

**2019 - 2020
MS4 ANNUAL REPORT
NPDES PERMIT #CT0030279**

FOR

**CONNECTICUT DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION**

PREPARED FOR

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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 the State of Connecticut's Department of Energy and Environmental Protection (CTDEEP) 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, 2019 through June 30, 2020 (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 2018–19 MS4 Annual Report was submitted to CTDEEP on November 19, 2019.

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) 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 the requested information.

Notice of Sufficiency from CTDEEP was received on July 9, 2019. The notice indicates the application is undergoing technical review, and Permit No. CT0030279, which expired on June 3, 2018 will continue in effect until such time as the Commissioner disposes of the renewal application.

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 Road Maintenance Department 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, including modified zoning regulations, to address the quality of stormwater discharge.
- 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 2020–21 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 2019-20 Reporting Period, the City received a draft revised SMP from Fuss & O'Neill and will be reviewing and finalizing the SMP. The SMP is nearing completion with only a few remaining items which need revision and finalization.

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. In 2010, the Stamford Water Pollution Control Authority (WPCA) transferred responsibility of Stormwater Management compliance to the City of Stamford, Office of Operations. It was determined the Traffic and Road Maintenance Department would be responsible to implement the Permit (CT0030279) which was issued to the City in 2013. Responsibility for Traffic functions within this department has since been shifted to the newly created Traffic, Transportation, and Planning Department, as of approximately 2017.

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 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 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 NPDES Permit.

As of 2014, the City created and filled five positions under the direction of the Regulatory Compliance and Administrative Officer; the positions currently include five (5) Heavy Equipment Operators (HEO's) to operate equipment related to the required stormwater control measures contained in the Permit. In July 2020, due to budget cuts related to the COVID pandemic, the City's elected boards and the Administration eliminated five (5) HEO positions from the Road Maintenance Department and one (1) HEO from the Stormwater Management Department. The elimination of these positions created a direct impact of service reduction to residents and will impact the quantity of stormwater control measures implemented during the 20-21 reporting year. Additional information regarding this will be provided during the next reporting period.

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 coastal boundaries.

The City continues to update 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, 2020, the City has mapped 960 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
 - 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 3,360 hits on the website. There was a 22% decrease in web traffic compared to 2018-2019, which totaled 4,327 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 via Zoom on August 25, 2020 for the review of the SMP and the draft 2019-2020 Annual Report. The Notice of Meeting was published in the Stamford Advocate newspaper and the Notice of Meeting was filed with the Town Clerk. There were no public attendees at the meeting. No formal questions or comments were submitted by citizens. The City has noted small or absent attendance over recent years at the required annual meetings and has observed that effort and time spent preparing for and conducting the meeting may be more effectively allocated toward other methods of outreach.
- An informational pamphlet on pet waste management was provided to all dog owners obtaining or renewing a dog license at the Town Clerks Office. Approximately 1,650 of the pamphlets were provided to the Town Clerk, and 650 pamphlets provided to the dog pound 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. No new pet waste stations were installed during the reporting period. 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. During the Reporting Period, the City switched from 2-ply pet waste bags to a 1-ply bag which allowed them to order double the amount of bags at the same cost. Due to the COVID-19 pandemic lockdown, the Parks Department observed an increase in dog walking activity in the City's parks. Shipments of pet waste bags are ordered twice during the reporting year, and each order consists of 320,000 pet waste bags. This component of education, outreach, and partnership with the Parks Department has yielded significant environmental benefits since 2014, when there were only a handful of pet waste stations installed citywide. The amount of pet waste contained in 640,000 bags is significant, and removal and proper disposal of it represents a major environmental benefit.
- The SWPCA provides tours of the City's wastewater treatment facilities to school children and adults. Due to the COVID-19 pandemic and ongoing construction work related to plant upgrades, tours were restricted and the data regarding the number of people who attended the tours is unavailable at this time. As part of the presentation, the tour guides typically discuss stormwater impacts and distribute a brochure entitled "What is Your Storm Drain IQ?"
- The Mill River Collaborative (MRC) is a 501(c)3 nonprofit dedicated to creating and sustaining a world-class park in the heart of downtown Stamford. MRC is a quasi-governmental public/private partnership, and they manage and oversee internal staff and volunteer labor to perform annual stream clean ups, conduct park improvements, and provide educational programming. During the reporting year, the City was unable to obtain data from MRC regarding their water quality improvement work. Typical work conducted by MRC during

previous years included everything from stuffing envelopes, to removing invasive plant species from the meadows, to creating erosion barriers in the river. See detailed list below for more information regarding work conducted during previous years:

- reinforcing riverbanks using organic biologists
 - 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 Mianus Chapter of Trout Unlimited continued work during the reporting year along a portion of the Mianus River, located in the City. Although not in the reporting period, the chapter conducted a river restoration project on 9/28/20 and 9/29/20 which consisted of installing a large series of conifer revetments in the river, to slow velocity and create aquatic habitat. Additional Christmas tree revetment projects are planned during January 2021.
 - 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 complies with the MS4 permit. Installation was completed in Rippowam Park on September 16, 2019. This bioswale was honored with a Changemakers Resiliency Award by the Business Council of Fairfield County in partnership with the Stamford 2030 District. The City and TNC have received a proposal for five (5) additional bioswale site locations throughout the City. Based on the success of the Rippowam Place bioswale installation, the City looks to work in the future with the Downtown Special Services District (DSSD) and other City agencies to plan, install, and maintain additional bio-swale structures.
 - During this Reporting Period, the City continued to install catch basin medallions throughout the City. These medallions were installed both English and Spanish to improve public awareness for stormwater quality issues. These medallions are being installed by City staff and are primarily located on curb-backed catch basins. Currently, the City estimates it has installed medallions on approximately 60 to 65% of the City-maintained catch basins. Current focus on medallion placement is north of the Merritt Parkway. 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 been developing and implementing a program that will allow residents to have access to limited GIS data and be allowed to adopt a catch basin. This will help the public understand how catch basins are connected to the rivers and streams in the area. Due to the covid-19 pandemic, plan coordination and rollout of the program has been impacted.

- The City has collaborated with a marketing and public relations firm (Catalyst Marketing) to develop a new stormwater management mailer/pamphlet to be sent out to provide a guide for regulatory compliance. Catalyst also developed materials for the 2019 Leaf Pick Up program which includes mailers, printed flyers, and notice of violation (NOV) hangers.
- The City celebrated Earth Day on 4/22/2020 in the Lobby of Government Center. The event was changed to an online format due to the covid-19 pandemic. Information on recycling, history of Earth Day, activity ideas, and informative videos were presented during the event.
- The City's Recycling and Sanitation Department did not conduct a Household Hazardous Waste Collection event during the Reporting Period due to the covid-19 pandemic. There was one event on September 12, 2020 in neighboring New Canaan, and strict COVID safety protocols were in place. It is unknown to the City how much HHW was collected during the New Canaan event, and how much of it originated from Stamford households. All other household hazardous waste collection events in neighboring towns were canceled due to the pandemic. It has been noted that during the pandemic, and as residents were isolated or quarantined at home, that collections of solid waste and other household materials increased dramatically. Therefore, it is anticipated that the next household hazardous waste collection events occurring during 2021 will be extremely popular.
- On October 24, 2020, the Stamford Police Department hosted a National Rx Drug Take-Back event. The event collected a record 699 pounds of unused and unwanted medicines from residents. As part of the event, the police department provided services for residents to drop off their unused or expired medications. The event was publicized through informative links for the event posted on the City's website, under Public Safety, Health and Welfare Administration. The event was staffed from 10am to 2pm at a drive through setup at police headquarters. Clearly some portion of this material could have been flushed by residents, and ultimately make its way to the WPCA treatment plant, which does not have the ability to remove certain chemicals from treated waste, prior to discharging to Long Island Sound.
- Along with the Fats, Oils Grease (FOG) staff from WPCA, the City continued to engage with Downtown Special Services District (DSSD) regarding the condition of their refuse and grease storage areas at the Bell Street and Bedford Street locations. When the City receives complaints regarding the condition of the enclosures, DSSD is engaged and has been responsive by bringing in qualified professional cleaners to address housekeeping and reclaim all residual wash water used as part of the cleaning process.

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 2020-21 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. Due to the covid-19 pandemic, on July 15, 2020 staff hours at the Recycling Center were reduced from six (6) days a week to one (1) day a week. In the fall of 2020, and due to numerous complaints from residents, the Recycling Center hours of operation were increased to two (2) days per week, which remains currently in place as of January 2021. During the Reporting Period, 3,990-gallons of motor oil and 2,261-gallons of cooking oil was 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 normally 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. During the Reporting Period, the covid-19 pandemic prevented the City from conducting its HHW collection day. All neighboring municipalities also cancelled their HHW collections as well. The town of New Canaan conducted their HHW collection event on September 12, 2020 with COVID protocols in place. The City intends to resume its involvement in these collection events once they are able to do so.

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 6.33-tons of batteries, 5.96-tons of fluorescent bulbs, and 157 tons of consumer electronics were collected. The City intends to continue its waste electronics collection activities.

4.3.3.3 Spills and Leaks

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 six (6) 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. The City of Stamford's Fire Department has records of twenty (20) incidents that they responded to. 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 2020–21 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 2019-20 Reporting Period. See *Appendix E* for a table of the total nitrogen used at the City-owned ball parks.

The City used the Troy Field #2 ballfield at Cove Island as a pilot field to experiment with an all organic regiment and compare results with the traditional program which is used on all other fields. Due to decreased rainfall and decreased wear and tear on the fields due to the COVID-19 pandemic, the program will continue into the 2020-21 Reporting Period to assess and compare the results of the all-organic program to the non-organic program. The City plans on starting the all-organic program on a second field in the Spring of the 2020-21 Reporting Period and reporting on it in next year's report.

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 150 pounds of nitrogen and the E. Gaynor Brennan Municipal Golf Course used a total of 1,537 pounds of nitrogen. The total 1,687 pounds of nitrogen used in the Reporting Period represents a 79.3 percent reduction from the total nitrogen that was used in 2016 (8,145 pounds).

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*. Each of the facilities have their own Stormwater Pollution Prevent Plan (SWPPP) and the facilities are inspected routinely to ensure salt is quickly put away and swept after deliveries are received.

The City used approximately 5,135 tons of salt during 6 storms for a combined total of 11.5 inches of snow during the winter of 2019-20. 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. During the 2018-2019 Reporting Period, the City encountered areas with significant icing caused by a variety of different conditions. This prompted the City to develop the Special Hazard Area program for ice control. As in previous years, the City maintained a special hazard list for roads prone to icing, and dispatched salt spreader as necessary, generally each time temperatures dropped below freezing. Concurrently, the Regulatory Compliance and Administrative Officer is working to identify and eliminate these sources of water on roads. Some examples of include but are not limited to: groundwater coming up through pavement, water illegally discharging to surface or roadway from sump pumps, business practices of car wash establishments, areas of pavement settling or poor roadway grading and design, and others. The city is making a significant effort to use enforcement tools, proper grading and roadway design, and revisions to drainage conveyance systems to eliminate these sources of water, in an effort to minimize unnecessary salt usage.

