

**2016 STORMWATER ANNUAL REPORT**

**TOWN OF REDDING, CONNECTICUT  
REGISTRATION NO. GSM000085**

March 9, 2017

MMI #3052-04-8

***Prepared for:***

Town of Redding  
100 Hill Road  
P.O. Box 1028  
Redding, Connecticut 06875

***Prepared by:***

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## **1.0 INTRODUCTION**

This report has been prepared by Milone & MacBroom, Inc. (MMI) for the Town of Redding (the Town) as the required Annual Report described in Section 6(i)(2) of the General Permit for the Discharge of Stormwater from Municipal Separate Storm Sewer Systems (the Permit). The Town developed a Stormwater Management Plan in association with its registration under this Permit. This report is intended to address stormwater-related activities performed within the Town during the 2016 calendar year.

## **2.0 STORMWATER SAMPLING**

Stormwater samples were collected at six locations in the Town on November 15, 2016. Results of these analyses are presented in Appendix A. The Town has submitted sampling results and annual reports for the previous permit years (2006 through 2015).

## **3.0 MINIMUM CONTROL MEASURES**

For this 2016 Annual Report, the current status of each minimum control measure has been reviewed. The Town conducts daily activities that include several existing Best Management Practices (BMPs) and the development of proposed and future BMPs for implementation. The minimum control measures and the current schedule for each are listed below. In addition, the current status of the specific BMP is also included.

### **BMP #1: PUBLIC EDUCATION AND OUTREACH**

#### **A. Educate citizens about the impacts of stormwater on waterways.**

1. In 2015, the Town launched a new official Town website designed to be more user friendly and to provide more accessible information. The website contains a stormwater information page that includes all past submitted Stormwater Management Plans.
2. The Town's stormwater web page includes links to the Norwalk River Watershed Association, the Conservation Districts of Connecticut, and the Nature Conservancy Saugatuck Forest Lands Project. The Norwalk River Watershed Association web page includes reference information regarding watershed protection through maintenance of septic systems and responsible yard care in addition to watershed events that involve the public.
3. The Town's transfer station staff notifies residents of available recycling programs via the *Redding Pilot*, brochures, and the Town website.
4. An illicit/illegal connection fact sheet has been developed and is available at the town hall.

5. Stormwater fact sheets developed by the first selectman are on display at the town hall.
6. The United States Environmental Protection Agency (EPA) handout "Pollution Prevention/Good Housekeeping Minimum Control Measures" is made available to the public at the town hall. The handout includes information on pollution prevention and good housekeeping measures that can be implemented by all the residents of Redding.
7. Copies of the fact sheet "Nonpoint Source Water Pollution" published through the Connecticut Nonpoint Education for Municipal Officials (NEMO) program have been made available to the public for free at the town hall.
8. Copies of the Connecticut State Health Department flyer "Septic Systems 101" is available to the public at the town hall.
9. In 2014, two more informative brochures were made available to the public: The "Wipe Out Waste! Guidebook" published by the Housatonic Resources Recovery Authority and also "Preserving Natural Redding: A Guide to Living in a Watershed Community" created by the Redding Garden Club. The latter is also available at multiple other locations in Town such as the public library and the community center.

**B. Educate municipal officials and land use commissions on proper stormwater management.**

1. The Zoning Office will evaluate the feasibility of coordinating a NEMO or Southwest Conservation District presentation for Town staff and land use commissions in 2017. This training was planned for 2016 but postponed due to changes in commission personnel and concern over additional requirement of the new MS4.

**BMP #2: PUBLIC INVOLVEMENT AND PARTICIPATION**

**A. Develop a public involvement and participation program.**

1. The first selectman is responsible for continued involvement in the Landscape Stewardship Advisory Committee.
2. The first selectman is responsible for continued participation in the Saugatuck River Watershed Partnership.
3. The Health Department coordinates with the Housatonic Resources Recovery Authority to participate in the annual household hazardous waste collection program.

4. Waste oil and oil filters are collected at the transfer station.
5. The Norwalk River Watershed Association (NRWA) sponsors the annual Norwalk River Watershed Make a Difference Day and spring river cleanups. The Norwalk River runs through the Georgetown section of Redding, and the activities of the NRWA help to educate residents on the importance of maintaining good water quality.
6. The first selectman organizes the annual community cleanup day in which citizens of all ages take part in a townwide trash cleanup. This year's cleanup took place in April 2016.
7. The Redding Land Trust is a private organization that oversees approximately 1,600 acres of open space properties in gifts or in conservation easements. Preserved properties range from a few acres to large tracts of 100 acres or more. The trust is actively looking for additional property that could be acquired in the Town. Dedicated open space land cannot be developed and so helps to maintain water quality through the natural filtering processes that occur in nature.

