TOWN OF CHESHIRE
CONNECTICUT

STORMWATER MANAGEMENT PLAN

July 2017

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Introduction

This Stormwater Management Plan (SMP) was developed by the Town of Cheshire to protect water quality and reduce the discharge of pollutants from the municipality's storm sewer system to the maximum extent practicable (MEP). This SMP addresses the requirements established by the CT Department of Energy and Environmental Protection's (DEEP) General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 General Permit). This permit is the local enforcement mechanism of the U.S. Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Rule.

SMP Structure

The plan outlines a program of best management practices (BMPs), measurable goals, responsible individuals or departments, and implementation schedules for the following six minimum control measures:

(1) Public education and outreach
(2) Public involvement and participation
(3) Illicit discharge detection and elimination
(4) Construction site stormwater runoff control
(5) Post-construction stormwater management in new development and redevelopment
(6) Pollution prevention/good housekeeping

CT DEEP's General Permit for the Discharge of Stormwater from Small MS4s is included as Appendix A.

Area Subject to the Plan

The measures identified in this SMP will be applied throughout the boundaries of the Town of Cheshire except as otherwise noted and be consistent with the MS4 General Permit requirements. Stormwater discharges from municipally-owned maintenance garages, salt sheds and the Water Pollution Control Plant that are subject to the DEEP Industrial Stormwater General Permit will continue to be regulated under the conditions of that permit.

A complete listing of CT DEEP Industrial Stormwater Registrations in Cheshire is included in Appendix B.

SMP Development

A stormwater committee led by the Public Works and Engineering Department and including representatives from planning, parks and recreation, economic development, inland wetlands and watercourses agency, and zoning enforcement was assembled to coordinate the development and implementation of the SMP.

The SMP's implementation will be tracked and documented in Annual Reports summarizing stormwater management activities carried out by the town and its partners. These reports will be submitted to DEEP on an annual basis no later than April 1st of the following year.

Description of Municipality

The operator of the MS4 is the Town of Cheshire. The Town of Cheshire is a public entity located in the county of New Haven, State of Connecticut. The Town of Cheshire covers an area of approximately 33 square miles, located in Central Connecticut as shown in Figure 1, which depicts land use.

The Town of Cheshire is located in south central Connecticut. The Town has a current population of 29,261. The majority of the Town is considered Urbanized Area based on the results of the 2010 Census. The Urbanized Area is depicted on Figure 2.

Current land use in Cheshire is predominantly single-family residential, with 86% of the Town zoned for residential development. Over 11,000 acres of undeveloped, residentially zoned land remains in Cheshire, of which approximately 3,600 acres are considered developable. Of these 3,600 acres, approximately 2,400 acres are R-80 two-acre zoning. There are over 1,300 acres of Town-owned open space.

The Town has an extensive sanitary sewer system with its own modern wastewater treatment plant with 9 pump stations and over 100 miles of mains serving roughly 5,500 residential, commercial, and residential properties, or about 50% of the Town.

Cheshire has been named as the "Bedding Plant Capital of Connecticut" by the Connecticut General Assembly due to its high concentration of plant companies operating in Town. These agricultural operations, which produce small vegetable plants and flowers, are scattered throughout Town. However, the largest concentration is in the northern end of Town in areas predominantly zoned industrial.

There is an estimated 2,660 acres of industrially zoned land in Cheshire, predominately located in the north end of Town. Commercial development is located along Route 10 and along Route 70. Approximately three miles of Interstate 84 are located within the northwest portion of Cheshire. Approximately 2.5 miles of Interstate 691 are located in the northern reach of Town. There is an additional 20.5 miles of State roads located in Cheshire (Route 10, Route 70, Route 68, and Route 42). Stormwater management for these State roads is the responsibility of the Department of Transportation (ConnDOT). However, Cheshire does have the responsibility for addressing the quality of stormwater that discharges into the ConnDOT system. Aside from the ConnDOT facilities, approximately 455 acres of land on Route 10 is owned by the State Department of Corrections (CT DOC) for the Cheshire Correctional Facility.

Water Resources

Figure 3 depicts the subregional drainage basins of Cheshire.

The northern portion of the Town is located in the Quinnipiac river watershed (DEP Basin No. 5200). Portions of the Tenmile River (DEP Basin No. 5202) and Broad Brook (DEP Basin No. 5204) watersheds (subwatersheds of the Quinnipiac River) are also located within Cheshire. Overall, the north half of Cheshire drains north to the Quinnipiac River. The Town's placement in the Quinnipiac River watershed is an important consideration for this Stormwater Management Plan since the Quinnipiac River is considered to be one of the most impacted rivers in the State.

Land uses in the areas of Town that are in the Quinnipiac River watershed consist of residential and industrial zoned property. Much of Route 10 northwest of the center of Town is located in this watershed. A portion of the State-owned and operated Connecticut Correctional Facility is also in this watershed. The commercial developments along Route 10, such as the Super Stop & Shop, CVS, and a number of professional offices are located in this watershed. The surface water quality classification in the Quinnipiac River is B.

The eastern part of Cheshire, along the Wallingford boundary, is located in the Broad Book watershed. Most of this watershed is not located in the Census Bureau-designated Urbanized Area. This is a public water supply watershed and the area is zoned R-80 (two-acre residential). Much of this area remains undeveloped, with some orchards and farms interspersed.

The Tenmile River watershed is a subwatershed of the Quinnipiac River. Most of western Cheshire is in this watershed, including most of the three miles of Interstate 84 which are in Cheshire. Approximately half of the Cheshire Correctional Facility is located in this watershed. A number of agricultural properties located along Peck Lane and industrial operations such as Bozzuto's truck terminal are also located in the Tenmile River watershed. The river flows north into Southington before discharging to the Quinnipiac River. Land in this watershed is zoned as a mix of R-40, R-80, and industrial. The Town's former landfill and existing public works garage (regulated under a separate industrial stormwater permit) are located in this watershed.

Land in the southern portion of Cheshire drains in a generally southerly direction to the Mill River (CT DEEP Basin No. 5302). The southeastern area of Cheshire, including much of Route 10 south of the Town Center, is located in the watershed for the main stem of the Mill River. Land in this watershed is zoned for R-20, R-40, R-80, and commercial uses. There have been a number of high-density residential developments in this watershed over the past 20 years. These consist of active adult communities as well as residential subdivisions.

Willow Brook (DEP Basin No. 5301) is a major tributary of the Mill River which drains most of southwestern Cheshire. Land use in this watershed is zoned for R-40 and R-80 as well as commercial use. Commercial zones are focused along Route 10. Cheshire High School is located in this watershed, as is the Farmington Canal Greenway.

A small portion of western Cheshire is located in the Beaver Pond Brook watershed (DEP Basin No. 6913). This is a subwatershed of the Naugatuck River which drains westerly from the Cheshire/Waterbury municipal boundary.

Impaired Waters

In preparing the SMP, the CT DEEP's Water Quality Standards were reviewed in order to determine the Surface Water Quality Classifications for each watercourse in town. Certain BMP's address the watersheds containing watercourses designated as "impaired" by the CT DEEP. Table 1 shows the water quality classification for each watershed and a map depicting CT DEEP Water Quality Classification is included as Appendix C. Table 2 summarizes the water bodies within or that run through Cheshire that are listed on the 2014 List of Connecticut Water Bodies not meeting water quality standards and are designated as "impaired" (Appendix D).

TABLE 1 Surface Water Quality Classifications Cheshire, CT			
Drainage Basin Number	Name	Surface Water Quality Classification	Impaired per Water Quality Standards
5200	Quinnipiac River	B	Yes
5202	Tenmile River	B	Yes
5204	Broad Brook	AA	No
5301	Willow Brook	A	Yes
5302	Mill River	A	Yes
6913	Beaver Pond Brook	A	Yes
6914	Mad River	A	Yes

TABLE 2 Cheshire Impaired Waterbodies					
Waterbody ID	**Water Segment Description**	**Water Segment Length**	**Impaired Use**	**Pollutant**	**Cause/Potential Source**
Quinnipiac River Watershed – Surface Water Quality Classification – B					
Mixville Ponds	upper and lower ponds	100 acres	drinking water supply, recreation	E. coli	urban runoff/stormwater runoff, illicit discharge, failing septic system, nuisance wildlife/pets, other
Tenmile River	from mouth at confluence with Quinnipiac River (DS of Old Turnpike Road Crossing), Southington, US to Lake Percival outlet dam on Moss Farm Pond (just US of Jarvis Street crossing), Cheshire	4.1 miles	drinking water supply, aquatic life	E. coli	urban runoff/stormwater runoff, illicit discharge, failing septic system, nuisance wildlife/pets, other
Quinnipiac River	from Waterworks (breached dam), just DS of Cheshire/Meriden town border (parallel to River Road [Route 70]), US to confluence with Tenmile river (US of Route 322 crossing and US of Southington WPCP)	4.78 miles	drinking water supply, aquatic life, fish consumption	E.coli, PCBs	urban runoff/stormwater runoff, illicit discharge, failing septic system, nuisance wildlife/pets, other
Willow Brook	from mouth at confluence with Mill River (DS of Willow Street crossing), Hamden, US to confluence with Brooksvale Stream (DS of South Brooksvale Road crossing), Cheshire (River travels along RR track)	1.87 miles	recreation	E. coli	urban runoff/stormwater runoff, illicit discharge, failing septic system, nuisance wildlife/pets, other
Mill River	from Cook Hill Road crossing, Cheshire, US to headwaters (US of Williamsburg Drive crossing)	3.09 miles	aquatic life	E. coli	urban runoff/stormwater runoff, illicit discharge, failing septic system, nuisance wildlife/pets, other

The Surface Water classifications currently assigned to Cheshire watercourses are defined below.

Class B
Surface Water described for uses as habitat for fish, aquatic life, and wildlife; recreation; navigation; industrial and agricultural water supply.

Class A
Surface Water is known or presumed to meet Water Quality Criteria which support designated uses, which may include potential drinking water supply; fish and wildlife habitat; recreational use; agricultural, industrial supply and other legitimate uses, including navigation.

Class AA
Designated uses include existing or proposed drinking water supply, fish and wildlife habitat, recreational use (may be restricted), agricultural and industrial supply.

These multiple areas of priority were taken into consideration as the BMPs were developed.

Water supply is an important consideration in Cheshire. The South Central Regional Water Authority (the Authority) provides public water to 80% of the Town, with the remaining 20% served by private wells. The Authority also owns and operates some water supply sources that are located in Cheshire, specifically, the North Cheshire wellfield located in the Quinnipiac River watershed and the South Cheshire wellfield located in the Mill River Drainage basin. In addition, the Mill River is a tributary to the Lake Whitney Reservoir. Broad Brook Reservoir is Meriden's water supply.

Level A Aquifer Protection Areas for the Authority wellfields are shown on Figure 4. Chlorinated solvents have impacted the North Cheshire Wellfield and that water is treated prior to distribution. Protecting this resource from further deleterious impact is an important consideration for the Authority. A portion of the Level A area for the North Cheshire Wellfield is within industrial zone areas.

The Town has had Aquifer Protection Regulations in effect since 1994. These are enforced through the Planning and Zoning review process. The Regional Water Authority provides comments on all proposed developments within the Aquifer Protection Area.

Based on the DEEP Surface Water Quality Classifications, Tenmile River and the Quinnipiac River are identified as Class B Surface Waters and should be priority areas as Cheshire determines policy to address stormwater impacts. Mill River, Willow Brook, and the Broad Brook Reservoir are other priority areas because they flow through the AA groundwater area used by Meriden and the South Central Regional Water Authority as a drinking water supply.

NDDB Areas of Concern

The Connecticut DEEP has developed and maintains the Natural Diversity Data Base (NDDB). This database includes mapping of the most recently identified location of state and federally threatened and endangered species. The location of these areas should be determined for all proposed construction activities so harmful impacts to rare and endangered species can be avoided.

There are a number of NDDB mapped areas located within Cheshire as shown on Figure 5. Many of these areas are located on "Prospect Ridge," which runs north /south and forms the western border of the Town. Between Waterbury Road to the north and the Cheshire town line to the south, Prospect Ridge contains 16 undeveloped parcels, ranging in size from 3 to 122 acres. The ownership of these parcels is as follows:

Town of Cheshire	249.57 acres
State of CT	192.36 acres
Private owners	160.61 acres
Cheshire Land Trust	64 acres

Over half of the available land has been purchased and reserved for passive recreational purposes, thereby reducing the potential for development in this environmentally sensitive area.

Surficial Materials

Approximately 40% of the Town is underlain by stratified drift materials as shown on Figure 6. Other areas consist of glacial till, with some pockets of thick glacial till. While each site needs soil testing to determine the composition of soils, the presence of stratified drift as indicated on Figure 6 indicates that infiltration of stormwater may be a favorable Best Management Practice in some areas of Town.

It is worth noting that some portions of stratified drift material are located in the industrial zoned area at the north end of Town. Careful consideration needs to be given to the use of infiltration in this area since some of the industrial zone is located in the Level A Aquifer Protection Area of the North Cheshire Wellfield. Depending on the type of industrial activity that is proposed, some pretreatment may be needed. The Town Engineer, along with the Regional Water Authority, must determine the specific infiltration requirements on a case-by-case basis.

(1) Public Education and Outreach

This minimum control measure outlines a program to communicate common sources of stormwater pollution and the impacts of polluted stormwater to the public. This will be done through distributing educational materials to the community and conducting outreach activities. The following BMPs and implementation schedule serve as Cheshire's MS4 Public Education Program.

1.1 Implement public education program

Goals:

- Raise public awareness that polluted stormwater runoff is the most significant source of water quality problems;
- Motivate residents to use Best Management Practices (BMPs) that reduce polluted stormwater runoff; and
- Reduce polluted stormwater runoff in town as a result of increased awareness and utilization of BMPs.

Cheshire will collect and distribute stormwater educational materials that, at a minimum, address the impacts of the following on water quality: pet waste, impervious cover, application of fertilizers, pesticides, and herbicides, and illicit discharges and improper disposal of wastes into the MS4. Cheshire will maintain a link to the University of Connecticut's CT NEMO Program, a comprehensive online library of stormwater educational material. The Cheshire website homepage (www.CheshireCT.org) will link directly to this web-based library and promote the availability of these materials. Cheshire will also provide materials in a printed format to be on display in public locations in the Environmental Planner's Office and at the Town Library located at 104 Main Street.

Additional targeted outreach efforts will be completed by the Engineering and Planning and Zoning Departments, and Town Environment Commission to educate K-12 students, agricultural operators, commercial businesses, developers, and homeowners on particular aspects of stormwater management.

Cheshire will coordinate with the Quinnipiac River Watershed Association and the South Central Regional Water Authority to ensure that required topics listed in this plan are covered and tracked on an annual basis.

The Town maintains a website providing current information on issues such as leaf collection schedules, planned road work and/or drainage repairs, snow removal schedules, recycling, and household hazardous waste collection. The Town website also includes links to information sources including the town wide GIS mapping, Chesprocott Health District, and CT DEEP.

The Town maintains an online GIS system (http://cheshire.mapxpress.net/) which provides access to town parcel mapping and includes information such as storm and sanitary catch basins and piping, open space, aquifer protection areas, areas provided with solid waste and recycling pick-up, and FEMA flood zones.

Outreach Events:

The Town conducts both mattress and electronics recycling events biannually to prevent these materials from being discarded on roadsides and in open spaces, thereby reducing negative stormwater impacts.

The local R. W. Hine ACE Hardware store is a registered drop-off location for old/unused paint as part of Paintcare, Inc. which represents paint manufacturers to operate paint stewardship programs.

The Regional Water Authority, of which Cheshire is a member, accepts hazardous waste weekly from mid-May through October each year. A list of materials accepted at this HazWaste location is included as Appendix D.

The Town Environment Commission periodically hosts clean-ups, walks, and hikes at ecological places of interest and open spaces. It also hosts exhibits at community events.

The Town promotes participation in the Whitney Water Center educational programs, operated by the South Central CT Regional Water Authority (RWA). The RWA provides a program available to 6th, 7th, and 8th graders entitled W.A.T.E.R., which includes classroom and field activities such as a field trip to the local water bodies to test pH, dissolved oxygen and nitrate levels to assess the impact that human activities have on water quality.

When appropriate, stormwater poster boards/kiosks were displayed at local Town events, especially the annual Fall Festival. The educational programs offered by the Southwest Conservation District (SCD) are posted at the Town Hall. The Town also posts environmental and nature information at kiosks on open space property, such as Quinnipiac Park, Boulder Knoll, the DeDominicis property, and the Farmington Canal Greenway.

1.2 Address education and outreach for pollutants of concern

Cheshire will distribute information on common sources of phosphorus, nitrogen, bacteria, and mercury pollution and how to prevent or reduce the amount reaching the MS4 and discharging into waterways.

The table below shows additional topics to be covered to address the phosphorus, nitrogen, bacteria, and mercury impairments that exist in Cheshire.

TABLE 3
Educational Topics

Phosphorus	Nitrogen	Bacteria	Mercury
Septic systems	Septic systems	Septic systems	Thermometers
Fertilizer use	Fertilizer use	Sanitary cross connections	Thermostats
Grass clippings and leaves management	Grass clippings and leaves management	Waterfowl	Fluorescent lights
Detergent use	Discharge of sediment (to which Nitrogen binds) from Construction sites	Pet waste	Button cell batteries
Discharge of sediment (to which Phosphorus binds) from Construction sites	Other erosive surfaces	Manure piles associated with livestock and horses	
Other erosive surfaces			

Public outreach and education schedule

Minimum Control Measure								
Public Education and Outreach on Stormwater Impacts								
Best Management Practice	**Measurable Goals**	**Responsible Party**	**Year**					
			'17	'18	'19	'20	'21
A. Educate citizens about the importance of stormwater management	1. Maintain copies of selected NEMO and QRWA brochures in Town Hall and water quality literature in the Town Library. Rotate brochure content semi-annually.	Environmental Planner	x	x	x	x	x
	2. Evaluate feasibility of updating Town's website to include links to stormwater related sites.	Town Engineer	x	x	x	x	x
	3. Coordinate with local schools to promote use of educational programs offered by Whitney Water Center.	Town Engineer	x	x	x	x	x
	4. Assess feasibility of mailing stormwater-related education materials with tax bills.	Town Engineer	x	x	x	x	x
	5. Based on the outcome of Goal A.4., send materials with tax bills.	Town Engineer	x	x	x	x	x
	6. Post notifications of education programs offered by the Southwest Conservation District at the Town Hall.	Environmental Planner	x	x	x	x	x
	7. Assess feasibility of having the Town's Environment Commission coordinate the Town's public education program.	Environmental Planner	x	x	x	x	x
	8. Place copies of "Caring for Your Septic System" in the Planning Department for free distribution.	Environmental Planner	x	x	x	x	x
	9. Establish contact with QRWA and identify avenues Town staff can use to provide public notice of QRWA activities.	Environmental Planner	x	x	x	x	x
	10 Participate in RWA Hazardous Waste collection	Public Works Director	x	x	x	x	x
	11. Run electronic recycling event	Public Works Director	x	x	x	x	x
	12. Run mattress recycling event	Public Works Director	x	x	x	x	x
B. Educate industries of the need for proper stormwater management	1. Develop mailing list of local industries.	Town Engineer with Chamber of Commerce	x	x	x	x	x
	2. Develop or identify from other source(s) education materials targeted to industries, with at least one material being targeted to agricultural uses or bedding plant growers.	Town Engineer	x	x	x	x	x
	3. Mail materials identified in Goal B.2. to list of local industries developed in Goal B.1.	Town Engineer	x	x	x	x	x
	4. Provide notice of need for CT DEEP's General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities to developers and engineers.	Environmental Planner	x	x	x	x	x
	5. Send letter to local dentists to ensure compliance with mercury removal equipment.	Town Engineer	x				
C. Educate municipal officials and land use commissions on proper SW management	1. Coordinate one NEMO or Southwest Conservation district or knowledgeable technical staff to present to Town staff and land use commissions.	Town Planner	x	x	x	x	x

(2) Public Involvement and Participation

This minimum control measure identifies the process for public involvement and participation in the Town's stormwater management efforts.

Goals:

- Involve the community in planning and implementing the Town's stormwater management activities.
- Provide a minimum 30-day notice to the public for this plan and annual reports.

2.1 Comply with public notice requirements for the Stormwater Management Plan and Annual Reports

Cheshire will publish a public notice regarding its Stormwater Management Plan and associated Annual Reports on the Town website (www.CheshireCT.org) and in the Cheshire *Herald*, the local newspaper. The notice will provide a contact name, phone number, address, and email to whom the public can send comments. Additionally, this plan and the Annual Reports will be publicly accessible on the web (www.CheshireCT.org) and on file at the Town Engineer's office. The public notice will allow for a 30-day comment period, at a minimum.

2.2 Public Involvement and Participation schedule

Minimum Control Measure								
Public Involvement/Participation Plan								
Best Management Practice	**Measurable Goals**	**Responsible Party**	**Year**					
			'17	**'18**	**'19**	**'20**	**'21**
A. Allow public participation in developing and reviewing the stormwater management plan	1. Place draft copy of plan in Town Engineer's Office on or before April 1, 2017	Town Engineer	x				
	2. Place draft copy of annual report at Town Engineer's Office on or before December 1 yearly	Town Engineer	x	x	x	x	x
	3. Provide notice to the QRWA that the draft plan is available for public comment.	Town Engineer	x				
B. Involve the public in watershed activities	1. Update Town's website to include links to stormwater related sites	Environmental Planner	x	x	x	x	x
	2. Identify opportunities with QRWA	Town Engineer	x	x	x	x	x

(3) Illicit Discharge Detection and Elimination

This minimum control measure outlines a program to detect and eliminate current illicit discharges to the MS4 and prevent further illicit discharges in the future. All activities for this measure will be completed in Cheshire's priority areas (urbanized area, catchment areas with directly connected impervious area (DCIA) > 11%, and outfalls that discharge to impaired waters).

Goal:

Find the source of any illicit discharges; eliminate those illicit discharges; and ensure ongoing screening and tracking to prevent and eliminate future illicit discharges.

3.1 Develop written IDDE plan

Cheshire will develop a written IDDE plan to detect, locate and eliminate illicit discharges (to the maximum extent practicable) from the MS4 within Cheshire's priority areas. The IDDE plan will provide enforceable legal authority to eliminate illicit discharges, assign responsibilities, and develop a citizen reporting program. The plan will also outline the outfall screening and IDDE protocols consistent with Appendix B of the MS4 General Permit to identify, prioritize, and investigate MS4 catchments for suspected illicit discharge of pollutants. Also, the IDDE plan will outline follow-up screening and illicit discharge prevention procedures.

Illicit discharges consist of anything besides stormwater that is discharged to an MS4 other than NPDES-permitted industrial sources, or as a result of and firefighting.

They include:

Sanitary wastewater
Car wash wastewaters
Radiator flushing disposal
Spills from roadway accidents
Effluent from septic tanks
Improper oil disposal
Laundry wastewaters
Improper disposal of auto and household toxics

They exclude:

Water line flushing
Diverted Stream Flows
Uncontaminated Groundwater infiltration
Discharges from potable water sources
Air Conditioning condensation
Sump pumps
Street sweeping water
Irrigation and lawn watering
Rising Ground Water
Uncontaminated pumped groundwater
Footing and foundation Drains
Springs
Individual residential car washing
Dechlorinated swimming pool

3.2 Develop list and map of all MS4 outfalls and interconnections in priority areas

Cheshire will complete a GIS database of all stormwater discharges from a pipe or conduit located within and owned or operated by the municipality and all interconnections with other MS4s. Each entry will include:

a. Type, material, size, shape and location (identified with a latitude and longitude) of conveyance, outfall or channelized flow (e.g. 24" concrete pipe);
b. the name, water body ID and Surface Water Quality Classification of the immediate surface waterbody or wetland to which the stormwater runoff discharges;
c. if the outfall does not discharge directly to a named waterbody, the name and water body ID of the nearest named waterbody to which the outfall eventually discharges;
d. the name of the watershed, including the subregional drainage basin number (available from CT ECO at www.cteco.uconn.edu) in which the discharge is located;
e. date of most recent inspection of the outfall, the condition, and any indicators of potential non-stormwater discharges as of most recent inspection;

The database will be exported into Excel format for annual reports.

While the Town currently has well-developed sanitary and storm system GIS layers that are a result of aerial mapping and the digital conversion of over 1,200 office maps, over the next two years the Town plans to visually inspect the existing 800 known outfalls (in addition to other unmapped discharges encountered) to inspect, photograph, and complete useful data fields. Once completed and verified, the storm layer will be made visible on the Town's public GIS map to increase public awareness.

During the course of these inspections the water quality of these discharges will be empirically assessed by the presence or absence of an oily sheen, discoloration, suds, high-levels of turbidity, or odors. Should any of these conditions be encountered they will be traced to their source, and the DEEP Oil & Chemical Spill Unit, Fire Department, and/or Cheshire Inland Wetlands Officer shall be notified for enforcement action as the Public Works and Engineering Department does not have regulatory authority or trespass rights. In addition, should problematic erosion or sedimentation conditions be identified on public property or within Town easements a maintenance notification form shall be submitted to the Inland Wetlands Commission, and a work order issued to the Department of Public Works Highway Superintendent to remedy the deficiency. Of special note will be in areas where there are potential for industrial discharges, and failing septic systems that may discharge sediment or bacteria to impaired waterways. In the case of failing septic systems, the local health district, Chesprocott, will be notified as they have jurisdiction over septic systems.

3.3 Develop citizen reporting program

Cheshire has an established complaint tracking system (IWORQ) that allows for citizen reporting of suspected dumping or illicit discharges into the stormwater system. The system includes email address and phone number fields for staff follow-up when investigating said reports. Cheshire will affirmatively investigate and eliminate any illicit discharges for which a time and location of discharge are provided. Cheshire will promptly inspect the reported outfall or manhole and proceed according to the requirements of the written IDDE program. All citizen reports and responses will be included in Cheshire's annual report.

3.4 Establish legal authority to prohibit illicit discharges

Cheshire will review and update the necessary and enforceable legal authority by statute, ordinance, rules and regulations, permit, easement, contract, order or any other means, to eliminate illicit discharges. This will be accomplished no later than July 1, 2018. The authority will:

a. *prohibit illicit discharges to its storm sewer system and require removal of such discharges consistent with the deadlines outlined in the MS4 general; and*
b. *authorize the investigation of suspected illicit discharges and elimination of illicit discharge, including from properties not owned or controlled by the MS4 that discharge to the MS4*
c. *control the discharge of spills and prohibit the dumping or disposal of materials including, but not limited to, residential, industrial and commercial wastes, trash, used motor vehicle fluids, pesticides, fertilizers, food preparation waste, leaf litter, grass clippings, and animal wastes into its MS4; and*
d. *authorize appropriate enforcement procedures and actions;*
e. *authorize fines or penalties and/or recoup costs incurred by the permittee from anyone creating an illicit discharge or spilling or dumping.*

3.5 Develop record-keeping system for IDDE tracking

Routine Inspection and Maintenance of Storm Water system:
As part of the Town's MS4 plan the Public Works Department will be inspecting and cleaning catch basins and other facilities on a routine basis. During each inspection staff and the contractor will be advised to check for private discharge pipes that should not be present as part of the mapped drainage system. A notation in an electronic log will call out the presence of any pipes 6" in diameter or less to help build the data base for future investigations, and to note if there is any sheen, odor or other possible contaminant in the structure being cleaned, which will be promptly reported to the Town Engineer.

Complaint-driven investigations:
The Public Works Department will continue to log and investigate complaints of illicit discharges through the IWorQ work order system by establishing a new illicit discharge field (instead of using the current miscellaneous category) for this infrequent yet important complaint. Email addresses for staff outside the Public Works Department, including the Environmental Planner, Assistant Zoning & Wetlands Officer, DEEP Oil & Chemical Response Agency, and Fire Chief will be added into the work order distribution contact list for ease of notification.

In the event that a complaint is received for the dewatering of a swimming pool into the street or directly into a drainage structure, the PW department will purchase a test kit to keep in its vehicle and will check the pH and chlorine residual of the effluent to determine whether or not the discharge is illicit. If illicit, the owner and Environmental Planner will be notified, and the outlet location will be inspected for any signs of damage to the environment. If damage is suspected, CT DEEP Spills Unit will be informed.

Motor vehicle accident response:
The Fire Department will continue to respond to all vehicular accidents and related oil and chemical leaks. The Town will ensure that they are provided with sufficient absorbent material and booms as first responders. Standard protocol is for the Fire Department to notify the DEEP Oil & Chemical Spills Unit if

the leaked fluids are beyond their capability to address, or if the liquids manage to enter a storm drain or watercourse. If so, it has been the policy of the CT DEEP to hire a private contractor to do the cleanup.

Cheshire will keep a record of illicit discharge abatement activities including location (including latitude and longitude or address), description, date(s) of inspection, sampling data (if applicable), action(s) taken, date of removal or repair and responsible party.

In addition, Cheshire will develop and maintain a Sewer System Overflow (SSO) inventory that records the location, date and time of occurrence, estimated volume of discharge, a description of known or suspected cause, and details about mitigating measures including dates of implementation. Since Cheshire has a relatively new sanitary sewer system, that does not contain any combined storm-sanitary sewers, there have been very few SSO incidents in the past.

This inventory will also:

- include all known SSOs to their MS4 in the past 5 years (July 1, 2012 – June 30, 2017);
- continue to be updated to track future SSOs; and
- be included in Annual Reports.

3.6 Address IDDE in areas with pollutants of concern

Cheshire will identify which areas in town are most likely to contribute nitrogen, phosphorus, and bacteria to the MS4. This assessment will consider: historic on-site sanitary system failures, proximity to bacterial impaired waters, low infiltrative soils, and shallow groundwater. Any areas determined to have a high potential for septic system failure will be reported to Chesprocott for corrective action. Currently, Chesprocott notifies Cheshire monthly, through our Water Pollution Control Department of failures and corrective actions taken to septic systems throughout the town (See Appendix D).

Cheshire will update its GIS mapping to illustrate where these failures have occurred, and the need for more intense investigation and sampling in areas exhibiting higher than normal failure rates.

In addition, Cheshire had a Sanitary Sewer System Facilities Plan Update conducted in 2008-2010, and historical septic system failures are depicted in Figure 5-2 of that report.

3.7 Detailed MS4 infrastructure mapping

Cheshire will prepare an updated map of the MS4 to include:

- Components of the MS4 within priority areas:
- Outfalls & receiving waters;
- Pipes; open channel conveyances; catch basins; manholes;
- Interconnections with other MS4s and other storm sewer systems;
- Municipally-owned stormwater treatment structures (e.g. detention & retention ponds, infiltration systems, bioretention areas, water quality swales, gross particle separators, oil/water separators, or other systems);

- Catchment delineations for each outfall;
- Impaired water bodies identified by name and use impairment as defined by the most recent integrated water quality report;
- Municipal sanitary sewer system
- Municipal combined sewer system –none currently exist

Cheshire will update the map as new information becomes available and will report on the progress of the development of this map in the annual report.

Minimum Control Measure			
Illicit Discharge Detection and Elimination Schedule			
BMP	**Lead department / individual**	**Month / year of implementation**	**Measurable goal**
Develop written IDDE program	Town Engineer	July 1, 2018	Report
Develop list and maps of all MS4 stormwater outfalls in priority areas	Town Engineer	July 1, 2019	GIS Map Layer
Develop citizen reporting program	Town Engineer	July 1, 2018	IWorQ
Establish legal authority to prohibit illicit discharges	Town Engineer	July 1, 2018	Revised Sewer Regulations
Develop record keeping system for IDDE tracking	Town Engineer	July 1, 2017	Component of IWorQ
Address IDDE in areas with pollutants of concern	Town Engineer	July 1, 2017	Sampling
Detailed MS4 infrastructure mapping	Town Engineer	July 1, 2020	GIS Map Layer
Complete list and maps of all MS4 stormwater outfalls throughout municipality	Town Engineer	July 1, 2022	GIS Map Layer

(4) Construction Site Stormwater Runoff Control

This minimum control measure outlines procedures for minimizing polluted stormwater runoff from activities that disturb one or more acres of land. In Cheshire, this is determined by the Planning and Zoning Commission as part of their Subdivision Regulations.

Goal:

Minimize polluted stormwater runoff from construction sites and prevent it from carrying sediment into waterways via MS4 infrastructure.

4.1 Implement, upgrade and enforce land use regulations to meet requirements of MS4 general permit

Cheshire already has strong Planning and Zoning and Subdivision Regulations that address most of the requirements related to stormwater runoff control. Cheshire will review and where necessary revise its land use regulations to establish the legal authority to control stormwater runoff from construction sites by requiring:

a. developers, construction site operators, or contractors maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the Connecticut Stormwater Quality Manual, and all stormwater discharge permits issued by the DEEP within the municipal or institutional boundary pursuant to CGS 22a-430 and 22a-430b;
b. the implementation of additional measures to protect/improve water quality (in addition to the above requirements) as deemed necessary by Cheshire.
c. Cheshire is authorized to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with municipal regulations, ordinances or programs or institutional requirements related to the management of Cheshire's MS4. Inspections shall be conducted, where allowed, to inventory the number of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive drainage from the permittee's MS4;
d. the owner of a site seeking development approval from Cheshire shall provide and comply with a long term maintenance plan and schedule to ensure the performance and pollutant removal efficiency of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive discharge from Cheshire's MS4 including short-term and long-term inspection and maintenance measures to be implemented by the private owner; and
e. Cheshire will endeavor to control, through interagency or inter-jurisdictional agreements, the contribution of pollutants between the permittee's MS4 and MS4s owned or operated by others.

4.2 Develop and implement plan for interdepartmental coordination of site plan review and approval

Cheshire's plan to coordinate the functions of all the departments and boards involved in the review, permitting, or approval of land disturbance projects is as follows:

Cheshire's Planning and Zoning Department currently coordinates the review of site plans with all affected Town departments. This includes Inland/Wetlands, Engineering, Fire, and Police.

4.3 Review site plans for stormwater quality concerns

Cheshire will conduct site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality on sites with soil disturbance of one acre or more. The Engineering Department's review of these plans is in accordance with the regulations and guidelines included in Appendix E.

Cheshire will also conduct site inspections to assess the adequacy of the installation, maintenance, operation, and repair of construction and post construction control measures and take enforcement action when necessary. New building permit application and certificate of occupancy endorsement protocols to be established via regulation, and enforced through an electronic building permit tracking system are currently under study could bring the Engineering Department into the process of reviewing plans and drainage calculations for proposed site developments prior to building permit issuance and clarify who has authority and is responsible for enforcing soil erosion and sediment controls and drainage facilities on private properties.

4.4 Conduct site inspections

During the course of routine inspections pertaining to the construction of public improvements, Engineering Department personal shall note the lack of proper soil erosion and sediment control measures and related discharges of turbid waters in person or via email or other electronic report to the developer and Planning and Zoning Officer for correction. For similar problems relating to development activities on private properties and accepted streets the matter will be referred to the Zoning Enforcement Officer for enforcement of the provisions of the CT Guidelines for Soil Erosion and Sediment Control Handbook and the approved site plans unless and until broader enforcement authority expressly permits joint action.

4.5 Implement procedure to allow public comment on site development

Cheshire's procedure for public involvement in proposed and ongoing development and land disturbance activities is as follows:

- Information submitted to the Planning and Zoning Commission by the public is evaluated for a jurisdictional authority and also forwarded to the Public Works Department within the town for consideration.

- Information related to construction site runoff is forwarded to the Zoning Enforcement Officer, Environmental Planner, and Director of Public Works and a multi-faceted response is determined.

4.6 Implement procedure to notify developers about DEEP construction stormwater permit

Cheshire will notify developers and contractors of their potential obligation to obtain authorization under DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (construction general permit) if their project disturbs more than 1 acre of land and results in a point source discharge to Connecticut surface waters directly or through the Cheshire MS4. Cheshire will also require a copy of the Storm Water Pollution Control Plan be made available to the town on request. The procedure to notify developers of the construction general permit is as follows:

Through the addition of standard language to all P & Z approvals Cheshire will inform developers that they have a potential obligation to obtain authorization under the DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities ("construction general permit") if their development or redevelopment project disturbs one or more acres of land, either individually or collectively, as part of a larger common plan, and results in a point source discharge to the surface waters of the state directly or through the permittee's MS4. The notification shall include a provision informing the developer/ contractor of their obligation to provide a copy of the Storm Water Pollution Control Plan (required by the construction general permit) to the permittee upon request.

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

Minimum Control Measure			
Construction site stormwater management schedule			
BMP	**Lead department / individual**	**Month / year of implementation**	**Measurable goal**
Implement, upgrade and enforce land use regulations to meeting MS4 permit requirements	Town Planner	July 1, 2019	Revised LUR
Develop/implement plan for interdepartmental coordination in site plan review and approval	Town Planner	July 1, 2017	Exists (review and improve)
Review site plans for stormwater quality concerns	Town Engineer	July 1, 2017	Exists (continue and improve)
Conduct site inspections	Town Engineer/ZEO	July 1, 2017	Exists (continue and improve)
Implement procedure to allow public comment on site development	Town Planner	July 1, 2017	Exists
Implement procedure to notify developers about DEEP construction stormwater permit	Town Planner	July 1, 2017	Written notification

(5) Post-construction Stormwater Management in New Development or Redevelopment

This minimum control measure outlines Cheshire's program to address stormwater runoff from new or re-development projects that disturb one or more acres of land.

Goal:

Mitigate the long-term impacts of new and re-development projects on water quality through proper use of low impact development and runoff reduction practices.

5.1 Establish legal authority and update guidelines regarding LID and runoff reduction in site development planning

Cheshire will establish the legal authority by ordinance, bylaw, regulation, standard condition of approval, or other means to require developers and contractors seeking the town's approval to consider the use of low impact development (LID) and runoff reduction site planning and development practices that meet or exceed those LID and runoff reduction practices in the CT Stormwater Quality Manual prior to other stormwater management practices allowed in Cheshire's land use regulations, guidance or construction project requirements.

This legal authority will include the following standards:

1) for redevelopment of sites that are currently developed with Directly Connected Impervious Area (DCIA) of forty percent or more, the project must retain on-site half the water quality volume for the site, or
2) for new development and redevelopment of sites with less than forty percent DCIA, retain the water quality volume for the site, or
3) if those retention standards cannot be met, the developer will be required to provide a report indicating why the standard could not be met and a mitigation project on another property or pay a fee to fund a DCIA retrofit.

In developing this legal authority, Cheshire will consider the following watershed protection elements to manage the impacts of stormwater on receiving waters:

a. Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each municipality by minimizing the creation, extension, and widening of parking lots, roads, and associated development and encourage the use of Low Impact Development or green infrastructure practices.
b. Preserve, protect, create and restore ecologically sensitive areas that provide water quality benefits and serve critical watershed functions. These areas may include, but are not limited to; riparian corridors, headwaters, floodplains and wetlands.

c. Implement stormwater management practices that prevent or reduce thermal impacts to streams, including requiring vegetated buffers along waterways, and disconnecting discharges to surface waters from impervious surfaces such as parking lots.
d. Seek to avoid or prevent hydromodification of streams and other water bodies caused by development, including roads, highways, and bridges.
e. Implement standards to protect trees, and other vegetation with important evapotranspirative qualities.
f. Implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils.
g. Coordinate with state or local health officials to ensure no interference with performance of on-site septic systems.
h. Limit turf areas.

In addition, Cheshire will review its current regulations - site planning requirements, zoning regulations, street design regulations, and infrastructure specifications with minimum size criteria for impervious cover (roads, parking lots, etc.) to identify and, where appropriate, reduce or eliminate existing regulatory barriers to implementation of LID and runoff reduction practices.

The NVCOG has developed an assessment of Cheshire's local regulations (see Appendix F). This will be used as a guidance document for this effort. In addition, the Town Planning and Zoning Office is currently reviewing amendments to their regulations to both define Low Impact Development and to require it's use specifically in Industrial zones, but also in other zones throughout town.

5.2 Implement long-term maintenance plan for stormwater basins and treatment structures

Cheshire currently maintains a list of stormwater basins and treatment structures that it is in charge of maintaining. In addition, for newer developments the Town has made it a requirement that the Homeowners Association or other legal entity be responsible for maintaining these items. A list exists of those areas needing long term maintenance and the list will be updated as needed.

