officer to seek cumulative remedies.

FUSS & O'NEILL

Appendix E

Spill Procedures and Reports

Stamford Fire & Rescue Department

Standard Operating Guideline

Hazardous Materials Dispatch Guidlines

SOG ID: COM-HMGuide

Date Updated: 13 October 2011

Scope: This guideline applies to all uniformed and investigatory personnel of the Stamford Fire & Rescue Department.

Purpose: The purpose of this guideline is to provide for an orderly system of dispatching operating personnel to releases or potential releases of Hazardous Materials, and to provide for the proper notification of appropriate support agencies.

Definitions (for the purposes of this guideline)

HAZARDOUS MATERIAL

A substance that when released from it's container is capable of creating harm to people, the environment, and property.

HAZARDOUS MATERIALS FIRST RESPONDER - OPERATIONAL

Personnel who respond to releases or potential releases of Hazardous Materials as part of the initial response to the incident for the purpose of protecting nearby persons, the environment, or property from the effects of the release. Operational level personnel are expected to respond in a defensive fashion to control the release from a safe distance and keep it from spreading. However, they may take offensive action when handling certain ***Incidental spills*** while recognizing their level of training, the nature of the hazard, limitations of personal protective equipment, and availability of specialized control equipment. Such incidental spills include gasoline/diesel spills from fuel tanks or motor vehicles, leaks of flammable gases from 20 lb. propane cylinders, or flammable gas leaks such as natural gas within a structure. All SFRD line personnel are trained to a minimum of Operational Level.

HAZARDOUS MATERIALS TECHNICIAN

Personnel who respond to releases or potential releases of Hazardous Materials for the purposes of controlling the release. Technician level personnel may take offensive action to control the release within the limitations of their individual training, available chemical protective clothing, and specialized control equipment. SFRD is the authority having jurisdiction certifying Hazardous Materials Technicians for its Hazardous Materials Response Team. The SFRD maintains personnel

at the Technician Level through appropriate training.

HAZARDOUS MATERIALS RESPONSE TEAM

An organized group of trained response personnel operating under an emergency response plan and appropriate standard operating guidelines who handle and control actual or potential leaks or spills of hazardous materials requiring possible close approach to the material. The team members respond to releases or potential releases of hazardous materials for the purpose of control or stabilization of the incident. The SFRD Hazardous Materials Response Team consists of Technician Level personnel primarily assigned to Truck 2, Engine 2 and Rescue 1, with support from Operational Level (or Technician Level) personnel from all other companies.

Guidleline

Whenever fire dispatch receives a request for SFRD assistance at a release or potential release of a hazardous material, the following guideline will be followed:

The dispatcher and/or Fire Supervisor will attempt to obtain as much information as possible about the product involved and the extent of release or potential release. This information is to be relayed to responding units upon initial dispatch and updated as warranted.

The SFRD initial response to the incident will be determined by the reported nature and extent of the release.

Incidental Haz-Mat Releases - able to be handled by a single Engine Company at the first responder-operational level. Examples: Automobile with leaking fluids; investigation of spill/slick on a waterway; fuel oil spill; Carbon Monoxide detector alarm without report of illness.

Incidental Haz-Mat Releases requiring combustible gas metering - ability to be handled by responding companies at the operational level with accessibility to combustible gas meters. Examples: Natural gas leak; leaking propane tank.

Significant Haz-Mat Releases - potential for the incident to be beyond the control of a single Company at the operational level. The need for Technician level training is most likely needed. Examples: Chemical spill at a manufacturing facility; Chemical leak from a tanker truck; etc.

Based upon the information received at fire dispatch (or in consultation with the on-duty Haz-Mat Officer) the following units will be initially dispatched:

Incidental Haz-Mat Release

- First due engine company

Incidental Haz-Mat release requiring combustible gas metering

- First due Engine and Truck company and Rescue 1
- If Rescue 1 is unavailable, dispatch Truck 2 for metering in addition to the first due engine/truck
- If Rescue 1 and Truck 2 are unavailable, dispatch Engine 2 for metering in addition to the first due engine/truck

Significant Haz-Mat Releases

- First due engine company and the Haz-Mat Team (Rescue 1; Truck 2; Engine 2)

The Incident Commander (IC) can upgrade or downgrade the response as necessary.

The SFRD Hazardous Materials Officer page group should be notified of any Haz-Mat Team responses. The on duty Hazardous Materials Officer shall be notified. The Hazardous Materials Officer(s) will respond to such incidents at their discretion or at the request of the IC.

The IC can request a response from the Fairfield County Hazardous Materials Response Team depending upon the size and scope of the incident. This Unit can be mobilized for a specific piece of equipment or a "Full Team Fan-Out". Indications to mobilize a "Full Team Fan-Out" would be a limited number of SFRD Technician Level Personnel on-scene to make a hot zone entry or response as a back-up to our level A entry. A staging area for a "Full Team Fan-Out" should be designated by the IC. The FCHMRT will operate under the SFRD Incident Command System. To mobilize this unit, refer to the FCHMRT Fan-Out Procedure Binder.

Natural or propane gas leaks inside a structure should be given an assignment of 2 Engine Companies, 1 Truck Company, 1 Rescue Company, & 1 Incident Commander.

Request for SFRD Haz-Mat Team response beyond the City borders shall be authorized by the on-duty Deputy Chief pursuant to mutual-aid agreements.

It is recommended that the Communications Supervisor contact the on-duty Haz-Mat Officer by landline or radio for assistance in determining the appropriate resources/response prior to or immediately after dispatch.

Stamford Fire & Rescue Department

Standard Operating Guideline

Operations At A Hazardous Materials Incident

SOG ID: HZM-Ops

Date Updated: 16 December 2011

Scope: This guideline applies to all uniformed and investigatory personnel of the Stamford Fire & Rescue Department.

Purpose: To provide for the safety of operating personnel and to provide for an orderly system of mitigating an incident involving hazardous materials.

Definitions

For the purposes of this guideline, the United States Department of Transportation definition of hazardous materials will be adopted as follows:

"A hazardous material is one that poses a risk to the health and safety of operating or emergency personnel, the public, and/or the environment if it is not properly controlled during handling, storage, manufacture, processing, packaging, use, disposal, or transportation. "

As you can see, many routine engine calls are actually hazardous materials incidents. A leaking gas tank from a vehicle, an oil spill on the highway, etc. are all hazardous materials incidents.

General Procedures

The following course of action will be followed at all hazardous material incident scenes:

1. Determine the presence of hazardous materials. Many times this is accomplished prior to arrival through the Communications Center.
2. Set up a command post. This could be as simple as using the responding Engine or Rescue or as elaborate as an enclosed building or tent for prolonged operations.
3. Identify the product involved. This is not always easy to do. Many times the product such as oil or gasoline will be obvious, but at times identification will test your detective abilities. Use placards, shipping papers, witness information, and shipper and manufacturer information to determine the identity of the product. This is a crucial step because all other actions are dependent upon the identity of the product.
4. Conduct a hazard and risk assessment. Basically, what this means is to determine the possible and probable outcomes of the incident with and without intervention. The resulting hazard

assessment will determine the size of evacuation perimeters, scene zones, levels of chemical protective clothing required, and whether offensive or defensive operations are appropriate.
5. Determine operational alternatives. Determine two or three different methods of handling the incident e.g. offensive vs. defensive, burn off vs. extinguishment, vapor control vs. evaporation, etc.
6. Choose best course of action. From the different alternatives, choose the one that provides for the greatest safety of the public and can be readily accomplished.
7. Constantly evaluate your decision. Determine if the course of action chosen is accomplishing the objectives. If it is not meeting those objectives, consider an alternative.

Scene Command And Control

Because of the complexity of some operations, the Incident Command System(ICS) will be used at HazMat incidents. Remember that the ICS can be as simple or as complex as the incident dictates. At HazMat incidents there should always be a Hazard Sector Officer. The Hazard Sector Officer should usually be a hazardous materials technician from the Stamford Fire and Rescue Department assigned to Rescue 1, Engine 2, or Truck 2.

The Incident Commander (IC) must do the following:

- Establish a command post as previously stated. Identify the Hazard Sector Officer. Assign a timekeeper to be at the command post to keep track of times of notifications, breathing apparatus, etc. The timekeeper may also be the Safety Officer.
- Request other agencies as needed. This may include the Stamford Health Dept. if public health is involved, Police, EMS, etc. **The State of Connecticut Dept. of Environmental Protection (DEP) MUST be notified of all incidents**. They don't have to respond but they must be notified of any release to the environment by law.
- Request call back of additional manpower, as needed. Remember that operations in chemical protective clothing can cause heat exhaustion and early relief and fluid replacement is a necessity.
- Establish control zones based on information received from the Hazard Sector Officer. Physically delineate the different zones with barrier tape or by other means.
- Insure that a decontamination corridor is established prior to any entry into a hot zone. Decontamination procedures may be simple-or complex based on the product involved.
- Provide for EMS standby at the scene of any serious HazMat incident. Any contaminated victims-will be decontaminated prior to treatment by EMS personnel.
- Determine with the Hazard Sector Officer the level of the incident and relay this information to dispatch. Incident levels are as follows:

Level I

Level I incidents are minor incidents which can be handled with the resources on the scene. There is no evacuation needed and Stamford Fire Department resources can handle the incident using normal fire fighting protective clothing. Decontamination is usually very minimal and there is no immediate life threat. DEP, Coast Guard, Health Dept., may be involved on a limited basis. Examples: fuel leak from passenger vehicle, small oil spill in river, small propane tank leak, odor investigations, leaks from drums of less than 55 gallons, etc.

Level II

Level II incidents are those which are more involved than a Level I incident and which an Engine Company can not handle on it's own. Level II incidents require outside-agency assistance for product containment, control and clean up. Any incident which requires Level A or B chemical protective clothing, metering, unknown product determination, evacuation other than the immediate area, IDLH atmospheres, etc. is considered a Level II incident.

Level III

Level III incident are those that are beyond the capabilities of the HazMat response team and local agencies to handle. Level III incidents require the implementation of the City disaster plan, large evacuations, State and Federal intervention, etc. Examples include-large BLEVES, evacuation beyond the City boundaries, migrating poisonous gas vapors, large numbers of deaths, etc. A Level III incident is usually declared a disaster by the Mayor and the Governor may also be involved. Level III incidents are usually handled in a defensive manner and may require the expertise of federal or manufacturer response teams.

Protective Clothing Guidelines

Level A:

Completely encapsulated, gas tight and acid resistant clothing with internal self contained breathing apparatus. Usually used for poisonous gases or corrosives. The level of protection required should be chosen using an assortment of reference materials and manufacturers literature.

Level B:

Encapsulated chemical protective clothing with all openings secured or taped. Self contained breathing apparatus must be worn but not encapsulated within the clothing. Level B is usually used for irritant liquid or solid products which are not corrosive. Cheap disposable protective clothing can be worn over turnout clothing to protect the turnout clothing as well as the firefighters

Level C:

Level C protection uses filtering type breathing apparatus and so therefore will not be addressed here.

Level - D:

Normal fire fighting protective clothing without breathing apparatus. This would be used where there is no inhalation hazard.

Decontamination Procedures

A decontamination line must be set up prior to any site entry. Decontamination can be simple or involved depending on the product and extent of involvement. The Hazard Sector Officer will determine the extent of Decontamination.

Decontamination takes place between the hot and warm zone using hoses, buckets, soap, brushes, etc. the runoff water must be collected for disposal. Any contaminated clothing or tools must be collected and secured for cleaning or disposal.

Medical Surveillance Procedures

A Medical Sector will be established in the cold zone as soon as possible. Staffing will be by Stamford EMS agencies and possible hospital personnel based on the extent of involvement. The Medical Sector will treat all injuries or exposures of responders or victims after they have been decontaminated. The Medical Sector should also monitor and record the vital signs of all hot zone response personnel. Any personnel operating in Level A or B clothing will have vital signs recorded prior to entry and immediately after Decontamination. The Medical Sector will also supply fluid replacement.

Termination Procedures

Each incident requires certain termination procedures as follows:

1. Debriefing - all responders will be informed as to the hazards of' the product and any acute or chronic health symptoms that may occur. All should be informed as to what symptoms may show up in the next few days. Anyone exposed, should be handed a safety data sheet on the product involved.
2. Critique - A critique should be conducted within 48 hours of the incident to determine lessons learned. This is a valuable training experience, since large incidents don't happen often.
3. Reporting - All necessary reports must be completed and copies filed where required. Each HazMat incident should have a fire incident report and a hazardous materials officer report filed. If there were any exposures, an exposure report must be filed with the incident report and a copy forwarded to the HazMat officer to be filed in the employees medical file. A complete listing of equipment used, overtime required, etc. must be included on the incident report so that cost of operations may be recovered.

Dispatch Procedures

The dispatcher will attempt to receive as much information as possible about the product involved and relay this information to the responding units.

Initial response to an incident will depend on the reported size and type of incident. Refer to SOG COM-AlarmRespAssign.

The arriving officer will then determine what other resources are needed. A Signal 19 will be declared for all HazMat incidents no matter how minor they may be. The Director of Emergency Management and the Hazardous Materials Officer will be notified on all incidents and will respond at their discretion. No other notifications (DEP- Coast Guard, etc.) will be made until requested by

the IC. As each incident is different, the IC will determine which agencies are needed at the scene.

The Incident Commander will advise dispatch as soon as possible as to the level of the incident, i.e. Level I, II, III, etc. Whenever an incident is declared a Level II or higher, dispatch will, per Incident Commander, dispatch the Turn of River Fire Department Rescue and HazMat trailer to the scene.

INVENTORY HAZ MAT 1

UPDATED10/08/2006

LOCATION	qty.	equipment type	description	FIRST TUESDAY DATE	SECND TUESDAY DATE	THIRD TUESDAY DATE	FOURTH TUESDAY DATE
COMPARTMENT 1							
Top Shelf #!							
	6	Blue Flashing Lanterns					
	2	Chemical Sampling Kits	Paint Cans with Supplies				
	1	Biological Sampling Kit	Plastic Bucket with Supplies				
Middle Shelf #2							
	1	Plastic Caddy					
	2	UEI CO Meters					
	1	3M Heat Gun					
	1	Calibration Kit	Blue/Spare Cylinders				
	1	Triage Tags	Red box				
	1	Large	Disposable Gloves				
	1	XL	Disposable Gloves				
	1	XXL	Disposable Gloves				
Bottom Shelf #3							
	1	Dreager Kit					
	1	Dreager Kit	Chip Kit				
	1	Dreager Kit	CDS Kit				
	1	CDV 777 Kit Complete	700,717,750				
	1	CDV 777 Kit	715 only				
	1	Speaker for 700					
	1	Digital Camara in case					
	1	Radiation meter	Ludlum 14C w/ probes				
	2	Combustible Gas Indicators	TIF 8800				
	1	Mecury Spill Kit					
	1	M256 Kit w/ M8 paper					
	1	Ultrasonic Leak detector	TIF 6600				
	1	Ceramic Heater					
	1	20/20 Gene Kit					
		Bio Assay Tickets	Anthrax				
		Bio Assay Tickets	Ricin				
Floor #4							
	1	Bio sampling Bag	Orange (Assorted supplies)				
	1	Infra Red Spectometer	IRSense Kit w. Laptop				
	1	Portable Power Pack					
	1	Extension Cord w/ Strip					
	1	Refrigerator----					
		Iodine Solution, Acetone, Assorted Batteries					
		Chlorinol Kit, 20/20 Gene Kits,					

LOCATION	qty.	equipment type	description	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE
Stand up compartment							
	2	Folding tables					
	6	Folding Chairs					
	1	4' Ladder	Wood Folding				
Compartment #2							
	4 Bins	Level "A" Suits	Flash Protection &Oover Boots				
	16	5 Gallon containers of AR/FFFP Foam					
Bin #1	Hazard/Risk Assessment						
	1	Clip Board					
	2	Calculators					
Bin #2	Safety Officer						
	1	Clipboard					
	1	Binoculars					
	1	Air Horn/Cylinders					
Bin #3	Weather						
	1	Weather Radio					
		Tape					
Bin #4	Command						
	1	Clip Board					
	1	Green Revolving light					
	1	Air Horn/Cylinders					
Bin #5	Site Contol						
	1	Clipboard					
		Barrier Tape					
Bin #6	Resource						
	1	Clip Board					
Bin #7	Decontamination						
	1	Clip Board					
Bin #8	Medical						
	1	Clip Board					

LOCATION	qty.	equipment type	description	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE
Comp #2 Con't							
	1 Bin	9 Cool Vests	NO Cold Packs				
	1 Bin	Modesty Garments					
8 Drawer Cabinet							
Drawer #1							
	2pr	Goggles					
	2	Scott Envoy interface connectors					
		Garden Hose coupling pieces					
		Bag of Plastic Straw/droppers					
Drawer #2							
	1	Auomile Jumper Cables					
	2	Bonding Straps					
	2	Grounding Straps					
		M8 Paper					
		M9 Paper					
		Phenolphthalein Paper					
		Neutral Litmus Paper					
		Infectious Waste Tape					
		Chem Tape					
		Spilfyter					
Drawer #3							
	4 boxes	Disposable Gloves	Assorted sizes				
		Plastic Bags					
		Wire Ties					
		Chem Tape					
Drawer #4							
	3	Folding Shovels					
	1	Foam Wrench	70mm				
	1	Bung Wrench					
	1	Hydrant Wrench					
	4	Spanner Wrenches					
	1	1.5 inch X garden hose adapter					
Drawer #5							
	3	Coils of Rope					
Drawer #6							
		Barrier Tape					
Drawer #7	Reference Books						
	1	Public Health ERG (Blue)					
	1	Janes Chem-Bio Handbook					
	1	Emergency Response to Terrorism JobAid (Yellow)					
	1	2008 Emergency Response Guide Book					
	1	2003 NIOSH Guide					
	1	LSU WMD Response Guide Book					
	2	Permeation Binders (Black and White)					

LOCATION	qty.	equipment type	description	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE
		CD-ROMs - TG238, FEMA Haz Guide, LSU Guide Book					
Drawer #8	Personal Effects						
		Key for Drawer					
		Ziplock Bags					
		Permanent Markers					
Top Shelf							
	2	Walkers					
Middle Shelf							
	1 Bin	5 Rolls of Chem Tape					
	1 Bin	Neoprene Gloves	Various Sizes				
	1 Bin	Silver Shield Gloves and Vinyl Exam Gloves					
	1 Bin	Butyl Gloves					
	1 Bin	Nitrile Gloves (Truama Gloves)					
Bottom Shelf							
	4	SCBA 1 Hour Packs	43,44,45,46				
		Radio Carry Case					
		PASS Alarm	Lifeguard II				
		Scott Envoy Earpiece and Amplifyer					
	1 Box	4 Spare Regulators w/1 Spare Radio Harness					
Stand up Compartment							
	3	Stools					
	8	SCBA 1 Hour Bottles					
Compartment #4							
Top Shelf #1							
	3	Tarps	2 Green and 1 Blue				
Middle Shelf #2	Level B						
	1 Bin	6 Large TK Suits, 1 Roll Chem Tape, 6 pr Boots, 1 Box Gloves					
	1 Bin	6 XL TK Suits, 1 Roll Chem Tape, 6 pr Boots, 1 Box Gloves					
	1 Bin	6 XXL TK Suits, 1 Roll Chem Tape, 6 pr Boots, 1 Box Gloves					
	1 Bin	3 XXXL TK Suits, 1 Roll Chem Tape, 6 pr Boots, 1 Box Gloves					
Middle Shelf #3	Level C						
	1 Bin	12 Large SL Suits, 1 Roll Chem Tape, 6 pr Boots, 1 Box Gloves					
	1 Bin	12 XL SL Suits, 1 Roll Chem Tape, 6 pr Boots, 1 Box Gloves					
	1 Bin	12 XXL SL Suits, 1 Roll Chem Tape, 6 pr Boots, 1 Box Gloves					
	1 Bin	6 XXXL SL Suits, 1 Roll Chem Tape, 6 pr Boots, 1 Box Gloves					
Middle Shelf #3							
	1 Bin	Green Beta Boots	8 pr				
	1 Bin	Orange Tingley Boots	8 pr				
	1 Bin	4 XL CPF4 Suits, ! Roll Chem Tape					
	1 Bin	2 XL, 2XXL, CPF3 Suits, 1 Roll Chem Tape					

LOCATION	qty.	equipment type	description	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE
Compartment #5							
Top Shelf #1							
		Plastic Hoses					
	2	Bundles Absorbent Pads					
		Assortments of "Pigs"					
Middle Shelf #2							
	6	Spill Sorbent					
	1	5" Boom					
	2	Bundles of Absorbent Pads					
	1	Roll Polypropylene Cord					
Middle Shelf #3							
	2 Bins	Absorbent Pillows					
	2	5 Gallon Pails/1 Lid					
	2	6" Booms					
Middle Shelf #4							
	16	Dri-Sorb					
Compartment #6							
Top Shelf #1							
	4	Bundles of Absorbent Pads					
Middle Shelf #2							
	1	Large Vetter Air Bag System Case + 4 Patches					
	1	Small Vetter Air Bag System(Yellow Box)					
	4	Orange Cones					
Middle Shelf #3							
	1	Flat Head Axe					
	1	Haligan Bar					
	1	Sparkless Maul					
	1	Regular Maul					
	1	Crow Bar					
	1	3' Unger Grab Bar					
	2	24" Quick Grip Clamps					
	1	55 Gallon Drum Hoist					
	1	Drum Handling Tool					
	2	Large Drum Bands Patches					
	1	Acid Nuetralizer					
	1	Dense Soda Ash					

LOCATION	qty.	equipment type	description		TUESDAY DATE	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE
Middle Shelf #3	Con't							
Sparkless Tool Box								
		Claw Hammer						
		14" Pipe Wrench						
		Adjustable Wrench						
		Bunch Wrench						
	2	Regular Screwdrivers						
	2	Phillips Screwdrivers						
		Wire Brush						
		Channel Lock Pliers						
		Pipe Patch Kit						
	11	Patches						
	3	Box Wrenches						
	1	Ratchet						
	2	Sockets						
	1	Extension						
		Spare Bolts for Patches						
		Roll Duct Tape						
Tool Box								
	1	Hacksaw						
	6	Putty Knives						
	1	10" Adjustable Wrench						
	1	10" Pipe Wrench						
	1	Wire Brush						
	1	Ball Pien Hammer						
	1	Mallet						
	1	5 Piece Standard Wrench Set						
	1	6 Piece Metric Wrench Set						
	2	10" Vise Grips						
	1	Tubing Crimper						
		Tie Wraps						
	4	Regular Screwdrivers						
	4	Phillips Screwdrivers						
	2	Combination Screwdrivers						
	1	Electricians Pliers						
	1	Channel Lock Pliers						
	1	Utility Knife and Spare Blades						
		Emery Cloth						

LOCATION	qty.	equipment type	description	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE
Compartment #6 Con't							
Stand Up Compartment		SEALED					
	1Bin	Leak/Plug Supplies					
Leak Kit Lid		Assorted Washers					
		Toggle Bolts					
		Sheet Metal Screws					
		Assorted Stoppers/Caps					
		Type II Propane Adapter					
Leak Kit Bottom		Emery Cloth					
	2	Rolls of Duct Tape					
		Large Hose Clamps					
		Container of Plumbers Putty					
		Lead Wool					
	2	8" C-Clamps					
	2	4" C-Clamps					
Leak Kit Tray 2	2	1/8" Metal Plugs					
	2	1/8" Metal Caps					
	1	1/4" Metal Plugs					
	2	1/4" Metal Caps					
	1	3/8" Metal Plugs					
	2	3/8" Metal Caps					
	1	1/2" Metal Plugs					
	2	1/2" Metal Caps					
	1	3/4" Metal Plugs					
	2	3/4" Metal Caps					
	1	1" Metal Plugs					
	2	1" Metal Caps					
	1	1 1/4" Metal Plugs					
	2	1 1/4" Metal Caps					
	1	1 1/2" Metal Plugs					
	2	1 1/2" Metal Caps					
	1	2" Metal Plugs					
		3/8" Brass Ball Valve					
		1/2" Brass Ball Valve					
		3/4" Brass Ball Valve					
		1/2" PVC Ball Valve					
		3/4" PVC Ball Valve					
		1" PVC Ball Valve					
		1 1/2" PVC Ball Valve					
		1/2" PVC Plug					
		2 1/2" PVC Cap					
		1 3/4" PVC Plug					
		2 3/4" PVC Cap					
	2	1" PVC Caps					

LOCATION	qty.	equipment type	description		TUESDAY DATE	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE
Compartment #6 Con't		**SEALED**						
Leak Kit Tray 2 Con't	2	1 1/4" PVC Plug						
	2	1 1/2 PVC Plug						
		2" PVC Plug						
		3" PVC Plug						
	2	Garden Hose Caps						
	1	Tire Patch Kit						
	3	Boiler Plug						
	1	1" Boat Plug						
	3	Bailer Plugs						
Leak Kit Tray 1		Assorted Tie Wraps						
		Assorted Wood Shims						
		Wax Coated Golf Tees						
		Teflon Tape						
	1	Tube of Apoxy						
	1	Tube Silicone Gasket Maker						
		Radial Tire Patch Kit						
		3/4" Test Plug						
		1" Test Plug						
		1 1/4" Test Plug						
		1 1/2" Test Plug						
		2" Test Plug						
		3" Test Plug						
		4" Test Plug						
	1	Ball Plug						
	1	Water Key						
	1	Regular Screwdriver						
	1	Philips Screwdriver						
		3/16" Nut Driver						
		1/4" Nut Driver						
		5/16" Nut Driver						
	1	Aviation Snips						
	1	Flat-billed Vise Grips						
	1	Large Foreceps						
	1	Utility Knife						
	2	Small Clamps						
	1	Bag Pipettes						
	2pr	Safety Glasses						

LOCATION	qty.	equipment type	description		TUESDAY DATE	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE
Compartment #7								
Top Shelf #1	2	Lengths Garden Hose						
		10" Right Angle 1 1/2" Rockwood Adapter						
Middle Shelf #2								
	6	Plastic Racks						
	1Bin	Misc. Brushes/adaptors						
	1 Bin	Soap, Sodium Bicarb, Acclaim, Green Soap, Detergent						
		Dawn, Bleach, Hand Soap						
	3	5 Gallon Buckets						
	1	Pail/Lid w/ 5 - 4lb Packets of Trisodium Phosphate (TSP)						
Middle Shelf #3								
Decon Bin #1								
		Tarp						
		Fold-A-Tank or Inflatable Pool						
	1	Wand						
	1	Garden Hose Wye						
	1	Garden Hose Nozzle						
	1	Garden Hose						
	2	Brushes						
Decon Bin #2								
		Tarp						
		Fold-A-Tank or Inflatable Pool						
	1	Wand						
	1	Garden Hose Wye						
	1	Garden Hose Nozzle						
	1	Garden Hose						
	2	Brushes						
Decon Bin #2								
		Tarp						
		Fold-A-Tank or Inflatable Pool						
	1	Wand						
	1	Garden Hose Wye						
	1	Garden Hose Nozzle						
	1	Garden Hose						
	2	Brushes						
Bottom Shelf #4								
	12	5 Gallon Pails FFFP Foam						
	1	Chlorine "A" Kit						
	1	Chlorine "B" Kit						