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 four to five times 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, and site-specific stormwater requirements are now contained in Section 15 of the Zoning Regulations, which became effective on June 2, 2020. 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 included provisions to encourage low impact development (LID) practices to maximize infiltration and minimize stormwater runoff. The regulations 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 Stormwater Drainage Manual prepared by Fuss & O'Neill went into effect on June 10, 2020. This manual provides a technical framework, stormwater management standards, and design guidance for land development activities. The Drainage Manual is available online, and located at: <https://www.stamfordct.gov/engineering-department/pages/stormwater-drainage-manual>

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 is aware of the requirements and are currently working on developing strategies to develop and collect the relevant DCIA data.

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.

Employees working at selected 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

Due to the COVID-19 pandemic, annual training was postponed during the 19-20 reporting year, and will resume once the public health status allows for it.

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 improve the quality of the stormwater discharge from the City's MS4. The City will continue to update and implement its training programs for all employees working at City-owned facilities.

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 is 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 43.39-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 approximately 6-inches less than the 1981-2010 climatological average of 49.35-inches for the Westchester Airport.

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, 2,169 of 10,157 catch basins were inspected and pumped/cleaned out, as necessary. This represents a 10% increase in catch basin inspections from the 2018-19 Reporting Period. In addition to catch basins cleaned and inspected by City staff, the City has retained a private sewer and drain contractor to clean and assess stormwater infrastructure prior to paving operations. In order to inspect drainage structures and piping, catch basins and thousands of feet of piping were high pressure jetted.

The City hired Grasso Companies to conduct roadway paving services, infrastructure maintenance, and repairs on the MS4 system during this Reporting Period. In total, 5,823 linear feet of piping was replaced (over three times previous year), 580 catch basin sumps (nearly double previous year) were replaced, 140 bell traps (over three times previous year) were installed, and 438 manhole covers, and frames (over five times previous year) were replaced. The data regarding the amount of centerline miles paved is currently unavailable. The centerline miles data is difficult to quantify due to the varying road widths throughout the City. Approximately 9,541 tons of asphalt was used for new paving work during the Reporting Period.

The City hired Arnow Construction to conduct drainage work on the MS4 system during this Reporting Period. In total, 3 pipes were repaired, 335 linear feet of piping was repaired, 52 catch basin sumps were replaced, 41 catch basin frames and grates were reset, and 23 manhole frames were replaced. See **Section 4.3.5.7** for additional details on catch basin cleaning. A list of 2019-20 catch basin/manhole repairs is presented in *Appendix G*.

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 2018-19 Reporting Period. This contract continued into the 2019-20 Reporting Period to assist with the Citywide Stormwater Cleaning Assessment program. This

program assesses all stormwater infrastructure prior to paving. An exact number of linear piping assessed is not available at this time but is estimated to be several thousand linear feet. During the 19-20 reporting period, nearly \$250,000 of capital funds spent for storm system cleaning and assessment. The contractor provides overall sketches of the work performed in addition to a DVD of the video work with allows for additional review and assessment. 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 owned 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. The goal is to ensure that every catch basin can accommodate a bell trap. The City currently has approximately thirty (30) extra bells in inventory which will continued to be installed during the 2019–2020 Reporting Period.

The Road Maintenance Department, in conjunction with the Stormwater Management Department, has purchase orders in place for contractors to complete repairs to stormwater infrastructure/MS4 piping when property owners cannot, or will not, make repairs in the timeframe provided in the permit. This contingency planning tool was in place during the 19-20 reporting period and will remain in place for the 20-21 reporting year. The City did not need to use any of this contingency funding for the 19-20 reporting year.

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 \$95,000 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, 2020, the City swept approximately 11,241-miles of roadway and collected approximately 1,893 tons of street material during the Reporting

Period. On average, the City swept each curb mile of roadway 18 times. Supporting documentation regarding the street sweeping activities for the Reporting Period can be provided upon request.

Sidewalk and curbside sweeping are 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 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 1st and June 30th 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 during summer and fall of 2019. The amount of materials collected during these events is included in the total tons of street material noted above. When the COVID Pandemic began in March 2020, all downtown DSSD special events were cancelled. Because of this, there were no special sweeping circumstances in the downtown area this period.

4.3.5.5 Leaf Collection

In 2019, the City’s leaf pickup program was completed by December 13th. Every accepted, unaccepted, and nearly every private street in the City is swept as a part of this program. A total of 13,505 tons of leaves were collected during the reporting period.

According to the NPDES Permit, the City shall conduct City-wide leaf pickup program annually to be completed by December 15th. 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 is completed by December 15th. 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 December 1st which delayed the pickup program. 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. Additional seasonal CDL drivers and laborers are hired to supplement full time staffing levels.

The loose leaf collection program begins at the northern town line and City crews work their way south towards Long Island Sound. Outreach programs instruct residents in the area north of the Merritt Parkway, between the Parkway and Interstate-95, and south of Interstate-95 to have their leaves ready for pickup by particular time. The objective is to minimize the time between leaf piling by the residents and pickup by the City crews.

Current guidance for residents and contractors is to pile the leaves behind the curb during the timeframe provided for each area of the City. Residents are told to not place leaves in the street. During the Reporting period, one-thousand doubled sided color flyers were printed and distributed to municipal buildings throughout the city. Approximately 20,000 postcard mailers were sent to single family homes, a half-page ad was placed in the Stamford Advocate on two separate occasions and placed on the City's website at www.stamfordct.gov/leafpickup, flyers were placed throughout the City to remind the citizens that leaves collected were not to be placed in the roadways. Communications Director provided updates regarding progress of the city crews as they moved through the City using the Stamford Government Center Facebook page. Additionally, two different door hangers were designed and distributed as needed. A yellow door hanger was placed if illegally placed leaf piles were observed in an area where City work crews have not completed the leaf pickup. A red door hanger was placed if piles were placed in the road after work crews have cleared an area.

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. Pre-treatment usage nearly doubled in this Reporting Period based on review of data from the winter of 2018-19.

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 Officer 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 the 2018-2019 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 2019-20 Reporting Period, at least 2,169 catch basins throughout the city were inspected and cleaned on an as needed basis. These numbers generally do not include drainage structures pumped, cleaned, and inspected by the City's drainage contractor for roads that are going to be paved. Approximately 2,544-tons of materials were removed from the basins during the Reporting Period. This equates to 5,088,000 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 maintains 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**). As mentioned previously, current staff levels as of January 2021 are four (4) HEO's.

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 larvae found in stormwater drainage structures. Typically, three (3) rounds of larvicide to each of the city owned and maintained catch basins. Application of larvicide within City catch basins was scheduled to start on June 3, 2019.

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 uses 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 27 culverts over approximately 30 working 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 200 cubic yards of soil was removed from the culverts and discharge areas. A list of 2019-20 culverts cleaned is presented in **Appendix H**.

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 corresponds with neighboring municipalities to refer maintenance items on an as needed basis.

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

- At least 25 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

- At least 18 referrals provided to the City's Engineering Bureau for items regarding: management and oversight of utility contractors as related to street opening permits, poor trench compaction or failing subbase prior to paving, contractor trench finish patch too high resulting in ponding on roadway, illegal and unapproved use of city property by private entities, requesting development and creation of legitimate legal authority or establishment of easements to cover maintenance work for existing storm piping, requesting drainage design work, requesting creation of new or additional capital engineering projects for drainage improvements, ponding on roadway issues

requiring authorization to discharge on private property proximate to wetlands, failing stormwater conveyance box culverts, failure of contractors to maintain erosion controls on City projects, unpermitted increases of impervious surface, pavement failure resultant from coastal and tidal effects

Sweeping Referrals Provided to Various Entities

- At least 30 – 40 referrals were made to the Highway Department regarding dirt, rock, and gravel debris spilled on roadway, sweeping targeted areas, and for General Permit compliance purposes. About 20 streets were targeted for post and tow operations. Additional targeted sweeping on dozens of streets where Highway Department Supervisors observed heavy trash, debris, sand, gravel, etc. Additionally, the alternate side sweeping program has been utilized on the west side, south end, and east side, on heavily parked streets where cars are required to move one day per month in order to allow for cleaning work to occur. Also, in June of 2020, the alternate side program was expanded to include a handful of additional streets on the west side, with the support of area residents, elected representatives, and the Traffic Transportation and Parking Bureau.

Stormwater Referrals Provided to the Environmental Planning Board (EPB)

- At least (13) referrals provided to EPB for items including: failing erosion and sediment controls on active private construction site, failing erosion and sediment controls on active City project construction site, water over road from obstructed culvert proximate to wetlands on private property, discharge of waters and pollutants to road, adding new impervious surface – no permits, grading and filling work, unstable soils.

Stormwater Referrals Provided from the Environmental Planning Board (EPB)

- At least five (5) referrals provided from EPB, providing copies of enforcement/compliance letters, and providing notice of compliance issues. Issues related to maintenance of ESC's, grading, and filling, and dumping debris proximate to wetlands and regulated areas.

Referrals Provided to the CTDOT

- Fourteen (14) referrals to CTDOT were provided, which included items such as: clearing of snow and ice from areas within CTDOT right-of-way, citizen requests submitted to the city for filled catch basins maintained by CTDOT, flooding at railroad overpass at US-RT 1, damaged CTDOT manhole frame and cover, illegal dumping on CTDOT right-of-way, sinkhole in recent paving work performed by contractor working on behalf of CTDOT, potholes in CTDOT ROW, and failing CB's on CTDOT ROW.

Curbing Referrals

- The Road Maintenance department handles curbing requests and estimates at least 250 were received during the 2019-20 Reporting Period. The average curbing request is about 40 linear feet of asphalt curbing. Nearly all were completed during the reporting year. Based on the average repair length, the City estimates about 10,000 linear feet of new asphalt curbing installed during the Reporting Period.

Other Referrals

- Aquarion Water Company. Eight (8) referrals sent during reporting period. Referrals included: failing asphalt patches and potholes in contractor trenches causing debris in road, utility conflict issues identified through CCTV work of storm piping on roads to be paved which located potable water service piping and water mains penetrating stormwater infrastructure resulting in flow obstructions, water main and service line leaks causing icing issues during freezing temperatures and broken/missing/damaged service caps in roadways.
- Eversource. At least eleven (11) referrals made regarding unacceptable roadway patches, unfilled test holes for gas link leak detection work, damaged utility caps, and dirt and debris left on sidewalk after new utility pole installation.
- To WPCA. At least fifty (50) referrals were made to WPCA for requests related to: damaged WPCA MH structures, loud and rattling WPCA MH structures, dye test results illustrating infiltration of stormwater to WPCA MH structure, placement of fill material proximate to WPCA maintained piping and structures, and sinkholes.
- From WPCA: At least thirteen (13) Referrals made to Stormwater Management from WPCA. Requests related to wastewater treatment plant permit exceedances. Six (6) reported exceedances during annual reporting period, complaints regarding fats, oils, and grease storage regarding area restaurants, sinkholes in roadway, cleaning services and applicable regulations, plan review questions and appropriate routing of storm drainage piping.
- Parks. At least nineteen (19) referrals made to Parks Department for requests to: prune trees and vegetation blocking access to City owned and maintained drainage structures, remove fallen trees in the roadway and in various streams and rivers in watercourses and in city drainage easements, logs, and branches to be cleared at stream culvert inlets that Stormwater Management staff cannot reach with backhoe or mini excavator, and remove leaning trees blocking access to curb line by sweeper.
- Building / Zoning. One referral made to Building Department for possible work without permits proximate to catch basin.

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

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 J*.