Cheshire will develop a maintenance plan for retention / detention ponds and stormwater treatment structures that it owns or over which it holds an easement or other authority and that are located in the town's priority areas to ensure their long-term effectiveness. This plan will require an annual inspection of those retention / detention ponds and stormwater treatment structures and removal of accumulated sediment and pollutants in excess of 50% design capacity.

5.3 Directly Connected Impervious Area (DCIA) mapping

Cheshire will follow guidance provided by CT DEEP and UConn CLEAR to calculate the Directly Connected Impervious Area (DCIA) that contributes stormwater runoff to each of its MS4 outfalls. Progress on this task will be documented in each Annual Report until completion.

5.4 Address post-construction issues in areas with pollutants of concern

For areas contributing to waters where Nitrogen, Phosphorus or Bacteria is a Stormwater Pollutant of Concern and erosion or sedimentation problems are found during the annual inspections conducted under the long-term maintenance plan described in BMP 5.2, Cheshire will prioritize those areas for the DCIA retrofit program under Minimum Control Measure 6 – Pollution Prevention/Good Housekeeping.

Minimum Control Measure			
Post-construction stormwater management system			
BMP	**Lead department / individual**	**Month / year of implementation**	**Measurable goal**
Establish or update legal authority and guidelines regarding LID and runoff reduction in site development planning	Town Planner	July 1, 2021	Revised regulations
Enforce LID/runoff reduction requirements for development and redevelopment projects	Town Planner	July 1, 2021	Enforcement Log
Implement long-term maintenance plan for stormwater basins and treatment structures	Town Engineer	July 1, 2019	Written plan
Complete DCIA mapping	Town Engineer	July 1, 2020	Mapping
Address post-construction issues in areas with pollutants of concern	Town Engineer	July 1, 2019	IWORQ Log

(6) Pollution Prevention / Good Housekeeping

This minimum control measure outlines a program to mitigate the impact of town operations and maintenance on town owned and/or operated properties and the MS4 itself to water quality.

Goal:

Prevent or reduce pollutant runoff as a result of municipal operations.

Cheshire will implement an operations and maintenance program to prevent or reduce pollutant runoff from town facilities and protect water quality.

6.1 Develop and implement formal employee training program

Cheshire will continue its MS4 training program for town employees to increase awareness of water quality issues. Training will include:

- Standard operating procedures consistent with the MS4 general permit;
- General goals and objectives of this Stormwater Management Plan;
- Identification and reporting of illicit discharges and improper disposal; and
- Spill response protocols and responsibilities.

The Town Engineer will be responsible for this training.

6.2 Implement MS4 property and operations maintenance

Properties, parks, school grounds, and other facilities that are owned, operated, or otherwise the legal responsibility of Cheshire will be maintained so as to minimize the discharge of pollutants to its MS4. Such maintenance will include, but not be limited to:

(i) Parks and open space

Cheshire will optimize the application of fertilizers by municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance. Optimization practices considered may include:

- conducting soil testing and analysis to determine soil phosphorus levels,
- the reduction or elimination of fertilizers; currently the parks and Recreation department only uses organic fertilizers at its facilities;
- reduction of fertilizer usage by adhering to the manufacturers' instructions,
- use of alternative fertilizers forms (i.e. products with reduced, slow-releasing, or insoluble phosphorus compositions),

- proper storage and application practices (i.e. avoid impervious surfaces); Parks and recreation only purchases what is needed for each year and does not maintain significant storage of fertilizers;
- application schedule (i.e. appropriate season or month) and timing (i.e. coordinated with climatic conditions to minimize runoff potential); currently Parks and recreation only applies fertilizers three times per year;
- standard operating practices for the handling, storage, application, and disposal of pesticides and herbicides in compliance with applicable state and federal laws; Parks and recreation does not store any herbicides or pesticides for its playing fields, and in large part neither does the Cheshire School system; Parks and recreation uses over the counter products at town buildings;
- evaluating reduced mowing frequencies and use of alternative landscaping materials like drought resistant and native plantings;
- establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number). Parks and recreation empties its trash barrels at its facilities several times a week in season and then as necessary;

Cheshire will establish practices for the proper disposal of grass clippings and leaves at Cheshire owned lands. Clippings shall be composted or otherwise appropriately disposed and prevented from entering the MS4 system or waters of the state.

(ii) Pet waste management

Cheshire will identify locations where inappropriate pet waste management practices are immediately apparent and pose a threat to receiving water quality due to proximity and potential for direct conveyance of waste to its storm system and waters. In such areas Cheshire will, implement targeted management efforts such as public education and enforcement (e.g. increased patrol for violators).

In Cheshire owned recreational areas where dog walking is allowed, Cheshire will install educational signage, pet waste baggies, and disposal receptacles (or require carry-out). These are already in place at the town owned Dog Park.

Cheshire will document its efforts in its annual reports.

(iii) Waterfowl management

Cheshire will raise awareness regarding the water quality impacts of Waterfowl. Cheshire will install signage or use other targeted techniques to educate the public about the detrimental impacts of feeding waterfowl (including the resulting feces deposition) and discourage such feeding practices.

Cheshire has already implemented practices that discourage the undesirable congregation of waterfowl in Mixville Ponds. A contractor has been hired for close to 10 years at this location to discourage Canadian geese through the use of trained dogs. Parks and recreation also has permits to "addle" eggs and destroy nests to prevent increases in waterfowl populations.

(iv) Cheshire Buildings and facilities (schools under the jurisdiction of Cheshire, town offices, police and fire stations, pools, parking garages and other Cheshire owned or operated buildings or utilities)

Cheshire already has Spill Prevention Plans covering all of its regulated petroleum tanks. These plans will be updated as conditions warrant.

In addition, Cheshire will:

- evaluate the use, storage, and disposal of both petroleum and non-petroleum products and ensure, through employee training, that those responsible for handling these products know proper procedures;
- develop management procedures for dumpsters and other waste management equipment;
- sweep parking lots and keep areas surrounding the facilities clean to minimize runoff of pollutants;
- ensure that all interior building floor drains are not connected to the MS4 and are appropriately permitted.

(v) Vehicles and Equipment

Cheshire will:

- establish procedures for the storage of Cheshire owned or -operated vehicles;
- require vehicles with fluid leaks to be stored indoors or in contained areas until repaired;
- evaluate fueling areas owned by Cheshire and used by Cheshire owned or -operated vehicles and if possible, place fueling areas under cover in order to minimize exposure;
- establish procedures to ensure that vehicle wash waters are not discharged to the municipal storm sewer system or to surface waters (Cheshire maintains a permitted vehicle wash station at the Public Works Garage);
- ensure that interior floor drains are appropriately permitted;
- Minimize the application of organic herbicides and apply only as necessary to control public health hazards.

(vi) Leaf Management

Cheshire will establish and implement procedures to minimize or prevent the deposition of leaves in catch basins, streets, parking lots, driveways, sidewalks or other paved surfaces that discharge to the MS4. Such procedures shall also apply to leaves collected by Cheshire.

Currently, Cheshire collects leaves curb side and delivers them to a private contractor for composting.

6.3 Implement coordination with interconnected MS4s

Cheshire will coordinate with operators of interconnected MS4s (such as neighboring municipalities, institutions, DOC and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control measures in the respective MS4s. This same coordination shall be conducted regarding operation and maintenance procedures utilized in the respective systems.

6.4 Develop and implement a program to control other sources of pollutants to the MS4

Cheshire will evaluate the need and extent of a program to control the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by a CT DEEP stormwater permit.

6.5 Evaluate additional measures for discharges to impaired waters

(i) For waters for which Nitrogen or Phosphorus is a Stormwater Pollutant of Concern:

On Cheshire owned or operated lands, Cheshire will implement a turf management practices and procedures policy which includes, but is not limited to, procedures for proper fertilizer application and the planting of native plant materials to lessen the amount of turf area requiring mowing and the application of chemicals. Each Annual Report will discuss the actions taken to implement this policy with an estimate of fertilizer and turf reduction.

(ii) For waters for which Bacteria is a Stormwater Pollutant of Concern:

On Cheshire owned or operated lands with a high potential to contribute bacteria (such as dog parks, parks with open water, sites with failing septic systems), Cheshire will develop, fund, implement, and prioritize a retrofit or source management program to correct the problem(s) within a specific timeframe. Each Annual Report will identify problem areas for which a retrofit or source management program were developed, the location of the closest outfall monitored in accordance with Section 6(*i*), the cost of such retrofit or program, and the anticipated pollutant reduction. On Cheshire owned or operated lands, prohibit the feeding of geese or waterfowl and implement a program to manage geese and waterfowl populations. Each Annual Report will discuss the actions taken to implement this program.

6.6 Track projects that disconnect from the DCIA

Cheshire will annually track the total acreage of Directly Connected Impervious Area (DCIA) that is disconnected from the MS4 as a result of redevelopment or retrofit projects within the town. For each retrofit/redevelopment project, Cheshire will document the amount of existing DCIA that is disconnected. The total amount of disconnected DCIA will be reported each year in the Annual Report. Starting on July 1, 2021, Cheshire's goal will be to reduce 1% of its total DCIA acreage per year to the maximum extent possible. Cheshire will provide updates on this goal in its annual report. In its 2017 Annual report, Cheshire will also incorporate all DCIA disconnections which occurred in the town since July 1, 2012 towards meeting this goal.

6.7 Develop and implement an infrastructure repair, rehabilitation and retrofit program

Cheshire will continue a program to identify MS4 structures to repair, rehabilitate, or upgrade to reduce or eliminate the discharge of pollutants into water bodies. This program will be responsive to new information on outfalls discharging pollutants, impaired waters, inspections, or observations made during outfall mapping under the IDDE section of this plan.

6.8 Develop and implement plan to identify and prioritize retrofit projects

Cheshire will develop a Retrofit Project Plan to identify and prioritize potential DCIA disconnection projects. Prioritization will be based on several factors, including whether the project lies within one of the MS4 priority areas (urbanized area, DCIA > 11%, discharge to impaired waters). Cheshire will include in its annual report, starting in the third year of the permit (2020-2021), its identification and prioritization process, a rationale for the selection of projects to be implemented, and the total acres of DCIA to be disconnected upon implementation. The implementation of projects in this plan will begin by June 30, 2022.

6.9 Develop and implement street sweeping program

Cheshire owns a street sweeper and provides annual sweeping of all town roads.

All streets and parking lots within the MS4 Priority Areas will be inspected, swept and/or cleaned (as necessary) at least once per year in the spring following the cessation of winter maintenance activities (i.e. sanding, deicing, etc.). The procedures shall also include more frequent inspections, cleaning and/or sweeping of targeted areas determined by Cheshire to have increased pollutant potential based on the presence of active construction activity or other potential pollutant sources. Cheshire will identify such potential pollutant sources based upon surface inspections, catch basin cleaning or inspection results, land use, winter road deicing and/or sand application, impaired or TMDL waters or other relevant factors as determined by Cheshire. If wet dust suppression is conducted, the use of water will be minimized such that a discharge of excess water to surface waters and/or the storm sewer system does not occur.

For streets and parking lots outside the MS4 Priority Areas, including any rural uncurbed streets and parking lots with no catch basins, Cheshire will either meet the minimum frequencies above, or develop and implement an inspection, documentation and targeted sweeping and/or cleaning plan for those areas by June 30, 2018 and submit such plan with its year one Annual Report. For new and redeveloped municipal parking lots, Cheshire will evaluate options for reducing stormwater runoff to surface waters and/or the storm sewer system to promote sheet flow of stormwater.

Cheshire will ensure the proper disposal of street sweepings in accordance with DEEP policies, guidance and regulations. Sweepings shall not be discharged back into the storm drain system and/or surface waters.

Cheshire will document results of its sweeping program in its annual reports including: a summary of inspection results, curb miles swept, dates of cleaning, estimated volume or mass of material collected,

and method(s) of reuse or disposal. Cheshire will also include documentation of any alternate sweeping plan for rural uncurbed streets and any runoff reduction measures implemented.

6.10 Develop and implement catch basin cleaning program

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

a. Inspect all Cheshire owned catch basins within MS4 Priority Areas at least once by June 30, 2020. Catch basins outside the MS4 Priority Areas shall be inspected by June 30, 2022.

b. Prioritize inspection and maintenance for Cheshire owned catch basins located near impaired waters and construction activities (roadway construction, residential, commercial, or industrial development or redevelopment.) Cheshire will clean catch basins in such areas more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.

c. Establish a schedule such that the frequency of routine cleaning will ensure that no catch basin at any time will be more than fifty (50) percent full. A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.

d. If a catch basin sump is more than fifty (50) percent full during two consecutive routine inspections/cleaning events, Cheshire will document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the maximum extent practicable, abate contributing factors. Cheshire will describe any actions taken in its Annual Report.

e. Cheshire will detail its plan for optimizing catch basin cleaning, inspection plans, and its schedule for gathering information to develop the optimization plan in its first annual report. Documentation shall include metrics and other information used to reach the determination that the established plan for cleaning and maintenance is optimal for the MS4. Cheshire will keep a log of catch basins cleaned or inspected on its GIS system.

f. Cheshire will report in each Annual Report the total number of catch basins, number inspected, number cleaned, the total volume or mass of material removed from all catch basins and, if practicable, the volume or mass of material removed from each catch basin draining to water quality limited waters.

6.11 Develop and implement snow management practices

(i) Deicing Material Management

Cheshire will develop and implement standard operating practices for the use, handling, storage, application, and disposal of deicing products such as salt and sand to minimize exposure to stormwater; consider means to minimize the use and optimize the application of chloride-based or other salts or deicing product (while maintaining public safety) and consider opportunities for use of alternative materials.

For any exterior containers of liquid deicing materials installed after July 1, 2017, Cheshire will provide secondary containment of at least 110% of the largest container or 10% of the total volume of all containers, whichever is larger, without overflow from the containment area. This containment system has been in place at the Town garage since 2016.

(ii) Snow and Ice Control Practices

Cheshire will implement and refine its standard operating practices regarding its snow and ice control to minimize the discharge of sand, anti-icing or de-icing chemicals and other pollutants while maintaining public safety.

Cheshire will establish goals for the optimization of sand and/or chemical application rates through the use, where practicable, of automated application equipment (e.g. zero-velocity spreaders), anti-icing and pre-wetting techniques, implementation of pavement management systems, and alternate chemicals.

Cheshire will maintain records of the application of sand, anti-icing and/or de-icing chemicals to document the reduction of chemicals to meet established goals. Cheshire will ensure the proper training for deicing applications for municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance.

Cheshire will review Disposal of Snow Accumulations from Roadways and Parking Lots, revised 2/4/11 and as amended (see link at: www.ct.gov/deep/stormwater) for additional guidance and best practices.

In its Annual Report, Cheshire will document results of its snow removal program including, at a minimum: the type of staff training conducted on application methods and equipment, type(s) of deicing materials used; lane-miles treated; total amount of each deicing material used; type(s) of deicing equipment used; any changes in deicing practices (and the reasons for the change); and snow disposal methods.

Minimum Control Measure			
Pollution prevention/good housekeeping schedule			
BMP	**Lead department / individual**	**Month / year of implementation**	**Measurable goal**
Develop/implement formal employee training program	Public Works Director	July 1, 2018	Training Document
Implement MS4 property and operations maintenance	Public Works Director	July 1, 2018	Annual Report
Implement coordination with interconnected MS4s	Public Works Director	July 1, 2017	Annual Report
Develop/implement program to control other sources of pollutants to MS4	Town Engineer	July 1, 2018	Program
Evaluate additional measures for discharges to impaired waters	Town Engineer	July 1, 2018	Annual Report
Track projects the disconnect DCIA	Town Engineer	July 1, 2017	Annual Report
Develop/implement infrastructure repair/rehab program	Public Works Director	July 1, 2017	Program
Develop/implement plan to identify/prioritize retrofit projects	Public Works Director	July 1, 2020	Annual Report
Develop/implement street sweeping program	Public Works Director	July 1, 2017	Annual Report
Develop/implement catch basin cleaning program	Public Works Director	July 1, 2017	Annual Report
Develop/implement snow management practices	Public Works Director	July 1, 2017	Annual Report

Stormwater Management Plan Signature

Michael A. Milone, Cheshire Town Manager

Date

Stormwater Management Plan Engineering Certification

I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, submitted to the Commissioner by the Town of Cheshire for an activity located at or within the Town of Cheshire and that all terms and conditions of the general permit are being met for all discharges which have been created, initiated or maintained and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(b)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes, as amended by Public Act 12-172. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law.

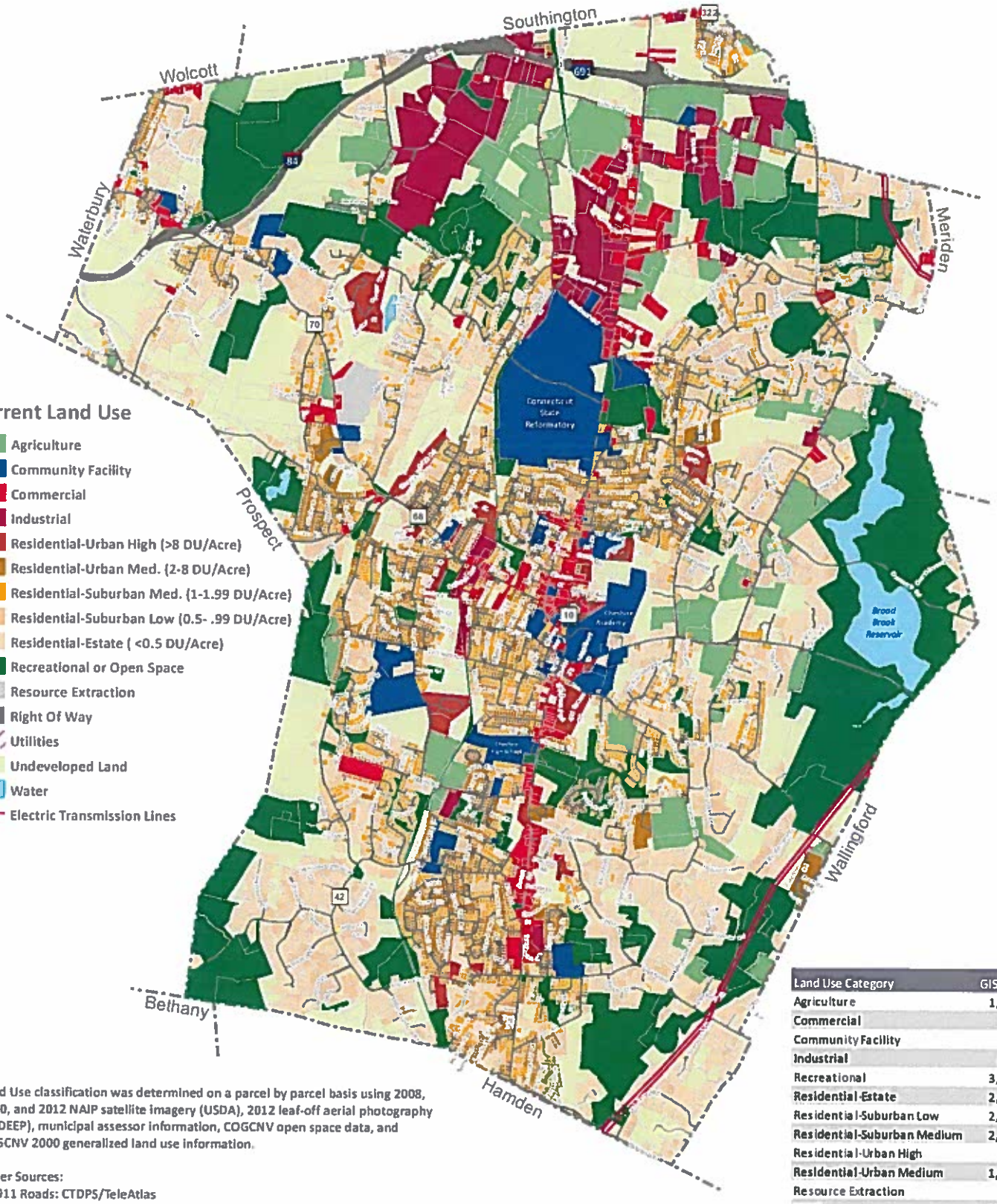
Walter J. Gancarz, P.E.
Town Engineer/Operations Manager
Town of Cheshire

Date

P. E. Seal

Cheshire Land Use 2012

Figure 1



Land Use Category	GIS Acres	Percent
Agriculture	1,306.8	6.2%
Commercial	569.6	2.7%
Community Facility	909.4	4.3%
Industrial	809.5	3.8%
Recreational	3,763.3	17.8%
Residential-Estate	2,658.8	12.6%
Residential-Suburban Low	2,101.9	10.0%
Residential-Suburban Medium	2,171.1	10.3%
Residential-Urban High	309.5	1.5%
Residential-Urban Medium	1,222.1	5.8%
Resource Extraction	62.1	0.3%
ROW	1,381.7	6.5%
Undeveloped	3,518.7	16.7%
Utilities	0.2	0.0%
Water	325.5	1.5%
Totals:	21,110.0	100.0%

Land Use classification was determined on a parcel by parcel basis using 2008, 2010, and 2012 NAIP satellite imagery (USDA), 2012 leaf-off aerial photography (CTDEEP), municipal assessor information, COGCNV open space data, and COGCNV 2000 generalized land use information.

Other Sources:
CT 911 Roads: CTDPS/TeleAtlas
Parcels: New England Geosystems

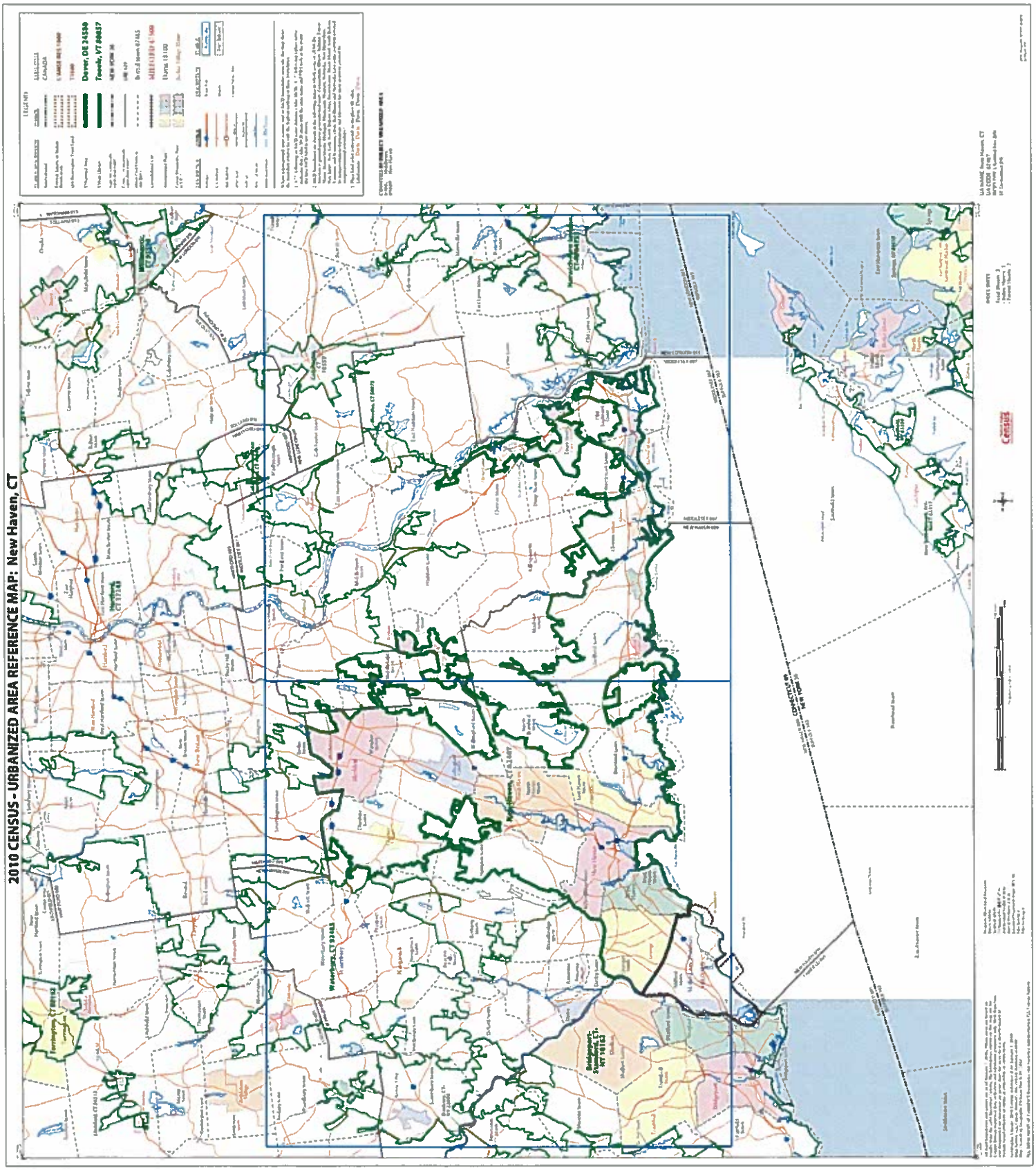
For planning purposes only.
Delineations may not be exact.

0 0.5 1 2 Miles

Revised: 10/21/2013 Document Path: S:\ArcGIS\projects\LandUse\LandUse\Cheshire_LandUse_2012.mxd

COUNCIL of GOVERNMENTS CENTRAL NAUGATUCK VALLEY

Figure 2



CHESHIRE

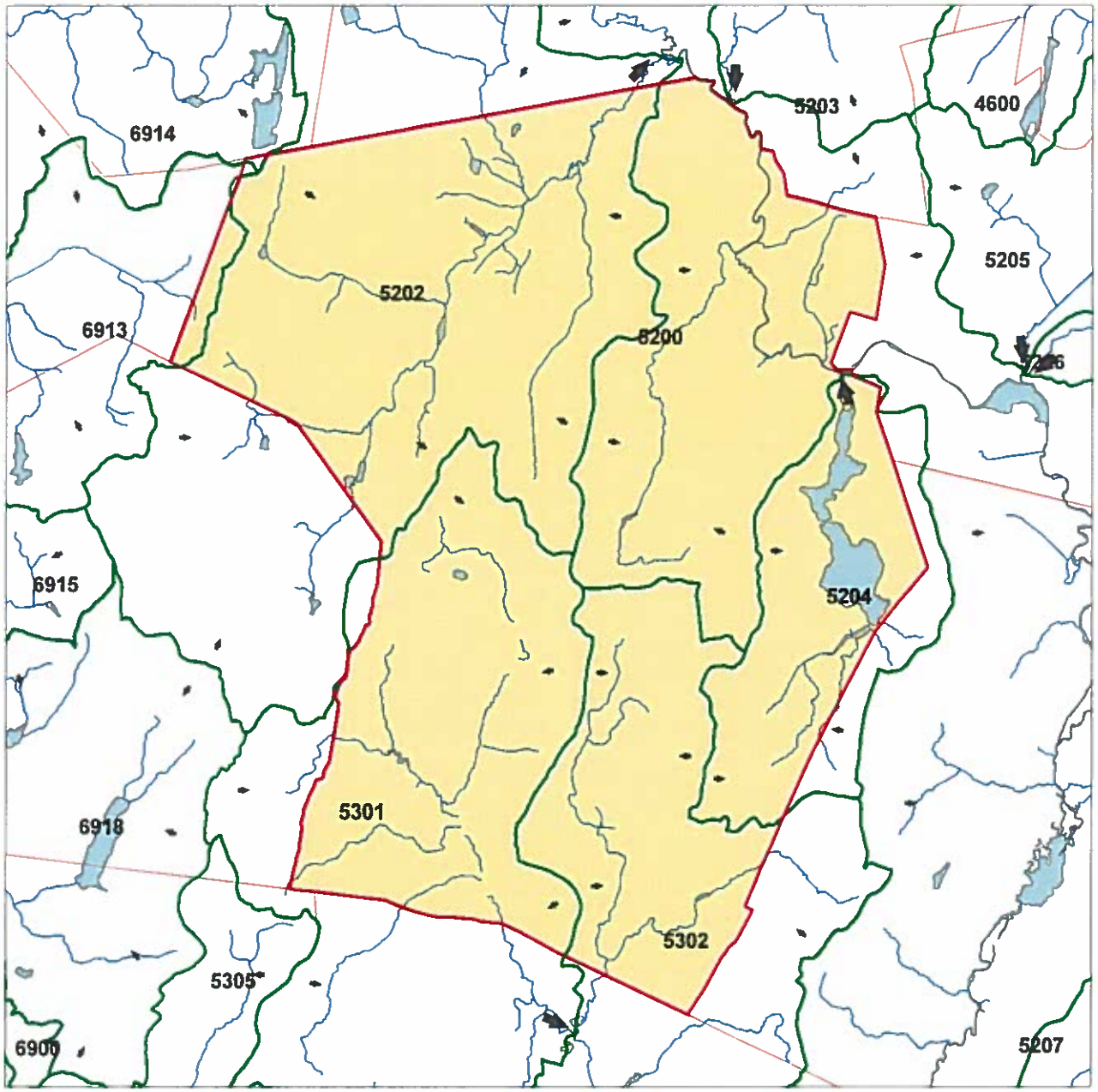
CONNECTICUT SUBREGIONAL BASINS AND SURFACE WATER FLOW DIRECTIONS

Explanation

- Town Boundary
- Subregional Watershed Boundary
- 4201 Subrg. Basin ID# - as designated by CTDEP
- Watercourse / Open Water
- Basin Outlet
- Surface Water Flow Direction

The table provides statistics for each subregional basin. Shown are the areas of the basin within the town, the percentage for that area, and the percent of the town covered by each basin.

Sbas_nc	AcresInTw	Percofbs	Percoftwn
5200	4612.73	9.9	21.8
5202	6621.69	51.1	31.3
5204	2374.35	77.1	11.2
5301	4370.27	52.7	20.6
5302	3006.75	18.5	14.2
6913	170.35	4.8	0.8
6914	7.90	0.1	0.0



Town Area: 21164 Acres

Digital layers provided by the CTDEP.
Map composed by the NEMO project.
For educational purposes only.

1 0 1 Miles

The University of Connecticut, CES November 01, 1999

Figure 3

AQUIFER PROTECTION AREAS

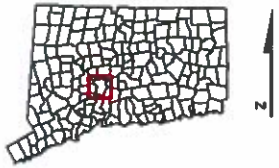
Cheshire, CT

October 6, 2016

- Level A APA (Final Adopted)
- Level A APA (Final)
- Level B APA (Preliminary)
- Town Boundary

NOTE: The Aquifer Protection Areas were delineated through Connecitcut's Level A and Level B Mapping Processes. Aquifer Protection Areas are delineated for active public water supply wells in stratified drift that serve more than 1000 people, in accordance with Sections 22a-354c and 22a-354z of the Connecticut General Statutes. Level B Mapping delineates a preliminary aquifer protection area, providing an estimate of the land area from which the well draws its water. Level A Mapping delineates the final Aquifer Protection Area, which becomes the regulatory boundary for land use controls designed to protect the well from contamination. As Level A Mapping is completed for each well field and approved by DEEP, it replaces the Level B Mapping. Final Adopted Level A Areas are those where towns have land use regulations for them.
Masschusetts and Rhode Island Wellhead Protection Areas may be shown for informational purposes.

QUESTIONS:
Bureau of Water Protection and Land Reuse
Planning and Standards Division
Phone: (860) 424-3020
www.ct.gov/deep/aquiferprotection



STATE OF CONNECTICUT
DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127

Southington
Berlin
Cheshire
Meriden
Prospect
Naugatuck
Bethany
Hamden
Wallingford
North Haven

A 126 Well 7 8 12/17/2009
A 125 Well 2
A 125 Well 2 10/23/2009
A 119 North Cheshire 6/11/2008
A 119 North Cheshire 7/9/2008
A 119 North Cheshire 4/1/2009
A 94 Mule 3/16/2010
A 96 Lincoln-Platt 3/16/2010
A 97 Evansville 3/16/2010
A 139 Oak Street 4/1/2009
A 139 Oak Street 9/13/2005
A 120 South Cheshire 7/9/2008
A 140 North Turnpike 9/13/2005
A 121 North Sleeping Giant 7/9/2008
A 121 North Sleeping Giant 9/17/2008
A 122 South Sleeping Giant 9/17/2008
A 123 Mount Carmel 9/17/2008

Exit 27
Exit 28
Exit 28
Exit 2
Exit 3
Exit 3
Exit 4
Exit 25
Exit 25A
Exit 26
Exit 26
Exit 65
Exit 64
Exit 64

Figure 4

Natural Diversity Data Base Areas

CHESHIRE, CT

December 2016

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division

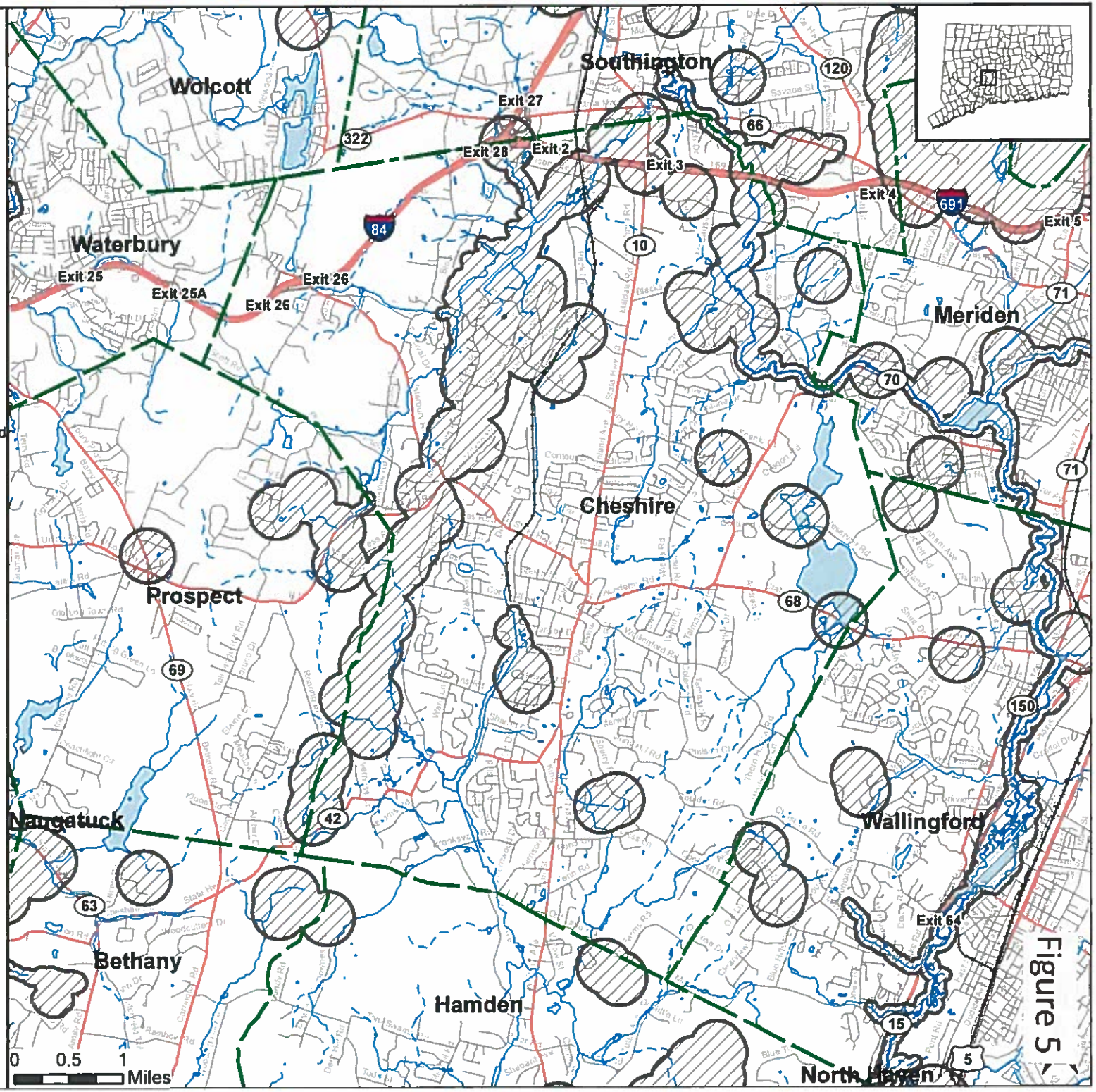
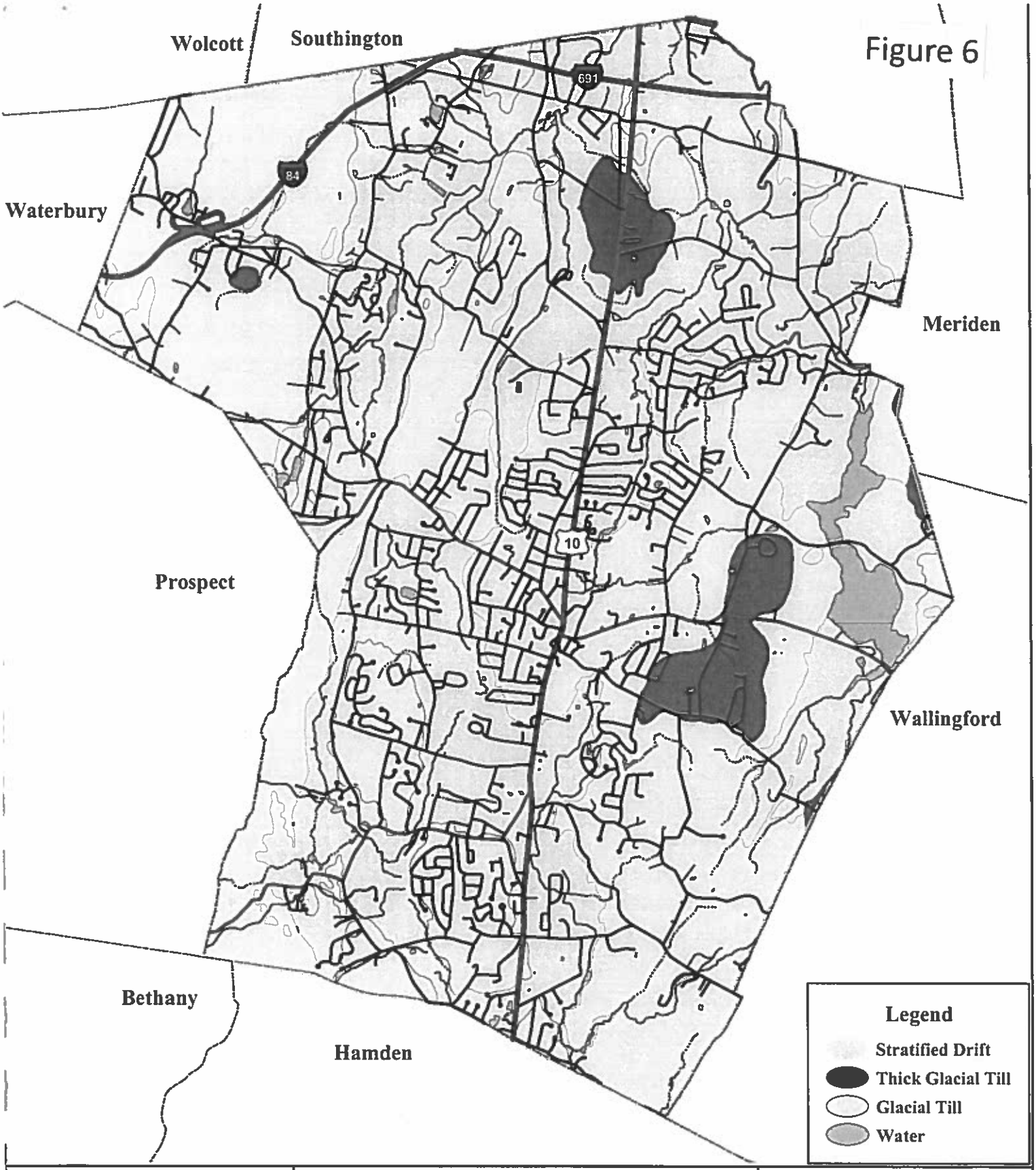


Figure 5

Figure 6



Engineering, Landscape Architecture and Environmental Science MILONE & MACBROOM® 716 South Main Street Cheshire, Connecticut 06410 (203) 271-1773 Fax: (203) 272-9733 www.miloneandmacbroom.com	**Town of Cheshire** **NPDES Permit II** **Stormwater Management Plan**	LOCATION: **Cheshire, Connecticut**
MMI#: 1046-52 MXD: H:\smaterials.mxd SOURCE: www.magic.lib.uconn.edu	**Surficial Geology**	DATE: July 2004 SCALE: 1:60,000
		SHEET: **Figure 6**

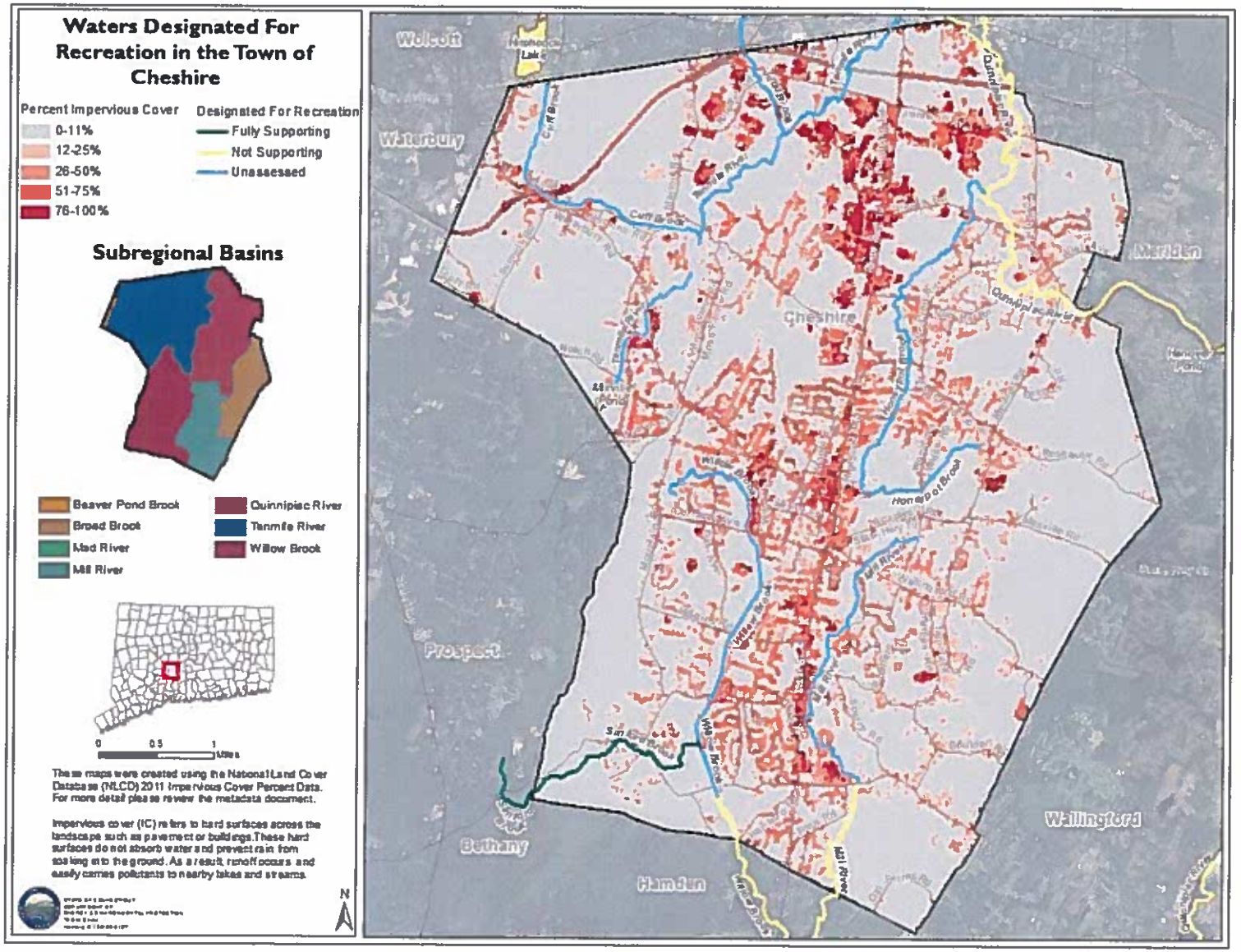

Waters Designated For Recreation in the Town of Cheshire
Percent Impervious Cover
0-11%
12-25%
26-50%
51-75%
76-100%
Designated For Recreation
Fully Supporting
Not Supporting
Unassessed
Subregional Basins
Beaver Pond Brook
Broad Brook
Mad River
Mill River
Quinnipiac River
Tenmile River
Willow Brook
0
0.5
1
Miles
These maps were created using the National Land Cover Database (NLCD) 2011 Impervious Cover Percent Data. For more detail please review the metadata document.
Impervious cover (IC) refers to hard surfaces across the landscape such as pavement or buildings. These hard surfaces do not absorb water and prevent rain from soaking into the ground. As a result, runoff occurs and easily carries pollutants to nearby lakes and streams.
N
Wolcott
Waterbury
Cheshire
Meriden
Prospect
Bethany
Hamden
Wallingford

Figure 7

Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Issued: January 20, 2016

Effective: July 1, 2017

Expires: June 30, 2022

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Table of Contents

Section 1. Authority

This general permit is issued under the authority of Section 22a-430b of the Connecticut General Statutes.