LOCATION	qty.	equipment type	description		TUESDAY DATE	TUESDAY DATE	TUESDAY DATE	TUESDAY DATE
Compartment #7 Cont'								
Ofiero Foam Bucket	1	Mater Stream Foam Through						
	1	Metal Spike and Cover						
	1	500 GPM Foam Nozzle and Eductor						
	1	1 1/2" Rockwood SG Fog Nozzle						
	1	1 1/2" RockwoodFoam Applicator						
	1	2 1/2" X 1/2" Gated Wye						
	1	Hydrant to Garden Hose Adapter						
	1	6 Outlet Manifold (1 1/2" X Garden Hose)						
	1	Diaphram Hand Pump						
	1	Short Garden Hose UnThreaded						
	1	Short Garden Hose Threaded						
Compartment #8								
Top Shelf #1	2	Rolls Plastic Sheeting						
	1	Bin Hazmat Garbage Bags						
	1	Box of 7 Broom Heads						
Middle Shelf #2	3	Paint Can/Lids (2 Large-1 Small)						
	3	Sprayers (2 large, 1 small)						
	1	Utility Rope						
	2	Kernmantle Ropes						
	1	Little Giant Pump						
	1	Can Regular Garbage Bags						
		Fiber over packs						
Middle Shelf #3	1	95 Gallon Platic Overpack Drum w/Lid						
	1	30 Gallon Platic Overpack Drum w/Lid						
	1	20 Gallon Cardboard OverPack Drumw/Lid						
	2	5 Gallon Plastic Pails						
	2	20# Sodium Bicarbonate Extinguishers						
	1	2 1/2 Gallon PW Extinguisher						
Middle Shelf #4	1	Drum Hand Truck						
	1	Hand Truck						
	1	Piston Hand Pump						
	2	SKED Stretchers						
		10 Gallon Cardboard Drum w/Lid						
		20 Gallon Cardboard Drum w/Lid						
	4	Plastic Shovels						
	1	Metal Shovels						
	1	Plastic Drum Pump						
	4	Broom Handles						
	3	Brooms						
	1	Grounding						
	1	Plastic Sampler Scoop	2 Piece					

Stamford Fire Rescue

Hazmat List by Incident

Alarm Date Between {07/28/2012} And {07/28/2014} and Release Amt >= 5 and Release Unit = "12"

Chemical Name	Container	Qty Released	Released Into
12-0006097 07/31/2012 09:57:36			
411 Gasoline or other flammable liquid spill			
JEFFERSON ST // MAGEE AVE			
Mobile Property Involved: 21 General use truck, dump truck, fire apparatus			
Diesel Fuel UN#:1993	Vehicle fuel tank and associated piping	5 Gallons	Ground
12-0007355 09/09/2012 21:01:30			
413 Oil or other combustible liquid spill			
18 WILSON ST			
Fuel Oil UN#:1993	Tank or silo	100 Gallons	Confined, no environmental impact
12-0009334 11/06/2012 08:51:30			
422 Chemical spill or leak			
125 WEST TRL			
Mineral Oil CAS#:8042-47-5	Fixed container, Other	25 Gallons	Ground
13-0002934 04/16/2013 22:20:31			
324 Motor Vehicle Accident with no injuries			
87 I95 TNPK S			
Deisel Fuel UN#:1993		80 Gallons	Water and ground
Diesel		70 Gallons	
13-0003198 04/25/2013 12:10:26			
422 Chemical spill or leak			
21 HARBOR DR /Czescik Marina			
food dye		25 Gallons	Water
13-0004068 05/26/2013 17:29:13			
413 Oil or other combustible liquid spill			
43 Harbor View DR			
Diesel	Vehicle fuel tank and associated	90 Gallons	Water

Chemical Name	Container	Qty Released	Released Into
	piping		

13-0004697 06/17/2013 08:32:56
411 Gasoline or other flammable liquid spill
2666 Summer ST

Gasoline UN#:1203		10 Gallons	Air, water, and ground

13-0008088 10/10/2013 15:26:13
411 Gasoline or other flammable liquid spill
112 Southfield AVE
Mobile Property Involved: 23 Trailer - semi, designed for freight

Diesel fuel UN#:1202	Vehicle fuel tank and associated piping	50 Gallons	Ground

13-0008138 10/12/2013 10:43:24
413 Oil or other combustible liquid spill
Pumping Station RD

Diesel fuel UN#:1202	Cylinder	15 Gallons	Ground

14-0003602 05/10/2014 16:54:16
421 Chemical hazard (no spill or leak)
25 Forest ST

Odorant/Irritant		8 Gallons	

FUSS & O'NEILL

Appendix F

Lists of Toxic and Hazardous Substances

Table II - Organic Toxic Substances in Each of Four Fractions in Analysis by Gas Chromatography/Mass Spectroscopy (GS/MS)

Volatiles

1 acrolein
2 acrylonitrile
3benzene
5 bromoform
6 carbon tetrachloride
7 chlorobenzene
8 chlorodibromomethane
9 chloroethane
10 2-chloroethylvinyl ether
11 chloroform
12 dichlorobromomethane
14 1,1-dichloroethane
15 1,2-dichloroethane
16 1,1-dichloroethylene
17 1,2-dichloropropane
18 1,2-dichloropropylene
19 ethylbenzene
20 methylbromide
21 methylchloride
22 methylene chloride
23 1,1,2,2-tetrachloroethane
24 tetrachloroethylene
25 toluene
26 1,2-trans-dichloroethylene
27 1,1,1-trichloroethane
28 1,1,2-trichloroethane
29 trichloroethylene 31 vinyl chloride

Acid Compounds

1 2-chlorophenol
2 2,4-dichlorophenol
3 2,4-dimethylphenol
4 4,6-dinitro-o-cresol
5 2,4-dinitrophenol
6 2-nitrophenol
7 4-nitrophenol

8 p-chloro-m-cresol
9 pentachlorophenol
10 phenol
11 2,4,6-trichlorophenol

Table II - Organic Toxic Substances in Each of Four Fractions in Analysis by Gas Chromatography/Mass Spectroscopy (GS/MS) -

Base/Neutral

1 acenaphthene
2 acenaphthylene
3 anthracene
4 benzidine
5 benzo(a)anthracene
6 benzo(a)pyrene
7 3,4-benzofluoranthene
8 benzo(ghi)perylene
9 benzo(k)fluoranthene
10 bis(2-chloroethoxy)methane
11 bis(2-chloroethyl)ether
12 bis(2-chloroisopropyl)ether
13 bis(2-ethylhexyl)phthalate
14 4-bromophenylphenyl ether
15 butylbenzyl phthalate
16 2-chloronaphthalene
17 4-chlorophenyl phenyl ether
18 chrysene
19 dibenzo(a,H)anthracene
20 1,2-dichlorobenzene
21 1,3-dichlorobenzene
22 1,4-dichlorobenzene
23 3,3-dichlorobenzidine
24 diethyl phthalate
25 dimethyl phthalate
26 di-n-butyl phthalate
27 2,4-dinitrotoluene
28 2,6-dinitrotoluene
29 di-n-octyl phthalate
30 1,2-diphenylhydrazine (as azobenzene)
31 fluroranthene
32 fluorene

33 hexachlorobenzene
34 hexachlorobutadiene
35 hexachlorocyclopentadiene
36 hexachloroethane
37 indeno(1,2,3-cd)pyrene
38 isophorone
39 napthalene
40 nitrobenzene
41 N-nitrosodimethylamine
42 N-nitrosodi-n-propylamine
43 N-nitrosodiphenylamine
44 phenanthrene
45 pyrene
46 1,24-trichlorobenzene

Table II - Organic Toxic Substances in Each of Four Fractions in Analysis by Gas Chromatography/Mass Spectroscopy (GS/MS) -

Pesticides
1 aldrin
2 alpha-BHC
3 beta-BHC
4 gamma-BHC
5 delta-BHC
6 chlordane
7 4,4-DDT
8 4,4-DDE
9 4,4-DDD
10 dieldrin
11 alpha-endosulfan
12 beta-endosulfan
13 endosulfan sulfate
14 endrin
15 endrin aldehyde
16 heptachlor
17 heptachlor epoxide
18 PCB-1242
19 PCB-1254
20 PCB-1221
21 PCB-1232
22 PCB-1248
23 1260

24 PCB-1016
25 toxaphene

Table III - Other Toxic Substances: Metals, Cyanide, and Total Phenols

1 Antimony, Total
2 Arsenic, Total
3 Beryllium, Total
4 Cadmium, Total
5 Chromium, Total
6 Chromium, Hexavalent
7 Copper, Total
8 Lead, Total
9 Mercury, Total
10 Nickel, Total
11 Selenium, Total
12 Silver, Total
13 Thallium, Total
14 Zinc, Total
15 Cyanide, Total
16 Cyanide, Amenable
17 Phenols, Total
Titanium, Total

Table V - Other Toxic Substances and Hazardous Substances

Toxic Substances

1 Asbestos

Hazardous Substances

1 Acetaldehyde
2 Allyl alcohol
3 Allyl chloride
4 Amyl acetate
5 Aniline
6 Benzonitrile
7 Benzyl chloride
8 Benzyl chloride
9 Butyl acetate
10 Butylamine

11 Captan
12 Carbaryl
13 Carbofuran
14 Carbon disulfide
15 Chlorpyrifos
16 Coumaphos
17 Cresol
18 Crotonaldehyde
19 Cyclohexane
20 2,4-Dichlorophenoxy (acetic acid)
21 Diazinon
22 Dicamba
23 Dichlobenil
24 Dichlone
25 2,2-Dichloropropionic acid
26 Dichlorvos
27 Diethyl amine
28 Dimethyl amine
29 Dintrobenzene
30 Diquat
31 Disulfoton
32 Diuron
33 Epichlorohydrin
34 Ethanolamine
35 Ethion
36 Ethylene diamine
37 Ethylene dibromide
38 Formaldehyde
39 Furfural
40 Guthion
41 Isoprene
42 Isopropanolamine
43 Kelthane
44 Kepone
45 Malathion
46 Mercaptodimethur
47 Methoxychlor
48 Methyl mercaptan
49 Methyl methacrylate
50 Methyl parathion
51 Mevinphos
52 Mexacarbate

TABLE V - Other Toxic Substances and Hazardous Substances - Continued

53 Monoethyl amine
54 Monomethyl amine
55 Naled
56 Napthenic acid
57 Nitrotoluene
58 Parathion
59 Phenolsulfanate
60 Phosgene
61 Propargite
62 Propylene oxide
63 Pyrethrins
64 Quinoline
65 Resorcinol
66 Strontium
67 Strychnine
68 Styrene
69 2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)
70 TDE (Tetrachlorodiphenylethane)
71 2,4,5-TP
72 Trichlorofan
73 Triethylamine
74 Trimethylamine
75 Uranium
76 Vanadium
77 Vinyl acetate
78 Xylene
79 Xylenol
80 Zirconium

Appendix D

Other Toxic Substances

1 Acenaphthene
2 Acrolein
3 Acrylonitrile
4 Aldrin/Dieldrin
5 Antimony and compounds*

6 Arsenic and compounds
7 Asbestos
8 Benzene
9 Benzidine
10 Beryllium and compounds
11 Cadmium and compounds
12 Carbon tetrachloride
13 Chlordane (technical mixture and metabolites)
14 Chlorinated benzenes (other than dichlorobenzenes)
15 Chlorinated ethanes (including 1,2-dichloroethane, 1,1,1-trichloroethane, and hexachloroethane)
16 Chloroalkyl ethers (chloromethyl, chloroethyl, and mixed ethers)
17 Chlorinated naphthalene
18 Chlorinated phenols (other than those listed elsewhere; includes trichlorophenols and chlorinated cresols)
19 Chloroform
20 2-chlorophenol
21 Chromium and compounds
22 Copper and compounds
23 Cyanides
24 DDT and metabolites
25 Dichlorobenzenes (1,2-1,3-, and 1,4-dichlorobenzenes)
26 Dichlorobenzidine
27 Dichloroethylenes (1,1-and 1,2-dichloroethylene)
28 2,4-dichlorophenol
29 Dichloropropane and dichloropropene
30 2,4-dimethylphenol
31 Dinitrotoluene
32 Diphenylhydrazine
33 Endosulfan and metabolites
34 Endrin and metabolites
35 Ethylbenzene
36 Fluoranthen
37 Haloethers (other than those listed elsewhere; includes chlorophenylphenyl ethers, bromophenylphenyl ether, bis(dischloroisopropyl) ether, bis-(chloroethoxy) methane and polychlorinated diphenyl ethers)
38 Halomethanes (other than those listed elsewhere; includes methylene chloride, methylchloride, methylbromide, bromoform, dichlorobromomethane, trichlorofluoromethane, dichlorodifluoromethane)
39 Heptachlor and metabolites
40 Hexachlorobutadiene
41 Hexachlorocyclohexane (all isomers)

42 Hexachlorocyclopentadiene
43 Isophorone
44 Lead and compounds
45 Mercury and compounds
46 Naphthalene
47 Nickel and compounds
48 Nitrobenzene
49 Nitrophenols (Including 2,4-dinitrophenol, dinitrocresol)
50 Nitrosamines
51 Pentachlorophenol
52 Phenol
53 Phthalate esters
54 Polychlorinated biphenyls (PCBs)
55 Polynuclear aromatic hydrocarbons (including benzanthracenes, benzopyrenes, benzofluoranthene, chrysenes, dibenzanthracenes, and indenopyrenes)
56 Selenium and compounds
57 Silver and compounds
58 2,3,7,8 - Tetrachlorodibenzo-p-dioxin (TCDD)
59 Tetrachloroethylene
60 Thallium and compounds
61 Toluene
62 Toxaphene
63 Trichloroethylene
64 Vinyl chloride
65 Zinc and compounds

*The term "compounds" shall include organic and inorganic compounds.

interstate travelers for recreational or other purposes; and

(ii) Intrastate lakes, rivers, streams, and wetlands from which fish or shellfish are or could be taken and sold in interstate commerce; and

(iii) Intrastate lakes, rivers, streams, and wetlands which are utilized for industrial purposes by industries in interstate commerce.

Navigable waters do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Offshore facility means any facility of any kind located in, on, or under, any of the navigable waters of the United States, and any facility of any kind which is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel;

Onshore facility means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under, any land within the United States other than submerged land;

Otherwise subject to the jurisdiction of the United States means subject to the jurisdiction of the United States by virtue of United States citizenship, United States vessel documentation or numbering, or as provided for by international agreement to which the United States is a party.

A discharge *in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976)*, means: (1) A discharge into any waters beyond the contiguous zone from any vessel or onshore or offshore facility, which vessel or facility is subject to or is engaged in activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, and (2) any discharge into any waters beyond the contiguous zone which contain, cover, or support any natural resource belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976).

Public vessel means a vessel owned or bareboat-chartered and operated by the United States, or a State or political subdivision thereof, or by a foreign nation, except when such vessel is engaged in commerce.

Territorial seas means the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of 3 miles.

Vessel means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water other than a public vessel;

[43 FR 10474, Mar. 13, 1978; 43 FR 27533, June 26, 1978, as amended at 44 FR 10266, Feb. 16, 1979; 58 FR 45039, Aug. 25, 1993]

§ 116.4 Designation of hazardous substances.

The elements and compounds appearing in Tables 116.4 A and B are designated as hazardous substances in accordance with section 311(b)(2)(A) of the Act. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing these substances. Synonyms and Chemical Abstract System (CAS) numbers have been added for convenience of the user only. In case of any disparity the common names shall be considered the designated substance.

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES

Common name	CAS No.	Synonyms	Isomers	CAS No.
Acetaldehyde	75070	Ethanal, ethyl aldehyde, acetic aldehyde.		
Acetic acid	64197	Glacial acetic acid, vinegar acid.		
Acetic anhydride	108247	Acetic oxide, acetyl oxide.		
Acetone cyanohydrin	75865	2-methyllactonitrile, alpha-hydroxyisobutyronitrile.		

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No.	Synonyms	Isomers	CAS No.
Acetyl bromide	506967			
Acetyl chloride	79367			
Acrolein	107028	2-propenal, acrylic aldehyde, acrylaldehyde, acraldehyde.		
Acrylonitrile	107131	Cyanoethylene, Fumigrain, Ventox, propeneitrile, vinyl cyanide.		
Adipic acid	124049	Hexanedioic acid.		
Aldrin	309002	Octalene, HHDN.		
Allyl alcohol	107186	2-propen-1-ol, 1-propenol-3, vinyl carbinol.		
Allyl chloride	107051	3-chloropropene, 3-chloropropylene, Chlorallylene.		
Aluminum sulfate	10043013	Alum.		
Ammonia	7664417			
Ammonium acetate	631618	Acetic acid ammonium, salt.		
Ammonium benzoate	1863634			
Ammonium bicarbonate	1066337	Acid ammonium carbonate, ammonium hydrogen carbonate.		
Ammonium bichromate	7789095			
Ammonium bifluoride	1341497	Acid ammonium fluoride, ammonium hydrogen fluoride.		
Ammonium bisulfite	10192300			
Ammonium carbamate	1111780	Ammonium aminoformate.		
Ammonium carbonate	506876			
Ammonium chloride	12125029	Ammonium muriate, sal ammoniac, salmiac, Amchlor.		
Ammonium chromate	7788989			
Ammonium citrate dibasic	3012655	Diammonium citrate, citric acid diammonium salt.		
Ammonium fluoborate	13826830	Ammonium fluoroborate, ammonium borofluoride.		
Ammonium fluoride	12125018	Neutral ammonium fluoride.		
Ammonium hydroxide	1336216			
Ammonium oxalate	6009707			
	5972736			
	14258492			
Ammonium silicofluoride	16919190	Ammonium fluosilicate.		
Ammonium sulfamate	7773060	Ammate, AMS, ammonium amidosulfate.		
Ammonium sulfide	12135761			
Ammonium sulfite	10196040			
	10192300			
Ammonium tartrate	3164292	Tartaric acid ammonium salt.		
	14307438			
Ammonium thiocyanate	1762954	Ammonium rhodanide, ammonium sulfocyanate, ammonium sulfocyanide.		
Amly acetate	628637	Amylacetic ester	iso-	123922
		Pear oil	sec-	626380
		Banana oil	tert-	625161
Aniline	62533	Aniline oil, phenylamine, aminobenzene, aminophen, kyanol.		
Antimony pentachloride	7647189			
Antimony potassium tartrate	28300745	Tartar emetic, tartrated antimony, tartarized antimony, potassium antimonyltartrate.		
Antimony tribromide	7789619			
Antimony trichloride	10025919	Butter of antimony.		
Antimony trifluoride	7783564	Antimony fluoride.		
Antimony trioxide	1309644	Diantimony trioxide, flowers of antimony.		
Arsenic disulfide	1303328	Red arsenic sulfide.		
Arsenic pentoxide	1303282	Arsenic acid anhydride, arsenic oxide.		
Arsenic trichloride	7784341	Arsenic chloride, arsenious chloride, arsenous chloride, butter of arsenic.		
Arsenic trioxide	1327533	Arsenious acid, arsenious oxide, white arsenic.		
Arsenic trisulfide	1303339	Arsenious sulfide, yellow arsenic sulfide.		
Barium cyanide	542621			
Benzene	71432	Cyclohexatriene, benzol.		
Benzoic acid	65850	Benzenecarboxylic acid, phenylformic acid, dracylic acid.		
Benzonitrile	100470	Phenyl cyanide, cyanobenzene.		
Benzoyl chloride	98884	Benzenecarbonyl chloride.		
Benzyl chloride	100447			
Beryllium chloride	7787475			
Beryllium fluoride	7787497			
Beryllium nitrate	7787555			

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No.	Synonyms	Isomers	CAS No.
	13597994			
Butyl acetate	123864	Acetic acid butyl ester	iso-	110190
			sec-	105464
			tert-	540885
Butylamine	109739	1-aminobutane	iso-	78819
			sec-	513495
			sec-	13952846
			tert-	75649
n/butyl phthalate	84742	1.2-benzenedicarboxylic acid, dibutyl ester, dibutyl phthalate.		
Butyric acid	107926	Butanoic acid, ethylacetic acid	iso-	79312
Cadmium acetate	543908			
Cadmium bromide	7789426			
Cadmium chloride	10108642			
Calcium arsenate	7778441	Tricalcium orthoarsenate.		
Calcium arsenite	52740166			
Calcium carbide	75207	Carbide, acetylenogen.		
Calcium chromate	13765190	Calcium chrome yellow, geblin, yellow ultramarine.		
Calcium cyanide	592018			
Calcium dodecylbenzenesulfonate	26264062			
Calcium hypochlorite	7778543			
Captan	133062	Orthocide-406, SR–406, Vancide-89.		
Carbaryl	63252	Sevin.		
Carbofuran	1563662	Furadan.		
Carbon disulfide	75150	Carbon bisulfide, dithiocarbonic anhydride.		
Carbon tetrachloride	56235	Tetrachloromethane Perchloromethane.		
Chlordane	57749	Toxichlor, chlordan.		
Chlorine	75003			
Chlorobenzene	108907	Monochlorobenzene, benzene chloride.		
Chloroform	67663	Trichloromethane.		
Chlorpyrifos	2921882	Dursban.		
Chlorosulfonic acid	7790945	Sulfuric chlorohydrin.		
Chromic acetate	1066304			
Chromic acid	11115745	Chromic anhydride, chromium trioxide.		
Chromic sulfate	10101538			
Chromous chloride	10049055			
Cobaltous bromide	7789437	Cobalt bromide.		
Coabaltous formate	544183	Cobalt formate.		
Cobaltous sulfamate	14017415	Cobalt sulfamate.		
Coumaphos	56724	Co-Ral.		
Cresol	1319773	Cresylic acid	m-	108394
		Hydroxytoluene	o-	95487
			p-	106445
Crotonaldehyde	4170303	2-butenal propylene aldelhyde.		
Cupric acetate	142712	Copper acetate, crystalized verdigris.		
Cupric acetoarsenite	12002038	Copper acetoarsenite, copper acetate arsenite, Paris green.		
Cupric chloride	7447394	Copper chloride.		
Cupric nitrate	3251238	Copper nitrate.		
Cupric oxalate	5893663	Copper oxalate.		
Cupric sulfate	7758987	Copper sulfate.		
Cupric sulfate, ammoniated	10380297	Ammoniated copper sulfate.		
Cupric tartrate	815827	Copper tartrate.		
Cyanogen chloride	506774			
Cyclohexane	110827	Hexahydrobenzene, hexamethylene, hexanaphthene.		
2,4-D acid	94757	2,4-dichlorophenoxyacetic acid.		
2,4-D ester	94111	2,4-dichlorophenoxyacetic acid ester.		
	94791			
	94804			
	1320189			
	1928387			
	1928616			
	1929733			
	2971382			
	25168267			
	53467111			
DDT	50293	p,p′-DDT.		
Diazinon	333415	Dipofene, Diazitol, Basudin, Spectracide.		
Dicamba	1918009	2-methoxy-3,6-dichlorobenzoic acid.		
Dichlobenil	1194656	2,6-dichlorobenzonitrile, 2,6-DBN.		

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No.	Synonyms	Isomers	CAS No.
Dichlone	117806	Phygon, dichloronaphthoquinone.		
Dichlorobenzene	25321226	Di-chloricide	Ortho	95501
		Paramoth (Para)	Para	106467
Dichloropropane	26638197	Propylene dichloride	1,1	78999
			1,2	78875
			1,3	142289
Dichloropropene	26952238		1,3	542756
			2,3	78886
Dichloropropene-dichloropropane (mixture).	8003198	D-D mixture Vidden D.		
2,2-Dichloropropionic acid	75990	Dalapon.		
Dichlorvos	62737	2,2-dichlorovinyl dimethyl phosphate, Vapona.		
Dicofol	115322	Di(p-chlorophenyl)-trichloromethylcarbinol, DTMC, dicofol.		
Dieldrin	60571	Alvit.		
Diethylamine	109897			
Dimethylamine	124403			
Dinitrobenzene (mixed)	25154545	Dinitrobenzol	m-	99650
			o-	528290
			p-	100254
Dinitrophenol	51285	Aldifen	(2,5-) (2,4-).	329715
			(2,6-)	573568
Dinitrotoluene	25321146	DNT	2,4	121142
			2,6	606202
			3,4	610399
Diquat	85007	Aquacide.		
	2764729	Dextrone, Reglone, Diquat dibromide.		
Disulfoton	298044	Di-syston.		
Diuron	330541	DCMU, DMU.		
Dodecylbenzenesulfonic acid	27176870			
Endosulfan	115297	Thiodan.		
Endrin	72208	Mendrin, Compound 269.		
Epichlorohydrin	106898	-chloropropylene oxide.		
Ethion	563122	Nialate, ethyl methylene, phosphorodithioate.		
Ethylbenzene	100414	Phenylethane.		
Ethylenediamine	107153	1,2-diaminoethane.		
Ethylenediamine-tetraacetic acid (EDTA).	60004	Edetic acid, Havidote, (ethylenedinitrilo)-tetraacetic acid.		
Ethylene dibromide	106934	1,2-dibromoethane acetylene dibromide sym-dibromoethylene.		
Ethylene dichloride	107062	1,2-dichloroethane sym-bichloroethane.		
Ferric ammonium citrate	1185575	Ammonium ferric citrate.		
Ferric ammonium oxalate	2944674	Ammonium ferric oxalate.		
	55488874			
Ferric chloride	7705080	Flores martis, iron trichloride.		
Ferric fluoride	7783508			
Ferric nitrate	10421484	Iron nitrate.		
Ferric sulfate	10028225	Ferric persulfate, ferric sesquisulfate, ferric tersulfate.		
Ferrous ammonium sulfate	10045893	Mohr's salt, iron ammonium sulfate.		
Ferrous chloride	7758943	Iron chloride, iron dichloride, iron protochloride.		
Ferrous sulfate	7720787	Green vitriol.		
	7782630	Iron vitriol, iron sulfate, iron protosulfate.		
Formaldehyde	50000	Methyl aldehyde, methanal, formalin.		
Formic acid	64186	Methanoic acid.		
Fumaric acid	110178	Trans-butenedioic acid, trans-1,2-ethylenedicarboxylic acid, boletic acid, allomaleic acid.		
Furfural	98011	2-furaldehyde, pyromucic aldehyde.		
Guthion	86500	Gusathion, azinphos-methyl.		
Heptachlor	76448	Velsicol-104, Drinox, Heptagran.		
Hexachlorocyclopentadiene	77474	Perchlorocyclopentadiene.		
Hydrochloric acid	7647010	Hydrogen chloride, muriatic acid.		
Hydrofluoric acid	7664393	Fluohydric acid.		
Hydrogen cyanide	74908	Hydrocyanic acid.		
Hydrogen sulfide	7783064	Hydrosulfuric acid sulfur hydride.		
Isoprene	78795	2-methyl-1,3-butadiene.		
Isopropanolamine dodecylbenzenesulfonate.	42504461			
Kepone	143500	Chlordecone 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-1,3,4-metheno-2H-cyclobuta(cd)pentalen-2-one.		

