

2018 - 2019  
MS4 ANNUAL REPORT  
NPDES PERMIT #CT0030279  
FOR  
CONNECTICUT DEPARTMENT OF  
ENERGY & ENVIRONMENTAL PROTECTION

PREPARED FOR

CITY OF STAMFORD  
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## INTRODUCTION

The City of Stamford (the City) was issued its current NPDES Permit (No. CT0030279) for discharge of stormwater from its municipal separate storm sewer system (MS4) on June 4, 2013. Renewal for this permit was submitted to DEEP on February 6, 2018. This permit requires many actions in order to reduce pollution from stormwater runoff.

This Annual Report (Report) covers the period from July 1, 2018 through June 30, 2019 (Reporting Period). It summarizes the activities conducted and measures taken to comply with the previous and current NPDES Permit during this Reporting Period. This Annual Report was prepared in accordance with the terms and conditions of the NPDES Permit, as well as the *Stormwater Management Plan, City of Stamford, Stamford, Connecticut, September 2, 2014* (the SMP).

The 2017–18 MS4 final Annual Report was submitted to CTDEEP on October 3, 2018.

On January 2, 2016, the City submitted an application for modification of its NPDES Permit. The City, in conjunction with the CTDEEP, completed many efforts to work through the requested permit modification items during the 2016-17 fiscal year. Many meetings, phone calls, emails, and letters related to the process were conducted over a period of two (2) years to complete the permit modification process which took a considerable amount effort. CTDEEP worked with the City and the Environmental Protection Agency (EPA) in efforts to complete the process. A NPDES Permit Modification for the City of Stamford was issued by the CTDEEP on August 14, 2017.

On February 6, 2018, the City submitted a permit renewal application for the newly modified NPDES Permit, which was set to expire on June 3, 2018. The City received minimal comments from the CTDEEP's review of the application and has since submitted all of the requested information. The new permit is pending renewal from CTDEEP.

Notice of Sufficiency from the Connecticut Department of Energy and Environmental Protection (CTDEEP) was received on July 9, 2019. The letter indicates the application is in technical review at this time.

## 1.0 CONTACTS LIST

The following individuals are members of the City's Stormwater Pollution Prevention Team and have a role in the implementation of the City's stormwater management program and are in positions that have the potential to impact and improve stormwater quality. All of these individuals are involved in the development of the Stormwater Management Plan (SMP) and/or this Annual Report.

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## 2.0 PROGRAM EVALUATION

### 2.1 Stormwater Management Plan (SMP) Objectives

The City of Stamford (the City) was issued a NPDES Permit for discharge of stormwater from its municipal separate storm sewer system (MS4) on June 4, 2013. This permit was renewed in February 2018. The new modified permit renewal is pending approval from CTDEEP. The City developed and is implementing a Stormwater Management Plan (SMP) based on the requirements of the NPDES Permit.

The SMP provides the framework for compliance with the terms and conditions of the NPDES Permit with the overall objective of improving the quality of stormwater runoff and protecting the surface waters of the State. The SMP seeks to achieve this objective through:

- Establishment of a Pollution Prevention Team
- Development of Stormwater Mapping
- Establishment and Implementation of Control Measures, including:
  - Public Education and Involvement
  - Source Controls for Pollution Prevention
  - Future Land Disturbance and Development Management
  - Infrastructure Operations and Maintenance
- Establishment and Implementation of an Illicit Discharge Detection and Elimination (IDDE) Program
- Establishment and Implementation of a Water Quality Monitoring Program
- Establishment and Implementation of Legal Authority to Control Discharges
- Establishment and Implementation of Procedures to Coordinate Stormwater Activities between various Departments and Agencies
- Maintaining Consistency with Other Plans and Permits

Additional details on each of these of these methods to achieve the objectives of the SMP are presented in the Summary Table of SMP Components (*Section 3.0*) and the Narrative Report (*Section 4.0*).

### 2.2 Major Findings

The objective of the SMP is to improve stormwater runoff quality and protect the surface waters of the State. This discussion of major findings should provide an overall evaluation as to whether stormwater and surface water quality in the City and from the City's MS4 is improving or degrading in the City.

The major findings during this Reporting Period of the modified NPDES Permit are the steps that the City has taken to implement the permit requirements, including but not limited to:

- Continued development of an understanding of the permit requirements and the resources necessary to achieve compliance
- Continued allocation of additional resources (personnel, equipment, and budget) to/within the Traffic and Road Maintenance Division to specifically address stormwater management and stormwater runoff quality improvement issues

- Continued coordination of the Stormwater Pollution Prevention Team with City Departments for stormwater-related issues
- Implementation of the SMP and associated public outreach activities
- Continuation of city-wide geographic information system (GIS) mapping related to stormwater infrastructure and management
- Continued development of legal authority and zoning regulations to address stormwater discharges and quality
- Continued coordination of public outreach with local environmental and business groups
- Continued coordination with consultants to assist in the implementation of the SMP and to perform surface water, stormwater, and outfall monitoring

### 2.3 SMP Strengths and Weaknesses

#### 2.3.1 EPA Review of the Status of the NPDES Permit

Representatives from the US Environmental Protection Agency (EPA) and the CTDEEP visited with members of the City's Stormwater Pollution Prevention Team on June 15 and 16, 2015 to conduct a compliance audit of the City's NPDES Permit. The compliance audit included a "five-year look-back" period. After the compliance audit, the EPA indicated that several areas of the permit needed improvement which are outlined in Section 2.3.1 of the 2014 & 2015 Annual Report.

The EPA issued an Administrative Order and Request for Information, regarding the compliance audit, to the City of Stamford on October 1, 2015. The City of Stamford has been working with the EPA of this Reporting Period to address items identified during the compliance audit.

Per the request of the CTDEEP, on September 17, 2018, the City of Stamford provided the CTDEEP with a 52-page document discussing the current status of the findings of the EPA's Violation and Order for Compliance – Docket No. CWA-01-AO-15-012, September 30, 2015.

### 2.4 Future Direction of the SMP

The SMP will continue to be evaluated in greater detail as part of the 2018–19 Reporting Period. A component of that evaluation will be a review of goals, schedules, and procedures referenced in the SMP as "to be established" and a detailed analysis of the status of these items.

The City considers the SMP to be a dynamic document and will continue to work towards updating and revising it as conditions and regulations change in an effort to maximize its ability to be utilized as a tool to manage and improve stormwater runoff quality

The City will continue to focus more of its resources in the coming years to achieving compliance with the SMP, particularly in the areas of:

- Public education and involvement
- Stormwater mapping
- Illicit discharge detection and elimination



- Control measures
- Infrastructure operations and maintenance
- Legal authority and regulatory changes
- Water quality monitoring

Specific goals or requirements are discussed in the Narrative Report, **Section 4.0**, of this Annual Report.

The Team Coordinator and Regulatory Compliance and Administrative Officer will continue to be responsible for closely tracking individual activities and events in each of these areas.

## **2.5 NPDES Permit Modification SMP Updates**

On August 14, 2017, a permit modification was issued for the City's NPDES Permit. During the 2017-18 Reporting Period, the City reviewed the permit modification for any new requirements. During the 2018-19 Reporting Period, the City received a draft revised SMP from Fuss & O'Neill and will be reviewing and finalizing the SMP during the 2019-20 Reporting Period.

### 3.0 SUMMARY TABLE OF SMP COMPONENTS

The summary table of SMP components is presented in *Appendix B*. This table concisely presents the stormwater management activities completed within the time period for this Annual Report and documents the City's compliance with key permit and SMP requirements.

Administrative issues, such as planning activities, program development, and pilot studies, are not discussed in the summary table of SMP components.

## 4.0 NARRATIVE REPORT

### 4.1 Pollution Prevention Team

The Pollution Prevention Team (Team), **Section 1.0**, was established to implement the SMP, to keep it up-to-date as conditions and/or regulations change, to maintain the control measures to improve stormwater quality, and to take corrective actions, as necessary. With the issuance of the new NPDES Permit in 2013, the City decided to transfer the majority of the responsibility for compliance with the permit from the SWPCA to the Traffic and Road Maintenance Division.

Much of the first year of the new permit was utilized by the Traffic and Road Maintenance Division becoming familiar with the permit requirements and establishing the necessary schedules, procedures, personnel, equipment, financing, and other resources necessary to successfully implement the permit requirements and the SMP.

The Team that has been established under the current SMP (see Appendix B of the SMP and **Section 1.0** of this report) consists of personnel from many City departments whose operations may affect the current and future stormwater quality. Team members supply the City with a wide range of experience and expertise in managing and controlling stormwater runoff quality.

Since 2013, the Team has continued improving their understanding of the new NPDES Permit requirements, communicating these requirements amongst themselves, establishing areas of responsibility and cooperation, brainstorming on public education and control measure ideas, and working with the appropriate legal counsel to establish legal authority and new regulations.

The Team's activities are coordinated by the Traffic and Road Maintenance Supervisor. Many of the day-to-day stormwater permit compliance activities are managed by the Regulatory Compliance and Administrative Officer; this position was created in early 2014 specifically as a result of the issuance of the current NPDES Permit.

The City has also created and filled five positions under the direction of the Regulatory Compliance and Administrative Officer; the positions include five heavy equipment operators to help operate the vacuum trucks and camera truck for IDDE screening and catch basin and manhole inspections and cleaning.

It is anticipated that the Team will continue these activities during the next year of the discharge permit as well as develop and coordinate additional specific goals with the objective of improving the overall quality of stormwater runoff in the City of Stamford.

## 4.2 Mapping

The City maintains a strong GIS department that can coordinate city-specific, as well as environmental data, available from the DEEP and other sources. Information that has been mapped includes: city roadways, city properties, aerial photography, topography, zoning map, surface water bodies, watershed areas, surface water quality classifications, impaired waters, mapped inland wetlands, mapped tidal wetlands, and the coastal boundary.

The City continues to update and reuse mapping for sanitary sewer lines, stormwater lines, and stormwater outfalls. Mapping efforts have focused on the more developed sections of the City, closest to Long Island Sound, with the most stormwater outfalls mapped south of Interstate 95 and many more mapped between I-95 and the Merritt Parkway (Connecticut Route 15). Initially, 154 stormwater outfalls were mapped. Several of the initially mapped outfall locations were determined to be inaccurate and 90 MS4 outfalls have been confirmed/identified/mapped. Two of the previous 92 MS4 outfalls were eliminated from the list, outfalls number SON-0021 and SON-0060. These outfalls were removed from the monitoring list because one was identified as the SWPCA's Facility discharge location and the other was a structure inlet.

The City continued to identify and map new MS4 outfalls in the City throughout the Reporting Period. As of June 30, 2019, the City has mapped 958 outfalls. Efforts were completed to canvas the entire City for identifying outfalls and approximately 95% of the City has been mapped. The City understands that there is continual maintenance being conducted on the stormwater system throughout the city and that the outfall mapping will require constant updating. Current updated outfall mapping is provided in *Appendix C*.

The City is currently in the process of confirming the accuracy of the outfall locations and whether they are part of the City's MS4 stormwater system or another entity's responsibility. Several of the potential new outfalls have been identified as duplicates and others have been noted as inlets or discharges under state DOT control. The City continues communication with the DEEP to identify more specific criteria for the outfalls that will be required for monitoring as part of the IDDE program and the wet weather monitoring. See *Section 4.5* and *Section 4.4.2* for additional details on the IDDE program and the wet weather monitoring program. A new Interconnected MS4 plan was prepared in June 2016 and is further discussed in *Section 4.3.5.10*.

This component of the SMP is to be expanded to include the following GIS mapping:

- Storm line material and size data
- Responsibility, if part of another MS4 stormwater system (such as DOT's)
- Completed and proposed cleaning and repair activities
- Outfall discharge monitoring data
- IDDE screening and investigation results
- Proposed IDDE investigations
- Completed and proposed capital projects
- Connections to any other public or private storm drainage systems
- Drainage areas for each MS4 outfall

- Areas served by on-site subsurface disposal areas
- Storm drains that do or may receive discharges from underdrain systems

For an update on the impervious cover and directly impervious cover area (DCIA) see *Section 4.3.4.1*.

### 4.3 Control Measures

#### 4.3.1 Public Education and Involvement

City 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 the City's water bodies by local residents. Also, public education and outreach coupled with public involvement and participation allows city residents to have a voice with regard to stormwater.

During this Reporting Period, the following public education and involvement activities have been completed:

- The City has continued to maintain and update the stormwater section that was previously added to the City of Stamford's website at <http://www.stamfordct.gov/stormwater-management>. The website provides basic information about stormwater as well as key contacts within the City of Stamford. Additionally, it provides links to:
  - The NPDES Permit
  - The SMP
  - The MS4 Stormwater Ordinance
  - The Annual Reports
  - The household hazardous waste collection events schedule and information on the materials managed
  - Dog waste management practices
  - Best management plans for pesticides
  - Information on preventing stormwater pollution honored
  - Fall leaf pick up schedule
  - Christmas tree pick up schedule
  - How to report a stormwater issue, violation, or complaint

The City maintains a Frequently Asked Questions section that includes 25 questions and answers that city residents may view. To date, there have been approximately 4,326 hits on the website. There was a 205% increase in web traffic compared to 2017-2018, which totaled 1,420 hits to the City's website.

- The Regulatory Compliance and Administrative Officer for the City of Stamford, in an effort to aid in the public participation of stormwater management added a link to Stormwater Management Website for the RiverSmart CT project at: <https://www.stamfordct.gov/stormwater-management>.

- In 2014, the department adjusted internal operations to receive and respond to citizen questions and complaints regarding stormwater related issues. The City's stormwater management department responded to numerous citizen inquiries regarding snow storage, sweeping, catch basin cleaning, and IDDE program during the Reporting Period.
- A public meeting was held on August 21, 2019 at 12:00pm for the review of the SMP and the draft 2018-2019 Annual Report. The Notice of Meeting was published in the Stamford Advocate on August 9, 2019 and August 20, 2019 and was posted on the City's stormwater management website. The Notice of Meeting was filed with the Town Clerk. There was one (1) attendee at the meeting. No formal questions or comments were submitted by citizens and the meeting lasted nearly two hours. All questions were answered during the course of the meeting and subsequent discussions.
- An informational pamphlet on dog waste management was provided to all dog owners at license renewal time. 3,000 pamphlets were provided to the Town Clerk for distribution during the Reporting Period.
- Since 2014, the City has installed 60 dog waste dispensers and signs informing park patrons of the need to pick up after their dogs in key parks. These signs refer to the existing municipal dog waste ordinance in the City Charter (Section 111) and the City is installing new signs in hot spot locations, based on field observations. The City's Parks Department has taken over ordering responsibilities for pet waste bags with the exception of Mill River Park. The budget for pet waste bags was increased from \$10,000 dollars to \$20,000 dollars during the Reporting Period as these stations have been popular with park visitors. City staff have observed the used bags disposed of in the trash containers throughout the areas with dispensers. No new pet waste stations were installed during this Reporting Period.
- The SWPCA provides tours of the City's wastewater treatment facilities to school children and adults. During the Reporting Period, 289 people attended these tours. As part of the presentation, they discuss stormwater impacts and typically distribute a brochure entitled "What is Your Storm Drain IQ?"
- The Mill River Collaborative performs annual clean ups, improvements, and provides educational programming within the City. Approximately 5,455 volunteer hours were provided from over 1,109 individual volunteers during this Reporting Period. These hours included everything from stuffing envelopes, to removing invasive plant species from the meadows, to creating erosion barriers in the river. A specific list of volunteer activities includes:
  - + reinforcing riverbanks using organic biologs
  - + invasive species removal by hand (mugwort, Queen Anne's lace, loosestrife, wild lettuce, white clover, ailanthus, burdock, bindweed)
  - + planting pollinator-attracting flowers
  - + cleaning up litter in and near the river
  - + building rock veins to funnel water away from banks to reduce undercutting
  - + mulching
  - + harvesting native seeds
  - + removing silt around drainage areas
  - + cutting overgrown shrubs and trees
  - + weeding paths, lawns, flower beds, gardens
  - + spreading organic fertilizers (sparingly)