Section 2. Definitions

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

"x-year, 24-hour rainfall event" means the maximum 24-hour precipitation event with a probable recurrence interval of once in the given number of years (i.e. x=2, 25 or 100), as defined by the National Weather Service in Technical Paper Number 40, "Rainfall Frequency Atlas of the United States," May 1961, and subsequent amendments, or equivalent regional or state rainfall probability information developed therefrom.

"Aquifer protection area" means aquifer protection area as defined in section 22a-354h of the Connecticut General Statutes.

"Best engineering practices" means the design of engineered control measures to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable.

"Best Management Practices (BMP)" means schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the state consistent with state, federal or other equivalent and technically supported guidance. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from material storage.

"Catchment area" means the land area from which stormwater runoff is collected by a permittee's MS4 and discharges through a single outfall to surface water.

"Coastal Jurisdiction Line" means the location of the topographical elevation of the highest predicted tide as defined in Section 22a-359(c) of the Connecticut General Statutes.

"Coastal waters" means coastal waters as defined in Section 22a-93(5) of the Connecticut General Statutes.

"Commissioner" means Commissioner as defined in section 22a-423 of the Connecticut General Statutes.

"Control Measures" means any BMPs or other methods (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the state.

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

"Directly Connected Impervious Area (DCIA)" means that impervious area from which stormwater runoff discharges *directly* to waters of the state or *directly* to a storm sewer system that discharges to waters of the state. Impervious areas that discharge through a system designed to retain the

appropriate portion of the Water Quality Volume (pursuant to Section 6(a)(5)(b)(i) or (ii) of this general permit) are not considered DCIA.

"Fresh-tidal wetland" means a tidal wetland located outside of coastal waters.

"Grab sample" means an individual sample collected in less than fifteen minutes.

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

"High Quality Waters" means those waters defined as high quality waters in the Connecticut Water Quality Standards pursuant to Section 22a-426-1(36) of the Regulations of Connecticut State Agencies.

"Illicit Discharge" means any unpermitted discharge to waters of the state that does not consist entirely of stormwater or uncontaminated ground water except those discharges identified in Section 3(*a*)(2) of this general permit when such non-stormwater discharges are not significant contributors of pollution to a discharge from an identified MS4.

"Impaired water(s)" means those surface waters of the state designated by the Commissioner as impaired pursuant to Section 303(d) of the federal Clean Water Act and as identified in the most recent State of Connecticut Integrated Water Quality Report within Categories 4 or 5, including any subdivisions of these categories.

"Individual permit" means a permit issued to a named permittee under Section 22a-430 of the Connecticut General Statutes.

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

"Low Impact Development" or *"LID"* means a site design strategy that maintains, mimics or replicates pre-development hydrology through the use of numerous site design principles and small-scale treatment practices distributed throughout a site to manage runoff volume and water quality at the source.

"Minimize", for purposes of implementing the minimum control measures in Section 6 of this general permit, means to reduce and/or eliminate to the Maximum Extent Practicable (MEP) as described in Section 5(*b*).

"Municipal separate storm sewer system" or *"MS4"* means conveyances for stormwater (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) owned or operated by any municipality or by any state or federal institution and discharging to surface waters of the state.

"Municipality" means a city, town or borough of the state as defined in section 22a-423 of the Connecticut General Statutes.

"New or Increased Discharge" means new discharge or activity as defined in section 22a-426-8(b)(3) and increased discharge or activity as defined in section 22a-426-8(b)(2), as referenced to the Regulations of Connecticut State Agencies.

"Permittee" means any municipality or any state or federal institution that initiates, creates, originates or maintains a discharge authorized by this general permit and that has filed a registration pursuant to Section 4 of this permit.

"Point Source" means any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged.

"Qualified professional engineer" means a professional engineer who: (1) has, for a minimum of eight (8) years, engaged in the planning and designing of engineered stormwater management systems for (i) municipal separate storm sewer systems and (ii) residential and commercial construction projects in accordance with the Guidelines and the Stormwater Quality Manual including, but not limited to, a minimum of four (4) years in responsible charge of the planning and designing of engineered stormwater management systems for such projects; or (2) is currently certified as a Professional in MS4 Stormwater Compliance as designated by EnviroCert International, Incorporated, or other certifying organization acceptable to the Commissioner, and for a minimum of six (6) years, has engaged in the planning and designing of engineered stormwater management systems for (i) municipal separate storm sewer systems and (ii) residential and commercial construction projects in accordance with the Guidelines and the Stormwater Quality Manual including, but not limited to, a minimum of two (2) years in responsible charge of the planning and designing of engineered stormwater management systems for such projects; or (3) currently provides engineering services for the Permittee by employ (e.g. Town Engineer) or by contract.

"Registrant" means a municipality or institution which files a registration pursuant to Section 4 of this general permit.

"Redevelopment" means any construction activity (including, but not limited to, clearing and grubbing, grading, excavation, and dewatering) within existing drainage infrastructure or at an existing site to modify or expand or add onto existing buildings or structures, grounds, or infrastructure.

"Registration" means a registration form filed with the Commissioner pursuant to Section 4 of this general permit.

"Retain" means to hold runoff on-site to promote vegetative uptake and groundwater recharge through the use of runoff reduction or LID practices or other measures. In addition, it means there shall be no subsequent point source release to surface waters from a storm event defined in this general permit or as approved by the Commissioner.

"Runoff reduction practices" means those post-construction stormwater management practices used to reduce post-development runoff volume delivered to the receiving water, as defined by retaining the volume of runoff from a storm up to the first half inch or one inch of rainfall in accordance with Sections 6(*a*)(5)(B)(i) or (ii), respectively. Runoff reduction is quantified as the total annual post-development runoff volume reduced through canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended filtration or evapotranspiration.

"Sanitary Sewer Overflow" or *"SSO"* means a discharge of untreated sanitary wastewater from a municipal sanitary sewer.

"Small MS4" means any municipally-owned or -operated MS4 (as defined above) including all those located partially or entirely within an Urbanized Area that have at least 1,000 residents in the Urbanized Area (as determined by the 2000 or 2010 census) and all state- and federally-operated MS4s (except DOT) and any other MS4s located outside an Urbanized Area as may be designated by the Commissioner. (Note: A list of Small MS4 municipalities is included in Appendix A of this general permit. DOT will be authorized under a separate permit.)

"Standard of care", as used in Section 3(*b*)(9), means to endeavor to perform in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

"State or Federal Institution" or *"institution"* means any facility (including, but not limited to, state and federal prisons, office complexes, hospitals; university campuses, public housing authorities, schools, or other special districts) consisting of more than one building that is owned by an agency or department of the State of Connecticut (except the Department of Transportation) or a federal agency and has an average daily population of 1,000 people or more.

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

"Stormwater Quality Manual" means the Connecticut Stormwater Quality Manual published by the Connecticut Department of Energy & Environmental Protection in 2004, as amended and maintained at http://www.ct.gov/deep/stormwaterqualitymanual.

"Surface water" means those waters as defined in Section 22a-426-1(60) of the Regulations of Connecticut State Agencies.

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

"Total Maximum Daily Load (TMDL)" means a water quality implementation plan established pursuant to Section 303 of the federal Clean Water Act.

"Urbanized Area (UA)" means the areas of the State of Connecticut so defined by the U.S. Census Bureau for the 2000 or 2010 census.

"Water Quality Standards or Classifications" means those water quality standards or classifications contained in Sections 22a-426 -1 through 22a-426-9, inclusive, of the Regulations of Connecticut State Agencies and the Classification Maps adopted pursuant to Section 22a-426 of the Connecticut General Statutes, which together constitute the Connecticut Water Quality Standards., as may be amended.

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

Section 3. Authorization Under This General Permit

(a) Eligible Activities

(1) This general permit authorizes the discharge of stormwater from or associated with a Small MS4, provided the requirements of subsection (*b*) of this section are satisfied and the activity is conducted in accordance with the conditions listed in Section 5 of this general permit to the Maximum Extent Practicable (as defined in Section 5(b)).

(2) This permit authorizes the following non-stormwater discharges provided: the permittee controls such non-stormwater discharges to the Maximum Extent Practicable (MEP), as required by this general permit; such non-stormwater discharges do not contribute to a violation of water quality standards; and such non-stormwater discharges are documented in the Stormwater Management Plan and are not significant contributors of pollutants to any identified MS4:

- uncontaminated ground water discharges including, but not limited to, pumped ground water, foundation drains, water from crawl space pumps and footing drains;
- irrigation water including, but not limited to, landscape irrigation and lawn watering runoff;
- residual street wash water associated with sweeping;
- discharges or flows from firefighting activities (except training); and
- naturally occurring discharges such as rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), springs, diverted stream flows and flows from riparian habitats and wetlands.

(3) Any non-stormwater discharge to the MS4 authorized by a permit issued pursuant to Section 22a-430 or 22a-430b of the Connecticut General Statutes is also authorized under this general permit.

(b) Requirements for Authorization

This general permit authorizes the activity listed in the "Eligible Activities" section (Section 3(*a*)) of this general permit provided:

(1) Coastal Management Act

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

(2) Endangered and Threatened Species

Implementation of the permittee's Stormwater Management Plan shall not threaten the continued existence of any species listed pursuant to section 26-306 of the Connecticut General Statutes as endangered or threatened and must not result in the destruction or adverse modification of habitat designated as essential to such species unless otherwise exempted by Federal statute.

(3) Aquifer Protection Areas

Such activity, if it is located within an aquifer protection area as mapped under section 22a-354b of the Connecticut General Statutes, must comply with regulations adopted pursuant to section 22a-354i of the Connecticut General Statutes.

(4) Discharge to POTW

The stormwater is *not* discharged to a Publicly Owned Treatment Works (POTW).

(5) Discharge to Groundwater

The stormwater is *not* discharged entirely to groundwater, meaning a stormwater discharge to a surface water will not occur up to a 100-year, 24-hour rainfall event.

(6) New or Increased Discharges to High Quality Waters

On or before thirty (30) days prior to the commencement of a new or increased discharge to a High Quality Waters from its MS4, the permittee must document compliance with the Connecticut Anti-Degradation Implementation Policy in the Water Quality Standards, as amended. Before commencing any new or increased discharge, the permittee shall identify in its Stormwater Management Plan ("Plan"), the control measures it will implement to ensure compliance with anti-degradation provisions and the terms of this Permit. At a minimum, the permittee shall evaluate and implement to the Maximum Extent Practicable practices which will prevent the discharge of the Water Quality Volume to a surface water body or other practices necessary to protect and maintain designated uses and meet standards and criteria contained in the Water Quality Standards.

(7) New or Increased Discharges to Impaired Waters

There shall be no increased discharges from the MS4 to impaired waters listed in categories 5 or 4b of the most recent Connecticut Integrated Water Quality Report of waters listed pursuant to Clean Water Act section 303(d) and 305(b) unless the permittee demonstrates that there is no net increase in loading by the MS4 to the impaired water of the pollutant(s) for which the waterbody is impaired. The permittee may demonstrate no net increase by either:

(A) Documenting that the pollutant(s) for which the waterbody is impaired is not present in the MS4's discharge and retain documentation of this finding with the Plan; or

(B) Documenting that the total load of the pollutant(s) of concern from the MS4 to any impaired portion of the receiving water will not increase as a result of the activity and retain documentation of this finding in the Plan. Compliance with the requirements for Runoff Reduction and Low Impact Development measures for new development and redevelopment in Sections 6(a)(5)(A) and (B) shall be considered as demonstrating no net increase. Requirements for discharges to impaired waters are included in Section 6(k) of this general permit.

(8) Certification Requirements for Registrants and other Individuals

As part of the registration for this general permit, the registrant and any other individual or individuals principally responsible for preparing the registration submits to the Commissioner a written certification which, at a minimum, complies with the following requirements:

(A) The registrant and any other individual or individuals responsible for preparing the registration and signing the certification has completely and thoroughly reviewed, at a minimum, this general permit and the following regarding the activities to be authorized under such general permit: (i) all registration information provided in accordance with Section 4(*c*)(2) of such general permit, (ii) the Stormwater Management Plan, and (iii) any plans and specifications and any Department approvals regarding such Stormwater Management Plan;

(B) The registrant and any other individual or individuals responsible for preparing the registration and signing the certification pursuant to this general permit has, based on the review described in section 3(*b*)(8)(A) of this general permit, made an affirmative determination to: (i) comply with the terms and conditions of this general permit; (ii) maintain compliance with all plans and documents prepared pursuant to this general permit including, but not limited to, the Stormwater Management Plan; (iii) properly implement and maintain the elements of the Stormwater Management Plan; and (iv) properly operate and maintain all stormwater management measures and systems in compliance with the terms and conditions of this general permit to protect the waters of the state from pollution;

(C) Such registrant and any other individual or individuals responsible for preparing the registration certifies to the following statement:

"I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, submitted to the Commissioner by [INSERT NAME OF REGISTRANT] for an activity located at or within [NAME OF MUNICIPALITY OR ADDRESS OF THE REGISTERED ACTIVITY] and that all terms and conditions of the general permit are being met for all discharges which have been created, initiated or maintained and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(*b*)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes, as amended by Public Act 12-172. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including

the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

(9) Stormwater Management Plan Certification

As part of the registration for this general permit, the registrant submits to the Commissioner a written certification by a qualified professional engineer who has reviewed the Stormwater Management Plan (Plan) in accordance with the following requirements:

(A) The qualified professional engineer has, at a minimum, completely and thoroughly reviewed this general permit and the following regarding the discharges to be authorized under such general permit: (i) all registration information provided in accordance with Section 4(*c*)(2) of such general permit, (ii) the Stormwater Management Plan, and (iii) all non-engineered and engineered stormwater management measures and systems, including any plans and specifications and any Department approvals regarding such stormwater management measures and systems.

(B) Affirmative Determination

A qualified professional engineer signing the certification must have made an affirmative determination, based on the review described in section 3(*b*)(9)(A) of this general permit and on best engineering practices, that the Plan and control measures therein are adequate to assure that the activity authorized under this general permit will comply with the terms and conditions of such general permit and all non-engineered and engineered stormwater management measures and systems: (i) have been designed in accordance with best engineering practices; (ii) will function properly as designed; (iii) are adequate to ensure compliance with the terms and conditions of this general permit; and (iv) will protect the waters of the state from pollution.

(C) The qualified professional engineer, as specified in section 3(*b*)(9)(A), above, shall certify to the following statement:

"I hereby certify that I am a qualified professional engineer, as defined in the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. I am making this certification in connection with a registration under such general permit, submitted to the Commissioner by [INSERT NAME OF REGISTRANT] for an activity located at or within [NAME OF MUNICIPALITY OR ADDRESS OF THE REGISTERED ACTIVITY]. I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(*b*)(9)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify, based on my review of all information described in Section 3(*b*)(9)(A) of such general permit and on the standard of care for such projects, that I have made an affirmative determination in accordance with Section 3(*b*)(9)(B) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment,

under section 53a-157b of the Connecticut General Statutes and any other applicable law."

(D) Nothing in this subsection shall be construed to authorize or require a qualified professional engineer to engage in any profession or occupation requiring a license under any other provision of the Connecticut General Statutes without such license.

(c) Registration

Pursuant to the "Registration Requirements" section (Section 4) of this permit, a Small MS4 shall submit a Registration Form (accessible from the DEEP website) to the Commissioner at least ninety (90) days prior to the effective date of this general permit. The form will guide the registrant to submit the appropriate information.

Include any additional forms and information regarding compliance and/or consistency with the Coastal Management Act, High Quality Waters, Impaired Waters (including TMDL requirements), Endangered and Threatened Species, and Aquifer Protection Areas that may be required pursuant to the "Requirements of Authorization" section (Section 3(*b*)).

(d) Geographic Area

This general permit applies throughout the State of Connecticut.

(e) Effective Date and Expiration Date of this General Permit

This general permit is effective July 1, 2017 and expires on June 30, 2022.

(f) Effective Date of Authorization

An activity is authorized by this general permit: on the date the general permit becomes effective; on the date a complete registration meeting the requirements of Section 4(*c*) is submitted; for registrants that did not register as required by Section 3(*c*), on the date the authorized activity is initiated; or on another date approved by the Commissioner, whichever is latest.

Section 4. Registration Requirements

(a) Who Must File a Registration

Any municipality or state or federal institution that initiates, creates, originates or maintains a discharge of stormwater from or associated with a Small MS4 shall file with the Commissioner a registration form that meets the requirements of this section of this general permit. Such form shall be submitted along with the applicable fee within the timeframes and in the amounts specified in Sections 3(*c*) and 4(*c*)(1)(A), respectively.

(b) Scope of Registration

A registrant must register on one registration form by the date indicated in Section 3(*c*) for all discharges that are operated by the registering municipality or institution. A registrant may not submit more than one registration under this general permit.

(c) Contents of Registration

(1) Fees

(A) The registration fee for a Small MS4 shall be $625 to be submitted with the registration form.

(B) The fees for municipalities shall be half of those indicated in subsection (A) above pursuant to section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection.

(C) The registration fee shall be paid electronically or by check or money order payable to the **Department of Energy & Environmental Protection**.

(D) No activity shall be authorized by this general permit until the registration fee has been paid in full.

(E) The registration fee is non-refundable.

(2) Registration Form

The registration shall be filed in a form prescribed and provided by the Commissioner (available on the DEEP website) and shall include the following:

(A) Name of the permittee and the name, title, address, telephone number, permit number (for existing 2004 MS4 permittees) and email address of the chief elected official or principal executive officer.

(B) Name, address, telephone number, and email address of the primary contact person for the permittee.

(C) Name, primary contact, address, telephone number, and email address of any consultant(s) or engineer(s) retained by the permittee to prepare the registration,

(D) Name of receiving stream(s), watershed(s) or waterbody(s) (including waterbody ID number which can be identified at www.cteco.uconn.edu) to which the MS4 discharges and indication of whether or not a receiving stream is listed as an impaired water, with or without a TMDL, and including identification of the impairment in the most recent State of Connecticut Integrated Water Quality Report or identification of the receiving stream as a high quality water by the Commissioner as defined in the Connecticut Water Quality Standards.

(E) An electronic map or a paper copy of the relevant portion or a full-sized original of a United States Geological Survey (USGS) quadrangle map with a scale of 1:24,000, showing the permittee's boundaries and limits of its separate storm sewer system. If a paper copy of a map is submitted, identify the quadrangle name on the map and be sure to include the name of the permittee.

(F) Assurance that the Stormwater Management Plan for the MS4 is consistent with the following provisions of state statutes and regulations, as appropriate:

(i) For sites within the Coastal Boundary, the permittee must address all applicable goals and policies in Section 22a-92 of the Connecticut General Statutes, and must not cause adverse impacts to coastal resources as defined in Section 22a-93(15) of the Connecticut General Statutes.

(ii) The permittee's Stormwater Management Plan will not threaten the continued existence of any species listed pursuant to section 26-306 of the Connecticut General Statutes as endangered or threatened and will not result in the destruction or adverse modification of habitat designated as essential to such species.

(iii) The implementation of the permittee's Stormwater Management Plan for any part of the MS4 located within an aquifer protection area (see Appendix C) as mapped under section 22a-354b of the Connecticut General Statutes will comply with regulations adopted pursuant to section 22a-354i of the Connecticut General Statutes. For any activity regulated pursuant to sections 8(c) and 9(b) of the Aquifer Protection Regulations (section 22a-354i(1)-(10) of the Regulations of Connecticut State Agencies), the Stormwater Management Plan must assure that stormwater run-off generated from the MS4 is managed in a manner so as to prevent pollution of groundwater.

(iv) The Stormwater Management Plan has been reviewed for consistency with state Historic Preservation statutes, regulations, and policies including identification of any potential impacts on property listed or eligible for listing on the Connecticut Register of Historic Places. A review conducted for an Army Corps of Engineers Section 404 wetland permit would meet this qualification.

(v) The Stormwater Management Plan appropriately addresses new or increased discharges to high quality waters, as specified in Section 3(*b*)(6).

(vi) The Stormwater Management Plan appropriately addresses new or increased discharges to impaired waters, as specified in Section 3(*b*)(7).

(G) For each of the Minimum Control Measures in Section 6(*a*), the following information shall be included:

(i) each Best Management Practice (BMP) to be implemented;

(ii) the person(s) responsible for implementing and maintaining each BMP;

(iii) the date by which each BMP will be implemented;

(iv) the measurable goal(s) by which each BMP will be evaluated.

(H) Provide an internet address (URL) where the Stormwater Management Plan required by Section 5(*b*) and the Annual Reports required by Section 6(*j*) are accessible for public review. Also provide a physical address where a paper copy of the Plan and Annual Reports are available for inspection. If the registrant claims that certain elements of their Plan constitute secure information (pursuant to Section 4(*d*)(2)) or are otherwise exempt from the disclosure requirements of the state Freedom of Information Act (section 1-210 et seq of the Connecticut General Statutes, also called FOIA) as specified in that Act, the registrant shall follow the procedures provided in the

registration form instructions for this general permit regarding information subject to FOIA requirements. The process of complying with the FOIA requirements does not exempt the registrant from the registration and Plan preparation deadlines of this general permit.

(I) The certification of the registrant and of the individual or individuals responsible for actually preparing the registration, in accordance with Section 3(*b*)(8).

(J) Certification (pursuant to the requirements and conditions of Section 3(*b*)(9)) that the Stormwater Management Plan has been reviewed by a qualified professional engineer (as defined in Section 2) licensed in the State of Connecticut.

(d) Availability of Registrations, Stormwater Management Plans and Annual Reports

(1) Registration Availability

Within thirty (30) days of receipt of a registration, the Commissioner shall post on the DEEP website a list of registrations submitted and identify the location where the Stormwater Management Plan is available.

On or before sixty (60) days from the date of posting of a registration by the Commissioner, members of the public may review the registration and submit written comments to the Commissioner.

(2) Stormwater Management Plan Availability

A permittee shall make its Stormwater Management Plan (Plan) available, electronically and at a publicly available location, for public review and comment at least ninety (90) days prior to the effective date of this general permit. The permittee shall also provide the internet address (URL) where the Plan may be located or an electronic copy to the Commissioner. Within thirty (30) days of receipt of a Stormwater Management Plan (or its URL), the Commissioner shall post on the DEEP website a list of Plans submitted and identify the location where the Plan will be available for review. In addition to the internet address (URL) required as part of the registration (pursuant to Section 4(*c*)(2)(H)), reasonable efforts to inform the public of this document shall be undertaken by the permittee. The Plan shall be made available at the permittee's main office or other designated municipal or institution office, a local library or other publicly available location for public inspection and copying consistent with the federal and state Freedom of Information Acts. On or before sixty (60) days from the date of the availability of the Plan, members of the public may review the Plan and submit written comments on it to the Commissioner.

If the registrant claims that certain elements of their Plan constitute secure information subject to restrictions related to Homeland Security or other security issues otherwise exempt from the disclosure requirements of the state Freedom of Information Act (section 1-210 et seq of the Connecticut General Statutes, also called FOIA) as specified in that Act, they shall follow the procedures provided in the registration form instructions for this general permit regarding information subject to FOIA requirements. The process of complying with the FOIA requirements does not exempt the registrant from the registration and Plan preparation deadlines in this general permit.

Following the comment period specified above, the final Plan shall remain available for public inspection on-line and a paper copy made available at the location specified above during regular business hours.

(3) Annual Report Availability

At least forty five (45) days prior to submission of each Annual Report to the Department, pursuant to Section 6(*j*), each permittee shall make available for public review and comment a draft copy of the complete Annual Report. Comments on the Annual Report may be made to the permittee and are *not* submitted to the Department. Reasonable efforts to inform the public of this document shall be undertaken by the permittee. Such draft copies shall be made available electronically on the permittee's website for public inspection and copying consistent with the federal and state Freedom of Information Acts and at at least one of the following locations: the permittee's main office or other designated municipal or institution office, a local library or other central publicly available location. Following submission of the Annual Report (pursuant to Section 6(*j*)), a copy of the final report shall be made available for public inspection during regular business hours.

(e) Where to File a Registration

A registration shall be filed with the Commissioner on forms available through the DEEP website.

(f) Additional Information

The Commissioner may require a registrant to submit additional information, which the Commissioner reasonably deems necessary to evaluate the consistency of the subject activity with the requirements for authorization under this general permit.

(g) Additional Notification

For discharges authorized by this general permit to another regulated Small MS4 or to the City of Stamford, a copy of the registration and all attachments thereto shall also be submitted to the owner and operator of that system.

For discharges authorized by this general permit to a DOT separate storm sewer system, a copy of the registration and all attachments thereto shall also be submitted to the DOT upon request.

For discharges within a public drinking water supply watershed or aquifer area, the permittee shall notify the water company of the availability (pursuant to Sections 4(*d*)(1) and (2), above) of the registration and the Plan described in subsection 5(*b*) of this general permit or the registration and Plan shall be submitted to the water company upon request.

For discharges to river components and tributaries which have been designated as Wild and Scenic under the Wild and Scenic Rivers Act, a copy of the registration and the Plan described in 5(*b*) of this general permit shall be submitted to the applicable Wild and Scenic Coordinating Committee upon request.

(h) Action by Commissioner

(1) The Commissioner may require that a permittee obtain an individual permit for any discharge authorized by this permit in accordance with Section 22a-430b of the Connecticut General Statutes.

(2) The Commissioner may reject without prejudice a registration if he or she determines that it does not satisfy the registration requirements (Section 4(*c*)) of this general permit. Any registration refiled after such a rejection shall be accompanied by the fee specified in the "Fees" section (Section 4(*c*)(1)) of this general permit.

(3) The Commissioner may disapprove a registration if he or she finds that the subject activity is inconsistent with the "Requirements for Authorization" section (Section 3(*b*)) of this general permit, or for any other reason provided by law.

(4) Disapproval of a registration under this subsection shall constitute notice to the registrant that the subject activity must be authorized by an individual permit.

(5) Disapproval of a registration shall be in writing.

Section 5. Requirements of this General Permit

The permittee shall at all times continue to meet the requirements for authorization set forth in Section 3 of this general permit. In addition, a permittee shall ensure that authorized activities are conducted in accordance with the following conditions:

(a) Conditions Applicable for Certain Discharges

(1) If the permittee initiates, creates, or originates a discharge of stormwater which is located less than 500 feet from a tidal wetland that is not a fresh-tidal wetland, such discharge shall flow through a system designed to retain the Water Quality Volume, as defined in Section 2.

(2) If the permittee wishes to initiate, create, or originate a discharge of stormwater below the coastal jurisdiction line into coastal, tidal, or navigable waters for which a permit is required under the Structures and Dredging Act in accordance with Section 22a-361(a) of the Connecticut General Statutes or into tidal wetlands for which a permit is required under the Tidal Wetlands Act in accordance with Section 22a-32 of the Connecticut General Statutes, the municipality shall obtain such permit(s) from the Commissioner prior to initiating, creating or originating such discharge.

(3) There shall be no distinctly visible floating scum, oil or other matter contained in the stormwater discharge. Excluded from this are naturally occurring substances such as leaves and twigs provided no person has placed such substances in or near the discharge.

(4) The stormwater discharge shall not result in pollution which may cause or contribute to acute or chronic toxicity to aquatic life, impair the biological integrity of aquatic or marine ecosystems, or result in an unacceptable risk to human health.

(5) The stormwater discharge shall not cause or contribute to an exceedance of the applicable Water Quality Standards in the receiving water.

(6) Any new stormwater discharge to high quality waters (as identified by the Commissioner consistent with the Water Quality Standards) shall be discharged in accordance with the Connecticut Anti-Degradation Implementation Policy in the Water Quality Standards manual. At a minimum, the permittee shall evaluate and implement to the Maximum Extent Practicable practices which will prevent the discharge of the Water Quality Volume to a surface water body or other practices necessary to protect and maintain designated uses and meet standards and criteria contained in the Water Quality Standards.

(7) Any stormwater discharge to the waters identified in Appendix D shall be managed for the Stormwater Pollutant of Concern identified in the appendix consistent with the requirements in Section 6 of this permit.

(b) Stormwater Management Plan

The permittee shall develop, implement, and enforce a stormwater management plan designed to reduce the discharge of pollutants from the Small MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the federal Clean Water Act. Maximum Extent Practicable (MEP) is a technology-based standard established by Congress in the Clean Water Act Section 402(p)(3)(B)(iii). Since no precise definition of MEP exists, it allows for maximum flexibility on the part of MS4 operators as they develop their programs. (40CFR 122.2, See also: Stormwater Phase II Compliance Assistance Guide EPA 833-R-00-002, March 2000). When trying to reduce pollutants to the MEP, there must be a serious attempt to comply, and practical solutions may not be lightly rejected. Factors such as the conditions of receiving waters, specific local concerns, MS4 size, climate, implementation schedules, current ability to finance the program, beneficial uses of receiving water, hydrology, geology, and capacity to perform operation and maintenance should be considered in determining whether permittee has complied with this general permit to the Maximum Extent Practicable.

Under this program, the permittee shall prepare a Stormwater Management Plan pursuant to Section 6 of this general permit, which plan must be completed by such time as specified in Section 4(*d*)(2) of this general permit. The permittee shall continue to implement the Stormwater Management Plan and all Minimum Control Measures required by this general permit throughout the entire term of the general permit. The permittee shall continue to provide for adequate staffing and economic resources for such implementation throughout the entire term of the general permit. If at any time the Commissioner finds that the Plan is not adequate to protect the waters of the state from pollution, the Commissioner may terminate authorization under this permit and require the permittee to submit an individual permit application.

Failure to implement all elements of the Stormwater Management Plan to the MEP constitutes a violation of this permit.

Section 6. Development of Stormwater Management Plan (Plan)

The Plan shall address the Minimum Control Measures as indicated in this section. Section 6(*a*) contains the requirements for Small MS4s. These measures shall be implemented throughout the boundaries of the municipality or institution except as otherwise indicated in this section.

(a) Minimum Control Measures

For each Minimum Control Measure, the permittee shall: define appropriate BMPs; designate a person(s) and job title responsible for each BMP; define a time line for implementation of each BMP; where appropriate, identify the location, including the address and latitude and longitude, for each BMP; and define measurable goals for each BMP. The Minimum Control Measures in the Plan include, but are not limited to:

(1) Public education and outreach

The goals of this minimum control measure are:

- To raise awareness that polluted stormwater runoff is the most significant source of water quality problems;
- To motivate residents to use Best Management Practices (BMPs) which reduce polluted stormwater runoff; and
- To reduce polluted stormwater runoff as a result of increased awareness and utilization of BMPs.

(A) Implement a public education program to distribute educational materials to the permittee's community (i.e. residents, business and commerce, students, staff, contractors, etc.) or conduct equivalent outreach activities about the sources and impacts of stormwater discharges on waterbodies and the steps that the public can take to reduce pollutants in stormwater runoff. The education program shall include, but not be limited to, information on management of pet waste, application of fertilizers, herbicides, and pesticides, impervious cover and impacts of illicit discharges and improper disposal of waste into the MS4. The form and content of the education program will be dependent on the audience and identified areas of concern for each MS4. Permittees may join other permittees in the same region to develop and implement a public education program. Educational information may be developed and/or acquired from other permittees, governmental agencies, community and non-governmental organizations, councils of government, academia, and/or environmental advocacy organizations. Outreach resources will be available from the DEEP stormwater webpage at www.ct.gov/deep/stormwater. Information may be disseminated with flyers, brochures, door hangers, television public service announcements, and/or web based tools. Each Annual Report shall summarize the types, sources, number of, and methods by which materials disseminated.

(i) Permittees previously authorized by the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems issued on January 9, 2004 (existing 2004 MS4 permittees) shall begin implementation of this measure within the first year following the effective date of this permit and continue until permit expiration. Permittees shall utilize the materials developed under the 2004 MS4 permit and update or modify as necessary to acquire and/or develop the content of the outreach materials for this general permit.

(ii) Permittees not previously authorized by the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems issued on January 9, 2004 (new MS4 permittees) shall begin implementation of this measure within the second year following the effective date of this permit and continue until

permit expiration. Permittees shall utilize the one year period following the effective date of this permit to acquire and/or develop the content of the outreach materials.

(B) To implement the public education and outreach program, the permittee shall develop or acquire current educational material from DEEP and other sources that identifies the pollutants (such as pathogens/bacteria, nitrogen, phosphorus, sediments, metals, oils & greases) associated with stormwater discharges, the potential sources of the pollutants, the environmental impacts of these pollutants, and related pollution reduction practices.

(C) Additional measures for discharges to waters associated with a Stormwater Pollutant of Concern

These measures may be implemented solely by the permittee or as part of a collaborative regional or statewide program to address the issue. However, the permittee retains sole responsibility for compliance with this section. The method of implementation shall be indicated in the permittee's Plan.

(i) For waters for which **Phosphorus** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts, and available pollution reduction practices from the following:

a. Septic systems
b. Fertilizer use
c. Grass clippings and leaves management
d. Detergent use
e. Discharge of sediment (to which Phosphorus binds) from Construction sites
f. Other erosive surfaces

(ii) For waters for which **Nitrogen** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts, and available pollution reduction practices from the following:

a. Septic systems
b. Fertilizer use
c. Grass clippings and leaves management
d. Discharge of sediment (to which Nitrogen binds) from Construction sites
e. Other erosive surfaces

(iii) For waters for which **Bacteria** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources, impacts, and available pollution reduction practices from the following:

a. Septic systems
b. Sanitary cross connections
c. Waterfowl
d. Pet waste
e. Manure piles associated with livestock and horses

(iv) For waters for which **Mercury** is a Stormwater Pollutant of Concern, educational materials shall be specifically tailored and targeted to educate on the sources,

impacts and available recycling programs for elemental mercury and mercury-containing items such as:

a. Thermometers
b. Thermostats
c. Fluorescent lights
d. Button cell batteries

(D) Suggested Strategies.

(i) Target specific populations: Each permittee is encouraged to direct such outreach program and/or materials at specific populations. Such target populations may include, for example, school age populations, farming populations, and urban populations. Sample educational material for each Stormwater Pollutant of Concern noted above will be made available by DEEP.

(ii) Partner with local organizations: Permittees may wish to include in its outreach efforts various local organizations which may be able to assist in helping to spread the stormwater message.

(2) Public Involvement/Participation

The permittee shall provide opportunities to engage their community to participate in the review and implementation of the permittee's Plan. The goal of this minimum control measure is to involve the community in both the planning and implementation process of improving water quality. Public participation is beneficial to the success of a municipal stormwater management program because it allows for a broader public support, additional expertise, and a conduit to other programs. Community members are also more likely to apply these lessons/BMPs at home if they are part of the process.

(A) Publish a public notice on the permittee's website, through an email or mailing list, if the permittee maintains one, or in a newspaper with general circulation in the area to inform the public of the Plan and the Annual Report required by Section 6(*j*) of this permit and to solicit comments on the Plan and Annual Report. The notice shall provide a contact name (with phone number, address, and email) to whom the public can send comments and a publicly accessible location (such as the MS4's main office or other designated municipal office, a local library or other central publicly available location) and/or URL where the Plan and Annual Report are available for public review. The public notice shall allow for a 30 day comment period, at a minimum. Municipalities and institutions shall publish this public notice annually no later than January 31.