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 the 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, 63 outfalls were dry weather screened and 7 of the outfalls screened had flow that was sampled for illicit discharges. To date, 463 of the 960 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 continued to investigate potential sources of illicit discharges to the MS4 system.

- Stormwater/Sanitary MH at #30 Woodland Ave. had existing 6" clay WPCA sanitary main running through it. A 6" WPCA main was clay, and confirmed leaking. WPCA contractor replaced approximately 8-lf of the 6" main and ensured tight Fernco seal to existing clay pipe and to WPCA MH. No lab sampling. No Harbor Watch involvement.
- Much work on outfalls DIS-70 and DIS-71, which is piped Toilsome Brook, which discharges to the Rippowam River, just north of the fire station on Washington Blvd. Reported consistent oil sheen in river from discharge pipes over many months. Boomed outfall. Maintained and inspected. Multiple efforts at IDDE and source tracing in upgradient MH's. Harbor Watch, CT DEEP, City of Stamford Stormwater Management Dept., City of Stamford Fire Dept., and others involved. Multiple sampling efforts sent to lab for analysis.
- Research 1934 drainage plans in field with WPCA to ensure overflow pipes from sanitary sewer to storm, are effectively sealed shut. Confirmed. No lab sampling. No Harbor Watch involvement.
- Complaints from residents on Brookside Drive that a dwelling illegally connected to MS4 drainage system. Harbor Watch lab sampling conducted 3/11/20 at DIS-902, DIS-892, and DIS-893. Data revealed no sewage pollution issues. Area was smoke tested by WPCA. Did confirm one dwelling not connected to existing WPCA main as required by city ordinance and state statute. WPCA to coordinate and approve proper service connection from dwelling to WPCA main conveyance pipe.

- 101 Greenwich Avenue – CCTV work revealed likely high level sanitary overflow from WPCA force main to existing MS4 storm piping. Confirmed sanitary odor in adjacent CB. Confirmed sanitary odor and floatables in existing storm piping. Plan research revealed as-built plan which indicated storm pipe should have been sealed. CCTV revealed it was not. Work commenced to notify WPCA and seal the pipe, which occurred 10/21/19. WPCA has not reported any issues since.
- 134 Berrian Road – This was location of sanitary discharge comingled with groundwater seep to roadway as per the 18-19 reporting year. Post verification screening conducted 12/20/19 and did not suggest any further pollution issues.
- Gaymoor Circle – IDDE work. Harbor Watch collected lab sample. CCTV work commenced. Need further CCTV and lab sampling prior to dye or smoke testing. Coliform levels were abnormally high.
- Wedgemere Road – IDDE work commenced. Origin of water determined to be groundwater.
- DIS-50 – Cummings park. Ongoing IDDE efforts. Additional sampling and lab analysis required. High coliform data as reported 7/25/19.

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 Harbor Watch / Earthplace to assist efforts related to illicit discharge detection and source identification. Harbor Watch 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 2018-2019 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 39 locations during this Reporting Period. A flow was observed, and samples were collected at 28 of the locations. 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 2019 and June 2020. Summary tables of the analytical data for the dry weather outfall screening and sampling efforts are presented in *Appendix K*.

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. Section 15 of the Zoning Regulations became effective June 2, 2020 and the City's first

ever Drainage Manual became effective 6/10/20. The SMP will be updated accordingly to reflect the newly established authorities.

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: 15

Violations: Discharge of sanitary waste water from failing on site residential treatment structures to roadway to CB, discharge of sanitary waste water from failing on site residential treatment structures to roadway, discharge of sanitary waste water from backup in basement to sidewalk and roadway to CB, discharge of water to a roadway during the winter, leaves in roadway, illegal dumping of paint /soap washout to CB, discharge of swimming pool water to roadway to CB, blockage of storm pipe on private property possibly causing up-gradient conveyance issues, removal of illegally placed rock/fill in drainage swale, authorization to discharge to MS4, power washing portable toilets outdoors.

Note: 63 NOV door hangers were placed on residences who illegally placed piles of leaves in the roadway or sidewalk, in violation of Sec. 201 (Regulation of MS4).

4.6.2 Verbal Warnings

Verbal Warnings Issued: 3

Violations: Discharge of fire suppression testing water to roadway which froze, landscapers blowing leaves into road, exterior power washing.

The Stormwater Management Department estimates thousands of dollars of expense incurred by property owners during the reporting period to correct conditions as described in the correspondence above.

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 the City anticipates submitting the document to CT DEEP during the 2020-2021 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 all control measures contained in the NPDES Permit as quickly 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 \$6,377,988 for Fiscal Year 2020-2021 (\$299,092 increase from the FY 2019-20 Revised Budget).

The FY 2020-21 operating budget for MS4 stormwater management is \$1,163,534 (a decrease of \$36,195 from the FY 2019-20 Revised Budget). The budget for snow removal is \$1,299,351 (an increase of \$318,292 from FY 2019-20 Revised Budget). The operating budget for leaf collection is \$387,890 (an increase of \$59,085 from FY 2019-2020 Revised Budget).

The operating budget for traffic and road maintenance, including street sweeping, pothole repairs, debris removal and infrastructure improvements is \$3,484,153 for Fiscal Year 2020-21 (an increase of \$9,846 from the FY 2019-20 Revised 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 C5B623, District-Wide Paving & Resurfacing, requested \$125,000 for FY 2020-21. The requested funds are to support priority paving and resurfacing projects at various schools throughout the City.

Capital project C16012, Engineering Bureau -City Wide Storm Drains, requested \$1,750,000 for FY20-21. Adopted budget is \$1,000,000 for FY 2020-21. The requested funds are to address drainage improvements at Clay Hill Rd., Leroy Place, Bird Song Lane, Tod Lane, Drum Hill Lane, Newfield Court, 455 Hope Street, and other citywide drainage issues.

Capital project CP1074, Engineering Bureau - Pine Hill Drainage, requested \$2,500,000 for FY 20-21. Adopted budget is \$100,000 for FY 2020-21. The requested funds are to upgrade existing storm drainage and reconstruct the roadway on Pine Hill Avenue and Colonial Road. The project involves an upgrade of an existing undersized drainage system from a two-year storm event to a 25-year storm event.

Capital project C56119, Engineering Bureau - Citywide Roadway Correction, requested \$100,000 for FY 20-21. Adopted budget is \$0. Funding available in the account as of 6/26/20 was \$409,500.69. The project currently has a budget from the previous fiscal year where funds were used to correct a roadway failure at Cascade Road, 279 June Road, 589 Den Road, 41 West Trail, and Pheasant Lane. Funds requested for FY 2020-21 was to address construction needs from Citizen Service Requests.

Capital project CP1457, Land Use Bureau - Resiliency and Climate Adaption Implementation, requested \$150,000 for FY 20-21. Adopted budget is \$50,000 for FY 2020-21. The requested funds are to address vulnerable coastline communities from weather events due to climate change effects. The Land Use Bureau proposed a study of the City's Coastal Flood Hazard Areas to identify flood risks, vulnerabilities, and opportunities to enhance climate resiliency. The study will develop a preliminary design and cost estimate for a prioritized list of resiliency projects. The study will allow the City to apply and be awarded Federal and State grants (e.g., Pre-Disaster Mitigation Grant [FEMA]). Earlier attempts by the City to apply for the Federal and State grants have been unsuccessful due to "they (Stamford) have no interest in funding studies, have a study and FEMA will review funding actual projects to implement that study."

Capital project CP0211, Road Maintenance Department/Stormwater Management Department - Environmental Compliance, requested \$100,000 for FY 20-21. Adopted budget is \$0 for FY 2020-21. The capital project had a leftover \$262,456 balance from FY 19-20 which will roll over into the following fiscal year. 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. Based on the MS4 permit CT0030279, currently in force, significant action is mandated by CTDEEP.

Capital project CP1456, Road Maintenance Department / Stormwater Management Department - Stormwater System Illicit Discharge Analysis, requested \$50,000 for FY 2020-21. Adopted budget \$50,000. The funds will allow for a survey of all the stormwater outfalls to locate the highest sources of pollutants which may be flowing into rivers and eventually Long Island Sound. Per the MS4 permit, the elimination/abatement of non-stormwater discharge will be evaluated for corrective measure implementation. Once the highest pollutant outfalls are determined, the pollutant source can be identified and eliminated.

Capital project C56129, Road Maintenance Department/Stormwater Management Department Citywide Manhole and Basin, requested \$1,400,000 for FY 20-21. Adopted budget was \$1,000,000 for construction for FY 2020-21. The funds will be used to maintain the over 12,000 catch basins and manholes which are located in the City's road network. These structures require periodic reconstruction, replacement, and adjustment and are crucial to protect the safety of the public and to maintain the City's infrastructure. There are currently 234 basins or manholes in the repair queue which have an average replacement cost of \$8,000 per manhole/basin.

Capital project C56182, Road Maintenance Department - Street Patch and Resurfacing, requested \$9,000,000 for FY 20-21. Adopted budget was \$10,000,000 FY 2020-21. These funds are in addition to the \$4,500,000 of capital allocated by the city in FY 20-21 and the \$991,302 allocated by a State grant in FY 2019-20. The funds will be used for road patching and resurfacing of the City's roadway infrastructure using accepted engineering standards.

Capital project 000715, Road Maintenance Department - Utility Coordination Paving, was created to coordinate paving in coordination with the utility companies. Requested amount \$1,000,000 for FY 20-21. Adopted budget \$0 for FY 20-21. The project will provide drainage repairs and full width paving throughout the City where the side of the road was undisturbed by utility work. The utilities provide a contribution for their share of the final restoration costs.

Capital project CP8711, Road Maintenance Department - Traffic/Road Paving and Drainage, Requested \$500,000 for FY 20-21. Adopted budget \$200,000 for construction for FY 2020-21. The funds will be used to repair or replace any drainage structure which are located in roads which are scheduled to be repaved. This project is especially for unknown situations that require additional funding to complete repairs.

Capital project C56123, Road Maintenance Department - Citywide Sidewalks Reconstruction, Requested \$1,000,000 for FY 20-21. Adopted budget was \$250,000 for FY 2020-21. These funds will be used for reconstruction of major sections of sidewalks and critical reconstruction of existing walkways.

Capital project CP4211, Road Maintenance Department - Downtown Sidewalk Restoration, Requested \$500,000 for FY 20-21. Adopted budget was \$200,000 for FY 2020-21. These funds will be used to revitalize "old" brick sidewalks and concrete/bituminous sidewalks in the downtown area to correct deficiencies and to meet the standards set forth in the master plan. These "Streetscape" sidewalks include granite curbs, brick pavers, and more prominently scored concrete slabs for better aesthetics.

Capital project CP5059, Road Maintenance Department - Pavement Management, Requested \$50,000 for FY 20-21. Adopted budget was \$100,000 for FY 2020-21. These funds will be used to install crack seal on City roads to preserve and extend their life before having to repave. The crack seal treatment prevents water infiltration which can cause roadway cracking and pothole formation.

Capital project 000585, Road Maintenance Department - New Salt Dome at Town Yard, Requested \$50,000 for FY 20-21. Adopted budget was \$0 for FY 2020-21. These funds would be used to build a new salt dome at 106 Haig Ave, the Town Yard Garage, to replace the over 30 year old salt dome and to add additional offices and garage bays. The project would use the same design that was recently constructed at the Scofield Park Yard.