- SoundWaters is the leading environmental education organization on Long Island Sound. Over 25,000 students learn and explore with SoundWaters, through education and action, every year. The City and SoundWaters are in the process of coordinating a vacuum truck demonstration for kids in order to strengthen the relationship with the community.
- The Mianus Chapter of Trout Unlimited continued their restoration of the Mianus Riverbank by pinning more Christmas trees and adding a hardened access. The effort, spearheaded by the Mianus Chapter, took place of July 13-14, 2018. The Friends of Mianus River Park and the City of Stamford were also contributors.
- The Nature Conservancy (TNC), a non-profit organization which promotes environmental conservation, gifted the City's first bioswale which was approved by the Board of Representatives on May 22, 2019. The bioswale removes contaminants from stormwater surface runoff and compiles with the MS4 permit. Resolution to accept the gift was passed by the Board of Representatives on June 3, 2019. Installation was to be in Rippowam Park and was completed on September 16, 2019.
- During this Reporting Period, the City continued to install catch basin medallions throughout the City. These medallions were installed both English and Spanish to help raise public awareness for stormwater quality issues. These medallions are being installed by City staff members or by seasonal employees and are primarily installed on curb-backed catch basins. Currently, the City estimates it has installed medallions on approximately 45% of the City-maintained catch basins. The City has recognized that the medallions are a useful and effective tool and has been great for assisting in educating the public.
- The Regulatory Compliance and Administrative Officer for the City has made strides in developing and implementing a program for the future that will allow residents to have access to limited GIS data and be allowed to adopt a catch basin and begin to understand how it is connected to the rivers and streams in the area.
- The City has collaborated with a marketing and public relations firm (Catalyst) to develop a new stormwater management mailer/pamphlet to be sent out to provide a guide for regulatory compliance.
- During the Reporting Period the City's Board of Representatives passed an ordinance eliminating the distribution of disposable plastic bags. The City's hope is for residents to use reusable carryout bags that will help better serve the environment. The city has collected information and resources for businesses to act in compliance with this new ordinance. More information can be found at <http://www.stamfordct.gov/plasticbags>
- The City celebrated Earth Day on 4/22/2019 in the Lobby of Government Center. Tyler Theder set up an enviroscape demo model to educate the public about the ways in which stormwater runs off impervious surfaces and gets into our waterways. Also displayed were catch basin medallions in English and Spanish, which indicate no dumping. Example photos of full catch basins, tracing dye, and pamphlets were used to illustrate education and outreach efforts underway by the Stormwater Management Department. A few hundred people attended the event, which went from 9am – 2pm.
- The City's Recycling and Sanitation Department conducted a Household Hazardous Waste Collection event on Saturday, July 14, 2018 and Saturday, July 13, 2019.
- On April 27, 2019, the Stamford Police Department hosted a National Rx Drug Take-Back event. The event collected approximately 476 pounds of unused medicines from residents. As

part of the event, the police department provided services for residents to drop off their unused or expired medications.

- City staff continued to engage with Downtown Special Services District (DSSD) regarding the condition of their dumpster storage and grease area. The area was professionally cleaned with the reclamation of any wash water used in the process. An emergency spill kit was purchased and provided to DSSD by the City.

#### 4.3.2 Industrial Dischargers

During the 2015 NDPEs Permit compliance audit, the EPA indicated that the City is required to educate owners and operators of commercial, industrial, and institutional facilities as to their responsibility to control pollutants in stormwater discharges from their properties into the City's MS4.

The City's Stormwater Management Department has obtained a CTDEEP list of stormwater discharge General Permit sites for commercial or industrial activity and has prepared informational outreach materials to target these businesses. The City intends to distribute the materials during the 2019-20 Reporting Period.

#### 4.3.3 Source Controls and Pollution Prevention

##### 4.3.3.1 Motor Oil Collection

The City collects used motor oil and cooking oil at the Katrina Mygatt Recycling Center so that residents will have a place to properly dispose of these materials and to limit the potential for them to be improperly disposed and adversely affect stormwater quality. During the Reporting Period, approximately 3,960-gallons of used motor oil and 2,429-gallons of used cooking oil were collected. The City intends to continue its used motor oil collection activities.

##### 4.3.3.2 Household Hazardous Waste (HHW) and Electronic Waste Collection Programs

The City holds at least one HHW collection day within the City limits each year so that residents will have a place to properly dispose of these materials and to limit the potential for them to be improperly disposed of and potentially affecting stormwater quality. In 2018 and 2019, the City hosted an HHW collection day on July 14, 2018 and July 13, 2019, at the Rippowan School on High Ridge Road. During this Reporting Period 414 households and 151 half-households participated. In addition, Stamford residents can utilize HHW collection days in Darien, Greenwich, New Canaan, Norwalk, Westport, Weston, or Wilton approximately seven other days per year (throughout the spring and fall). The City intends to continue its involvement in these collection events.

The City collects used consumer electronics at the Katrina Mygatt Recycling Center during normal operating hours. Acceptable materials include computers, monitors, televisions, VCRs, DVDs, cell phones, copiers, fax machines, printers, radios, stereos, and small electronics. In addition, inks and toners, rechargeable batteries, lithium ion batteries, vehicle batteries, compact fluorescent light bulbs, and linear lamps are also accepted at the Recycling Center. During the Reporting Period, approximately 3.18 tons



of universal wastes and 171 tons of consumer electronics were collected. The City intends to continue its waste electronics collection activities.

#### 4.3.3.3 Spills and Leak

In June 2016, a city-wide Spill Prevention and Response Plan (SPRP) was completed to prevent, contain and clean up spills of oils, petroleum products, and other potentially hazardous materials to minimize stormwater impacts and protect surface waters.

The department responded to 13 spills in excess of five gallons of petroleum products on the City's roadways and coordinated with first responders (Police, Fire, DEEP) to limit impacts to the City's MS4. A list of recent spills during the Reporting Period is presented in *Appendix D*.

For additional information on training for spill prevention and response see *Section 4.3.5.1*.

#### 4.3.3.4 Pesticide, Herbicide and Fertilizer Use Limitations

The City 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 of the SMP, 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 modeled based on the CTDEEP Integrated Pest Management (IPM) Plans. Completion of the PHF SOPs is anticipated during the 2019–20 Reporting Period.

Fertilizers and herbicides are used on the municipal athletic fields, as described in the SMP. Every year, in April, Dimension (18-0-40) is applied to the fields and contains both fertilizer and herbicides. In May, ProPendi (13-0-4) is applied to the fields and contains both herbicides and fertilizer. In September, just fertilizer (25-0-5) is applied to the fields. The City applied a total of 1,530 pounds of nitrogen to the ball parks during the 2018-19 Reporting Period. See *Appendix E* for a table of the total nitrogen used at the City-owned ball parks.

As required by the NPDES Permit, the City is in the process of establishing reduction goals, including consideration of alternatives, for PHFs being used at City-owned or operated areas, specifically at the municipal athletic fields.

No PHFs are used on city park green spaces.

The Mill River Park/Mill River Collaborative completely avoids the use of synthetic fertilizers. They employ a "feed the soil ecology" program where the soil is infused with sixteen or more species of bacteria and fed with a fish emulsion/kelp/yucca blend as a substitute for traditional fertilizers. Additionally, the Mill River Collaborative maintains its lawns at four inches to build deeper, more drought tolerant root systems. All grass clippings are returned to the lawns and they use organic products, such as soybean meal, to add nitrogen to the soil. The Mill River Collaborative uses minimal herbicides on invasive plant species per DEEP guidelines. They have found that as they continue this program, they require less herbicide use each year.

With respect to the City-owned golf courses, the NPDES Permit requires that the City implement practices which achieve a ten percent (10%) reduction in total nitrogen by June 3, 2018. The reduction will be determined by the average annual usage, by weight, of the three years preceding the current NPDES Permit. The current SMP has established the application rates of fertilizers used at the golf courses, which can be found in Appendix B of the SMP.

During the Reporting Period, the Sterling Farms Golf Course used a total of 550 pounds of nitrogen and the E. Gaynor Brennan Municipal Golf Course used a total of 3,637 pounds of nitrogen. The total 4,187 pounds of nitrogen used in the Reporting Period represents a 48.6 percent reduction from the total nitrogen that was used in 2016 (8,145 pounds). See *Appendix E* for a table of the total nitrogen used at the City-owned golf courses.

The Pollution Prevention Team will work with the golf course staff to help reduce the total amount of nitrogen used at these facilities. It is the City's intention to establish goals for reducing the amount of PHFs used at all city-owned or operated areas.

#### 4.3.3.5 Salt Storage and Usage

The City stores road salt at the Highway Department (90 Magee Avenue), the Town Yard (106 Haig Avenue), and the Scofieldtown Transfer Station (612 Scofieldtown Road). At each facility, salt is stored on an impervious pad and under a salt shed in accordance with the requirements of the DEEP's *General Permit for the Discharge of Stormwater Associated with Industrial Activities*.

The City used approximately 11,775 tons of salt during 13 storms for a combined total of 30.3 inches of snow during the winter of 2018-19. Salt usage quantities will continue to be tracked and the City's goal is to reduce the amount of salt utilized on its roadways by increasing efficiencies and investigating alternate methods. However, salt usage will continue to vary based on storm frequency and intensity. The winter of 2018-2019 brought significant icing events which the City tackled by developing a Special Hazard Area program for ice control. These areas were especially vulnerable to roadway icing conditions due to a variety of factors including high groundwater table, improper road design, inadequate roadway drainage, residential sump pumps draining to the street, blocked catch basins, and other factors. Salt trucks were deployed to these Special Hazard Areas when nighttime temperatures fell below freezing levels in an effort to maintain safe roadway conditions at all times. In an effort to reduce salt usage, the regulatory compliance officer has worked to correct the factors and field conditions which contribute to water and ice on City roadways.

The City's brine system was brought back into full service in the fall of 2018 with the 5,000-gallon brine tank located at the Town Yard Facility (105 Haig Ave.). This tank was filled twice during the winter season. See *Section 4.3.5.6, Snow Removal*, for additional discussion on salt usage.

#### 4.3.4 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.

Under the terms of the NPDES Permit, 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 program 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 continues working towards developing this program; both documents will be incorporated into the draft changes to the Zoning Regulations.

The City has a well-developed process for ensuring that applicants for building permits have received all appropriate City approvals prior to issuance of a building permit. A copy of the checklist utilized by the Building Official is presented in Appendix J of the SMP. As part of this review and approval process, the Engineering Department reviews stormwater and drainage for proposed developments and site plan revisions.

The site plan review process will continue in the future, but the site-specific stormwater requirements will be better defined once the draft Zoning Regulation changes have been approved and implemented. 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. Modifications to the Zoning Regulations will include provisions to encourage low impact development (LID) practices to maximize infiltration and minimize stormwater runoff. The regulations will also limit barriers to LID design and construction.

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.

As part of the application review process, the City is now providing applicant's with information on the DEEP's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities*. Applicants are being told about stormwater management issues at the time building permits Environmental Planning Board and Planning & Zoning signoffs are being obtained. Applicants have been made aware of their responsibility to obtain DEEP Construction Stormwater General Permits. This notification of responsibility has been met with some resistance from the builder / developer community. Therefore, the City is currently exploring alternative ways for providing notification to the builder / developer community.

The City's building permit process is facilitated electronically through a software package called "View Permit". The plan is to attach standard text to all applications notifying the applicants of their responsibility, if applicable, to obtain DEEP permits.

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's staff performs site visits when the project is near 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.

The City of Stamford's Environmental Protection Board conducted permit and technical reviews, enforcement and inspections and other land development services. A summary table of the services that they provided during the Reporting Period is included in *Appendix F*.

The City has requested an extension for addressing the change in zoning regulations. The proposed changes will require more staff from the Engineering Department and the Environmental Protection Board and additional time is required to implement the changes.

During the Reporting Period, the City received a draft copy of the Stormwater Drainage Manual prepared by Fuss & O'Neill. This manual provides a technical framework, stormwater management standards, and design guidance for land development activities.

Additional information on the proposed stormwater ordinance and changes to the Zoning Regulations are presented in *Section 4.6*, Legal Authority.

#### 4.3.4.1 Impervious Cover

The NPDES Permit calls for completion of DCIA (directly connected impervious area) mapping associated with each MS4 outfall within four years. The City continued the process of estimating the DCIA throughout the City. Sub-meter aerial photogrammetry of the City is being used in determining the DCIA. The initial estimate will be based on the total area of impervious cover, including roadways, driveways, sidewalks, parking lots, and building footprints, that discharge to the MS4. Allocating the amount of the DCIA to each MS4 outfall and evaluating each drainage area to determine if the roof tops are connected to the DCIA will be performed in the next couple of years. Estimates will be revised in the future as development, re-development, or retrofit projects or new information effectively add or remove DCIA to or from the MS4.

The Mayor of the City of Stamford has requested that the Western Connecticut Council of Governments (WestCOG) complete the DCIA mapping. The City's GIS Department has conducted a pilot study for the Shippan Area, which is currently being evaluated by the WestCog. WestCOG and the City of Stamford maintains an ongoing its partnership and continues to develop an innovative demonstration project to create a new semi-automated GIS workflow to determine DCIA within suburban and urban watersheds within Stamford and understand better the effort and technologies involved. This work is in support of the mapping requirements of the NPDES Permit. Five outfalls and corresponding watersheds were selected with different land use mixtures. Impervious cover and DCIA were estimated utilizing previously acquired and very high-resolution planimetric GIS. In addition, an automated watershed delineation method was tested for urban areas. Results show the importance of

very detailed field confirmation of the proposed methods and the importance of selecting the proper input data set with accompanying attribute information.

The City has continued efforts to reducing DCIA coverage through LID developments throughout the City. During the Reporting Period, the City was gifted its first bioswale by The Nature Conservancy, a nonprofit which promotes environmental conservation. The bioswale was constructed in the City right-of-way at the west end of Rippowam Park. The purpose of the bioswale is to remove pollution from surface runoff water. This installation was conducted in accordance with the DEEP MS4 permit requirements. The City's Board of Representatives approved the bioswale project on May 22, 2019 and installation was completed on September 16, 2019.

#### 4.3.5 Infrastructure Operations and Maintenance

Pollution prevention and good housekeeping are critical minimum control measures because they concentrate 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.

##### 4.3.5.1 Employee Training

Employee training is essential for maintaining and increasing the awareness of water quality related issues in the management of any MS4. Training also enables facility staff to have an improved understanding of the stormwater system and how to minimize the impact the facility has on the MS4.

All employees working at City-owned facilities participate in annual training to meet the requirements of the DEEP's *General Permit for the Discharge of Stormwater Associated with Industrial Activity*. This annual training includes:

- Overview of the NPDES MS4 Permit
- Review of the goals and objectives of the SMP
- Review of facility Stormwater Pollution Prevention Plan
- Review of good housekeeping
- Identifying and reporting illicit discharges
- Review of spill prevention and response procedures

Training was conducted on June 27 and 28, 2019 for Universal Waste Management, Spill Prevention Control and Countermeasures Plan, and Stormwater Pollution Prevention Plan training. Approximately 22 employees were in attendance from City-owned facilities at this training event.

The City is dedicated to ensuring that its employees continue to gain the necessary knowledge needed for understanding and implementing the SMP in order to increase the quality of the stormwater in the City's MS4. The City will continue to update and implement its training programs for all employees working at City-owned facilities. A copy of the sign-in sheets for each of the training events is provided in **Appendix G**.

#### 4.3.5.2 Infrastructure Repair and Rehabilitation

It is important that the City make timely repairs to the infrastructure of its MS4 in order to help reduce the discharge of pollutants from the MS4 to the receiving waters. The City is dedicated to giving priority to those projects discharging pollutants to impaired waters or that have other concerns related to the mapping and IDDE process. A schedule for implementation of repairs is developed and updated once the need for the repairs are established.

The SWCPA performs routine maintenance and any necessary repairs on the three stormwater pump stations on an annual basis.

During the Reporting Period, the City received a total of approximately 62.2-inches of liquid equivalent water (LEW). LEW is a measure of liquid precipitation which has fallen to the ground in any precipitation type (rain, sleet, hail, snow, etc.). This data was retrieved from the National Climate Data Center (NCDC) for the Westchester County Airport weather station in New York located immediately west of the City. The precipitation amount received is over 12-inches more than the 1981-2010 climatological average of 49.35-inches for the Westchester Airport. This information is important due to the impact heavy rainfall has on MS4 Permit compliance regarding maintaining City stormwater infrastructure and responding to emergencies that arise after heavy precipitation events.