(B) The permittee is encouraged to enlist local organizations to help implement the elements of their Plan. However, the permittee retains sole responsibility for permit compliance.

(C) No requirements in addition to those specified in subsections (A)-(B), above, are specified for discharges to waters impaired for Phosphorus, Nitrogen, Bacteria, or Mercury.

(3) Illicit discharge detection and elimination.

Within one (1) year of the effective date of this general permit for existing 2004 MS4 permittees and within two (2) years of the effective date of this general permit for new MS4 permittees, the permittee shall develop a written Illicit Discharge Detection and Elimination (IDDE) program designed to: provide the legal authority to prohibit and eliminate illicit discharges (as defined in Section 2 except for those discharges noted in the Section 3(*a*)(2) of this permit) to the MS4; find the source of any illicit discharges; eliminate those illicit discharges; and ensure ongoing screening and tracking to prevent and/or eliminate future illicit discharges. Failure to implement all elements of the IDDE program to the MEP constitutes a violation of this permit.

(A) IDDE Program Elements

(i) The permittee shall, at a minimum, implement the IDDE program elements in this section and the IDDE protocol in Appendix B within the Urbanized Area and those catchment areas of the MS4 with either Directly Connected Impervious Area (DCIA) of greater than 11% (as identified on maps available at www.ct.gov/deep/municipalstormwater) or which discharge to impaired waters ("priority" areas). The permittee is encouraged to develop a prioritizing strategy to identify areas outside these identified areas to further implement these IDDE measures. This prioritizing strategy should utilize the prioritizing elements included in Section (A)(7)(c) of Appendix B.

(ii) Illicit discharges to the MS4 by any person are prohibited, and any such discharges are not authorized by the general permit, are unlawful, and remain unlawful until they are eliminated. The permittee shall prohibit all illicit discharges from entering its MS4. Upon detection, the permittee shall eliminate illicit discharges as soon as possible and require the immediate cessation of such discharges upon confirmation of responsible parties in accordance with its enforceable legal authorities established pursuant to subsection (B) below. Where elimination of an illicit discharge within sixty (60) days of its confirmation is not possible, the permittee shall establish a schedule for its elimination not to exceed 180 days (six (6) months). The permittee shall immediately commence actions necessary for elimination. The permittee shall diligently pursue elimination of all illicit discharges. In the interim, the permittee shall take all reasonable and prudent measures to minimize the discharge of pollutants to its MS4.

(iii) The permittee shall develop a program for citizen reporting of illicit discharges. This may include maintaining a website, email list or mailing program that provides clear instructions for the public describing how citizens can submit an illicit discharge report. The reporting program shall provide an email address and/or a phone number or other means for submissions. The permittee shall affirmatively investigate and eliminate any illicit discharges reported to it by any citizen or organization, provided that such report incorporates at least a time and location of an observed discharge. The permittee shall commence inspection of such a reported outfall or manhole promptly after receiving such a report, and incorporate those reported outfalls into its IDDE program subject to all provisions

of this subsection (3) and of Appendix B. All citizen reports and the responds to those reports shall be included in the Annual Report.

(iv) The permittee shall implement outfall screening and an illicit discharge detection protocol pursuant to **Appendix B** to identify, prioritize, and investigate separate storm sewer catchments for suspected illicit discharges of pollutants.

(v) The permittee shall maintain a record of illicit discharge abatement activities including, at a minimum: location (identified with an address or latitude and longitude), description, date(s) of inspection, sampling data (if applicable), action(s) taken, date of removal or repair and responsible party(ies). This information shall be included in the permittee's Annual Report pursuant to the Section 6(*j*) of this permit.

(vi) Timelines – permittees shall implement IDDE program elements in accordance with the schedules included in this section and in Appendix B.

(B) Establish the necessary and enforceable legal authority by statute, ordinance, rules and regulations, permit, easement, contract, order or any other means, to eliminate illicit discharges.

(i) The legal authority shall:

a. prohibit illicit discharges to its storm sewer system and require removal of such discharges consistent with subsection (3)(A), above; and

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

c. authorize fines or penalties and/or recoup costs incurred by the permittee from anyone creating an illicit discharge or spilling or dumping as specified in subsection (3)(A), above. For state and federal institutions, where this provision may conflict with existing rules, regulations, policies, chain of command or other circumstances, alternate provisions for enforcement may be utilized.

d. provide any additional legal authorities specified in Section (A)(7)(a) of Appendix B.

(ii) Existing 2004 MS4 permittees must establish and implement this legal authority within one year of the effective date of this permit.

(iii) New MS4 permittees must establish and implement this legal authority on or before two (2) years of the effective date of this permit.

(C) Develop a list (spreadsheet or database) and map or series of maps at a minimum scale of 1"=2000' and maximum scale of 1"=100' showing all stormwater discharges from a pipe or conduit located within and owned or operated by the municipality or institution

and all interconnections with other MS4s. The map(s) should, if possible, be developed in a GIS format.

(i) The list and map(s) shall include for each discharge:

a. Type, material, size, and location (identified with a latitude and longitude) of conveyance, outfall or channelized flow (e.g. 24" concrete pipe);

b. the name, water body ID and Surface Water Quality Classification of the immediate surface waterbody or wetland to which the stormwater runoff discharges;

c. if the outfall does not discharge directly to a named waterbody, the name and water body ID of the nearest named waterbody to which the outfall eventually discharges;

d. the name of the watershed, including the subregional drainage basin number (available from CT ECO at www.cteco.uconn.edu) in which the discharge is located; and

e. the spreadsheet or database should, if possible, be prepared in a format compatible with Microsoft Excel.

(ii) For existing 2004 MS4 permittees, this list and mapping must be completed within two (2) years of the effective date of this permit.

(iii) For new MS4 permittees, this list and mapping must commence upon the effective date of this permit and be completed within three (3) years from the effective date of this permit. The entirety of the municipal or institutional MS4 shall be mapped by the expiration date of this permit.

(D) For waters for which **Phosphorus**, **Nitrogen**, or **Bacteria** is a Stormwater Pollutant of Concern:

(i) To address septic system failures, the IDDE program shall give highest priority for the IDDE program in areas with the highest potential to discharge bacteria, phosphorus, and nitrogen to the MS4. Such areas shall be identified based on assessment of the following criteria: historic on-site sanitary system failures, proximity to bacteria impaired waters, low infiltrative soils, and shallow groundwater. Consultation with local or state health officials is strongly encouraged. The Annual Report shall include a summary of the program, the number of areas identified with failing systems, actions taken by the permittee to respond to and address the failures, and the anticipated pollutant reduction.

(E) No requirements in addition to those specified in subsections (A) - (C) above exist for discharges to waters for which **Mercury** is a Stormwater Pollutant of Concern.

(4) Construction Site Stormwater Runoff Control

The permittee shall implement and enforce a program to control stormwater discharges (to its MS4) associated with land disturbance or development (including re-development)

activities from sites (as defined in the Department's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities) with one acre or more of soil disturbance, whether considered individually or collectively as part of a larger common plan. Such program shall include the following elements:

(A) Legal Authority

(i) The permittee shall establish an ordinance, bylaw, regulation, standard condition of approval or other appropriate legal authority that requires:

a. developers, construction site operators, or contractors to maintain consistency with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the Connecticut Stormwater Quality Manual, and all stormwater discharge permits issued by the DEEP within the municipal or institutional boundary pursuant to CGS 22a-430 and 22a-430b;

b. the implementation of additional measures to protect/improve water quality (in addition to the above requirements) as deemed necessary by the municipality or institution;

c. the permittee to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with municipal regulations, ordinances or programs or institutional requirements related to the management of the permittee's MS4. Specifically, inspections shall be conducted, where allowed, to inventory the number of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive drainage from the permittee's MS4;

d. the owner of a site seeking development approval from the permittee to provide and comply with a long term maintenance plan and schedule to ensure the performance and pollutant removal efficiency of privately-owned retention ponds, detention ponds and other stormwater basins that discharge to or receive discharge from the permittee's MS4 including short-term and long-term inspection and maintenance measures to be implemented by the private owner; and

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

(ii) For existing 2004 MS4 permittees, within two (2) year from the start of the permittee's first fiscal year that begins after the effective date of this permit, the permittee shall implement, upgrade (if necessary) and enforce its land use regulations to meet the requirements of subsections 4(A)(i)a. – e. above.

(iii) For new MS4 permittees, within three (3) years from the start of the permittee's first fiscal year that begins after the effective date of this permit, the permittee shall implement, upgrade (if necessary) and enforce its land use regulations (for municipalities) or its construction requirements (for institutions) to meet the requirements of Sections 4(A)(i)a. – e. above.

(B) Interdepartmental Coordination

(i) The permittee will develop and implement a plan outlining how all municipal or institutional departments and boards with jurisdiction over the review, permitting, or approval of land disturbance and development projects within the MS4 will coordinate their functions with one another.

(ii) All municipalities and institutions shall implement this measure upon the effective date of this permit.

(C) Site Review and Inspection

(i) The permittee will conduct site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality.

(ii) The permittee will conduct site inspection(s) and enforcement to assess the adequacy of the installation, maintenance, operation, and repair of construction and post construction control measures.

(iii) All municipalities and institutions shall implement this measure upon the effective date of this permit.

(D) Public Involvement

(i) The permittee will implement a procedure for receipt and consideration of information submitted by the public concerning proposed and ongoing land disturbance and development activities.

(ii) All municipalities and institutions shall implement this procedure upon the effective date of this permit.

(E) State Permit Notification

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

(ii) All municipalities and institutions shall implement this procedure upon the effective date of this permit.

(F) For construction discharges to waters for which **Phosphorus, Nitrogen, Bacteria,** or **Mercury** is a Stormwater Pollutant of Concern no additional measures are included in this section except as may be required by Sections 3(*b*)(7) or 6(*k*).

(5) Post-construction stormwater management in new development or redevelopment

(A) Legal Authority

(i) The permittee shall establish an ordinance, bylaw, regulation, standard condition of approval or other appropriate legal authority that requires, to the MEP, that a developer or contractor seeking the permittee's approval shall consider the use of low impact development ("LID") and runoff reduction site planning and development practices prior to the consideration of other practices in the permittee's land use regulations, guidance or construction project requirements to meet or exceed those LID and runoff reduction practices identified in the Stormwater Quality Manual. Such legal authority shall include the following standards: 1) for redevelopment of sites that are currently developed with Directly Connected Impervious Area (DCIA) of forty percent or more, retain on-site half the water quality volume for the site, or 2) for new development and redevelopment of sites with less than forty percent DCIA, retain the water quality volume for the site, or 3) an alternate retention/treatment standard as outlined in subsections 5(B)(i)-(ii) below. All permittees shall identify and, where appropriate, reduce or eliminate existing local regulatory barriers to implementing LID and runoff reduction practices to the MEP. These may include site planning requirements, zoning regulations, street design regulations, or infrastructure specifications that address minimal dimensional criteria for the creation of roadways, parking lots, and other DCIA. If such barriers cannot be eliminated within the timeframe dictated by subsections 5(A)(ii) and (iii), below, the permittee shall provide in the Annual Report(s) required by Section 6(*j*) a justification and a revised schedule for implementation.

In establishing the legal authority, the permittee shall consider the following watershed protection elements to manage the impacts of stormwater on receiving waters, except where noted:

a. Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each municipality by minimizing the creation, extension, and widening of parking lots, roads, and associated development and encourage the use of Low Impact Development or green infrastructure practices.

b. Preserve, protect, create and restore ecologically sensitive areas that provide water quality benefits and serve critical watershed functions. These areas may include, but are not limited to; riparian corridors, headwaters, floodplains and wetlands.

c. Implement stormwater management practices that prevent or reduce thermal impacts to streams, including requiring vegetated buffers along waterways, and disconnecting discharges to surface waters from impervious surfaces such as parking lots.

d. Seek to avoid or prevent hydromodification of streams and other water bodies caused by development, including roads, highways, and bridges.

e. Implement standards to protect trees, and other vegetation with important evapotranspirative qualities.

f. Implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils.

(ii) For existing 2004 MS4 permittees, the permittee shall consider the elements of this section during regular reviews and implement this requirement no later than four (4) years after the effective date of this permit.

(iii) For new permittees, the permittee shall consider the elements of this section during regular reviews and implement this requirement no later than five (5) years after the effective date of this permit.

(B) Runoff Reduction/Low Impact Development ("LID") Measures

Pursuant to the requirements of subsection 5(A)(i) above, the permittee shall require the party responsible (i.e. a developer within a municipal boundary or a developer/contractor with the institution) for development and redevelopment projects within its MS4 to:

(i) For development or redevelopment of sites that are currently developed with Directly Connected Impervious Area (DCIA) of forty percent or more, retain on-site half the water quality volume for the site. In cases where this entire amount cannot be retained, the permittee shall require the responsible party to retain runoff volume to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice. In such cases, additional stormwater treatment, to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice, shall be required for sediment, floatables and nutrients for the volume above that which can be retained up to the water quality volume. In cases where the runoff reduction requirement cannot be met, the developer/contractor shall submit, for the permittee's review, a report detailing factors limiting the capability of achieving this goal. In such cases, the permittee shall approve a stormwater mitigation project on another site proposed by the developer/contractor or approve a fee to be deposited into a dedicated account of the permittee for use by the permittee to fund in whole or in part the retrofit of one or more existing DCIA. Unless such fee is established by DEEP, the fee proposed by the developer/contractor should be set in amount approved by the permittee as calculated based on an estimate of the cost necessary to implement the retrofit to achieve a similar amount of runoff reduction to the amount by which the actual amount of runoff reduced fails to achieve the requirement to retain the water quality volume for the site. The report shall include: the measures taken to maximize runoff reduction practices on the site; the reasons why those practices constitute the maximum extent achievable; the alternative retention volume; and a description of the measures used to provide additional stormwater treatment above

the alternate volume up to the water quality volume. In the case of linear redevelopment projects (e.g. roadway reconstruction or widening) for the developed portion of the right of way: (1) for projects that may be unable to comply with the full retention standard, the alternate retention and treatment provisions may also be applied as specified above, or (2) for projects that will not increase the DCIA within a given watershed, the developer/contractor shall implement the additional stormwater treatment measures referenced above, but will not be required to retain half of the water quality volume.

(ii) For all new development and for redevelopment of sites with less than forty percent DCIA, retain the water quality volume for the site. If there are site constraints that would prevent retention of this volume on-site (e.g. brownfields, capped landfills, bedrock, elevated groundwater, etc.), documentation must be submitted, for the permittee's review and written approval, which: explains the site limitations; provides a description of the runoff reduction practices implemented; provides an explanation of why this constitutes the maximum extent achievable; offers an alternative retention volume; and provides a description of the measures used to provide additional stormwater treatment for sediment, floatables and nutrients above the alternate volume up to the water quality volume. In such cases, the permittee shall approve a stormwater mitigation project on another site proposed by the developer/contractor or approve a fee to be deposited into a dedicated account of the permittee for use by the permittee to fund in whole or in part the retrofit of one or more existing DCIA. Unless such fee is established by DEEP, the fee proposed by the developer/contractor should be set in amount approved by the permittee as calculated based on an estimate of the cost necessary to implement the retrofit to achieve a similar amount of runoff reduction to the amount by which the actual amount of runoff reduced fails to achieve the requirement to retain the water quality volume for the site. Any such treatment shall otherwise be designed, installed and maintained consistent with the Stormwater Quality Manual. In the case of linear projects that do not involve impervious surfaces (e.g. electrical transmission rights-of-way or natural gas pipelines), retention of the water quality volume is not required as long as the post-development runoff characteristics do not differ significantly from pre-development conditions.

(iii) Consider the limitation of turf areas to those areas necessary to construct buildings, utilities, stormwater management measures, parking, access ways, reasonable lawn areas and contouring necessary to prevent future site erosion,

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

(v) In areas served by on-site sewage disposal (septic) systems, the permittee should coordinate with the state or local health official, as appropriate, to confirm that any infiltration measures are appropriately sized, located and constructed in a manner consistent with the Connecticut Department of Public Health's *Technical Standards for Subsurface Sewage Disposal Systems*, Section 19-13-B100A of the Regulations of Connecticut State Agencies and/or DEEP requirements for on-site sewage disposal systems.

(vi) For existing 2004 MS4 permittees, the permittee shall implement this requirement within two (2) years after the effective date of this permit.

(vii) For new MS4 permittees, the permittee shall implement this requirement within three (3) years from the start of the permittee's first fiscal year that begins after the effective date of this permit.

(C) Directly Connected Impervious Area

Using mapping provided by the Commissioner (available at www.ct.gov/deep/municipalstormwater) or other equivalent source, the permittee shall calculate the Directly Connected Impervious Area (DCIA) that contributes stormwater runoff to each of its MS4 outfalls (i.e. catchment area) within three (3) years of the effective date of this general permit. The DCIA calculation shall be based upon the criteria available through the DEEP stormwater webpage (www.ct.gov/deep/municipalstormwater) and the precise methodology and assumptions shall be described in the permittee's Plan and initial annual report. Each annual report shall document the progress of this task until its completion. The Permittee shall revise its DCIA estimate as development, redevelopment, or retrofit projects effectively add or remove DCIA to its MS4.

(D) Long Term Maintenance

(i) The permittee shall implement a maintenance plan for ensuring the long-term effectiveness of retention or detention ponds located in the Urbanized Area and those catchment areas of the MS4 with either DCIA of greater than 11% or which discharge to impaired waters and which discharge to, or receive stormwater from, its MS4. This shall include such ponds that are owned by the permittee and all privately-owned ponds where the permittee maintains an easement or other legal authority pursuant to Section 6(*a*)(4)(A)(i) of this permit. At a minimum, the permittee shall annually inspect all such retention or detention ponds and remove accumulated sediment to restore full solids capture design capacity where found to be in excess of 50% design capacity.

(ii) The permittee shall implement a maintenance plan for ensuring the long-term effectiveness of stormwater treatment structures or measures (such as swirl concentrators, oil/grit separators, water quality wetlands or swales, etc.) installed within the Urbanized Area and those catchment areas of the MS4 with either DCIA of greater than 11% or which discharge to impaired waters. This shall include structures that are owned by the permittee or those for which the permittee maintains an easement or other legal authority pursuant to Section 6(*a*)(4)(A)(i) of this permit. At a minimum, the permittee shall annually inspect all such structures/measures and remove accumulated pollutants (such as sediment, oils, leaves, litter, etc.) to restore full solids capture design capacity where found to be in excess of 50% design capacity.

(iii) For existing 2004 MS4 permittees, the permittee shall implement this requirement within two (2) years of the effective date of this permit.

(iv) For new MS4 permittees, the permittee shall implement this requirement within three (3) years after the effective date of this permit.

(E) Additional measures for discharges to impaired waters (with or without a TMDL)

(i) For waters for which **Nitrogen, Phosphorus** or **Bacteria** is a Stormwater Pollutant of Concern:

To address erosion and sediment problems noted during the course of conducting the inspections required by subsection D above and identified by other means, the permittee shall develop, fund, implement, and prioritize these problems under the Retrofit program specified in Section 6(a)(6)(B) to correct the problem(s) in a specific timeframe and to establish short term and long term maintenance. Each annual report shall include which problem areas were retrofitted, the cost of the retrofit, and the anticipated pollutant reduction.

(ii) No requirements in addition to those specified in subsections (A)-(D) above exist for discharges to waters for which **Mercury** is a Stormwater Pollutant of Concern.

(6) Pollution Prevention/Good Housekeeping

The permittee shall implement an operations and maintenance program for permittee-owned or –operated MS4s that has a goal of preventing or reducing pollutant runoff and protecting water quality from all permittee-owned or -operated MS4s.

(A) Employee Training

The existing 2004 MS4 permittees shall continue a formal employee training program to increase awareness of water quality related issues in management of its MS4. New MS4 permittees shall develop this program within two (2) years of the effective date of this general permit. In addition to providing key staff with topical training regarding standard operating procedures and other activities necessary to comply with the provisions of this permit, the training program shall include establishing an awareness of the general goals and objectives of the Plan; identification and reporting of illicit discharges and improper disposal; and spill response protocols and respective responsibilities of involved personnel.

(B) Infrastructure Repair, Rehabilitation and Retrofit

(i) The permittee shall repair and rehabilitate its MS4 infrastructure in a timely manner to reduce or eliminate the discharge of pollutants from its MS4 to receiving waters. Priority for repair and rehabilitation shall be based on the following:

a. For existing 2004 MS4 permittees, the permittee shall utilize the information developed pursuant to Section 6(*a*)(6)(A)(v) of the 2004 MS4 permit to fund and implement a program for repairing, retrofitting or upgrading the conveyances, structures and outfalls of the MS4. This program shall be updated based on new information on outfalls discharging pollutants, impaired waters, inspection observations or observations made during outfall mapping pursuant to Section 6(*a*)(3)(C) of this permit.

b. For new MS4 permittees, the permittee shall, within the first three (3) years following the effective date of this general permit, develop a program to

identify conveyances, structures and outfalls in need of repairing, retrofitting or upgrading utilizing new and existing information on outfalls discharging pollutants, impaired waters, inspection observations or observations made during outfall mapping pursuant to Section 6(*a*)(3)(C) of this permit.

(ii) Retrofit Program

The goal of the retrofit program is to "disconnect" existing Directly Connected Impervious Areas (DCIA). An area of DCIA is considered disconnected when the appropriate portion of the Water Quality Volume has been retained in accordance with the requirements of Section 6(*a*)(5)(B)(i) or (ii) of this general permit. This may be accomplished through retrofits or redevelopment projects (public or private) that utilize Low Impact Development (LID) and runoff reduction measures or any other means by which stormwater is infiltrated into the ground or reused for other purposes without a surface or storm sewer discharge. A redevelopment project, as that term is used here and in Section 6(*a*)(5)(B)(i) and (ii), is one that modifies an existing developed site for the purpose of enhancing, expanding or otherwise modifying its function or purpose. A retrofit project is one that modifies an existing developed site for the primary purpose of disconnecting DCIA. The DCIA calculation performed pursuant to Section 6(*a*)(5)(C) shall serve as the baseline for the retrofit program required in this section.

a. DCIA Disconnection Tracking

Beginning on the effective date of this general permit, the permittee shall track on an annual basis the total acreage of DCIA that is disconnected as a result of redevelopment or retrofit projects within the MS4. Tracking the disconnection of DCIA means documenting within a given redevelopment or retrofit project the amount of existing DCIA that is modified such that it is disconnected. This tracking may include disconnections of DCIA from redevelopment or retrofit projects implemented as early as five (5) years prior to the effective date of this permit. Any redevelopment or retrofit of an existing developed site, whether public (municipal, state or federal) or private (residential, commercial or industrial) shall be included in this tracking.

Tracking the disconnection of DCIA does <u>not</u> apply for sites that were previously undeveloped as there were no existing impervious surfaces on those sites. The total amount of DCIA that has been disconnected during a given year shall be reported in that year's Annual Report.

b. Retrofit Planning

On or before the end of third year after the effective date of this general permit, the permittee shall develop a plan to implement retrofit projects to meet the goals of this section. The permittee shall identify and prioritize sites that may be suitable for retrofit. Considerations for prioritizing retrofit projects may include outfall catchment areas that discharge to impaired waters, areas within the Urbanized Area of the MS4 or catchment areas with greater than eleven percent (11%) DCIA. The permittee shall select from the list of prioritized projects those that it will implement to meet the goals in subparagraph (c) below. In the Annual Report for the third year of this general permit, the

permittee shall report on its identification and prioritization process, the selection of the projects to be implemented, the rationale for the selection of those projects and the total DCIA to be disconnected upon implementation of the projects.

c. Retrofit Schedule

By the end of this permit term, the permittee shall commence the implementation of the retrofit projects identified in subparagraph (b), above, with a goal of disconnecting one percent (1%) per year of the permittee's DCIA for the fourth and fifth years of this general permit, or a total of 2%, to the MEP. The two percent (2%) goal may be achieved by compiling the total disconnected DCIA tracked pursuant to subparagraph (a), above, or the retrofit projects designated in subparagraph (b), above, or a combination of the two.

If the two percent (2%) goal will not be met, the permittee shall include in the Annual Report a discussion of what percentage of DCIA will actually be disconnected and why the remainder of the two percent (2%) goal could not be achieved based on the MEP standard outlined in Section 5(*b*). The permittee shall also provide in the Annual Report for the fifth year of this permit for continuation of the retrofit program and continue such program with a goal to disconnect one percent (1%) of DCIA in each year thereafter.

(C) MS4 Property and Operations Maintenance

Permittee-owned or -operated properties, parks, and other facilities that are owned, operated, or otherwise the legal responsibility of the permittee shall be maintained so as to minimize the discharge of pollutants to its MS4. Such maintenance shall include, but not be limited to:

(i) Parks and open space

The permittee shall optimize the application of fertilizers by municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance. Optimization practices considered may include conducting soil testing and analysis to determine soil phosphorus levels, the reduction or elimination of fertilizers, reduction of usage by adhering to the manufacturers' instructions, and use of alternative fertilizers forms (i.e. products with reduced, slow-releasing, or insoluble phosphorus compositions). Additional optimization practices to be considered include: proper storage and application practices (i.e. avoid impervious surfaces), application schedule (i.e. appropriate season or month) and timing (i.e. coordinated with climatic conditions to minimize runoff potential); develop and implement standard operating practices for the handling, storage, application, and disposal of pesticides and herbicides in compliance with applicable state and federal laws; evaluate lawn maintenance and landscaping activities to promote water quality (protective practices include reduced mowing frequencies, proper disposal of lawn clippings, and use of alternative landscaping materials like drought resistant and native plantings); and establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number).

The permittee shall establish practices for the proper disposal of grass clippings and leaves at permittee-owned lands. Clippings shall be composted or otherwise appropriately disposed. Clippings should not enter the MS4 system or waters of the state.

(ii) Pet waste management

The permittee shall identify locations within its community/institution where inappropriate pet waste management practices are immediately apparent and pose a threat to receiving water quality due to proximity and potential for direct conveyance of waste to its storm system and waters. In such areas, the permittee shall, implement targeted management efforts such as public education and enforcement (e.g. increased patrol for violators). In permittee-owned recreational areas where dog walking is allowed, the permittee shall install educational signage, pet waste baggies, and disposal receptacles (or require carry-out). The permittee shall document its efforts in its annual reports. The permittee should consider including information regarding the scope and extent of its education, compliance, and enforcement efforts (including the number of violations pursued and fines levied or other enforcement taken).

(iii) Waterfowl management

Identify lands where waterfowl congregate and feeding by the public or institutional staff/residents occurs. To raise awareness regarding the water quality impacts, the permittee shall install signage or use other targeted techniques to educate the public about the detrimental impacts of feeding waterfowl (including the resulting feces deposition) and discourage such feeding practices. The permittee shall also implement practices that discourage the undesirable congregation of waterfowl in these areas, or otherwise isolate the direct drainage from these areas away from its storm system and waters.

(iv) Buildings and facilities (schools under the jurisdiction of the permittee, town offices, police and fire stations, pools, parking garages and other permittee-owned or operated buildings or utilities)

Evaluate the use, storage, and disposal of both petroleum and non-petroleum products; ensure, through employee training, that those responsible for handling these products know proper procedures; ensure that Spill Prevention Plans are in place, if applicable, and coordinate with the fire department as necessary; develop management procedures for dumpsters and other waste management equipment; sweep parking lots and keep areas surrounding the facilities clean to minimize runoff of pollutants; and ensure that all interior building floor drains are not connected to the MS4. This permit does not authorize such discharges; wastewaters from interior floor drains must be appropriately permitted.

(v) Vehicles and Equipment

Establish procedures for the storage of permittee-owned or -operated vehicles; require vehicles with fluid leaks to be stored indoors or in contained areas until repaired; evaluate fueling areas owned by the permittee and used by permittee-owned or -operated vehicles and if possible, place fueling areas under cover in

order to minimize exposure; establish procedures to ensure that vehicle wash waters are not discharged to the municipal storm sewer system or to surface waters. This permit does not authorize such discharges; wastewaters from interior floor drains must be appropriately permitted.

(vi) Leaf Management

The permittee shall establish and implement procedures to minimize or prevent the deposition of leaves in catch basins, streets, parking lots, driveways, sidewalks or other paved surfaces that discharge to the MS4. Such procedures shall also apply to leaves collected by the permittee.

(D) Street, Parking & MS4 Maintenance

The permittee shall implement a program to provide for regular inspection and maintenance of permittee-owned or -operated streets, parking areas and other MS4 infrastructure.

(i) Sweeping

a. Establish and implement procedures for sweeping permittee-owned or -operated streets and parking lots. All streets and parking lots within the Urbanized Area of the MS4, and outside the Urbanized Area within the catchment areas of the MS4 with either DCIA of greater than 11% or which discharge to impaired waters, shall be inspected, swept and/or cleaned (as necessary) with a minimum frequency of once per year in the spring following the cessation of winter maintenance activities (i.e. sanding, deicing, etc.). The procedures shall also include more frequent inspections, cleaning and/or sweeping of targeted areas determined by the permittee to have increased pollutant potential based on the presence of active construction activity or other potential pollutant sources. The permittee shall identify such potential pollutant sources based upon surface inspections, catch basin cleaning or inspection results, land use, winter road deicing and/or sand application, impaired or TMDL waters or other relevant factors as determined by the permittee. If wet dust suppression is conducted, the use of water should be minimized such that a discharge of excess water to surface waters and/or the storm sewer system does not occur.

For streets and parking lots outside the Urbanized Area and outside the catchment areas of the MS4 with either DCIA of greater than 11% or which discharge to impaired waters, including any rural uncurbed streets and parking lots with no catch basins, the permittee shall either meet the minimum frequencies above, or develop and implement an inspection, documentation and targeted sweeping and/or cleaning plan within one (1) year of the effective date of the general permit, and submit such plan with its year one Annual Report. For new and redeveloped municipal parking lots, evaluate options from reducing stormwater runoff to surface waters and/or the storm sewer system by the installing pervious pavements and/or other measures to promote sheet flow of stormwater.

b. Ensure the proper disposal of street sweepings in accordance with Department policies, guidance and regulations. Sweepings shall not be discharged back into the storm drain system and/or surface waters.

c. In its Annual Report, the permittee shall document results of its sweeping program including, at a minimum: a summary of inspection results, curb miles swept, dates of cleaning, volume or mass of material collected, and method(s) of reuse or disposal. The permittee shall also include documentation of any alternate sweeping plan for rural uncurbed streets and any runoff reduction measures implemented.

(ii) Catch Basin Cleaning

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

a. Inspect all permittee-owned catch basins within the Urbanized Area of the MS4 and outside the Urbanized Area within the catchment areas of the MS4 with either DCIA of greater than 11% or which discharge to impaired waters at least once by the end of the third year following the effective date of this general permit. Catch basins outside the Urbanized Area and outside the catchment areas of the MS4 with either DCIA of greater than 11% or which discharge to impaired waters shall be inspected by the end of the fifth year following the effective date of this general permit.

b. Prioritize inspection and maintenance for permittee-owned catch basins located near impaired waters and construction activities (roadway construction, residential, commercial, or industrial development or redevelopment). Clean catch basins in such areas more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.

c. Establish a schedule that the frequency of routine cleaning will ensure that no catch basin at any time will be more than fifty (50) percent full.

d. If a catch basin sump is more than fifty (50) percent full during two consecutive routine inspections/cleaning events, the permittee shall document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the maximum extent practicable, abate contributing sources. The permittee shall describe any actions taken in its Annual Report.

e. For the purposes of this subsection, an excessive sediment or debris loading is a catch basin sump more than fifty (50) percent full. A catch basin sump is more than 50 percent full if the contents within the sump exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.

f. The permittee shall document in the Plan and in the first Annual Report its plan for optimizing catch basin cleaning, inspection plans, or its schedule for gathering information to develop the optimization plan. Documentation shall include metrics and other information used to reach the determination that the established plan for cleaning and maintenance is optimal for the MS4. The permittee shall keep a log of catch basins cleaned or inspected.

g. The permittee shall report in each Annual Report the total number of catch basins, number inspected, number cleaned, the total volume or mass of material removed from all catch basins and, if practicable, the volume or mass of material removed from each catch basin draining to water quality limited waters.

(E) Snow Management Practices

(i) Deicing Material Management

Develop and implement standard operating practices for the use, handling, storage, application, and disposal of deicing products such as salt and sand to minimize exposure to stormwater; consider means to minimize the use and optimize the application of chloride-based or other salts or deicing product (while maintaining public safety) and consider opportunities for use of alternative materials; for any exterior containers of liquid deicing materials installed after the effective date of this permit, provide secondary containment of at least 110% of the largest container or 10% of the total volume of all containers, whichever is larger, without overflow from the containment area.

(ii) Snow and Ice Control Practices

The permittee shall implement and refine its standard operating practices regarding its snow and ice control to minimize the discharge of sand, anti-icing or de-icing chemicals and other pollutants (while maintaining public safety). The permittee shall establish goals for the optimization of sand and/or chemical application rates through the use, where practicable, of automated application equipment (e.g. zero-velocity spreaders), anti-icing and pre-wetting techniques, implementation of pavement management systems, and alternate chemicals. The permittee shall maintain records of the application of sand, anti-icing and/or de-icing chemicals to document the reduction of chemicals to meet established goals. The permittee shall ensure the proper training for deicing applications for municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance.

The permittee shall manage and dispose of snow accumulations in accordance with DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots, revised 2/4/11 and as amended (see link at: www.ct.gov/deep/stormwater). In its Annual Report, the permittee shall document results of its snow removal program including, at a minimum: the type of staff training conducted on application methods and equipment, type(s) of deicing materials used; lane-miles treated; total amount of each deicing material used; type(s) of deicing equipment used; any changes in deicing practices (and the reasons for the change); and snow disposal methods.

(F) Interconnected MS4s

As part of interagency agreements established pursuant to Section 6(*c*)(3) of this permit, the Permittee shall coordinate with operators of interconnected MS4s (such as neighboring municipalities, institutions and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control measures in the respective MS4s. This same coordination shall be conducted regarding operation and maintenance procedures utilized in the respective systems.

(G) Sources contributing pollutants to the MS4

The permittee shall develop and implement a program to control the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by permit issued pursuant to Sections 22a-430 or 22a-430b of the Connecticut General Statutes.

(H) Additional measures for discharges to impaired waters (with or without a TMDL)

(i) For waters for which **Nitrogen** or **Phosphorus** is a Stormwater Pollutant of Concern:

On Permittee-owned or -operated lands, implement a turf management practices and procedures policy which includes, but is not limited to, procedures for proper fertilizer application and the planting of native plant materials to lessen the amount of turf area requiring mowing and the application of chemicals. Each Annual Report shall discuss the actions taken to implement this policy with an estimate of fertilizer and turf reduction.

(ii) For waters for which **Bacteria** is a Stormwater Pollutant of Concern:

On Permittee-owned or -operated lands with a high potential to contribute bacteria (such as dog parks, parks with open water, sites with failing septic systems), the permittee shall develop, fund, implement, and prioritize a retrofit or source management program to correct the problem(s) within a specific timeframe. Each Annual Report shall identify problem areas for which a retrofit or source management program were developed, the location of the closest outfall monitored in accordance with Section 6(*i*), the cost of such retrofit or program, and the anticipated pollutant reduction.

On Permittee-owned or -operated lands, prohibit the feeding of geese or waterfowl and implement a program to manage geese and waterfowl populations. Each Annual Report shall discuss the actions taken to implement this program.

(iii) No additional requirements in addition to those specified in subsections (A)-(C) above exist for discharges to waters for which **Mercury** is a Stormwater Pollutant of Concern.

(b) Sharing Responsibility

(1) Qualifying Local Program

The permittee may satisfy the requirement to implement a BMP for a Minimum Control Measure by having a third party implement the BMP.

When a permittee is relying on a third party to implement one or more BMP(s), the permittee shall note that fact in the registration and Annual Report required in Section 6(*j*), below. If the third party fails to implement the BMP(s), the permittee remains responsible for its implementation.

(Note: For example, if a local watershed organization performs an annual "river clean-up", this event may be used to satisfy a BMP for the Public Participation and/or the Pollution Prevention and Good Housekeeping Minimum Control Measure.)

(2) Qualifying State or Federal Program

If a BMP or Minimum Control Measure is the responsibility of a third party under another NPDES stormwater permit, the permittee is not required to include such BMP or Minimum Control Measure in its Stormwater Management Plan. The permittee shall reference this qualifying program in their Stormwater Management Plan. However, the permittee is not responsible for its implementation if the third party fails to perform. The permittee shall periodically confirm that the third party is still implementing this measure. If the third party fails to implement the measure, the Stormwater Management Plan may be modified to address the measure, if necessary.

In the case of a permitted municipal industrial activity that is covered by the General Permit for the Discharge of Stormwater Associated with Industrial Activity, the permittee may reference the activity's Stormwater Pollution Prevention Plan to address a portion of the permittee's Stormwater Management Plan.

(Note: For example, the permittee may reference a regional mall's requirement to perform sweeping and catch basin cleaning under the General Permit for the Discharge of Stormwater Associated with Commercial Activity. This third party action may be used to address a portion of the permittee's requirement under the Good Housekeeping and Pollution Prevention Minimum Control Measure.)

(3) Coordination of Permit Responsibilities

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

(Note: For example, a storm sewer system within a municipality may be operated and maintained by the DOT. In cases such as these, the two entities shall coordinate their Stormwater Management Plans to address the Minimum Control Measures, particularly at the interface between the two storm sewer systems.)

(4) Co-Permitting

When a municipal Regulated Small MS4s is co-located within the corporate boundary of another Regulated Small MS4, the two may, at their discretion, submit a single registration and share a single Plan as co-permittees. In such a case, the Plan shall clearly indicate which co-permittee is responsible for implementing each of the control measures and other elements of the Plan.

(Note: This provision currently applies only to the City of Groton within the Town of Groton and the Borough of Stonington within the Town of Stonington.)

(c) Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control, including related appurtenances, which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee when necessary to achieve compliance with this permit.

(d) Signature Requirements

The Plan shall be signed by the chief elected official or principal executive officer, as those terms are defined in Section 22a-430-3(b)(2) of the Regulations of Connecticut State Agencies. The Plan shall be retained by the chief elected official or principal executive officer and copies retained by MS4 officials or employees responsible for implementation of the Plan.

(e) Plan Review Fee

When submitting a Stormwater Management Plan as requested by the Commissioner pursuant to Section 6(*f*), below, the permittee shall submit a plan review fee of $375.

(f) Keeping Plans Current

The permittee shall amend the Plan whenever; (1) there is a change which has the potential to cause pollution of the waters of the state; or (2) the actions required by the Plan fail to prevent pollution of the waters of the state or fail to otherwise comply with any other provision of this general permit; or (3) the Commissioner requests modification of the Plan. The amended Plan shall be completed and all actions required by such Plan shall be completed within a time period determined by the Commissioner.

The Commissioner may notify the permittee in writing at any time that the Plan does not meet one or more of the requirements of this general permit. Within thirty (30) days of such notification, unless otherwise specified by the Commissioner in writing, the permittee shall respond to the Commissioner indicating how they plan to modify the Plan to address these requirements. Within ninety (90) days of this response or within one hundred twenty (120) days of the original notification, whichever is less, unless otherwise specified by the Commissioner in writing, the permittee shall then revise the Plan, perform all actions required by the revised Plan, and shall certify to the Commissioner that the requested changes have been

made and implemented. The permittee shall provide such information as the Commissioner requires to evaluate the Plan and its implementation. If at any time the Commissioner finds that the Plan is not adequate to protect the waters of the state from pollution, the Commissioner may terminate authorization under this permit and require the permittee to submit an individual permit application.

(g) Failure to Prepare or Amend Plan

In no event shall failure to complete or update a Plan in accordance with Sections 5(*b*) and 6 of this general permit relieve a permittee of responsibility to implement actions required to protect the waters of the state and to comply with all conditions of this general permit.

(h) Plan Review Certification

A copy of the Plan review certification made in accordance with Section 3(*b*)(9) shall be maintained with the Plan.