**B. Comply with Freedom of Information (FOI) requirements.**

1. Land use commissions hold public hearings on land use applications for new development and redevelopment.
2. A draft copy of this Annual Report was placed in the Zoning Department at the town hall on February 5, 2017, for public review for a period of 30 days. A legal notice was published in the *Redding Pilot* inviting public review and comment.

**BMP #3: ILLICIT DISCHARGE DETECTION AND ELIMINATION**

**A. Develop and implement ongoing illicit discharge detection program.**

1. In 2009, a map of all outfalls greater than 15" in urbanized areas was completed and is maintained in the Zoning Office.
2. In 2009, a map of all outfalls greater than 15" in the entire Town was completed and is maintained in the Zoning Office.
3. In 2009, a map of all outfalls greater than 12" in urbanized areas was completed and is maintained in the Zoning Office.
4. In 2010, townwide Geographic Information System (GIS) mapping with outfalls was developed and is maintained on the Town website – [www.townofreddingct.org](http://www.townofreddingct.org).

5. The Health Department is coordinating with Aquarion to ensure continued execution of watershed inspections to identify illicit discharges.
6. The Health Department performs annual inspections of restaurants with external grease traps.
7. The Town typically relies on resident complaints to identify questionable discharges from outfalls or illegal dumping. A reporting form is available on the Town website – [www.townofreddingct.org](http://www.townofreddingct.org) or in the Zoning Office.

**B. Manage waste collection to prevent/minimize illegal dumping.**

1. The transfer station manager continues to collect nickel cadmium batteries, car batteries, appliances, demolition debris, scrap tires, fluorescent bulbs, waste oil, and antifreeze at the transfer station.
2. The transfer station manager continues to collect recyclable glass, cans, newspapers, and cardboard at the transfer station. Single-stream recycling has added additional items that are eligible for recycling.
3. The transfer station manager continues the program to collect and, if possible, recycle household electronics items.
4. In 2016, the Town began participation in a composting program. Residents may bring compostable materials to the transfer station, where they are picked up by a regional composting company.

**BMP #4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL**

**A. Review land use regulations.**

1. In 2006, the Zoning Office completed its review of zoning regulations for erosion and sediment control for construction-phase stormwater management elements.
2. In 2006, the Land Use Office completed its review of subdivision regulations for construction-phase stormwater management elements.
3. In 2006, the Land Use Office completed its review of wetland regulations for construction-phase stormwater management elements.

**B. Review development project for proper erosion and sediment control management.**

1. The Land Use Office and zoning enforcement officer actively review all land use and site plan applications for consistency with *2002 Connecticut Guidelines for Erosion and Sedimentation Control* BMPs.

2. The zoning enforcement officer regularly inspects construction sites to evaluate the effectiveness of erosion and sediment controls.
3. The Land Use Office and zoning enforcement officer refer all applications in the Saugatuck River watershed to Aquarion for review.
4. The Zoning Commission includes, with all application forms, information regarding notification of the Connecticut Department of Health of any application for activity within the watershed areas.
5. The zoning regulations expressly require construction site operators to monitor sediment and erosion controls and control discarded wastes, concrete truck washout, litter, chemicals, and sanitary wastes.

**C. Develop program to notify contractors of Connecticut Department of Energy & Environmental Protection (DEEP) stormwater permits.**

1. The Land Use Office and zoning enforcement officer have revised land use application forms to require stormwater management controls. In 2015, the Town began the implementation of online permitting, which will provide more opportunity for public access to regulations and guidelines associated with construction activities.

**D. Track and act on, as needed, information provided by the public relating to construction-site maintenance in Town.**

1. Construction-related complaints from the public are recorded and kept in the street file for the violating property in the Zoning Office.
2. An inspection program for construction sites against which complaints are logged has been developed and executed by the zoning enforcement officer. Inspections take place on a regular basis during construction on major projects.
3. Implementation of an online permitting program began in 2015. This program will allow better mobile access to job information for inspectors and also manage calendars and create reminders for regular inspections and follow-up.