Capital project CP1281, Traffic Engineering - Roadway Design and Reconstruction, Requested \$3,000,000 for FY 20-21. Adopted budget was \$2,000,000 for FY 2020-21. These funds will be used to implement measures to improve safety, mobility, and quality of life in residential areas and areas of high pedestrian use. Each year the Department identifies or receives requests for roadway modifications and improvements.

Capital project CP1461, Traffic Engineering - South End Transportation Improvement Plan, Requested \$0 for FY 20-21. Adopted budget was \$6,600,000 for FY 2020-21. These funds will be used for road reconstruction and streetscape improvements on Atlantic Street, Woodland Avenue, Ludlow Street, Garden Street, and Woodland Place. Plans for road resurfacing on Cedar Place, Stone Place, and Lipton Place. Woodland Avenue, Cedar Street and Stone Street drainage construction and new paving complete and in place as of January 2021.

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 2020-2021 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 prior to 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. One operator retired in July of 2020 due to COVID-19 related budget cuts.

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, 2019 - June 30, 2020

Activity Description	# Actions Scheduled	Status Complete / Incomplete as of June 30th	# Actions Completed	Comments on Activities
1. Education				
1.1 City and Government				
1.1.1 Training	As needed	Complete	0	Training was postponed due to the coronavirus pandemic. Training is anticipated to resume in the 2020-2021 Fiscal Year.
1.2 Public				
1.2.1 Annual Information Meeting	Annually	Complete	1	2020 meeting was held virtually on 8/25/2020.
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. The City has received a draft copy of the SMP prepared by Fuss & O'Neill. Only a few items are in need of finalization for the draft to be completed.
1.2.3 HHW Collection	At least Annually	Complete	0	HHW Collection was not due to the COVID-19 pandemic. The neighboring town of New Canaan held their HHW Collection event on 9/12/2020. Once the public health situation allows for HHW Collection to take place, the City anticipates a large public turnout.
1.2.4 Pet Waste Control	As needed	On-Going	As needed	1,650 pamphlets were provided to the Town Clerk and 650 pamphlets provided to the dog pound for distribution Spring 2020. Since 2013, the City has installed 60 dog waste dispensers and signs. Approximately \$20,000 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. The City switched from a 2-ply waste bag to a 1-ply waste bag which allowed twice the amount of bags to be purchased. Approximately 320,000 bags were purchased.
1.2.5 Distribution of Educational Information	As needed	Complete	On-going	Typically, a Stormwater Management mailer and pamphlet 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	On-going	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 60-65% of the City-maintained catch basins.
2. Public Involvement				
2.1 Mill River Collaborative (MRC)	On-going	Complete	-	Making improvements to the Mill River Park through joint efforts the MRC.

Annual SMP Summary Table
July 1, 2019 - June 30, 2020

Activity Description	# Actions Scheduled	Status Complete / Incomplete as of June 30th	# Actions Completed	Comments on Activities
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.
3. Mapping				
3.1 Initial Outfall, Sampling, Roadway, Receiving Waters, Watersheds	On-going until all are identified	On-Going	-	As of June 30, 2020, the City has mapped 960 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	-	The City continues to develop strategies to collect the relevant DCIA data.
4. Infrastructure Operations & Maintenance				
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 2019-2020, the City swept over 11,241 miles of streets and collected over 1,893 tons of non-leaf materials.

Annual SMP Summary Table
July 1, 2019 - June 30, 2020

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 2019 by December 13th and approximately 13,505 tons of leaves and debris were collected.
4.6 Snow Removal	As needed	Complete	-	Snow removal completed as necessary for 2019 and 2020.
4.7 Catch Basin Cleaning	On-going	On-going	2,169	In 2019-2020, the City cleaned at least 2,169 of it's ~11,000 catch basins and removed approximately 2,544 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	-	During this Reporting Period, the City continued to conduct CCTV reports, which totaled several thousand linear feet of piping that was videoed, including storm mains and lateral piping.
4.11 Culverts	On-going	On-going	27	The City performed maintenance activities at 27 culverts over approximately 22 days.
5. Stormwater Monitoring				
5.1 Wet Weather Outfall Old/Known Outfalls	All outfalls within first two years	On-going	~60% Completed	To date, 108 of the 191 know wet weather outfalls were sampled.
6. IDDE				
6.1 Dry Weather Outfall Screening for Illicit Discharges	25% of known MS4 outfalls per year	On-going	On-going	To date, 465 of the 960 known outfalls have been screened.
6.2 Outfall Verification (Post-IDDP)	As needed	-	-	No post-IDDP efforts completed at this time.
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.
7. Legal Authority				

Annual SMP Summary Table
July 1, 2019 - June 30, 2020

Activity Description	# Actions Scheduled	Status Complete / Incomplete as of June 30th	# Actions Completed	Comments on Activities
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.
7.2 Ordinances				
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 F 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.
8. Monitor PHFs				
8.1 City Parks	On-going	On-Going	-	In 2019-20, the City did not fertilize park green space.
8.2 PHF Use in Ball Fields	On-going	On-Going	-	In 2019-20, 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 2019-20: 150 pounds

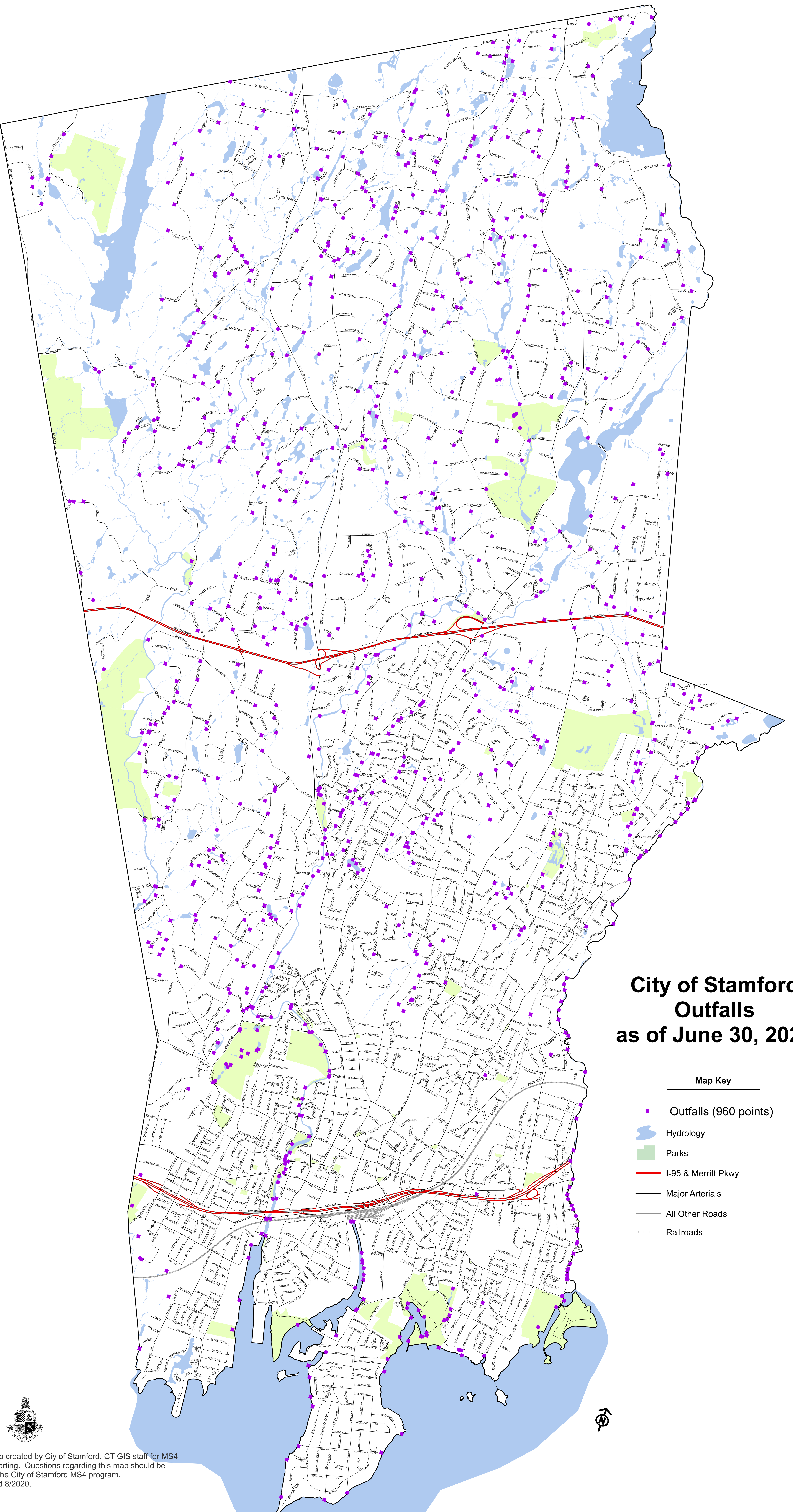
Annual SMP Summary Table
July 1, 2019 - June 30, 2020

Activity Description	# Actions Scheduled	Status Complete / Incomplete as of June 30th	# Actions Completed	Comments on Activities
8.4 E. Gaynor Brennan Municipal Golf Course Nitrogen Monitoring	On-going	On-Going	-	Total Nitrogen applied in 2019-20: 1,537 pounds
9. Other Program Items				
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

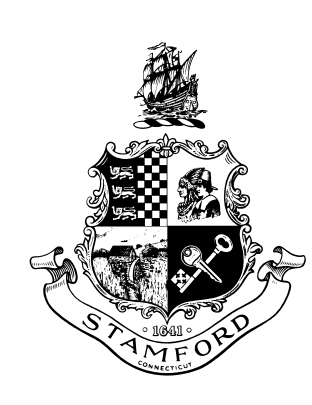
UPDATED CITY OUTFALL LOCATIONS MAP



City of Stamford Outfalls as of June 30, 2020

- Map Key**
- Outfalls (960 points)
 - Hydrology
 - Parks
 - I-95 & Merritt Pkwy
 - Major Arterials
 - All Other Roads
 - Railroads

Notes: Map created by City 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 8/2020.