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No.	Synonyms	Isomers	CAS No.
Lead acetate	301042	Sugar of lead.		
Lead arsenate	7784409			
	7645252			
	10102484			
Lead chloride	7758954			
Lead fluoborate	13814965	Lead fluoroborate.		
Lead fluoride	7783462	Lead difluoride, plumbous fluoride.		
Lead iodide	10101630			
Lead nitrate	10099748			
Lead stearate	7428480	Stearic acid lead salt.		
	1072351			
	52652592			
Lead sulfate	7446142			
Lead sulfide	1314870	Galena.		
Lead thiocyanate	592870	Lead sulfocyanate.		
Lindane	58899	Gamma-BHC, gamma-benzene hexachloride.		
Lithium chromate	14307358			
Malathion	121755	Phospothion.		
Maleic acid	110167	Cis-butenedioic acid, cis-1,2-ethylenedicarboxylic acid, toxilic acid.		
Maleic anhydride	108316	2,5-furandione, cis-butenedioic anhydride, toxilic anhydride.		
Mercaptodimethur	203657	Mesurol.		
Mercuric cyanide	592041	Mercury cyanide.		
Mercuric nitrate	10045940	Mercury nitrate, mercury pernitrate.		
Mercuric sulfate	7783359	Mercury sulfate, mercury persulfate.		
Mercuric thiocyanate	592858	Mercury thiocyanate, mercuric sulfocyanate, mercuric sulfocyanide.		
Mercurous nitrate	7782867			
	10415755	Mercury protonitrate.		
Methoxychlor	72435	DMDT, methoxy-DDT.		
Methyl mercaptan	74931	Methanethiol, mercaptomethane, methyl sulfhydrate, thiomethyl alcohol.		
Methyl methacrylate	80626	Methacrylic acid methyl ester, methyl-2-methyl-2-propenoate.		
Methyl parathion	298000	Nitrox-80.		
Mevinphos	7786347	Phosdrin.		
Mexacarbate	315184	Zectran.		
Monoethylamine	75047	Ethylamine, aminoethane.		
Monomethylamine	74895	Methylamine, aminomethane.		
Naled	300765	Dibrom.		
Naphthalene	91203	White tar, tar camphor, naphthalin.		
Naphthenic acid	1338245	Cyclohexanecarboxylic acid, hexahydrobenzoic acid.		
Nickel ammonium sulfate	15699180	Ammonium nickel sulfate.		
Nickel chloride	37211055	Nickelous chloride.		
	7718549			
Nickel hydroxide	12054487	Nickelous hydroxide.		
Nickel nitrate	14216752			
Nickel sulfate	7786814	Nickelous sulfate.		
Nitric acid	7697372	Aqua fortis.		
Nitrobenzene	98953	Nitrobenzol, oil of mirbane.		
Nitrogen dioxide	10102440	Nitrogen tetraoxide.		
Nitrophenol (mixed)	25154556	Mononitrophenol	m-	554847
			o-	88755
			p-	100027
Nitrotoluene	1321126		Ortho	88722
			Meta	99081
			Para	99990
Paraformaldehyde	30525894	Paraform, Formagene, Triformol, polymerized formaldehyde, polyoxymethylene.		
Parathion	56382	DNTP, Niran.		
Pentachlorophenol	87865	PCP, Penta.		
Phenol	108952	Carbolic acid, phenyl hydroxide, hydroxybenzene, oxybenzene.		
Phosgene	75445	Diphosgene, carbonyl chloride, chloroformyl chloride.		
Phosphoric acid	7664382	Orthophosphoric acid.		
Phosphorus	7723140	Black phosphorus, red phosphorus, white phosphorus, yellow phosphorus.		
Phosphorus oxychloride	10025873	Phosphoryl chloride, phosphorus chloride.		
Phosphorus pentasulfide	1314803	Phosphoric sulfide, thiophosphoric anhydride, phosphorus persulfide.		

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No.	Synonyms	Isomers	CAS No.
Phosphorus trichloride	7719122	Phosphorous chloride.		
Polychorinated biphenyls	1336363	PCB, Aroclor, polychlorinated diphenyls.		
Potassium arsenate	7784410			
Potassium arsenite	10124502	Potassium metaarsenite.		
Potassium bichromate	7778509	Potassium dichromate.		
Potassium chromate	7789006			
Potassium cyanide	151508			
Potassium hydroxide	1310583	Potassium hydrate, caustic potash, potassa.		
Potassium permanganate	7722647	Chameleon mineral.		
Propargite	2312358	Omite.		
Propionic acid	79094	Propanoic acid, methylacetic acid, ethylformic acid.		
Propionic anhydride	123626	Propanoic anhydride, methylacetic anhydride.		
Propylene oxide	75569	Propene oxide.		
Pyrethrins	121299	Pyrethrin I.		
	121211	Pyrethrin II.		
Quinoline	91225	1-benzazine, benzo(b)pyridine, leuocoline, chinoleine, leucol.		
Resorcinol	108463	Resorcin, 1,3-benzenediol, meta-dihydroxybenzene.		
Selenium oxide	7446084	Selenium dioxide.		
Silver nitrate	7761888	Nitric acid silver (1+) salt lunar caustic.		
Sodium	7440235	Natrium.		
Sodium arsenate	7631892	Disodium arsenate.		
Sodium arsenite	7784465	Sodium metaarsenite.		
Sodium bichromate	10588019	Sodium dichromate.		
Sodium bifluoride	1333831			
Sodium bisulfite	7631905	Sodium acid sulfite, sodium hydrogen sulfite.		
Sodium chromate	7775113			
Sodium cyanide	143339			
Sodium dodecylbenzene-sulfonate	25155300			
Sodium fluoride	7681494	Villiaumite.		
Sodium hydrosulfide	16721805	Sodium hydrogen sulfide.		
Sodium hydroxide	1310732	Caustic soda, soda lye, sodium hydrate.		
Sodium hypochlorite	7681529	Bleach.		
	10022705			
Sodium methylate	124414	Sodium methoxide.		
Sodium nitrite	7632000			
Sodium phosphate, dibasic	7558794			
	10039324			
	10140655			
Sodium phosphate, tribasic	7785844			
	7601549			
	10101890			
	10361894			
	7758294			
	10124568			
Sodium selenite	10102188			
	7782823			
Strontium chromate	7789062			
Strychnine	57249			
Styrene	100425	Vinylbenzene, phenylethylene, styrol, styrolene, cinnamene, cinnamol.		
Sulfuric acid	7664939	Oil of vitriol, oleum.		
Sulfur monochloride	12771083	Sulfur chloride.		
2,4,5-T acid	93765	2,4,5-trichlorophenoxyacetic acid.		
2,4,5-T amines	6369966	Acetic acid (2,4,5-trichlorophenoxy)-compound with N,N-dimethylmethanamine (1:1).		
	6369977	Acetic acid (2,4,5-trichlorophenoxy)-compound with N-methylmethanamine (1:1).		
	1319728	Acetic acid (2,4,5-trichlorophenoxy)-compound with 1-amino-2-propanol (1:1).		
	3813147	Acetic acid (2,4,5-trichlorophenoxy)-compound with 2,2'2"-nitrilotris [ethanol] (1:1).		
2,4,5-T esters	2545597	2,4,5-trichlorophenoxyacetic esters.		
	93798			
	61792072			
	1928478			
	25168154			
2,4,5–T salts	13560991	Acetic acid (2,4,5–trichlorophenoxy)-sodium salt.		
TDE	72548	DDD.		

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No.	Synonyms	Isomers	CAS No.
2,4,5–TP acid	93721	Propanoic acid 2–(2,4,5–trichlorophenoxy).		
2,4,5–TP esters	32534955	Propanoic acid, 2–(2,4,5–trichlorophenoxy)-, isooctyl ester.		
Tetraethyl lead	78002	Lead tetraethyl, TEL.		
Tetraethyl pyrophosphate	107493	TEPP.		
Thallium sulfate	10031591			
	7446186			
Toluene	108883	Toluol, methylbenzene, phenylmethane, Methacide.		
Toxaphene	8001352	Camphechlor.		
Trichlorfon	52686	Dipterex		
		Dylox.		
Trichlorethylene	79016	Ethylene trichloride.		
Trichlorophenol	25167822	Collunosol, Dowicide 2 or 2S, Omal, Phenachlor.	(2,3,4-)	15950660
			(2,3,5-)	933788
			(2,3,6-)	933755
			(2,4,5-)	95954
			(2,4,6-)	88062
			(3,4,5-)	609198
Triethanolamine dodecylbenzenesulfonate.	27323417			
Triethylamine	121448			
Trimethylamine	75503	TMA.		
Uranyl acetate	541093			
Uranyl nitrate	10102064			
	36478769			
Vanadium pentoxide	1314621	Vanadic anhydride, vanadic acid anhydride.		
Vanadyl sulfate	27774136	Vanadic sulfate, vanadium sulfate.		
Vinyl acetate	108054	Acetic acid ethylene ether.		
Vinylidene chloride	75354	1,1–dichlorethylene.		
		1,1–dichloroethene.		
Xylene (mixed)	1330207	Dimethylbenzene	m-	108383
		Xylol	o-	95476
			p-	106423
Xylenol	1300716	Dimethylphenol, hydroxydimethylbenzene.		
Zinc acetate	557346			
Zinc ammonium chloride	14639975			
	14639986			
	52628258			
Zinc borate	1332076			
Zinc bromide	7699458			
Zinc carbonate	3486359			
Zinc chloride	7646857	Butter of zinc.		
Zinc cyanide	557211			
Zinc fluoride	7783495			
Zinc formate	557415			
Zinc hydrosulfite	7779864			
Zinc nitrate	7779886			
Zinc phenolsulfonate	127822	Zinc sulfocarbolate.		
Zinc phosphide	1314847			
Zinc silicofluoride	16871719	Zinc fluosilicate.		
Zinc sulfate	7733020	White vitriol, zinc vitriol, white copperas.		
Zirconium nitrate	13746899			
Zirconium potassium fluoride	16923958			
Zirconium sulfate	14644612	Disulfatozirconic acid.		
Zirconium tetrachloride	10026116			

TABLE 116.4B—LIST OF HAZARDOUS SUBSTANCES BY CAS NUMBER

CAS No.	Common name
50000	Formaldehyde
50293	DDT
51285	2,4-Dinitrophenol
52686	Trichlorfon
56382	Parathion
56724	Coumaphos
57249	Strychnine
57749	Chlordane
58899	Lindane

TABLE 116.4B—LIST OF HAZARDOUS SUBSTANCES BY CAS NUMBER—Continued

CAS No.	Common name
60004	Ethylenediaminetetraacetic acid (EDTA)
60571	Dieldrin
62533	Aniline
62737	Dichlorvos
63252	Carbaryl
64186	Formic acid
64197	Acetic acid
65850	Benzoic acid

FUSS & O'NEILL

Appendix G

BMPs for Pesticides

PESTICIDE INFORMATION SHEET

PESTICIDE BEST MANAGEMENT PRACTICES (BMP's)

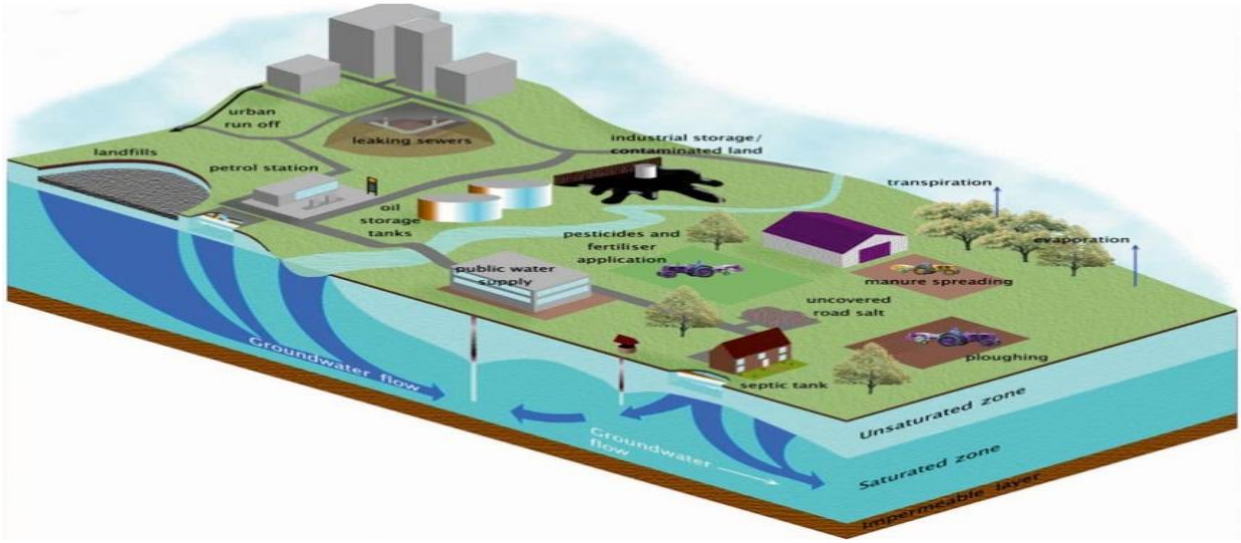
The protection of the nation's surface water and groundwater resources has become one of the primary environmental issues facing pesticide applicators. This is especially true in Connecticut with the on-going efforts to restore the City of Stamford. Connecticut is also comprised of a diverse geological make up that ranges from the sandy soil and shallow water tables of the Eastern Shore to the fractured limestone areas.

Pesticides can reach surface water by running off the application sire following a heavy rainfall and into neighboring streams and rivers or sink holes. Pesticides can also leach through the soil profiled into the groundwater. Contamination resulting from either of these sources is classified as "non-point source" contamination. Water contamination can also be the result of a direct or specific source, such as spill or backsiphoning during filling of pesticide application equipment. This type of contamination is referred to as "point source" contamination.

It is the responsibility of all pesticide applicators to ensure that they are using every means available to prevent pesticides from contaminating Connecticut's surface water and groundwater resources. Pesticide applicators can greatly reduce the risk of either point or non-point source contamination from pesticides by utilizing Best Management Practices (BMP's). BMP's are effective, common sense practices that emphasize proper mixing, loading and application of pesticides and also include methods that should be used before, during and after application.

When these recommended Best Management Practices are followed the potential to cause and adverse effect on the environment will greatly be reduced.

Identify The Vulnerability Of The Area



- **Know The Application Site** – Scout the area to evaluate the extent of the pest problem in order to select the appropriate control method. Identify environmentally sensitive areas and learn how the soil types and the layout of each application site affect the movement of water, both through and across soil.

- **Read And Follow Label Direction**s – Pesticide labels contain important information about applicator and environmental safety, including water quality protection. Always follow label directions.

- **Match Application Rate To The Pest Problem** – Every pesticide label specifies application rates. Carefully consider all aspects of the pest problem such as the pest or pests, level of infestation, location, and environmental consideration (i.e., soil type, organic matter).

- **Do Not Mix and Load Near Water** – Pesticides can reach groundwater and surface water as a result of discharges or spills that occur during mixing and loading operations. Mixing and loading should be done as far as possible (at least 50 feet) from wells, lakes, streams, rivers and storm drains. When possible, mix and load the pesticides at the sire of application. Applicators should also consider the use of liquid-tight mixing and loading pad. Be sure all containers being transported are secured.

- **Prevent Backsiphoning** – When filling any pesticide spray tank from a well or other water source, be sure the end of the hose stays above the \spray solution in the tank. Backsiphoning can occur when the end of the fill hose or pipe falls below the level of the solution in the tank and there is a drop in water pressure. Use an approved anti-backsiphoning devise or an air break in the water system.

- **Calibrate Application Equipment Properly** – Frequently check and maintain spray nozzles, hoses, gauges and tanks. Proper calibration is the key to applying accurate rates of pesticides. Improper calibration can result in too much or too little product applies, irregular distribution and poor pest control. Inaccurate tank volumes and pressure gauges or worn nozzles also may cause improper application. Inspect application equipment before every use.

- **Delay pesticide Application If Heavy Rain Is Forecast** – Pesticides are most susceptible to runoff from heavy rains during the first several hours after application.

- **Avoid Overspray And Drift** – Check the pesticide label for application precautions or restrictions during windy conditions. Wind speed, temperature and humidity all affect pesticide spray drift. Drift can be reduced by lowering boom heights and using nozzles that produce large droplet sizes.

- **Store Pesticides In A Safe Place** – Pesticides need to be stored in a secure place and should be stored in their original containers with the labels clearly visible. Pesticides must be stored at least 50 feet from any well unless they are stored in secondary containment.

- **Properly Dispose Of Pesticide Containers** – Information about container disposal is on the pesticide label. Containers should be triple or pressured-rinsed thoroughly after use, punctured and disposed of the in accordance with label directions or offered for recycling as part of the Connecticut Department of Agriculture's program. Sprayers should be cleaned at the application sire whenever possible and at a safe distance from wells, lakes, streams and storm drains. The rinsate should be sprayed on site that is listed on the pesticide label or used as makeup water in the next tank mix. Be sure label rates are not exceeded.

- **Develop An Emergency Response Plan** – Anyone who stores, handles or uses pesticides should have an emergency response plan in case an accident occurs.

For further information on BMP's, contact the Department of Energy and Environmental Protection Bureau of Materials Management and Compliance Assurance, Pesticide Management Program, 79 Elm Street, Hartford, Connecticut 06106-5127. (http://www.ct.gov/deep/cwp/view.asp?a=2710&q=324266&deepNav_GID=1712%20)

Sterling Farms Golf Course
1347 Newfield Ave
Stamford, CT 06905

Total acres of golf course property is 132 acres of which 58.5 is fertilized.
Pesticides are handled, stored, disposed of and applied by licensed pesticide applicators by the DEP. See "Summary Reports for licenses" in accordance to the state and federal laws.
Licensed personnel maintain current licenses by attending training sessions (CEU's).
Mixing, handling, application dosage and timing involved in pesticide use and methods of application is all performed by licensed pesticide applicators who are trained by the DEP.
Integrated Pest Management, (IPM) is implemented to manage pest damage at Sterling Farms Golf Course. IPM incorporates proper identification and monitoring of potential pests, setting thresholds for acceptable pest damage and using cultural practices and resistant varieties of grasses. Pesticides are applied when all other acceptable preventive methods are no longer effective or available. Pesticides when used are chosen to target the specific pest and be the least detrimental to beneficial organisms, people, animals, water and the overall environment.
Sterling Farms Golf Course is already in the process of reducing total nitrogen and phosphorus use and will continue to implement practices that achieve 10% reduction by the expiration date of this permit.

Total nitrogen/1000ft2/year applied to 58.5 acres:

Year 2014: (10.5 – 11lbs)N/1000ft2/YR
Year 2013: (10.5 – 11lbs)N/1000ft2/YR
Year 2012: (11 – 12lbs)N/1000ft2/YR
Year 2011: (11 – 12lbs)N/1000ft2/YR
Year 2010: (11 – 12lbs)N/1000ft2/YR

Program breakdowns:

Greens: 5 acres receive (3.5 – 4lbs)N/1000ft2/YR
Granular fertilizers = approx. (2 – 2.5lbs)N/1000ft2/YR: (17-0-19) (10-20-20) (Milorganite)
Liquids = approx. (1-1.5lbs)N/1000ft2/YR: (N30 Plus 30-0-0) (12-0-0+6Fe) (4-14-2)

Tees: 3.5 acres receive (3 - 3.5lbs)N/1000ft2/YR
Granular fertilizers = approx. 3lbs/1000ft2/YR: (26-0-10 -70% slow release Polyon N)
Liquids = approx. 1/2lbs/1000ft2/YR: (N30 Plus 30-0-0)

Fairways: 25 acres receive (2lbsN/1000ft2/YR)
Granular fertilizers = approx. 1.75lbs/1000ft2/YR: (26-0-10-70% slow release Polyon N)
Liquids = approx. 1/4lb/1000ft2/YR: (N30 Plus 30-0-0)

Roughs: 25 acres receive 1.75lbs/1000ft2/YR
Granular fertilizer: (26-0-10-70% slow release Polyon N)

Commercial Applicator Pesticide Use Summary Report

DEP USE ONLY
Date:

Print *in ink* or type unless otherwise noted. Retain a copy for your records.

This form must be submitted on or before January 31st for pesticide applications made during the preceding calendar year.

Part I: Pesticide Certified Supervisor Information

1. Name and Address of Certified Supervisor:

Name: Tracey Holliday

Home Address: 1347 Newfield Ave

City/Town: Stamford State: CT Zip Code: 06905

Phone: 203-322-5731 ext. Fax: 203-329-8172

Supervisory Certification No. S-1806 Arborist Certification No.

☐ Please check here if your home address has changed since your last submittal.

2. Name and Address of Business

Name: Sterling Farms Golf Course

Mailing Address: 1349 Newfield Ave

City/Town: Stamford State: CT Zip Code: 06905

Business Phone: 203-321-3414 ext. 21 Fax: 203-329-8172

E-mail Address: cappy8@optonline.net

Contact Person: Tracey Holliday Title: Golf Course Superintendent

☐ Please check here if your business address has changed since your last submittal.

Part II: Reporting Period

1. This report covers the period from January 1, to December 31, 2013

2. ☐ Check this box if pesticide usage by the above named supervisor has been reported by another Certified Supervisor and provide that individual's name and certification number.

Name: Supervisory Certification No.

3. ☐ Check this box if *no pesticides were applied* during the above reporting period. If so, you must still complete and submit the remaining parts of this form, with the exception of Part IV.

Name of Certified Supervisor: Tracey Holliday

Certification No.: S-1806 Reporting Year: 2013

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Tracey Holliday - Certified Supervisor	S-1806
Keith Carper	0-27202
Athan Bakis	0-18852
Robert Davis	0-18855
George Payne Jr	G-9727
William Bakis	0-41960

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Cavalier F	100-69	32	☑ gal or ☐ lbs
Tartan	432-1446	17½	☑ gal or ☐ lbs
T.M. 4.5 F	66222-134	20	☑ gal or ☐ lbs
Headway	100-1216	20	☑ gal or ☐ lbs
Insignia SC	7969-290	10	☑ gal or ☐ lbs
AFFirm	68173-3-1001	36	☐ gal or ☑ lbs
Medallion SC	100-1448	14	☑ gal or ☐ lbs
Daconil Action	100-1364	37¼	☑ gal or ☐ lbs
Chlorothalonil 720 SFT	66222-154	80	☑ gal or ☐ lbs
Secure	71512-20-100	17	☑ gal or ☐ lbs
Provaunt	352-716	8¾	☐ gal or ☑ lbs
Banol	432-942	30	☑ gal or ☐ lbs
Lesco Banol	432-942-10404	9	☑ gal or ☐ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Name of Certified Supervisor: Tracey Holliday

Certification No.: S-1806 Reporting Year: 2013

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Tracey Holliday-Certified Supervisor	S-1806
Keith Carper	0-27202
Athan Bakis	0-18852
Robert Davis	0-18855
George Payne Jr.	G-9727
William Bakis	0-41960

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gal's or lbs)	
Chlorothalonil DF	66222-149-73220	80	☐ gal or ☑ lbs
Tebuconazole	66222-117	17	☑ gal or ☐ lbs
Conserve SC	62719-291	1	☑ gal or ☐ lbs
LambdaGC-0	53883-244-66222	1	☑ gal or ☐ lbs
Instrata	100-1231	54	☑ gal or ☐ lbs
Scimitar GC	100-1089	1	☑ gal or ☐ lbs
Acelepryne	352-731	10	☑ gal or ☐ lbs
Dithiopyre 40 WSB	73220-3	92	☐ gal or ☑ lbs
Lontrel	62719-305	.5	☑ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Part 4: Certification of Accuracy

"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 in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Signature of Certified Supervisor	Date
[signature]	12/3/2013

Mail completed Commercial Applicator Pesticide Use Summary Report to:

PESTICIDE MANAGEMENT PROGRAM
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Commercial Applicator Pesticide Use Summary Report

DEP USE ONLY
Date:

Print *in ink* or type unless otherwise noted. Retain a copy for your records.

This form must be submitted on or before January 31st for pesticide applications made during the preceding calendar year.

Part I: Pesticide Certified Supervisor Information

1. Name and Address of Certified Supervisor:

Name: Tracey Holliday

Home Address: 1347 Newfield Ave

City/Town: Stamford State: CT Zip Code: 06905

Phone: 203-322-5731 ext. Fax: 203-329-8172

Supervisory Certification No. S-1806 Arborist Certification No.

☐ Please check here if your home address has changed since your last submittal.

2. Name and Address of Business

Name: Sterling Farms Golf Course

Mailing Address: 1349 Newfield Ave

City/Town: Stamford State: CT Zip Code: 06905

Business Phone: 203-321-3414 ext. 21 Fax: 203-329-8172

E-mail Address: cappy8@optonline.net

Contact Person: Title: Golf Course Superintendent

☐ Please check here if your business address has changed since your last submittal.

Part II: Reporting Period

1. This report covers the period from January 1, to December 31, 2012

2. ☐ Check this box if pesticide usage by the above named supervisor has been reported by another Certified Supervisor and provide that individual's name and certification number.

   Name: Supervisory Certification No.

3. ☐ Check this box if *no pesticides were applied* during the above reporting period. If so, you must still complete and submit the remaining parts of this form, with the exception of Part IV.

Name of Certified Supervisor: Tracey Holliday

Certification No.: S-1806 Reporting Year: 2012

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Tracey Holliday - Certified Supervisor	S-1806
Keith Carper	0-27202
Athan Bakis	0-18852
Robert Davis	0-18855
George Payne Jr	G-9727
William Bakis	0-41960

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)
Instrata	100-1231	70 ☑ gal or ☐ lbs
Aceleprvne	352-731	10 ☑ gal or ☐ lbs
DithioPyr 40 WSB	73220-3	91 ☐ gal or ☑ lbs
Lambda GC-0	53883-244-66222	100 oz ☐ gal or ☐ lbs
Lontrel	62719-305	1 ☑ gal or ☐ lbs
Headway	100-1216	23½ ☑ gal or ☐ lbs
Azaguard	70299-17	75 oz ☐ gal or ☐ lbs
Lesco Band	432-942-10404	50 ☑ gal or ☐ lbs
Chlorothalonil DF	66222-149	480 ☐ gal or ☑ lbs
Conserve SC	62719-291	32 oz ☐ gal or ☐ lbs
Torque	69361-27-1001	6 ☑ gal or ☐ lbs
Docket WS	50534-209-100	55 ☑ gal or ☐ lbs
Tebuconazole 3.6F	66222-117	28 ☑ gal or ☐ lbs

☑ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Name of Certified Supervisor: Tracey Halliday

Certification No.: S-1806 Reporting Year: 2012

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Tracey Holliday - Certified Supervisor	S-1806
Keith Carper	0-27202
Athan Bakis	0-18852
Robert Doris	0-18855
George Payne Jr	G-9727
William Bakis	0-41960

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Chipco Signature	432-890	66	☐ gal or ☑ lbs
Heritage	100-1093	6	☐ gal or ☑ lbs
Medallion	100-769	39	☐ gal or ☑ lbs
Curlan EG	7969-224	66	☐ gal or ☑ lbs
Pentathlon LF	67690-38	60	☑ gal or ☐ lbs
Segway	71512-13-279	4	☑ gal or ☐ lbs
Scimitar	100-1088	50 oz	☐ gal or ☐ lbs
Affirm WDG	68173-3-1001	50	☐ gal or ☑ lbs
ProDevice	228-509	2	☑ gal or ☐ lbs
Interface	432-1505	7½	☑ gal or ☐ lbs
Insignia	7969-184	72	☐ gal or ☑ lbs
Dismiss	279-3295	6 oz	☐ gal or ☐ lbs
Cavalier F	1001-69	30	☑ gal or ☐ lbs

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Name of Certified Supervisor: Tracey Holliday

Certification No.: S-1806 Reporting Year: 2012

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Tracey Holliday - Certified Supervisor	S-1806
Keith Carper	0-27202
Athan Bakis	0-18852
Robert Dorus	0-18855
George Payne Jr	G-9727
William Bakis	0-41960

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Subdue Maxx	100-796	64 oz	☐ gal or ☐ lbs
Chlorothalonil 720 SFT	66222-154	110	☑ gal or ☐ lbs
Spectator	79676-21	44 oz	☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
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			☐ gal or ☐ lbs
			☐ gal or ☐ lbs

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Part V: Certification of Accuracy

"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 in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Signature of Certified Supervisor	Date
	12/3/12

Mail completed Commercial Applicator Pesticide Use Summary Report to:

PESTICIDE MANAGEMENT PROGRAM
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Commercial Applicator Pesticide Use Summary Report

DEP USE ONLY
Date:

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This form must be submitted on or before January 31st for pesticide applications made during the preceding calendar year.