(i) Monitoring Requirements

All permittees shall comply with the screening and monitoring requirements in this subsection.

(1) Impaired Waters Outfall Investigation and Monitoring

Regulated Small MS4s that discharge to impaired waters, as identified in Section 6(*k*) below, must create an inventory of all outfalls that discharge to impaired waters utilizing the list and mapping prepared pursuant to Section 6(*a*)(3)(C). The permittee shall then screen these outfalls for the pollutant identified as the pollutant of concern for the impairment in accordance with the following procedures. If the permittee has wet weather sampling data for an outfall pursuant to their sampling conducted under the 2004 MS4 permit or other appropriate wet weather sampling, they may use that data for their outfall screening and will not be required to screen that outfall under this general permit.

(A) Outfall Screening for Phosphorus and Nitrogen

The permittee shall screen outfalls from the MS4 identified in Section 6(*a*)(3)(C) that discharge to impaired waters for which phosphorus or nitrogen is the pollutant of concern. The permittee may take a sample at the outfall during any rain event that results in a discharge from the outfall in accordance with subsection (2), below. This screening shall be conducted for all such outfalls at least once during the term of this general permit in accordance with subparagraphs (i) and (ii) below.

(i) Nitrogen Screening

The permittee may use a portable nitrogen meter to take a field reading during the wet weather discharge. If the nitrogen reading exceeds the following threshold, the outfall shall be identified for follow-up investigation pursuant to subsection (D) below.

Total Nitrogen > 2.5 mg/l

(ii) Phosphorus Screening

The permittee may use a portable phosphorus meter to take a field reading during the wet weather discharge. If the phosphorus reading exceeds the following threshold, the outfall shall be identified for follow-up investigation pursuant to subsection (D) below.

Total Phosphorus > 0.3 mg/l

(B) Outfall Screening for Bacteria

The permittee shall screen outfalls from the MS4 that discharge to impaired waters for which bacteria is the pollutant of concern. The permittee may take a sample at the outfall during any rain event that results in a discharge from the outfall in accordance with subsection (2), below. The sample shall be analyzed for the following:

- E. coli and Total Coliform (col/100ml) (for discharges to Class AA, A and B surface waters)
- Fecal coliform and Enterococci (col/100ml) (for discharges to Class SA and SB surface waters)

The outfall shall be identified for follow-up investigation pursuant to subsection (D) below if any of the following conditions apply:

- E. coli >235 col/100ml for swimming areas and >410 col/100ml for all others, or
- Total Coliform >500 col/100ml, or
- Fecal coliform >31 col/100ml for Class SA and >260 col/100ml for Class SB, or
- Enterococci >104 col/100ml for swimming areas and >500 col/100ml for all others.

If the permittee can document that bacteria levels at an outfall that exceed these levels are solely the result of natural sources of bacteria, they are not required to conduct a follow-up investigation for that outfall. Natural sources may include wildlife or runoff from undeveloped wooded areas but do not include pet waste or waterfowl congregating at parks, ponds or other attractive nuisance areas.

(C) Outfall Screening for Other Pollutants of Concern

The permittee shall screen outfalls from the MS4 identified in Section 6(*a*)(3)(C) that discharge to impaired waters for which pollutants other than phosphorus, nitrogen or bacteria are listed as the pollutant of concern. The permittee shall take a sample at the outfall and in-stream immediately upstream or otherwise outside the influence of the outfall. The sample may be taken during any rain event that results in a discharge from the outfall in accordance with subsection (2), below. These samples shall be analyzed for turbidity. The permittee may use a field turbidity meter for these analyses. If the

outfall sample is more than 5 NTU greater than the in-stream sample, the outfall shall be identified for follow-up investigation pursuant to subsection (D) below.

(D) Follow-up Investigations

The permittee shall conduct follow-up investigations for the drainage areas associated with the outfalls identified as potentially contributing to an impairment as a result of the analyses conducted pursuant to subsections (A) – (C), above.

(i) Drainage Area Investigation

The permittee shall investigate activities within the drainage area contributing to each outfall identified for follow-up investigation pursuant to subsections (A) – (C), above. This investigation shall include factors potentially associated with the cause of the related stream impairment. Such factors may include: land use or development patterns; business or commercial activities; industrial activities; DCIA; natural contributors; potential MS4 maintenance issues; residential activities; and any other activities identified by the permittee as potentially contributing to the related impairment.

(ii) Control Measure Implementation

In each outfall drainage area identified for follow-up investigation pursuant to subsections (A) – (C), above, the permittee shall implement a BMP program focusing on the impaired waters provisions of each of the Control Measures in Section 6(*a*) of this general permit and on the findings of the drainage area investigation in subparagraph (i), above.

(iii) Prioritized Outfall Monitoring

Once outfall screening has been completed for at least half of the outfalls identified pursuant to this section, the permittee shall utilize the screening results to select six (6) of the highest contributors of any of the pollutants of concern. These six outfalls shall be sampled annually for the appropriate pollutant of concern in accordance with the schedule in subsection (E), below. If more than one pollutant of concern is identified for any monitored outfall (i.e. more than one impairment), all of these pollutants shall be monitored. If fewer than six outfalls were identified for follow-up investigation, all of these outfalls shall be monitored, but no more than six.

(E) Schedule

(i) Impaired Waters Discharge Mapping

Inventory and mapping of discharges to impaired waters prepared pursuant to this section shall be completed within two (2) years from the effective date of this general permit for existing 2004 MS4 permittees and within three (3) years from the effective date of this general permit for new MS4 permittees.

(ii) Outfall Screening

Outfall screening pursuant to subsections (A) – (C) shall begin within one (1) year of the effective date of this general permit for existing 2004 MS4 permittees and two (2) years for new MS4 permittees. At least fifty percent (50%) of these outfalls shall be screened no later than the end of the third year following the effective date of this general permit for existing 2004 MS4 permittees and no later than the end of the fourth year for new MS4 permittees. All such outfalls shall be screened by the end of the term of this general permit (5 years).

(iii) Follow-up Investigations

The permittee shall commence follow-up investigations identified pursuant to subsection (D), above, no later than two (2) years following the effective date of this general permit for existing 2004 MS4 permittees and three (3) years for new MS4 permittees.

(iv) Prioritized Outfall Monitoring

The permittee shall commence annual monitoring of the six outfalls identified pursuant to subsection (D)(iii), above, no later than beginning of the fourth year following the effective date of this general permit for existing 2004 MS4 permittees and no later than the beginning of the fifth year for new MS4 permittees.

(F) Reporting

The permittee shall report on the progress of their impaired waters investigation and monitoring program in their Annual Report beginning in the second year following the effective date of this general permit. The report shall include a listing of the outfalls screened during the year, the number of outfalls identified for follow-up investigation, the progress of drainage area investigations, a description of the control measure implementation for the different impairments, identification of the six outfalls to be monitored, and the results of the prioritized outfall monitoring.

(2) Stormwater Monitoring Procedures

(A) Wet Weather Outfall Monitoring

Samples shall be collected from discharges resulting from any rain storm that produces a discharge from the outfall(s) being monitored and that occurs at least 48 hours after any previous rain storm that produced a discharge from the outfall. Runoff events resulting from snow or ice melt alone cannot be used to meet these monitoring requirements. However, monitoring may be conducted during a rain event that may include insignificant amounts of snow or ice melt. Monitoring shall consist of a single grab sample taken within the first six (6) hours of discharge from the outfall.

(B) Rain Event Information

The following information shall be collected for the rain events during which monitoring is conducted:

(i) The date, temperature, time of the start of the discharge, time of sampling, and magnitude (in inches) of the rain event sampled.

(ii) The duration between the rain event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) rain event.

(C) Test Procedures

Unless otherwise specified in this permit, all pollutant parameters shall be tested according to methods prescribed in Title 40, CFR, Part 136 (1990). Laboratory analyses must be consistent with Connecticut Reasonable Confidence Protocols.

(j) Reporting & Record Keeping Requirements

(1) The permittee shall keep records required by this permit for at least 5 years following its expiration or longer if requested by the Commissioner in writing. Such records, including the Stormwater Management Plan, shall be available to the public at reasonable times during regular business hours.

(2) Annual Report

By April 1 of the second year following the effective date of this general permit and annually thereafter by April 1, the permittee shall submit an Annual Report for the preceding calendar year electronically to the Department. The DEEP MS4 stormwater webpage (www.ct.gov/deep/municipalstormwater) will provide guidance on Annual Report submittal. The Annual Report must be in Microsoft Word©, Adobe Acrobat© or other format acceptable to the Commissioner. In the event that electronic submission is not available or possible, please contact the Stormwater Section at (860) 424-3025.

The report shall include:

(A) The Annual Report review fee is $375.00.

(i) The fees for municipalities shall be half of those indicated above pursuant to section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection.

(B) A written discussion of the status of compliance with this general permit including, but not limited to:

(i) a listing and brief description (including, where appropriate, the address or latitude and longitude) of all BMPs within each Minimum Control Measure;

(ii) any reporting requirements enumerated in the controls measures sections 6(*a*) and its subsections;

(iii) an implementation schedule for each BMP and an indication of whether or not the BMP or any portion of the BMP was scheduled to be implemented during the year covered by the Annual Report;

(iv) the status of implementation for each BMP scheduled to be completely or partially implemented during the year covered by the Annual Report, including an assessment of the appropriateness of the BMP and progress towards achieving the implementation dates and measurable goals for that BMP;

(v) for any portion of a BMP implementation scheduled for the year covered by the Annual Report that was *not* completed as scheduled, a discussion of the circumstances and reasons for non-implementation, a modified implementation schedule, and, if necessary, a modified or alternate BMP to replace the BMP not implemented including the rationale for such modification or alternate BMP;

(vi) the overall status of each of the six categories of the Minimum Control Measures and a discussion of the effectiveness of each category in achieving its goals;

(vii) a discussion of any changes to personnel responsible for the Plan or BMP implementation;

(viii) a description of any new BMPs added to the Plan during the year including a description of the BMP, the reason or rationale for adding the BMP, the timeline for implementation, the party responsible for implementation and the measurable goal for the BMP and, where appropriate, the location for each BMP, including the address and latitude and longitude;

(ix) a discussion of the progress and status of the MS4's IDDE program (see Section 6(*a*)(3)) including outfall screening, mapping, drainage area evaluation and prioritization, illicit discharge tracking activities, IDDP field monitoring results, number and type of illicit discharges detected, and number of illicit discharges eliminated;

(x) a discussion of measures included in the Plan for the control of discharges to impaired waters (see Section 6(*k*) below) including a list of BMPs in the Minimum Control Measures that are targeted for such discharges, progress in implementing these measures, any evaluation of the effectiveness of these measures in meeting the goals of the Plan's impaired waters program, and any new or modified BMPs to be added to the Plan to improve its effectiveness;

(xi) a discussion of the MS4's stormwater monitoring program describing the status of monitoring for the year of the report, the overall status of the monitoring program, a summary of the findings, any significant observations regarding the results, any modifications to the Plan as a result of the monitoring results; and

(xii) a discussion of any planned BMP implementation in the coming year, including a discussion of any new or modified BMPs planned for future implementation.

(C) All monitoring data collected and analyzed pursuant to Section 6(*i*).

(D) All other information collected and analyzed, including data collected under the Illicit Discharge Detection Protocol (Appendix B), during the reporting period.

(k) Discharges to Impaired Waters or Water bodies subject to a Pollutant Load Reduction within a TMDL

MS4s that discharge to impaired waters (with or without a TMDL), waters for which nitrogen, phosphorus, bacteria or mercury are stormwater pollutants of concern, or waters which have pollution load reductions specified within a TMDL are required to meet certain criteria identified in this section and other sections of this general permit.

(1) Existing Discharge to an Impaired Water without an Established TMDL

If the permittee discharges to an impaired water without an established TMDL, the permittee must follow:

(A) For waters for which Phosphorus, Nitrogen, Bacteria, or Mercury are stormwater pollutants of concern, the control measures in Section 6(*a*) and the screening and monitoring requirements of Section 6(*i*)(1),

(B) For all other impairments, implement control measures to reduce the discharge of the pollutant(s) associated with the impairment and follow the requirements of Section 6(*i*)(1)(C), or as directed by the Commissioner.

(2) Existing Discharge to a Water with an Established TMDL or with a Pollutant Load Reduction specified within the TMDL

If the permittee discharges to a water included in a TMDL, the permittee must follow:

(A) For waters for which Phosphorus, Nitrogen, Bacteria, or Mercury is a stormwater pollutant of concern, the control measures in Section 6(*a*) and the screening and monitoring requirements of Section 6(*i*)(1),

(B) For all other discharges subject to a pollutant load reduction contained within a TMDLs, implement control measures to be consistent with the Waste Load Allocation in the specific TMDL. The permittee must also conduct the appropriate screening and monitoring in accordance with Section 6(*i*)(1).

(C) The permittee shall implement BMPs as necessary to achieve the Waste Load Allocation, Load Allocation or Water Quality Targets specified within the TMDL (see Appendix D).

(3) New Discharge to an Impaired Water without an Established TMDL

If a new discharge to an impaired water without a TMDL is authorized pursuant to the conditions of Section 3(*b*)(7), the permittee must implement and maintain any control measures or conditions on the site that enabled such authorization, and modify such measures or conditions as necessary to maintain such authorization. The permittee must also maintain compliance with this subsection and Section 6(*i*) and maintain documentation of these measures and conditions in their Plan.

(4) New Discharge to a Water with an Established TMDL or with a Pollutant Load Reduction specified within the TMDL

If a new discharge to a water with a TMDL or with a pollutant load reduction established within the TMDL is authorized pursuant to the conditions of Section 3(*b*)(7), the permittee must follow the discharge requirements consistent with the applicable Wasteload Allocations, Load Allocations or Water Quality Targets for that TMDL. The permittee must also conduct the appropriate screening and monitoring in accordance with Section 6(*i*)(1) and maintain documentation of these measures and conditions in their Plan.

Section 7. Additional Requirements of this General Permit

(a) Regulations of Connecticut State Agencies Incorporated into this General Permit

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

(1) Section 22a-430-3:

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

(2) Section 22a-430-4

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

(b) Reliance on Registration

In evaluating the permittee's registration, the Commissioner has relied on information provided by the permittee. If such information proves to be false or incomplete, the permittee's authorization may be suspended or revoked in accordance with law, and the Commissioner may take any other legal action provided by law.

(c) Duty to Correct and Report Violations

Upon learning of a violation of a condition of this general permit, a permittee shall immediately take all reasonable action to determine the cause of such violation, correct and mitigate the results of such violation and prevent further such violation. The permittee shall report in writing such violation and such corrective action to the Commissioner within five (5) days of the permittee's learning of such violation. Such information shall be filed in accordance with the certification requirements prescribed in Section 7(*e*) of this general permit.

(d) Duty to Provide Information

If the Commissioner requests any information pertinent to the authorized activity or to compliance with this general permit or with the permittee's authorization under this general permit, the permittee shall provide such information within thirty (30) days of such request. Such information shall be filed in accordance with the certification requirements prescribed in Section 7(*e*) of this general permit.

(e) Certification of Documents

Any document, including but not limited to any notice, information or report, which is submitted to the Commissioner under this general permit shall be signed by the chief elected official or principal executive officer of the municipality or institution, and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

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

(f) Date of Filing

For purposes of this general permit, the date of filing with the Commissioner of any document is the date such document is received by the Commissioner. The word "day" as used in this general permit means the calendar day; if any date specified in the general permit falls on a Saturday, Sunday, or legal holiday, such deadline shall be the next business day.

(g) False Statements

Any false statement in any information submitted pursuant to this general permit may be punishable as a criminal offense, in accordance with Section 22a-6, under Section 53a-157b of the Connecticut General Statutes.

(h) Correction of Inaccuracies

Within fifteen days after the date the permittee becomes aware of a change in any information in any material submitted pursuant to this general permit, or becomes aware that any such information is inaccurate or misleading or that any relevant information has been omitted, the permittee shall correct the inaccurate or misleading information or supply the omitted

information in writing to the Commissioner. Such information shall be filed in accordance with the certification requirements prescribed in Section 7(*e*) of this general permit.

(i) Other Applicable Law

Nothing in this general permit shall relieve the permittee of the obligation to comply with any other applicable federal, state and local law, including but not limited to the obligation to obtain any other authorizations required by such law.

(j) Other Rights

This general permit is subject to and does not derogate any present or future rights or powers of the State of Connecticut and conveys no rights in real or personal property nor any exclusive privileges, and is subject to all public and private rights and to any federal, state, and local laws pertinent to the property or activity affected by such general permit. In conducting any activity authorized hereunder, the permittee may not cause pollution, impairment, or destruction of the air, water, or other natural resources of this state. The issuance of this general permit shall not create any presumption that this general permit should or will be renewed.

Section 8. Commissioner's Powers

(a) Abatement of Violations

The Commissioner may take any action provided by law to abate a violation of this general permit, including but not limited to penalties of up to $25,000 per violation per day under Chapter 446k of the Connecticut General Statutes, for such violation. The Commissioner may, by summary proceedings or otherwise and for any reason provided by law, including violation of this general permit, revoke a permittee's authorization hereunder in accordance with Sections 22a-3a-2 through 22a-3a-6, inclusive, of the Regulations of Connecticut State Agencies. Nothing herein shall be construed to affect any remedy available to the Commissioner by law.

(b) General Permit Revocation, Suspension, or Modification

The Commissioner may, for any reason provided by law, by summary proceedings or otherwise, revoke or suspend this general permit or modify to establish any appropriate conditions, schedules of compliance, or other provisions which may be necessary to protect human health or the environment.

(c) Filing of an Individual Application

If the Commissioner notifies a permittee in writing that such permittee shall obtain an individual permit under Section 22a-430 of the Connecticut General Statutes if he wishes to continue lawfully conducting the authorized activity, the permittee shall file an application for an individual permit within thirty (30) days of receiving the Commissioner's notice, or at such other date as the Commissioner may allow. While such application is pending before the Commissioner, the permittee shall comply with the terms and conditions of this general permit and the subject approval of registration. If the Commissioner issues an individual permit to a permittee under this general permit, this general permit, as it applies to such permittee, shall automatically terminate on the date such individual permit is issued. Nothing herein shall affect the Commissioner's power to revoke a permittee's authorization under this general permit at any time.

Issued Date: January 20, 2016

Michael Sullivan

Deputy Commissioner

This is a true and accurate copy of the general permit executed on January 20, 2016 by the Department of Energy and Environmental Protection.

Appendix A – Small MS4 Municipalities

Connecticut Municipalities with >1,000 People in Urbanized Areas		
Ansonia	Avon	Beacon Falls
Berlin	Bethany	Bethel
Bloomfield	Bolton	Branford
Bridgeport	Bristol	Brookfield
Brooklyn*	Burlington	Canton
Cheshire	Chester	Clinton
Cromwell	Danbury	Darien
Deep River	Derby	Durham
East Granby	East Hartford	East Haven
East Lyme	East Windsor	Easton
Ellington	Enfield	Essex
Fairfield	Farmington	Glastonbury
Granby	Greenwich	Griswold
Groton (City)	Groton (Town)	Guilford
Haddam*	Hamden	Hartford
Hebron	Killingly*	Ledyard
Lisbon	Madison	Manchester
Marlborough	Meriden	Middlebury
Mansfield*	Middlefield	Middletown
Milford	Monroe	Montville
Naugatuck	New Britain	New Canaan
New Fairfield	New Hartford*	New Haven
New London	New Milford	Newington
Newtown	North Branford	North Haven
Norwalk	Norwich	Old Lyme
Old Saybrook	Orange	Oxford
Plainfield*	Plainville	Plymouth
Portland	Prospect	Putnam
Redding	Ridgefield	Rocky Hill
Seymour	Shelton	Simsbury
Somers	South Windsor	Southbury
Southington	Sprague*	Stonington (Town & Borough)
Stratford	Suffield	Thomaston
Thompson	Tolland	Trumbull
Vernon	Wallingford	Waterbury
Waterford	Watertown	West Hartford
West Haven	Westbrook	Weston
Westport	Wethersfield	Wilton
Willington*	Windsor	Windsor Locks
Wolcott	Woodbridge	Woodbury

* Designates New MS4 Permittees

Appendix B
Illicit Discharge Detection and Elimination (IDDE) Program Protocol

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

Objective: The permittee shall implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its MS4 and implement procedures to prevent such discharges.

During the development of the new components of the IDDE program required by this permit, permittees previously authorized by the permit issued January 9, 2004 must continue to implement their existing IDDE program required by that permit to detect and eliminate illicit discharges to their MS4.

(1) Definitions and Prohibitions

The permittee shall prohibit illicit discharges and sanitary sewer overflows (SSOs) to its MS4 and require removal of such discharges consistent with subsections (2) and (4), below.

An SSO is a discharge of untreated sanitary wastewater from a municipal sanitary sewer.

An illicit discharge is any discharge to an MS4 that is not composed entirely of stormwater, *except*:

(a) discharges authorized under a separate NPDES permit that authorize a discharge to the MS4

(b) non-stormwater discharges allowed by Section 3(a)(2) of this general permit

(2) Elimination of Illicit Discharges

(a) Upon detection, the permittee shall eliminate illicit discharges as soon as possible and require the immediate cessation of such discharges upon confirmation of responsible parties in accordance with its enforceable legal authorities established pursuant to subsection (B) below. Where elimination of an illicit discharge within sixty (60) days of its confirmation is not possible, the permittee shall establish a schedule for its elimination not to exceed 180 days (six (6) months). The permittee shall immediately commence actions necessary for elimination. The permittee shall diligently pursue elimination of all illicit discharges. In the interim, the permittee shall take all reasonable and prudent measures to minimize the discharge of pollutants to its MS4.

(b) The period between identification and elimination of an illicit discharge is not a grace period. Discharges from an MS4 that are mixed with an illicit discharge are not authorized by this general permit, are unlawful, and remain unlawful until eliminated.

(3) Non-Stormwater Discharges

The permittee may presume that the sources of non-stormwater listed in Section 3(a)(2) of this permit need not be addressed. However, if the permittee identifies any of these sources as significant contributors of pollutants to the MS4, then the permittee shall implement measures to control these sources so they are no longer significant contributors of pollutants, and/or eliminate them entirely, consistent with this appendix.

(4) Sanitary Sewer Overflows

(a) Upon detection of an SSO the permittee shall eliminate it as expeditiously as possible and take interim mitigation measures to minimize the discharge of pollutants to and from its MS4 until elimination is completed.

(b) The permittee shall identify all known locations where SSOs have discharged to the MS4 within the previous five years. This shall include SSOs resulting, during dry or wet weather, from inadequate conveyance capacities, or where interconnectivity of the storm and sanitary sewer infrastructure allows for communication of flow between the systems. Within 120 days of the effective date of the permit, the permittee shall develop an inventory of all identified SSOs indicating:

- Location (approximate street crossing/address and receiving water, if any);
- A clear statement of whether the discharge entered a surface water directly or entered the MS4;
- Date(s) and time(s) of each known SSO occurrence (i.e. beginning and end of any known discharge);
- Estimated volume(s) of the occurrence;
- Description of the occurrence indicating known or suspected cause(s);
- Mitigation and corrective measures completed with dates implemented; and
- Mitigation and corrective measures planned with implementation schedules.

The permittee shall maintain the inventory as a part of the Plan and update the inventory annually.

(c) The permittee shall provide written notice to the Commissioner within five (5) days of becoming aware of the SSO occurrence and shall include the information in the updated inventory. The notice shall contain all of the information listed in subsection (b), above.

(d) The permittee shall include and update the SSO inventory in its annual report, including the status of mitigation and corrective measures implemented by the permittee to address each SSO identified pursuant to this appendix.

(e) The period between identification and elimination of a discharge from the SSO to the MS4 is not a grace period. Discharges from an MS4 that are mixed with an SSO are not authorized by this general permit, are unlawful and remain unlawful until eliminated.

(5) Outfall/Interconnection Inventory

The permittee shall develop an outfall and interconnection inventory that identifies each outfall and interconnection discharging from the MS4, records its location and condition, and provides a framework for tracking inspections, screenings and other activities under the permittee's IDDE program pursuant to Section 6(*a*)(3) of this general permit.

(a) An outfall means a point source as defined by 40 CFR § 122.2 and in Section 2 of this general permit as the point where the MS4 discharges to waters of the state. An outfall does not include open conveyances connecting two separate storm sewers or pipes, tunnels or other conveyances that connect segments of the same stream or other waters of the state and that are used to convey waters of the state. However, it is strongly recommended that a permittee inspect all

accessible portions of the system as part of this process. Culverts longer than a simple road crossing shall be included in the inventory unless the permittee can confirm that they are free of any connections and simply convey waters of the state.

An interconnection means the point where the permittee's MS4 discharges to another MS4 or other storm sewer system, through which the discharge is conveyed to waters of the state or to another storm sewer system and eventually to a water of the state.

(b) The permittee shall complete its outfall and interconnection inventory in accordance with the timelines in Sections 6(*a*)(3)(C)(ii) and (iii) and shall include the progress of this inventory in each annual report. The inventory shall be updated annually to include data collected in connection with the dry weather screening under subsection (7(d)), below, and other relevant inspections conducted by the permittee.

(c) The inventory shall include the following information: unique identifier, receiving water, date of most recent inspection, dimensions, shape, material (concrete, PVC), spatial location (latitude and longitude with a minimum accuracy of +/-30 feet, physical condition and indicators of potential non-stormwater discharges (including presence or evidence of suspect flow and sensory observations such as odor, color, turbidity, floatables, or oil sheen) as of the most recent inspection.

(6) System mapping

The permittee shall develop a revised and more detailed map than was required by the previous permit issued January 9, 2004. This revised map of the MS4 shall include, at a minimum, parts of the MS4 within the Urbanized Area and those catchment areas of the MS4 with either DCIA of greater than 11% or which discharge to impaired waters ("priority" areas). This map shall be completed within three (3) years of the effective date of this permit for existing 2004 MS4 permittees and by the end of the permit term for new 2004 MS4 permittees. This permit does not provide additional time for existing 2004 MS4 permittees for completion of the mapping that was required by the previous permit.

(a) The mapping shall include, at a minimum, a depiction of the permittee's separate storm sewer system in the priority areas described above. The mapping is intended to facilitate the identification of key infrastructure and factors influencing proper system operation, and the potential for illicit sanitary sewer discharges. The map shall include the required infrastructure and water resources information as indicated in subparagraph (i), below, and shall include the information in subparagraph (ii), below, where available. The Commissioner also recommends the inclusion of additional items as indicated in subparagraph (iii), below.

(i) Required mapping elements

- Municipal separate storm sewer system
  - outfalls and receiving waters (required by previous permit)
  - pipes
  - open channel conveyances (swales, ditches, etc.)
  - catch basins
  - manholes
  - interconnections with other MS4s and other storm sewer systems

- municipally-owned stormwater treatment structures (e.g. detention and retention basins, infiltration systems , bioretention areas, water quality swales, gross particle separators, oil/water separators, or other proprietary systems)
- Catchment delineations as defined in Section 2 for use in priority rankings required in subsection (7)(c), below, or prioritizing BMP retrofits.
- Waterbodies identified by name and indication of all use impairments as identified on the most recent Integrated Water Quality Report pursuant to Clean Water Act section 303(d) and 305(b).

(ii) Elements required where available

- Municipal sanitary sewer system;
- Municipal combined sewer system, if applicable

(iii) Recommended elements

- Storm sewer material, size and age.
- Sanitary sewer system material, size and age
- Where a municipal sanitary sewer system exists, properties known or suspected to be served by a septic system, especially in high-density urban areas
- Area where the permittee's MS4 has received or could receive flow from septic system discharges (e.g. areas with poor soils, or high ground water elevations unsuitable for conventional subsurface disposal systems)
- Seasonal high water table elevations impacting sanitary alignments
- Topography
- Orthophotography
- Alignments, dates and representation of work completed (with legend) of past illicit discharge investigations (e.g. flow isolation, dye testing, CCTV)
- Locations of suspected, confirmed and corrected illicit discharges (with dates and flow estimates)

(b) The mapping may be produced by hand or through computer-aided methods (e.g. GIS). The required scale and detail of the map shall be appropriate to facilitate a rapid understanding of the system by the permittee and the Commissioner. In addition, the mapping shall serve as a planning tool for the implementation and phasing of the IDDE program and demonstration of the extent of complete and planned investigations and corrections. The permittee shall update the mapping as necessary to reflect newly discovered information and required corrections or modifications.

(c) The permittee shall report on the progress towards the completion of the map required by this permit in each annual report.

(7) Written Illicit Discharge Detection and Elimination Program

The IDDE program shall be recorded in a written document pursuant to Section 6(*a*)(3) of the general permit. The IDDE program shall include each of the elements described in subsections (a) – (h), below, unless the permittee provides a written explanation within the IDDE program as to why a particular element is not applicable to the permittee.

Notwithstanding the permittee's explanation, the Commissioner may at any time determine that a particular element is in fact applicable to the permittee and require the permittee to add it to the IDDE program. The written IDDE program shall be completed within one (1) year of the effective date of the permit for existing 2004 MS4 permittees and within two (2) years of the effective date of this general permit for new MS4 permittees. The permittee shall implement the IDDE program in accordance with the goals and milestones set forth in subsection (8), below.

(a) Legal Authority

The IDDE program shall provide that the permittee has adequate legal authority to accomplish the following tasks: prohibit illicit discharges; investigate suspected illicit discharges; eliminate illicit discharges, including discharges from properties not owned by or controlled by the MS4 that discharge into the MS4 system; and implement appropriate enforcement procedures and actions. Adequate legal authority consists of a currently effective ordinance, by-law, or other regulatory mechanism. For existing 2004 MS4 permittees, the ordinance, by-law, or other regulatory mechanism was a requirement of that permit and was required to be effective by January 8, 2009. These permittees shall update their IDDE legal authority within one year of the effective date of this permit. New MS4 permittees must establish this legal authority on or before two (2) years of the effective date of this permit. The written IDDE program shall include a reference or citation of the authority the permittee will use to implement all aspects of the IDDE program.

(b) Statement of IDDE Program Responsibilities

The permittee shall establish a written statement that clearly identifies responsibilities with regard to eliminating illicit discharges. The statement shall identify the lead permittee agency(ies), department(s) or personnel responsible for implementing the IDDE Program as well as any other agencies, departments or personnel that may have responsibilities for aspects of the program (e.g. state or local health officials responsible for overseeing septic system construction; sanitary sewer system staff; inspectional services for enforcing plumbing codes; town counsel responsibilities in enforcement actions, institutional support staff etc.). Where multiple departments, agencies or personnel have responsibilities with respect to the IDDE program specific areas of responsibility shall be defined and processes for coordination and data sharing shall be established and documented.

(c) Assessment and Priority Ranking of Catchments

The permittee shall assess and priority rank the catchments, delineated as required by subsection (6)(a), above, in terms of their potential to have illicit discharges and SSOs and the related public health significance. This ranking will determine the priority order for screening of outfalls and interconnections pursuant to subsection (d), below, catchment investigations for evidence of illicit discharges and SSOs pursuant to subsection (e), below, and provides the basis for determining permit milestones pursuant to subsection (8), below.

(i) The permittee shall classify each catchment into one of the following categories:

- Excluded catchments: Catchments with no potential for illicit discharges may be excluded from the IDDE program. This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services;

cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

- Problem Catchments: Catchments with known or suspected contributions of illicit discharges based on existing information shall be designated as Problem Catchments. This shall include any catchments where previous outfall/interconnection screening indicates sewer input based on olfactory/visual evidence or sampling results (ammonia $\geq$ 0.5 mg/l, surfactants $\geq$ 0.25 mg/l, and bacteria levels greater than the water quality criteria applicable to the receiving water; or ammonia $\geq$ 0.5 mg/l, surfactants $\geq$ 0.25 mg/l, and detectable levels of chlorine). Problem Catchments need not be screened pursuant to subsection (d), below, and shall be scheduled for catchment investigation pursuant to subsection (e), below. Problem catchments shall be identified during the initial ranking of catchments and subsequent rankings shall not add any catchments to the Problem Catchment category.
- High Priority Catchments: Catchments that have not been classified as Problem Catchments and that are discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds; catchments determined by the permittee as high priority based on outfall/interconnection screening under subsection (d), below, and catchment characteristics assessment under subparagraph (c)(ii), below. Any catchment where outfall/interconnection screening indicates sewer input based on olfactory/visual evidence or sampling results (ammonia $\geq$ 0.5 mg/l, surfactants $\geq$ 0.25 mg/l, and bacteria levels greater than the water quality criteria applicable to the receiving water; or ammonia $\geq$ 0.5 mg/l, surfactants $\geq$ 0.25 mg/l, and detectable levels of chlorine) shall be ranked at the top of the High Priority Catchments category and scheduled for catchment investigation pursuant to subsection (e), below.
- Low Priority Catchments: Catchments determined by the permittee as low priority based on outfall/interconnection screening under subsection (d), below, and catchment characteristics assessment under subparagraph (c)(ii), below.

(ii) The permittee shall priority rank catchments within each category (except for excluded catchments), based on screening factors. The permittee shall, at a minimum, consider the following screening factors:

- Past discharge complaints and reports.
- Poor dry weather receiving water quality- the following guidelines are recommended to identify waters as having a high illicit discharge potential: exceeding water quality standards for bacteria; ammonia levels above 0.5 mg/l; surfactants levels greater than or equal to 0.25 mg/l.
- Density of generating sites - Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; and industrial manufacturing areas.
- Age of surrounding development and infrastructure – Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old will probably have a high illicit discharge potential. Developments 20 years or younger will probably have a low illicit discharge potential.
- Sewer conversion – Catchments that were once serviced by septic systems, but have been converted to sewer connections may have a high illicit discharge potential.

- Historic combined sewer systems – Catchments that were once serviced by a combined sewer system, but have been separated may have a high illicit discharge potential.
- Density of aging septic systems – Septic systems thirty years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential. Consultation with local or state health officials is strongly encouraged.
- Culverted streams – any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.

The permittee may also consider as priorities for evaluation for illicit discharges, although not necessarily indicators of the presence of illicit connections or discharges:

- Water bodies that receive a discharge from the MS4 and are drinking water supplies, shell fishing areas, beaches or waters used for contact recreation.
- Impaired waterbodies that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the impairment.

The permittee may add additional relevant factors, including location-specific screening factors; if so, the permittee shall include the additional factors in its written IDDE program.

(iii) An initial illicit discharge potential assessment and priority ranking based on existing information shall be completed within two (2) years from the effective date of the permit for existing 2004 MS4 permittees. New MS4 permittees shall complete this assessment and ranking by the end of the term of the permit. The permittee shall update its assessment and priority ranking annually based on catchment delineations pursuant to subsection (6), above, the results of screening pursuant to subsection (d), below, and other new relevant information. The permittee shall provide a listing of all catchments and the results of the ranking for each catchment in each annual report. For each catchment being investigated the permittee shall also provide in its annual report (1) a summary of evidence of known or suspected illicit discharges and SSOs; (2) completed, ongoing or planned corrective measures addressing confirmed illicit discharges and SSOs; and (3) a schedule for completing and verifying measures correcting the confirmed illicit discharges and SSOs.

(d) Outfall and Interconnection Screening and Sampling

The IDDE program shall include a written procedure for screening and sampling of outfalls and interconnections from the MS4 in dry and wet weather for evidence of illicit discharges and SSOs. This screening procedure shall be used for:

- baseline outfall and interconnection screening pursuant to subparagraph (iii), below (dry weather);
- confirmatory screenings pursuant to subsection (f), below (dry and/or wet weather depending on catchment characteristics);
- follow-up screening pursuant to subsection (g), below (dry and/or wet weather depending on catchment characteristics).

(i) The screening and sampling procedure shall include procedures for sample collection, use of field kits, storage and conveyance of samples (including relevant hold times).

(ii) If an outfall is inaccessible or submerged, the permittee shall proceed to the first accessible upstream manhole or structure for the observation and sampling and report the location with the screening results. If an interconnection is inaccessible or submerged, interconnection screening shall occur at the first accessible location within the permittee's system upgradient of the interconnection.

(iii) Dry weather screening and sampling shall proceed only when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period. When a flow is observed, a sample of the flow shall be collected and analyzed for the parameters listed in subparagraph (v), below. If no dry weather flow is observed, the permittee shall record the condition of the outfall and other relevant information. If no flow is observed, but evidence of dry weather flow exists, the permittee shall revisit the outfall during dry weather within one week of the initial observation, if practicable, to perform a second dry weather screening and sample any observed flow. The permittee shall identify in the annual report any other necessary follow-up actions to identify the source of any apparent intermittent flow not sampled.

(iv) Wet weather screening and sampling, which shall be conducted at an outfall and/or within the catchment area in accordance with subparagraph (e)(ii)b., below, shall proceed during or after a storm event of sufficient depth or intensity to produce a stormwater discharge but only during the spring (March to June) when groundwater levels are relatively high. The permit does not require a minimum rainfall event prior to wet weather screening. However, the purpose of wet weather screening and sampling under the IDDE program is to identify illicit discharges that may activate or become evident during wet weather. Permittees may incorporate provisions that assist in targeting such discharges, including avoiding sampling during the initial period of discharge ("first flush") and/or identifying minimum storm event intensities likely to trigger sanitary sewer interconnections.

(v) Samples shall be analyzed at a minimum for ammonia, chlorine, conductivity, salinity, *E. coli.* (freshwater receiving water) or enterococcus (saline or brackish receiving water), surfactants (such as MBAS), and temperature. All analyses with the exception of indicator bacteria can be performed with field test kits or field instrumentation. In addition, where the discharge is directly into a water quality limited water or a water subject to an approved TMDL, the sample shall be analyzed for the pollutants identified as the cause of the impairment. Sampling for pollutants of concern shall be conducted using the analytical methods found in 40 CFR §136, or alternative methods approved by the Commissioner in accordance with the procedures in 40 CFR §136. Other IDDE screening parameters shall be considered field screening and are not subject to 40 CFR Part 136 requirements.

(vi) Catchments where there is relevant information indicating sewer input to the MS4 or sampling results where ammonia $\geq$ 0.5 mg/l, surfactants $\geq$ 0.25 mg/l, and bacteria levels greater than the water quality criteria applicable to the receiving water (or alternatively, ammonia $\geq$ 0.5 mg/l, surfactants $\geq$ 0.25 mg/l, and detectable levels of chlorine) shall be considered highly likely to contain illicit discharges from sanitary sources, and such catchments shall be ranked at the top of the High Priority Catchments category for investigation.

(e) Catchment Investigation Procedure

The permittee shall develop a written systematic procedure for catchment investigation that includes (1) a review of mapping and historic plans and records for the catchment; (2) a manhole inspection methodology; and (3) procedures to isolate and confirm sources of illicit discharges, as set forth below.

(i) For each catchment being investigated, the permittee shall review relevant mapping and historic plans and records to the extent available, including but not limited to plans related to the construction of the storm drain and of sanitary sewers in the catchment, prior work performed on the storm drain or sanitary sewers, local health official or other municipal data on septic system failures or required upgrades, and complaint records related to SSOs, sanitary sewer surcharges, and septic system breakouts. This review shall be used to identify areas within the catchment with higher potential for illicit connections and System Vulnerability Factors that indicate a risk of sanitary or septic system inputs to the MS4 under wet weather conditions. Consultation with local or state health officials is strongly encouraged. The permittee shall identify and record the presence of any of the following specific System Vulnerability Factors:

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages;
- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs;
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints;
- Common or twin-invert manholes serving storm and sanitary sewer alignments;
- Common trench construction serving both storm and sanitary sewer alignments;
- Crossings of storm and sanitary sewer alignments;
- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
- Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
- Areas formerly served by combined sewer systems;
- Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas;
- Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance);
- History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance);

The permittee shall document the presence or absence of System Vulnerability Factors for each catchment, retain this documentation as part of its IDDE program, and report this

information in Annual Reports. Where System Vulnerability Factors are present, the catchment shall be investigated pursuant to subparagraph (ii)b., below.