APPENDIX D

2019–20 SPILLS OF FIVE GALLONS OR MORE

Fire Department

Hazmat List by Incident

Alarm Date Between {07/01/2019} And {06/30/2020}

Chemical Name	Container	Qty Released	Released Into
19-0005580 07/01/2019 22:24:06			
412 Gas leak (natural gas or LPG)			
200 Broad ST /2314			
Natural gas		1 Parts per million	Air
19-0006406 07/25/2019 15:48:33			
151 Outside rubbish, trash or waste fire			
108 Lawn AVE			
Aqueous Film-Forming Foam Concentrate		5 Gallons	Ground
19-0006795 08/06/2019 11:10:47			
413 Oil or other combustible liquid spill			
Atlantic St / Henry ST			
Mobile Property Involved: 27 Garbage, waste, refuse truck			
8W46 Hydraulic Fluid	Mobile container, Other	50 Gallons	Ground
19-0007199 08/19/2019 17:41:32			
410 Combustible/flammable gas/liquid condition, other			
31 Nelson ST			
Glue		1 Gallons	Confined, no environmental impact
19-0008358 09/26/2019 17:54:33			
424 Carbon monoxide incident			
101 Seaside AVE /D			
Carbon monoxide UN#:1016 CAS#:630-08-0		1 Parts per million	
19-0008370 09/27/2019 06:55:07			
413 Oil or other combustible liquid spill			
Forest ST & Grove ST			
motor oil		4 Ounces (liquid)	

Fire Department

Hazmat List by Incident

Alarm Date Between {07/01/2019} And {06/30/2020}

Chemical Name	Container	Qty Released	Released Into
19-0008923 10/15/2019 08:58:15 412 Gas leak (natural gas or LPG) 130 Ursula PL			
Natural gas		16 Parts per million	Air
19-0008969 10/16/2019 10:11:45 411 Gasoline or other flammable liquid spill 370 West Main ST			
Gasoline UN#:1203 CAS#:8006-61-9	Can or bottle	16 Ounces (liquid)	Confined, no environmental impact
19-0009228 10/23/2019 10:53:34 412 Gas leak (natural gas or LPG) 91 Rogers RD			
Natural gas		1 Liters	
19-0009242 10/23/2019 17:05:25 411 Gasoline or other flammable liquid spill 101 Maple AVE			
Gasoline UN#:1203 CAS#:8006-61-9		64 Ounces (liquid)	Ground
19-0011180 12/22/2019 16:04:04 424 Carbon monoxide incident 130 Lenox AVE //27			
Carbon monoxide UN#:1016 CAS#:630-08-0		90 Parts per million	Confined, no environmental impact
19-0011412 12/30/2019 15:15:53 411 Gasoline or other flammable liquid spill 90 Magee AVE			
Gasoline UN#:1203		50 Gallons	Water and ground

Fire Department

Hazmat List by Incident

Alarm Date Between {07/01/2019} And {06/30/2020}

Chemical Name	Container	Qty Released	Released Into
CAS#:8006-61-9			
20-0000461 01/16/2020 14:43:52			
412 Gas leak (natural gas or LPG)			
87 Cascade RD			
Propane	UN#:1978 CAS#:74-98-6 Tank or silo	5 Gallons	Air
20-0000984 02/03/2020 10:47:17			
412 Gas leak (natural gas or LPG)			
696 Hope ST			
Natural gas	Pipe or pipeline	1 Cubic feet	Air
20-0002015 03/09/2020 21:59:16			
322 Motor vehicle accident with injuries			
148 Colonial RD			
Mobile Property Involved: 21 General use truck, dump truck, fire apparatus			
Automotive Fluids		16 Ounces (liquid)	Ground
20-0002390 03/25/2020 12:49:58			
410 Combustible/flammable gas/liquid condition, other			
70 Garden ST			
Diesel Fuel	UN#:128	3 Gallons	
20-0003075 04/25/2020 16:44:03			
412 Gas leak (natural gas or LPG)			
84 Camp AVE			
Natural gas		60 Parts per million	Confined, no environmental impact
20-0003392 05/10/2020 21:12:08			
424 Carbon monoxide incident			
75 NOBLE ST			
Carbon monoxide	UN#:1016	44 Parts per million	Air
CAS#:630-08-0			

Fire Department

Hazmat List by Incident

Alarm Date Between {07/01/2019} And {06/30/2020}

Chemical Name	Container	Qty Released	Released Into
20-0004534 06/25/2020 15:44:15 413 Oil or other combustible liquid spill Hope ST & Bennett ST			
unknown		20 Ounces (liquid)	Ground
20-0004667 06/30/2020 11:49:02 422 Chemical spill or leak 18 ELMCROFT RD			
Unknown Paint Product		6 Gallons	

APPENDIX E

2019–20 PESTICIDE, FERTILIZER, AND HERBICIDE USE

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

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

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

3rd application Sept Fertilizer- 60 Bags total used, each bag 40lbs

Little League/Softball/Baseball

Troy #1 Field and Troy # Field 2- Cove

Federal #1 Field and Federal #2 Field

Kane Ave Field

Vine Road Field

Scalzi Little League Field/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

2019–20 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 2019-20, EPB's staff members responded to 2,955 public inquiries during its regular office hours, endorsed 1,210 applications for building/septic permit, and evaluated 87 formal applications from the various Land Use Boards. The movement towards electronic services due to the pandemic resulted to more than 14,000 e-mailed responses to public inquiries (outgoing only). In addition, EPB staff participated in the review and/or inspection of numerous public/private projects of value and interest to the City including the following:

West Broad Street – Mill River Collaborative – Whittingham Discover Center
Green and Hanrahan Streets – City of Stamford – Mill River Park North Phase 2
Greenwich Avenue – City of Stamford - Greenwich Avenue Corridor Improvements/Roundabout
Cascade Road – City of Stamford – Cascade Road Drainage/Roadway Improvements

Greenwich Avenue/Division Street/Clinton Avenue – RBS Americas/City of Stamford
Strawberry Hill Avenue – City of Stamford - Rogers Inter-District Magnet Extension
Tresser Boulevard/Greyrock Place – Parcel 38 - RB Stamford Associates, LLC
Colonial Road/Pinehill Avenue – RMS Colonial Road, LLC

Project monitoring and enforcement remained a priority for the department. EPB Staff also performed essential functions in the development and adoption of regulations pertinent to Stamford's MS4 Program ("Municipal Separate Storm Sewer System"), development and adoption of the City's uniform "Drainage Manual", participated in the revision of both the Subdivision and Zoning Regulations, improved efforts to update pertinent resource layers in the City's Geographic Information System (GIS), enhanced the EPB website, evaluated and adopted 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 2009-2020

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>	<u>2019-20</u>
Customer Service:											
Office Visits:	3354	4483	4783	4798	4900	4832	4912	4568	4146	4400	2955(d)
Building/Septic Permit Reviews:	1222	1342	1642	1584	1505	1462	1540	1355(a)	1318	1438	1210
Administration:											
General Program Administration:	336	364	307	414	373	347	372	416	414	416	415
Referrals:	143	150	158	121	171	159	157	194	210	191	176
Outgoing E-Mails (Various)	NA	NA	NA	NA	NA	NA	NA	NA	NA	3830	14030(d)
Permitting/Technical Review:											
Coastal Site Plan/Zoning Apps.	13	15	20	19	16	26	23	30	29	19	18
Wetland/EPB SPR Applications:	27	38	35	41	28	28	34	28	40	30	27
Subdivision Applications:	02	03	03	03	05	09	07	02	03	01	4
ZBA Applications:	68	55	63	71	66	51	66	52	48	56	38
Site Plan Review Applications:	39	46	55	106	99	117	128	119	124	160	138
Enforcement/Inspection:											
Project Monitoring/Compliance:	79	82	87	81	95	93	106	119	135	129	162
General Enforcement Activity:	58	56	59	28	25	30	64	43	71	69	73
Complaints/Citizen Services:	35	34	39	37	46	220	249	280	380	172(c)	43
Special Projects:											
CRS Program:	18	18	18	18(b)	18	18	18	18	22(b)	24	24
GIS Updates	00	00	00	01	01	01	01	01	01	01	01
Public Outreach	01	01	01	02	03	04	02	02	02	02	02
MS4, Drainage Manual, Web and Regulation Change	00	00	00	00	01	01	01	01	03	06	06

*The information summarized above is based upon an examination of written correspondence (chronological) files and existing data base entries for the period 7/1/19 to 6/30/20. Omitted from the reporting are telephone entries, 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.
- (d) Reflects increase in electronic services in lieu of Government Center access and counter service due to Covid-19.

10/2/2020

APPENDIX G

2019–20 CATCH BASIN / MANHOLE REPAIRS LIST

ARNOW CONSTRUCTION WORK JULY 1, 2019 - JUNE 30, 2020

Description	Date	Location	How Many
# of Pipe Repairs	12/26/2019	133 Black Twig at Macintosh	1
# of Pipe Repairs	1/2/2020	15 Flint Rock/Den Rd	1
# of Pipe Repairs	6/3/2020	Bangall Road	1
		Total Pipe Repairs:	3
LF of pipe repair/replace	10/4/2019	Hidden Brook	0
LF of pipe repair/replace	11/5/2019	43 Settlers Trail	10
LF of pipe repair/replace	11/12/2019	965 Sunset Road	12
LF of pipe repair/replace	11/12/2019	965 Sunset Road	10
LF of pipe repair/replace	11/13/2019	130 Redmont Road	12
LF of pipe repair/replace	11/20/2019	73 Flint Rock Road	10
LF of pipe repair/replace	11/22/2019	117 Flint Rock Road	12
LF of pipe repair/replace	12/6/2019	21 Hardesty Road	12
LF of pipe repair/replace	12/13/2019	21 Hardesty Road Opposite	12
LF of pipe repair/replace	12/26/2019	133 Black Twig at Macintosh	12
LF of pipe repair/replace	1/2/2020	15 Flint Rock/Den Rd	10
LF of pipe repair/replace	1/6/2020	35 Rockridge Lane	10
LF of pipe repair/replace	1/8/2020	65 Glenbrook Road	10
LF of pipe repair/replace	1/06/2020-1/07/2020	8 Talmadge Lane	10
LF of pipe repair/replace	1/10/2020	100 Research Drive	12
LF of pipe repair/replace	1/14/2020	85 Riverside Avenue	8
LF of pipe repair/replace	1/14/2020	85 Riverside Avenue	15
LF of pipe repair/replace	1/15/2020	527 Glenbrook Road	10
LF of pipe repair/replace	1/15/2020	527 Glenbrook Road	6
LF of pipe repair/replace	1/15/2020	8 Dunn Avenue	10
LF of pipe repair/replace	1/17/2020	52 Westgate	12
LF of pipe repair/replace	1/21/2020	230 Hope & Rock Spring	12
LF of pipe repair/replace	1/21/2020	230 Hope & Rock Spring	10
LF of pipe repair/replace	1/21/2020	230 Hope & Rock Spring	8
LF of pipe repair/replace	1/20/2020	25 Second Street	10
LF of pipe repair/replace	1/20/2020	25 Second Street	8

LF of pipe repair/replace	1/22/2020	26 Snow Crystal Lane	12
LF of pipe repair/replace	1/23/2020	64 Blue Rock Drive	12
LF of pipe repair/replace	1/28/2020	81 Rippowam	10
LF of pipe repair/replace	1/28/2020	112 Woodmere	12
LF of pipe repair/replace	1/29/2020	51 Kenilworth Drive East	12
LF of pipe repair/replace	1/29/2020	83 Kenilworth Drive East	10
LF of pipe repair/replace	6/3/2020	Bangall Road	12
LF of pipe repair/replace	6/15/2020	Bridge Street #33-37 *new/not repair	12
		Total LF:	355
CB sump replacement	7/1/2019	8th Street	1
CB sump replacement	7/03/2019-7/08/2019	Catoona Lane	1
CB sump replacement	7/09//2019-7/10/2019	44 Valley Road	1
CB sump replacement	7/23/2019	24 Benstone	1
CB sump replacement	7/24/2019	6 Applebee Road (DBL CB)	2
CB sump replacement	7/29/2019	1318 Bedford Street	1
CB sump replacement	7/31/2019	89 Toms Road	1
CB sump replacement	8/2/2019	Hubbert Court	1
CB sump replacement	8/12/2019	Golfview	1
CB sump replacement	8/27/2019	118 Scofield Town Road	1
CB sump replacement	9/20/2019	Hidden Brook	1
CB sump replacement	9/18/2019	Minivale & Hope Street Corner	1
CB sump replacement	9/17/2019	40 Minivale	1
CB sump replacement	11/4/2020	43 Settlers Trail	1
CB sump replacement	11/5/2020	36 Sunset Ct	1
CB sump replacement	11/12/2020	965 Sunset Ct	1
CB sump replacement	11/13/2019	130 Redmont Road	1
CB sump replacement	11/15/2019	129 Redmont Road	1
CB sump replacement	11/19/2019	139 Turn Of River Road	1
CB sump replacement	11/20/2019	73 Flint Rock Road	1
CB sump replacement	11/22/2019	117 Flint Rock Road	1
CB sump replacement	10/8/2019	130 Gaymoor	1
CB sump replacement	12/03/2019-12/04/2019	Corner Iron Gate & Flint Rock	1
CB sump replacement	12/05/2020-12/06/2019	21 Hardesty Road	1
CB sump replacement	12/12/2020-12/13/2019	21 Hardesty Road Opposite	1