Part I: Pesticide Certified Supervisor Information

1. Name and Address of Certified Supervisor:

Name: Tracey Holliday

Home Address: 1347 Newfield Ave

City/Town: Stamford State: CT Zip Code: 06905

Phone: 203-322-5731 ext. Fax: 203-329-8172

Supervisory Certification No. S-1806 Arborist Certification No.:

☐ Please check here if your home address has changed since your last submittal.

2. Name and Address of Business

Name: Sterling Farms Golf Course

Mailing Address: 1349 Newfield Ave

City/Town: Stamford State: CT Zip Code: 06905

Business Phone: 203-321-3414 ext. 21 Fax: 203-329-8172

E-mail Address: cappy18@optonline.net

Contact Person: Tracey Holliday Title: Golf Course Superintendent

☐ Please check here if your business address has changed since your last submittal.

Part II: Reporting Period

1. This report covers the period from January 1, to December 31, 2011

2. ☐ Check this box if pesticide usage by the above named supervisor has been reported by another Certified Supervisor and provide that individual's name and certification number.

   Name: Supervisory Certification No.

3. ☐ Check this box if *no pesticides were applied* during the above reporting period. If so, you must still complete and submit the remaining parts of this form, with the exception of Part IV.

Name of Certified Supervisor: Tracey Holliday

Certification No.: S-1806 Reporting Year: 2011

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Tracey Holliday - certified Supervisor	S-1806
Keith Carter	0-27202
Athan Bakis	0-18852
Robert Daros	0-18855
George Payne Jr.	G-9727

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Curlan EG	7969-224	132	☐ gal or ☑ lbs
Lesco Demension Plus Fert	10404-85	200	☐ gal or ☑ lbs
Instrata	100-1231	60	☑ gal or ☐ lbs
Acelepryne	352-731	8½	☑ gal or ☒ lbs
Dithiopyr 40 WSB	73220-13	76	☐ gal or ☑ lbs
Scimitar	100-1088	50 oz	☐ gal or ☐ lbs
Lontrel	62719-305	136 oz	☐ gal or ☐ lbs
Banol	432-942	32½	☑ gal or ☐ lbs
ChipcoSignature	432-890	154	☐ gal or ☑ lbs
Conserve	62719-291	96 oz	☐ gal or ☐ lbs
Shaw's Turf food 30-0-0	8378-72	25	☐ gal or ☑ lbs
Primo Maxx	100-937	1	☑ gal or ☐ lbs
Daconil	50534-209-100	30	☑ gal or ☐ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Name of Certified Supervisor: Tracey Holliday

Certification No.: S-1806 Reporting Year: 2011

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Tracey Holliday - Certified Supervisor	S-1806
Keith Casper	0-27202
Athan Bakis	0-18852
Robert Dorus	0-18855
George Payne Jr.	G-9727

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gal. or lbs)	
Heritage	100-1093	24	☐ gal or ☑ lbs
chlorothalonil DF	66222-149-73220	670	☐ gal or ☑ lbs
Affirm WDG	68173-3-1001	36	☐ gal or ☑ lbs
Medallion	100-769	80	☐ gal or ☑ lbs
Torque	69361-27-1001	10	☑ gal or ☐ lbs
Subdue G	100-794	50	☐ gal or ☑ lbs
Docket WS	50534-209-100	45	☑ gal or ☐ lbs
Headway	100-1216	35	☑ gal or ☐ lbs
T-Storm	66330-293-10404	30	☑ gal or ☐ lbs
Tartan	432-1446	5	☑ gal or ☐ lbs
Heritage G	100-1323	90	☐ gal or ☑ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs

☐ Check here if additional sheets are necessary You may reproduce this sheet and attach the additional sheets to this sheet

Part V: Certification of Accuracy

"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 in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Signature of Certified Supervisor	Date
[signature]	12/12/11

Mail completed Commercial Applicator Pesticide Use Summary Report to:

PESTICIDE MANAGEMENT PROGRAM
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Commercial Applicator Pesticide Use Summary Report

DEP USE ONLY
Date

Print *in ink* or type unless otherwise noted. Retain a copy for your records.

This form must be submitted on or before January 31st for pesticide applications made during the preceding calendar year.

Part I: Pesticide Certified Supervisor Information

1. Name and Address of Certified Supervisor:

Name: Tracey Holliday

Home Address: 1347 Newfield Ave

City/Town: Stamford State: CT Zip Code: 06905

Phone: 203-322-5731 ext. Fax: 203-329-8172

Supervisory Certification No. S-1806 Arborist Certification No.

☐ Please check here if your home address has changed since your last submittal.

2. Name and Address of Business

Name: Sterling Farms Golf Course

Mailing Address: 1349 Newfield Ave

City/Town: Stamford State: CT Zip Code: 06905

Business Phone: 203-321-3414 ext. 21 Fax: 203-329-8172

E-mail Address: Cappy8@optonline.net

Contact Person: Tracey Holliday Title: Golf Course Superintendent

☐ Please check here if your business address has changed since your last submittal.

Part II: Reporting Period

1. This report covers the period from January 1, to December 31, 2010

2. ☐ Check this box if pesticide usage by the above named supervisor has been reported by another Certified Supervisor and provide that individual's name and certification number.

Name: Supervisory Certification No.

3. ☐ Check this box if ***no pesticides were applied*** during the above reporting period. If so, you must still complete and submit the remaining parts of this form, with the exception of Part IV.

of Certified Supervisor: Tracey Holliday

fication No.: S-1806 Reporting Year: 2010

t III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Tracey Holliday - Certified Supervisor	S-1806
Keith Carper	0-27202
Athan Bakis	0-18852
Robert Davis	0-18855
George Payne Jr.	

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
T-Storm FLO	66330-293-10404	15	☑ gal or ☐ lbs
Chipco Signature	432-890	264	☐ gal or ☑ lbs
Tartan	432-1446	20	☑ gal or ☐ lbs
Interface	432-1505	27 1/2	☑ gal or ☐ lbs
Chipco 26019	432-888	10	☑ gal or ☐ lbs
Compass	432-1371	4	☐ gal or ☑ lbs
Affirm WDG	68173-3-1001	12	☐ gal or ☑ lbs
Torque	69361-27-1001	2	☑ gal or ☐ lbs
Daconil Ultrex	50534-202-100	360	☐ gal or ☑ lbs
Aceleryn	352-731	63	☐ gal or ☑ lbs
Docket WS	50534-209-100	52	☑ gal or ☐ lbs
Scimitar GC	100-1088	3/4	☑ gal or ☐ lbs
Dithiopyr 40 WSB	73220-13	70	☐ gal or ☑ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Chlorothalonil DF 66222-149-73222 230 #'s

of Certified Supervisor: Tracey Holliday

fication No.: S-1806 Reporting Year: 2010

t III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Tracey Holliday - Certified Supervisor	S-1806
Keith Carper	0-27202
Athan Bakis	0-18852
Robert Dorus	0-18855
George Payne, Jr.	G-9727

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Instrata	100-1231	60	☑ gal or ☐ lbs
Curlan	7969-224	115½	☐ gal or ☑ lbs
Provaunt 30 WDG	352-716	15	☐ gal or ☑ lbs
Prima Maxx	100-937	1½	☑ gal or ☐ lbs
Heritage	100-1093	21	☐ gal or ☑ lbs
Concert	100-1192	40	☑ gal or ☐ lbs
Lontrel	62719-305	½	☑ gal or ☐ lbs
Medallion	100-769	35	☐ gal or ☑ lbs
Spectator	79676-21	2½	☑ gal or ☐ lbs
Headway	100-1216	35	☑ gal or ☐ lbs
Banol	432-942-72	112 9	☑ gal or ☐ lbs
Endorse	66330-4-1001	55	☐ gal or ☑ lbs
Conserve SC	62719-291	4	☑ gal or ☐ lbs

☐ Check here if additional sheets are necessary You may reproduce this sheet and attach the additional sheets to this sheet

Dacon:l Flo 50534-209-100 35 gal

Part V: Certification of Accuracy

"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 in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Signature of Certified Supervisor	Date
	12/11/10

Mail completed Commercial Applicator Pesticide Use Summary Report to:

PESTICIDE MANAGEMENT PROGRAM
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

E. Gaynor Brennan Municipal Golf Course
451 Stillwater Road
Stamford , CT 06902

Total acres of the Golf Course Property is approximately 85. Of this Acreage, Only Greens(3 acres), Tees(2 Acres) and Fairways(20 Acres) are fertilized. For a total treated area of 25 acres. Areas of rough is approximately 10 acres treated.
All Pesticides are handled, stored, disposed of and applied by Licensed / Certified Applicators according to DEEP standards and requirements. Licensed personnel are required to updated their Pesticide License every five years as well as to take yearly CEU's and training sessions. This training must be reported to the DEEP as well.
All pesticides are mixed and applied by these licensed applicators Only, in a manner consistent with the rules and regulations of the Connecticut DEEP.
Integrated Pest management is continually incorporated at Brennan Municipal Golf Course. Both for Environmental, as well as financial reasons. Daily course tours by the Course Superintendent or his Assistant with monitor turfgrass pests for the purpose of determining Threshold levels of these pests. Brennan Municipal Golf Course continues to monitor use of all fertilizer and only uses it when necessary. Frequent use of organic products and methods are used in an effort to support microbial activity of the soil to assist in a future reduction of Fertilizer usage.

Total Nitrogen /1000sqft/year applied to 35 acres
Year 2014: 10.0 lbs N/1000sqft/year
Year 2013: 10.5 lbsN/1000sqft/year
Year 2012: 10.5 lbs N/1000sqft
Year 2011: 11 lbs N/1000sqft
Year 2010: 12 lbs N/1000sqft

Program breakdowns:

Greens : 3 Acres ; 2.5 lbs N/1000sqft/year
Granular Fertilizers: 2.0 lbs N/ 1000sqft/Year (14-0-26, 18-2-18, 22-3-11)
Liquid fertilizers : 1.0 lbs N/ 1000sqft/year (30-0-0, 18-3-6, 12-0-0, Fe, 4-5-4 Fe, 0-0-30)

Tees: 2 acres ; 3.0 lbs N/1000sqft/year (26-0-10, 18-2-18)

Fairways: 20 Acres; 2.5 lbs N/1000sqft/year
Granular Fertilizer: 2.0 lbs N/1000sqft/year (26-0-10)
Liquid Fertilizer : .5 lbs N/1000sqft/year (30-0-0, 0-0-30)

Rough: Approx. 10 acres; 2.0 lbs N/1000sqft/year (26-0-10)

Commercial Applicator Pesticide Use Summary Report

DEP USE ONLY

Date:

Print *in ink* or type unless otherwise noted. Retain a copy for your records.

This form must be submitted on or before January 31st for pesticide applications made during the preceding calendar year.

Part I: Pesticide Certified Supervisor Information

1. Name and Address of Certified Supervisor:

Name: Michael Sullivan

Home Address: 15 Unity Drive

City/Town: Stratford State: CT Zip Code: 06614

Phone: 203-375-9613 ext. Fax: 203-977-5695

Supervisory Certification No. Arborist Certification No.

☐ Please check here if your home address has changed since your last submittal.

2. Name and Address of Business

Name: E Gaynor Brennan Municipal G.C.

Mailing Address: 451 Stillwater Rd

City/Town: Stamford State: CT Zip Code: 06902

Business Phone: 203-977-5694 ext. Fax: 203-977-5695

E-mail Address: MSullivan@stamfordct.gov

Contact Person: Michael Sullivan Title: Golf Course Supt

☐ Please check here if your business address has changed since your last submittal.

Part II: Reporting Period

1. This report covers the period from January 1, 2010 to December 31, 2010

2. ☒ Check this box if pesticide usage by the above named supervisor has been reported by another Certified Supervisor and provide that individual's name and certification number.
   Name: Charles Pollard Supervisory Certification No. S-4871

3. ☐ Check this box if ***no pesticides were applied*** during the above reporting period. If so, you must still complete and submit the remaining parts of this form, with the exception of Part IV.

Name of Certified Supervisor:

Certification No.: **Reporting Year:** 2010

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Michael Sullivan	GS-3408
Charles Pollard	5-4871

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Banol	432-942	.78	☒ gal or ☐ lbs
Concert	100-1192	5	☒ gal or ☐ lbs
Chipco Signature	432-890	66	☐ gal or ☒ lbs
Daconil Ultrex	50534-202-100	130	☐ gal or ☒ lbs
Quali-Pro chlorothalonil	66222-149	115	☐ gal or ☒ lbs
Emerald	7969-196	1.25	☐ gal or ☒ lbs
Headway	100-1216	21.09	☒ gal or ☐ lbs
Medallion	100-769	17.5	☐ gal or ☒ lbs
Tourney	59639-144	3	☐ gal or ☒ lbs
Acelyprn	100-1489	1.03	☒ gal or ☐ lbs
Meridian	100-943	.94	☒ gal or ☐ lbs
Acclaim x-tra	432-950	1.6	☒ gal or ☐ lbs
Primo	100-937	.88	☒ gal or ☐ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Part V: Certification of Accuracy

"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 in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Signature of Certified Supervisor	Date
	1/18/2011
Michael J. Sullivan	Golf Course Supt.
Printed Name of Certified Supervisor	Title

Mail completed Commercial Applicator Pesticide Use Summary Report to:

PESTICIDE MANAGEMENT PROGRAM
ENGINEERING AND ENFORCEMENT DIVISION
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Commercial Applicator Pesticide Use Summary Report

DEP USE ONLY

Date: _____

Print *in ink* or type unless otherwise noted. Retain a copy for your records.

This form must be submitted on or before January 31st for pesticide applications made during the preceding calendar year.

Part I: Pesticide Certified Supervisor Information

1. Name and Address of Certified Supervisor:

Name: Michael J. Sullivan

Home Address: 15 Unity Drive

City/Town: Stratford State: CT Zip Code: 06614

Phone: 203-375-9613 ext. Fax:

Supervisory Certification No. GS-3408 Arborist Certification No.

☐ Please check here if your home address has changed since your last submittal.

2. Name and Address of Business

Name: E. Gaynor Brennan Municipal G.C.

Mailing Address: 451 Stillwater Rd

City/Town: Stamford State: CT Zip Code: 06902

Business Phone: 203 977-5694 ext. Fax: 203-977-5695

E-mail Address: MSullivan@ci.Stamford.ct.us

Contact Person: Michael Sullivan Title: Golf Course Supt.

☐ Please check here if your business address has changed since your last submittal.

Part II: Reporting Period

1. This report covers the period from January 1, 2011 to December 31, 2011

2. ☒ Check this box if pesticide usage by the above named supervisor has been reported by another Certified Supervisor and provide that individual's name and certification number.

Name: Supervisory Certification No.

3. ☐ Check this box if ***no pesticides were applied*** during the above reporting period. If so, you must still complete and submit the remaining parts of this form, with the exception of Part IV.

Name of Certified Supervisor: Michael Sullivan

Certification No.: GS-3408 Reporting Year: 2011

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Michael Sullivan	GS-3408
Charles Pollard	GS-4871

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Acclaim X-tra	432-950	1.04	☒ gal or ☐ lbs
Chipco GT	432-888	10	☒ gal or ☐ lbs
Daconil Ultrex	50534-202-100	220 lbs	☐ gal or ☒ lbs
Dimension 2EW	62719-542	.94	☒ gal or ☐ lbs
Dismiss	279-3295	.25	☒ gal or ☐ lbs
Drive 75 DF	7969-130	6	☐ gal or ☒ lbs
Emerald	7969-196	5.88	☐ gal or ☒ lbs
Headway	100-1216	18.35	☒ gal or ☐ lbs
Medallion	100-769	13.13	☐ gal or ☒ lbs
Primo	100-937	.78	☒ gal or ☐ lbs
Proplant	55260-9	2	☒ gal or ☐ lbs
Signature	432-890	66	☐ gal or ☒ lbs
Similar	100-1078	.25	☒ gal or ☐ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Name of Certified Supervisor: Michael Sullivan

Certification No.: GS-3408 Reporting Year: 2011

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Michael Sullivan	GS-3408
Charles Pollard	GS-4871

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Acelyprn	352-731	1.03	☒ gal or ☐ lbs
Tourney	59639-144	9	☐ gal or ☒ lbs
Curalan EG	7969-224	16.5	☐ gal or ☒ lbs
Chlorothalonil DF	66222-149-73220	20	☐ gal or ☒ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs

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Part V: Certification of Accuracy

"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 in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Signature of Certified Supervisor	Date
	1/28/12

Mail completed Commercial Applicator Pesticide Use Summary Report to:

PESTICIDE MANAGEMENT PROGRAM
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Commercial Applicator Pesticide Use Summary Report

DEP USE ONLY

Date: _____

Print *in ink* or type unless otherwise noted. Retain a copy for your records.

This form must be submitted on or before January 31st for pesticide applications made during the preceding calendar year.

Part I: Pesticide Certified Supervisor Information

1. Name and Address of Certified Supervisor:

Name: Michael Sullivan

Home Address: 15 Unity Drive

City/Town: Stratford State: CT Zip Code: 06614

Phone: 203-375-9613 ext. Fax: 203-977-5695

Supervisory Certification No. GS-3408 Arborist Certification No.

☐ Please check here if your home address has changed since your last submittal.

2. Name and Address of Business

Name: E. Gaynor Brennan Municipal G.C.

Mailing Address: 451 Stillwater Rd

City/Town: Stamford State: CT Zip Code: 06902

Business Phone: 203-977-5694 ext. Fax: 203-977-5695

E-mail Address: MSullivan@stamfordct.gov

Contact Person: Michael Sullivan Title: Golf Course Supt.

☐ Please check here if your business address has changed since your last submittal.

Part II: Reporting Period

1. This report covers the period from January 1, 2012 to December 31, 2012

2. ☒ Check this box if pesticide usage by the above named supervisor has been reported by another Certified Supervisor and provide that individual's name and certification number.

Name: Charles Pollard Supervisory Certification No. S-4871

3. ☐ Check this box if ***no pesticides were applied*** during the above reporting period. If so, you must still complete and submit the remaining parts of this form, with the exception of Part IV.

Name of Certified Supervisor:

Certification No.: Reporting Year: 2012

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Michael Sullivan	GS-3408
Charles Pollard	S-4871

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Banner MAXX	100-741	8	☒ gal or ☐ lbs
Banol	432-942	.5	☒ gal or ☐ lbs
Curalan	7969-224	48.125	☐ gal or ☒ lbs
Quali-Pro chlorothalonil	66222-149	60	☐ gal or ☒ lbs
Daconil Action	100-1364	16.66	☒ gal or ☐ lbs
Daconil Ultrex	50534-202-100	10	☐ gal or ☒ lbs
Emerald	7969-196	1.96	☐ gal or ☒ lbs
Headway	100-1216	26.5	☒ gal or ☐ lbs
Insignia	7969-184	14.5	☐ gal or ☒ lbs
Iprodione E-Pro	81959-4	5	☒ gal or ☐ lbs
Medallion	100-769	7.5	☐ gal or ☒ lbs
Lesco Mancozeb	62719-402-10404	6	☐ gal or ☒ lbs
Pentathalon	1812-414	18	☐ gal or ☒ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Name of Certified Supervisor:

Certification No.: **Reporting Year:** 2012

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Michael Sullivan	GS-3408
Charles Pollard	S-4871

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
ProStar	432-1223	12	☐ gal or ☒ lbs
Proplant	55260-9	1.5	☒ gal or ☐ lbs
Quali-Pro Fosetyl-AL	66222-161	33	☐ gal or ☒ lbs
Signature	432-890	26.5	☐ gal or ☒ lbs
Lesco Touche	7969-224-10404	2.75	☐ gal or ☒ lbs
Acclaim X-tra	432-950	3.28	☒ gal or ☐ lbs
Dimension	62719-542	4.31	☒ gal or ☐ lbs
Dismiss	279-3295	.42	☒ gal or ☐ lbs
Drive	7969-130	14	☐ gal or ☒ lbs
Lontrel	62719-305	1.09	☒ gal or ☐ lbs
Acelyprn	100-1489	1.53	☒ gal or ☐ lbs
Doldge Dursban 2E	655-466	.75	☒ gal or ☐ lbs
Primo	100-937	2.28	☒ gal or ☐ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Name of Certified Supervisor:

Certification No.: **Reporting Year:** 2012

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Michael Sullivan	GS-3408
Charles Pollard	S-4871

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Lesco T-Storm	51036-329-10404	4.09	☒ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs
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			☐ gal or ☐ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Part V: Certification of Accuracy

"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 in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Signature of Certified Supervisor	Date
	1/19/13

Mail completed Commercial Applicator Pesticide Use Summary Report to:

PESTICIDE MANAGEMENT PROGRAM
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Commercial Applicator Pesticide Use Summary Report

DEP USE ONLY
Date:

Print *in ink* or type unless otherwise noted. Retain a copy for your records.

This form must be submitted on or before January 31st for pesticide applications made during the preceding calendar year.

Part I: Pesticide Certified Supervisor Information

1. Name and Address of Certified Supervisor:

Name: Michael Sullivan

Home Address: 15 Unity Drive

City/Town: Stratford State: CT Zip Code: 06614

Phone: 203-375-9613 ext. Fax: 203-977-5695

Supervisory Certification No. GS-3408 Arborist Certification No.

☐ Please check here if your home address has changed since your last submittal.

2. Name and Address of Business

Name: E. ~~Gaynor~~ Brennan Municipal G.C.

Mailing Address: 451 Stillwater Rd

City/Town: Stamford State: Ct Zip Code: 06902

Business Phone: 203-977-5694 ext. Fax: 203-977-5695

E-mail Address: MSullivan@stamfordct.Gov

Contact Person: Michael Sullivan Title: Golf Course Supt

☐ Please check here if your business address has changed since your last submittal.

Part II: Reporting Period

1. This report covers the period from January 1, 2013 to December 31, 2013

2. ☐ Check this box if pesticide usage by the above named supervisor has been reported by another Certified Supervisor and provide that individual's name and certification number.
   Name: Charles Pollard Supervisory Certification No. 5-4871

3. ☐ Check this box if ***no pesticides were applied*** during the above reporting period. If so, you must still complete and submit the remaining parts of this form, with the exception of Part IV.

Name of Certified Supervisor:

Certification No.: **Reporting Year:** 2013

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Michael Sullivan	GS-3408
Charles Pollard	S-4871

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Banner MAXX	100-741	96 oz	☐ gal or ☐ lbs
Banol	432-942	1	☒ gal or ☐ lbs
Daconil Action	100-1364	5g	☒ gal or ☐ lbs
Daconil 2N	50534-211-100	2 1/2	☒ gal or ☐ lbs
Emerald	7969-196	2	☐ gal or ☒ lbs
Headway	100-1216	19.25	☐ gal or ☐ lbs
Heritage	100-1093	.5	☐ gal or ☒ lbs
Insignia	7969-184	30.6	☐ gal or ☒ lbs
Instrata	100-1231	10	☒ gal or ☐ lbs
Medallion	100-769	10	☐ gal or ☒ lbs
Renown	100-1315	5	☒ gal or ☐ lbs
Secure	71512-20-100	2	☒ gal or ☐ lbs
T-storm	51036-329-10404	12 1/2	☒ gal or ☐ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Name of Certified Supervisor:

Certification No.: Reporting Year: 2013

Part III: Certified Applicator's Information

Name of Certified Applicator	Certification No.
Michael Sullivan	GS-3408
Charles Pollard	S-4871

Part IV: Commercial Pesticide Usage

Pesticide Product Name	EPA Product Registration No.	Total Amount of Pesticide Used Before Diluting (check gals or lbs)	
Quali-Pro chlorothalonil	66222-149	195	☐ gal or ☒ lbs
Tourney	59639-144	22.5	☐ gal or ☒ lbs
Acelyprn	100-1489	0.75	☒ gal or ☐ lbs
Similar	100-1088	.25	☒ gal or ☐ lbs
Dimension	62719-542	3.2g	☒ gal or ☐ lbs
Dismiss	279-3295	.5	☒ gal or ☐ lbs
Acclaim X-tra	432-950	.66	☒ gal or ☐ lbs
Quali Pro Fosetyl-Al 80WDG	66222-161	22	☐ gal or ☒ lbs
~~Similar~~	~~100-1088~~		☐ gal or ☐ lbs
Pentathalon DF	1812-414	24	☐ gal or ☒ lbs
Manzate Pro stick T+O	70506-234	24	☐ gal or ☒ lbs
			☐ gal or ☐ lbs
			☐ gal or ☐ lbs

☐ Check here if additional sheets are necessary. You may reproduce this sheet and attach the additional sheets to this sheet

Part V: Certification of Accuracy

"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 in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Signature of Certified Supervisor	Date
	1/10/14

Mail completed Commercial Applicator Pesticide Use Summary Report to:

PESTICIDE MANAGEMENT PROGRAM
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

FUSS & O'NEILL

Appendix H

PHF Use in Ball Fields

Athletic Field Fertilizer use only, we do not use any Fertilizers on park Green space

1st application April 2nd Dimension application 18-0-40- 60 bags total used, each bag is 50lbs

2nd application May 2nd Propendi- 60 bags total used, each bag is 50lbs

3rd application Sept Fertilizer- 60 Bags total used, each bag 40lbs

Little League/Softball/Baseball

Troy #1 Field and Troy # Field 2- Cove

Federal #1 Field and Federal #2 Field

Kane Ave Field

Vine Road Field

Scalzi Little League Field/Scazli #1, #2 and #3

Cubeta Stadium

Springdale Little League Field

Kosciusesko LL and Softball Field

Cummings #1 Field #2 Field #4 field and #5

Chestnut Field

Dorthey Heroy Field

Northrop (Stark school) Field

FUSS & O'NEILL

Appendix I

Draft Changes to Zoning Regulations for Stormwater Management

CITY OF STAMFORD, CONNECTICUT
ENVIRONMENTAL PROTECTION BOARD
incorporating
FLOOD AND EROSION CONTROL BOARD
CONSERVATION COMMISSION
INLAND WETLANDS and WATERCOURSES AGENCY

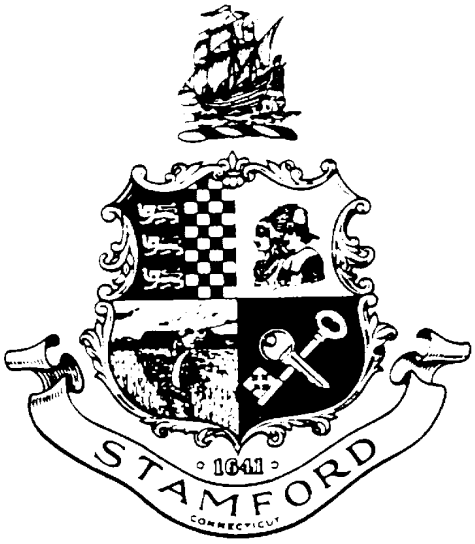
State of Connecticut Department of Energy and Environmental Protection (DEEP) Construction General Permit Notification

- You are required to obtain authorization from CT DEEP under the *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("Construction General Permit")*
- Go to www.ct.gov/deep to view a copy of the Construction General Permit.
- This authorization is required because your project disturbs one (1) or more acres (43,560 sf) of land, either individually or collectively as part of a larger common plan.
- You may be required to provide a copy of the Stormwater Pollution Control Plan to the City of Stamford Environmental Protection Board, or designee, upon request.