As of January 1, 2016, the Traffic and Road Maintenance Division is now responsible for tracking the catch basins and stormwater manholes that require repairs. Previous lists of required repairs were maintained by the Engineering Department. The Traffic and Road Maintenance Division will maintain the list of catch basins and stormwater manholes that require repair and will assign that work internally or to independent contractors, as needed. During the Reporting Period, at least 1,929 of 10,566 catch basins were inspected and pumped/cleaned out, as necessary.

The City hired Grasso Companies to conduct infrastructure maintenance and repairs on the MS4 system during this Reporting Period. In total, 1,865 linear feet of piping was replaced, 292 catch basin sumps were replaced, 26 catch basin frame grates were replaced, 41 bell traps were installed, 93 manhole covers and frames were replaced, and 5.7 centerline miles were milled and repaved.

The City hired Arnow Construction to conduct drainage work on the MS4 system during this Reporting Period. In total, 3 pipes were repaired, 80 linear feet of piping was repaired, 11 catch basin sumps were replaced, 1 catch basin frame and grate was reset, and 11 manhole frames were replaced. See **Section 4.3.5.7** for additional details on catch basin cleaning. A list of 2018-19 catch basin/manhole repairs is presented in *Appendix H*.

The City also understands that the refinement of the standard operating procedures and good housekeeping practices for the management of the MS4 is essential to improving stormwater quality.

In 2014, the City purchased a camera truck which is used for implementing the IDDE program and for inspecting catch basins, manholes and stormwater piping. The truck was deployed in October 2014 after employees completed the necessary one-week training on the truck and equipment. Initially, the camera

truck is being used to inspect areas identified as needing maintenance within the MS4 and has proved to be a valuable asset for mapping/GIS work required by the permit.

The City has hired a private contractor (OneVac) to conduct CCTV work on storm mains and lateral pipes prior to paving operations during the Reporting Period. OneVac assessed approximately 8,825 linear feet of stormwater piping in the City. During this Reporting Period, the City conducted CCTV reports which totaled approximately 1,345 linear feet of piping that was videoed, including storm mains and lateral piping. In total, 10,170 linear feet of stormwater piping was assessed between OneVac and the City. The City has prioritized the areas that it inspects with the camera truck based on flooding issues, complaints about collapsing areas and complaints about illicit discharges. See **Section 4.5** for further discussion on the progress of identifying illegal connections in the IDDE program.

Catch basin inspections also include inspecting the condition of catch basin “bells.” Some City catch basins have bells (metal 90-degree bends covering catch basin outlets) to control floatables. Bells are hung on pins set in the side of catch basins. The City continues to install bells on additional catch basins in parts of its MS4 where trash and floatables are a problem. In the 2017-2018 Reporting Period, the City procured two (2) hydraulic cranes for the installation of bells and maintenance to the catch basins. The City also contracted Grasso Construction to assist with infrastructure maintenance. Grasso Construction installed an additional 41 bell traps in City catch basins. The City also installed thirteen (13) bell traps in existing catch basins which had stable hooks. Going forward, the City plans to put a bell in every catch basin. The City currently has approximately thirty (30) extra bells in inventory which will continued to be installed during the 2019–2020 Reporting Period.

The Traffic and Road Maintenance Division has acquired funding in an Environmental Compliance Capital account to make improvements to MS4 piping when property owners cannot, or will not, make repairs in the timeframe provided in the permit.

#### 4.3.5.3 Roadway Maintenance

Roadway maintenance activities can directly affect water quality. An important task of roadway maintenance is keeping the highway drainage system functioning. The City is dedicated to ensuring that routine road maintenance is conducted frequently and that roadside ditches are cleaned and inspected periodically to verify that flow is not being restricted.

A total of 5.7 miles of roadways were paved during the Reporting Period. The City purchased approximately \$70,000 worth of asphalt from three different vendors for use in roadway patching of potholes.

#### 4.3.5.4 Sweeping

Properly swept streets are a key element to limiting stormwater impacts as sediment and debris can transport other pollutants into the stormwater system and because copious quantities of these materials can inhibit the proper function of MS4 components. By June 30, 2019 the City swept 10,003 miles of roadway and collected 2,378 tons of street material during the Reporting Period. On average, the City

swept each curb mile of roadway 14 times. Supporting documentation regarding the street sweeping activities for the Reporting Period can be provided upon request.

Sidewalk and curbside sweeping is performed weekly in the Downtown Special Services District (DSSD), along 9.5 miles of sidewalk and curbside during this Reporting Period. This work is coordinated and paid for by the DSSD. An estimated 23 tons of materials was removed during this Reporting Period as a part of the sidewalk and curbside sweeping activities.

The NPDES Permit prescribes very specific sweeping schedules for main lines, arteries, main roads and sidewalks in business and commercial districts, residential streets, other streets, and municipal parking lots between March and November of each year. The City has requested relief from the sweeping requirements as per the permit modification. The permit modification language is modeled after the DEEP MS4 general permit, which allows cities the ability to focus sweeping efforts on targeted areas. One goal is to compress the spring sweeping schedule between March 1<sup>st</sup> and June 30<sup>th</sup> to maximize the quantity of material collected at the end of the winter season.

The City has been implementing a “Post & Tow” policy where they will be posting sweeping dates and times and subsequently towing away any cars that are parked in the areas posted for sweeping events. This system helps the City to effectively sweep in the areas posted instead of having to sweep around parked cars, missing large areas of the road.

During this Reporting Period, the City also conducted post-event sweeping activities after several Wednesday and Thursday concert series. The amount of materials collected during these events is included in the total tons of street material noted above.

#### 4.3.5.5 Leaf Collection

In 2018, the City’s leaf pickup program was completed by December 14<sup>th</sup>. Every street in the City is swept clean as a part of this program. A total of 15,261 tons of leaves were collected.

According to the NPDES Permit, the City shall conduct City-wide leaf pickup program annually to be completed by December 15<sup>th</sup>. The City has established a procedure that breaks the City of Stamford down into three areas (see Appendix L of the SMP for a map of the leaf collection areas):

- Area #1 - north of the Merritt Parkway
- Area #2 - between Merritt Parkway and I-95
- Area #3 - south of I-95

Leaf pick-up typically begins in mid-November and completed by December 15<sup>th</sup>. The exact completion date depends on weather conditions and competing demands (snow removal and road salting for staff and equipment). The first snowfall occurred on November 15<sup>th</sup> which resulted in the City converting trucks from leaf duty to snow duty then back to leaf duty over the course of three days to handle the snow event. 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 for all available road maintenance crews.



The current leaf disposal policy is that the leaves will be piled at the curb prior to pick-up and off the streets. During the Reporting period, one-thousand doubled sided color flyers were printed and distributed to municipal buildings throughout the city. 20,000 postcard mailers were sent to single family homes, a half-page ad was placed in the Stamford Advocate and on the City's website, flyers were placed throughout the City to remind the citizens that leaves collected were not to be placed in the roadways. The initial program was to collect bagged leaves only which the outreach campaign advertised. After October 2018, funding was secured to continue the loose-leaf pick-up program. One-thousand flyers were recreated, the City's website was updated, and another round of 20,000 postcards were distributed to households detailing the loose-leaf pick up program. One (1) ½ page ad was placed in the print version of the Stamford Advocate and presented same info as the bi-lingual flyer. This ad ran twice in twice in the Stamford Advocate Newspaper, 1,000 flyers were distributed throughout the City, and information was posted to the City's website at [www.stamfordct.gov/leafpickup](http://www.stamfordct.gov/leafpickup). Communications Director provided updates regarding progress of the city crews as they moved through the City using the Stamford Government Center Facebook page. Additionally, door hangers were used as an enforcement mechanism for any violators of the City's ordinances.

#### 4.3.5.6 Snow Removal

Timely snow removal and the appropriate application of de-icing materials is another key element to a successful SMP. The City follows the DEEP's *Best Management Practices (BMPs) for Disposal of Snow Accumulation from Roadways and Parking Lot*. A copy of this BMP is presented in Appendix L of the SMP. The purpose of the BMPs are to prevent accumulation of sand, other solids, and pollutants in the MS4 and in sensitive areas, such as streams and wetlands.

The NPDES Permit requires that the City implement and refine its SOPs, 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 is already well on its way to meeting these goals. The Highway Crew continues to perform anti-icing using liquid calcium chloride (brine) to pre-treat city streets with the highest traffic volume. Once the storm begins, patrols are sent 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. As noted in **Section 4.3.3.5**, the City intends to expand its use of brine trucks for pre-treatment in the future, which will help reduce the road salt usage.

The City continues to minimize its use of de-icing materials. This goal is being pursued in part to respond to shortages of de-icing materials in recent years. Salt is applied only twice for each storm – once at the beginning to prevent ice from binding and once at the end of prevent re-freezing. The regulatory compliance and administrative official has been enforcing illegal discharges of private basement sump pumps into the right-of-way, rather than simply treating these areas with removal of additional de-icing materials.

During this Reporting Period, the City compiled a list of Special Hazard Areas which were more prone to icing conditions due to a variety of factors including: high groundwater table, improper roadway design, blocked catch basins, sump pumps from residential properties, and other factors. These areas were checked and treated by City staff whenever temperatures dropped below freezing levels.

During this Reporting Period, the West Beach parking lot was prepared from November through April with haybales, double catch basin filters, etc. in the event that additional snow stockpiling was necessary. This space was not utilized during this Reporting Period.

#### 4.3.5.7 Catch Basin Cleaning

Clogged or overloaded catch basins can lead to unwanted stormwater quality impacts. Catch basin sumps provide a first line of defense in improving stormwater quality. Maintenance and cleaning activities are important to the proper operation of each catch basin.

For the 2018-19 Reporting Period, at least 1,929 catch basins throughout the city were inspected and cleaned on an as needed basis. Approximately 3,163-tons of materials were removed from the basins during the Reporting Period. This equates to 6,326,000 pounds of waste that was captured and processed and did not enter the City's waterways, streams, rivers, or Long Island Sound.

The City continues to maintain a catch basin inspection, cleaning, and repair program. This program helps to identify and map each MS4 catch basin and determine flow direction, inspect its condition, determine the amount of sediment in each, clean catch basins with less than 50% of their sump capacity available, gather information over time on sediment accumulation rates, and develop a routine maintenance and cleaning schedule as prescribed by the NPDES Permit.

To support this program, the City has obtained or purchased the following equipment:

- (3) Vactor vacuum trucks purchased between 2014 and 2015
- (4) Elgin Pelican sweepers purchased between 2008 and 2015
- (1) Rapid View CCTV truck w/ Pipe Logix software – purchased in 2015. CCTV truck has three cameras and a manhole/ stick camera
- (2) One-ton dump trucks on with Stetco hydraulic cranes – purchased in 2016
- (1) Caterpillar mini-excavator – purchased in 2014 and used for culvert cleaning work
- (1) Caterpillar loader / backhoe – purchased around 2010 and used for culvert cleaning work
- (~10) One-ton dump trucks used for typical highway department work
- (~25) Large dump trucks – used as necessary for haul away of sediment per culvert cleaning work
- (1) Utility truck with a crane and lift gate to assist with catch basin replacement, manhole replacement, stormwater drain medallion installation, curb back bolts, water barrier installation, and spill response.

In 2014, the City hired five heavy equipment operators to support this program for stormwater management and compliance activities (see **Section 6.0**).

The Road Maintenance Department has also retained the services of a contractor that cleans and videos all associated catch basins and storm drains prior to completing roadway paving projects.

Additionally, the City continues implementing a software tracking program using field tablets for tracking catch basin inspection, cleaning and repair progress. The MS4 Front software was brought on-line in October 2014.

The depth of sediment is approximated in the field before each catch basin cleaning. The City using the depth of sediment observed and the time between catch basin cleanings to optimize the cleaning schedule.

#### 4.3.5.8 Culvert Cleaning

During the Reporting Period, the City performed maintenance activities at 37 culverts over approximately 30 days. Various maintenance activities were conducted at the culverts including, but not limited to: stabilizing inlet and outlet areas, cleaning out culvert, removing debris and vegetation from around the culvert, CCTV inspections, excavating culvert discharge area, and wetlands delineation. During the Reporting Period, over 191 cubic yards of soil was removed from the culverts and discharge areas. A list of 2018-19 culverts cleaned is presented in *Appendix I*.

#### 4.3.5.9 Detention and Retention Ponds

Detention and retention ponds that become overloaded with sediment deposition can negatively impact stormwater quality in the City's MS4. MS4 Ponds are required to be cleaned out when solids levels reach 50% of design capacity.

A list of detention and retention basins was developed and the City is maintaining an inspection schedule. To date, 77 basins were identified and the City continues its efforts to inspect the basins identified. The detention and retention basins were added to the GIS mapping. Stormwater Management began inspections and maintenance work on these basins during this Reporting Period and is anticipating conducting the remainder of the inspections at each pond during the next Reporting Period. The City is considering utilizing outside contractors to assist with inspections and any follow-up work that may be needed.

#### 4.3.5.10 Interconnected MS4s

Connections of other MS4s to the City's MS4 can affect the performance of the City's stormwater system and the quality of its discharges. There are no known interagency agreements between any other municipalities, institutions, or agencies and the City of Stamford. However, it appears that the following municipalities and agencies may be contributing stormwater to the City of Stamford's MS4:

- State of Connecticut (ConnDOT)
- Town of New Canaan, CT
- Town of Darien, CT
- Town of Greenwich, CT
- Town of Pound Ridge, NY

The Connecticut Department of Transportation (“ConnDOT”) operates several roadways within the City, including: Interstate 95; the Merritt Parkway (Route 15); Long Ridge Road (Route 137); High Ridge Road (Route 104); and Route 1. The City’s MS4 flows into ConnDOT’s MS4 in some locations and ConnDOT’s MS4 flows into the City’s MS4 at other locations. The City communicates with ConnDOT, as needed, primarily when the City receives complaints of clogged ConnDOT storm drains.

The City has mapped out most of the interconnected MS4 areas during the development of the new SMP. A map of the interconnected MS4 areas is provided in Appendix C of the Spill Prevention Response Plan. Currently, there are no interagency agreements established. The City of Stamford will be working with each of the interconnected MS4 municipalities to develop detailed responsibilities for the City of Stamford and for each of the interconnected MS4 municipalities.

#### 4.3.5.11 Referrals

During the Reporting Period, the Stormwater Management Department provided referrals to other City departments and organizations for maintenance and repairs. These referrals are outlined below:

##### City of Stamford Highway Department

- Approximately 20 referrals were provided to the City’s Highway Department for items including: potholes, utility work, contractor trenches, aprons to control stormwater flow, curbing to direct flow and limit erosion, sidewalk trip hazards.

##### City of Stamford Engineering Bureau

- 24 referrals were provided to the City’s Engineering Bureau for items regarding: management and oversight of utility contractors as related to street opening permits issued by the Engineering Bureau, poor trench compaction or failing subbase prior to pavement activities, poor trench compaction at newly installed manholes in city right of way for private development, compromised or failing corrugated metal culvert piping, water and icing over road with no piping installed with the need for easements and piping and drainage design, installation of new catch basins and curbing, non-functioning in-line check valve in existing tidal discharge storm piping, sink holes related to storm pipe issues, roadway ponding after storms, failure to maintain erosion controls on City projects, flooding and drainage issues related to existing curtain drain performance, requesting capital projects to design and install and control roadway damage, failing headwall and eroding roadway at storm culvert.
- 5 referrals were completed by the City’s Engineering Bureau for items including: partial completion of Mill Road drainage and paving capital project, culvert piping repair which led to roadway failure, sinking pavement which led to roadway failure, repair and partial removal of obstructed or damaged storm piping which led to roadway flooding, stormwater swale regraded and stabilized.

##### Sweeping Referrals Provided to Various Entities

- Approximately 30-40 referrals were provided to Traffic and Road Maintenance/Highway Department regarding dirt/rock/gravel/debris spilled on roadway, sweeping targeted areas (e.g.

roadside swale excavation), General Permit compliance purposes, as related to milling and road paving, leaves, tree debris, heavy trash areas.

- Conducted at least twelve (12) post and tow operations.
- Conducted targeted sweeping on dozens of streets where Highway Department Supervisors observed trash, debris, sand, gravel, etc.

#### Stormwater Referrals Provided to the Environmental Planning Board (EPB)

- 13 referrals were provided from the EPB for items regarding: building permit work, exterior spray foam and rasping resulting in foams in catch basins, discharge of pollutants to City catch basins, failed erosion and sediment controls on active construction site, tidal or shoreline work as related to existing MS4 discharge points, grading and filling work, custodian maintenance work at City schools, City transportation projects, flooding and drainage related issues, paving work without proper permits.
- 9 referrals were provided to the EPB for items regarding: grading and filling with no erosion controls, river and bridge obstructions, tidal and shoreline construction work, tree removals proximate to wetlands.