CB sump replacement	12/13/2020-12/16/2020	118 Iron Gate	1
CB sump replacement	6/2/2020	Bangall Road	1
CB sump replacement	6/5/2020	Skyview Drive #202	1
CB sump replacement	6/10/2020	Sherwood Road #56	1
CB sump replacement	6/12/2020	Bridge Street #33-37	1
CB sump replacement	12/24/2020-12/26/2020	Norman Lane	1
CB sump replacement	12/27/2019	15 Flint Rock/Den Rd	1
CB sump replacement	1/2/2020	35 Rockridge Lane	1
CB sump replacement	1/07/2020-1/08/2020	65 Glenbrook Road	1
CB sump replacement	1/02/2020-1/06/2020	190 Quarry Road	1
CB sump replacement	1/06/2020-1/07/2020	8 Talmadge Lane (DBL CB)	2
CB sump replacement	1/9/2020	Hoyt Street (Stamford Corners)	1
CB sump replacement	1/9/2020	100 Research Drive	1
CB sump replacement	1/13/2020-1/14/2020	85 Riverside Avenue (DBL CB)	2
CB sump replacement	1/14/2020-1/15/2020	527 Glenbrook Road	1
CB sump replacement	1/15/2020	8 Dunn Avenue	1
CB sump replacement	1/16/2020-1/17/2020	52 Westgate	1
CB sump replacement	1/20/2020-1/21/2020	230 Hope & Rock Spring	1
CB sump replacement	1/20/2020	25 Second Street	1
CB sump replacement	1/22/2020	26 Snow Crystal Lane	1
CB sump replacement	1/21/2020-1/23/2020	64 Blue Rock Drive	1
CB sump replacement	1/27/2020-1/28/2020	81 Rippowam	1
CB sump replacement	1/27/2020	24 Wright Street	1
CB sump replacement	1/28/2020	112 Woodmere	1
CB sump replacement	1/28/2020-1/29/2020	51 Kenilworth Drive East	1
CB sump replacement	1/29/2020	83 Kenilworth Drive East	1
		Total CB Sump Replacements	52
CB reset frame/grate	7/2/2019	8th Street	1
CB reset frame/grate	7/23/2019	24 Benstone	1
CB reset frame/grate	7/25/2019	6 Applebee Road	2
CB reset frame/grate	7/29/2019	1318 Bedford Street	1
CB reset frame/grate	8/27/2019	118 Scofield Town Road	1
CB reset frame/grate	8/12/2019	Golfview	1
CB reset frame/grate	8/2/2019	Hubbert Court	1

CB reset frame/grate	7/31/2019	89 Toms Road	1
CB reset frame/grate	9/20/2019	Hidden Brook	1
CB reset frame/grate	9/17/2019	40 Minivale	1
CB reset frame/grate	11/12/2019	965 Sunset Road	1
CB reset frame/grate	11/13/2019	130 Redmont Road	1
CB reset frame/grate	11/15/2019	129 Redmont Road	1
CB reset frame/grate	11/19/2019	139 Turn Of River Road	1
CB reset frame/grate	11/20/2019	73 Flint Rock Road	1
CB reset frame/grate	11/25/2019	117 Flint Rock Road	1
CB reset frame/grate	12/4/2019	Corner Iron Gate & Flint Rock	1
CB reset frame/grate	12/6/2019	21 Hardesty Road	1
CB reset frame/grate	12/13/2019	21 Hardesty Road Opposite	1
CB reset frame/grate	12/26/2020	Norman Lane	1
CB reset frame/grate	6/2/2020	Bangall Road	1
CB reset frame/grate	6/11/2020	Sherwood Road #56	1
CB reset frame/grate	6/15/2020	Bridge Street #33-37	1
CB reset frame/grate	1/8/2020	65 Glenbrook Road	1
CB reset frame/grate	1/6/2020	190 Quarry Road	1
CB reset frame/grate	1/8/2020	8 Talmadge Lane (DBL CB)	2
CB reset frame/grate	1/13/2020	87 Den Road (Reset ?)	1
CB reset frame/grate	1/14/2020	85 Riverside Avenue (DBL CB)	2
CB reset frame/grate	1/15/2020	8 Dunn Avenue	1
CB reset frame/grate	1/20/2020	25 Second Street	1
CB reset frame/grate	1/22/2020	26 Snow Crystal Lane	1
CB reset frame/grate	1/23/2020	64 Blue Rock Drive	1
CB reset frame/grate	1/24/2020	26 Tupper Drive	1
CB reset frame/grate	1/28/2020	81 Rippowam	1
CB reset frame/grate	1/27/2020	24 Wright Street	1
CB reset frame/grate	1/28/2020	112 Woodmere	1
CB reset frame/grate	1/29/2020	51 Kenilworth Drive East	1
CB reset frame/grate	1/29/2020	83 Kenilworth Drive East	1
		Total CB reset Fram/Grate:	41
MH Frame Replacement	7/25/2019	109 Oaklawn Avenue	1
MH Frame Replacement	7/26/2019	Transfer Station	1

MH Frame Replacement	7/30/2019	Newfield Avenue & Dorlan	1
MH Frame Replacement	8/5/2019	Vanbuskirk & Cove Road	1
MH Frame Replacement	8/8/2019	Transfer Station	1
MH Frame Replacement	9/23/2019	Woodway & Regent Court	2
MH Frame Replacement	11/8/2019	1392 Summer Street	1
MH Frame Replacement	11/11/2019	Selleck & Bonner	1
MH Frame Replacement	11/25/2019	Valley View Drive	1
MH Frame Replacement	12/18/2019	91 Rogers Road	1
MH Frame Replacement	12/18/2019	1 Little John Road	1
MH Frame Replacement	1/13/2020	253 Thornwood Road	1
MH Frame Replacement	1/16/2020	63 Oaklawn Avenue	1
MH Frame Replacement	1/20/2020	230 Hope & Rock Spring	1
MH Frame Replacement	1/22/2020	194 Quarry Road	1
MH Frame Replacement	1/22/2020	202 Quarry Road	1
MH Frame Replacement	1/23/2020	10 New England Drive	1
MH Frame Replacement	1/23/2020	109 Fieldstone, 16 Munko, 13 Fenway	3
MH Frame Replacement	1/24/2020	West Avenue/Piave Street	1
MH Frame Replacement	6/4/2020	Bangall Road	1
		Total Manhole Frame Repairs:	23

APPENDIX H

2019–20 CULVERT CLEANING LIST

City of Stamford - CT0030279

Open Drainage Channel (Culvert Cleaning and Backhoe Work) 7/1/19 - 6/30/2020



Date	Address / Location	Duration	Manpower	Quan. Of Material Removed	Receiving Stream	Notes
7/8/2019	Opposite #138 Lawton Ave.	1/3 Day	3 men, stetco hydraulic crane	appx. 1 cubic yard	Noroton River	Cleared debris from culvert inlet - sleepy hollow park.
7/11/2019	21 River Place	1/2 Day	2 men stetco hydraulic crane, loader	Added surge stone to stabilize leakoff emptying into river.	Noroton River	Stabilized leakoff.
7/15/2019	24 Bracchi Drive	1 Day	3 men, mini excavator and small dump trucks	appx. 5 cubic yards	Rippowam River	Removed debris from swale, exposed partially buried outfall from CB's in roadway.
8/27/2019	39 Wedgemere Rd.	1 Day	4 men, mini ex, small dump trucks	appx. 2 cubic yard	Rippowam River	Constructed swale to CB, seeded and stabilized.
9/16/2019	16 Munko Dr./Opposite #416 Roxbury Rd.	3 Days	6 men, loader, small dump trucks	appx. 40 cubic yards	Rippowam River	Excavated and removed fill and stone placed in roadside drainage swale in ROW. Seeded and stabilized soils.
10/6/2019	28 Berges Ave.	1 Day	3 men, mini excavator and small dump trucks	appx. 2 cubic yards	Rippowam River	Used mini ex to remove brush and accumulated debris at outfall. Causing debris build up in upgradient storm pipe.
10/7/2019	Rippowam School, rear parking lot. High Ridge Rd.	2 Day	6 men, loader, small dump trucks	appx. 2 cubic yards	Rippowam River	scraped and prepped area. Haul off 2 yds. Added topsoil and seed to create berm behind CB to protect adjacent residential properties.
10/7/2019	171 Dogwood Ln.	1 Day	6 men, mini ex, small dump trucks.	appx. 10 cubic yards	Rippowam River	cleared debris from swale, in front of outfall pipe, and inlet pipe.
10/8/2019	163 Breezy Hill Rd.	1 Day	5 men, loader, small dump trucks	appx. 8 cubic yards	Rippowam River	Excavated trench to allow water to flow off road at cul-de-sac and infiltrate.
10/8/2019	68 Blackberry Dr./22 Blackberry Drive East	2 Days	6 men, loader, small dump trucks		Rippowam River	Removed sediment and debris obstructing outfall. Unable to haul away due to access. Seeded and stabilized soils.
11/6/2019	Opposite #138 Lawton Ave.	1/3 Day	3 men, stetco hydraulic crane	appx. 1 cubic yard	Noroton River	Cleared debris from culvert inlet - sleepy hollow park.
1/7/2020	Riverbank Rd. at Bridge	1/3 Day	2 men, stetco hydraulic crane	appx. 1 cubic yard	Mianus River	Cleared RCP culvert inlets (2) of leaves, roots, and debris.
1/7/2020	264 Cedar Heights Rd.	1/3 Day	2 men, stetco hydraulic crane	appx. 1 cubic yard	Rippowam River	Cleared four (4) leakoffs at bridge.
1/10/2020	84 Farms Rd.	1/3 Day	3 men, stetco hydraulic crane	appx. 1 cubic yard	Mianus River	cleared logs and debris from culvert inlet.
2/24/2020	Bridge at Lakeside Drive	2 Days	6 men, backhoe and dump trucks	appx. 30 cubic yards	Rippowam River	Cleared accumulated debris under guard rail to allow water to drain off road to reservoir, both sides.
2/25/2019	611 Westover Rd.	1/3 Day	2 men, small dump trucks		Rippowam River	Added rip rap to stabilize culvert inlet RCP under roadway.
2/26/2020	205 North Stamford Rd.	1 Day	3 men, mini excavator and small dump trucks	appx. 4 cubic yards	Rippowam River	Excavated swale east side of road to provide proper roadway drainage to culvert inlet.
3/9/2020	372 Chestnut Hill Rd. - Chestnut Hill Park	1 Day	3 men, mini excavator and small dump trucks	appx. 5 cubic yard	Rippowam River	Cleared obstructions from stream flowing under stone wall at property boundary. Removed and hauled.
3/12/2020	Opposite #160 Rock Rimmon Rd.	1 Day	3 men, mini excavator and small dump trucks	Added surge stone and rip rap to armor roadway edge	Rippowam River	
3/12/2020	Opposite #73 Mill Rd.	1 Day	3 men, mini excavator and small dump trucks	Added surge stone and rip rap to armor roadway leakoff	Rippowam River	