$30.00

ZONING REGULATIONS

CITY OF STAMFORD CONNECTICUT



As adopted November 30, 1951
With subsequent amendments

SECTION 3 - DEFINITIONS

A - For the purpose of these regulations certain words and terms used herein are defined as follows:

…

Impervious cover: Any portion of a zoning lot altered to cause stormwater to flow over a surface instead of soaking into the ground including typically streets, sidewalks, driveways, parking lots, buildings and structures, but excluding isolated impervious areas that are not hydraulically connected to the MS4 or otherwise drain to a pervious area.

Land-Disturbing Activity: Any alteration of a zoning lot, including development or redevelopment, resulting in one-half acre or more of soil disturbance, whether considered individually or collectively as part of a larger common plan, including but not limited to clearing, grubbing, demolition, ~~cutting~~ grading, excavating, filling, and moving and stockpiling of soils

MS4: (Municipal Separate Storm Sewer System) A conveyance or system of conveyances, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains, which discharge to waters of the State of Connecticut and are: (1) Owned or operated by the City of Stamford, (2) Designed or used for collecting or conveying stormwater and (3) Not a combined sewer.

Retain: To hold runoff on-site with no subsequent point source release to surface waters, as defined in the 2004 Connecticut Stormwater Quality Manual.

Stormwater: Waters consisting of rainfall runoff, including snow or ice melt during a rain event, and drainage of such runoff.

Water Quality Volume: The volume of stormwater runoff generated by one inch (1") of rainfall on that portion of a zoning lot impacted by land disturbing activities, calculated using the methodology defined in the 2004 Connecticut Stormwater Quality Manual, as amended.

…

*Note: The above listed definitions are proposed to be incorporated within the City of Stamford Zoning Regulations in an effort to comply with NPDES Permit CT0030279, issued to the City of Stamford. Existing unchanged definitions contained in Section 3 have been omitted from this list for purposes of clarity.

SECTION 15 - EXCAVATIONS

…

B. SOIL EROSION, SEDIMENT CONTROL, AND STORMWATER MANAGEMENT

1. Applicability.

a) Soil Erosion and Sediment Control Plan.

Pursuant to Public Act No. 85-91, no activity that results in the cumulative disturbance of more than 10,000 square feet of land area shall be permitted unless a "Soil Erosion and Sediment Control Plan" is submitted, reviewed and certified in accordance with the standards and procedures as herein defined. A certified "Soil Erosion and Sediment Control Plan" may also be required for those activities disturbing a lesser amount of soil, where, in the professional opinion of the Environmental Protection Board or a designated member of its staff there is a significant potential for erosion or sedimentation damage, based on topographic, hydrologic, environmental or land use conditions of individual sites. However, nothing in these regulations shall be construed to require the filing of a separate application for those activities for which a permit has been issued by the Environmental Protection Board, or for which a coastal site plan, special permit or special exception application has been approved by the Zoning Board or the Zoning Board of Appeals, provided such approvals certify conformity with the erosion and sediment control standards of this subsection.

b) Stormwater Management Plan.

No activity that results in a land-disturbance activity, including development or redevelopment, resulting in one-half acre (21,780 square feet) or more of soil disturbance, whether considered individually or collectively as part of a larger common plan, shall be permitted unless a "Stormwater Management Plan" is submitted, reviewed and certified in accordance with the standards and procedures as herein defined.

2. Standards.

a) Soil Erosion and Sediment Control Plans

Plans shall be prepared and control measures specified in accordance with accepted soil and erosion control principals and technical standards as outlined in the Connecticut Guidelines for Soil Erosion and Sediment Control (2002), and the Connecticut Stormwater Quality Manual (2004), as amended. Such plans shall effectively minimize erosion and sedimentation of the development site during construction, shall provide for temporary and permanent stabilization of all disturbed areas, shall provide for the effective management and disposal of stormwater runoff, and shall prevent flooding or the discharge of sediment to surrounding properties, wetlands, watercourses or drainage facilities.

b) Stormwater Management Plans

Plans shall be prepared and control measures specified in accordance with stormwater control principals and technical standards of the Connecticut Stormwater Quality Manual

(2004), as amended. Such plans shall effectively use Best Management Practices (BMPs) and incorporate the use of runoff reduction and low impact development ("LID") practices to reduce the discharge of pollutants to the maximum extent practicable and to meet a goal of maintaining post-development runoff conditions similar to pre-development runoff conditions.

1) Developed parcels with an existing impervious cover of forty percent (40%) or more, and for which redevelopment is proposed, shall retain, on-site, one-half (1/2) the water quality volume for the site. When one-half (1/2) the water quality volume is not able to be retained, then the site shall be designed to retain runoff volume to the maximum extent achievable using available control measures. In such cases, the applicant shall provide additional stormwater treatment for sediment, floatables, and nutrients by using available control measures for the volume above that which can be retained up to the required water quality volume. Additionally, in cases where the runoff retention requirement cannot be met, the applicant shall submit a report detailing factors limiting the capability of achieving this goal. The report shall include:

    i) An explanation of site limitations;
    ii) A description of the runoff reduction practices implemented;
    iii) Reasons why those practices constitute the maximum extent achievable;
    iv) The alternative retention volume;
    v) A description of the measures used to provide additional stormwater treatment above the alternate volume up to the water quality volume.

2) For all new development and for redevelopment of parcels with existing impervious cover of less than forty percent (40%), the site shall be designed to retain the water quality volume for the site. If site constraints prevent retention of this volume on-site (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.), the applicant shall submit a report detailing factors limiting the capability of achieving this goal. The report shall include:

    i) An explanation of site limitations;
    ii) A description of the runoff reduction practices implemented;
    iii) Reasons why those practices constitutes the maximum extent achievable;
    iv) The alternative retention volume;
    v) A description of the measures used to provide additional stormwater treatment above the alternate volume up to the water quality volume.

3. Application Requirements.

a) Erosion and Sedimentation Control Plan.

Relevant information shall be noted on an "Erosion and Sediment Control Plan" and Application Form. The form shall be supplied by the City of Stamford. The "Soil Erosion and Sediment Control Plan" shall show the following information:

1) Site plan of the property (at a preferred scale of one inch = twenty (20) feet but not less than one inch = forty feet) and a vicinity sketch (at a scale of not less than one inch = 800 feet);

2) General resource information including soil types (based on the published USDA Soil Survey of Fairfield County), wetlands, watercourses, flood hazard and floodway boundaries (based on the official Flood Insurance Rate Maps of the City of Stamford), stream channel encroachment lines and significant vegetation;
3) Existing topography at two (2) foot contour intervals;
4) The location of all existing structures and drainage structures on the site and within seventy-five (75) feet of the site;
5) Proposed topography at two (2) foot contour intervals;
6) Proposed area alterations including those areas to be cleared, excavated, filled or graded as well as the proposed location of all structures, utilities, roads and if applicable, new property lines;
7) The location of and design details for all proposed soil erosion and sediment control measures and storm water management facilities;
8) The sequence of grading and construction activities;
9) The sequence for the installation and/or application of soil erosion and sediment control measures;
10) The sequence for final stabilization of the development of the site;
11) The measures for protection of trees and other significant vegetation;
12) Such other information deemed necessary to determine the conformity of the application to the performance standards of these regulations, as determined by the Environmental Protection Board or a designated member of its staff.

A written narrative may also be requested describing the nature of the proposed development activity, the proposed schedule and sequence of grading and construction activities, the design criteria and specifications for the proposed erosion and sediment controls and stormwater management facilities and sequence for their installation and/or application, and the program for operation and maintenance of control measures throughout the life of the project.

b. Stormwater Management Plans

A “Stormwater Management Plan shall include an “Erosion and Sediment Control Plan" with all of the required information as stated above, and the following additional information:

- Stormwater Management Report
- Construction Plans
- Operation and Maintenance Plan

1) Stormwater Management Report: The Stormwater Management Report shall describe how the proposed project has addressed the use of runoff reduction and Low Impact Development (LID) practices to reduce the discharge of pollutants to the maximum extent practicable to meet the goal of maintaining post-development runoff conditions similar to pre-development runoff conditions, including the following elements:

i) Project Narrative describing the project, proposed non-structural BMPs (source controls and LID site planning and design measures), proposed structural BMPs and how the development complies with Stormwater Management standards.

ii) Comparison of pre-&-post development peak flow, volume and percent difference.

iii) Discussion of efforts to protect wetlands and riparian corridors (as applicable), efforts to protect floodplains and water bodies (as applicable) and efforts to protect natural drainageways.

iv) Define the portion of the property impacted by land disturbing activities and areas to be permanently altered, including efforts to protect and retain mature trees and minimize disturbance of steep slopes (over 25%).

v) Calculation of the required Water Quality Volume to be retained.

vi) Evaluation of the Pre-Development and Post-Development Site Hydrograph, including total runoff volumes and peak flow rates for the 1, 2, 5, 10, 25, 50 and 100 year storms.

vii) Supporting calculations (as applicable) including sizing of emergency outlet, culvert capacity, gutter flow capacity, outlet protection, downstream analysis and capacity of municipal drainage structures.

viii) The Stormwater Management Report shall be sealed and signed by a Professional Engineer.

ix) In addition to the water quality measures indicated herein, hydrologic and hydraulic analysis for volume control is required for site planning and design and shall be consistent with the policies and guidelines set forth by the City of Stamford's Engineering Bureau. These policies and guidelines are intended to augment other existing design guidance including the CT Storm water Quality Manual. These guidelines shall be implemented by professional engineers licensed to practice in the State of Connecticut. The City's policies and guidelines may be amended to reflect new and modified technologies, practices, and regulatory requirements.

2) Construction Plans: all plans shall be black and white, no larger than 36"x48" and no smaller than 24"x36" with a maximum scale of 1" = 40' showing the location and construction details for all structural and non-structural BMPs, sealed and signed by a Professional Engineer.

3) Operation and Maintenance Plan: a long-term Operation and Maintenance (O&M) Plan to insure that stormwater management systems function as designed including owner of the stormwater management system(s), parties responsible for implementing the O&M Plan, schedule for performance of routine and non-routine maintenance tasks, estimated O&M budget and draft drainage and maintenance agreements, sealed and signed by a Professional Engineer.

4. Review Procedures.

a) The Environmental Protection Board or a designated member of its staff shall act as the designated agent of the Zoning Board and shall be empowered to receive, review and certify "Soil Erosion and Sediment Control Plans" and "Stormwater Management Plans" pursuant to these regulations, except where the plan has been certified by one of the reviewing agencies enumerated under subsection 15.B.1 above.

c) "Soil Erosion and Sediment Control Plans" and "Stormwater Mangement Plans" may be

forwarded to the City Engineer or other appropriate City agency for an advisory opinion.

d) Upon the receipt of a complete application and plan, the Environmental Protection Board or a designated member of its staff shall approve, approve with conditions, or deny the plan within 30 days.

e) In approving the plan, the Environmental Protection Board or a designated member of its staff or other reviewing agency may impose as a condition of approval the submission of a performance bond in an amount sufficient to insure the timely installation, operation, maintenance and certification of the control measures, in the form of cash or surety bond as determined by the Environmental Protection Board or a designated member of its staff, and in form acceptable to Corporation Counsel.

5. Enforcement. Site disturbance shall not begin until the required soil erosion and sediment control measures and facilities are properly installed and functional. All required soil erosion and sediment control measures shall be maintained in an effective condition throughout the duration of the project.

Final approval and release of the performance bond shall only be granted upon final inspection and written certification that all disturbed areas have been stabilized and that final sediment control measures and stormwater management facilities have been installed in accordance with the plan. When structural measures are required, the applicant shall additionally submit an Improvement Location Survey (ILS) or Data Accumulation Plan (DAP) as prepared by a land surveyor licensed in the State of Connecticut.

In acceptance of an approval pursuant to these regulations, the owner of the property shall consent to permit the City of Stamford of its designee to enter upon the premises to inspect compliance with the approved plan and to perform all work necessary to correct and abate any violations.

Enforcement of these regulations shall be the duty of the Zoning Enforcement Officer pursuant to Section 16 of the Zoning Regulations. (91-003)

FUSS & O'NEILL

Appendix J

Building Permit

CITY OF STAMFORD

BP-20 _____

BUILDING BUREAU

SWO #: 20_____

DEPARTMENT APPROVAL FOR BUILDING PERMIT

Owner's Name:_____ Address:_____

Gen. Contractor:_____ Address:_____

Architect:_____ Address:_____

Job Address:_____Location:_____

Permission to:_____

** 1) Owner ☐ Applicant ☐ or Contractor ☐ is ☐ was ☐ a City of Stamford Employee ☐ or Official ☐

2) No Building Permit will be issued until the following signatures are obtained with reference to above mentioned project

Required	N/A	
( )	( )	Assessor's Office: _____
		Lot#: _____ List#: _____
		Card#: _____ Date: _____
( )	( )	Tax Collector: _____
( )	( )	Construction Waste Recycling: _____
( )	( )	Zoning: _____
( )	( )	Coastal Management: _____
( )	( )	Envir. Prot: _____
( )	( )	Flood Plain: _____
( )	( )	Fire Marshal: _____
( )	( )	Health Dept: _____
( )	( )	Housing Code: _____
( )	( )	Traffic Dept: _____
( )	( )	Engineering Dept: _____ Is Street Opening Permit Required? ( ) Yes ( ) No
( )	( )	D.O.T.: _____
( )	( )	W.P.C.A.: _____
( )	( )	Building Official: _____

Upon securing the required signatures, return this document to the Division of Building Inspection, City of Stamford.

Dir. of Operations: _____

Date: _____

By: _____
Robert D. DeMarco
Chief Building Official

FUSS & O'NEILL

Appendix K

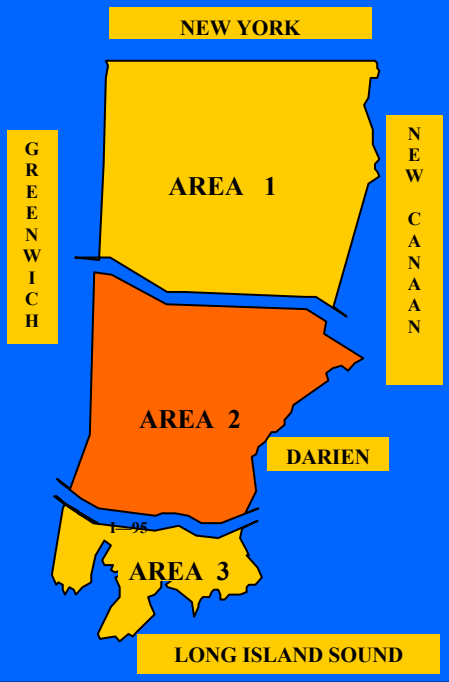
List of Roads in Each Sweeping Category and Leaf Collection Information

ATTENTION!

RESIDENTS OF STAMFORD!

DEPARTMENT OF OPERATIONS

LEAF PICK-UP



AREA 1* STARTING NOVEMBER 13th

AREA 2* Estimated Start Date: NOVEMBER 16th

AREA 3* Estimated Start Date DECEMBER 3rd

Leaf pick-up will begin November 13th Starting from the New York State line with crews working South to the Merritt Parkway.
Crews will pick-up leaves between the Merritt Parkway and I-95 Beginning approximately November 16th.
City neighborhoods below I-95 will be picked up beginning approximately December 3rd.

- **Please do not put leaves out before start date for your designated area.**
- **City crews will not return if leaves are not put out by start date for your designated area.**
- **Only loose leaves or leaves in paper leaf bags will be picked up.** Residents can bring bagged leaves to the recycling centers on Magee Avenue and Scofieldtown Road.
- **Leaves must be brought to the curb.**
- **NO BRUSH, grass clippings or bulky Waste will be picked up.** If these materials are found at curb side they will not be picked up. Owners of the adjacent properties can be cited or fined for leaving brush ,grass clippings, or bulky waste at curbside.
- **When ever possible , compost leaves.** If you have wooded property, the leaves will naturally compost if raked or swept into the woods.
- **Do not cover curbs, irrigation pipes, sprinklers and water curb boxes with leaves. Do not pile leaves near stone walls, fences or trees . They could be damaged by heavy equipment removing leaves.**

IF YOU HAVE ANY QUESTIONS ABOUT LEAF PICK-UP PLEASE CALL 977-4140

***Delays may occur because of Bad Weather**

Stamford Downtown Special Services District
Request for Proposals
for outdoor sidewalk cleaning and maintenance of the downtown district
September 2011

A. SUMMARY:

The Stamford Downtown Special Services District (DSSD), a business improvement district funded by property owners to enhance the downtown, provides through its maintenance program a clean and inviting environment for the downtown. To continue to accomplish this, the DSSD is requesting proposals for the services of a sidewalk cleaning contractor for the entire downtown district (approximately two square miles).

Interested parties should have the ability to address the 365 day per year needs of the DSSD in the most efficient manner while overcoming the obvious obstacles of year round exterior maintenance. This primarily includes outdoor litter control as well as limited graffiti removal, landscape maintenance, manual snow removal and ice treatment. Litter control to be performed manually and with any mechanized aids deemed necessary to complete the scope of work of the program.

B. PROGRAM OBJECTIVES:

1. To provide a clean and inviting downtown 7 days a week.
2. To have a visible presence of cleaning and maintenance staff working to improve the quality of life downtown.
3. To provide a service to the downtown business area which is performed in an expert, professional manner.

C. SCOPE OF WORK:

1. Cleaning/Landscape Maintenance/Snow & ice removal
   a. Daily litter and debris removal from sidewalks, curbside gutters and parks using both manual and mechanized equipment.
   b. Remove graffiti, decals, handbills, tape and adhesive residue from public infrastructure as needed.
   c. Periodic removal of cigarette butts and debris from tree well grates.
   d. In emergency overfill situations only, transfer trash from city litter containers into heavy duty plastic garbage bags.
   e. Remove larger weeds from sidewalks, treewells and curbs and remove tree trunk sprouts as they occur.
   f. Water and weed specific garden areas as directed.
   g. Supplemental removal of snow from curbcuts a t intersections and bus stops. *
2. Work will be performed in the Downtown Special Services District on a specified route (see map, exhibit A).
3. Work will be performed on the sidewalks, from the building line to approximately three (3) feet beyond the street curb. In addition, four (4) parks and three (3) parklets will be cleaned 5 weekday mornings.
4. Work is to be performed 365 days/year, 7 days/week, in 8:00 AM to 4:00 PM shifts. Current staffing level is 24-manhours/day Monday through Friday and 16-manhours/day on Saturday and Sunday for a total of 152 manhours/week.

5. A minimum of one (1) complete tour of the area, plus a return to "hot spots" must be made per eight (8) hour shift.
6. All equipment and supplies, must be provided by the contractor and be approved by the DSSD. The DSSD will provide a location for daily storage of equipment and not more than 30 days of supplies. Equipment and supplies will include but not be limited to:
   a. Manual tools will include brooms, dustpans, rakes, pruning clippers, snow shovels, ice choppers.
   b. Mechanized equipment, as recommended by the respondent, bearing "Stamford Downtown" name and logo.
   c. Icemelt material and carry totes.
   d. Heavy-duty garbage bags for occasional use.
   e. Mobile phone or other means of 2-way communication with the DSSD office.
7. Contractor will provide uniforms which are crucial to the visibility, identity and comfort of the cleaning staff and must meet the following criteria:
   a. Include "Stamford Downtown" logo on front (small) and back (large). DSSD provides artwork.
   b. Uniforms must be appropriate to keep the crew comfortable in winter, spring/fall, and summer and include provisions for precipitation and extreme heat or cold.
   c. Arrangements must be in place to ensure all uniform components are kept clean and presentable.
   d. Uniforms are to be examined on a regular basis and prior to each change of season to ensure they meet the established criteria.
8. Radio or telephone communication with the working supervisor must be provided by the contractor.
9. Contractor must provide support and maintenance of an existing electronic route verification system. Guard Plus!®, a product of Timekeeping Systems, Inc.
10. Regular meetings between the contractor and the DSSD will be required.
11. An English speaking working supervisor must be provided by the contractor on every weekday shift. This supervisor will communicate daily conditions and issues in person to the DSSD.
12. Contractor must provide a detailed program for quality control specific to the job.

* The DSSD contracts a separate crew to remove snow from sidewalks and curbcuts during and immediately following any snowfall of 3" or more. After that crew has completed its work, city snowplows pass by and often fill in curbcuts that have previously been cleared. The DSSD Cleaning Crew will be responsible to re-clear those curbcuts until snowplow activity has ceased (often days after a snowstorm) and to spread icemelt on trouble spots as needed.

D. SUBMITTALS:

The proposal should contain the following items of information:

1. Background and description of the firm.
2. A description of the services and equipment that the firm will provide to specifically address the "Scope of Work" listed above
3. Suggestions or ideas on how the cleaning services can be performed most efficiently and effectively (including cost-effectiveness)
4. Description of staffing plan and per hour cost per employee.
5. Description of the equipment which will be used.
6. Description of the uniforms which will be provided.
7. A portfolio of similar works which include maintenance within an urban downtown environment.
8. Names and contact information for at least three references for similar work.
9. Evidence of policies insuring minimum limits as indicated below:
   - General Liability - $1,000,000 Occurrence/$2,000,000 Aggregate
   - Excess/Umbrella Liability - $7,000,000 occurrence/aggregate (This equals your coverage)
   - Workers' compensation – statutory requirements w/ Employer's liability of $500,000/500,000/500,000
   - Commercial Automobile - $1,000,000 combined single limit to include owned autos (if applicable) and hired & non-owned autos

   Such policies shall name the DSSD as an additional insured and contain a provision stating that the DSSD will be notified not less than 30 days in advance of the cancellation of any such policy.
10. A detailed breakdown of your fees to provide these services to the DSSD.

E. TERMS, CONDITIONS & LIMITATIONS:

This Request for Proposals is subject to the specific conditions, terms and limitations stated below:

1. No applicant will be selected if it is in default upon any debt, contract or obligation to the Stamford Downtown Special Services District, or City of Stamford.
2. The Stamford Downtown Special Services District shall not pay any costs or losses incurred by any applicant at any time, including but not limited to, the cost of responding to this RFP.
3. This RFP does not represent any obligation or agreement whatsoever on the part of the Stamford Downtown Special Services District.
4. An invitation to respond to the RFP does not create any rights on the part of the applicant.
5. Any documents provided to the applicant represent the best available information at the disposal of the Stamford Downtown Special Services District, and are

provided in good faith without warranty of accuracy or applicability. Respondents are encouraged to undertake their own investigations.

6. The DSSD reserves the right to accept or reject all or part of a proposal for any reason the DSSD deems advisable.

F. SELECTION PROCESS:

The DSSD will review all proposals received by the deadline In selecting a vendor the DSSD will consider the following:

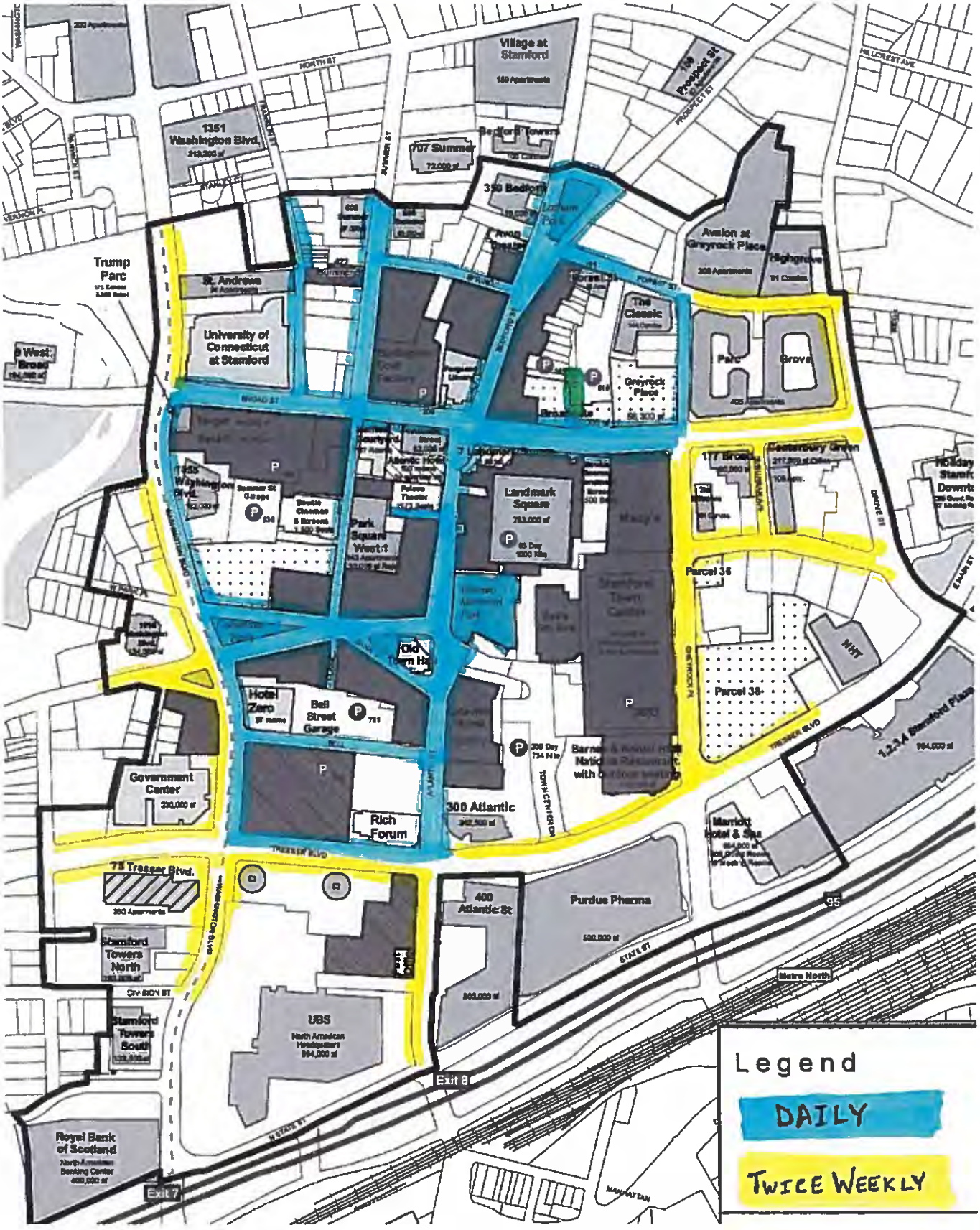
- The vendor's experience and demonstrated ability to successfully run a cleaning program for a DID organization
- Cost of services
- Demonstrated responsiveness to client concerns and the ability to resolve problems quickly and appropriately
- Suggestions and recommendations to maximize resources and effectiveness while minimizing costs
- Corporate and financial stability

The DSSD will be happy to respond to any questions or clarify anything in this RFP. Reponses to all questions will be shared with all interested parties.
All questions regarding the interpretation of this RFP should be directed to:
John Ruotolo **Phone:** (203) 348-5285, **E-mail:** operations@stamford-downtown.com

Six (6) hard copies of your proposals should be submitted to:
John Ruotolo, Vice President of Operations
Stamford Downtown Special Services District
5 Landmark Square, Suite 110, Stamford, CT 06901.
The submission deadline is Wednesday September 28, 2011, 4:00 p.m.
Note: A digital copy of the proposal may also be submitted to operations@stamford-downtown.com but is not required.