#### Referrals Provided to the CTDOT

- Fourteen referrals were provided to CTDOT for items regarding: motor vehicle accidents and SpeedyDry not swept up on I-95, performance of CTDOT MS4 drainage infrastructure where interconnected to the City's MS4, citizen requests to pump and clean catch basins, potholes or failing pavement at CTDOT storm manholes, flooding at railroad overpass at US Route 1 – catch basin grates welded to frames, water on road (State Highway Long Ridge Road), open or damaged CTDOT manhole covers.

#### Curbing Referrals

- The Road maintenance department handles curbing requests and estimates at least 400 were received during the 2018-19 Reporting Period. The average curbing request is about 40 linear feet of asphalt curbing. There were 394 requests completed at 40 feet each, the City installed about 12,000 linear feet of new asphalt curbing during the Reporting Period.

#### Other Referrals

- Referrals made to Eversource: four referrals made regarding utility trenches which were failing, electrical manholes, vaults, and other structures in need of repair.
- Referrals made to WPCA: 34 referrals made regarding issues with sanitary infrastructure (damage or paved over manholes), incomplete demolition and abandonment of sanitary chamber in park, asphalt trench or patch failure at new sanitary lateral connection to dwelling, sanitary lateral repair work, sanitary lateral pipe constructed through existing 42" reinforced concrete storm main pipe.
- Referrals from WPCA: 19 referrals were received regarding wastewater treatment plant permit exceedances (9 exceedances during monitoring period), reporting issues with stormwater infrastructure (damaged manholes and catch basins), correspondence from the public about regulatory procedure and wastewater/stormwater discharge, food truck washing and cooking oil

storage, piping connectivity (storm and sanitary) as related to maintenance work, proper disposal of wash/mop water.

- Referrals made to Parks Department: 14 referrals made regarding requests to prune trees, shrubs, vegetation to gain access to catch basins, requests to cut or remove trees for culvert cleaning and swale construction, request to remove or pull out 12" diameter log stuck in stormwater culvert, requests to remove logs and debris at bridges stuck on the upstream side, requests to prune or remove low hanging trees.
- Referrals made to City of Stamford Building/Zoning Departments: four referrals were made regarding construction of accessory structure (garage) on top of existing stormwater easement with no permits for structure, demolition work at large multi-family residential tower, demolition work at commercial office space, construction work and excavation proximate to city stormwater easement.

#### 4.4 Monitoring Program

In addition to the screening and monitoring activities associated with the IDDE Program (see *Section 4.55*), the NPDES Permit calls for stormwater outfall monitoring throughout the life of the permit.

As prescribed in the modified NPDES Permit, the City is no longer required to conduct in-stream samples.

##### 4.4.1 Dry Weather Outfall Screening for Illicit Discharges

Efforts conducted for outfall screening during dry weather conditions are discussed in *Section 4.5*

##### 4.4.2 Wet Weather Outfall Monitoring

During the Reporting Period, thirty-three (33) wet weather outfalls were sampled. To date, 108 of the 191 known wet weather outfalls were sampled.

Analytical data is submitted to the DEEP via the NetDMR system as the laboratory data is received. Summary tables of the analytical data for the wet weather outfall monitoring are presented in *Appendix K*.

#### 4.5 Illicit Discharge Detection and Elimination (IDDE) Program

IDDE 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 conditions to determine whether illicit discharges are suspected and then to conduct extensive evaluation and follow-up to eliminate the illicit discharges that are found.

Additionally, City personnel continue to follow-up on known or suspected illicit discharges as well as any complaints associated with potential illicit discharges through calls to Traffic and Road Maintenance Division or reported via the City's stormwater management website.

#### 4.5.1 Dry Weather Outfall Screening for Illicit Discharges

As part of the outfall monitoring requirements, during the Reporting Period, 179 outfalls were dry weather screened and 40 of the outfalls screened had flow that was sampled for illicit discharges. To date, 380 of the 958 known outfalls have been screened. Summary tables of the analytical data for the dry weather outfall screening and sampling efforts during the Reporting Period are presented in *Appendix J*.

The City has started submitting notifications of intent to conduct stormwater monitoring and sampling at privately-owned outfalls throughout the City.

#### 4.5.2 Illicit Discharge Investigations

Additionally, during the Reporting Period, the City continued to utilize Harborwatch / Earthplace to assist efforts related to illicit discharge detection and source identification. Harborwatch was directed to go into the field to gather and analyze samples during wet and dry weather conditions, in an effort to quickly ascertain and isolate suspected illicit discharges, in the interest of public health, safety, and welfare. When there is a discharge of suspected contamination or pollutants in stormwater, efforts to inspect and identify are very time sensitive. In the interest of promptness, these efforts are sometimes directed regardless of precipitation events. In some cases, multiple samples are collected at the same location over an extended time period in an effort to build a more comprehensive data set and gain a better understanding of how precipitation events can impact a discharge. A good example of this occurred in early 2019 when a failing septic field was found to be leaking onto the roadway and ultimately into down gradient catch basins. During the Reporting Period, Harbor Watch was awarded a Five Star and Urban Waters Restoration Grant from the EPA for their efforts to reduce pollutants to numerous watersheds.

Harbor Watch screened 69 locations during this Reporting Period. A flow was observed and samples were collected at 54 of the locations. Harbor Watch submitted a total of 43 samples for analysis. Harbor Watch also produced a Fairfield County River Report which also provided valuable information about the water quality data for the Mianus and Noroton rivers during both wet and dry sampling events which occurred between September 2018 and June 2019. Summary tables of the analytical data for the dry weather outfall screening and sampling efforts are presented in *Appendix L*.

Through the City's efforts using the camera truck completed during the Reporting Period, they have identified multiple areas of concern that will receive priority for further IDDE investigations. IDDE investigations will be focused in the same areas as previously identified during the 2018-19 Reporting Period.

#### 4.5.3 Illegal Connections

As a result of the IDDE program the City has identified multiple areas of concern, which will receive further investigation. The City continues to track, identify, and eliminate illegal connections.

## 4.6 Legal Authority

In 2015, the Board of Representatives approved an MS4 Ordinance addressing stormwater management issues that affect NPDES Permit. The legal authorities that were established or are being established with proposed zoning regulation modifications include:

- The authority to administer the stormwater management program and all elements of the SMP.
- The authority to control the contribution of pollutants to the MS4 by permittees registered under the DEEP's *General Permit for the Discharge of Stormwater Associated with Industrial Activity*; by other commercial, industrial, municipal, institutional, or other facilities; and from any site that may affect water quality to the MS4.
- The authority to establish ordinances, bylaws, regulations, or other mechanisms to require developers and construction site operators to maintain consistency with the *Guidelines for Soil Erosion and Sedimentation Control*, the *Connecticut Stormwater Quality Manual*, and all DEEP stormwater discharge permits issued with the City of Stamford.
- The authority to identify existing regulations that may represent barriers to low impact development (LID) practices to minimize the quantity of impervious cover.
- The authority to perform inspections, surveillance, and monitoring related to the MS4.
- The authority to establish ordinances, bylaws, regulations, or other mechanisms to ensure a developer's or construction site operator's proposed use of LID practices by right or exception.
- The authority to revise regulations to eliminate or reduce potential barriers to LID.
- The authority to perform adequate inspection and maintenance activities to optimize the performance and pollutant removal efficiency of privately-owned retention or detention ponds that discharge to or receive discharge from the City's MS4.
- The authority to control through interagency or inter-jurisdictional agreement, the contribution of pollutants between the City's MS4 and MS4 owned or operated by others.
- The authority to prohibit by statute, ordinance, rules and regulations, permit, easement, contract, or any other means, illicit discharges to its MS4; to require the removal of these discharges; and to assess fines, penalties or cost recoupment for violations.
- The authority to control by statute, ordinance, rules and regulations, permit, easement, contract, or any other means, the discharge of spills into its MS4; to prohibit the dumping and disposal of materials into its MS4; and to assess fines, penalties or cost recoupment for violations.

The schedule for establishment of these legal authorities is documented in the NPDES Permit. On March 20, 2015, a final MS4 Ordinance, Ordinance 1153, adding Chapter 201 to the City Charter, became effective. Draft changes to the Zoning Regulations have been prepared and are included in Appendix I of the SMP. These documents have been developed to establish the necessary legal authorities. The public must be provided adequate notice and an appropriate amount of time to participate in the establishment in this legal authority. It is the City's intention to establish these legal authorities as soon as possible.

To comply with the NPDES Permit, the City is required to have these revisions approved by the Zoning Board and formally incorporated into the Zoning Regulations. The Modifications to Sections 15 of the



Zoning Regulations of the City of Stamford is underway and the modifications were sent out to referral to various agencies for comment in the spring of 2015.

The City has requested an extension for addressing the change in zoning regulations. The proposed changes will require more staff from the Engineering Department and the Environmental Protection Board and additional time is required to implement the changes.

Several written and verbal warnings were issued during this Reporting Period as part of the implementation of the City's new stormwater ordinance. The warnings issued are listed below:

#### 4.6.1 Written Warnings

Written Warnings Issued: 89

Violation: Discharge of water to roadway, confirmed illegal connection to MS4 system, possible illegal connection to MS4 system, confirmed failing on-site sanitary facilities leaking on to roadway, tracking or pushing material on to roadway from contractors yard or residence, contributing pollutants to MS4 system, culvert replacement at driveway apron to right-of-way, drainage easement agreement documents, structures/improvements illegally constructed in right-of-way and impacting drainage structures, required stormwater maintenance work with an easement, access required for on-site investigation dye/smoke test/CCTV work, construction dewatering into catch basin, abatement satisfactorily completed

Notes: Doorhanger written warning during leaf pick up program: Approx. 59 doorhangers placed.

#### 4.6.2 Verbal Warnings

Verbal Warnings Issued: 5

Notes: Verbal warnings were issued for items including: dumping mop water on to roadway, power washing with soap, construction dewatering

## 5.0 SUMMARY OF PROPOSED SMP MODIFICATIONS

The SMP was updated and submitted to the DEEP on September 2, 2014. Revisions to the SMP are underway and will be submitted to CTDEEP during the 2019-2020 Reporting Period.

On August 14, 2017, a permit modification was issued for the City's NPDES Permit. During the 2017-18 Reporting Period, the City reviewed the permit modification for any new requirements and is in the process of updating the SMP accordingly. The new modified permit renewal is pending approval from CTDEEP.

## 6.0 PROGRAM RESOURCES ANALYSIS

### 6.1 Fiscal Analysis

During this Reporting Period, the City continued to make efforts to secure budget, staffing, and resources necessary to develop and implement the SMP, to comply with the NPDES Permit requirements, and to improve the overall quality of stormwater discharging from its MS4. The City is committed to identifying these details and adequately funding them to achieve compliance with the NPDES Permit as soon as possible.

Some line items in the City's Capital and Operating Budgets are obviously related to MS4 stormwater compliance, such as the "Environmental Compliance" and "Stormwater Management". However, there are other line items for infrastructure and other public improvement projects (drainage, catch basin, storm lines, etc.), special projects, and operating expenses that will result in direct improvements to stormwater runoff quality and the quality of discharge from the City's MS4. For example, the closure of the old Scofieldtown Road Landfill is being performed for specific reasons but should have the added benefit of improving stormwater quality in these areas of the City.

There are also budget line items for vehicle, equipment, and information technology upgrades throughout the City which include Departments with responsibility for stormwater quality improvements and implementation of the SMP.

The Road Maintenance Division has an overall total operating budget of \$6,334,447 for Fiscal Year 2019-2020 (\$1,425,544 decrease from the FY 2018-19 Adopted Budget).

The FY 2019-20 operating budget for MS4 stormwater management is \$1,184,718 (a decrease of \$193,575 from the FY 2018-19 Adopted Budget). The budget for snow removal is \$1,319,925 (an increase of \$265,730 from FY 2018-19 Adopted Budget).

The operating budget for leaf collection is \$301,038 (an increase of \$253,555 from FY 2018-2019 Adopted Budget). Originally, the City planned on eliminating loose leaf collection from their leaf pick-up program which reduced the cost of the program. The City's legislative body was able to secure funding to expand the leaf pick-up program to include loose leaf pick up.

The operating budget for traffic and road maintenance, including: street sweeping, pothole repairs, debris removal and infrastructure improvements is \$3,485,736 for Fiscal Year 2019-20 (a decrease of \$1,219,765 from the FY 2018-19 Adopted Budget)

The capital budget covers long term projects to provide improvements to the City. These capital projects have the potential to impact the quality of stormwater discharged to waterbodies.

Capital project C56119, Citywide Roadway Correction, was given \$200,000 in construction related costs for FY 2019-20. The requested funds are for design work and construction activities associated with the project. The current balance will be used to fund emergency road failure at Cascade Road.

Capital project C16012, Citywide Storm Drains, was given \$500,000 in construction related costs for FY 2019-20. The requested funds are to complete drainage improvements on Spruce Street, Orchard Street, Leroy Place, Drum Hill Lane, Tod Lane, Bird Song Lane, Newfield Court, and citywide drainage improvements. The current balance will be used to fund drainage improvements at Newfield Avenue, Spruce Street, and Orchard Street.

Capital project 000664, Resilience and Climate Adaptation Implementation, requested \$200,000 for FY 2019-20. The requested funds are to address vulnerable coastline communities from weather events due to climate change effects including rising sea levels and the potential for more severe weather events. The City is splitting this project into two tasks: first, map and identify areas where repetitive loss of property has occurred and map public infrastructure vulnerable to weather hazards, and second, create a tree inventory to facilitate preventative tree maintenance to aid in reducing the impact of fallen trees due to weather events.

Capital project C56078, Parks Master Plan Update, requested \$200,000 in professional services for FY 2019-20. The requested funds are to create a master plan for the Edward Hunt Complex, "Courtland Park". The funds would also be used to amend the City zoning map to include parks which are not included in the Master Plan Category 14 Open Space Parks and 22 parks which are not zoned as P, Park District.

Capital project C06352, Open Space Acquisition/Flood Control, requested \$500,000 for land acquisition for FY 2019-20. This project is to aid in implementing Master Plan Policy 7L2-a: Acquisition of vulnerable parcels for open space, flood prone vulnerable parcels, and sensitive lands. The funds would be used to acquire priority parcels and easements for Mill River Greenbelt and ecologically vulnerable coastal or wetlands parcels which are vulnerable to flooding among other hazards.

Capital project CP0211, Environmental Compliance, requested \$250,000 for construction, equipment acquisition, miscellaneous costs, and professional services for FY 2019-20. This project is required to investigate, assess, and correct drainage systems discharging into waterbodies. This includes Public Services provided by the City and modification of practices in compliance with federal and state regulations.

Capital project 000592, Stormwater System Illicit Discharge Analysis, requested \$100,000 for construction and professional services for FY 2019-20. The funds would be used to identify sources of non-stormwater which is discharging into stormwater systems. This project will also eliminate or abate the sources of contamination with corrective measures.

Capital project CP6757, Reconstruction of Stormwater Waste Debris Drop-Off Station, was given \$125,000 for construction and professional services for FY 2019-20. The funds will be used to reconstruct the waste debris drop-off station used by the City's vacuum trucks. The current drop-off station is not functional and cannot handle the amount of waste volume currently being generated from work being performed per the City's MS4 permit.

Capital project C56182, Street Patch and Resurfacing, was given \$3,000,000 from the City and \$991,302 from the State in form of a grant for FY 2019-20. The funds will be used to patch and resurface the City's roadway infrastructure.

Capital project C56129, Citywide Manhole and Basin, was given \$500,000 for construction for FY 2019-20. The funds will be used to maintain the over 10,000 catch basins and 5,000 manholes which are located in the City's road network.

Capital project CP8711, Traffic/Road Paving and Drainage, was given \$250,000 for construction for FY 2019-20. The funds will be used to repair or replace any drainage structure which are located in roads which are scheduled to be repaved.

In addition, other Departments, such as Engineering (catch basin and manhole improvements and replacement program), Land Use (environmental reviews), Solid Waste (motor oil recycling and HHW events), SWPCA (stormwater pump operation), and Administration provide services through their capital and operating budgets.

The City's Annual Capital and Operating Budgets for 2019-2020 are available on the City's website at <http://www.stamfordct.gov/>.