3/13/2020	87 Barmore Drive East	2 Days	5 men, loader, dump trucks, mini excavator.	appx. 15 cubic yards	Rippowam River	Scraped, removed, and hauled away debris along curb lines which was obstructing flow into adjacent wetlands.
3/16/2020	235 Den Rd. and 21 Hardesty Rd.	2 Days	4 men, mini excavator and small dump trucks	appx. 15 cubic yards	Mianus River	Excavated roadside drainage swale. Water accumulating on road. Seeded and stabilized all exposed soils.
3/16/2020	132 Doolittle Rd.	1/3 Day	4 men, mini excavator and small dump trucks	appx. 2 cubic yards	Mianus River	Cleaned brush, leaves, and debris from inlet pipe.
3/20/2020	125 Turn of River Rd.	1/3 Day	4 men, Stetco hydraulic crane and Vac truck	appx. 1 cubic yard	Rippowam River	Stormwater inlet cleared. Leaves, logs, and accumulated debris. Proper flow restored.
5/1/2020	489 Roxbury Rd.	1/3 Day	4 men, Stetco hydraulic crane and Vac truck	appx. 4 cubic yards	Mianus River	vac and jet work at corrugated metal culvert in ROW under driveway. Jetted and cleaned. Pipe has reached end of service life and needs replacement. Pipes replaced by property owner 6/2020.
5/5/2020	257 Silver Hill Ln.	1/3 Day	4 men, Stetco hydraulic crane and Vac truck	appx. 1 cubic yard	Rippowam River	Stormwater bar screen inlet cleared from leaves, logs, and accumulated debris. Proper flow restored.
5/5/2020	87 White Birch Ln.	1/3 Day	4 men, Stetco hydraulic crane and Vac truck	appx. 1 cubic yard	Rippowam River	Stormwater bar screen inlet cleared from leaves, logs, and accumulated debris. Proper flow restored.
5/20/2019	Bangall Rd. at Riverbank Rd.	4 Days	6 men, loader, dump trucks, mini excavator.	appx. 40 cubic yards	Mianus River	Shifted CB location from travel lane to curb line, converted CB from flat top to curb back, converted existing CB to MH, cut back and regraded slope, removed stumps, topsoil and seed, and installed new curb.

APPENDIX I

2019–20 IDDE SCREENING DATA SUMMARY TABLE

APPENDIX J

IDDE WET WEATHER SCREENING DATA SUMMARY TABLE

General Information			Field Parameter						Lab Data					
Permit Outfall ID	Date	Time SF	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
DIS-1	3/21/2017	11:55	5.02		9	7.1	0.32	2774	345	10500	440	369	0.1	0.63
DIS-2	6/1/2015				7.09	15.04	9.59	1048	3,870	>24200	>2000	>24200	0.26	1.35
DIS-3	6/1/2015				7.52	15.44	8.47	27886	840	>24200	>2000	6490		
DIS-4	6/1/2015				7.37	15.21	9.23	1875	5,170	>24200	>2000	15530	0.11	0.63
DIS-5	3/31/2017	13:21	4.76		4.61	6.48	0.98	537	959	19900	1110	1300	0.159	0.74
DIS-6	12/2/2015	11:25			6.86	11.37	7.27	1728	1220	>24200	1070	1990	0.18	0.58
DIS-7	3/31/2017	12:52	5.64		8.37	6.69	0.46	284	862	24200	1330	1970	0.183	0.62
DIS-10	12/2/2015	8:50			7.49	10.45	7.41	1323	>24200	>24200	>2000	>24200	4.1	3.9
DIS-12	12/9/2014	13:30	15.4		7.27	5.25	8.09	37	8,160	>24200	>2000	7,700	0.35	2
DIS-13	12/2/2015	11:17			8.13	10.41	11.63	644	>24200	>24200	>2000	>24200	0.68	1.75
DIS-14	12/2/2015	9:12			7.37	10.91	9.91	834	>24200	>24200	>2000	>24200	1.67	1.75
DIS-15	6/1/2015				7.70	14.86	8.76	426	19,86	>24200	>2000	>24200	0.15	0.75
DIS-17	12/2/2015	9:52			7.23	11.16	8.43	20328	>24200	>24200	>2000	>24200	0.53	0.91
DIS-18	3/31/2017	12:27	2.96		6.79	3.42	9.14	641	6490	>24200	>2000	355	0.526	2.52
DIS-19	5/5/2017				6.70	11.7	4.29	777	>24200	>24200	>2000	>24200	2.93	25
DIS-20	6/1/2015				7.70	15.83	8.08	571	>24200	>24200	>2000	17330	0.26	2.03
DIS-22	12/2/2015	9:30			7.99	11.58	8.54	273	910	>24200	1470	610	0.35	1.12
DIS-23	6/1/2015				7.90	15.68	8.47	251	1460	>24200	>2000	5480	0.1	1.01
DIS-24	6/15/2015	8:03			6.93	19.63	6.4	15949	>24200	>24200	>2000	>24200	0.24	0.71
DIS-25	6/15/2015	7:10			7.55	21.44	7.33	73	310	>24200	>2000	70	0.09	0.96
DIS-27	6/1/2015				7.54	15.02	7.91	624	12,030	>24200	>2000	>24200	0.23	1.68
DIS-28	12/2/2015	12:21			8.32	10.22	10.92	84	12030	>24200	>2000	880	0.27	1.28
DIS-30	1/24/2019	10:00			7.03	19.94	7.64	603	13000	>24200	>2000	10	31	
DIS-30	6/15/2015	9:44			7.16	9.29	6.37	125	10500	>24200	>2000	14140	0.19	1.08
DIS-35	11/15/2016	12:45			7.74	8.15	11.21	65	2600	>24200	>2000	7700	0.08	1.09
DIS-37	12/2/2015	10:50			7.80	10.6	9.6	125	240	>24200	210	260	0.28	0.88
DIS-45	12/2/2015	11:20			7.57	15.10	9.83	428	19,860	>24200	>2000	>24200	0.2	1.11
DIS-47	6/1/2015				7.28	16.07	8.19	3110	>24200	>24200	>2000	>24200	0.14	1.38
DIS-48	6/1/2015				7.86	15.86	8.35	263	4,610	>24200	>2000	9,210	0.12	0.93
DIS-49	6/1/2015				7.74	11.52	9.76	400	>24200	>24200	>2000	>24200	0.7	1.71
DIS-50	12/2/2015	10:23			7.02	5.11	11.16	260	1,020	>24200	610	1,720	0.09	0.43
DIS-52	12/9/2014	11:55	2.98											
DIS-55	1/24/2019	7:54												
DIS-58	6/15/2015	10:40			7.2	19.98	7.25	158	24200	>24200	>2000	14140	0.13	0.59
DIS-60	5/5/2017				7.99	10.48	9.98	165	6490	>24200	>2000	4880	0.871	5.15
DIS-62	3/31/2017	11:09	11.2		6.62	6.13	9.03	305	1550	>24200	1560	1240	0.133	0.95
DIS-63	12/9/2014	1:43:00 PM	11.5		6.85	5.08	11.5	19						
DIS-63	6/1/2015		NA		7.49	15.63	8.19	3110	9210	>24200	2000	8660	0.22	9.56
DIS-67	6/18/2019	14:35	1	0.74										
DIS-69	12/2/2015	10:04												
DIS-70	6/1/2015				7.08	14.69	8.43	301	>24200	>24200	>2000	>24200	0.18	0.82
DIS-71	6/1/2015				7.96	14.87	9.16	225	17,330	>24200	>2000	>24200	0.16	0.93
DIS-73	12/2/2015	10:37			7.73	9.84	11.65	162	8660	>24200	>2000	6490	0.14	0.66

General Information			Field Parameter						Lab Data					
Permit Outfall ID	Date	Time SF	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
DIS-75	6/1/2015				8.02	16.21	0.29	995	>24200	>24200	>2000	>24200		
DIS-76	5/5/2017				7.25	11.03	9.66	396	>24200	>24200	>2000	4610	0.233	1.5
DIS-77	11/15/2016	13:25			6.15	8.04	6.72	410	595	>24200	840	816	0.187	0.65
DIS-78	6/1/2015				7.85	16.17	8.59	371	>24200	>24200	>2000	>24200	0.18	1.2
DIS-79	6/1/2015				7.91	16.1	8.65	347	>24200	>24200	>2000	>24200	0.2	1.1
DIS-82	6/15/2015	9:50			7.67	19.13	4.98	347	14140	>24200	>2000	24200	0.37	1.83
DIS-84	1/24/2019	8:44	11.7	13.7										
	5/5/2017				7.68	10.89	8.57	345	4610	>24200	>2000	1660	0.39	2.26
DIS-85	6/15/2015	9:38							100	1410	70	120	0.2	<1.4
DIS-88	6/15/2015	9:03			7.47	19.37	9.52	286	17330	>24200	>2000	24200	0.15	<1.4
DIS-89	6/15/2015	8:02			7.23	21.01	9.25	53	10460	>24200	>2000	19860	0.16	0.66
DIS-94	1/24/2019	11:54	7.78	11.7										
	6/1/2015		14.5		7.85	17.52	8.05	374	7270	>24200	>2000	9800	0.11	0.67
DIS-95	1/24/2019	12:13	29.5	6.18										
	6/15/2015	7:40			7.59	20.49	9.24	114	24200	>24200	>2000	>24200	0.43	4.6
DIS-96	1/24/2019	11:10	25	5.87										
	6/15/2015	8:15			7.61	21.41	3.25	109	17300	>24200	>2000	24200	0.19	1.49
DIS-97	5/5/2017				6.82	10.8	7.54	384	19900	>24200	>2000	5480	0.871	5.12
DIS-98	1/24/2019	13:12	22.6	6.71										
	6/15/2015	7:10			7.71	21.49	6.19	319	4610	>24200	>2000	5790	0.1	0.74
DIS-99	6/15/2015	7:23			7.54	18.87	5.39	203	<10	50	10	20	0.22	0.53
DIS-100	11/15/2016	13:45			6.65	8.37	9.91	337	3450	>2,000	>2000	1220	0.298	0.45
DIS-102	6/15/2015	8:10			7.13	19.95	6.99	201	>24200	>24200	>2000	>24200	0.17	0.85
DIS-103	6/15/2015	7:20			6.8	19.45	6.25	155	>24200	>24200	>2000	24200	0.17	0.79
DIS-104	12/9/2014	12:45	8.09		6.09	4.94	10.96	58	5.790	>24200	>2000	6.130	0.27	1.25
DIS-106	12/9/2014	12:25	7.76		6.68	4.80	8.19	48	4.350	>24200	>2000	4.880	0.28	1.01
DIS-107	5/5/2017				6.96	9.94	10.61	745	1100	17300	700	279	0.117	0.71
DIS-108	6/15/2015	9:10			6.77	19.45	7.59	154	14140	>24200	>2000	>24200	0.19	0.91
DIS-109	6/15/2015	9:30			6.22	16.96	7.77	584	1790	>24200	>2000	2050	0.04	0.57
DIS-112	6/15/2015	9:55			6.64	19.09	6.89	588	2720	>24200	>2000	4110	0.05	0.65
DIS-116	12/9/2014	1:08:00 PM	26.2		6.59		11.39	48						
	6/1/2015				7.80	15.95	8.4	560	4110	24200	>2000	19860	0.16	1.1
DIS-117	12/9/2014	12:54:00 PM	16		6.60	5.21	11.37	51						
	6/1/2019				7.62	17.45	7.69	923	2760	24200	2000	7270	0.1	1.13
DIS-121	5/5/2017				7.08	10.26	10.11	1176	11200	>24200	>2000	5170	0.498	1.95
DIS-123	5/5/2017				7.26	11.02	8.71	1295	12000	>24200	>2000	7270	1.52	4.08
DIS-125	3/31/2017	13:30	6.69		7.95	4.03	14.24	427	546	>24200	510	880	0.067	0.93
DIS-126	6/15/2015	7:50			7.22	23.21	7.36	491	>24200	>24200	>2000	1340	0.34	1.69
DIS-127	6/1/2015				7.62	15.07	8.47	268	9.800	>24200	>2000	>24200	0.21	1.41
DIS-129	6/1/2015				7.89	14.98	8.53	245	19860	>24200	>2000	>24200	0.2	1.21
DIS-130	1/24/2019	8:39			7.74	14.91	8.75	544	17330	>24200	52	228		
DIS-131	3/31/2017	11:56	9.62		7.12	6.78	8.24	414	187	>24200	1250	160	0.169	0.82