**BMP #5: POSTCONSTRUCTION STORMWATER MANAGEMENT**

**A. Review land use regulations to promote low-impact development techniques for development and redevelopment projects as appropriate.**

1. The Land Use Office and zoning enforcement officer have assessed BMPs and evaluated applicability for the Town based on geology and topography of the Town.

2. The Land Use Office and zoning enforcement officer have reviewed zoning regulations for postconstruction stormwater management practices including low impact development.
3. The Land Use Office and zoning enforcement officer have reviewed subdivision regulations for postconstruction stormwater management practices including low-impact development.
4. The Land Use Office and zoning enforcement officer have developed Town standards for stormwater management that incorporate water quality BMPs.
5. The Land Use Office and zoning enforcement officer have revised zoning and subdivision regulations to reference design standards developed in goal 5.A-4.
6. All plans approved by land use commissions are required to be in conformance with the standards of the *2002 Sediment and Erosion Control Guidelines*. New construction is often bonded to ensure compliance.
7. Wherever possible, the Town encourages low-impact standards (reduction of impervious coverage, stormwater detention, 80% total suspended solids removal, etc.).
8. The Conservation Commission has adopted a regulatory buffer for all activities within 100 feet of wetlands, 150 feet of named watercourses, and 500 feet of vernal pools as these are believed to have the potential to impact resources.

**B. Develop a mechanism to ensure long-term operation and maintenance of BMPs.**

1. The Highway Department has developed a list of Town-owned detention and retention basins and will update it as needed.
2. The Highway Department inspects the Town-owned detention/retention structures on a regular basis and/or when prompted by citizen inquiries.
3. The Town currently requires applicants to provide a stormwater operation and maintenance plan with all new developments.

**BMP #6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING**

**A. Develop training/education program for municipal employees.**

1. The Highway Department has reviewed and updated the Stormwater Pollution Prevention Plan (SWPPP) for the Public Works garage in conjunction with the renewal of its Industrial Stormwater Permit. The Highway Department is in the process of implementing the recommendations outlined in the SWPPP.

2. The transfer station manager has developed a stormwater management plan for the transfer station in conjunction with its Industrial Stormwater Permit. In 2013, temporary covers were installed. In 2016, covers for dumpsters at the transfer station were found to be acceptable by the DEEP.
3. The Highway Department organizes and documents annual training of Public Works and Highway Department employees.
4. The first selectman has identified public resources such as from the DEEP that would provide public education on stormwater management for municipal employees.

**B. Optimize maintenance of Town-owned drainage facilities.**

1. The Highway Department has reviewed the existing street sweeping program and has identified streets to be swept more than once per year. Additional sweeping is done based upon citizen requests and observed need.
2. The Highway Department documents annual catch basin inspection and cleaning. However, due to limited Town resources, it is not feasible to perform annual maintenance on all catch basins within the Town.
3. The Highway Department has evaluated street conditions and has developed a long-range plan for street maintenance, which includes, in some areas, improvement to stormwater management infrastructure, removal of sediment from outfalls, and stabilization of drainage channels.
4. The Highway Department trains employees in proper handling of catch basin sediments and wastes.

**C. Continue the existing program for prioritizing maintenance of storm drainage infrastructure.**

1. The Town provides funding, as necessary, to perform maintenance and emergency repairs on the storm drainage infrastructure.
2. The Town continues to use "Ice B'Gone" instead of road sand to reduce ice on roads resulting in a lower volume of sand in catch basins.

3052-04-8-mr817-rpt

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**APPENDIX A**

**Results of Stormwater Sampling**

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# AQUA ENVIRONMENTAL LAB

56 Church Hill Road • Newtown, CT 06470 • (203) 270-9973

## Report of Analysis

**Name:** Redding Wetland Enforcement  
 ATTN Amy Pardee  
 PO Box 1028  
 Redding, CT 06875

**Sample Date:** 10/27/2016 3:15 PM  
**Receipt Date:** 10/27/2016 5:30 PM  
**Report Date:** 12/5/2016  
**Sample Site:** Cricklewood