It is anticipated that additional funding will be required for the following monitoring activities:

- Wet weather sampling of each identified MS4 outfall
- IDDE screening and investigations

An increase in funding associated with additional staffing discussed in the next section of this Annual Report, will also be required in coming fiscal years.

## 6.2 Staff and Resources

The City transferred responsibility for many of the stormwater management tasks and MS4 permit compliance from the SWPCA to the Traffic and Road Maintenance Department with the issuance of the NPDES Permit in June 2013. While evaluating the permit requirements, the Traffic and Road Maintenance Supervisor and Pollution Prevention Team Coordinator, Thomas Turk, began to assess the staff and resources necessary to achieve and maintain compliance. Since Traffic and Road Maintenance Department took over responsibilities for implementing the MS4 permit, several new staff members have been hired, including:

- Five heavy equipment operators to complete field work including catch basin identification, investigation, cleaning, and maintenance. These operators are also responsible for assisting with sweeping, snow removal, leaf pickup and other activities designed to improve the quality of stormwater runoff.

Over the course of the Reporting Period, the Stormwater Department assessed these new staffing levels as the SMP was being implemented and additional schedules and goals are continuously being generated to meet the demands of the City's MS4.

In addition to these individuals, the Traffic and Road Maintenance Division maintains a work force of skilled operators, laborers, administrative, support, and management personnel that provide many of the direct services outlined in this report, such as: catch basin maintenance, roadway sweeping, leaf pickup,

snow removal, and infrastructure improvements and maintenance. They are also available to assist on other stormwater management projects, as directed.

Several other City Departments provide personnel to support compliance with the NPDES Permit and implementation of the SMP, including Engineering, Land Use, Planning, Zoning, Environmental Protection, Information Technology (GIS), SWPCA, Solid Waste, Recreation and Leisure Services, Parks, Parking & Transportation, Fleet Maintenance, Legal, and the Fire Department.

During the next year of implementation of the SMP and the new municipal stormwater ordinance and the changes to the Zoning Regulations, City Departments will be better able to assess the adequacies of their staffing levels with the added MS4 permit compliance requirements. As discussed during the compliance audit conducted by the EPA (see *Section 2.3.1*) and the City's own assessments, it is anticipated that additional staffing may be necessary in the following areas:

- Information Technology – There is a substantial amount of stormwater mapping and information management to be set up and managed, particularly during the first several years of the permit. The City needs to finalize the outfall identification mapping, and confirmation process and begin the DCIA analysis.
- Engineering and Land Use Offices – Additional staff is required to perform technical review of land use permits due to volume and complexity of work. Performing site inspections before permit issuance, during construction, and prior to Certificate of Occupancy are a critical component for compliance.
- Stormwater Management Department – Additional staff is required (Heavy Equipment Operators) to operate vacuum trucks, the camera truck, and equipment to maintain storm drainage piping. The addition of an Office Support Specialist (OSS) is required in the Stormwater Management Department to assist with data collection, record keeping, and correspondence requirements. New types of data are being generated in the field and it must be properly managed so that it can be put into effective use.

Once the revised Zoning Regulations have been enacted, there will be a need for additional construction site inspections, retention and detention basin inspections and maintenance, stormwater infrastructure (swales, ditches, storm drain lines, etc.) inspections and maintenance, post-construction inspections and maintenance, and illicit discharge detection and elimination program implementation. Additional staffing will be necessary to complete these tasks; the City's ability to complete these activities in the past has been hampered due to limited staff resources.

As mentioned in *Section 4.3.5.7*, the City recently started implementing a software tracking program using field tablets for tracking catch basin inspection, cleaning and repair progress. The MS4 Front software was brought on-line in October 2014.

Additional software and equipment needs will be assessed during the coming year and requested in the City's next fiscal year budget.

APPENDIX A  
DEFINITIONS

## DEFINITIONS

"BMPs" or "Best Management Practices" means either structural or engineered control devices and systems (e.g. retention ponds) to treat polluted stormwater, as well as operational or procedural practices (e.g. minimizing use of chemical fertilizers and pesticides).

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

"CTDEEP" or "DEEP" means the Connecticut Department of Energy and Environmental Protection, whose mission is to conserve, improve and protect the air, water and other natural resources and environment of the State of Connecticut while fostering sustainable development.

"DCIA" or "Directly Connected Impervious Area" means that part of the total impervious area that is hydraulically connected to the City of Stamford'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.

"EPA" means the United States Environmental Protection Agency, whose mission is to protect human health and the environment.

"EPB" means the City of Stamford's Environmental Protection Board.

"GIS" or "Geographic Information System" is a system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.

"HHW" or "Household Hazardous Waste" means post-consumer waste which qualifies as hazardous waste when discarded. It includes household chemicals and other substances for which the owner no longer has a use, such as consumer products sold for home care, personal care, automotive care, pest control and other purposes.

"IDDE" or "Illicit Discharge Detection and Elimination" means a program to detect and eliminate existing illicit discharges and to prevent future illicit discharges.

"IDDP" or "Illicit Discharge Detection Protocol" means a protocol established to identify, prioritize and investigate separate storm sewer catchments for suspected illicit discharges of pollutants.

"Illicit Discharge" means any discharge to the MS4 that is not composed entirely of stormwater, with the exception of discharges authorized by another NPDES Permit, or discharges described in the "Non-Stormwater Discharges" section (Section 4(A)(3)) of the 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.



“LID” or “Low Impact Development” means land planning and engineering design approach to manage stormwater runoff. LID emphasizes conservation and use of on-site natural features to protect water quality.

“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.

“NOV” or “Notice of Violation” means a notice provided by the CTDEEP informing the permittee that a violation of law has occurred.

“NPDES Permit” or “National Pollutant Discharge Elimination System Permit” means the program authorized by the Clean Water Act which controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

“Outfall” means the discharge point of a waste stream into a body of water.

“PHFs” means pesticides, herbicides and fertilizers.

“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.

“POTW” or “Publicly Owned Treatment Works” means sewage treatment plants.

“Reporting Period” refers to the period of time that the Annual Report is based on. In this report it pertains to July 1, 2015 through June 30, 2016.

“SMP” or “Stormwater Management Plan” sets 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.

“SPRP”, “SP&R Plan” or “Spill Prevention and Response Plan” means a plan to prevent, contain and respond to spills entering the MS4.

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

"*SWPCA*" or "*Stamford Water Pollution Control Authority*" controls the City of Stamford Water Pollution Control Facility, which processes wastewater from the City and the neighboring Town of Darien, and discharges clean water into the East Branch of Stamford Harbor.

**APPENDIX B**

**STORMWATER MANAGEMENT PLAN SUMMARY TABLE**

Annual SMP Summary Table  
July 1, 2018 - June 30, 2019

Activity Description	# Actions Scheduled	Status Complete / Incomplete as of June 30th	# Actions Completed	Comments on Activities
<b>1. Education</b>				
<b>1.1 City and Government</b>				
1.1.1 Training	As needed	Complete	2	Training was conducted on 6/27/19 and 6/28/19 for Universal Waste Management, Spill Prevention Control and Countermeasures Plan, and Stormwater Pollution Prevention Plan training.
<b>1.2 Public</b>				
1.2.1 Annual Information Meeting	Annually	Complete	1	2019 meeting was held on 8/21/2019.
1.2.2 Annual SMP Review and Comments	Annually	On-Going	As needed	A permit modification was issued on 8/14/17 for the City's NPDES Permit. During the 2018-19 Reporting Period, the City will be reviewing the permit modification for any new requirements and will be updating the SMP accordingly. The City has received a draft copy of the SMP prepared by Fuss & O'Neill.
1.2.3 HHW Collection	At least Annually	Complete	1	HHW Collection held on 7/14/18 & 7/13/19 at the Rippowam Middle School. Stamford citizens may also use HHW collection days in seven neighboring towns each year.
1.2.4 Pet Waste Control	As needed	On-Going	As needed	3,000 pamphlets were provided to the Town Clerk for distribution Spring 2019. Since 2013, the City has installed 60 dog waste dispensers and signs. Approximately \$15,000 was spent on dog waste disposal bags during the Reporting Period and City staff have observed used bags disposed of in the trash containers throughout the areas with dispensers. Parks Department will take over budget item to purchase bags in FY 2019-20. They will budget \$20,000 to cover their anticipated use. Current price of bags has increased, but at current pricing, they could purchase 250,000 bags in FY 2019-20.
1.2.5 Distribution of Educational Information	As needed	Complete	On-going	No stormwater flyers were distributed throughout the City for this annual reporting period. Typically, Stormwater Management are distributed throughout the City with the December tax bills. The City has continued to maintain and update the stormwater section of the City's website.
1.2.6 Catch Basin Medallions	As needed	In-Progress	-	Medallions are being installed by City staff members or by seasonal employees and volunteers and are primarily installed on curb-backed catch basins throughout three areas targeted in the southern part of the City, and in parks, and downtown areas with the most pedestrian traffic. Currently, the City has installed medallions on approximately 45-50% of the City-maintained catch basins.
<b>2. Public Involvement</b>				

Annual SMP Summary Table  
July 1, 2018 - June 30, 2019

Activity Description	# Actions Scheduled	Status Complete / Incomplete as of June 30th	# Actions Completed	Comments on Activities
2.1 Mill River Collaborative (MRC)	On-going	Complete	5,455 volunteer hours	Making improvements to the Mill River Park through joint efforts the MRC.
2.2 SoundWaters in Cove Park	On-going	On-Going	-	Over 25,000 students learn and explore with SoundWaters, through education and action, every year.
2.3 Educational Outreach	On-going	On-Going	-	The City is in the process of collaborating with other middle schools throughout the City to expand this outreach program.
2.4 Harbor Watch	On-Going	On-Going	-	Harbor Watch, a division of Earthplace, a not-for-profit organization, was retained by the City, to conduct the dry weather outfall sampling as part of the IDDE program. They were awarded a Five Star and Urban Waters Restoration grant for their work with pollution identification and source tracing projects in the City.
<b>3. Mapping</b>				
3.1 Initial Outfall, Sampling, Roadway, Receiving Waters, Watersheds	On-going until all are identified	On-Going	-	As of June 30, 2018, the City has mapped 958 outfalls. Stormwater mapping is approximately 95% complete. The City is currently in the process of confirming the accuracy of the outfall locations. Several of the potential new outfalls were identified as duplicates and others were noted as inlets or discharges under state DOT control. The city will continue to update mapping as needed to reflect current field conditions.
3.2 IDDE Mapping - Infrastructure, Findings, Data, Activities, Projects	On-going until all are identified	On-Going	-	The City continues to try to identify more specific criteria for the outfalls that will be required for monitoring as part of the IDDE program and the wet weather monitoring. The Harbor Watch non-profit organization has continued to assist the City with identifying sources of illicit discharges in the area.
3.3 Establish DC IA	25% of total area per year	On-Going	-	
<b>4. Infrastructure Operations &amp; Maintenance</b>				
4.1 Infrastructure Repair & Rehab	On-going	On-going	As needed	A schedule for implementation of repairs is maintained by the Engineering Dept. and updated as needed / as items are completed.
4.2 Roadway Maintenance	On-going	On-going	As needed	The City is dedicated to ensuring that routine road maintenance is conducted frequently and that roadside ditches are cleaned and inspected periodically to verify that flow is not being restricted. During the Reporting Period, the City repaved approximately 5.7 miles of roadway as part of its road maintenance program.
4.3 Street Sweeping	On-going	On-going	As needed	During 2018-2019, the City swept over 8,770 miles of streets and collected over 2,378 tons of non-leaf materials.

Annual SMP Summary Table  
July 1, 2018 - June 30, 2019

Activity Description	# Actions Scheduled	Status Complete / Incomplete as of June 30th	# Actions Completed	Comments on Activities
4.4 Sidewalk Sweeping	See Appendix K of the SMP	On-going	-	Sidewalk sweeping occurs in the downtown area, as described in the SMP and is coordinated and paid for by the DSSD (downtown special services district). An estimated 23 tons of materials are removed on an annual basis.
4.5 Leaf Collection	At least Annually	Complete	1	Leaf collection was completed for 2018 by December 14th and approximately 15,261 tons of leaves and debris were collected.
4.6 Snow Removal	As needed	Complete	-	Snow removal completed as necessary for 2018 and 2019.
4.7 Catch Basin Cleaning	On-going	On-going	1,929	In 2018-2019, the City cleaned at least 1,929 of it's ~11,000 catch basins and removed approximately 3,163 tons of material.
4.7.1 Vectorborne Disease Prevention	On-going	On-going	As needed	The City's Department of Health has conducted larvicide activities in catch basins during the Reporting Period. These activities focus on disease prevention by reducing the population of mosquito larve found in stormwater drainage structures. Application of larvicide within City catch basins was scheduled to start on June 3, 2019.
4.8 City Owned Detention & Retention Pond Inspections	Annually	On-going	-	The City continues its efforts to inspect the basins identified.
4.9 Interconnected MS4s	On-going	On-going	-	The City has mapped out most of the interconnected MS4 areas during the development of the new SPRP. A map of the interconnected MS4 areas is provided in Appendix C of the Spill Prevention Response Plan.
4.10 Piping	On-going	On-going	136	During this Reporting Period, the City continued to conduct CCTV reports, which totaled approximately 10,170 linear feet of piping that was videoed, including storm mains and lateral piping.
4.11 Culverts	On-going	On-going	37	The City performed maintenance activities at 37 culverts over approximately 30 days.
<b>5. Stormwater Monitoring</b>				
5.1 Wet Weather Outfall Old/Known Outfalls	All outfalls within first two years	On-going	93% Completed	Thirty-three (33) wet weather outfalls were sampled. To date, 108 of the 191 know wet weather outfalls were sampled.
<b>6. IDDE</b>				
6.1 Dry Weather Outfall Screening for Illicit Discharges	25% of known MS4 outfalls per year	On-going	On-going	179 outfalls were dry weather screened with 40 samples collected at locations with flow observed. To date, 380 of the 958 known outfalls have been screened.
6.2 Outfall Verification (Post-IDDP)	As needed	-	-	No post-IDDP efforts completed at this time.

### Annual SMP Summary Table

July 1, 2018 - June 30, 2019

Activity Description	# Actions Scheduled	Status Complete / Incomplete as of June 30th	# Actions Completed	Comments on Activities
6.3 Harbor Watch	On-going	On-going	On-going	The non-profit organization was awarded a Five Star Urban Waters Restoration grant for their work with the City to identify potential pollutant sources which discharge into the Noroton River watershed.
<b>7. Legal Authority</b>				
7.1 Permits	As needed	On-Going	As needed	All permits to be signed off by each individual City department, including: Coastal Management, Environmental Protection, Flood Plain, Traffic Dept., Engineering Dept., DOT, and Zoning.
7.1.1 Zoning Department	As needed	On-Going	As needed	The City has requested an extension for addressing the change in zoning regulations. The proposed changes will require more staff from the Engineering Department and the Environmental Protection Board and additional time is required to implement the changes.
<b>7.2 Ordinances</b>				
7.2.1 Stormwater Management	As needed	On-going	As needed	On March 20, 2015, a final MS4 Ordinance, Ordinance 1153, adding Chapter 201 to the City Charter, became effective.
7.2.2 LID	As needed	On-going	As needed	The proposed changes to the zoning regulations will ensure that LID practices are allowable. There are no known zoning, site planning or street design regulations that would be an impediment to using LID practices.
7.3 Site Review, Inspection and Monitoring Activities	As needed	On-going	As needed	The City'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). Appendix G provides a table of the services provided by the EPB, including permitting reviews and site inspections.
7.4 Eliminate Barriers	On-going	On-going	-	The City has well-established procedures for coordinating municipal departments review and approval of land disturbances and development projects.
7.5 Private Retention/Detention Ponds	On-going	On-going	-	Access to privately-owned detention and retention ponds is addressed in the Stormwater Ordinance.
7.6 Interconnections	On-going	On-going	-	Research by City staff has revealed that no formal interagency stormwater agreements exist at this time. If agreements are deemed necessary, they will be discussed in the next annual report. Historically, ConnDOT maintains all State roads.
7.6 Plastic Bags	As needed	On-going	On-going	As of May 3, 2019, the City has passed an ordinance eliminating the distribution of disposable bags.