(ii) The manhole inspection methodology shall describe a storm drain network investigation that involves systematically and progressively observing, sampling (as required below) and evaluating key junction manholes in the MS4 to narrow the location of suspected illicit discharges or SSOs to an isolated pipe segment between two manholes, locate evidence of illicit discharges or SSOs that may not be evident at the outfall under all circumstances, and confirm or identify potential system vulnerability factors. The written catchment investigation procedures shall detail how the permittee will further isolate and identify potential illicit discharges as indicated by field kit detections equal to or greater than the threshold values listed in subparagraph (d)(vi), above. The permittee is responsible for selecting key junction manholes in a manner such that the distance between key junction manholes is appropriate to ensure a thorough assessment of its system.

The manhole inspection methodology may either start from the outfall and work up the system or start from the upper parts of the catchment and work down the system or be a combination of both practices. Either method must, at a minimum, include an investigation of each key junction manhole within the MS4, even where no evidence of an illicit discharge is observed at the outfall. The Catchment Investigation Procedure must describe the method the permittee will use.

a. Dry weather investigation

Key junction manholes shall be opened and inspected for visual and olfactory evidence of illicit connections (e.g. excrement, toilet paper, gray filamentous bacterial growth, or sanitary products present). If flow is observed, the permittee shall sample the flow at a minimum for ammonia, chlorine and surfactants and can use field kits for these analyses. Additional indicator sampling may assist in determining potential sources (e.g. bacteria for sanitary flows, conductivity to detect tidal backwater, etc.). Where sampling results or visual or olfactory evidence indicate potential illicit discharges or SSOs, the area draining to the junction manhole shall be flagged for further investigation, through upstream junction manhole investigation and/or isolation and confirmation of sources pursuant to subsection (e)(ii), above.

Manhole inspections in all areas shall also include identifying System Vulnerability Factors including common (twin invert) manholes, directly piped connections between storm drains and sanitary sewer infrastructure, common weir walls, sanitary sewer underdrain connections and other structural vulnerabilities where sanitary discharges could enter the storm drain system during wet weather. Where present, such System Vulnerability Factors shall be investigated pursuant to paragraph (b) below.

b. Wet weather investigation

Where the review of mapping and historic plans and records and/or manhole inspections indicate the presence of one or more System Vulnerability Factors as listed in subsection (e)(i), above, the permittee shall also inspect and sample under wet weather conditions to the extent necessary to determine whether wet weather-induced high flows in sanitary sewers or high groundwater in areas served by septic

systems result in discharges of sanitary flow to the MS4. The permittee shall conduct at least one wet weather screening and sampling at the outfall for any catchment where one or more System Vulnerability Factors are present. This sampling can be done upon completion of any dry weather investigation but must be completed before catchment investigation is marked as complete. All data shall be recorded and reported in each annual report.

(iii) Isolation and Source Verification Procedures

The permittee shall develop procedures to be used to isolate and confirm sources where manhole investigations or other physical evidence or screening has identified MS4 alignments to be influenced by illicit discharges or SSOs. These shall include isolation of the drainage area for implementation of more detailed investigations, inspection of additional manholes along the alignment to refine the location of potential contaminant sources, and methods such as caulk damns, targeted internal plumbing inspections, dye testing, video inspections, or smoke testing to isolate and confirm the sources.

(f) Removal and Confirmation

When the source of an illicit discharge or SSO is identified and confirmed, the permittee shall exercise its authority as necessary to require its removal pursuant to subsections (2) or (3), above. For each confirmed source the permittee shall include in the annual report the following information: the location of the discharge and its source(s), a description of the discharge, the method of discovery, date of discovery, date of elimination, mitigation or enforcement action; and estimate of the volume of flow removed.

Within one year of removal of all identified illicit discharge and SSO sources within a catchment area, confirmatory outfall or interconnection screening shall be conducted. The confirmatory screening shall be conducted in dry weather unless System Vulnerability Factors have been identified in the catchment pursuant to subsection (e)(i), above, in which case both dry weather and wet weather confirmatory screening shall be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment shall be scheduled for additional investigation. Confirmatory screening is not required in catchments where no illicit discharges or system vulnerability factors have been identified and no previous screening indicated suspicious flows.

(g) Follow-up Screening

Upon completion of catchment investigation pursuant to subsection (e), above, and illicit discharge removal and confirmation (if necessary) pursuant to subsection (f), above, the catchment outfall or interconnection shall be scheduled for follow-up screening within five years, or sooner as determined by the permittee based on the catchment's illicit discharge priority. Follow-up screening shall consist of dry weather screening and sampling except that wet weather screening and sampling shall also be required in catchments where wet weather screening was required by subparagraph (e)(ii)b., above.

(h) Illicit Discharge Prevention Procedures

The permittee shall develop and implement mechanisms and procedures designed to prevent illicit discharges and SSOs, such as: spill response and prevention procedures including identification of spills, reporting procedures, containment procedures, and documentation;

public awareness (this may be a part of the education program required by subsection (2), above); reporting (hotlines) and training of public employees involved in the IDDE program on ways to identify potential illicit discharges and SSOs.

(8) IDDE Program Implementation Goals and Milestones

The permittee shall implement the IDDE Program to meet the following goals and milestones:

(a) The permittee shall complete dry weather screening and sampling (where flowing) of every MS4 outfall and interconnection (except Excluded and Problem Catchments) no later than three years from the permit effective date for existing 2004 MS4 permittees and by the end of the permit term for new MS4 permittees. Existing 2004 MS4 permittees may rely on screening conducted under the previous permit issued January 9, 2004, pursuant to an enforcement action, or by the Commissioner to the extent that it meets the requirements of subsection (7), above. New MS4 permittees shall complete dry weather screening and sampling of every MS4 outfall and interconnection (except Excluded and Problem Catchments) no later than the end of the permit term. All data shall be reported in each annual report. Permittees that have conducted substantially equivalent monitoring to that required by subsection (7)(d), above, as part of an enforcement action can request an exemption from the requirements of subsection (7)(d), above, by submitting a written request to the Commissioner and retaining exemption approval from the Commissioner as part of the Plan. Until the permittee receives formal written approval of the exemption from subsection (7)(d), above, from the Commissioner the permittee remains subject to all requirements of subsection (7)(d), above.

(b) Existing 2004 MS4 permittees shall begin investigations using the procedure developed in accordance with subsection (7)(d), above, within three months of investigation procedure finalization and no later than 15 months (1 year and 3 months) from the effective date of the permit. New MS4 permittees shall begin these investigations no later than 2 years and 3 months from the effective date of the permit. All permittees shall make continued progress each year toward meeting the milestones of subsection (8)(c), below. The permittee shall continue investigation, including Problem Catchments, using its existing IDDE program until such time as the procedure under subsection (7)(e), above, is developed.

(c) The permittee shall implement the Catchment Investigation Procedure in every catchment of the MS4, even where dry weather screening does not indicate evidence of illicit discharges. The permittee shall begin implementation of the procedure in Problem Catchments and those catchments with the highest ranking in the Assessment of Priority Catchments pursuant to subsection (7)(c), above, Implementation of the Catchment Investigation Procedure shall comply with the following milestones. For purposes of these milestones, a catchment investigation is considered complete if a permittee has completed all elements of subsection (7)(e), above.

i. The permittee shall complete the Catchment Investigation Procedure in a minimum of 80% of the MS4 area served by Problem Catchments within three years of the permit effective date and 100% of Problem Catchments within five years of the permit effective date.

ii. The permittee shall complete the Catchment Investigation Procedure in every catchment of the MS4 where information indicates sewer input including outfall/interconnection screening that indicates sewer input based on olfactory/visual evidence or sampling results (ammonia $\geq$ 0.5 mg/l, surfactants $\geq$ 0.25 mg/l, and bacteria levels greater than the water

quality criteria applicable to the receiving water; or ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25 mg/l, and detectable levels of chlorine) within five (5) years of the permit effective date.

iii. The permittee shall complete the Catchment Investigation Procedure in 40% of the area served by all MS4 catchments within five (5) years of the permit effective date, and in 100% of the area served by all MS4 catchments within ten (10) years of the permit effective date. The permittee may count the area of low priority catchments only if the Catchment Investigation has been started in all other MS4 catchments. For the purposes of this section, catchment investigations that have been started include those where provisions of subsections (7)(e)(i) and (ii), above, have been completed.

d. Where catchments do not contain junction manholes, the dry weather screening and sampling shall be considered as meeting the manhole inspection requirement. In these catchments, dry weather screenings that indicate potential presence of illicit discharges shall be further investigated pursuant to subsection (7)(e)(iii), above. Investigations in these catchments may be considered complete where dry weather screening reveals no flow; no evidence of illicit discharges or SSOs is indicated through sampling results or visual or olfactory means; and no wet weather System Vulnerability Factors are identified.

e. The permittee shall track progress towards these milestones in each annual report.

(9) Indicators of IDDE Program Progress

The permittee shall define or describe indicators for tracking program success. At a minimum, indicators shall include measures that demonstrate efforts to locate illicit discharges, the number of SSOs and illicit discharges identified and removed, the percent and area in acres of the catchment area served by the MS4 evaluated using the catchment investigation procedure, and volume of sewage removed. The permittee shall evaluate and report the overall effectiveness of the program based on the tracking indicators in the annual report.

(10) Training

The permittee shall, at a minimum, annually provide training to employees involved in IDDE program about the program, including how to recognize illicit discharges and SSOs. The permittee shall report on the frequency and type of employee training in the annual report.

Appendix C

AQUIFER PROTECTION AREAS AND OTHER GROUNDWATER DRINKING SUPPLY AREAS

GUIDANCE INFORMATION

The Stormwater Management Plan ("the Plan") should consider measures to reduce or mitigate potential impacts to both ground water (aquifers) and surface waters, taking into consideration both quantity and quality of the runoff. The emphasis should be to minimize, to the extent possible, changes between pre-development and post-development runoff rates and volumes. Coordination and discussion with the local water company is strongly encouraged.

The basic stormwater principals for Aquifer Protection Areas (and other groundwater drinking supply areas) are to prevent inadvertent pollution discharges/releases to the ground, while encouraging recharge of stormwater where it does not endanger groundwater quality. The permittee should review Sections 19-13-B32(h) and (i) of the Regulations of Connecticut State Agencies for additional information. Measures include:

- prevent illicit discharges to storm water, including fuel/chemical pollution releases to the ground;
- minimize DCIA and disconnect large areas of DCIA with natural or landscape areas;
- direct paved surface runoff to aboveground type land treatment structures – sheet flow, surface swales, depressed grass islands, detention/retention and infiltration basins, and wet basins. These provide an opportunity for volatilization of volatile organic compounds to the extent possible before the stormwater can infiltrate into the ground;
- provide necessary impervious pavement in high potential pollutant release areas. These "storm water hot spots" include certain land use types or storage and loading areas, fueling areas, intensive parking areas and roadways (see table below);
- only use subsurface recharge structures such as dry wells, galleries, or leaching trenches, to directly infiltrate clean runoff such as rooftops, or other clean surfaces. These structures do not adequately allow for attenuation of salts, solvents, fuels or other soluble compounds in groundwater that may be contained in runoff; and
- restrict pavement deicing chemicals, or use an environmentally suitable substitute such as sand only, or alternative de-icing agents such as calcium chloride or calcium magnesium.

Infiltration of stormwater should be **restricted** under the following site conditions:

- ***Land Uses or Activities with Potential for Higher Pollutant Loads:*** Infiltration of stormwater from these land uses or activities (refer to Table 7-5 below), also referred to as stormwater "hotspots," can contaminate public and private groundwater supplies. Infiltration of stormwater from these land uses or activities may be allowed by the review authority with appropriate pretreatment. Pretreatment could consist of one or a combination of the primary or secondary treatment practices described in the Stormwater Quality Manual provided that the treatment practice is designed to remove the stormwater contaminants of concern.

- ***Subsurface Contamination:*** Infiltration of stormwater in areas with soil or groundwater contamination such as brownfield sites and urban redevelopment areas can mobilize contaminants.

- ***Groundwater Supply and Wellhead Areas:*** Infiltration of stormwater can potentially contaminate groundwater drinking water supplies in immediate public drinking water wellhead areas.

Land Uses or Activities with Potential for Higher Pollutant Loads
Table 7-5 of the 2004 Stormwater Quality Manual

Land Use/Activities	
• Industrial facilities subject to the DEEP Industrial Stormwater General Permit or the U.S. EPA National Pollution Discharge Elimination System (NPDES) Stormwater Permit Program • Vehicle salvage yards and recycling facilities • Vehicle fueling facilities (gas stations and other facilities with on-site vehicle fueling) • Vehicle service, maintenance, and equipment cleaning facilities • Fleet storage areas (cars, buses, trucks, public works) • Commercial parking lots with high intensity use (shopping malls, fast food restaurants, convenience stores, supermarkets, etc.) • Public works storage areas	• Road salt storage facilities (if exposed to rainfall) • Commercial nurseries • Flat metal rooftops of industrial facilities • Facilities with outdoor storage and loading/unloading of hazardous substances or materials, regardless of the primary land use of the facility or development • Facilities subject to chemical inventory reporting under Section 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA), if materials or containers are exposed to rainfall • Marinas (service and maintenance) • Other land uses and activities as designated by the review authority

For further information regarding the design of stormwater collection systems in Aquifer Protection Areas, contact the Aquifer Protection Area Program at (860) 424-3020 or visit www.ct.gov/deep/aquiferprotection.

Appendix D – Impaired Waters Guidance

Surface Waters and Associated Stormwater Pollutants of Concern			
Stormwater Pollutant of Concern	Waterbodies included within a TMDL or Waters Included in Pollution Control Strategy Developed by CT DEEP	Impaired waters without a TMDL	
		Impaired Designated Use	Cause
Phosphorus	Any water body subject to a TMDL pollutant load reduction for Phosphorus or any waterbody included in the Interim Phosphorus Reduction Strategy for Connecticut Freshwater Non-tidal Receiving Rivers and Streams Technical Support Document (2014 or as amended) , including but not limited to the Bantam River Watershed, Blackberry River Watershed, Factory Brook Watershed, Farmington River Watershed, Fivemile River Watershed, Hockanum River Watershed, Housatonic River Main Stem Watershed, Limekiln Brook Watershed, Naugatuck River Watershed, Norwalk River Watershed, Pequabuck River Watershed Pomperaug River Watershed, Pootatuck River Watershed, Quinebaug River Watershed, Quinnipiac River Watershed, Shetucket River Watershed or Willimantic River Watershed	Habitat for Fish, Other Aquatic Life and Wildlife or Recreation	Phosphorus, Nutrient/ Eutrophication Biological Indicators, Dissolved Oxygen, Chlorophyll-a, or Excess Algal Growth
Nitrogen	Any water body subject to a TMDL pollutant load reduction for Nitrogen, including but not limited to the Long Island Sound TMDL for Dissolved Oxygen (entire state of CT)	Habitat for Marine Fish, Other Aquatic Life and Wildlife	Dissolved oxygen saturation, Nitrogen (Total), Nutrient / Eutrophication Biological Indicators, Oxygen, Dissolved
Bacteria	Any water body subject to a TMDL pollutant load reduction for Total Coliform, Escherichia coli, Fecal coliform or Enterococci	Recreation, Existing or Proposed Drinking Water, Commercial Shellfish Harvesting Where Authorized or Shellfish Harvesting for Direct Consumption Where Authorized	Total Coliform, Escherichia coli, Fecal coliform or Enterococci
Mercury	Any water body subject to a TMDL pollutant load reduction for Mercury (Entire state of Connecticut)	Habitat for Fish, Other Aquatic Life and Wildlife or Fish Consumption	Mercury

Water Quality Targets for Waters for Which Bacteria is a Stormwater Pollutant of Concern				
Water Quality Classification	**E. Coli (Freshwater Rec) (cols/100mls)**	**Enterococci (Marine Rec) (cols/100mls)**	**Fecal Coliform (Marine Shellfishing) (cols/100mls)**	**Total Coliform (Freshwater Drinking) (cols/100mls)**
AA	Instantaneous designated swimming 235 / Non designated Swimming 410 / All other Recreation 576 Geomean 126	N/A	N/A	Monthly Moving average <100 / Single Sample Maximum 500
A	Same as AA	N/A	N/A	N/A
B	Same as AA	N/A	N/A	N/A
SA (Direct Consumption)	N/A	Instantaneous Designated Swimming 104 / Instantaneous All other Uses 500 / Geomean 35	Geomean 14 / 90% of samples <31	N/A
SB (Indirect Consumption)	N/A	Same as SA waters	Geomean 88 / 90% of samples < 260	N/A

CT DEEP Industrial Stormwater Registration Status

Report Includes all Registrations received by 1/31/2017

Site Town	Site Name & Street Address	Client Name	Application #	Received Date	Status	Status Date	Pollution Prevention Plan	Request or Comment Period End Date	Permit Number	Permit Expiration Date
CANTERBURY	Name: WWP CANTERBURY GARAGE Address: 133 PACKER RD	WILLIMANTIC WASTE PAPER CO., INC.,	201105078	06/01/2011	Issued	06/29/2011	Review & Comment Period Closed		GSI001970	9/30/2018
CANTERBURY	Name: WWP CANTERBURY RECYCLING Address: 32 PACKER RD	WILLIMANTIC WASTE PAPER CO., INC.,	201105081	06/01/2011	Issued	06/29/2011	Review & Comment Period Closed		GSI001971	9/30/2018
CANTERBURY	Name: WWP CANTERBURY RECYCLING Address: 32 PACKER RD	WILLIMANTIC WASTE PAPER CO., INC.,	201105095	06/01/2011	Issued	07/01/2011	Review & Comment Period Closed		GSI001969	9/30/2018
CANTON	Name: CANTON TRANSFER STATION Address: RAMP ROAD/POWDER MILL ROAD	CANTON, TOWN OF	201407038	06/27/2014	Rejected	07/25/2014	Review & Comment Period Closed	8/22/2014		
CENTERBROOK	Name: All Waste Inc. Address: 25 Industrial Park Rd	ALL WASTE INCORPORATED,	201205755	07/27/2012	Issued	10/31/2012	Review & Comment Period Closed		GSI002529	9/30/2018
CHESHIRE	Name: 22 BURTON DRIVE Address: 22 BURTON DR	AJ WASTE SYSTEMS, LLC,	201104953	06/01/2011	Issued	10/01/2011	Review & Comment Period Closed		GSI001588	9/30/2018
CHESHIRE	Name: 22 BURTON DRIVE Address: 22 BURTON DR	CENTRAL CONNECTICUT RECYCLING & TRANSFER, LLC	201105010	06/01/2011	Issued	06/27/2011	Review & Comment Period Closed		GSI002053	9/30/2018

Appendix B

CT DEEP Industrial Stormwater Registration Status

Report Includes all Registrations received by 1/31/2017

Site Town	Site Name & Street Address	Client Name	Application #	Received Date	Status	Status Date	Pollution Prevention Plan	Request or Comment Period End Date	Permit Number	Permit Expiration Date
CHESHIRE	Name: 224 SANDBANK ROAD Address: 224 SANDBANK RD	BOZZUTO'S, INC.,	201304718	10/16/2013	Issued	01/14/2014	Review & Comment Period Closed		GSI002639	9/30/2018
CHESHIRE	Name: 615 W Johnson Ave Address: 615 W Johnson Ave	QTG-Tropicana,	201105835	05/31/2011	Issued	08/02/2011	Review & Comment Period Closed		GSI002304	9/30/2018
CHESHIRE	Name: Atlantic Inertial Systems Inc. Address: 250 KNOTTER DR	ATLANTIC INERTIAL SYSTEMS INC.,	201103975	05/27/2011	Issued	06/06/2011	Review & Comment Period Closed		GSI001624	9/30/2018
CHESHIRE	Name: Central Transport International Inc. Address: 210 E JOHNSON AVE	CENTRAL TRANSPORT INTERNATIONAL INC,	201205815	08/02/2012	Issued	11/02/2012	Review & Comment Period Closed		GSI002530	9/30/2018
CHESHIRE	Name: CHESHIRE DEPARTMENT OF PUBLIC WORKS/TRANSFER STATION Address: 1286 WATERBURY RD	CHESHIRE, TOWN OF	201105665	06/01/2011	Issued	06/01/2011	Review & Comment Period Closed		GSI001174	9/30/2018
CHESHIRE	Name: CHESHIRE SEWAGE TREATMENT Address: 1325 CHESHIRE ST	CHESHIRE, TOWN OF	201105938	06/01/2011	Issued	08/04/2011	Review & Comment Period Closed		GSI001742	9/30/2018

CT DEEP Industrial Stormwater Registration Status

Report Includes all Registrations received by 1/31/2017

Site Town	Site Name & Street Address	Client Name	Application #	Received Date	Status	Status Date	Pollution Prevention Plan	Request or Comment Period End Date	Permit Number	Permit Expiration Date
CHESHIRE	Name: CONSOLIDATED INDUSTRIES AQUISITION CORP Address: 677 MIXVILLE RD	CONSOLIDATED INDUSTRIES ACQUISITION CORPORATION,	201105639	06/01/2011	Issued	07/07/2011	Review & Comment Period Closed		GSI001401	9/30/2018
CHESHIRE	Name: DATTCO CHESHIRE Address: 157 SANDBANK RD	CHESHIRE, TOWN OF	201105561	05/31/2011	Issued	08/19/2011	Review & Comment Period Closed		GSI002413	10/1/2011
CHESHIRE	Name: DATTCO CHESHIRE Address: 157 SANDBANK RD	CHESHIRE, TOWN OF	201105658	05/31/2011	Issued	10/01/2011	Review & Comment Period Closed		GSI002413	9/30/2018
CHESHIRE	Name: DATTCO CHESHIRE Address: 157 SANDBANK RD	DATTCO, INC.,	201105567	05/31/2011	Issued	08/19/2011	Review & Comment Period Closed		GSI002414	10/1/2011
CHESHIRE	Name: DATTCO CHESHIRE Address: 157 SANDBANK RD	DATTCO, INC.,	201105565	05/31/2011	Issued	08/26/2011	Review & Comment Period Closed		GSI002419	9/30/2018
CHESHIRE	Name: EDAC Technologies Corporation Address: 500 KNOTTER DR	EDAC TECHNOLOGIES CORPORATION	201205876	08/09/2012	Issued	10/09/2012	Review & Comment Period Closed	10/7/2012	GSI002535	9/30/2018
CHESHIRE	Name: EDAC Technologies Corporation Address: 500 KNOTTER DR	UNITED TECHNOLOGIES CORPORATION,	201104376	05/27/2011	Issued	06/09/2011	Review & Comment Period Closed		GSI000535	9/30/2016

CT DEEP Industrial Stormwater Registration Status

Report Includes all Registrations received by 1/31/2017

Site Town	Site Name & Street Address	Client Name	Application #	Received Date	Status	Status Date	Pollution Prevention Plan	Request or Comment Period End Date	Permit Number	Permit Expiration Date
CHESHIRE	Name: ERICKSON METALS CORPORATION Address: 25 KNOTTER DR	ERICKSON METALS CORPORATION	201106059	07/07/2011	Issued	07/07/2011	Review & Comment Period Closed		GSI002409	9/30/2018
CHESHIRE	Name: OGS TECHNOLOGIES, INC. Address: 1855 PECK LN	OGS TECHNOLOGIES INC,	201205419	07/02/2012	Issued	09/29/2012	Review & Comment Period Closed		GSI001602	9/30/2018
CHESTER	Name: 226-4 Middlesex Avenue Address: 226 Middlesex Ave	CHRISHOLM MARINA INC.	201105510	06/03/2011	Issued	09/13/2011	Review & Comment Period Closed		GSI002436	9/30/2018
CHESTER	Name: CHESTER FERRY DOCK Address: Ferry Road	TRANSPORTATION, STATE OF CONNECTICUT DEPARTMENT OF	201103724	05/19/2011	Issued	05/31/2011	Review & Comment Period Closed		GSI002331	10/1/2011
CHESTER	Name: CHESTER FERRY DOCK Address: Ferry Road	TRANSPORTATION, STATE OF CONNECTICUT DEPARTMENT OF	201103959	05/26/2011	Issued	10/01/2011	Review & Comment Period Closed		GSI002356	9/30/2018
CHESTER	Name: CHESTER POINT MARINA Address: 72 RAILROAD AVE	BLP MARINE, LLC,	201105685	06/13/2011	Issued	10/01/2011	Review & Comment Period Closed		GSI002274	9/30/2018
CHESTER	Name: CHESTER PUBLIC WORKS DEPARTMENT Address: 16 GROTE RD	CHESTER, TOWN OF	201105471	06/14/2011	Issued	07/07/2011	Review & Comment Period Closed		GSI001741	9/30/2018

VATER QUALITY CLASSIFICATIONS
CHESHIRE, CT

SURFACE WATER QUALITY CLASSES

A
AA
B, B*
SA
SB

A
AA
B, B*
SA
SB

NOTES
Surface Water Classifications beginning with I refer to Inland and Marine Surface Waters
B* is a subset of Class B where no direct human contact and fish ingestion are allowed other than those consistent with Class SA, B and SA surface waters

GROUND WATER QUALITY CLASSES

GA (white background)
GAA, GAAs
GA, GAA may not meet current standards
GB
GC

Area of Contribution to Public Supply Well
Final Aquifer Protection Area (Level A)
Major Basin Boundary

EXPLANATION

WATER QUALITY CLASSIFICATIONS (WQC) MAPS are one of the elements of the Water Quality Standards (WQS) for the State of Connecticut. The WQS are a part of Connecticut's clean water program and are essential for preserving and improving water quality. The WQS follow the principles of Connecticut's Clean Water Act referred to as "Chapter 446K of the Connecticut General Statutes. The WQS provide policy guidance in many areas for example the permit to discharge to water resources, siting of landfills remediation of groundwater of unsewered sewerage system projects. The first two elements of the WQS are the Standards which set an overall policy for maintenance of water quality and the Criteria which are descriptive and numerical standards that describe the allowable parameters and goals for various water quality classifications. A discussion of these two elements is found in the Water Quality Standards document available on the CT DEEP website. The third element is the Classifications and the Water Quality Classification Maps which show the Classifications assigned to each surface and groundwater resource throughout the State. The WQS are adopted using a public participation process. The WQC maps are also adopted using a public participation process but go through hearings separately from the Standards and Criteria. Revisions and updates to maps of the WQC data occurs in accordance with the public participation procedures contained in Section 22a-42a of the Connecticut General Statutes (Connecticut WQC is subject to Connecticut regulations and changes must be reviewed and adopted. All changes to the Surface WQC require an adoption process that is subject to federal review and approval in addition to CT regulations. The adopted dates for the WQC by major drainage basin are Housatonic River, Western River and Southwest Coastal Basins - March 1998 (Connecticut River and South Central Coastal Basins - February 1995 Thames River Basin and Eastern and Southeast Coastal Basins - December 1996 Surface Water Classifications do not change after the adoption date until the next basin revision. Ground Water Classifications may change with subsequent data and other specific circumstances. The map does have a more than one WQC adoption date because a town may be in more than one river drainage basin

SURFACE WATERS in Connecticut are divided into freshwater (designated as AA, A, B or B*) and marine waters (classified as SA or SB). Class AA designated uses consist of existing or proposed drinking water supplies habitats for fish and other aquatic life and wildlife recreational and water supply for industry and agriculture. Class A designated uses are habitat for fish and other aquatic life and wildlife potential drinking water supplies recreation and navigation and water supply for industry and agriculture. Class SA designated uses are habitat for marine fish, other aquatic life and wildlife shellfish harvesting for direct human consumption, recreational water supply and navigation. Class B designated uses are habitat for fish and aquatic life and wildlife recreation, navigation and industrial and agricultural water supply. Class B* applicable to Candlewood Lake as a subset of Class B and is delineated on all waters by the designated uses criteria and standards for Class B except no use for the consumption of direct shellfish. Class SB designated uses are habitat for marine fish and aquatic life and wildlife, restricted shellfish harvesting recreation industrial water supply and navigation

Surface waters which are not specifically classified shall be considered as Class A or Class AA. Surface waters of all groundwater areas are assumed Class AA unless otherwise indicated. Surface waters in GAA groundwater areas are assigned Class AA unless otherwise indicated

On the WQC maps surface water quality goal of A is represented by blue outlined water bodies. Surface water quality goal of AA is represented by purple outlined water bodies. Surface water quality goal of B is represented by gold colored water bodies.

GROUND WATERS in Connecticut are classified as GAA, GA, GB and GC. Class GAA designated uses are existing or potential public supply of water suitable for drinking without treatment and baseflow for hydraulically connected surface water bodies. The Class GAAs is a subclass of GAA but get more water that is primarily to a public water supply reservoir. The area of contribution to a public water supply well is represented by a thick dark brown around the well and is assumed to be Class GAA unless otherwise demonstrated. Class GA designated uses are existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically interconnected surface water bodies. All ground waters not specifically classified are considered as Class GA. Class GB designated uses are industrial process and cooling waters and baseflow for hydraulically interconnected water bodies and is presumed not suitable for human consumption without treatment. Class GC designated uses are considerations of discharges authorized by the Commissioner pursuant to Section 22a-430 of the General Statutes

On the WQC map GA is represented by white colored land areas. Class GAAs and some GAAs are represented by blue colored land areas. The area of water features to a public water supply well is shown by a blue groundwater overprint. A gradient of GAA followed by a dark brown shown indicates a watershed that contributes to the public water supply for a more urban than Connecticut. Class GA or Class SAA areas that currently does not but meeting the GA or GAA standards are represented on the WQC maps by tan colored land areas. Class GB is represented by green colored land areas. Class GC is represented by magenta colored land areas

FINAL AQUIFER PROTECTION AREAS (Level A) are included on the WQC maps for informational purposes. These areas are also posted to be reclassified GAA during the next report hearing updates subject to public participation. The Aquifer Protection Program helps protect "unsewered" public drinking water resources by delineating aquifer protection areas (also called wellhead protection areas) for public supply wells and maintaining land use regulations within these areas. These areas represent the land area contributing to ground water to active public supply wells as well fields that serve more than 1000 people and are not in sand and gravel aquifers (stratified drift deposits)

DATA SOURCES

WATER QUALITY CLASSIFICATIONS DATA - Water quality classifications shown on this map are based on information from the following digital spatial datasets that are typically shown together - Ground Water Quality Classifications Polygons Surface Water Quality Classifications Lines and Surface Water Quality Classifications Poly. The map legend shows reflects the contents of these three data sources. These WQC data were originally compiled at 1:24 000 scale or 7.5 minute USGS topographic quadrangle maps and were digitized at 1:24 000 scale. For example the Farmington River Quality Classifications Lake and Surface Water Quality Classifications Poly digital data samples surface water quality classifications to water bodies such as rivers streams reservoirs, lakes ponds and are so found at 1:24 000-scale in geography data available from CT DEEP. These do in general does not include all the waterbodies in Connecticut. The Ground Water Quality Classifications Poly data samples ground water quality classifications at 1:24 000 scale to the remaining land areas in Connecticut

AQUIFER PROTECTION AREA DATA - Aquifer Protection Areas shown on this map are from the Aquifer Protection Area digital dataset which contains polygon data intended to be used at 1:24 000 scale. The dataset contains mapped areas classified as Level A Aquifer Protection Areas (Final) and Level B Aquifer Protection Area (Preliminary). The Level B areas are not shown on the WQC maps. The data was collected from 1991 to the present and is continually updated as Final areas incorporate surface Preliminary areas. The Aquifer Protection Areas are delineated by the individual water companies serving the well fields and submitted to the CT DEEP for approval. Preliminary mapping provides a general estimate of the area contributing ground water to the well. Level B final mapping is based on extensive site-specific detailed modeling of the ground water flow systems. CT DEEP mandates Final area boundaries to be delineated with 1:24 000 scale topographic and base map data where appropriate during the approval process

BASE MAP AND BASIN DATA - Major drainage basin shown on this map are from the Major Basin Line data developed by CT DEEP and intended to be used at 1:24 000 scale

BASE MAP DATA - Based on data originally from 1:24 000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. In the basin political boundaries, road data supports the aggregate geographic names and geographic places. Streets and street names are from Tiger Atlas" copyrighted data. Base map information is limited outside the quadrangle

RELATED INFORMATION
This map is intended to be printed at an original dimensions as at that to maintain the 1:24 000 scale (1 inch = 2000 feet

WATER QUALITY STANDARDS - refer to the CT DEEP website for a summary and the full text of the Water Quality Standards and for other information on water quality

AQUIFER PROTECTION AREAS - Go to the CT DEEP website for more information

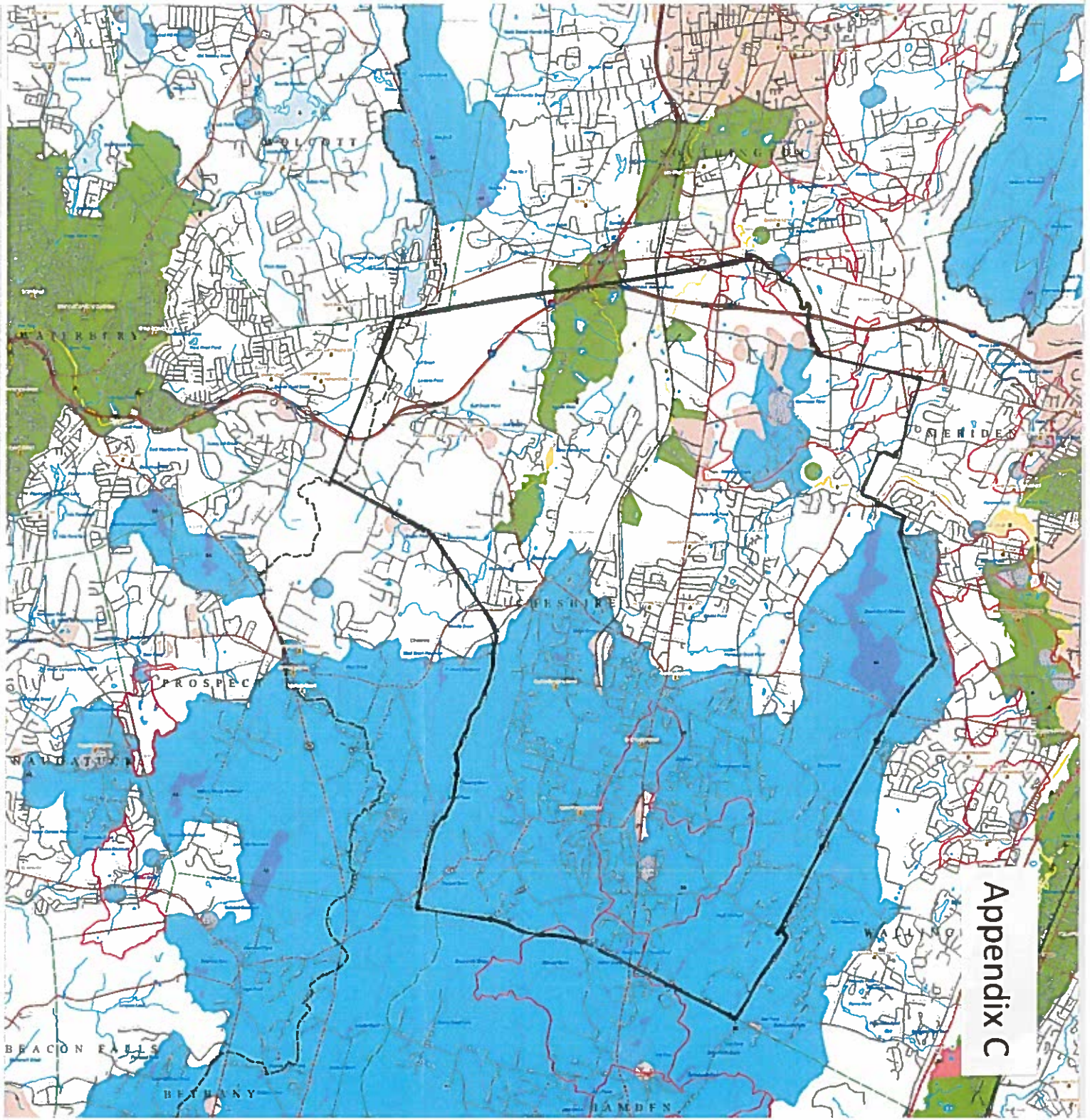
ADOPTED DATES

Water Quality Standards
February 25, 2011

Thames Basin and Pawcatuck River and Southeast Coastal Basins December 1996

Connecticut River and South Central Coastal Basins
February 1995

INDEX MAPS



Appendix C

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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

Factsheet: Town of Cheshire Water Quality and Stormwater Summary

This document was created for each town that has submitted monitoring data under the current Small Municipal Separate Storm Sewer System (MS4) General Permit. What follows is information on how stormwater can affect water quality in streams and rivers and a summary of data submitted by your town. This factsheet is intended to help you interpret your monitoring results and assist you in compliance with the MS4 program.

Water Quality in Connecticut

Surface waters are important resources that support numerous uses, including water supply, recreation, fishing, shellfishing and sustaining aquatic life. Water quality conditions needed to support these uses are identified within the Connecticut Water Quality Standards (WQS). In order to protect and restore these uses, we need acceptable environmental conditions (physical, chemical and biological) to be present within surface waters.

To assess and track water quality conditions, CT DEEP conducts monitoring across the State. The data is synthesized into a biennial state water quality report called the Integrated Water Quality Report. Currently, specific water quality monitoring in the state encompasses about 50% of rivers, 47% of lakes, and 100% of estuary/coastline. In addition, CT DEEP may have information about certain land uses or discharges which could indicate a potential for water quality to be impacted, even if the waterbody has not been fully monitored and assessed.

To find more detailed information on water quality in your town, please see the Integrated Water Quality Report (IWQR) on the CT DEEP website at www.ct.gov/deep/iwqr. Information on water quality within your town is also presented on the maps included in this fact sheet.

Impacts of Impervious Cover on Water Quality

Impervious cover (IC) refers to hard surfaces across the landscape such as roads, sidewalks, parking lots and roofs. Studies have focused on the amount of hard surfaces to evaluate the impacts of stormwater runoff from these hard surfaces on water quality and found that IC affects both the quantity and quality of stormwater. IC forces rain to runoff the land, carrying pollutants quickly and directly to lakes and streams instead of soaking into the ground and being filtered by the soil. For more information on impervious cover, please see the CT DEEP web page www.ct.gov/deep/imperviouscoverstudies and EPA's web page www.epa.gov/caddis/ssr_urb_is1.html.

In general, the higher the percentage of IC in a watershed, the poorer the surface water quality. Research in Connecticut strongly suggests that aquatic life will be harmed when the IC within a

watershed exceeds 12%. Stormwater pollution from IC is a likely cause of impairment for these waterbodies.

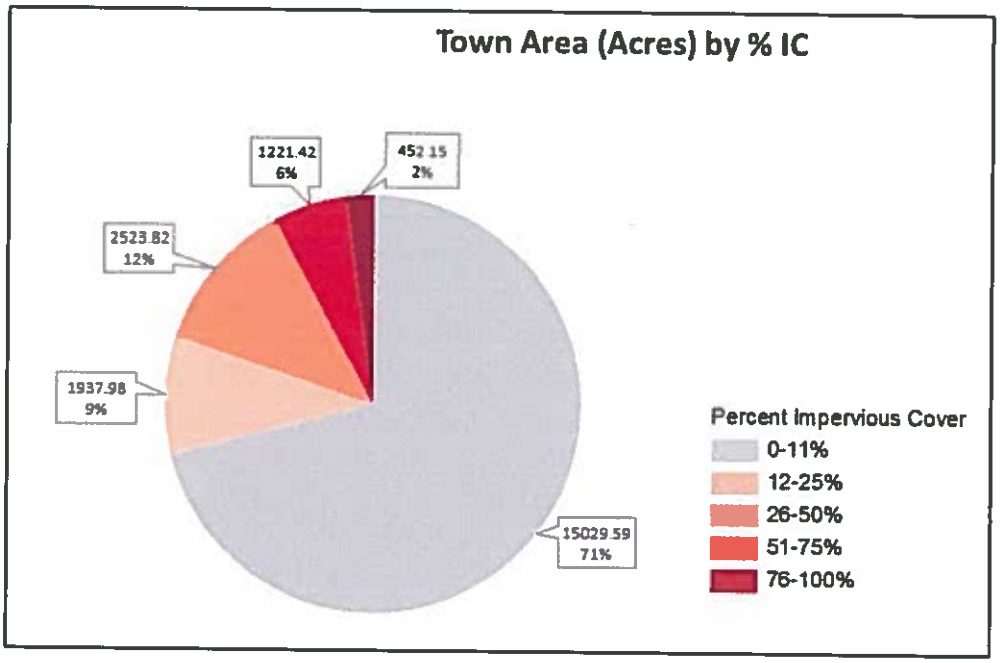
Town of Cheshire: Impervious Cover Data

This chart shows the amount of area within your town that contains IC. Data is grouped by acres and percent IC. While all levels of IC can contribute stormwater to streams, it is important to note that land with IC greater than 12% in town is likely to be contributing enough stormwater to streams to have a negative impact on water quality.