**Sample ID#:** 190696  
**Sample Type:** Test  
**Sampler:** TB

Parameter	Sample Result	Units	Limits	Method	MDL	Analysis Date
<b>Biological</b> e Coli Bacteria	365 *	Col/100 ml	235	SM9222D	0	10/27/2016
<b>Minerals</b> Hardness	7	mg/L	No Limit Set	EPA 200.5	1	11/1/2016
<b>Nutrient</b> Ammonia as N Nitrate as N Phosphorus-T as P Total Kjeldahl Nitrogen as N	0.61 0.22 0.13 1.45	mg/L mg/L mg/L mg/L	No Limit Set 10 No Limit Set No Limit Set	EPA 350.2 EPA 300.0 EPA 365.2t M4500NH30	0.2 0 None 0.2	11/2/2016 10/27/2016 11/1/2016 11/3/2016
<b>Organic Compounds</b> Oil & Grease	1.2	mg/L	No Limit Set	1664A	1	12/5/2016
<b>Oxygen Demand</b> Chemical Oxygen Demand	40	mg/L	No Limit Set	H8230	5	11/11/2016
<b>Physical</b> Conductivity PH Suspended Solids Temperature Turbidity	35 6.9 6.4 7.7 15.8 *	uS/cm SU mg/L C NTU	No Limit Set 2 - 10 No Limit Set No Limit Set 5	EPA 120.1 SM4500HB SM2540D 170.1-C EPA 180.1	1 0 None 1 0.05	10/28/2016 10/27/2016 10/28/2016 10/27/2016 10/28/2016

ND = Not Detected  
 \* = Above Specified Limit

Report Approved by:

Lab Director

CT Lic PH-0787

NY Lic 11706

Analytical results relate to the samples as received at the laboratory. Report shall not be reproduced except in its entirety without written approval from the laboratory.



# AQUA ENVIRONMENTAL LAB

56 Church Hill Road • Newtown, CT 06470 • (203) 270-9973

## Report of Analysis

**Name:** Redding Wetland Enforcement  
 ATTN Amy Pardee  
 PO Box 1028  
 Redding, CT 06875

**Sample Date:** 10/27/2016 4:40 PM  
**Receipt Date:** 10/27/2016 5:30 PM  
**Report Date:** 12/5/2016  
**Sample Site:** Post Office

**Sample ID#:** 190697  
**Sample Type:** Test  
**Sampler:** TB

Parameter	Sample Result	Units	Limits	Method	MDL	Analysis Date
<b>Biological</b> e Coli Bacteria	517 *	Col/100 ml	235	SM9222D	0	10/27/2016
<b>Minerals</b> Hardness	88	mg/L	No Limit Set	EPA 200.5	1	11/1/2016
<b>Nutrient</b> Ammonia as N	0.90	mg/L	No Limit Set	EPA 350.2	0.2	11/2/2016
Nitrate as N	0.36	mg/L	10	EPA 300.0	0	10/27/2016
Phosphorus-T as P	0.07	mg/L	No Limit Set	EPA 365.2t	None	11/1/2016
Total Kjeldahl Nitrogen as N	2.46	mg/L	No Limit Set	M4500NH30	0.2	11/3/2016
<b>Organic Compounds</b> Oil & Grease	3.1	mg/L	No Limit Set	1664A	1	12/5/2016
<b>Oxygen Demand</b> Chemical Oxygen Demand	188	mg/L	No Limit Set	H8230	5	11/11/2016
<b>Physical</b> Conductivity	50	uS/cm	No Limit Set	EPA 120.1	1	10/28/2016
PH	7.0	SU	2 - 10	SM4500HB	0	10/27/2016
Suspended Solids	109	mg/L	No Limit Set	SM2540D	None	10/28/2016
Temperature	7.0	C	No Limit Set	170.1-C	1	10/27/2016
Turbidity	119 *	NTU	5	EPA 180.1	0.05	10/28/2016

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## Report of Analysis

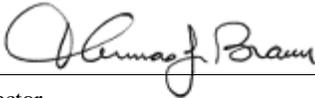
**Name:** Redding Wetland Enforcement  
 ATTN Amy Pardee  
 PO Box 1028  
 Redding, CT 06875

**Sample Date:** 10/27/2016 4:55 PM  
**Receipt Date:** 10/27/2016 5:30 PM  
**Report Date:** 12/5/2016  
**Sample Site:** John Todd