Annual SMP Summary Table  
 July 1, 2018 - June 30, 2019

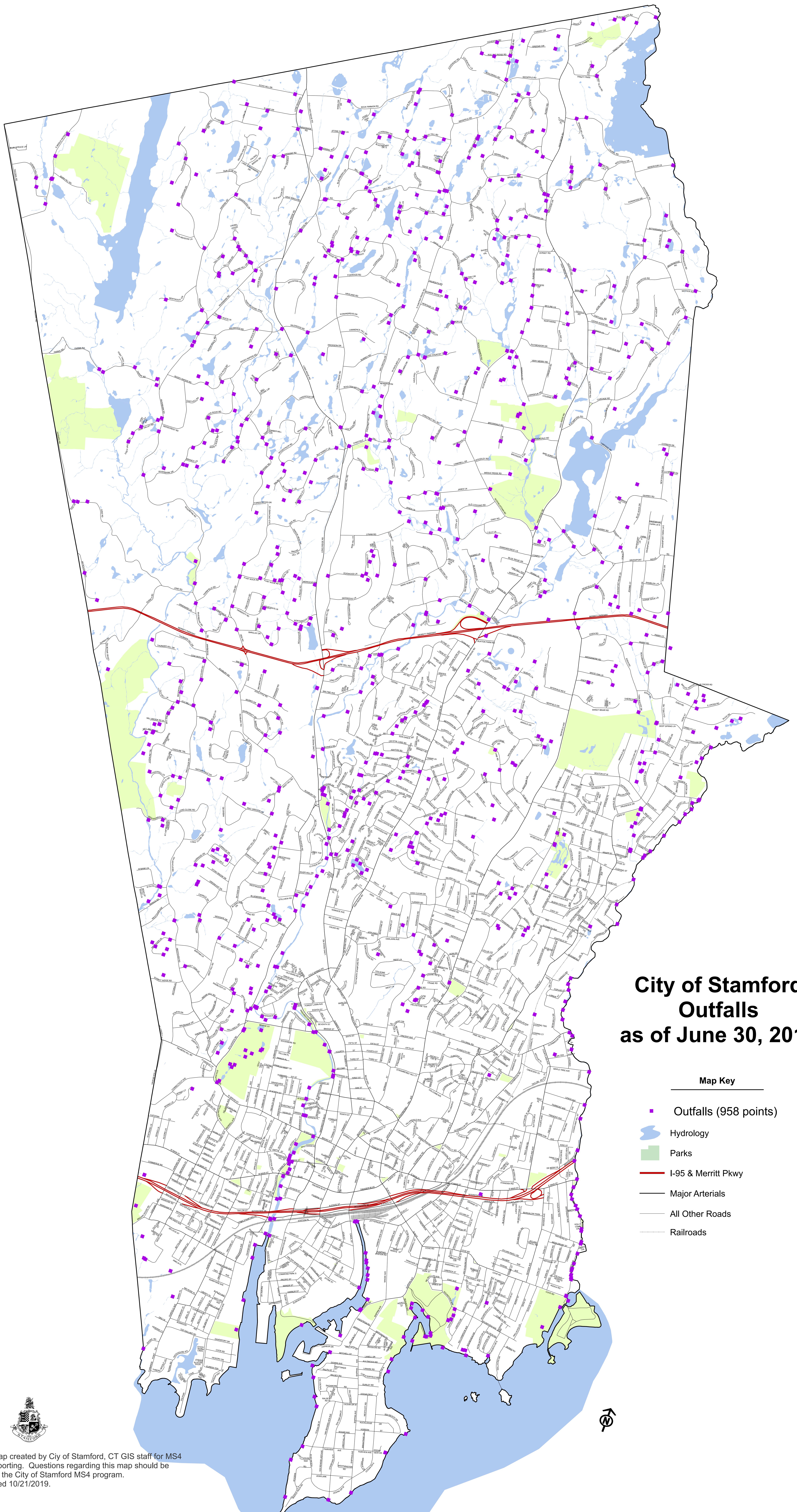
Activity Description	# Actions Scheduled	Status Complete / Incomplete as of June 30th	# Actions Completed	Comments on Activities
<b>8. Monitor PHFs</b>				
8.1 City Parks	On-going	On-Going	-	In 2018-19, the City did not fertilize park green space.
8.2 PHF Use in Ball Fields	On-going	On-Going	-	In 2018-19, the City applied a total of 1,530 pounds of nitrogen to the ball parks.
8.3 Sterling Farms Golf Course Nitrogen Monitoring	On-going	On-Going	-	Total Nitrogen applied in 2018-19: 550 pounds
8.4 E. Gaynor Brennan Municipal Golf Course Nitrogen Monitoring	On-going	On-Going	-	Total Nitrogen applied in 2018-19: 3,637 pounds
<b>9. Other Program Items</b>				
9.1 Establish SPRPs	As needed	On-Going	-	In June 2016, a city-wide SPRP was completed.
9.2 Review & Modify Current SMP	Annually	-	-	It is anticipated that an executed SMP will submitted to the CTDEEP as soon as possible. The updated SMP will be based on the modified permit and will reflect the current levels of resources available to support the permit goals.

HHW - Household Hazardous Waste  
 SMP - Stormwater Management Plan  
 DCIA - Directly Connected Impervious Area  
 BMP - Best Management Practices  
 LID - Low Impact Development  
 PHF - Pesticides, Herbicides and Fertilizers  
 SPRP - Spill Prevention and Response Plan



APPENDIX C  
UPDATED CITY OUTFALL LOCATIONS MAP

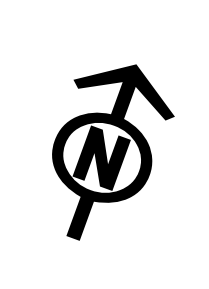
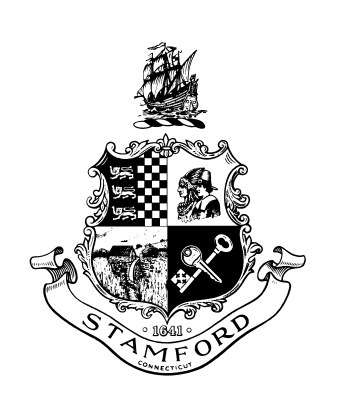




## City of Stamford Outfalls as of June 30, 2019

- Map Key**
- Outfalls (958 points)
  - Hydrology
  - Parks
  - I-95 & Merritt Pkwy
  - Major Arterials
  - All Other Roads
  - Railroads

Notes: Map created by Ciy of Stamford, CT GIS staff for MS4 annual reporting. Questions regarding this map should be directed to the City of Stamford MS4 program. map created 10/21/2019.





**APPENDIX D**

**2018–19 SPILLS OF FIVE GALLONS OR MORE**

City of Stamford - No. CT0030279  
 Spills and Leaks 7/1/18 - 6/30/2019



Date	Address / Location	Material Spilled	Quantity Released	Receiving Stream	
7/10/2018	Cummings Park North	Unknown petroleum product (Fuel oil or diesel fuel) from discharge 3/2018. .	Unknown	Long Island Sound / Westcott Cove	Tradebe to recover and dispose of oily booms related to 3/2018 incident at DIS-50.
7/10/2018	Haig Ave. at Crestview Ave.	Hydraulic oil	20 Gal.	Long Island Sound	City of Stamford loader ruptured hydraulic line on roadway. Spill was contained and did not enter storm drain system. Sorbent material and sand applied to area of spill. Sorbent material swept and cleaned 7/10/18. No impact to receiving waters.
10/9/2018	804 Atlantic St.	Hydraulic oil	unknown	West Branch / Stamford Harbor / Long Island Sound	City of Stamford sweeper ruptured hydraulic line on roadway. Spill was contained and did not enter storm drain system. Sorbent material and sand applied to area of spill. Sorbent material swept and cleaned 10/9/18. No impact to receiving waters.
10/16/2018	Bateman Way	Transformer Oil	120 - 180 Gal.	Stamford Harbor / Long Island Sound	CT DEEP Case No: 2018-05481. T. Theder contacted by WPCA. Private contractor (Vitti Excavating) moving large excavator with boom extended and pulled down utility poles and transformers, causing them to rupture. Material did enter catch basin but did not reach WPCA pump station. Abatement by contractor at owners expense. No impact to receiving waters.
10/23/2018	Bedford Street Parking Area	Oil / Grease	unknown	Long Island Sound	Stamford DSSD and co-op contracted Transclean to power wash and recover all wash waters.
12/7/2018	Indian Hill Rd. at Bayberry	Hydraulic oil	20 Gal.	Long Island Sound	City of Stamford loader ruptured hydraulic line on roadway. Spill was contained and did not enter storm drain system. Sorbent material and sand applied to area of spill. Sorbent material swept and cleaned. No impact to receiving waters.

1/5/2019	71 Pine Hill Ave.	Motor Oil	10 Gal.	Long Island Sound	CT DEEP Case No: 2019-00064. Oil into storm drain. Follow up by Stamford Fire Dept. and CT DEEP. CB on private property. Unknown impact to receiving waters.
2/11/2019	18 Ken Court	#2 Fuel Oil	unknown	Long Island Sound	CT DEEP Case No: 2019-01538. In ground tank failure. No free product. No impact to receiving waters.
2/14/2019	250 Hope St.	Petroleum / Gasoline	unknown	Long Island Sound	CT DEEP Case No: 2019-00728. In ground tank failure. Sheen on groundwater. No impact to receiving water.
2/28/2019	2453 West Ave.	Diesel Fuel	10 Gal.	Long Island Sound	CT DEEP Case No: 2019-00979. Overfill at Fed Ex. Discharge to ground surface. Cleaned.
2/28/2019	243West Ave.	Diesel Fuel	5 Gal.	Long Island Sound	CT DEEP Case No: 2019-00974. Sanded and swept.
3/4/2019	Hope St. at Colonial Rd.	Antifreeze	2 Gal.	Long Island Sound	CT DEEP Case No: 2019-01023. CT Transit MVA. Sanded, swept and cleaned. Not in CB's. No impact to receiving waters.
3/4/2019	25 Big Oak Lane	Transformer Oil	5 Gal.	Long Island Sound	CT DEEP Case No: 2019-01034. Clean Harbors contacted for abatement.
3/4/2019	684 Long Ridge Rd.	Motor vehicle fluids	10 Gal.	Long Island Sound	CT DEEP Case No: 2019-01035. Cleaned - contracted with Herbert Recovery.
3/22/2019	63 Hickory Way	Petroleum	10 Gal.	Long Island Sound	CT DEEP Case No: 2019-01301. Transfer line failure - Hoffman Fuel. CB's affected. Abatement performed by contractor. No impact to receiving waters. Stormwater Management Dept. pumped, cleaned CB's 3/26/2019.
3/22/2019	39 Grenhart Rd.	Petroleum	unknown	Long Island Sound	CT DEEP Case No: 2019-01307. UST removal of OWS. No free product. Soil remediation required. No impact to receiving waters.
3/25/2019	360 Thunder Hill Dr.	Diesel Fuel	30 Gal.	Rippowam River	CT DEEP Case No: 2019-01348. Ruptured saddle tank. No CB's this area. No impact to receiving waters.
3/25/2019	360 Thunder Hill Dr.	Diesel Fuel	30 Gal.	Rippowam River	CT DEEP Case No: 2019-01348. Ruptured saddle tank. No CB's this area. No impact to receiving waters.
3/26/2019	28 Bell St.	#2 Fuel Oil	unknown	Rippowam River	CT DEEP Case No:2019-01355. In ground tank failure. No impact to receiving waters.

<b>4/15/2019</b>	I-95 NB between exits 6 & 7	Motor vehicle fluids and chlorine bleach	Unknown	Rippowam River	CT DEEP Case No: 2019-01692. Tractor trailer rollover. CT Tank removal contracted to abate spill. No known impacts to receiving waters.
<b>4/23/2019</b>	300 Main St.	Hydraulic oil	1 Gal.	Rippowam River	CT DEEP Case No: 2019-01833. Hose failure. Sanded and swept. Clean Harbors assisted.
<b>5/1/2019</b>	626 Glenbrook Rd.	Transformer Oil	3 Gal.	Westcott Cove / Long Island Sound	CT DEEP Case No: 2019-01962. Eversource workstation spill - container failure discharge to ground surface. Clean up and abatement by contractor on behalf of Eversource. No impact to receiving waters.
<b>5/4/2019</b>	105 Harbor Drive	Petroleum product	unknown	Stamford Harbor / Long Island Sound - East Branch	CT DEEP Case No: 2019-02014. Reported small amount of gasoline around vessels in marina. USCG notified. Unknown impact to receiving waters.
<b>5/8/2019</b>	11 Leon Place	Diesel Fuel and Gasoline	275 UST	Long Island Sound	CT DEEP Case No: 2019-02094. In ground tank failure. No free product, pumped out. No impact to receiving waters.
<b>5/21/2019</b>	67 West Broad St.	Grease / Cooking Oil Spill	30 gal.	Rippowam River	CT DEEP Case No: 2019-02291. 30 gal. container used cooking oil / grease knocked over in parking lot. T. Theder was contacted Fire Dept. to provide sand for traction and to contain spill and safe off the areas to prevent additional tracking by vehicles. Spill was contained to area adjacent to parking lot. Tradebe contacted by restaurant owner to properly abate spill. Grease / oil did not enter drainage structures. No impact to receiving waters. T. Theder scheduled follow up inspection on 6/4/19 w/ restaurant owner, City of Stamford Health Dept. and City of Stamford WPCA Fats, Oils, and Grease (FOG) inspector.

Fire Department

Hazmat List by Incident

Alarm Date Between {07/01/2018} And {06/30/2019}

Chemical Name	Container	Qty Released	Released Into
<b>18-0008339 09/17/2018 19:05:52</b>			
Transmission Fluid		1 Liters	
<b>18-0008366 09/18/2018 15:58:25</b>			
Natural gas		1 Parts per	Air
<b>18-0008951 10/06/2018 11:08:23</b>			
Miscellaneous Automotive Waste	Drum	10 Gallons	Ground
<b>18-0009688 10/29/2018 17:52:41</b>			
Ethylene glycol		1 Gallons	Ground
<b>18-0010114 11/12/2018 14:04:23</b>			
<b>Mobile Property Involved: 11 Automobile, passenger car, ambulance, race car</b>			
Gasoline		64 Ounces (liquid)	
<b>18-0010361 11/20/2018 09:05:41</b>			
<b>Mobile Property Involved: 20 Freight road transport vehicle, Other</b>			
diesel fuel UN#:1202	Vehicle fuel tank	25 Gallons	
<b>18-0010861 12/06/2018 11:45:30</b>			
Motor Oil		1 Gallons	Confined, no
<b>19-0002013 03/06/2019 17:23:31</b>			
Fuel oil #2		5 Gallons	Ground
<b>19-0002577 03/25/2019 16:52:18</b>			
<b>Mobile Property Involved: 21 General use truck, dump truck, fire apparatus</b>			
Diseal	Vehicle fuel tank	30 Gallons	Ground

Fire Department

Hazmat List by Incident

Alarm Date Between {07/01/2018} And {06/30/2019}

Chemical Name	Container	Qty Released	Released Into
<b>19-0002603 03/26/2019 20:44:04</b>			
Carbon monoxide UN#:1016		8 Parts per	
<b>19-0003127 04/14/2019 15:17:05</b>			
Natural gas		1 Parts per	Confined, no
<b>19-0004400 05/26/2019 12:57:45</b>			
Natural gas	Machinery or process	1000 Parts per	Air
Carbon monoxide UN#:1016	None	7 Parts per	Air



**APPENDIX E**

**2018–19 PESTICIDE, FERTILIZER, AND HERBICIDE USE**

***Athletic Field Fertilizer use only, we do not use any Fertilizers on park Green space***

1<sup>st</sup> application April 2<sup>nd</sup> Dimension application 18-0-40- 60 bags total used, each bag is 50lbs

2<sup>nd</sup> application May 2<sup>nd</sup> Propendi- 60 bags total used, each bag is 50lbs

3<sup>rd</sup> 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/Scalzi #1, #2 and #3

Cubeta Stadium

Springdale Little League Field

Kosciusko LL and Softball Field

Cummings #1 Field #2 Field #4 field and #5

Chestnut Field

Dorthey Heroy Field

Northrop (Stark school) Field

Dimension (18-0-40) - 50lbs/bag x (18/100) = 9lbs/bag x 60 bags = 540lbs N  
ProPendi (13-0-4) - 50lbs/bag x (13/100) = 6.5lbs/bag x 60 bags = 390lbs N  
Fertilizer (25-0-5) - 40lbs/bag x (25/100) = 10lbs/bag x 60 bags = 600lbs N  
Total N Used = 1,530lbs

**APPENDIX F**

**2018–19 ENVIRONMENTAL PROTECTION BOARD SUMMARY TABLE**

## ENVIRONMENTAL PROTECTION BOARD

The Environmental Protection Board (EPB) is organized by ordinance as a multi-purpose City agency combining the duties and responsibilities of: 1) a local Inland Wetlands and Watercourses Agency, 2) a local Conservation Commission, and 3) a local Flood and Erosion Control Board. The EPB has regulatory responsibilities, including issuing special permits for development activities on properties having inland wetlands and watercourses, buffer/setback areas, and designated flood hazard areas. The EPB also has advisory responsibilities, providing review, technical assistance and comment on the potential impact of subdivisions, coastal site plan reviews, site plan reviews, variances, special exceptions, drainage/erosion control plans, utility installations, and other related matters. Information/comments are disseminated to City Boards, Commissions, Departments, professional consultants and members of the public. Finally, the EPB has stewardship responsibilities, including recommendations for the creation and subsequent monitoring of open space areas and public points of access to Stamford's waterfront and shoreline areas. EPB Staff (Executive Director/Environmental Planner – 1 and Environmental Analyst – 2) in cooperation with other City departments, inspects development projects to ensure conformance with issued permits/approvals and City standards, acts as the designated liaison with State and Federal officials on matters of wetland/floodplain/coastal management, and administers the City's participation in the Federal Emergency Management Agency's Community Rating System (CRS).