Stamford Downtown Special Services District
Request for Proposals
for outdoor sidewalk cleaning and maintenance of the downtown district
September 2011

Exhibit A - Cleaning Route



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Appendix L

CTDEEP's Best Management Practices for Disposal of Snow Accumulation from Roadways and Parking Lots

Water

Water Resources
Water Quality
Water Quantity
Watershed Management
Wetlands
Regulating Water Usage and Water Discharges
Environmental Protection Begins With You
Water Main Page
Main Menu

Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots

Purpose: These guidelines have been developed to clarify DEEP recommendations to state and municipal officials, and others regarding the removal and disposal of snow accumulations from roadways and parking lots. For purposes of this guidance snow accumulations refers to snow banks and snowpiles that are removed by front-end loader or by loading on trucks for disposal. This guidance does not apply to normal snow plowing operations that must, inevitably, discharge some snow into wetlands and watercourses.

Implementation: While following these guidelines does not constitute a permit or authorization, the Department recognizes there is a considerable need for flexibility in implementation of this policy, particularly in emergency situations. There is no intent to interfere with snow plowing operations. Where trucking and snow dumping operations are undertaken the Department recommends these guidelines be followed.

Problem: Current road maintenance activities include removal of snow accumulations from bridges, roads and parking areas for the purpose of providing more space for subsequent snow storms and for ease of travel and parking. Sometimes this snow is moved by truck or with a front-end loader and deposited directly into surface waters of the state including streams, wetlands and Long Island Sound. This practice is not recommended due to the presence of dirt, salt, litter and other debris, which are routinely mixed in the accumulated snow.

Under normal conditions of snowmelt, the majority of these contaminants remains on or next to the paved surface or may be captured in stormwater catch basins. These contaminants can then be swept from streets and bridges or vacuumed from catch basin sumps. However, when accumulated snow is collected and dumped into surface waters, this mixture of snow, sand and debris may smother aquatic life in the bottom of streams and rivers and degrade the aesthetics of the surface water with silt plumes and litter. Large quantities of snow (and the sand and debris) may also cause blockage of storm drainage systems, resulting in increased chance for localized flooding.

Recommended Management Practice: Snow accumulations removed from roadways, bridges, and parking lots should be placed in upland areas only, where sand and other debris will remain after snowmelt for later removal. Care must be exercised not to deposit snow in the following areas:

- freshwater or tidal wetlands or in areas immediately adjacent to such areas where sand and debris may be flushed during rainstorms;
- on top of storm drain catch basins;
- in storm drainage swales;
- on stream or river banks which slope toward the water, where sand and debris can get into the watercourse; and
- in areas immediately adjacent (within at least 100 feet) of private or public drinking water well supplies (due to the possible presence of road salt).

For Governmental Entities: In normal winter conditions, governmental entities should follow the recommended management practices outlined above. In extraordinary winter conditions, the commissioner may, upon public notification, offer governmental entities the flexibility of limited in-water disposal. When such flexibility is offered, governmental entities who have determined that extraordinary circumstances exist where all upland, land-based disposal options have been fully exhausted (i.e., disposal capacity is not available) and snow needs to be removed to meet public safety demands (i.e., clear access ways for police, emergency medical and fire responders), may use certain waterways for snow disposal in accordance with the following conditions:

- Upland storage and disposal of snow (i.e., athletic fields, parks and other flat, open-field sites) and other snow management methods (i.e., snow melting equipment) must be the first alternatives explored and exhausted. Environmentally sensitive areas must be avoided;
- This guidance applies only to snow and ice which is not visibly contaminated with material other than salt and sand from road clearing activities;
- For coastal communities, preference should be given to snow disposal in salt water where available;
- Disposal in rivers or streams must be limited to those water bodies that have adequate flow and mixing and are not prone to ice jams;
- The disposal must occur only in open water in areas that will not interfere with navigation;
- Disposal must be conducted in a manner so as to prevent ice dam formation or damage to bridges, docks or other structures;
- Disposal in ponds and lakes is discouraged;
- There shall be no disposal in coastal or freshwater wetlands, eelgrass beds, vegetated shallows, vernal pools, shellfish beds mudflats, public water supply reservoirs and their tributaries, or others areas designated as being environmentally sensitive;
- The activity must comply with local laws and requirements;
- Precautions must be taken to avoid shoreline or stream bank damage or erosion from truck/equipment activity; and
- Governmental entities must notify the Department by email (address email to kevin.sowa@ct.gov) prior to disposing of snow and ice in waterways or, if advance notification is not possible, then the

Department must be contacted as soon as possible after snow disposal has begun.

Notification: Notification can be made by addressing an email to Kevin Sowa at: kevin.sowa@ct.gov. The notification must include the following: (1) the name of the governmental entity making the notification; (2) contact information for the governmental entity including name, email address and phone number; (3) the street address where the snow disposal activity will occur; (4) the name of the waterbody where the snow will be disposed; (5) the estimated quantity of snow to be disposed; (6) the dates during which the disposal activity will occur; and (7) a statement that the governmental entity has exhausted all disposal alternatives and snow management methods and will make best efforts to adhere to these snow disposal guidelines.

Information: For further information please call the Water Permitting and Enforcement Division Engineer of the Day at 860-424-3025.

DEP-PED-GUID-002 Revised 02/04/11

Printable Version

79 Elm Street, Hartford, CT 06106-5127 / Phone: 860-424-3000

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Appendix M

Catch Basin Inspections, Cleanings and Recommended Cleaning Frequency

To be Developed by Stamford

FUSS & O'NEILL

Appendix N

Detention and Retention Ponds

To be Developed by Stamford

FUSS & O'NEILL

Appendix O

Agreements with Interconnected MS4s

Governor Dannel P. Malloy |

Original text

Contribute a better translation

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Bureau of Highway Operations

Mission

The Mission of the Bureau of Highway Operations is to maintain the State's Highway and Bridge systems in a safe, efficient manner balanced with the needs of the Motoring Public. Our dedicated staff will utilize Best Practices and High Standards to achieve an optimal level of service to the Highway and Bridge systems, which include Snow and Ice Control, Incident Management, and Oversize/Overweight Vehicle Permitting.

Michael W. Lonergan

Bureau Chief

Bureau of Highway Operations

Phone: (860) 594-2630

Fax: (860) 594-2655

Mike.Lonergan@ct.gov

Administration

Charles A. Drda

Transportation Maintenance Administrator

Office of Maintenance

Phone: (860) 594-2604

Fax: (860) 594-2655

Offices

District 1 Maintenance District 2 Maintenance

District 3 Maintenance District 4 Maintenance

Maintenance Operations

Content Last Modified on 11/18/2013 1:13:59 PM

2800 Berlin Turnpike, Newington, CT 06111 / Phone: 860-594-2000

State Highways and Street in Stamford, CT

Highways

Two limited-access highways run through the city. Interstate 95 serves as the main route through downtown Stamford with four exits (6-9). The Merritt Parkway runs through the northern part of the city. This road is designated for passenger vehicles only. Any congestion on the Merritt Parkway is mostly likely to occur on the southbound lane in the morning and the northbound in the evening (route to and from New York). At night, due to the absence of lighting, visibility on the Merritt Parkway is relatively poor. Stamford exits on the Merritt Parkway are 33-35, and exit 36 is just over the border in New Canaan.

Stamford is also served by four other state highways. Route 1, also known as Main Street in Stamford, is also used as a major artery during the morning and evening commute. Most traffic via Route 1 is short distance or fairly local, yet vehicles have utilized Route 1 during times of heavy congestion on I-95 as a re-route. Route 137 (Washington Boulevard and High Ridge Road) is the main north-south road of the city and runs from the Stamford Transportation Center and serves the Turn of River, North Stamford, and High Ridge sections of the city. Route 104 (Long Ridge Road) branches off from Route 137 to serve the Long Ridge section. Route 106 (Courtland Avenue) serves the Glenbrook neighborhood and continues towards the town of Darien.

List of state route

Signed Routes

Routes are signed state highways and are assigned numbers from 1 to 399 (with the exception of I-684 and I-691). All state, U.S. and Interstate highways are part of the same numbering system. In 1926, the U.S. highway system was implemented. U.S. Routes 1, 5, 6, and 7 were used as designations on several primary state highways, replacing New England routes 1, 2, 3, and 4, respectively. The other New England routes that were not re-designated as U.S. routes became ordinary state highways but kept their number designation, which are used even today (with some realignment). In 1958, Connecticut received approval for the route numbers of its three primary Interstate highways: I-84, I-91, and I-95. State highways with the same number designation as the Interstate highways were renumbered to avoid duplication of route numbers.

The chart below consists of all signed routes since the last state-wide renumbering during the mid-1960s; as well as the former New England Interstate Routes (1920s).

2-59	60-119	120-179	179-239	240-691	Former
1 U.S. Route 1	61 Route 61	120 Route 120	171 Route 171	243 Route 243	5A U.S. Route 5A
2 Route 2	63 Route 63	120A New York Route 120A (part of it is in Connecticut)	172 Route 172	244 Route 244	6A U.S. Route 6A
2A Route 2A	64 Route 64	121 Route 121	173 Route 173	254 Route 254	9A Route 9A
3 Route 3	66 Route 66	122 Route 122	174 Route 174	262 Route 262	CONN. 10A Route 10A
4 Route 4	67 Route 67	123 Route 123	175 Route 175	263 Route 263	44A U.S. Route 44A
5 U.S. Route 5	68 Route 68	124 Route 124	176 Route 176	272 Route 272	CONN. 51 Route 51
6 U.S. Route 6	69 Route 69	125 Route 125	177 Route 177	275 Route 275	52 Route 52
7 U.S. Route 7	70 Route 70	126 Route 126	178 Route 178	286 Route 286	82 Interstate 82 (proposed)
8 Route 8	71 Route 71	127 Route	179 Route 179	287 Route 287	86 Interstate 86 (renumbered)
9 Route 9	71A Route 71A		181 Route	289 Route	284 Interstate 284 (cancelled)
10 Route 10	72 Route 72				484 Interstate 484 (cancelled)
11 Route 11	73 Route 73				491 Interstate
	74 Route 74				
	75 Route 75				

- Route 12
- Route 14
- Route 14A
- Route 15
- Merritt Parkway
- Wilbur Cross Parkway
- Berlin Turnpike
- Wilbur Cross Highway
- Route 16
- Route 17
- Route 17A
- Route 19
- Route 20
- Route 21
- Route 22
- Route 25
- Route 27
- Route 30
- Route 31
- Route 32
- Route 33
- Route 34
- Route 35
- Route 37
- Route 77
- Route 78
- Route 79
- Route 80
- Route 81
- Route 82
- Route 83
- Interstate 84
- Route 85
- Route 87
- Route 89
- Interstate 91
- Route 94
- Interstate 95
- Route 97
- Route 99
- Route 100
- Route 101
- Route 102
- Route 103
- Route 104
- 127
- Route 128
- Route 130
- Route 131
- Route 132
- Route 133
- Route 135
- Route 136
- Route 137
- Route 138
- Route 139
- Route 140
- Route 142
- Route 145
- Route 146
- Route 147
- Route 148
- 181
- Route 182
- Route 182A
- Route 183
- Route 184
- Route 185
- Route 186
- Route 187
- Route 188
- Route 189
- Route 190
- Route 191
- Route 192
- Route 193
- Route 194
- Route 195
- Route 196
- 289
- Interstate 291
- Route 302
- Route 305
- Route 309
- Route 313
- Route 314
- Route 315
- Route 316
- Route 317
- Route 318
- Route 319
- Route 320
- Route 322
- Route 334
- Route 337
- Route 341
- 491 (cancelled)
- New England Route 1
- New England Route 2
- New England Route 3
- New England Route 4
- New England Route 8
- New England Route 10
- New England Route 12
- New England Route 17
- New England Route 32

- Route 39
- Route 40
- Route 41
- Route 42
- Route 43
- U.S. Route 44
- Route 45
- Route 47
- Route 49
- Route 53
- Route 55
- Route 57
- Route 58
- Route 59

- Route 106
- Route 107
- Route 108
- Route 109
- Route 110
- Route 111
- Route 112
- Route 113
- Route 114
- Route 115
- Route 116
- Route 117
- Route 118

- Route 149
- Route 150
- Route 151
- Route 152
- Route 153
- Route 154
- Route 155
- Route 156
- Route 157
- Route 159
- Route 160
- Route 161
- Route 162
- Route 163
- Route 164
- Route 165

- Route 197
- Route 198
- Route 199
- Route 200
- Route 201
- U.S. Route 202
- Route 203
- Route 205
- Route 207
- Route 209
- Route 213
- Route 214
- Route 215
- Route 216
- Route 217
- Route 218

- Route 343
- Route 349
- Route 354
- Route 361
- Route 364
- Route 372
- Interstate 384
- Interstate 395
- Interstate 684
- Interstate 691


Route 166


Route 167


Route 168


Route 169


Route 219


Route 220


Route 222


Route 229


Route 234

FUSS & O'NEILL

Appendix P

IDDE Outfall List and Map

City of Stamford - CT0030279

IDDE Outfall Priority Ranking

Outfall ID	Location	Receiving Stream	Priority Ranking	Notes
DIS-1	Harbor Drive - located in Schooner Cove Condos behind pool	Stamford Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-2	Mitchell Street - end of street	Stamford Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-3	Downs Avenue - behind 129 / 135 Downs Ave.	Stamford Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-4	Ralsey Road - behind 1 Ralsey Road	Stamford Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-5	Ralsey Road South - behind 43 Ral. Rd. / N. side Stam. Yacht Club	Stamford Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-6	East side of East Branch - adjacent to WPCA	Stamford Harbor / Long Island Sound	**A**	may need boat to sample at low tide
DIS-7	Ocean Drive West - behind 115 ODW, S. side of Stam. Yacht Club	Stamford Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-8	East side of East Branch - adjacent to Solid Waste Building	Stamford Harbor / Long Island Sound	**A**	may need boat to sample at low tide
DIS-9	East side of East Branch - adjacent to WPCA	Stamford Harbor / Long Island Sound	**A**	may need boat to sample at low tide
DIS-10	Fairview Ave. - West side. End of street	Stamford Harbor / Long Island Sound	**B**	possible recreational contact with water
DIS-11	Saddle Rock Road - backyard of 89 / 107 Saddle Rock Rd.	Stamford Harbor / Long Island Sound	**B**	possible recreational contact with water
DIS-12	Green Street - end of street	Rippowam River	**B**	discharge to impaired waters
DIS-13	West North St. -adjacent to bridge	Rippowam River	**B**	discharge to impaired waters
DIS-14	Stamford Ave. - end of street	Long Island Sound	**B**	possible recreational contact with water
DIS-15	Shippan Ave. - end of street	Long Island Sound	**A**	Previous MS4 permit sampling location #1
DIS-16	Ocean View Drive - end of street adjacent to public beach	Long Island Sound	**A**	possible recreational contact with water
DIS-17	Hobson St. - end of street	Long Island Sound	**A**	possible recreational contact with water
DIS-18	Main St. & Mill River St. at S. side of bridge	Rippowam River	**A**	Complaint of possible ID in area
DIS-19	Ocean Drive North - backyard of vacant lot between 20 & 40 ODN	Westcott Cove / Long Island Sound	**A**	possible recreational contact with water
DIS-20	Tresser Blvd. - adjacent to bridge on S. side	Rippowam River	**A**	Complaint of possible ID in area
DIS-21	Cold Spring road - adjacent to N. side of bridge	Rippowam River	**A**	Previous MS4 permit sampling location #2
DIS-22	Tresser Blvd. - adjacent to bridge on N. side	Rippowam River	**A**	Complaint of possible ID in area
DIS-23	Division St. - end of street	Rippowam River	**A**	Previous MS4 permit sampling location #4
DIS-24	Soundview Drive	Westcott Cove / Long Island Sound	**B**	possible recreational contact with water
DIS-25	Selleck St. - behind 328 Selleck - samples collected in manhole	Long Island Sound	**A**	Previous MS4 permit sampling location #6
DIS-26	Mill River St. & Smith St.	Rippowam River	**A**	Complaint of possible ID in area
DIS-27	West View Lane - N. side of street, off Westover Rd.	Mianus River	**A**	Complaint of possible ID in area
DIS-28	Meadowpark Ave. West - located in park area	Rippowam River	**C**	possible recreational contact with water
DIS-29	Innaccurate location - eliminated		**-**	
DIS-30	Weed Ave. - adjacent to E. Main St.	Holly Pond / Long Island Sound	**B**	possible recreational contact with water
DIS-31	Innaccurate location - eliminated		**-**	
DIS-32	Innaccurate location - eliminated		**-**	
DIS-33	Innaccurate location - eliminated		**-**	
DIS-34	Innaccurate location - eliminated		**-**	
DIS-35	Viaduct Road - backyard of 57 Viaduct Rd. adj. to end of cul de sac	Noroton River	**B**	discharge to impaired waters

DIS-36	Poplar St. - N. side of 52 Poplar St.	Noroton River	**B**	discharge to impaired waters
DIS-37	Vernon Place - end of street	Rippowam River	**B**	discharge to impaired waters
DIS-38	Innaccurate location - eliminated		**-**	
DIS-39	Innaccurate location - eliminated		**-**	
DIS-40	Innaccurate location - eliminated		**-**	
DIS-41	Innaccurate location - eliminated		**-**	
DIS-42	Innaccurate location - eliminated		**-**	
DIS-43	Innaccurate location - eliminated		**-**	
DIS-44	Innaccurate location - eliminated		**-**	
DIS-45	Richmond Hill Ave. - adjacent to bridge	Rippowam River	**B**	discharge to impaired waters
DIS-46	Innaccurate location - eliminated		**-**	
DIS-47	Cove Island Park - adjacent to S. end of parking lot	Cove Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-48	Cove Island Park - Cove Road	Cove Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-49	Mill River Park - adjacent to Mill River St.	Rippowam River	**A**	possible recreational contact with water
DIS-50	Cummings Park - adjacent to East Ave.	Westcott Cove / Long Island Sound	**A**	possible recreational contact with water
DIS-51	Innaccurate location - eliminated		**-**	
DIS-52	Meadowpark Ave. East - located in park area	Rippowam River	**C**	possible recreational contact with water
DIS-53	Innaccurate location - eliminated		**-**	
DIS-54	Innaccurate location - eliminated		**-**	
DIS-55	Innaccurate location - eliminated		**-**	
DIS-56	Innaccurate location - eliminated		**-**	
DIS-57	Innaccurate location - eliminated		**-**	
DIS-58	Maple Tree Ave. - south side of bridge	Noroton River	**C**	discharge to impaired waters
DIS-59	Innaccurate location - eliminated		**-**	
DIS-60	Stanwick Circle - backyard of 8 Stanwick Circle	Rippowam River	**C**	discharge to impaired waters
DIS-61	Innaccurate location - eliminated		**-**	
DIS-62	Courtland Hill St. - located in backyard of 119 Courtland Hill St.	Noroton River	**A**	discharge to impaired waters
DIS-63	Lenox Ave. - end of street	Noroton River	**A**	discharge to impaired waters
DIS-64	Innaccurate location - eliminated		**-**	
DIS-65	Innaccurate location - eliminated		**-**	
DIS-66	Innaccurate location - eliminated		**-**	
DIS-67	Innaccurate location - eliminated		**-**	
DIS-68	Jefferson Street - North end of East Branch	Stamford Harbor / Long Island Sound	**A**	may need boat to sample at low tide
DIS-69	West Forest Lawn Ave. - end of street	Rippowam River	**C**	discharge to impaired waters
DIS-70	Washington Blvd. and Fourth St. - South Outfall	Rippowam River	**A**	Previous MS4 permit sampling location #3
DIS-71	Washington Blvd. and Fourth St. - North Outfall	Rippowam River	**A**	Previous MS4 permit sampling location #3
DIS-72	Innaccurate location - eliminated		**-**	
DIS-73	Washington Blvd. and Second St.	Rippowam River	**B**	discharge to impaired waters
DIS-74	Jefferson Street - North end of East Branch	Stamford Harbor / Long Island Sound	**A**	may need boat to sample at low tide
DIS-75	Poplar St. - end of street	Noroton River	**A**	Previous MS4 sampling location #5
DIS-76	Research Drive - north of 74 Research Dr.	Noroton River	**B**	discharge to impaired waters
DIS-77	Research Drive - backyard of 74 Research Dr.	Noroton River	**C**	discharge to impaired waters
DIS-78	Research Drive - backyard of 92 Research Dr. - North outfall	Noroton River	**A**	discharge to impaired waters

DIS-79	Research Drive - backyard of 92 Research Dr. - South outfall	Noroton River	**A**	discharge to impaired waters
DIS-80	Innaccurate location - eliminated		**-**	
DIS-81	Innaccurate location - eliminated		**-**	
DIS-82	Old Colony Road - backyard of 3 Old Colony	Noroton River	**B**	discharge to impaired waters
DIS-83	Hope St. bridge at Mead St. - south side of bridge	Noroton River	**B**	discharge to impaired waters
DIS-84	Camp Ave. - located at southeast corner of prop. Adj. to RR tracks	Noroton River	**B**	discharge to impaired waters
DIS-85	Hope St - adjacent to springdale school ballfield	Noroton River	**B**	discharge to impaired waters
DIS-86	Minivale Rd. - backyard of 158 /156 Minivale rd.	Noroton River	**B**	discharge to impaired waters
DIS-87	Innaccurate location - eliminated		**-**	
DIS-88	Oenoke Place - backyard of Riveroak condos 40 Oenoke	Noroton River	**B**	discharge to impaired waters
DIS-89	Ceretta St. - end of street	Noroton River	**B**	discharge to impaired waters
DIS-90	Innaccurate location - eliminated		**-**	
DIS-91	Innaccurate location - eliminated		**-**	
DIS-92	Innaccurate location - eliminated		**-**	
DIS-93	Innaccurate location - eliminated		**-**	
DIS-94	Columbus Place - backyard of 71 / 65 Columbus Place	Noroton River	**A**	2008 photo shows possible illicit discharge
DIS-95	River Place - end of street	Noroton River	**B**	discharge to impaired waters
DIS-96	Garland Drive - adjacent to 92 Camp Ave.	Noroton River	**B**	discharge to impaired waters
DIS-97	Regent Court - backyard of 46 Regent Court	Noroton River	**C**	discharge to impaired waters
DIS-98	Regent Court - backyard of 32 Regent Court	Noroton River	**C**	discharge to impaired waters
DIS-99	Regent Court - backyard of 12 Regent Court	Noroton River	**C**	discharge to impaired waters
DIS-100	Joffre Ave. - backyard of 133 Joffre	Noroton River	**C**	discharge to impaired waters
DIS-101	Innaccurate location - eliminated		**-**	
DIS-102	Loveland Road - backyard of 305 Loveland Road	Undetermined	**C**	discharge to impaired waters
DIS-103	Crestwood Drive - backyard of 90 Crestwood Dr.	Undetermined	**C**	discharge to impaired waters
DIS-104	White Birch Lane - S. side of bridge	Undetermined	**C**	discharge to impaired waters
DIS-105	Innaccurate location - eliminated		**-**	
DIS-106	Dannell Drive - E. side of headwall	Undetermined	**C**	discharge to impaired waters
DIS-107	Dannell Drive - W. side of headwall	Undetermined	**C**	discharge to impaired waters
DIS-108	Woods End Road - backyard of 65 Woods End Road	Undetermined	**C**	discharge to impaired waters
DIS-109	Woods End Road - E. side of Stamford Land cons. Trust parcel	Undetermined	**C**	discharge to impaired waters
DIS-110	Innaccurate location - eliminated		**-**	
DIS-111	Innaccurate location - eliminated		**-**	
DIS-112	Woods End Road - backyard of 57 Woods End Road	Undetermined	**C**	discharge to impaired waters
DIS-113	Innaccurate location - eliminated		**-**	
DIS-114	Innaccurate location - eliminated		**-**	
DIS-115	Innaccurate location - eliminated		**-**	
DIS-116	Haig Ave. - located in southern park area	Noroton River	**A**	possible recreational contact with water
DIS-117	Haig Ave. - located in northern park area	Noroton River	**A**	possible recreational contact with water
DIS-118	Innaccurate location - eliminated		**-**	
DIS-119	Innaccurate location - eliminated		**-**	
DIS-120	Innaccurate location - eliminated		**-**	
DIS-121	Davenport Drive	Stamford Harbor / Long Island Sound	**A**	possible recreational contact with water

DIS-122	Davenport Street - O & G	Stamford Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-123	Davenport Street - O & G	Stamford Harbor / Long Island Sound	**A**	possible recreational contact with water
DIS-124	Innaccurate location - eliminated		**-**	
DIS-125	Florence Court - backyard of 26 Florence Ct.	Rippowam River	**C**	
DIS-126	Southfield Avenue - behind 126 Southfield (marshall trucking)	Stamford Harbor / Long Island Sound	**A**	Complaint of possible ID in area
DIS-127	Westover Lane - south side of road	Mianus River	**A**	Complaint of possible ID in area
DIS-128	Innaccurate location - eliminated		**-**	
DIS-129	Westover Lane - north side of road /backyard of 43 Westover Ln.	Minanus River	**A**	Complaint of possible ID in area
DIS-130	Weed Ave. - adjacent to Birch St.	Holly Pond / Long Island Sound	**A**	possible recreational contact with water
DIS-131	Riverside Ave. - located in backyard of 19 Riverside	Rippowam River	**C**	
DIS-132	Weed Ave. and Matthews St. - South outfall	Holly Pond / Long Island Sound	**A**	possible recreational contact with water
DIS-133	Weed Ave. and Matthews St. - North outfall	Holly Pond / Long Island Sound	**A**	possible recreational contact with water
DIS-134	Innaccurate location - eliminated		**-**	
DIS-135	Crestview Ave. - backyard of 87 Crestview Ave.	Noroton River	**C**	discharge to impaired waters
DIS-136	Innaccurate location - eliminated		**-**	
DIS-137	Innaccurate location - eliminated		**-**	
DIS-138	Innaccurate location - eliminated		**-**	
DIS-139	Overhill Rd. and Barncroft Rd.	Rippowam River	**C**	discharge to impaired waters
DIS-140	Innaccurate location - eliminated		**-**	
DIS-141	Innaccurate location - eliminated		**-**	
DIS-142	Barncroft Road	Rippowam River	**C**	discharge to impaired waters
DIS-143	Innaccurate location - eliminated		**-**	
DIS-144	Innaccurate location - eliminated		**-**	
DIS-145	Kenilworth Drive East	Westcott Cove / Long Island Sound	**B**	possible recreational contact with water
DIS-146	Innaccurate location - eliminated		**-**	
DIS-147	Innaccurate location - eliminated		**-**	
DIS-148	Innaccurate location - eliminated		**-**	
DIS-149	Innaccurate location - eliminated		**-**	
DIS-150	Innaccurate location - eliminated		**-**	
DIS-151	Innaccurate location - eliminated		**-**	
DIS-152	Innaccurate location - eliminated		**-**	
DIS-153	Innaccurate location - eliminated		**-**	
DIS-154	Innaccurate location - eliminated		**-**	

Totals - 46 'A' Priority Ranking - to be screened by 6/30/2015
23 'B' Priority Ranking - to be screened by 6/30/2016
23 'C' Priority Ranking - to be screened by 6/30/2017
92 Total Outfalls screened by 6/30/2017

City of Stamford

Map Key

- MS4Outfalls_92 records
- Hydrology
- Parks
- I-95 & Merritt Pkwy
- Major Arterials
- All Other Roads
- Railroads

Disclaimer: Road information displayed on this map is for general reference purposes only and is not represented as survey-accurate or up to date. All information is subject to verification by any user. The City of Stamford assumes no legal responsibility for the information contained herein.
map printed 8/27/14

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Appendix Q

IDDE Screening Checklist

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IDDE Screening Checklist

A. Location Information

Outfall Location: _____

Sampler: _____

Date: _____

Time (first visit): _____ Time (second visit): _____

Second Visit required if there is no flow but sign of discharge during first visit.