Towns should aim to make stormwater improvements in areas with IC greater than 12% in an effort to reduce the amount of stormwater pollution reaching surface waters which will protect and improve water quality.

For more information on areas of impervious cover within your town, please see the maps at the back of this factsheet.

Amounts of Impervious Cover within the Town of Cheshire



Pollution Reduction

Waterbodies often can handle a certain amount of pollutants and still maintain good water quality. However, impaired waterbodies have too much pollution impacting their water quality and therefore the streams do not support all uses for the waterbody. Total Maximum Daily Loads (TMDLs) are pollution reduction budgets developed for impaired waterbodies in order to meet water quality. If the pollution budget is achieved through the recommended pollution reduction

measures, then the waterbody is expected to meet water quality. CT DEEP also supports impaired waters restoration through watershed based plans (www.ct.gov/deep/watershed) which provide more specific non-point source pollution control measures. The following TMDLs or pollution reduction strategies have been developed and apply to areas within your town.

TMDLs or Strategies Applicable to the Town of Cheshire

Name of TMDL or Strategy	Pollutant	Waterbody Name	Link
Statewide Bacteria TMDL	Bacteria	Tenmile River / Mixville Pond	www.ct.gov/deep/lib/deep/water/tmdl/statewidebacteria/tenmileriver5202.pdf
Statewide Bacteria TMDL	Bacteria	Mill River	www.ct.gov/deep/lib/deep/water/tmdl/statewidebacteria/millriver5302.pdf
Statewide Bacteria TMDL	Bacteria	Mad River	www.ct.gov/deep/lib/deep/water/tmdl/statewidebacteria/madriver6914.pdf
A TMDL Analysis for the Quinnipiac River Regional Basin	Bacteria	Harbor Brook / Misery Brook / Quinnipiac River / Sodom Brook	www.ct.gov/deep/lib/deep/water/tmdl/tmdl_final/quinnipiac_tmdl_final.pdf
A TMDL Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound	Nitrogen	Long Island Sound and contributing watersheds	www.ct.gov/deep/lib/deep/water/lis_water_quality/nitrogen_control_program/tmdl.pdf
Northeast Regional Mercury TMDL	Mercury	All CT Inland waters	www.ct.gov/deep/lib/deep/water/tmdl/tmdl_final/ne_hg_tmdl.pdf
Interim Phosphorus Reduction Strategy	Phosphorus	Certain CT Inland waters	www.ct.gov/deep/lib/deep/water/water_quality_standards/p/interimmgntphosstrat_042614.pdf

For more information on these TMDLs or strategies please go to our website www.ct.gov/deep/tmdl.

Stormwater Quality Monitoring

Regular monitoring for targeted pollutants in stormwater provides an indication of potential for water quality impacts and helps identify sources and unlawful discharges. Annual monitoring at 6 locations from different areas of town has been a requirement of the MS4 permit since 2004. CT DEEP uses that information to evaluate the quality of stormwater and the potential for impacts to surface waters as well as to make sure that stormwater is managed properly.

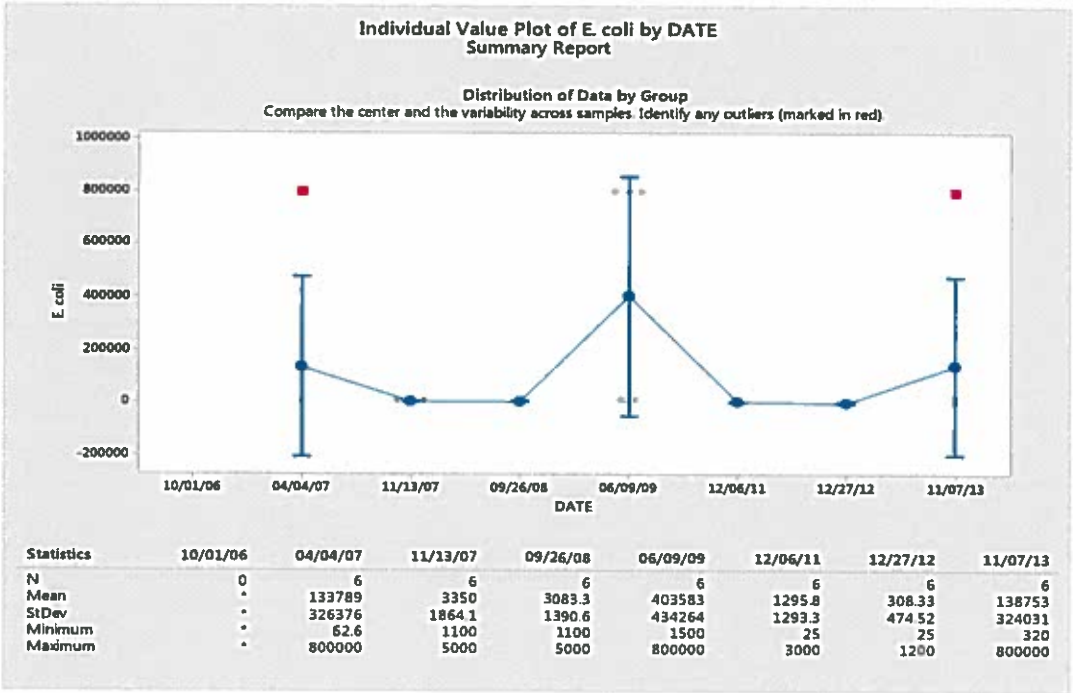
Below are 5 graphs tracking stormwater results submitted by your town for 5 parameters reported under the current MS4 General Permit. The results of each stormwater test submitted to CT DEEP by your town is shown. Individual sample results are shown in grey while the average of the samples collected on a particular day is shown in blue, with a line connecting the averages for the various sample dates. The bars show the statistical range of samples for each day with the red squares showing results which are considered to be outliers, that is, very different from the other samples collected on that day. The chart on the graph lists the sample dates and some basic statistics:

Statistic	Description
N	Number of stormwater samples collected on that date
Mean	Average of the results reported for that sample date
Standard Deviation (StdDev)	A measure of the variability of the results for the sample date
Minimum	The lowest sample result for the sample date
Maximum	The highest sample result for the sample date

Bacteria

Escherichia coli (*E. coli*) is a bacteria that lives in the intestines of humans and other warm-blooded animals and is used to indicate the presence of fecal matter in surface waters. Some strains of *E. coli* and other pathogens found in fecal material cause serious illness in people coming in contact with it. For this reason, high amounts of bacteria will cause authorities to close beaches for swimming. Bacteria is measured as the number of colony forming units, or CFU, per 100 ml of water. Any result that was reported as "to numerous to count" is included on the chart as 800,000 CFU/100 mL.

Results of annual stormwater monitoring under MS4 permit for *E.coli* (CFU/ 100 mL of sample)
Town of Cheshire



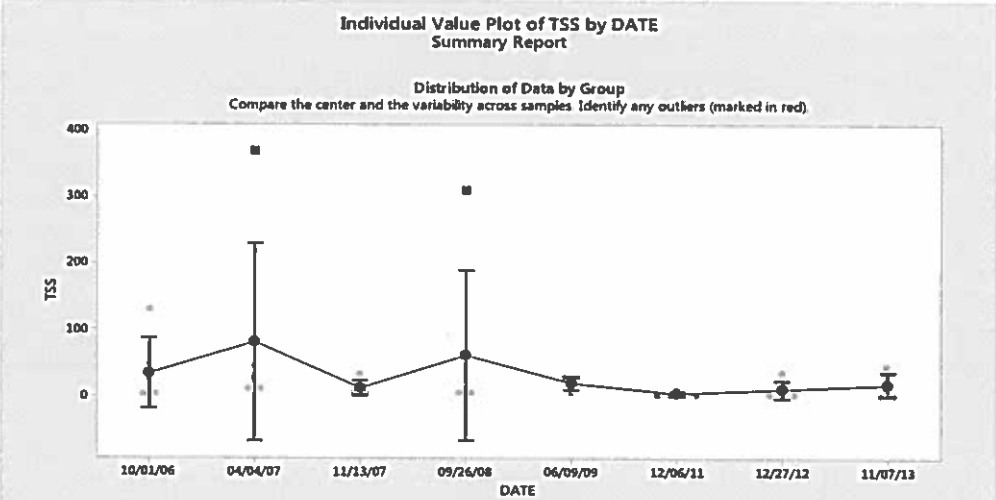
Statistics	10/01/06	04/04/07	11/13/07	09/26/08	06/09/09	12/06/11	12/27/12	11/07/13
N	0	6	6	6	6	6	6	6
Mean	*	133789	3350	3083.3	403583	1295.8	308.33	138753
StDev	*	326376	1864.1	1390.6	434264	1293.3	474.52	324031
Minimum	*	62.6	1100	1100	1500	25	25	320
Maximum	*	800000	5000	5000	800000	3000	1200	800000

To support recreational uses of surface waters, the CT DEEP Water Quality Standards indicate that the average amount of *E. coli* found in a freshwater water body should be less than 126 CFU/100 mL and that a single sample tested for *E. coli* should be less than 235 CFU/100 mL at a designated swimming area and less than 410 CFU/100 mL in other areas. Monitoring for *E. coli* is currently required in the MS4 permit. Enterococci is another bacteria used to indicate the presence of fecal material in salt water environments. For recreation in salt water the Water Quality Standards indicate that average amount of Enterococci should be less than 35 CFU/100 mL in a designated swimming area and that a single sample tested for Enterococci should be less than 104 CFU/100 mL and in all other areas less than 500 CFU/100 mL. These targets have been included in the statewide bacteria TMDLs. In the Draft MS4 permit, *E.coli* results higher than 235 CFU/100 mL at a designated swimming area or greater than 410 CFU/100 mL in other areas requires a follow-up investigation. Individual stormwater sample results that exceed the applicable single sample maximum value for bacteria could impact water quality, so the associated outfalls should be evaluated for additional stormwater management.

Total Suspended Solids

Total Suspended Solids (TSS) is a measurement of the amount of solids (including sand and silt) found in the stormwater sample. High concentrations of TSS can lower water quality in the receiving stream by transporting various pollutants to the waterbody where they can directly affect aquatic life or affect aquatic life by absorbing light, reducing photosynthesis, and by making the water warmer. TSS can also clog fish gills and smother fish eggs and suffocate the organisms that fish eat. TSS comes from erosion and is found in agricultural, urban and industrial runoff. TSS can be reduced by protecting land from erosion and allowing stormwater time to settle before discharging to surface waters.

Results of annual stormwater monitoring under the MS4 general permit for TSS (mg/L)
Town of Cheshire



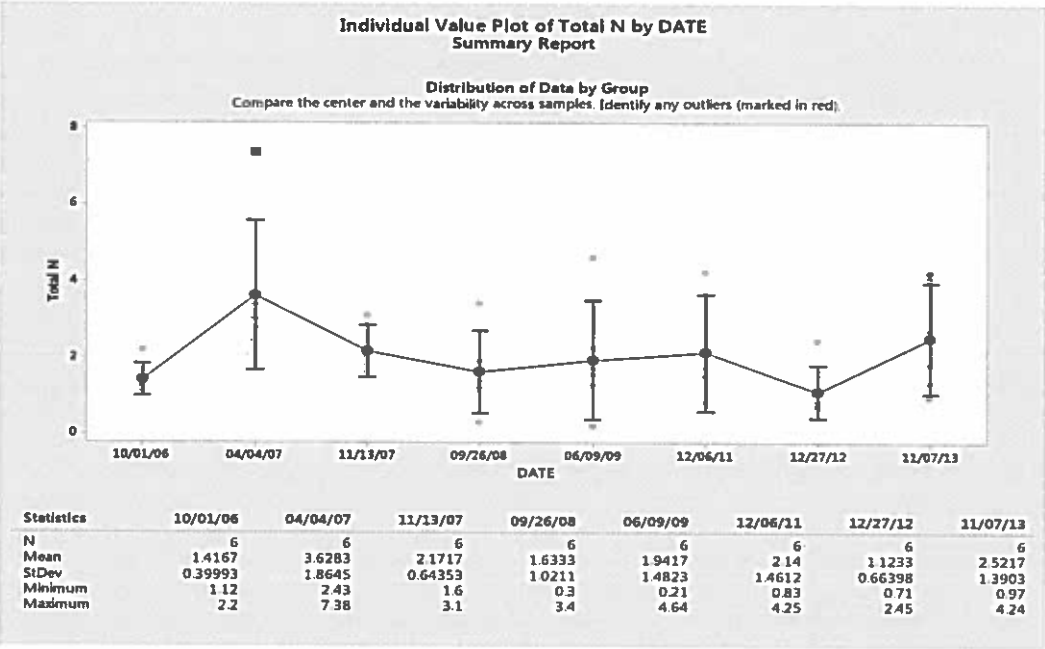
Statistics	10/01/06	04/04/07	11/13/07	09/26/08	06/09/09	12/06/11	12/27/12	11/07/13
N	6	6	6	6	6	6	6	6
Mean	34.583	81.667	13.667	62.667	20.333	4.3333	11.083	19.333
StDev	50.228	141.86	10.783	121.78	9.5638	3.1091	12.859	16.822
Minimum	1.5	10	5	5	6	2.5	2.5	2.5
Maximum	130	370	33	310	29	10	35	45

Currently, there is not a water quality based target for TSS in stormwater but TSS is a general indicator of water quality and, lower amounts of TSS are better. For comparison purposes, the average MS4 stormwater result reported for TSS by all towns covered by this permit is 48 mg/L. Areas within your town which have elevated TSS may be places to consider additional stormwater management efforts.

Total Nitrogen

Nitrogen is an important nutrient in marine and estuarine waters such as Long Island Sound, as well as a concern in fresh water lakes and rivers. High amounts of nitrogen can lead to excessive growth of water plants and algae which then reduces the amount of oxygen available to living things in these waters. Unlawful discharges, animal waste, failing septic systems, leaves, litter and fertilizers are common sources of high nitrogen in stormwater. Responsible use of fertilizers, maintaining septic systems and proper disposal of pet waste will help reduce nitrogen in stormwater.

Results of annual stormwater monitoring under MS4 general permit for total nitrogen (Total N mg/L)
Town of Cheshire



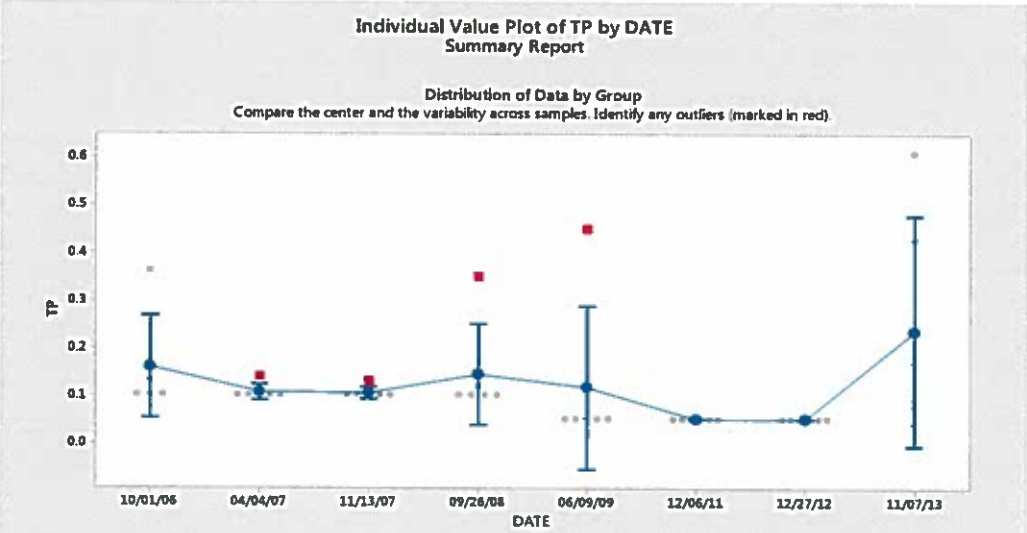
Statistics	10/01/06	04/04/07	11/13/07	09/26/08	06/09/09	12/06/11	12/27/12	11/07/13
N	6	6	6	6	6	6	6	6
Mean	1.4167	3.6283	2.1717	1.6333	1.9417	2.14	1.1233	2.5217
StDev	0.39993	1.8645	0.64353	1.0211	1.4823	1.4612	0.66398	1.3903
Minimum	1.12	2.43	1.6	0.3	0.21	0.83	0.71	0.97
Maximum	2.2	7.38	3.1	3.4	4.64	4.25	2.45	4.24

The TMDL for Long Island Sound requires a 10% reduction of nitrogen in stormwater discharges to prevent low oxygen conditions in Long Island Sound. Each town should be working to reduce the amount of nitrogen in their stormwater to address this issue. Under the current draft MS4 permit, any result for total nitrogen greater than 2.5 mg/L will require a follow-up investigation. Areas within your town which have elevated nitrogen may be places to consider additional stormwater management activities.

Total Phosphorus

Phosphorus is an important nutrient necessary for growth in plants and animals in freshwater. Too much phosphorus in the water can throw off the balance of aquatic ecosystems causing excessive growth of water plants and algae blooms, which reduces the amount of oxygen in the water, potentially harming the fish. Sometimes these algae blooms can contain toxic forms of algae which are harmful to people and animals that come into contact with it. Sources of high phosphorus can be unlawful discharges, fertilizers, litter, leaves, erosion and animal waste.

Results of annual stormwater monitoring under MS4 permit for total phosphorus (mg/L)
Town of Cheshire



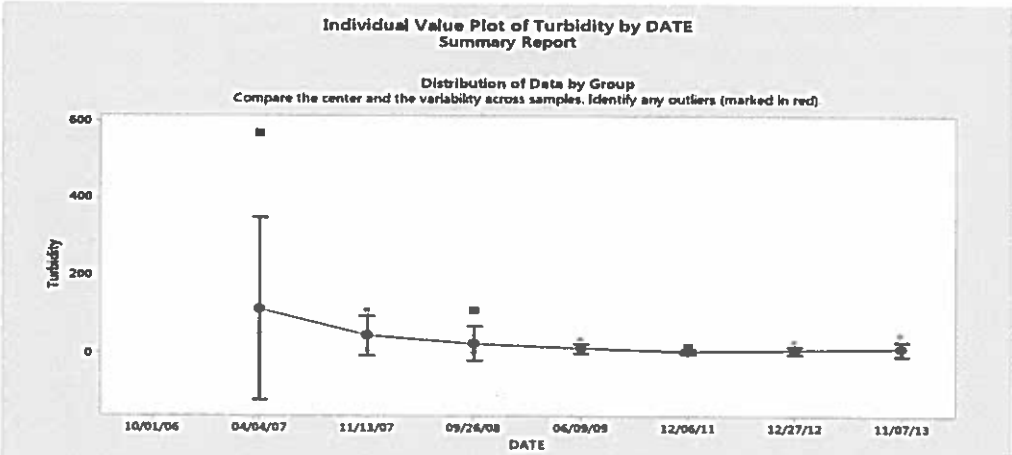
Statistics	10/01/06	04/04/07	11/13/07	09/26/08	06/09/09	12/06/11	12/27/12	11/07/13
N	6	6	6	6	6	6	6	6
Mean	0.16	0.10667	0.105	0.145	0.11667	0.05	0.05	0.23667
StDev	0.10178	0.016330	0.012247	0.10075	0.16330	0	0	0.23062
Minimum	0.1	0.1	0.1	0.1	0.05	0.05	0.05	0.04
Maximum	0.36	0.14	0.13	0.35	0.45	0.05	0.05	0.61

CT DEEP is actively working with many towns to reduce the amount of phosphorus reaching Connecticut's streams and rivers. Under the current draft MS4 permit, a total phosphorus result greater than 0.3 mg/L will require a follow-up investigation. Areas of your town that have elevated levels of phosphorus in the stormwater are good places to develop additional stormwater controls.

Turbidity

Turbidity measures the clarity of the stormwater sample. It measures how much material (soil, algae, pollution, microbes etc.) is suspended in the sample. High turbidity lowers the water quality of a surface water by blocking sunlight for the plants and makes food harder for the fish to find and may be an indication of a higher amounts of other pollution in the water. Surface waters with high turbidity are visually less appealing for recreational use. High turbidity can be caused by erosion, failing septic systems, decaying plants or animals, and excessive algae growth. Turbidity is reported in Nephelometric Turbidity Units (NTU) which is related to how easily light passes through the water sample.

Results of annual stormwater monitoring under MS4 permit for turbidity (NTU)
Town of Cheshire



Statistics	10/01/06	04/04/07	11/13/07	09/26/08	06/09/09	12/06/11	12/27/12	11/07/13
N	0	6	6	6	6	6	6	6
Mean	*	113.77	44.733	24.117	12.007	4.6333	7.85	11.943
StDev	*	224.04	49.207	42.550	12.002	6.1591	9.8559	18.255
Minimum	*	7.8	2.6	0.8	1.78	1.1	2	0.1
Maximum	*	570	110	110	34.2	17	27	48.1

The Water Quality Standards have a criterion that indicates turbidity should not to exceed 5 NTU above ambient levels. In the draft MS4 permit, a turbidity result greater than 5 NTU over in-stream conditions will require a follow-up investigation. While there is not a fixed statewide criterion for turbidity, lower results are better for the health of the surface waters in town. Areas with higher levels of turbidity in stormwater would be a good place to develop additional stormwater controls.

Town Maps

The following maps were created to show the impervious cover (IC) in your town as well as the water quality in the rivers, streams, lakes and estuaries in and around your town.

Impervious Cover on the Town Maps

IC is shown in red on the maps. Dark red areas indicate a higher percentage of IC, lighter red areas have less IC, while the grey areas indicate very little or no IC.

Water Quality on the Town Maps

Separate maps are provided for the different uses of the waterbodies such as Aquatic Life Uses, Recreation, and Shellfishing (in coastal towns). The waterbodies are colored to show the health of the waterbody. Green means that the waterbody meets the water quality requirements to fully support the specified use. Yellow means that water quality is poor and that the specified use is not met. Blue means that there is not enough information to know whether or not water quality is good or bad to support the specified use. Additionally, a small map is provided on the left side of each larger map to show which watersheds are within your town.

QUINNIPIAC REGIONAL BASIN
TOTAL MAXIMUM DAILY LOAD (TMDL) SUMMARY

A Total Maximum Daily Load (TMDL) analysis was completed for indicator bacteria in the Quinnipiac River Regional Basin. The waterbodies included in the TMDL analysis are the Harbor Brook, Misery Brook, Quinnipiac River, and Sodom Brook. These waterbodies were included on the *CT Impaired Waters List* due to exceedences of the indicator bacteria criteria contained within the State *Water Quality Standards*.

TMDL Overview

TMDL = Point Sources + Nonpoint Sources + Background + Margin of Safety

- A requirement under section 303(d) of the Federal Clean Water Act
- A management tool used to restore impaired waters by establishing the maximum amount of a pollutant that a waterbody can receive without adverse impacts to fish, wildlife, recreation, or other public uses
- Developed for waterbodies listed on the CT Impaired Waters List
- Provides guidance for responsible parties to use as a framework for developing a TMDL implementation plan

The TMDLs were drafted using data collected by the CT DEP and the CT DEP *Cumulative Frequency Distribution Function Method*, which expresses the TMDL as an average percent reduction from the current condition required to achieve consistency with the State recreational water quality criteria. Potential sources of indicator bacteria include point and nonpoint sources, such as stormwater runoff, pet waste (dogs), natural sources (wildlife), and illicit discharges. A summary of TMDL percent reductions and land use map are provided below.

The percent reductions established in this TMDL can be achieved by implementing control actions where technically and economically feasible that are designed to reduce indicator bacteria loading from nonpoint sources and point sources. These actions may be taken by State and Local government, academia, volunteer citizens groups, and individuals to promote effective watershed management.

It is important to note that the TMDLs are effective for the entire watershed because they are a measurement of compounded impacts at a single point. As such, corrective actions must be undertaken at the source(s) whether it is a tributary or illicit discharge pipe, in order to achieve the required percent reductions. The approach to TMDL Implementation is anticipated to be on a watershed wide scale, which will require that all sources within the regional basin that are contributing to the in-stream impairment be addressed. The DEP supports an adaptive and iterative management approach where reasonable controls are implemented and water quality is monitored in order to evaluate for achievement of the TMDL goals and modification of controls as necessary. Local watershed groups are encouraged to continue their efforts by working with municipalities to formulate a TMDL implementation plan. An implementation plan formulated at the local level will most efficiently make use of local resources by assigning tasks to responsible parties and should serve as an agreed roadmap to reducing bacteria levels in the Basin.

A copy of the entire Qunnipiac Regional Basin TMDL can be found on the CT DEP website at http://www.ct.gov/dep/tmdl.

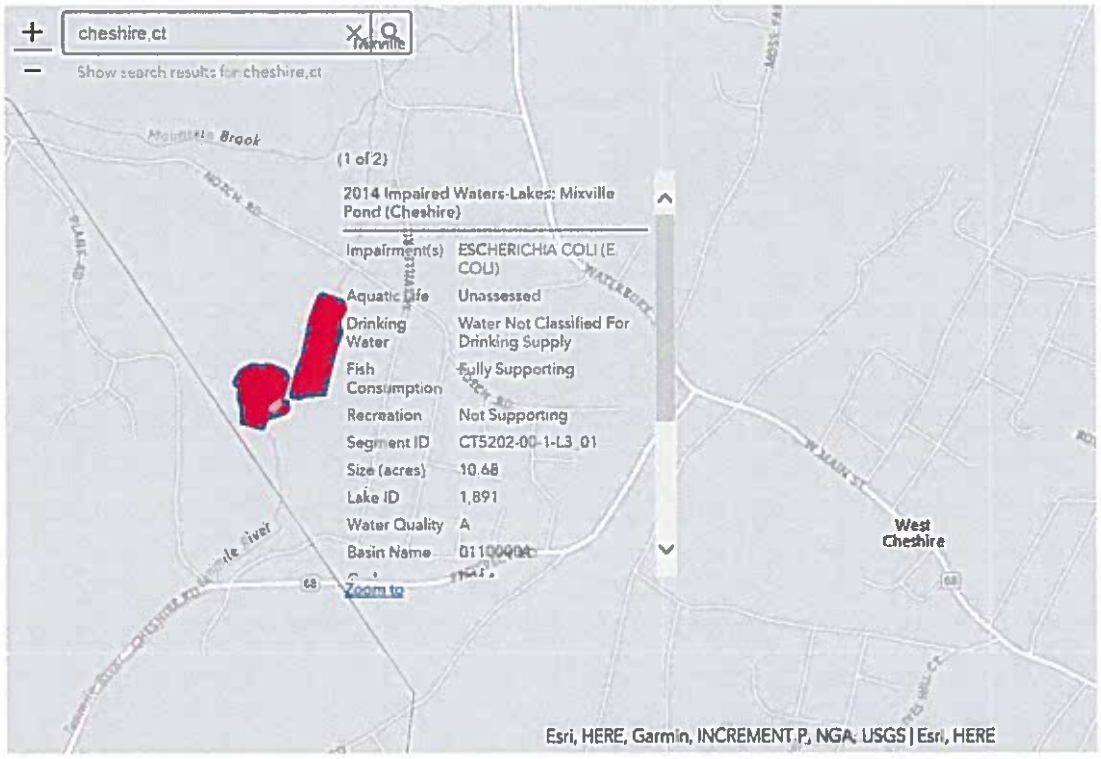
A Summary of TMDL Percent Reductions

Waterbody	Waterbody Segment Description	Segment ID	Monitoring Site	Average Percent Reduction to Meet Water Quality Standards			
				TMDL	WLA	LA	MOS
Harbor Brook	From mouth at confluence with Quinnipiac River upstream to exit of box culvert, Meriden.	CT5206-00_01	101	95	95	95	Implicit
		CT5206-00_02*					
Misery Brook	From mouth at Quinnipiac River upstream to Slopers Pond outlet dam, Southington.	CT5203-00_01	1417	65	74	59	Implicit
Quinnipiac River	From Rt. 5, North Haven upstream to headwaters at Dead Wood Swamp, Farmington.	CT5200-00_01	1421	68	73	64	Implicit
		CT5200-00_02	289	64	73	58	Implicit
		CT5200-00_03*	1422	84	88	80	Implicit
		CT5200-00_04					
		CT5200-00_05	294	75	80	71	Implicit
		CT5200-00_06	1423	82	85	80	Implicit
		CT5200-00_07	1424	78	83	75	Implicit
Sodom Brook	From mouth at confluence with Quinnipiac River upstream to headwaters, Meriden.	CT5205-00_01	1418	92	92	91	Implicit

*Current data is unavailable to conduct a TMDL analysis for segments CT5200-00_03 and CT5206-00_02 in the Quinnipiac River and Harbor Brook, respectively. However, these small segments (~1 ¼ and ¼ linear miles, respectively) and are located adjacent to segments that require percent reductions. Therefore, it is reasonable to presume that the same percent reduction applies to these segments.

CLEAR **Connecticut MS4 Towns & Data**

CT MS4 Guide CT DEEP Stormwater Page



0.2mi

-72.927 41.511 Degrees

CLEAR **Connecticut MS4 Towns & Data**

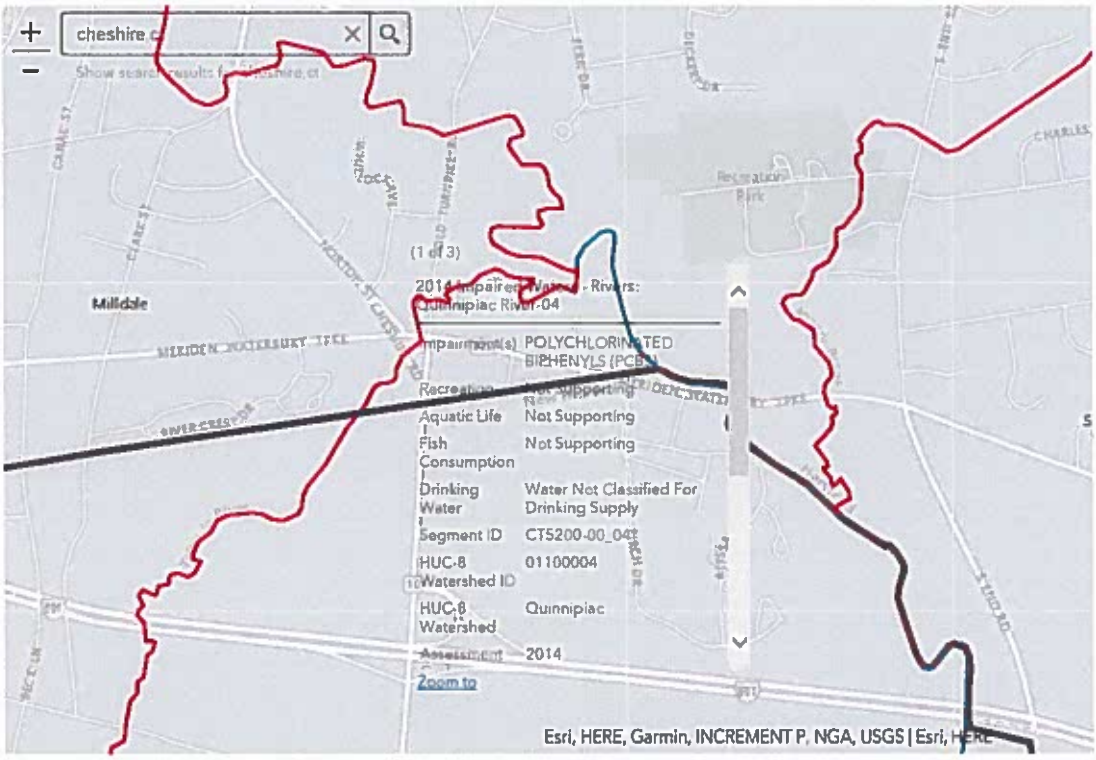
CT MS4 Guide CT DEEP Stormwater Page

0 2mi

-72.903 41.551 Degrees

CLEAR **Connecticut MS4 Towns & Data**

CT MS4 Guide CT DEEP Stormwater Page

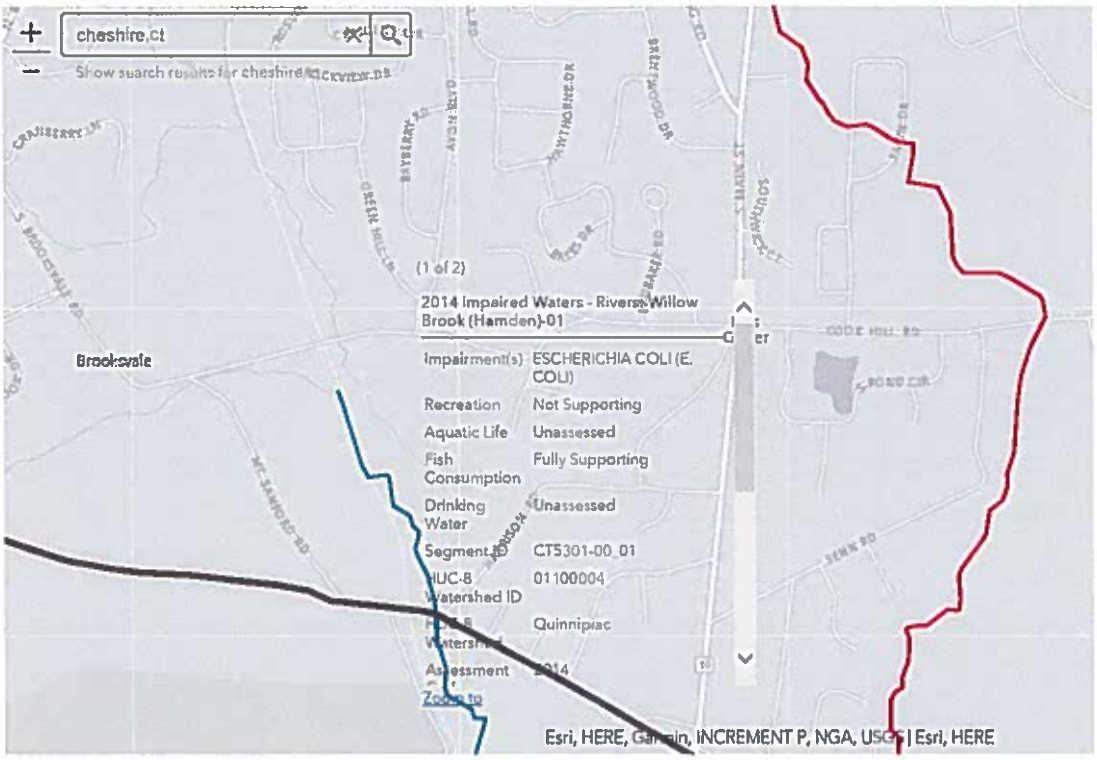


0.2mi

-72.879 41.561 Degrees

CLEAR **Connecticut MS4 Towns & Data**

CT MS4 Guide CT DEEP Stormwater Page

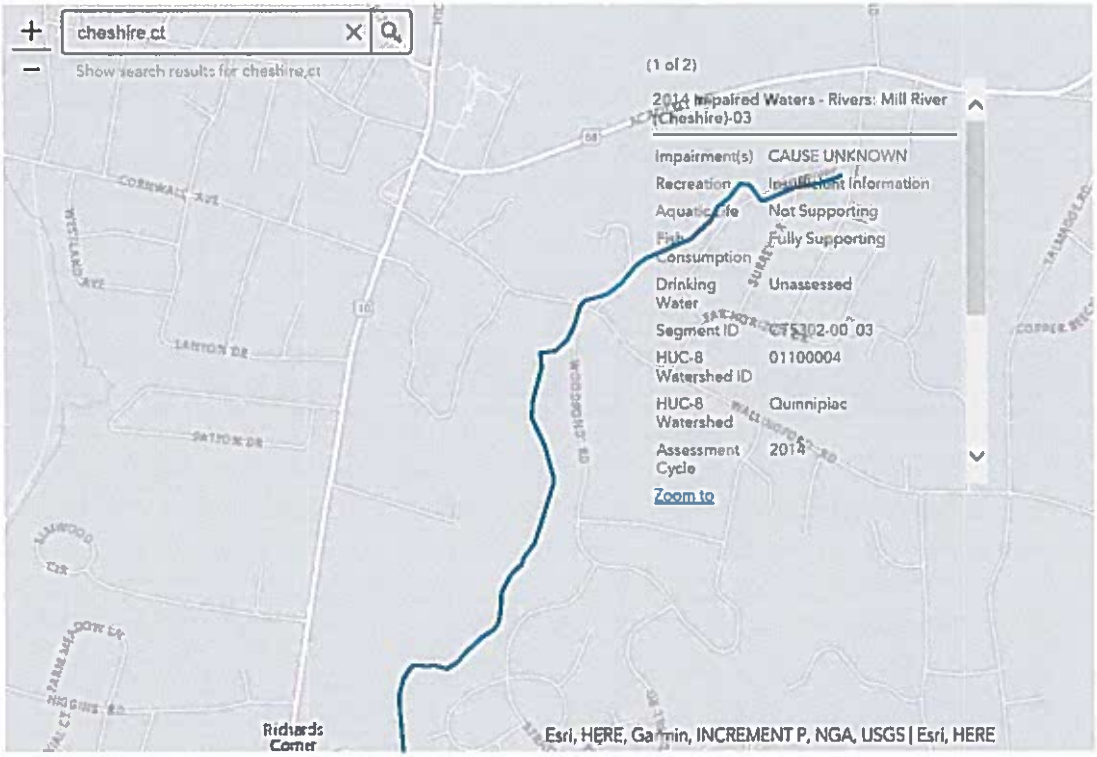


0.2mi

-72.906 41.461 Degrees

CLEAR **Connecticut MS4 Towns & Data**

CT MS4 Guide CT DEEP Stormwater Page



0 2mi

-72.895 41.496 Degrees

WHAT TO BRING TO HAZWASTE CENTRAL

RESIDENTIAL WASTE ONLY

Kitchen & Bathroom
- Aerosols
- Floor Care Products
- Metal & Furniture Polish
- Oven & Drain Cleaners
- Bathroom Cleaners
- Tile Cleaners
- Disinfectants
- Toilet Bowl Cleaners
- Nail Polish Remover

Garage & Workshop
- Bug Sprays
- Gasoline
- Auto Batteries
- Brake & Transmission Fluid
- Auto Body Repair Products
- Other Oils/Cleaners
- Latex & Oil-Based Paints*
- Paint Thinner & Stripper
- Varnish
- Used Motor Oil*
- Antifreeze

Garden & Miscellaneous
- Chemical Fertilizer
- Fungicides
- Herbicides & Insecticides
- Pesticides
- Rat Poison
- Artists' Paints
- Dry Cleaning Solvents
- Fiberglass Epoxy
- Moth Balls
- Batteries*
- Photographic Chemicals
- Swimming Pool Chemicals
- Small (1 Pound) Propane Cylinders
- Fluorescent Bulbs (Including CFL Type)*
- Mercury & Mercury-Containing Items

Do not mix or remove items from their original package.

* Local disposal options may be available. Please check with your public works department or local transfer station or the following resources:

Batteries: call 1-800-8-BATTERY or log on to www.call2recycle.org (excluding alkaline and auto batteries).

Compact Fluorescent Light (CFL) Bulbs: call 1-800-CLEANUP, or log on to www.earth911.com

Paint: log on to www.paintcare.org and visit the Connecticut portion of the site to find a drop-off location for household paint.

Safe & Free Disposal of Household Chemicals

HOUSEHOLD HAZWASTE CENTRAL

Household hazardous waste comes from everyday products used in the home, garage, yard or garden. These products are corrosive, flammable, toxic or reactive.

Alternatives to toxic products may be available. Visit our website at www.rwater.com/hazwaste or call the HazWaste office at 203-401-2712.