In Fiscal Year 2018-19, EPB's staff members (combined full and part time employees) responded to 4,400 public inquiries during its regular office hours, reviewed 1,438 applications for building/septic permit, and evaluated 106 formal applications from the various Land Use Boards. In addition, EPB staff participated in the review and/or inspection of numerous public/private projects of value and interest to the City including:

Greenwich Avenue – Mill River Collaborative - Mill River Park Middle Corridor Project  
Green and Hanrahan Streets – City of Stamford – Mill River Park North Phase 2  
Wedgemere Road - City of Stamford WPCA - Sanitary Sewer Extension  
Woodway Road – Aquarion Water Company for the Woodway Country Club, Inc.  
Scofieldtown Road - Bethany Assembly for Artis Senior Living, LLC

West Main Street - The Home Depot  
Southfield Avenue - Davenport/Stamford Landing – Boatyard  
Southfield Avenue – Davenport Landing – Residential Building/Roadway Improvements

Project monitoring and enforcement remained a priority for the department. EPB Staff also performed essential functions in the development of regulations pertinent to Stamford's MS4 Program ("Municipal Separate Storm Sewer System"), participated in the formulation of a uniform "Drainage Manual", improved efforts to update pertinent resource layers in the City's Geographic Information System (GIS), enhanced the EPB website, contributed to the continued evaluation of the City's on-line building permit system, and maintained/enhanced Stamford's excellent standing in FEMA's CRS (Community Rating System) Program.

## Performance Summary - Fiscal Years 2009-19

Activity	Service Output by Fiscal Year									
	<u>2009-10</u>	<u>2010-11</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>2016-17</u>	<u>2017-18</u>	<u>2018-19</u>
<b>Customer Service:</b>										
Office Visits:	3354	4483	4783	4798	4900	4832	4912	4568	4146	4400
Building/Septic Permit Reviews:	1222	1342	1642	1584	1505	1462	1540	1355(a)	1318	1438
<b><u>Administration:</u></b>										
General Program Administration:	336	364	307	414	373	347	372	416	414	416
Referrals:	143	150	158	121	171	159	157	194	210	191
Outgoing E-Mails (Various)	NA	NA	NA	NA	NA	NA	NA	NA	NA	3830
<b><u>Permitting/Technical Review:</u></b>										
Coastal Site Plan/Zoning Apps.	13	15	20	19	16	26	23	30	29	19
Wetland/EPB SPR Applications:	27	38	35	41	28	28	34	28	40	30
Subdivision Applications:	02	03	03	03	05	09	07	02	03	01
ZBA Applications:	68	55	63	71	66	51	66	52	48	56
Site Plan Review Applications:	39	46	55	106	99	117	128	119	124	160
<b><u>Enforcement/Inspection:</u></b>										
Project Monitoring/Compliance:	79	82	87	81	95	93	106	119	135	129
General Enforcement Activity:	58	56	59	28	25	30	64	43	71	69
Complaints/Citizen Services:	35	34	39	37	46	220	249	280	380	172(c)
<b><u>Special Projects:</u></b>										
CRS Program:	18	18	18	18(b)	18	18	18	18	22(b)	24
GIS Updates	00	00	00	01	01	01	01	01	01	01
Public Outreach	01	01	01	02	03	04	02	02	02	02
MS4, Drainage Manual, Web and Regulation Change	00	00	00	00	01	01	01	01	03	06

\*The information summarized above is based upon an examination of written correspondence (chronological) files and existing data base entries for the period 7/1/18 to 6/30/19. Omitted from the reporting are telephone entries, facsimile transmissions, undocumented field inspections, inspections conducted in conjunction with the review of development applications, and other related activities.

- (a) Reflects new/improved **streamlined policies/procedures** to reduce the specific types of building permit applications and follow up reviews conducted by EPB Staff.
- (b) Five (5) Year Recertification.
- (c) Reflects modifications to Fix-it-Stamford referral process.

**APPENDIX G**  
**CITY STAFF TRAINING EVENTS SIGN-IN SHEETS**



**Employee Training**  
**Universal Waste, Used Oil and CT Regulated Wastes**  
**Management Procedures and Emergency Response Procedures**  
**City of Stamford – Highway Department**  
**Date of Training: June 27, 2019**

**Attendees Sign-In:**

	Name Printed	Name Signed	Company / Work Function
1	Joe Hoyt	Joe Hoyt	Stormwater
2	Roberto Antenucci	Roberto Antenucci	Storm
3	Row MARKEY	Row Markey	PARKS / SUPERVISOR
4	Jim Hart	Jim Hart	Stormwater
5	Paul Kopiec	Paul Kopiec	Fleet
6	Chris Rivera	Chris Rivera	Stormwater
7	Rob Buzzeo	Rob Buzzeo	EQUIPMENT
8	Tyler HEDEN	Tyler Heden	Stormwater
9			
10			

**Training**

**Location:** City of Stamford – Highway Department  
100 Magee Avenue  
Stamford, CT

**Resources:** US Environmental Protection Agency (EPA) Regulations of 40 CFR 262.34(a)(4) and 265.16  
Regulations of Connecticut State Agencies (RCSA) Section 22a-449(c)-102(a)(1)  
Universal Waste, Used Oil and CT Regulated Waste Training Power Point Presentation (by F&O)  
Waste Training – Supplementary Handouts (by F&O)

**Training**

**Facilitator:** John Siedel, CHMM, OHST

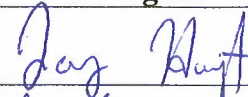






JOHN SIEDEL  
Printed Name

*John Siedel*  
Signature

Fuss & O'Neill, Inc

**Employee Training**  
**Stormwater Pollution Prevention Plan (SWPPP)**  
**City of Stamford – Highway Department**  
**Date of Training: June 27, 2019**

**Attendees Sign-In:**

	<b>Name Printed</b>	<b>Name Signed</b>	<b>Company / Work Function</b>
1	Joe Hoyt		Stormwater
2	Jim Hoyt		Stormwater
3	RON MARKEY		PARKS/SUPERVISOR
4	Chris Rivera		Stormwater
5	Paul Kopeck		Fleet
6	TYLER THEODORE		Stormwater -
7	Roberto Antonucci		Storm
8			
9			
10			

**Training**

**Location:** City of Stamford – Highway Department  
 100 Magee Avenue  
 Stamford, CT

**Resources:** General Permit for the Discharge of Stormwater

Associated with Industrial Activities

Connecticut General Statutes (CGS) Section 22a-430-3b:  
**Site's Stormwater Pollution Prevention Plan (SWPPP)**  
 SWPPP Training Power Point Presentation (by F&O)  
 SWPPP Training – Supplementary Handouts (by F&O)

**Training**

**Facilitator:** John Siedel, CHMM, OHST

JOHN SIEDEL

Printed Name



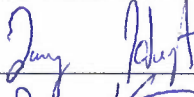

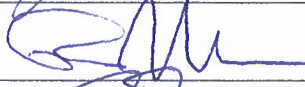
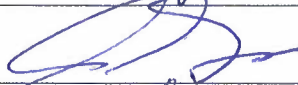
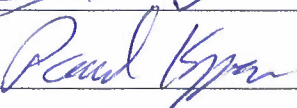
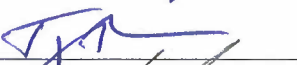
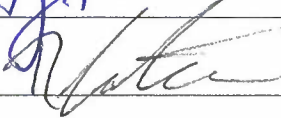
Signature

Fuss & O'Neill, Inc



**Employee Training**  
**Spill Prevention Control and Countermeasure (SPCC) Plan**  
*City of Stamford – Highway Department*  
**Date of Training: June 27, 2019**

**Attendees Sign-In:**

	Name Printed	Name Signed	Company / Work Function
1	Joe Hoyt		Stormwater
2	Jim Hart		Stormwater
3	Ron Mackay		Parks/SUPERVISOR
4	Chris Rivera		Stormwater
5	Paul Kopec		Fleet
6	Tyler Theden		Stormwater
7	Roberto Antonucci		storm
8			
9			
10			

**Training**

**Location:** City of Stamford – Highway Department  
 100 Magee Avenue  
 Stamford, CT

**Resources:** US Environmental Protection Agency (EPA) regulations of 40 CFR 112:  
 Site's Spill Prevention Control and Countermeasures (SPCC) Plan  
 SPCC Training Power Point Presentation (by F&O)  
 SPCC Training – Supplementary Handouts (by F&O)

**Training**

**Facilitator:** John Siedel CHMM, OHST

JOHN Siedel  
 Printed Name

, Fuss & O'Neill, Inc  
 Signature

**Employee Training**  
**Spill Prevention Control and Countermeasure (SPCC) Plan**  
**City of Stamford – Highway Department**  
**Date of Training: June 28, 2019**

**Attendees Sign-In:**

	<b>Name Printed</b>	<b>Name Signed</b>	<b>Company / Work Function</b>
1	Ron Capocede		Highway
2	RONNIE PERKINS		Highways
3	Kevin Cuevas		Highways
4	AARON TURNER		HIGHWAYS
5	Timothy Hinton		Highways
6	MORRIS D Echeverria		Highways
7	Joseph Caplon		" "
8	Phil Markey		Highways
9	Robert Frattavoli		Highways
10			

**Training**

**Location:** City of Stamford – Highway Department  
 100 Magee Avenue  
 Stamford, CT

**Resources:** US Environmental Protection Agency (EPA) regulations of 40 CFR 112:  
 Site's Spill Prevention Control and Countermeasures (SPCC) Plan  
 SPCC Training Power Point Presentation (by F&O)  
 SPCC Training – Supplementary Handouts (by F&O)

**Training**


**Facilitator:** John Siedel CHMM, OHST

John Siedel  
 Printed Name

, Fuss & O'Neill, Inc  
 Signature

**Employee Training**  
**Spill Prevention Control and Countermeasure (SPCC) Plan**  
**City of Stamford – Highway Department**  
**Date of Training: June 28, 2019**

**Attendees Sign-In:**

	Name Printed	Name Signed	Company / Work Function
1	Derek Aime	Derek Aime	H E O
2	John Moore		E O 3
3	Todd M. Johnson SR.	Todd M. Johnson Jr.	STAMFORD HIGHWAYS <sup>E-03</sup>
4			
5			
6			
7			
8			
9			
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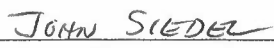
**Training**

**Location:** City of Stamford – Highway Department  
 100 Magee Avenue  
 Stamford, CT

**Resources:** US Environmental Protection Agency (EPA) regulations of 40 CFR 112:  
 Site's Spill Prevention Control and Countermeasures (SPCC) Plan  
 SPCC Training Power Point Presentation (by F&O)  
 SPCC Training – Supplementary Handouts (by F&O)

**Training**

**Facilitator:** John Siedel CHMM, OHST

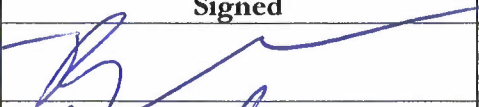

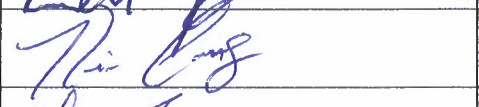
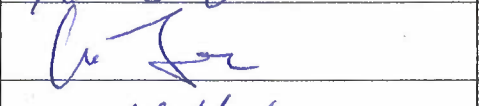
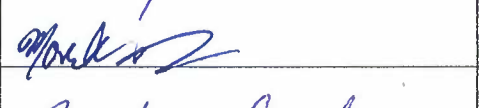
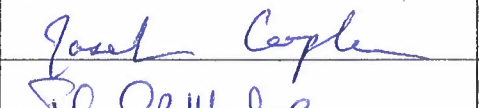
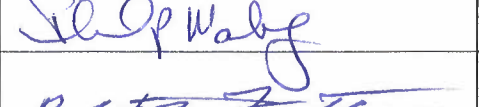
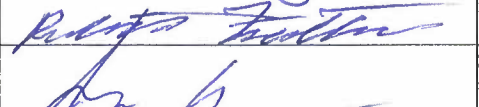
  
 Printed Name

  
 Signature

Fuss & O'Neill, Inc

**Employee Training**  
**Universal Waste, Used Oil and CT Regulated Wastes**  
**Management Procedures and Emergency Response Procedures**  
**City of Stamford – Highway Department**  
**Date of Training: June 28, 2019**

**Attendees Sign-In:**

	Name Printed	Name Signed	Company / Work Function
1	Ron Caporale		Highways
2	RONNIE PERKINS		Highways
3	Kevin Cuevas		Highways
4	AARON TURNER		HIGHWAYS
5	Timothy Hinton		Highways
6	markos Echeverria		Highways
7	Joseph Cople		" "
8	Phil Markey		HIGHWAYS
9	Robert Frattaroli		Highways
10	John Cornelio		Highways

**Training**

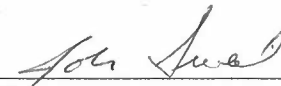
**Location:** City of Stamford – Highway Department  
 100 Magee Avenue  
 Stamford, CT

**Resources:** US Environmental Protection Agency (EPA) Regulations of 40 CFR 262.34(a)(4) and 265.16  
 Regulations of Connecticut State Agencies (RCSA) Section 22a-449(c)-102(a)(1)  
 Universal Waste, Used Oil and CT Regulated Waste Training Power Point Presentation (by F&O)  
 Waste Training – Supplementary Handouts (by F&O)

**Training**

**Facilitator:** John Siedel CHMM, OHST

John Siedel  
 Printed Name

  
 Signature

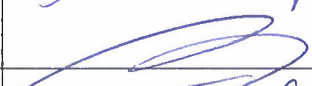
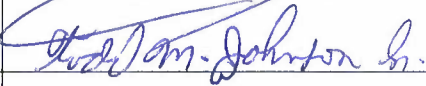
Fuss & O'Neill, Inc





**Employee Training**  
**Universal Waste, Used Oil and CT Regulated Wastes**  
**Management Procedures and Emergency Response Procedures**  
*City of Stamford – Highway Department*  
**Date of Training: June 28, 2019**

**Attendees Sign-In:**

	<b>Name Printed</b>	<b>Name Signed</b>	<b>Company / Work Function</b>
1	Derek Aime	Derek Aime	HEO
2	John Moore		EO3
3	Todd M. Johnson Sr.		STAMFORD HIGHWAYS E.O.3
4			
5			
6			
7			
8			
9			
10			

**Training**

**Location:** City of Stamford – Highway Department  
100 Magee Avenue  
Stamford, CT

**Resources:** US Environmental Protection Agency (EPA) Regulations of 40 CFR 262.34(a)(4) and 265.16  
Regulations of Connecticut State Agencies (RCSA) Section 22a-449(c)-102(a)(1)  
Universal Waste, Used Oil and CT Regulated Waste Training Power Point Presentation (by F&O)  
Waste Training – Supplementary Handouts (by F&O)