Date and Time of Prior Storm Event (>0.1 inch): _____

Are there previous photos? Y N

Take photograph of outfall. Take from same location as previous if answered Yes on above question.

B. Physical Condition of Outfall:

Intact? Collapse? Structural Defects? _____

_____

Deposition or Erosion? _____

_____

	Indicators of Illicit Discharge
Color	
Odor	
Oil Sheen	
Foam	
Soap Suds	
Slime	
Sanitary Solids	
Oil Sheen	

Is flow observed? Y N *If yes, continue to Section C. If no, skip to Section D.*

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C. Flow Characteristics and Sampling

Estimate Flow: _____

Describe Method of Flow Estimation: _____

_____

Sample for following parameters:

- Lab Sampling
  - E.Coli

- Field Sampling
  - pH
  - Temperature
  - Conductivity
  - Turbidity
  - Dissolved Oxygen
  - Surfactants (as MBAS)
  - Potassium
  - Ammonia

D. Conclusion

Should the outfall be considered for IDDP prioritization? Y N

If no flow is observed, but there are indicators of discharge, return in 4 to 24 hrs and repeat.

FUSS & O'NEILL

Appendix R

Sample Smoke Testing Notifications

Smoke and Dye Testing (SDT) Procedures

Prior to initiating smoke and/or dye testing activities, the WPCA implements the following procedures:

Smoke Testing

1. Via mapping and/or field verification information, area(s) of interest are determined;

2. Tags are hand delivered to the representatives/owners and/or fastened to door knobs of the buildings potentially affected. This notification process also describes when the planned smoke test activity will commence during a certain time period;

3. On the day of the smoke test activity, Stamford's central fire house and police department are notified of the time and where will occur within the designated area; and,

4. Results from this activity are summarized to the master mechanic and supervising engineer to determine appropriate course of action.

Dye Testing

1. Owners of buildings are notified via phone or in-person of the need to complete a dye test;

2. Once an agreed date and time is reached, WPCA crew arrive bearing proper credentials, and one-member enters the building to introduce the dye into the their sanitary wastewater discharge, while the other inspects the lateral line entering the City's sanitary line; and,

3. Results from this activity are completed on a dye test form, and copies are provided to the master mechanic and supervising engineer to determine appropriate course of action.

NOTICE

The City of Stamford is conducting a smoke test on the storm or sanitary lines in your area. This operation involves blowing smoke into the sewer lines to determine leaks and possible health hazards. More than likely, smoke will not enter your home or building. But if it does, do not be alarmed. The smoke is white and does not leave a residue. Please open all your windows to aid in the circulation of this smoke. If it does enter your home or building, please notify our field personnel on the street or call 977-4596 or 977-4590.

Smoke testing on your street will be conducted on:

_____

Thank you,
Water Pollution Control Authority
Stamford Public Works Department

William P. Brink, P.E. BCEE
Executive Director
Stamford Water Pollution Control Authority
203-977-5809
wbrink@ci.stamford.ct.us

Michael Handler, Chairman
SWPCA Board of Directors
Stamford Water Pollution Control Authority
203-977-4182
mhandler@ci.stamford.ct.us

Smoke Testing Activity
263 Tresser Boulevard

July 23, 2014 8:30 a.m.

Attention Occupants:

Property managers for this building, RFR Realty, L.L.C, have requested Stamford WPCA to assist in conducting a planned smoke testing activity for the building at 263 Tresser Boulevard on July 23, 2014 between 8:30 a.m. and 9:30 a.m.

Purpose is to verify plumbing connections/conveyances are proper and in good condition throughout the building.

General Overview of Smoke Testing Activity:

Utilities have safely used smoke testing for many years. It helps to determine where other sources of water are entering the sewer system and identify system improvement needs, as well as, identify potential plumbing deficiencies within a building.

During smoke testing, Stamford WPCA crews force smoke into sewer pipes through manholes. The smoke helps find cracks in pipes, uncapped customer lateral cleanouts, and prohibited connections that allow rain or groundwater into the sewer system.

Stamford WPCA has already coordinated with the property owner's representatives in advance of smoke testing to explain the process, and contractors leave door hangers one to three days before testing on a particular street. The letters and door hangers include a customer support number, so customers can call if they have questions or concerns about the testing. Stamford WPCA also notifies Stamford Fire and Police Departments in advance of the smoke testing activity, in the event they receive inquiries.

The smoke is non-toxic and non-staining, is not a fire hazard, and will not harm children, pets, or plants. Anyone with respiratory problems, however, should avoid breathing the smoke to prevent irritation.

For your peace of mind, you might want to contact RFP Realty, L.L.C. at the number below to request notification immediately prior to the test to help avoid any confusion or alarm.

Prior to the Smoke Test:

Stamford WPCA asks customers to run or pour about a pint of water into any garage or basement floor drains and unused sinks to fill the P-trap. The trap normally has water in it, but if the drain has not been used recently, the water may have evaporated. The water will help keep smoke from the testing from entering through the drain.

During the Smoke Test:

Don't be alarmed if you see smoke coming from vent stacks on buildings or holes in the ground. If the smoke enters your building, it may set off your smoke alarm. The smoke is harmless and should dissipate quickly - or you can open doors and windows to help ventilate smoke.

If you poured water down any unused drains but smoke still enters your building, it may indicate defects in your plumbing. Note the location of the smoke, and call Stamford WPCA and RFR Realty, L.L.C.'s property managers at the numbers provided below.

If you have questions about this planned smoke testing activity, please call Stamford WPCA at 203-977-5768 or Ed Wissell of RFR Realty, L.L.C. at 203-328-3647.

Sincerely,

Stamford WPCA

FUSS & O'NEILL

Appendix S

In-stream Sampling Locations and Justification

MAYOR
DAVID MARTIN

DIRECTOR OF OPERATIONS
ERNEST ORGERA

TRAFFIC & ROAD MAINTENANCE SUPERVISOR
THOMAS TURK

OPERATIONS SUPERVISOR
DOUGLAS HOYT

OPERATIONS SUPERVISOR
PETER J. IANNACCONE

OPERATIONS FOREMAN
JOHN CORNELIO

CITY OF STAMFORD
OFFICE OF OPERATIONS
HIGHWAY DEPARTMENT

May 23, 2014

Mr. Christopher O. Stone
Connecticut Department of Energy and Environmental Protection
79 Elm St.
Hartford, CT 06106

Re: *Permit No.CT0030279; In-stream Dry and Wet Weather Monitoring Locations as per Section 7(D)(1)*

Mr. Stone,

Please find the following information regarding ten (10) proposed sampling locations for in-stream dry and wet weather monitoring as per Section 7(D)(1). Please refer to the following Exhibits, which illustrate the proposed sampling locations.

- **Exhibit A** - City of Stamford In-Stream Monitoring Locations Map (Overall Map)
- **Exhibit B** – GIS map, written description, and photographs for each In-Stream Monitoring Location

Please review the proposed sampling locations in accordance with the requirements of the permit (CT0030279) and notify me at 203-977-5281 if you have any questions.

Regards,

5/23/2014

Tyler L. Theder

Regulatory Compliance and Administrative Officer
City of Stamford

MAYOR
DAVID MARTIN

DIRECTOR OF OPERATIONS
ERNEST ORGERA

CITY OF STAMFORD
OFFICE OF OPERATIONS
HIGHWAY DEPARTMENT

TRAFFIC & ROAD MAINTENANCE SUPERVISOR
THOMAS TURK

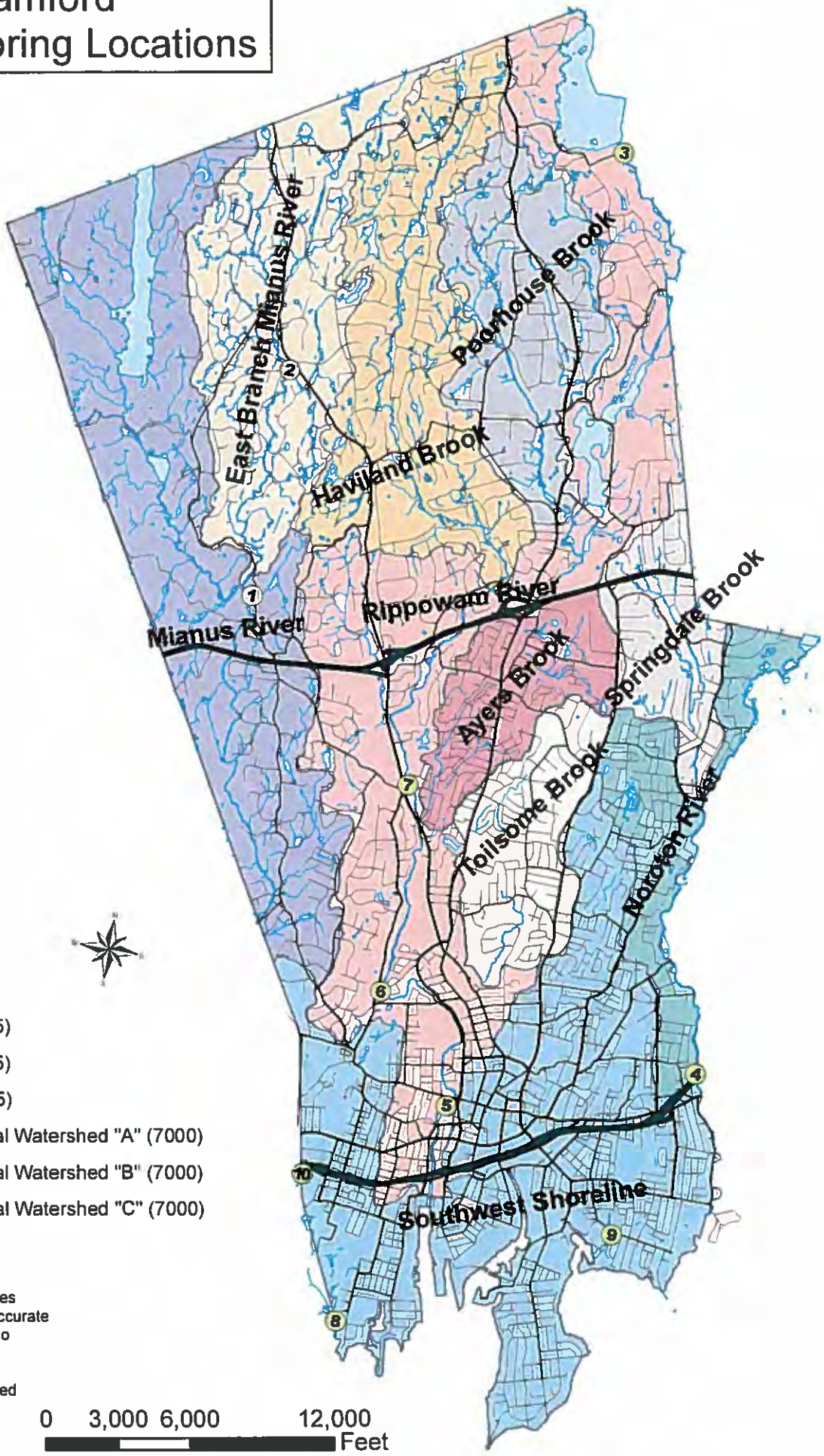
OPERATIONS SUPERVISOR
DOUGLAS HOYT

OPERATIONS SUPERVISOR
PETER J. IANNACCONE

OPERATIONS FOREMAN
JOHN CORNELIO

Exhibit A

City of Stamford
In-Stream Monitoring Locations



Legend

EPB Basins

- Ayers Brook
- East Branch Mianus River
- Haviland Brook
- Mianus River
- Noroton River
- Poorhouse Brook
- Rippowam River
- Southwest Shoreline
- Springdale Brook
- Toilsome Brook

1. Mianus River (7407)
2. East Mianus River (7406)
3. Mill River (7404)
4. Noroton River (7403)
5. Rippowam River "A" (7405)
6. Rippowam River "B" (7405)
7. Rippowam River "C" (7405)
8. Long Island Sound Coastal Watershed "A" (7000)
9. Long Island Sound Coastal Watershed "B" (7000)
10. Long Island Sound Coastal Watershed "C" (7000)

0 3,000 6,000 12,000 Feet

MAYOR
DAVID MARTIN

DIRECTOR OF OPERATIONS
ERNEST ORGERA

TRAFFIC & ROAD MAINTENANCE SUPERVISOR
THOMAS TURK

OPERATIONS SUPERVISOR
DOUGLAS HOYT

OPERATIONS SUPERVISOR
PETER J. IANNACCONE

OPERATIONS FOREMAN
JOHN CORNELIO

CITY OF STAMFORD

OFFICE OF OPERATIONS

HIGHWAY DEPARTMENT

Exhibit B

Location 1
Mianus River (7407)
EPA Description: From Mianus filtration plant dam outlet (Impoundment at filtration plant), Town of Greenwich, up to Sam Bargh Reservoir dam outlet, Stamford.

Proposed Sampling Location:
Newman Mills / Riverwalk Park, located off of Riverbank Road.

This monitoring location has been chosen because it is situated at the approximate midpoint of the Mianus River (7407) watershed within the City of Stamford. This sampling location is downstream from the confluence of the East Branch of the Mianus River. Adjacent land use activities in the sample area consist primarily of residential uses, although equestrian and farming based land uses are known to occur upstream from this location. The chosen location is in a city owned park, thereby providing available off-street parking in a gravel lot and convenient access to the river. See photo below.

View of sampling location.

Legend

Location 1

Mianus River (7407)

N

1 inch = 100 feet

0 50 100 200 Feet

The information displayed on this map is for general reference only. The data is not survey accurate. The City of Stamford assumes no legal responsibility for the information contained herein.
Aerial photograph taken March 2011.

Location 2
East Mianus River (7406)
EPA Description: Not available

Proposed Sampling Location:
Wildwood Road Bridge over East Branch of Mianus River

This monitoring location has been chosen because it is situated at the approximate midpoint of the East Branch Mianus River (7406) watershed as defined by EPA / DEEP. The chosen location is within the 50 foot wide city owned right-of-way along Wildwood Road. The roadway crosses the river at a perpendicular angle and does not follow along the watercourse, thereby minimizing the chance for compromised samples related to roadway contaminants. The watercourse downstream from the bridge appears to be scoured and rocky, with little evidence of sediment or eroded stream banks. A small (2 foot wide) concrete dam with weir was observed along the downstream side of the bridge. The area surrounding the sampling location includes primarily residential land uses with associated dwellings, paved driveways, woodlands, and wetlands. Access the sampling location by parking on the shoulder of Harpsichord Turnpike and walking down the bank within the right-of-way on the south side of the bridge. See photo below.

View of sampling location.


2132
2121
167
2118
63
2083
12
180
WILDWOOD RD
2064
238
Legend
Location 2
East Mianus River (7406)
N
1 inch = 100 feet
0 50 100 200
Feet
The information displayed on this map is for general reference only.
The data is not survey accurate. The City of Stamford assumes no
legal responsibility for the information contained herein.
Aerial photograph taken March 2011.

Location 3
Mill River (7404)

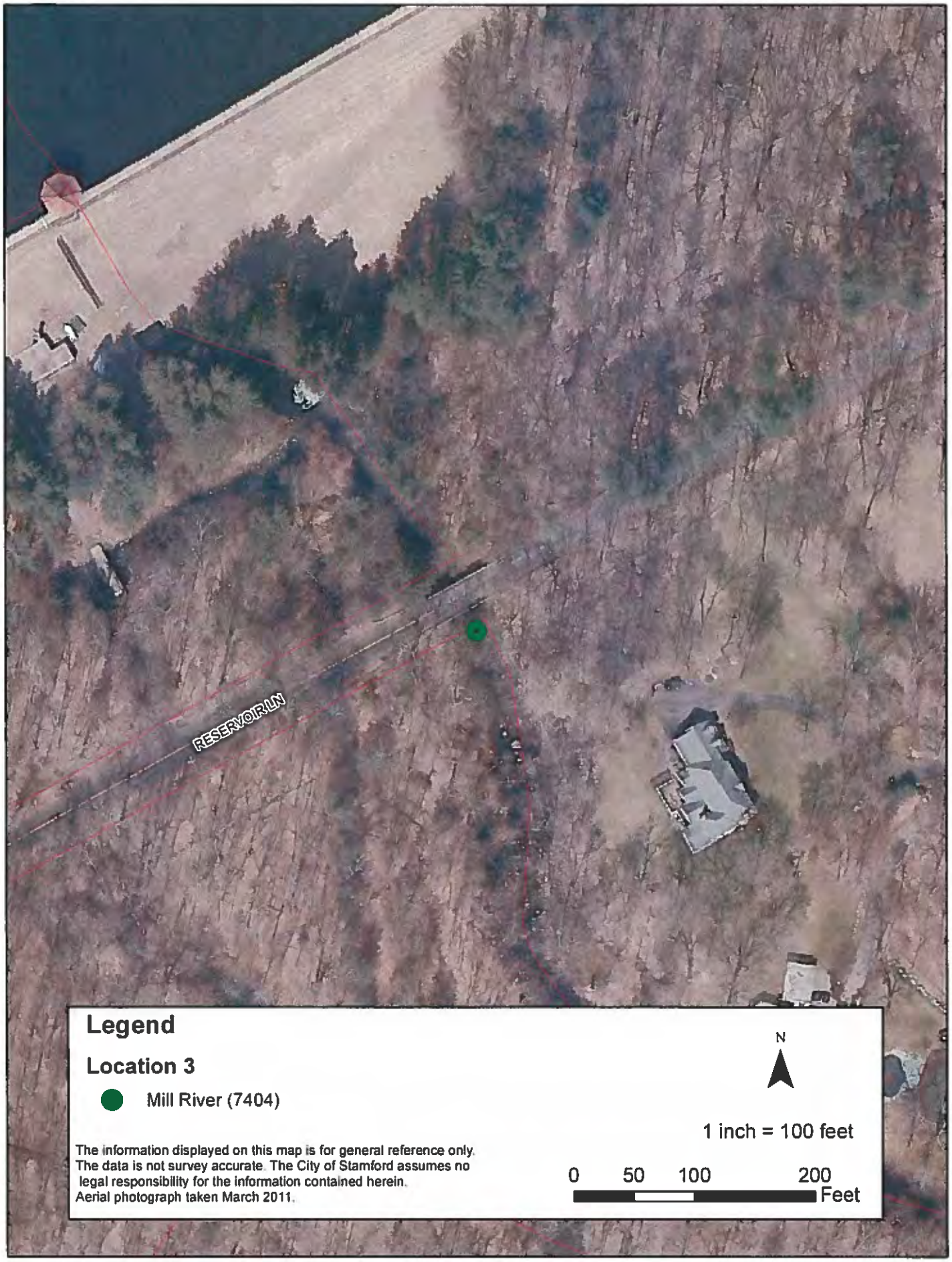
EPA Description: Mouth of Rippowam River, near Ponus Ridge crossing of Rippowam River, to Laurel Reservoir Dam, along New Canaan/Stamford town line.

Proposed Sampling Location:
Reservoir Lane Bridge over Mill River

This monitoring location has been chosen because it is situated midway through the Mill River (7404) as defined by EPA / DEEP. This sampling location is immediately downstream from the dam which contains the Laurel Reservoir. The chosen location is within the 50 foot wide city owned right-of-way along Reservoir Lane which turns into Ponus Ridge Road entering into the Town of New Canaan. The roadway crosses the river at a perpendicular angle and does not follow along the watercourse. The upstream area adjacent to the sampling location includes a rocky, scoured stream bank, likely a result from discharged flows from the reservoir. Other adjacent land uses include a small number of residential dwellings surrounded by forested lands owned by the Aquarion Water Company. Stream flows and timed discharges may be regulated by the water company. The eastern side of the Mill River and the Laurel Reservoir are located in New Canaan. Access the sampling location by parking on the shoulder of Reservoir Lane and walking down the bank on the south side of the bridge. See photos below.

View of sampling location.

View looking downstream.


RESERVOIR LN
Legend
Location 3
Mill River (7404)
The information displayed on this map is for general reference only. The data is not survey accurate. The City of Stamford assumes no legal responsibility for the information contained herein.
Aerial photograph taken March 2011.
N
1 inch = 100 feet
0 50 100 200
Feet

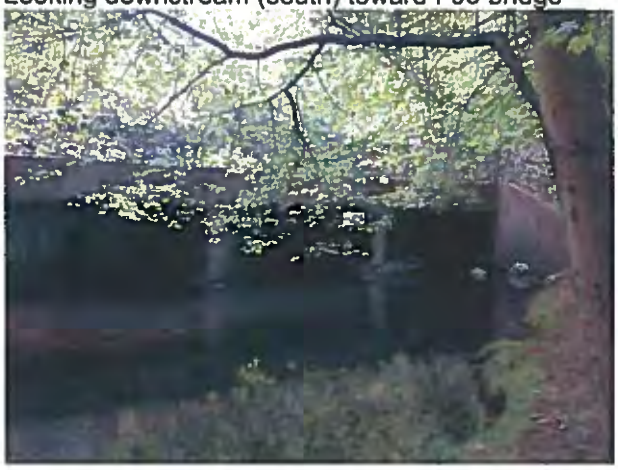
Location 4
Noroton River (7403)

EPA Description: From Post Road (Route 1) crossing (saltwater limit at head of Holly Pond), up to Southwestern corner of St. John's Cemetery (River Bend to West), Stamford/Darien Town Border.

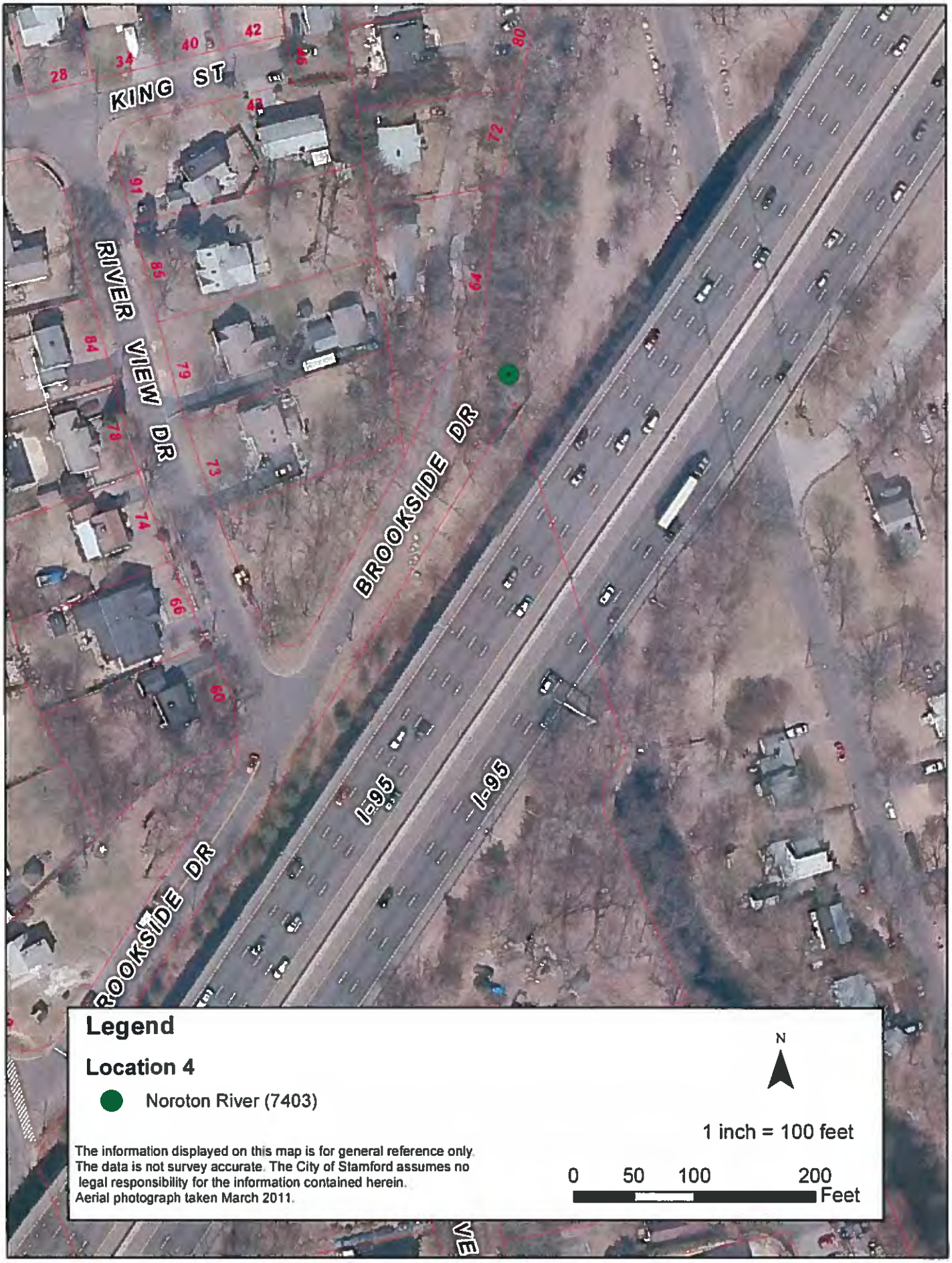
Proposed Sampling Location:
Brookside Drive, just north of I-95 Bridge over Noroton River

This monitoring location has been chosen because it is situated within the Noroton River (7403) as defined by EPA / DEEP, and is just upstream from the saltwater limit of Holly Pond. This site is located upstream (north) from the I-95 bridge crossing of the Noroton River. The upstream area adjacent to the sampling location includes a heavily wooded, earthen stream bank with scattered boulders. The eastern bank of the river is located within the Town of Darien. Land use on the Stamford side of the river consists of multi-family residential uses in the immediate area. The State of Connecticut maintains a highway garage just to the east of the sampling location. Access the sampling location by parking on the shoulder of Brookside Drive and walking down the bank to the river on the north side of the I-95 bridge. See photos below.