A visit to HazWaste Central is quick, easy and free. Participants never have to leave their cars, and the waste is off-loaded by professionals. The checklist helps identify products by rooms in a home.

HazWaste Central serves residents in the following towns: Bethany, Branford, Cheshire, East Haven, Fairfield, Guilford, Hamden, Madison, Milford, New Haven, North Branford, North Haven, Orange, Wallingford, West Haven, Woodbridge.

OPEN SATURDAYS – 9 AM TO NOON MAY 14 THROUGH OCTOBER 29, 2016

CLOSED HOLIDAY WEEKENDS OF MAY 28, JULY 2, AND SEPT. 3, 2016

SMALL BUSINESSES: CALL 203-401-2712 FOR DISPOSAL INFORMATION

90 Sargent Drive, New Haven, Regional Water Authority's Headquarters. I-95 exit 46 and follow signs to the RWA.

CHESPROCOTT HEALTH DISTRICT
1247 HIGHLAND AVENUE • CHESHIRE • CONNECTICUT
PHONE (203) 272-2761 • FAX (203) 250-9412
www.chesprocott.org

Maura A. Esposito RS, MPH, Director of Health

January 20, 2017

Mr. John Perrotti, Chairperson
Cheshire WPCA
Town Hall, 84 South Main Street
Cheshire, CT 06410

Re: December 2016 Summary

Failures Discovered:

- 1106 Peck Lane – 1942; failing septic system

Repairs Inspected:

- 1106 Peck Lane – Installation of new septic tank and leaching fields.

Submitted by:

Susan Bencivenga Lonczak, R.S.
Chief Sanitarian

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Maura A. Esposito RS, MPH, Director of Health

February 15, 2017

Mr. John Perrotti, Chairperson

Cheshire WPCA
Town Hall, 84 South Main Street
Cheshire, CT 06410

Re: January 2017 Summary

Failures Discovered:

- 606 Tamarack – 25 year old septic tank and distribution box being replaced for realestate transaction.
- 24 Cresent Cr. – 62 year old septic tank being replaced for realestate transaction.

Repairs Inspected:

- 606 Tamarack – Installation of new septic tank.
- 24 Cresent Cr. – Installation of new septic tank.

Submitted by:

Susan B. Lonczak

Susan Bencivenga Lonczak, R.S.
Chief Sanitarian

TOWN OF CHESHIRE
DEPARTMENT OF PUBLIC WORKS/ENGINEERING

84 SOUTH MAIN STREET, CHESHIRE, CONNECTICUT 06410
Telephone (203) 271-6650 Fax (203) 271-6659

ENGINEERING DEPARTMENT POLICIES
TOWN OF CHESHIRE, CT
January 8, 2007 Revised to 4/14/14

INTENT

The purpose of this document is to provide clarification of Engineering Department policies to professionals to assist them in the preparations of plans and reports to be submitted to the various Town of Cheshire regulatory agencies, such as the Planning and Zoning Commission, Inland Wetlands Commission, Public Building Commission and Water Pollution Control Authority. This is intended as supplementary information and is not to be used in lieu of any Law, Ordinance, Regulation or Specification. These are to be considered minimum requirements, measures exceeding these criteria are welcome.

EASEMENTS

Sanitary sewer easements where required shall be 20 feet in width, with the main line pipe centered within the easement. Easements shall be located such that they can be accessed by vehicles from a public or private street and shall be filed on the land records of the Town of Cheshire upon final approval of the regulating body.

Drainage easements where required shall be 25 feet in width, with the main line pipe centered within the easement. Easements shall be located such that they can be accessed by vehicles from a public street. Drainage easements for private projects not involving water from a Town road or other Town property will be reviewed on a case by case basis.

STORM DRAINAGE DESIGN

The Town of Cheshire uses zero net increase in post-development run off for all development projects. It shall be demonstrated in a drainage report that the project can meet the net zero increase requirements for a 10, 25, 50 and 100 year storm event. Any appropriate back up data and calculations shall be included. If there is more than one sub-catchment area exiting the site, this net zero increase requirement shall apply to all individual sub-catchment areas as well as the overall site.

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RETAINING WALLS

All proposed retaining walls shall be shown on the plans. Submissions shall include a design for the walls and shall demonstrate that the type of wall system proposed is appropriate for the intended use and site conditions.

PLANS

All plans submitted shall be neat, easy to read and at an appropriate scale. Small type shall be avoided and notes shall be neat and concise. Notes shall be located near items they refer to and tie lines for notes shall be short and not cross each other wherever possible. Plan sheets shall not be larger than 24"x36".

REVISIONS

All revisions are to be neatly executed and a cover sheet shall be provided listing all revisions made. It is strongly suggested that this office be contacted to clarify any of its review comments that are not clearly understood. It should be noted, however, that it is not the duty of this office to design projects for applicants and questions of this nature will not be answered.

EROSION AND STABILAIZATION

The transportation of eroded materials onto Town roads or into drainage systems is prohibited. The applicant shall demonstrate that appropriate permanent measures are utilized to ensure the stability of earthen materials. All proposed solutions, such as plantings, permanent fabrics and other measures shall be selected based on site conditions of soil type, topography (grade), location, etc.

USE OF TOWN REFERENCE MATERIALS

Materials such as topographic mapping, GIS information and other information made available by the Town for public use shall be used in a proper and appropriate manner. The Town does not warrant the suitability of any resource in its possession for any use. It is up to the licensed professional to determine if the resources available are appropriate for the proposed use.

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STORM DRAINAGE DESIGN continued

In all cases attenuation shall be provided for increases in peak flows. In areas with known drainage problems, volumetric attenuation shall be required. Questions regarding problem drainage areas should be referred to the Engineering staff.
Plans shall show the drainage design in both plan and profile view. The profile shall show for every pipe run, the length of the pipe, type of pipe and slope of the pipe. Every drainage structure, catch basin, manhole, sediment chamber or environmental chamber, shall include all pipe inverts, both inlet and outlet, sump depths, stationing, and top of grate elevations.
Details sheets shall be provided for all structures.
Infiltration designs shall include all data and calculations to demonstrate that the system will perform as proposed. This includes percolation test results.
This Department encourages the use of environmental structures and environmentally sensitive designs. Sedimentation chambers are required prior to run-off from private properties entering a Town of Cheshire storm drainage system. We encourage Engineers to discuss unusual designs and other design concerns with the Town of Cheshire staff prior to submitting applications.

STORM DRAINAGE REPORTS

All reports shall include a narrative summary. This summary shall include statements regarding the existing conditions of the site and post-development conditions. A chart or table summarizing the pre and post development flows for the 10, 25, 50 and 100 year storms shall be included. The report shall be written in a clear and concise manner. This report shall also include information about the method used to evaluate the site drainage and why that method was chosen over others, ie, the appropriateness of the method chosen for the site.
This office is interested in seeing the background calculations for the run-off coefficient, c, and the values of other variables and how they were chosen. For the initial review, pages of computer calculations/print outs are not required, if they are required by this Department to complete a review, they will be requested. Reports should include the Engineer's conclusions and recommendations where appropriate.

Municipal Separate Storm Sewer Systems (MS4) and Low Impact Development (LID)

Local Regulations Assessment

Town of Cheshire

Appendix H

Contents

Resources

American Association of State Highway and Transportation Officials (AASHTO) "A Policy on Geometric Design of Highways and Streets"
http://nacto.org/docs/usdg/geometric_design_highways_and_streets_aashto.pdf

Connecticut Department of Energy and Environmental Protection (CT DEEP) Municipal Separate Storm Sewer Systems (MS4) General Permit:
http://www.ct.gov/deep/lib/deep/permits_and_licenses/water_discharge_general_permits/ms4_gp.pdf

CT DEEP Stormwater Quality Manual:
http://www.ct.gov/deep/cwp/view.asp?a=2721&q=325704

CT DEEP Native Plant Species List:
http://www.ct.gov/deep/lib/deep/wildlife/pdf_files/habitat/ntvtree.pdf

Invasive Plant Species List:
http://cipwg.uconn.edu/invasive_plant_list/

University of Connecticut Nonpoint Education for Municipal Officials (NEMO) CT MS4 Guide: http://nemo.uconn.edu/ms4/index.htm

NEMO "Developing a Sustainable Community"
http://nemo.uconn.edu/publications/LIDPub.pdf

Greenwich Stormwater Drainage Manual
http://www.greenwichct.org/government/departments/public_works/engineering_division/stormwater_information/drainage_manual/

Introduction

On January 20, 2016, the CT Department of Energy and Environmental Protection (DEEP) issued a new Municipal Separate Storm Sewer Systems (MS4) General Permit, which becomes effective July 1, 2017. This new permit represents a marked increase in responsibilities for municipalities that operate a MS4 system over the requirements of the previous MS4 general permit that was issued in 2004. There are six minimum control measures for stormwater management that the permit requires municipalities address. While municipalities must complete a wide range of tasks to comply with the permit, this plan focuses on requirements in the permit that may require changes to local regulations. Three of the minimum control measures require towns to have specific legal authorities in their local regulations, to set up specific programs, or to ensure local regulations do not prevent the use of Low Impact Development (LID) practices. NVCOG staff reviewed local regulations in the context of the new MS4 requirements resulting in this assessment.

There are three minimum control measures in the new MS4 permit that may require local regulatory changes:

1. Illicit Discharge Detection and Elimination (IDDE)
2. Construction Site Stormwater Runoff Control
3. Post-Construction Stormwater Management

All three of these control measures require that specific legal authorities be established in order to set up programs and standards related to stormwater monitoring and pollution control. In addition, the post construction stormwater management measure requires that towns eliminate all barriers to the implementation of LID practices. Assessing compliance with this requirement required a detailed search through town regulations and ordinances to assess the degree to which LID practices are allowed and encouraged within town development and planning practices, and to identify current barriers to LID implementation.

To conduct this assessment for Cheshire, the following regulatory documents were reviewed:

- Zoning Regulations, amended to May 9, 2016
- Subdivision Regulations, amended to November 22, 2010
- Inland Wetlands and Water Courses Regulations, amended to October 5, 2010
- Design Guidelines and Specification for the Construction of Roads, Sidewalks, Curbs, Storm Drainage, and Other Public Improvements, adopted July 24, 2000
- Code of Ordinances
    - Chapter 16: Water and Sewer Services

This assessment report is divided into **two parts**:

Part I focuses on the legal authorities and program implementation required in the Illicit Discharge Detection and Elimination (IDDE), Construction Site Stormwater Runoff Control, and Post-Construction Stormwater Management minimum control measures.

Part II addresses the requirement in the Post-Construction Stormwater Management section to reduce or eliminate barriers to LID implementation. The section outlines good LID practices, identifies the municipality's regulatory documents which allude to these practices, flags potential barriers to LID, and describes how regulations could better allow for LID implementation.

Staff suggests the municipality review these suggestions with its corporation counsel before proceeding with revisions.

If there are other municipal regulatory documents you would like NVCOG to review or you have any questions about this assessment please contact Aaron Budris, Senior Regional Planner, at abudris@nvcogct.org.

Part I - Legal Authorities

Illicit Discharge Detection and Elimination (IDDE) - MS4 General Permit Section 6(a)(3)

Deadline: 7/1/2018

What the permit requires:

- Establish legal authority **to prohibit, find the source of, investigate, require removal of, eliminate,** and **authorize penalties and/or recoup costs** for illicit discharge.
- Furthermore legal authority shall **control the discharge of spills** and **ensure ongoing screening and tracking** to prevent and eliminate future illicit discharge.

Currently Implemented:

- Code of Ordinances: 16-3 (a): Any person, firm or corporation or any other person or agent, building or contractor, architect or engineer of such person, firm or corporation, who commits, takes part in or assists in any violation of the regulations, present or future of the water pollution control authority of Cheshire, which regulations are duly adopted by said authority shall be fined not less than $10 nor more than $100 for each violation and each day that said violation exists.

Suggested Changes for Compliance:

Expand upon the regulations above to include recommendations that will be posted at the UConn Nonpoint Education for Municipal Official (NEMO) CT MS4 Guide website. (NEMO CT MS4 Guide)

Construction Site Stormwater Runoff Control - MS4 General Perm Section 6(a)(4)

Deadline: First fiscal year beginning after 7/1/2019

What the MS4 permit requires:

- The municipality shall implement and enforce a program to control stormwater discharges to its MS4 associated with land disturbance (including re-development) activities from sites with **1 acre or more of soil disturbance.**
- Establish legal authority that requires:
  - Development is **consistent with CT DEEP** Guidelines for Soil Erosion and Sedimentation Control and Stormwater Quality Manual and all Stormwater permits issued by DEEP within the municipality
  - The implementation of **additional measures to protect/improve water quality** as deemed necessary by the municipality
  - Municipality shall carry out **inspection, surveillance and monitoring** to determine compliance with municipal regulations related to management of the MS4 (specifically, to inventory the number of privately-owned retention/detention ponds and other stormwater basins that discharge to/receive drainage from the MS4)
  - Owners seeking development approval to provide and comply with a **long term maintenance plan** and schedule for privately-owned retention and detention ponds and other stormwater basins that discharge to or receive discharge from the MS4
  - The municipality to control through **interagency or inter-jurisdictional agreements**, the contribution of pollutants between MS4.

Currently Implemented:

- Zoning: 49.2: Any proposal for development that will cumulatively create more than 0.5 acres on land being developed must have a Erosion and Sediment Control Plan.
- Zoning: 49.8: Municipal inspection during development shall ensure compliance with the certified plan and that control measures are properly performed, installed and maintained.
- Subdivision: 14.2: Any proposal for development that will cumulatively create more than 0.5 acre in area on land being developed must have a certified Erosion and Sediment Control Plan.
- Subdivision: 14.4.1: To be eligible for certification, a plan shall contain proper provisions to adequately control accelerated erosion and sedimentation and reduce the danger from storm water runoff on the site based on available technology. Such practices necessary for certification are found in the CT Guidelines for Soil Erosion and Sediment Control. Alternative practices may be used with prior approval of the Commission.
- Construction Guidelines: Construction Methods, Pg. 29: Sediment and Soil Erosion Control: Prior to the commencement of any work, the Contractor shall submit to the Engineer the proposed methods of water pollution and soil erosion to be incorporated in the work. In general, all construction shall proceed in a manner so as not to pollute, as much as possible, any water in accordance with this specification. The contractor shall be responsible to limit, as much as possible, the surface area of earth material exposed by construction, immediately provide permanent and temporary pollution control to prevent contamination of water and prevent as much as possible erosion on the site and abutting property. All slopes of materials and embankments/filling operations sloping into water and all other disturbed areas shall be protected with mulching, seeding or plastic sheets.

Suggested Changes for Compliance:

- Add reference to the Stormwater Quality Manual to section 14.4.1 of the Subdivision Regulations, regarding the Soil Erosion and Sedimentation Control plan.
- Adopt or include in the Zoning Regulations the recommendations that will be posted on the NEMO CT MS4 Guide.

Post-Construction Stormwater Management In New Development Or Redevelopment - MS4 General Permit Section 6(a)(5)(A)

Deadline: 7/1/2021 for legal changes, but development must be consistent with requirements 1 and 3 by 7/1/2019

What the MS4 permit requires:

1. Establish legal authority that requires:
   a. For redevelopment of sites that are currently developed with Directly Connected Impervious Area (DCIA) of 40% or more, retain on-site half the water quality volume for the site.
   b. For new development and redevelopment for sites with less than 40% DCIA, retain the water quality volume for the site.
   c. If 1 or 2 are not possible, an alternate retention/treatment standard.
2. Establish legal authority that requires a developer, to MEP, consider use of LID and runoff reduction site planning and development practices before considering other practices, to the standard in the Stormwater Quality Manual.
3. Require the developer operating within its MS4 to:
   a. Consider the limitation of turf areas to those necessary to construct buildings, utilities, stormwater management measures, parking access ways, reasonable lawn areas and contouring necessary to prevent future site erosion
   b. Maintain consistency with the CT Stormwater Quality Manual or provide an explanation of why consistency is not feasible/practicable
   c. In areas served by on-site septic systems, the permittee should coordinate with the state/local health official to confirm that any infiltration measures are appropriately sized, located and constructed consistent with relevant requirements for on-site septic systems
4. All permittees shall identify and reduce or eliminate existing local regulatory barriers to implementing LID and runoff reduction practices to the MEP

Currently Implemented: See Part II

Suggested changes for compliance:

- (1) Pass an ordinance to comply with requirement 1 above. (NEMO CT MS4 Guide)
- (2 and 3) Require that developers use a checklist of LID practices and either use each practice on the list, or explain why it is not possible or practicable to do so. See Greenwich Stormwater Drainage Manual, Sec. 7.1.
- (4) See Part II

Part II - LID Barriers Assessment

What follows is an assessment of the procedural barriers to LID implementation and suggestions to resolve them. The list of LID practices and the criteria for allowing and encouraging them is based on the list that UConn CLEAR and NEMO created for their publication, "Developing a Sustainable Community", which should be used as a guide to the LID practices listed below.

The assessment is color coded:

Practice is allowed or encouraged	Part of the practice is allowed or encouraged	There is a barrier to implementing this LID practice

LID Practice	Current Regulations	Good LID Practices
Street Width	• Subdivision: 6.4: The traveled way width shall be at least 30 ft. in all residential areas. • Subdivision: 12.2.2: Subdivision Map: o (a) Streets: All streets in industrial areas shall have a paved width of not less than 30 ft. (Also see: Construction Guidelines: Street and Cul-de-sac Standards, Pg. 131)	Currently Implemented • Toward better LID practice • Correlate street pavement width to traffic volume and traffic speed. • Street pavement widths should follow the standards set out in "A Policy on Geometric Design of Highways and Streets," AASHTO, 2011, Pg. 5-6.

LID Practice	Current Regulations	Good LID Practices
Cul-de-sacs	• Subdivision: 5.6: Cul-de-sac streets may be permitted. Shall not be granted unless the Commission finds that land characteristics and site conditions make a cul-de-sac practical and desirable, and only if there is no logical or feasible alternative for it to be served by a through street at present or in the future. o (3) Except in Cluster Subdivisions, permanent cul-de-sac streets shall terminate in a circular turnaround with a minimum external radius of 50 ft. to the front property line. If a center island is desired, if hall have a minimum radius of 20 ft., which shall be curbed and planted by the developer. o (4) Temporary cul-de-sacs may be approved where the developer submits plans for the extension of the street over property he controls to a connection with another existing street and provides a bond covering construction and completion of the street. Temporary dead-ended streets shall be terminated with a hammerhead. • (Also see: Construction Guidelines: Street and Cul-de-sac Standards, Pg. 131)	Currently Implemented • The use of cul-de-sacs is discouraged unless terrain dictates or connectivity is not feasible or sensible. • Use of alternative, non-circular, shapes such as a hammerhead, is allowed for temporary dead-end streets. Toward better LID practice • Require a maximum paved radius of a turnaround to be 30 ft. • Encourage use of sunken vegetated center island without curbs, to be used as a bio-retention area. • Allow use of alternative shapes such as tear-drop, loop-de-lane, T-shaped for permanent cul-de-sacs.

LID Practice	Current Regulations	Good LID Practices
Road Drainage	• Subdivision: 5.4.1.c: Where the grading of a lot fronting on an existing street will cause drainage problems in that street, the developer shall, install drains in the street, or make such other provisions as may be necessary to correct the condition. • Subdivision: 6.5.2: Street Construction: Curbs shall be constructed for subdivision lots facing on existing streets. Construction of new pavement shall be required between edge of existing pavement and the new curb on existing streets, which bound or intersect the proposed subdivision. • Subdivision: 6.9: Curbs shall be required on all new streets and may be requires on existing streets and shall conform to construction and design standards. • Subdivision: 7.2 Location of Drainage Facilities: Principal drainage facilities shall be located in the street ROW, where feasible, or in permanent ROW satisfactory to the Commission where necessary. All drainage facilities shall be constructed in accordance with "Road and Drainage Standards" of Cheshire. In cases where the Commission may find that the ecological effect of a proposed drainage disposal system is an important consideration it may require that the system shall be designed to cause min impact upon the ecology. • Subdivision 7.7: Catch basins shall be provided so that surface water will not travel more than 400 ft. on streets with surface grades up to and including 5% and not more than 300 ft. on streets with grades over 5%. • Construction Guidelines: Design Standards, Pg. 10: General Requirements: Stormwater pipe shall be installed in a continuous line for the entire length of all streets and should have capacity to transport all future runoff within the vicinity of the improvement. • Construction Guidelines: Design Standards, Pg. 10: General Requirements: Drainage ditches shall not be utilized for the transport of storm water. Water courses that cross building lots shall be enclosed in pipes or culverts to a point beyond the extended rear	Currently Implemented • Toward better LID practice • Do not require curbs and gutters on all roads. • Where appropriate allow water to sheet drain into vegetated areas. • Where conditions permit, allow the use of vegetated swales as an alternative to curbs and gutters. Swales should include primary stormwater quality treatment. • Allow alternative and pervious/porous/permeable pavement material to be used.

LID Practice	Current Regulations	Good LID Practices
Road Drainage (cont)	line of the house. • Construction Guidelines: Construction Methods, Pg. 97: Bituminous Concrete Pavement: Placement of the bituminous material (asphalt) shall be as continuous a possible. • (Also see: Construction Guidelines: Typical Roadway Section, Pg. 127)	
Parking Sizing	• Zoning: 33.3.1: Each parking space shall constitute a minimum area of 9 by 18 ft., parking spaces located in garages/buildings may be reduced where necessary to allow for column spacing to a width of no less than 8 ft. when next to a column. Where a lot contains more than 20 spaces the applicant may provide up to 40% of parking in small car spaces, subject to approval of Commission. A small car space shall not be less than 9 by 16 ft. Small car spaces shall be laid out in a group and marked. Travel aisles between all parking spaces shall have a minimum width of 24 ft. The applicant shall be encouraged to utilize the difference in area between each small car space and standard space for additional landscaping. • Zoning: 33.5: Joint parking and loading areas may be established by the owners of separate contiguous lots/projects with mixed uses in order to provide to total number of off street parking and loading required. The interconnection of adjoining parking areas shall be encouraged where said connections would result in increased parking, decreased curb cuts or signalized access. Shared parking shall also be permitted when: o (A) The parking facilities are interconnected with adjacent facilities to create a functional parking arrangement. o (B) Appropriate access and parking easements are executed between and adjacent properties providing for joint access and parking in perpetuity, or the site is developed as a unified site plan. o (C) It is demonstrated that the parking needs of the joint users on the sites occur at different times or that adequate parking will be available.	Currently Implemented • Parking lot design that minimizes impervious surface such as, minimal stall dimensions (9x18 ft.), is encouraged. • Small car parking is allowed. • Shared driveways are allowed for non-residential uses. • Construction of a share parking spaces may be delayed. • A reduction on parking is required for very large parking lots. Toward better LID practice • Reduce minimum aisle width to 21 ft. • Allow a reduction in parking requirements when shared parking is used. • Allow reduction of parking requirements for properties with mixed use and/or access to transit. • Change parking minimums to parking maximums. • Use parking standards based on local data. • Limit queue lengths for drive through windows.

LID Practice	Current Regulations	Good LID Practices

Parking Sizing (cont)	• Zoning: 33.6.1: The Commission may allow the delayed construction of parking if:
	  o (1) The use and intensity will probably not require all required spaces.
	  o (2) The delayed construction will not cause substantial inconvenience or impair safety.
	• Zoning: 33.6.2: The Commission may allow the delayed construction of up to 50% of the parking spaces if:
	  o (1) All required parking must be shown in plans and in conformance with regulations.
	  o (2) The spaces for which delayed installation is desired/approved shall be specified.
	  o (3) The applicant must agree to install the spaces at such time the Commission determines that the installation is appropriate.
	• Zoning: 33.7: Where more than 200 spaces are required for a single use or more than 300 spaces for a combination of uses on 1 property, the total required spaces shall be reduced by 10%.
	• Zoning: 33.8.1: Parking lots shall be designed to avoid creating large expanses of paving. Parking areas must be landscaped in the interior and perimeter areas of the site.
	• Zoning: 33.8.2: Parking lots for more than 20 cars shall contain interior landscaped area equal to at least 10% of the gross parking lot area.
	• Zoning: 48.5(b)(1): Interchange Zone: Each parking space shall constitute an area of not less than 9 by 20 ft.
	  o Compact car spaces shall not be less than 9 ft. by 16 ft. Compact spaces shall not exceed 25% of the total number of required parking spaces for the site.
	• Subdivision: 12.1.2 and 3: Off-street parking: No business or industrial development shall be approved without an area allocated to off-street parking. Such area shall meet zoning requirements.	

LID Practice	Current Regulations	Good LID Practices
Parking Runoff	• Zoning 33.3.3: Parking areas shall be divided into areas containing no more than 60 cars, by permanent barriers, landscapes strips of raised walls. • Zoning: 33.4: Except as provided below for temporary parking, all parking areas for more than 10 cars and access thereto shall be surfaced with asphalt, asphaltic concrete or Portland cement concrete and shall be defined by Portland cement concrete, granite of bituminous concrete (asphalt) curbs. • Zoning: 33.4: Parking lots proposed for more than 20 cars shall include a maintenance plan describing how the lot and landscaping will be maintained including snow plowing and stockpiling, irrigation, and the cleaning and maintenance of the storm water management system. • Zoning: 33.8.8: Parking lots should be designed with landscape elements capable of storm water absorption, infiltration and treatment including, but not limited to depressed island, elimination of curbing where appropriate, and similar design features.	Currently Implemented • Parking lots should be designed with landscape elements that can absorb, infiltrate and treat storm water, including elimination of curbing. (Other sections contradict this requirement and are addressed in Suggested Actions below.) Toward better LID practice • Allow vegetated areas to be sunken and used for bio-retention. • Remove requirement for curbs around all permanent parking lots. • Specify the types of drainage allowed and include LID practices such as bio-retention, swales and rain gardens. • Allow alternative and pervious/porous/permeable pavement material to be used, especially for overflow parking.

LID Practice	Current Regulations	Good LID Practices
Open Space/ Conservation Subdivision	• Zoning: 42: Cluster Subdivision: It is the intent of this section to provide an opportunity for flexibility through the option of Cluster Subdivision by permitting a reduction in the minimum lot size normally required in a residential zone provided that the total number of lots is not greater than otherwise permitted. Cluster Subdivision shall be considered special permit uses. The Commission may require conventional development if they decide that the layout, use and provision of open space doesn't provide significant benefit to the proposed community/town beyond what would normally be derived from conventional development. • Zoning: 42.2.1: Cluster Subdivision: Each cluster subdivision shall contain at least 1 contiguous parcel of open space with a minimum area of 160,000 sq. ft., with the size of the open space parcel or parcels to be commensurate with the size of the Cluster Subdivision • Zoning: 42.2.4: Cluster Subdivision: Land not allocated to building lots and streets shall be permanently reserved as open space and the Commission may require the open space be transferred to a HOA. If the Commission requires this the owner of each lot shall own an undivided interest in the open space proportionate to the total number of lots. Each homeowner and/or association shall be liable for all necessary maintenance costs of open space. Open space transferred to the HOA shall be transferred in accordance with the standards established by the Commission including: o (A) Restrictions in the use and development of the open space. o (B) Responsibility for providing adequate maintenance. o 42.2.4A: In specific cases the Commission may require the open space, or a portion, be conveyed to the Town or to a land trust, if accepted, or to another entity organized and empowered to own, operate and maintain land for the open space purpose approved by the Commission. • Zoning: 42.3.10: Cluster Subdivision: The open space preserved under the cluster plan shall be used only for the following purposes: o (A) Parks, playgrounds and other outdoor rec areas.	Currently Implemented • There is a type of development devoted to open space preservation and clustered development. • When selecting the means to preserve open space, it shall only deed to the town when it is appropriate and the town has the means to preserve the land. • It is required that the subdivision site plan identify existing natural and cultural resources as the areas to be conserved. Toward better LID practice • Allow this type of development by right or site plan approval, not by Special Permit. • Encourage other LID practices to reduce impervious surface and protect water resources in this type of development. • Include minimum and maximum lot sizes. • Flag lots should be allowed only where they would minimize the impact of development.

LID Practice	Current Regulations	Good LID Practices
Open Space/ Conservation Subdivision (cont)	○ (B) Protection of natural streams ponds or water supply. ○ (C) Conservation soils, wetlands or marshes. ○ (D) Protection of natural drainage systems or assurances of safety from flooding. ○ (E) Preservation is sites for scenic beauty or historic interest. ○ (F) Conservation of forests, wildlife, agriculture and other natural resources. ○ (G) Recreation buildings, pools, tennis, bus shelters and other such common use facilities/structures may be approved. • Zoning: 42.3.13: Cluster Subdivision: Landscaping: It is the intent of the Commission to encourage the developer to preserve the natural vegetation of the site wherever practical. Therefore, existing vegetation shall be shown in the site plan, indicating the areas to be disturbed. • Zoning: 42.6: Cluster Subdivision: Approval Criteria: ○ (f) Where applicable, open space preserved shall include an important natural or historic feature.	
Setbacks & Frontages	• Zoning: 32: Schedule B: Dimensional Requirements: ○ Setbacks are 40 ft. in residential zones, range from 40 to 50 ft. in commercial zones and 50 to 100 ft. in industrial zones. ○ Frontages are 50 ft. in residential and commercial zones and 60 ft. in industrial zones.	Currently Implemented • Frontages in all zones are at or below the recommended frontage of 60 ft. Toward better LID practice • Allow reduction of standards under certain circumstances. • Where practicable, reduce building setbacks to 20 to 30 ft.

LID Practice	Current Regulations	Good LID Practices

Sidewalks	• Subdivision: 6.10: All sidewalks shall conform to construction and design standards as required in the Cheshire Construction Guidelines.
	  o (1) Sidewalks shall be required on both sides of new streets in subdivisions in R-20, R-20A, R-40 and R-80 zones. The applicant may, however request a waiver of sidewalks on 1 or both sides of the street. At cul-de-sac streets, sidewalks will not be required around the circumference of the circle.
	  o (2) Where 1 or more following conditions exist on existing streets, Commission has discretion to postpone instillation:
	  ▪ (A) Not within legal walking distance of any school, existing/proposed park, playground, other public facility, and the public safety will not be affected.
	  ▪ (B) Road construction would make immediate installation impractical.
	  ▪ (C) Extreme and unusual physical or topographic conditions with absence of sidewalks in immediate area make immediate installation impractical.
	• Subdivision: 12.1.8: Sidewalks shall be provided in all commercial developments.
	• Subdivision: 12.2.8: Sidewalks may be required by the Commission in industrial developments at locations where the amount of expected pedestrian traffic warrants.
	• Construction Guidelines: Materials, Pg. 102: Concrete Sidewalks, Driveway Aprons and Ramps: Materials for this work shall conform to the requirements of the specification "Concrete Work".
	  o Concrete Work, Pg. 65: Class "A" concrete includes all reinforced concrete and that requiring considerable form work.
	  ▪ Materials: (1) Cement: Portland cement
	  ▪ Materials: (2) Aggregates
		Currently Implemented
		• Sidewalks are not required on both sides of every street.
		• Contiguous sidewalks are encouraged and the creation of isolated sidewalk segments is discouraged.
		
		Toward better LID practice
		• Allow separate unpaved or narrower pedestrian walkways as an alternative to sidewalks.
		• Allow alternative and pervious/porous/permeable pavement material to be used.
		• Do not allow sidewalks to drain into stormwater infrastructure.

LID Practice	Current Regulations	Good LID Practices
Driveways	• Zoning: 32.8.2: Driveways: There shall be not more than 1 driveway entering any lot from any 1 street if such has a frontage of less than 100 ft. For others, there shall be no more than 2 driveways entering from 1 street, except there may be 1 additional driveway for each additional 300 ft. of frontage. Driveways shall not exceed 35 ft. in width at the street line. The use of concrete and/or bituminous concrete shall be stipulated in any Commission approval. If such approval does not exist, it shall be determined by the Town Engineer. All sidewalk and driveway repairs and replacements shall be of the same material as approved by the Commission on the original subdivision approval. • Zoning: 42.2.5: Cluster Subdivision: Driveways or other areas shall be constructed to provide an additional 2 and 1.5 parking spaces for guests of families with more than 2 cars. These spaces shall be required to prevent the necessity of on-street parking and may be located so as to be usable by several dwelling units • Subdivision: 12.1.3: Driveways shall be designed and built to prevent washout of materials onto the street. • Construction Guidelines: Materials, Pg. 102: Concrete Sidewalks, Driveway Aprons and Ramps: Materials for this work shall conform to the requirements of the specification "Concrete Work". o Concrete Work, Pg. 65: Class "A" concrete includes all reinforced concrete and that requiring considerable form work. ▪ Materials: (1) Cement: Portland cement ▪ Materials: (2) Aggregates	Currently Implemented • There is a limitation on the amount of driveways per lot. • Shared driveways are allowed for residential uses. • Shared parking is allowed for residential uses in Cluster Subdivisions. • Driveways must be designed such that runoff is not directed on to the roadway. Toward better LID practice • Require driveway pavement widths of 18 ft. • Require that driveway runoff is not directed into stormwater infrastructure. • Allow alternative and pervious/porous/permeable pavement material to be used. • Encourage the use of stormwater treatment practices on individual lots such as, bio-retention, rain gardens and infiltration.

LID Practice	Current Regulations	Good LID Practices
Roof Runoff	• Subdivision 7.3: Drainage Discharge: The discharge of all storm water from a subdivision shall be into suitable streams or other acceptable and suitable storm water drainage facilities having adequate capacity to carry the additional water. Sufficient and adequate facilities shall be constructed on property where needed to prevent flow of surface drainage from the property where originates onto adjacent property in sufficient quantity, concentration or velocity to cause damage or create a nuisance on adjoining property. In general, wherever the accumulation or concentration or runoff from any subdivision or lot could reach quantities, velocities or other characteristics, which could become a nuisance on the adjoining lot of other property such as excessive quantity, erosion, silting, ponding, saturation of the soil, etc., the flow shall be intercepted by a berm, swale, catch basin inlet to an underground drain or other device or combination to control and prevent.	Currently Implemented • When runoff from one property may be a nuisance to an adjacent property, swales or catch basins are options on a list of devices to prevent such runoff. Toward better LID practice • Require that roof runoff is not directed on to the roadway or stormwater infrastructure. • Encourage the use of stormwater treatment practices on individual lots such as, bio-retention, rain gardens and infiltration practices.

LID Practice	Current Regulations	Good LID Practices
Stormwater Management Plans (SMP)	• Zoning: 49.2: Any proposal for development that will cumulatively create more than 0.5 acre in area on land being developed must have a certified Erosion and Sediment Control Plan. • Subdivision: 14.2: Any proposal for development that will cumulatively create more than 0.5 acre in area on land being developed must have a certified Erosion and Sediment Control Plan.	Currently Implemented • Erosion and Sediment Control Plan is required. Toward better LID practice • Require a SMP for any development where the disturbance is greater than or equal to 0.5 acre or in developments where: o More than 5 residential units are constructed. o A road is constructed or reconstructed. o Stormwater discharges into wetlands/ watercourses. o Land uses have a potential for high pollutant loadings (industrial and commercial). The SMP should follow the goals, criteria and suggested content found in the CT Stormwater Quality Manual.

LID Practice	Current Regulations	Good LID Practices
Riparian Buffers	• Wetlands: 2.1 (DD): "Regulated activity" means any operation within or the use of a wetland or watercourse involving, but not limited to, the removal or deposition of material and any obstruction, construction, alteration, or pollution of such wetlands and watercourses including any pond (permanent or seasonal) and including construction of any road or driveway over a watercourse, any rechanneling of a perennial or intermittent stream or intermittent watercourse, any discharge which has potential for significant erosion and/or deposition, or any earthmoving, filling, construction, or clear-cutting of trees within 50 ft. of wetlands and/or watercourses which earthmoving, etc. is likely to impact or affect wetlands or watercourses. Those activities specified in Sec. 4 of these Regulations, however, are determined to be nonregulated activities or activities permitted as of right. • Wetlands: 2.1 (EE): "Regulated area" means the area where a "regulated activity", as defined in this Sec. 2.1, occurs and includes all inland wetlands and/or watercourses, as defined in these Regulations and all areas within the 50 ft. review area.	Currently Implemented • Toward better LID practice • The definition of a regulated activity in Wetlands Regulations shall include the 100 ft. around wetlands and watercourses.

LID Practice	Current Regulations	Good LID Practices
Clearing & Grading	• Subdivision: 5.2: All prominent features such as water courses, water basins, wetlands, stone fences, ridge tops, scenic points and similar irreplaceable natural assets shall be shown on the subdivision maps and shall be preserved and conserved to the maximum. • Subdivision: 5.10.1: All areas disturbed by earth movement or by construction, except those used for paved surfaces, shall be covered with four inched of loam and seeded. All areas to be left in their natural condition such as rocky outcrops, swamps, ponds, open space, etc. shall be delineated on the subdivision map and shall be subject to the approval of the Commission. • Subdivision: 6.5.1A: Residential Street Grades: Grades of all streets shall conform in general to the terrain and shall not exceed 8% for major streets and 10% for minor streets. • Construction Guidelines: Description, Pg. 16: Site Preparation: Therefore, only such clearing and grubbing as is absolutely necessary to perform the Work shall be done. The Contractor shall control his operations so as to minimize the disturbance to all areas. Minimize cutting and damage to trees and shrubs which are to be preserved. Excavating machinery shall be handled with care to prevent damage to trees. Particularly to overhanging branches and limbs, and to other property.	Currently Implemented • In creating a site plan, developers are required to consider the conditions of the land and aim to minimally alter, known as site fingerprinting. • Streets shall follow the natural terrain. • There shall be minimal clearing and grading to carry out development. Toward better LID practice

LID Practice	Current Regulations	Good LID Practices
Tree Conservation	• Zoning: 33.8.4: Trees used in parking lots shall be selected from the preferred planting list prepared by the Town Beautification Committee or similar species. Existing native and non-native trees with significant aesthetic/scenic value should be preserved where said preservation does not impair the orderly development of the site. • Subdivision: 5.14: Every effort shall be made toward the preservation of trees. The Commission may require deciduous trees and/or evergreen trees to be planted by the developer on subdivision lots whenever either of the following conditions exist: o (1) Where the land had been excessively stripped of trees and vegetation. o (2) Where trees are deemed necessary for erosion control due to creation of steep slopes and other topo features.	Currently Implemented • Trees of a certain maturity are required to be conserved during development. Toward better LID practice • Extend use of the planting list prepared by the Town Beautification Committee to planting in all developments. • Require that landscaping is done with native species. • Provide a list of native species that excludes invasive species.

SEDIMENTATION CHAMBERS

Ashley Ct	5000 gal	On right behind start of guardrail
Bardon Ct	3000 gal	Just uphill from 1st CB on Right
Bluefield Ct	3000 gal.	At intersection, Cook Hill Rd, East side, behind CB
Chamberlain Ct	3000 gal.(?)	At end of cul-de-sac, behind CB
Copper Beech Dr.	3000 gal. 3000 gal.	Behind walk, West side of #115 In walk, between #15 and #25
Dundee Dr.	8000 gal. 4000 gal.	Behind CB, east of #67 Behind CB, east of 8000 gal.
Evelen Ct.	3000 gal (?)	200' down easement 160' west of intersection off Tucker
Kensington Ct	1000 gal	Behind Double CB in cul-de-sac
Lansdowne La.	3000 gal (?)	In walk, between #214 and #230
MacCausland Ct.	4000 gal.	Behind CB, on left before cul-de-sac
Orleton Ct.	2000 gal.	At cul-de-sac, behind CB
Prinz Ct	3000 gal	End of cul-de-sac to rt of twin cbs
Regent Ct	1500 gal (?)	Behind CB in cul-de-sac
Sterling Ridge Ct	4000 gal	1st CB on left under walk
Summer Hill Ct	2000 gal 4500 gal	900' on left opposite MH behind walk 1st CB on Rt behind walk
Ted's Ct	3000 gal (?)	Behind CB to left in cul-de-sac
Vanessa Ct.	3000 gal (?)	At low spot on left behind CB's
Sandbank Rd.	1500 gal & drywell	Just east of box culvert
Schoolhouse Rd.	2600 gal &8'x8' vault	85' east of stream crossing

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