**Training**

**Facilitator:** John Siedel CHMM, OHST

JOHN SIEDEL  
Printed Name

  
Signature

Fuss & O'Neill, Inc



**Employee Training**  
**Stormwater Pollution Prevention Plan (SWPPP)**  
*City of Stamford – Highway Department*  
**Date of Training: June 28, 2019**

**Attendees Sign-In:**

	<b>Name Printed</b>	<b>Name Signed</b>	<b>Company / Work Function</b>
1	Robert Fratturoli	<i>Robert Fratturoli</i>	city - Highway
2	AARON TURNER	<i>Aaron Turner</i>	Highways
3	hon Caprade	<i>hon Caprade</i>	" "
4	Rennie Perkins	<i>Rennie Perkins</i>	Highways
5	Kevin Cuevas	<i>Kevin Cuevas</i>	Highways
6	Timothy Hinton	<i>Timothy Hinton</i>	Highways
7	MARKAS D Echeverria	<i>Markas D Echeverria</i>	Highways
8	Joseph Coplon	<i>Joseph Coplon</i>	" "
9	Phil MARKEY	<i>Phil Markey</i>	Highways
10			

**Training**

**Location:** City of Stamford – Highway Department  
100 Magee Avenue  
Stamford, CT

**Resources:** General Permit for the Discharge of Stormwater

Associated with Industrial Activities

Connecticut General Statutes (CGS) Section 22a-430-3b:  
**Site's Stormwater Pollution Prevention Plan (SWPPP)**  
SWPPP Training Power Point Presentation (by F&O)  
SWPPP Training – Supplementary Handouts (by F&O)

**Training**


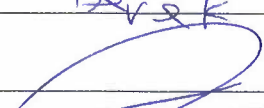
**Facilitator:** John Siedel, CHMM, OHST

John Siedel  
Printed Name

*John Siedel*, Fuss & O'Neill, Inc  
Signature

**Employee Training**  
**Stormwater Pollution Prevention Plan (SWPPP)**  
**City of Stamford – Highway Department**  
**Date of Training: June 28, 2019**

**Attendees Sign-In:**

	Name Printed	Name Signed	Company / Work Function
1	Derek Aime		HEO
2	John McGovern		EO3
3	Todd M. Johnson SR.	Todd M. Johnson Sr.	Stamford Highways E.03
4			
5			
6			
7			
8			
9			
10			

**Training**

**Location:** City of Stamford – Highway Department  
 100 Magee Avenue  
 Stamford, CT

**Resources:** General Permit for the Discharge of Stormwater

Associated with Industrial Activities

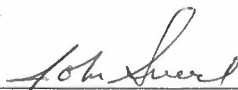
Connecticut General Statutes (CGS) Section 22a-430-3b:  
**Site's Stormwater Pollution Prevention Plan (SWPPP)**  
 SWPPP Training Power Point Presentation (by F&O)  
 SWPPP Training – Supplementary Handouts (by F&O)

**Training**

**Facilitator:** John Siedel, CHMM, OHST



Printed Name



Signature

, Fuss & O'Neill, Inc

**APPENDIX H**

**2018–19 CATCH BASIN / MANHOLE REPAIRS LIST**

















APPENDIX I

2018-19 CULVERT CLEANING LIST



# City of Stamford - No. CT0030279

## Open Drainage Channel (Culvert Cleaning and Backhoe Work) 7/1/18 - 6/30/2019



Date	Address / Location	Duration	Manpower	Quan. Of Material Removed	Receiving Stream	Notes
7/9/2018	265 Silver Hill Ln	1/3 Day	2 men stetco hydraulic crane and vac truck	appx. 1 cubic yard	Rippowam River	removed logs and debris at culvert inlet.
7/12/2018	Howard Road	1 Day	3 men, vac truck, stetco	appx. 6 cubic yards	Mianus River	stormwater inlet pipe on west side of road buried and not draining properly. Excavated with stetco and vac truck. Restored proper
7/17/2018	44 East Cross Road	1 Day	4 men, Stetco hydraulic crane and Vac truck	appx. 1 cubic yard	Norton River	Stormwater bar screen inlet cleared from leaves, logs, and accumulated debris. Proper flow restored.
7/25/2018	16 Westhill Ln.	1 Day	2 men stetco hydraulic crane and vac truck	appx. 1 cubic yard	Rippowam River	Cleared debris and stump bottom of swale
8/28/2018	Lakeside drive	3 Days	4 men, mini excavator and small dump trucks	appx. 25 cubic yards	Rippowam River	create leakoff under fence to drain puddle at roadway to reservoir. Coordination with Aquarion.
10/4/2018	180 Riverbank Rd.	1/3 Day	3 men, stetco hydraulic crane and vac truck	appx. 1 cubic yard	Rippowam River	cleared inlet piping
10/9/2018	53 & 71 Arrowhead Dr.	1 Day	3 men stetco hydraulic crane and vac truck	appx. 2 cubic yards	Rippowam River	Cleared culvert inlets
10/11/2018	53 & 71 Arrowhead Dr.	1 Day	3 men, mini excavator and small dump trucks	appx. 3 cubic yards	Rippowam River	Cleared culvert inlets and rip rap
10/24/2018	138 Rocky Rapids Rd.	2 Day	3 men, mini excavator and small dump trucks	appx. 3 cubic yards	Rippowam River	Cleared culvert inlets and rip rap
10/26/2018	12 Woodbrook Dr.	1/3 Day	3 men, mini excavator and small dump trucks	appx. 1 cubic yard	Noroton River	Cleared inlet at Woodbrook and Eden Rd.
10/26/2018	1271 Riverbank Rd.	1/3 Day	3 men, mini excavator and small dump trucks	appx. 2 cubic yards	Rippowam River	Remove and haul away pile of fill near CB and cut trench / leakoff to inlet headwall opposite #1233 Riverbank Rd.
10/29/2018	180 Riverbank Rd.	1/3 Day	3 men, mini excavator and small dump trucks	n/a	Rippowam River	added rip rap both sides of stream
10/29/2018	1510 Riverbank Rd.	1/3 Day	3 men, mini excavator and small dump trucks	appx. 5 cubic yards	Rippowam River	Cleared leak off, headwall, and culvert inlet
10/29/2018	135 Sawmill Rd.	1/3 Day	3 men, mini excavator and small dump trucks	appx. 1 cubic yard	Rippowam River	Cleared outlet piping
11/6/2018	65 White Birch Ln	1/2 Day	2 men stetco hydraulic crane	appx. 1 cubic yard	Rippowam River	removed logs and debris at culvert inlet.
11/6/2018	265 Silver Hill Ln	1/2 Day	2 men stetco hydraulic crane	appx. 1 cubic yard	Rippowam River	removed logs and debris at culvert inlet.
12/18/2018	1271 Rock Rimmon Rd.	1 Day	3 men stetco hydraulic crane	appx. 3 cubic yards	Rippowam River	Saw cut edge of asphalt road, exposed spring, stabilized edge of road w/ surge and gravel
12/19/2018	1654 Long Ridge Rd. at Butternut Ln.	1 Day	3 men back hoe and small dump trucks	appx. 1 cubic yard	Rippowam River	adjusted rip rap at leak off to ensure water removed from roadway.
1/3/2019	369 Rock Rimmon Rd.	1 Day	2 men, vac truck, stetco hydraulic crane	appx. 1 cubic yard	Rippowam River	cleared logs and debris from culvert inlet.
1/7/2019	386 June Rd.	1 Day	5 men, loader, small dump trucks	appx. 3 cubic yards	Mianus River	removed logs, cut in swale, restored leakoff, added rip rap

1/11/2019	141 Den Rd.	3 Days	5 men, loader, small dump trucks	appx. 5 cubic yards	Rippowam River	Excavated roadside swale, prep for pipe work
1/14/2019	415 Farms Rd.	1 Day	4 men, loader, small dump trucks	n/a	Rippowam River	added rip rap at guard rail to limit roadway erosion.
1/15/2019	28 Mill Rd.	1/3 Day	6 men, loader, small dump trucks	appx. 2 cubic yards	Rippowam River	scraped road, cleared leak off
1/15/2019	188 Slice Dr.	1/3 Day	6 men, loader, small dump trucks	appx. 1 cubic yard	Rippowam River	scraped road, cleared leak off
1/15/2019	120 Hobson St.	1/3 Day	6 men, loader, small dump trucks	appx. 4 cubic yards	Long Island Sound	scraped road - sand from coastal storms
1/15/2019	266 Willowbrook Ave.	1/3 Day	6 men, loader, small dump trucks	appx. 1 cubic yard	Long Island Sound	scraped road - sand from coastal storms
1/16/2019	Opposite #180 Wildwood Rd.	1 Day	4 men, loader, small dump trucks	n/a	Rippowam River	added rip rap at road leak off to prevent further erosion.
1/30/2019	123 Lawton Ave	1/2 Day	3 men, stetco hydraulic crane	appx. 2 cubic yards	Noroton River	cleared logs and debris from bar screen drainage inlet at sleepy hollow park.
2/4/2019	432 Carriage Dr.	1 Day	3 men, backhoe, small dump trucks	appx. 4 cubic yards	Rippowam River	cleared logs and debris from culvert inlet.
2/6/2019	Bracchi Drive	2 Days	5 men, mini excavator and small dump trucks	appx. 10 cubic yards	Rippowam River	stormwater swale filled in. Removed sediment and debris. Towed abandoned car prior to work.
2/15/2019	53 & 71 Arrowhead Dr.	1 Day	3 men, vac truck, stetco	appx. 3 cubic yards	Rippowam River	Cleared culvert inlets from logs and debris.
2/25/2019	611 Westover Rd.	1 Day	3 men, loader and small dump trucks	n/a	Minaus River	added rip rap to culvert inlet
3/15/2019	371 Taconic Road	3 Days	5 men, mini excavator and small dump trucks	appx. 20 cubic yards	Mianus River	excavated roadside swale to ensure water off of road.
3/18/2019	589 Den Road	1/2 Days	6 men, mini excavator and small dump trucks	appx. 1 cubic yard	Rippowam River	used mini ex to explore for pipe under roadway. None found. Referred to Engineering department.
3/19/2019	Old Long Ridge Road	4 Days	5 men, mini excavator and small dump trucks	appx. 40 cubic yards	Rippowam River	created two roadside swales. Removed illegally placed paving work by utility company resulting in heavy water flow on road. Fabric and rip rap at base of swales.
3/21/2019	Laurel Road	1 Day	4 men, Stetco hydraulic crane and Vac truck	appx. 6 cubic yards	Rippowam River	Clean out at 4 stormwater inlets
5/6/2019	Bangall Rd.	3 Days	6 men, backhoe, loader and dump trucks	appx. 30 cubic yards and boulders	Rippowam River	Excavated roadside swale, seed and hay

APPENDIX J

2018–19 IDDE DRY WEATHER SCREENING DATA SUMMARY TABLE



**APPENDIX K**

**2018–19 WET WEATHER SCREENING DATA SUMMARY TABLE**

General Information						Rain Event		Sample Info			Field Parameter				Lab Data											
SON #	Permit Outfall ID	Sample Status	Condition Status	Condition Level	Up Gradient Sample	Direct Discharge	Amount (in)	Time Since Previous Event	Initial	Date	Time SF	Photo	Turbidity (NTU)	Turbidity Upstream (NTU)	pH (S.U)	Temperature	D.O (mg/l)	Conductivity (umhos/cm)	Escherichia Coli	Total Coliforms	Fecal Coliforms	Enterococcus	Phosphorus	Total Nitrogen	Impairment	
SON-0036	DIS-30	30	SF	Good	No	Yes	1.44	4 days	DRS	1/24/2019	10:10	Yes													Bacteria	
SON-0095	DIS-55	55	SF	Good	No	Yes	1.44	6 days	EAA	6/15/2015	9:44	Yes													Bacteria	
SON-0095	DIS-67	67	SF	Good	No	Yes	0.48	4 days	KLM	6/18/2019	14:35	No	1	0.74							<10	272			Other Pollutant of Concern	
SON-0058	DIS-84	84	SF	Good	No	Yes	1.44	4 days	BIL	1/24/2019	11:54	Yes	7.98	11.7	7.68	10.89	8.57	345	4610	>24200	>2000	1660	0.39	2.26	Other Pollutant of Concern	
SON-0063	DIS-94	94	SF	Good	No	Yes	0.65	4 days	BIL	6/17/2015		No	14.5		7.85	17.52	8.06	374	7270	>24200	>2000	9800	0.11	0.67		
SON-0084	DIS-95	95	SF	Good	No	Yes	1.44	4 days	EAA	6/15/2015	7:40	Yes	29.5	6.18	7.59	20.49	9.24	114	24200	>24200	>2000	>24200	0.43	4.6	Other Pollutant of Concern	
SON-0065	DIS-96	96	SF	Good	No	Yes	0.65	6 days	EAA	6/15/2015	8:15	Yes	25	5.87	7.61	21.41	3.25	199	17300	>24200	>2000	24200	0.19	1.49	Other Pollutant of Concern	
SON-0067	DIS-98	98	SF	IE	Good	No	1.44	4 days	BIL	1/24/2019	13:12	Yes	22.6	6.71	7.70	21.40	6.10	319	4610	>24200	>2000	5760	0.1	0.74	Other Pollutant of Concern	
SON-0085	DIS-130	130	SF	Fair	No	Yes	1.44	4 days	DRS	1/24/2019	8:39	Yes			7.74	14.91	8.26	544	17330	>24200	52	228			Bacteria	
SON-0087	DIS-132	132	SF	Good	No	Yes	0.29	13 days	SWZ	1/22/2015	12:15	Yes			7.58	9.88	9.37	435	>24200	>24200	<10	20000	0.86	1.24	Bacteria	
SON-0087	DIS-180	180	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	12:05	No	8.25	1.72											Other Pollutant of Concern	
SON-0087	DIS-181	181	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	12:10	No	14.7	1.23												Other Pollutant of Concern
SON-0109	DIS-204	204	SF	Good	No	Yes	1.44	4 days	BIL	1/24/2019	7:57	Yes	7.4	9.94												Other Pollutant of Concern
SON-0109	DIS-205	205	SF	Good	No	Yes	1.44	4 days	BIL	1/24/2019	8:18	Yes	17.1	17.1												Other Pollutant of Concern
SON-0109	DIS-240	240	SF	Good	No	Yes	0.48	4 days	KLM	6/18/2019	13:10	No	1.79	1.64												Other Pollutant of Concern
SON-0109	DIS-727	727	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	12:56	No	6.88	2.05												Other Pollutant of Concern
SON-0109	DIS-769	769	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	12:40	No	2.02	1.56												Other Pollutant of Concern
SON-0129	DIS-770	770	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	12:43	No	0.12	1.49												Other Pollutant of Concern
SON-0129	DIS-830	830	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	11:50	No	1.41	1.16												Other Pollutant of Concern
SON-0129	DIS-936	936	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	13:43	No	0	1.07												Other Pollutant of Concern
SON-0129	DIS-937	937	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	13:35	No	0.28	1.23												Other Pollutant of Concern
SON-0129	DIS-938	938	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	13:52	No	0.21	0.96												Other Pollutant of Concern
SON-0129	DIS-996	996	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	13:00	No	2.31	1.62												Other Pollutant of Concern
SON-0135	DIS-1277	1277	SF	Good	No	Yes	1.44	4 days	DRS	1/24/2019	7:38	Yes														Bacteria
SON-0135	DIS-1282	1282	SF	Good	No	Yes	1.44	4 days	DRS	1/24/2019	9:25	Yes										<10	20			Bacteria
SON-0135	DIS-1283	1283	SF	Good	No	Yes	1.44	4 days	DRS	1/24/2019	9:11	Yes											63	1470		Bacteria
SON-0135	DIS-1285	1285	SF	Good	No	Yes	1.44	4 days	DRS	1/24/2019	8:52	Yes											106	3970		Bacteria
SON-0135	DIS-1286	1286	NFEF	UW	Fair	No	1.44	4 days	DRS	1/24/2019	0.339883333	Yes														Bacteria
SON-0135	DIS-1289	1289	SF	Good	No	Yes	0.65	4 days	DRS	6/17/2015		No														Bacteria
SON-0135	DIS-1412	1412	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	14:15	No	2.13	2.40												Other Pollutant of Concern
SON-0135	DIS-1445	1445	SF	Good	No	Yes	0.48	4 Days	KLM	6/18/2019	14:22	No	1.22	1.11												Other Pollutant of Concern

**APPENDIX L**

**2018-19 IDDE FOLLOW-UP INVESTIGATIONS**