General Information			Field Parameter						Lab Data					
Permit Outfall ID	Date	Time SF	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
DIS-132	1/24/2019	8:26			7.38	9.98	9.37	435	>24200	>24200	<10	216		
DIS-133	12/2/2015	12:15			7.9	14.44	9.4	465	630	>24200	>2000	24200	0.86	1.24
DIS-135	6/1/2015				7.91	9.09	11.36	1039	630	>24200	120	900	0.21	0.91
DIS-139	5/5/2017				7.76	3.6	12.77	614	>24200	>24200	>2000	19900	0.266	2.14
DIS-142	3/31/2017	12:15	3.51		7.76	3.6	12.77	614	41	4880	<10	10	0.06	0.78
DIS-142	3/31/2017	11:45	5.12		8.01	4.15	13.91	454	292	5480	660	31	0.06	0.46
DIS-145	5/5/2017				7.77	10.99	9.28	145	13000	>24200	>2000	6490	0.41	1.82
DIS-180	6/18/2019	12:05	8.25	1.72										
DIS-181	6/18/2019	12:10	1.47	1.23										
DIS-204	1/24/2019	7:57	7.4	8.94										
DIS-205	1/24/2019	8:18	17.1	17.1										
DIS-240	6/18/2019	13:10	1.79	1.64										
DIS-727	6/18/2019	12:56	6.88	2.05										
DIS-769	6/18/2019	12:40	2.02	1.56										
DIS-770	6/18/2019	12:43	0.12	1.49										
DIS-830	6/18/2019	11:50	1.41	1.16										
DIS-936	6/18/2019	13:43	0	1.07										
DIS-937	6/18/2019	13:35	0.28	1.23										
DIS-938	6/18/2019	13:52	0.21	0.96										
DIS-996	6/18/2019	13:00	2.31	1.62										
DIS-1277	1/24/2019	7:38									75	226		
DIS-1282	1/24/2019	9:25									<10	20		
DIS-1283	1/24/2019	9:11									63	1470		
DIS-1285	1/24/2019	8:52									106	3970		
DIS-1286	1/24/2019	0.339583333												
DIS-1289	1/24/2019	9:42									41	3650	0.15	1.09
DIS-1412	6/18/2019	14:15	2.13	2.40					17330		>2000	>24200		
DIS-1445	6/18/2019	14:22	1.22	1.11										
DIS-36S	11/15/2016	12:59			7.06	8.03	7.21	276	15500	>24200	>2000	2500	0.365	0.85
	12/2/2015	10:00			8.02	9.73	13.49	96	12030	>24200	>2000	>24200	0.21	1.75
	12/2/2015	9:55			8.03	11.58	9.1	646	10460	>24200	>2000	>24200	0.22	0.96
	12/2/2015	9:36			7.24	12.03	6.97	626	>24200	>24200	>2000	>24200	1.67	1.75
	12/2/2015	10:04			7.87	9.9	6.32	165	>24200	>24200	>2000	>24200	0.18	0.82

APPENDIX K

2019-20 IDDE FOLLOW-UP INVESTIGATIONS

Site Name	Date	Time	Dissolved Oxygen (mg/L)	Conductivity (µmho/cm)	Water Temp (°C)	Turbidity (NTU)	pH	Chlorine (mg/L)	Surfactants (ppt)	Potassium (mg/L)	Ammonia (mg/L)	Total Coliform	E. coli	Enterococcus	Sample Volume	Total Coliform Positive Large Wells	Total Coliform Positive Small Wells	Total Coliform MPN	Total Coliform Reported MPN	E. coli Positive Large Wells	E. coli Positive Small Wells	E. coli MPN	E. coli Reported MPN	Enterococcus Positive Large Wells	Enterococcus Positive Small Wells	Enterococcus MPN	Enterococcus Reported MPN	NOTES
MH7598	7/25/19	1056										>2419.6	>2419.6		100	49	48	>2419.6	>2419.6	49	48	>2419.6	>2419.6					Flow from side pipe unable to isolate for sample.
MH731	7/25/19	1047										>2419.6	>2419.6		100	49	48	>2419.6	>2419.6	49	48	>2419.6	>2419.6					Could really be MH7601
MH731P	7/25/19	1048										>2419.6	816.41	0.00	100	49	48	>2419.6	>2419.6	49	35	816.4	816.4					Side pipe flowing into MH731 flowing from Ursula Place
MH317	7/25/19	1042																										Did not open because rim kept lifting out of the ground as well.
MH7603	7/25/19	1036										>2419.6	>2419.6		100	49	48	>2419.6	>2419.6	49	48	>2419.6	>2419.6					
MH344	7/25/19	1029										>2419.6	1119.87		100	49	48	>2419.6	>2419.6	49	40	1119.9	1119.9					Flow in from both sides
146 Cold Spring Road	7/25/19	1005							<0.25																		Surfactants only. We did observe foam at the site.	
MH3	7/25/19	932						0.01	0.25		0.25	>4839.2	37.38		50	49	48	>2419.6	>4839.2	15	1	18.7	37.4					Stagnant water. Sampled anyway
DIS-205-B	7/25/19	1115										>4839.2	259.26		50	49	48	>2419.6	>4839.2	44	11	129.6	259.3					Taken from MH on hope street
DIS-84	7/25/19	1127										>2419.6	517.21		100	49	48	>2419.6	>2419.6	49	27	517.2	517.2					Outfall had river water up high into it but we could still observe flow out. Fence blocking access to the manholes.
DIS-1412-A	7/25/19	1137										>2419.6	1046.24		100	49	48	>2419.6	>2419.6	49	39	1046.2	1046.2					Damp but no flow
DIS-78	7/29/19	1141										>4839.2	1095.00		50	49	48	>2419.6	>4839.2	49	28	547.5	1095.0					
DIS-79	7/29/19	1142																										
Wedgemere	8/5/19	1240									0.00																	Did not observe bubbling as Tyler had described. There was a small puddle that dried up. Only a small sample for ammonia was able to be collected.
DIS-75	8/12/19	1053													50	49	48	>2419.6	>4839.2	46	8	137.6	275.2					Orange foam at discharge base
DIS-77	8/12/19																											Didn't sample due to construction and site access
DIS-76	8/12/19																											Didn't sample due to construction and site access
DIS-365	8/12/19	1104													50	49	48	>2419.6	>4839.2	41	11	107.1	214.2					Mixed with river water. Capped but flow is coming out of cap
DIS-36N	8/12/19																											capped no flow
DIS-35	8/12/19	1114																										believe to be dry. Found outfall but could not access/get close enough to sample and 100% confirm flow status.
MH35	8/12/19	1119																										Dry
Daffodil	10/9/19	1151									3.00	29866.00	4638.00		1	48	22	298.7	29866.0	29	3	46.4	4638.0					Tried doing surfactants but the sample malfunctioned in the field.
DIS-768	11/6/19	1315	9.55	729	15.8	1.11	7.4	0.35	0.25	5	0.00	67.66	1.00		100	36	4	67.7	67.7	1	0	1.0	1.0					Raccoon prints around and up to outfall
DIS-768	11/6/19	1315	9.55	729	15.8	1.11	7.4	0.35	0.25	5	0.00																	Raccoon prints around and up to outfall
MH1640	12/9/19	1027							0.25		0.00	>4839.2	1095.00	2092.48	50	49	48	>2419.6	>4839.2	49	28	547.5	1095.0	49	39	1046.2	2092.5	Fecal coliform 240 CFU/100mL
MH1643	12/9/19	1034							0		0.00	>4839.2	2239.74	821.16	50	49	48	>2419.6	>4839.2	49	40	1119.9	2239.7	49	23	410.6	821.2	Fecal coliform 740 CFU/100mL, replicate 870 CFU/100mL
MH1642	12/9/19	1049									0.00	>4839.2	60.80		5	49	48	>2419.6	>4839.2	2	1	3.0	60.8					Very little flow, only able to collect approximately 10mL. No entero or fecal
MH2916	12/9/19	1059							0.25		0.00	>4839.2	551.02	2406.66	50	49	48	>2419.6	>4839.2	49	16	275.5	551.0	49	41	1203.3	2406.7	Fecal coliform 390 CFU/100mL
MH1641	12/9/19	1107																										Appeared to be the main line, good flow, nothing unusual, not connected to MH1642. No sample collected
MH2915	12/9/19	1109																										No sample collected.
Berrian Road	12/20/19	1020							0.25		0.00	1453.98	36.58		50	49	33	727.0	1454.0	13	3	18.3	36.6					
6 Riding Stable Trail	1/6/20	1107									6.00	>2419600	>2419600		0.1	49	48	>2419.6	>2419600	49	48	>2419.6	>2419600					Replicate 49/47 for e. coli wells. Grey water though no flow originally observed just a puddle. Bumped a stick and flow followed. Strong sewage odor present.
47 Liberty Street	1/22/20	954							n/a		6.00	>2419600	>2419600		0.1	49	48	>2419.6	>2419600	49	48	>2419.6	>2419600					Grey water observed pulsing out of pipe in boarded up window into the street. Sewage odor present. Surfactants test was hard to interpret due to grey color of water and oil present - likely a 3mg/L.
DIS-892	3/11/20	1110													100	49	39	1046.2	1046.2	49	34	770.1	770.1	0	0	<1	<1	
DIS-893	3/11/20	1103													100	49	43	1413.6	1413.6	49	35	816.4	816.4	0	0	<1	<1	
Instream - 106 Brookside	3/11/20	1127													100	49	34	770.1	770.1	46	15	172.5	172.5					
Instream - 82 Brookside	3/11/20	1132													100	49	35	816.4	816.4	46	16	178.2	178.2					
116 Sawmill Road (Sample A)	6/22/20	1015						0			3.00	>241960	155312.00		1	49	48	>2419.6	>241960	49	44	1553.1	155312.0					
116 Sawmill Road (Sample B)	6/22/20	1025										>241960	129965.00		1	49	48	>2419.6	>241960	49	42	1299.7	129965.0					