Looking downstream (south) toward I-95 bridge



Looking upstream (north)


KING ST
RIVER VIEW DR
BROOKSIDE DR
I-95
I-95
ROOKSIDE DR
28
34
40
42
43
80
72
91
85
84
79
78
73
74
66
60
64
Legend
Location 4
Noroton River (7403)
The information displayed on this map is for general reference only. The data is not survey accurate. The City of Stamford assumes no legal responsibility for the information contained herein.
Aerial photograph taken March 2011.
N
1 inch = 100 feet
0 50 100 200
Feet

Location 5
Rippowam River "A" (7405)

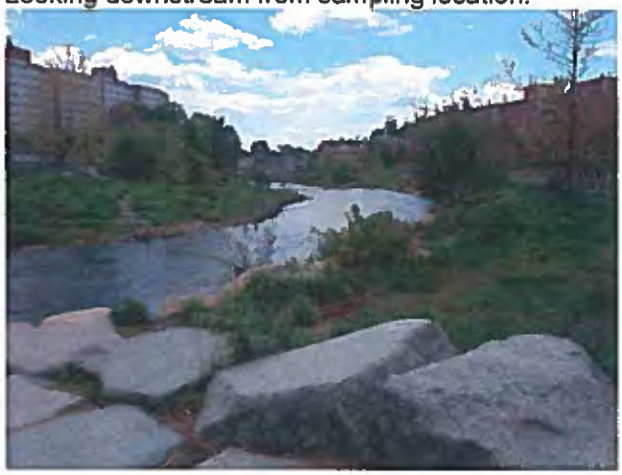
EPA / DEEP Description: From Rippowam River West Branch dam (head of tide, Route 1 bridge), up to Merritt Parkway (Route 15) crossing (mid-way between exit 34 and exit 35), Stamford.

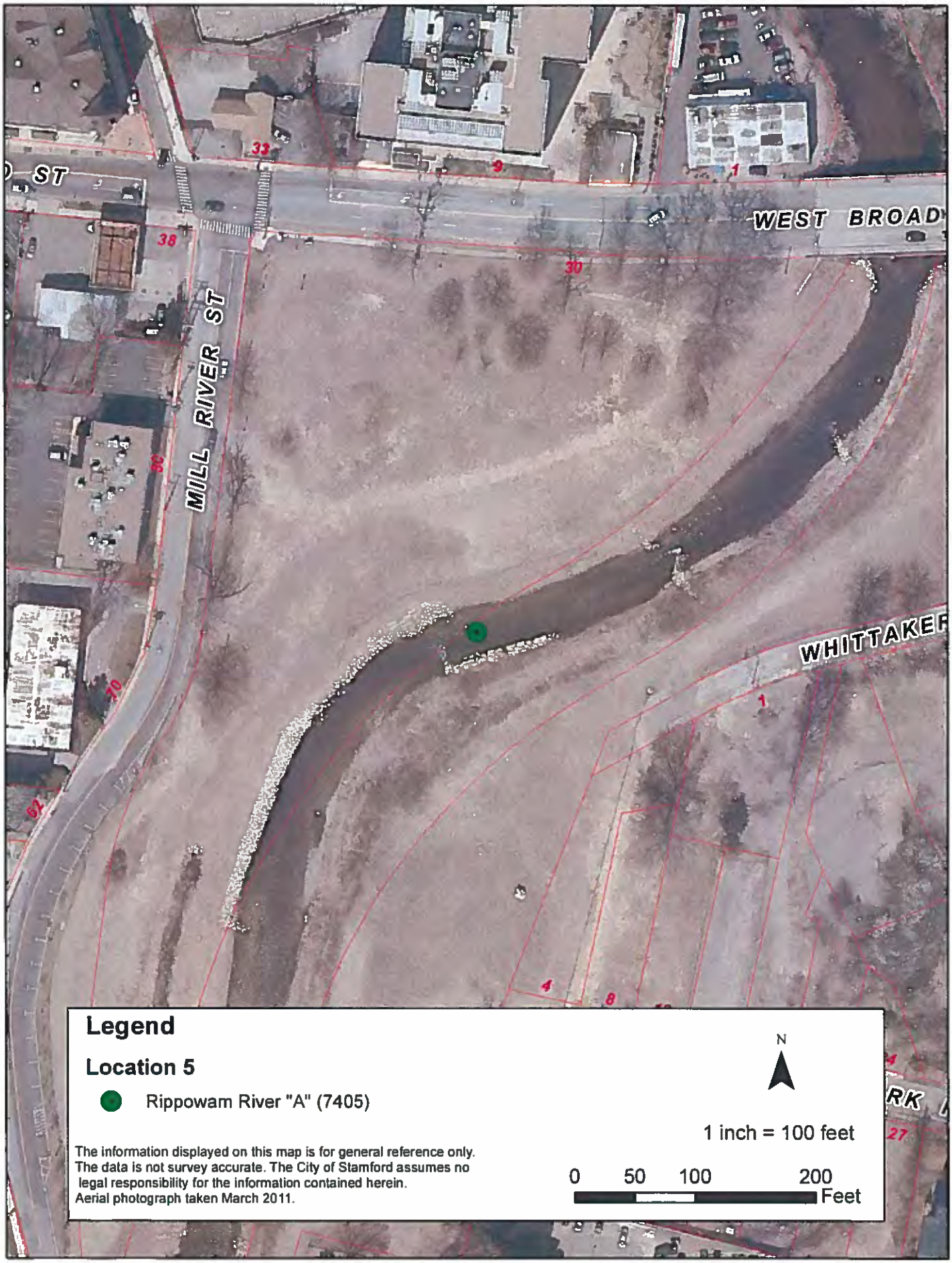
Proposed Sampling Location:
Within Mill River Park, adjacent to intersection of W. Broad and Mill River St. (West Overlook)

This monitoring location has been chosen because it is situated within the Rippowam River (7405) as defined by EPA / DEEP. This is the first of three required monitoring locations within the Rippowam River watershed (7405) as per CT0030279. The proposed sampling location is known as the 'West Overlook' and is at the southern end of the granite path leading to the Rippowam River and within the boundaries of the Mill River Park. Be advised the program for the establishment of the Mill River Park included restoration of wetlands, fish habitat, and the natural stream channel of the Rippowam River. The scope of this work included removal of the west branch dam, concrete retaining walls, and contaminated sediments beginning in 2009. Recent discussions with the Mill River Collaborative have revealed their support for stream monitoring at locations in the park such as the 'West Overlook', which were designed to encourage the public to interact with the water. This sampling location is located in the downtown part of Stamford which has office, retail, and residential land uses. Large amounts of impervious surface support these land uses, and exist just outside the boundaries of the park. Access the sampling location by parking on Mill River Street and walking down to the river. See photos below.

Sampling location within Mill River Park.

Looking downstream from sampling location.




ST
WEST BROAD
MILL RIVER ST
WHITTAKER
33
9
1
38
30
80
70
62
4
8
27
Legend
Location 5
Rippowam River "A" (7405)
N
1 inch = 100 feet
0 50 100 200
Feet
The information displayed on this map is for general reference only.
The data is not survey accurate. The City of Stamford assumes no
legal responsibility for the information contained herein.
Aerial photograph taken March 2011.

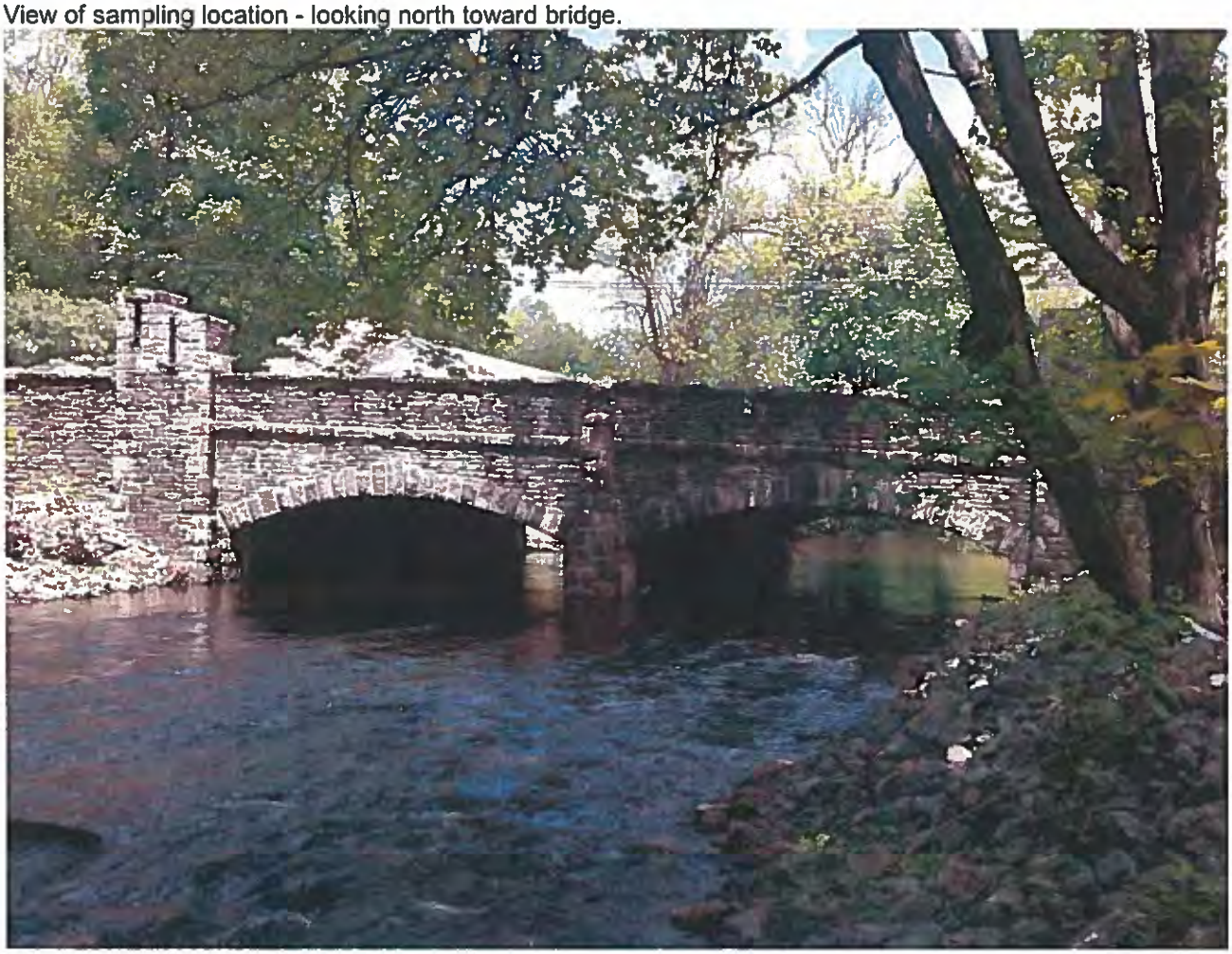
Location 6
Rippowam River "B" (7405)

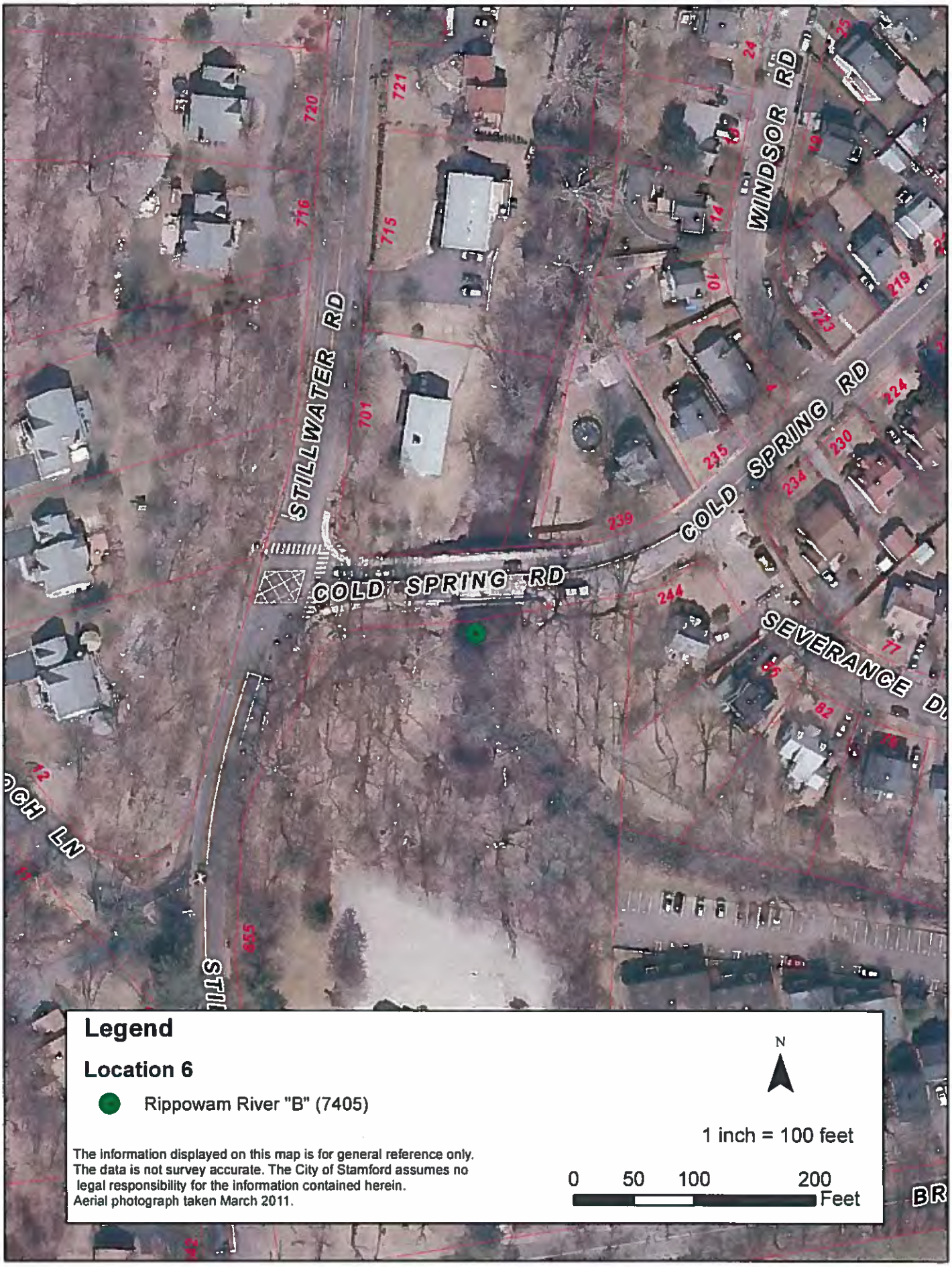
EPA / DEEP Description: From Rippowam River West Branch dam (head of tide, Route 1 bridge), up to Merritt Parkway (Route 15) crossing (mid-way between exit 34 and exit 35), Stamford.

Proposed Sampling Location:
Cold Spring Road Bridge over Rippowam River

This monitoring location has been chosen because it is situated within the Rippowam River watershed (7405) as defined by EPA. This is the second of three required monitoring locations within the Rippowam River watershed (7405) as per CT0030279. The sampling site is located within the 50 foot wide right of way of Cold Spring Road. Current land use in this area is primarily single-family residential, with religious institution and associated impervious parking surface located downstream. Upstream land uses include residential, office park, and a contractor's material storage yard adjacent to the river. Access the sampling location by parking on Severance Drive and walking down to the river. See photo below.

View of sampling location - looking north toward bridge.





Legend

Location 6

Rippowam River "B" (7405)

N

1 inch = 100 feet

0 50 100 200 Feet

The information displayed on this map is for general reference only. The data is not survey accurate. The City of Stamford assumes no legal responsibility for the information contained herein.
Aerial photograph taken March 2011.

Location 7
Rippowam River "C" (7405)

EPA / DEEP Description: From Rippowam River West Branch dam (head of tide, Route 1 bridge), up to Merritt Parkway (Route 15) crossing (mid-way between exit 34 and exit 35), Stamford.

Proposed Sampling Location:
Long Ridge Rd. and Buckingham Dr. (Levine Site – City of Stamford Park)

This monitoring location has been chosen because it is situated within the Rippowam River watershed (7405) as defined by EPA. This is the third of three required monitoring locations within the Rippowam River watershed (7405) as per CT0030279. The sampling site is located within the Levine Site, a City of Stamford Park. Current land use in this area consists of single-family residential dwellings, forested parkland, and arterial roadways (Long Ridge Road). Park on Buckingham Drive at the crosswalk and walk down the path directly to the river to access the sampling location. See photos below.

View of sampling location looking upstream toward bridge on Buckingham Drive.

View looking downstream from sampling location.


BUCKINGHAM DR
LONG RIDGE RD
BUCKINGHAM CT
BUCKINGHAM DR
54
56
58
60
62
68
72
57
59
63
65
15
17
156
27
25
3
1
7
Legend
Location 7
Rippowam River "C" (7405)
The information displayed on this map is for general reference only.
The data is not survey accurate. The City of Stamford assumes no
legal responsibility for the information contained herein.
Aerial photograph taken March 2011.
N
1 inch = 100 feet
0 50 100 200
Feet

Location 8
Long Island Sound Coastal Watershed "A" (7000)

EPA / DEEP Description: Southwest Shoreline – Straddles the Greenwich Town Line

Proposed Sampling Location:
Shore Road, south of Innis Arden Golf Course at Greenwich / Stamford Town Line

This monitoring location has been chosen because it is situated within the Long Island Sound Southwest Shoreline watershed (7000) as defined by EPA / DEEP. This is the first of three required monitoring locations within the Long Island Sound Coastal Watershed (7000) as per CT0030279. The sampling site is located downstream from the dual culverts on the south side of Shore Road. The west side of the stream is the Town of Greenwich. Current land use in this area includes single family residential, an office park with associated impervious parking, and the Innis Arden Golf Course which is located just upstream from the monitoring location. Park along Shore Road and walk down the embankment to the stream.

View of sampling location - downstream from Shore Rd. bridge.

View looking north along stream toward Innis Arden golf course.


SHORE RD
Legend
Location 8
Long Island Sound Coastal Watershed "A" (7000)
The information displayed on this map is for general reference only. The data is not survey accurate. The City of Stamford assumes no legal responsibility for the information contained herein. Aerial photograph taken March 2011.
N
1 inch = 100 feet
0 50 100 200
Feet

Location 9
Long Island Sound Coastal Watershed "B" (7000)

EPA / DEEP Description: Southwest Shoreline – Discharges to Westcott Cove

Proposed Sampling Location:
Soundview Ave. Bridge over Watercourse adjacent to Tupper Drive

This monitoring location has been chosen because it is situated within the Long Island Sound Southwest Shoreline watershed (7000) as defined by EPA / DEEP. This is the second of three required monitoring locations within the Long Island Sound Coastal Watershed (7000) as per CT0030279. The sampling site is located downstream from the bridge, adjacent to Tupper Drive. Current land use in this area includes Cummings Park owned by the City of Stamford to the north and west, and single family residential dwellings to the east of the proposed monitoring location. Park along Tupper Drive and walk down the embankment to the stream.

View of sampling location –
looking downstream from bridge.

View looking downstream toward Westcott Cove.


SOUNDVIEW AVE
WASCUSSEE LN
TUPPER DR
200
214
220
224
232
211
217
221
227
241
Legend
Location 9
Long Island Sound Coastal Watershed "B" (7000)
The information displayed on this map is for general reference only. The data is not survey accurate. The City of Stamford assumes no legal responsibility for the information contained herein.
Aerial photograph taken March 2011.
N
1 inch = 100 feet
0 50 100 200
Feet

Location 10
Long Island Sound Coastal Watershed "C" (7000)

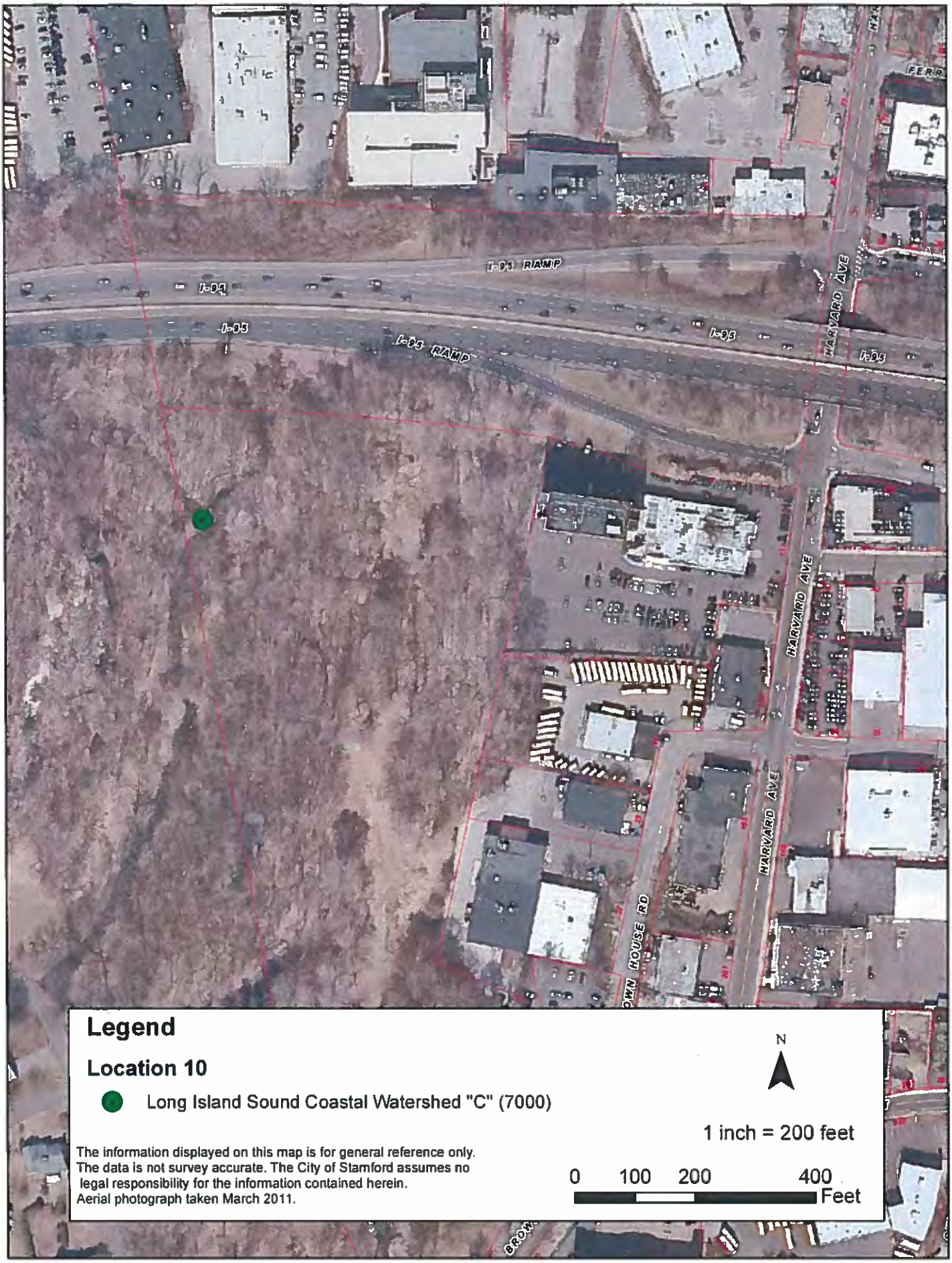
EPA / DEEP Description: Southwest Shoreline – Straddles the Greenwich Town Line

Proposed Sampling Location:
Northwest Corner of Rosa Hartman Park – Downstream from I-95 Bridge.

This monitoring location has been chosen because it is situated within the Long Island Sound Southwest Shoreline watershed (7000) as defined by EPA / DEEP. This is the third of three required monitoring locations within the Long Island Sound Coastal Watershed (7000) as per CT0030279. The sampling site is located just downstream from the embankment of I-95 adjacent to Exit #6. The watercourse appears to flow under I-95 and originate from the retail and commercial land uses located to the north of I-95. It appears this watercourse may have been piped underground many years ago in order to develop retail and commercial uses in this area. Recent inspection of the proposed monitoring location revealed stream bank scouring and erosion, which may be the result of the large amount of upstream impervious surface. The west side of the stream is the Town of Greenwich. To access the sampling location, park in the lot for Rosa Hartman Park and walk north along the asphalt trail. From the end of the trail, head northwest and walk downslope into the woodland to the stream.

View of sampling location – looking North toward I-95.

Looking downstream from sampling location.


I-95 RAMP
I-95
I-95 RAMP
I-95
I-95
HARVARD AVE
HARVARD AVE
HARVARD AVE
BROWN HOUSE RD
Legend
Location 10
Long Island Sound Coastal Watershed "C" (7000)
N
1 inch = 200 feet
0 100 200 400
Feet
The information displayed on this map is for general reference only.
The data is not survey accurate. The City of Stamford assumes no
legal responsibility for the information contained herein.
Aerial photograph taken March 2011.

FUSS & O'NEILL

Appendix T

In-stream Monitoring Field Data Sheet

FUSS & O'NEILL

Instream Dry and Wet Weather and Outfall Monitoring

A. Location Information

Sampler: _____

Date: _____

Time : _____

Sample Location in Detail: _____

_____

Date and Time of Prior Storm Event (>0.1 inch): _____

Date and Time of Prior Storm Event (>0.25 inch): _____

Is this Outfall or Instream ? (circle one)

If instream, include information below:

Time of First Grab:_____

Time of Second Grab: _____

Time of Third Grab: _____

Time of Fourth Grab: _____

Note: Each grab sample must occur at least 5 minutes after previous sample.

B. Physical Condition of Monitoring Location:

Deposition? Erosion? Sand Bars? Deltas? _____

_____

C. Sampling Parameters

- Lab Sampling Parameters:
  - Hardness (as $CaCO_3$)
  - Total Suspended Solids (TSS)
  - Oil & Grease, Total (from first grab for instream sample)
  - Total Petroleum Hydrocarbons (TPH) (from first grab for instream sample)

FUSS & O'NEILL

D. Sampling Parameters (cont.)

- Lab Sampling Parameters (cont.):
  - Surfactants
  - Total Phosphorus
  - Ammonia
  - Nitrate Nitrogen
  - Nitrite Nitrogen
  - Total Kjeldahl Nitrogen
  - Total Copper
  - Total Lead
  - Total Zinc
  - Chloride
  - Biochemical Oxygen Demand (BOD)
  - Chemical Oxygen Demand (COD)
  - E. coli
  - Fecal Coliform
  - Enterococci
  - Aquatic Toxicity (LC50) (required during summer wet weather, instream event only)

- Field Sampling
  - pH
  - Temperature
  - Conductivity
  - Dissolved Oxygen

FUSS & O'NEILL

Appendix U

Outfalls for Wet Weather Monitoring

To be Developed by Stamford