**Sample ID#:** 190698  
**Sample Type:** Test  
**Sampler:** TB

Parameter	Sample Result	Units	Limits	Method	MDL	Analysis Date
<b>Biological</b> e Coli Bacteria	461 *	Col/100 ml	235	SM9222D	0	10/27/2016
<b>Minerals</b> Hardness	8	mg/L	No Limit Set	EPA 200.5	1	11/1/2016
<b>Nutrient</b> Ammonia as N	0.63	mg/L	No Limit Set	EPA 350.2	0.2	11/2/2016
Nitrate as N	0.27	mg/L	10	EPA 300.0	0	10/27/2016
Phosphorus-T as P	0.18	mg/L	No Limit Set	EPA 365.2t	None	11/1/2016
Total Kjeldahl Nitrogen as N	3.19	mg/L	No Limit Set	M4500NH30	0.2	11/3/2016
<b>Organic Compounds</b> Oil & Grease	1.3	mg/L	No Limit Set	1664A	1	12/5/2016
<b>Oxygen Demand</b> Chemical Oxygen Demand	83	mg/L	No Limit Set	H8230	5	11/11/2016
<b>Physical</b> Conductivity	38	uS/cm	No Limit Set	EPA 120.1	1	10/28/2016
PH	6.9	SU	2 - 10	SM4500HB	0	10/27/2016
Suspended Solids	53.6	mg/L	No Limit Set	SM2540D	None	10/28/2016
Temperature	4.8	C	No Limit Set	170.1-C	1	10/27/2016
Turbidity	29.4 *	NTU	5	EPA 180.1	0.05	10/28/2016

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 Lab Director

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## Report of Analysis

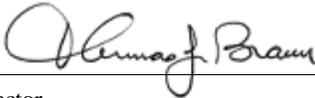
**Name:** Redding Wetland Enforcement  
 ATTN Amy Pardee  
 PO Box 1028  
 Redding, CT 06875

**Sample Date:** 10/27/2016 3:30 PM  
**Receipt Date:** 10/27/2016 5:30 PM  
**Report Date:** 12/5/2016  
**Sample Site:** Deer Hill

**Sample ID#:** 190699  
**Sample Type:** Test  
**Sampler:** TB

Parameter	Sample Result	Units	Limits	Method	MDL	Analysis Date
<b>Biological</b> e Coli Bacteria	214	Col/100 ml	235	SM9222D	0	10/27/2016
<b>Minerals</b> Hardness	11	mg/L	No Limit Set	EPA 200.5	1	11/2/2016
<b>Nutrient</b> Ammonia as N	0.62	mg/L	No Limit Set	EPA 350.2	0.2	11/2/2016
Nitrate as N	0.36	mg/L	10	EPA 300.0	0	10/27/2016
Phosphorus-T as P	0.12	mg/L	No Limit Set	EPA 365.2t	None	11/1/2016
Total Kjeldahl Nitrogen as N	2.49	mg/L	No Limit Set	M4500NH30	0.2	11/3/2016
<b>Organic Compounds</b> Oil & Grease	<1	mg/L	No Limit Set	1664A	1	12/5/2016
<b>Oxygen Demand</b> Chemical Oxygen Demand	36	mg/L	No Limit Set	H8230	5	11/11/2016
<b>Physical</b> Conductivity	121	uS/cm	No Limit Set	EPA 120.1	1	10/28/2016
PH	7.4	SU	2 - 10	SM4500HB	0	10/27/2016
Suspended Solids	14.8	mg/L	No Limit Set	SM2540D	None	10/28/2016
Temperature	6.8	C	No Limit Set	170.1-C	1	10/27/2016
Turbidity	11.3 *	NTU	5	EPA 180.1	0.05	10/28/2016

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## Report of Analysis

**Name:** Redding Wetland Enforcement  
 ATTN Amy Pardee  
 PO Box 1028  
 Redding, CT 06875

**Sample Date:** 10/27/2016 4:15 PM  
**Receipt Date:** 10/27/2016 5:30 PM  
**Report Date:** 12/5/2016  
**Sample Site:** Georgetown

**Sample ID#:** 190700  
**Sample Type:** Test  
**Sampler:** TB

Parameter	Sample Result	Units	Limits	Method	MDL	Analysis Date
<b>Biological</b>						
e Coli Bacteria	291 *	Col/100 ml	235	SM9222D	0	10/27/2016
<b>Minerals</b>						
Hardness	7	mg/L	No Limit Set	EPA 200.5	1	11/2/2016
<b>Nutrient</b>						
Ammonia as N	0.63	mg/L	No Limit Set	EPA 350.2	0.2	11/2/2016
Nitrate as N	0.40	mg/L	10	EPA 300.0	0	10/27/2016
Phosphorus-T as P	<0.01	mg/L	No Limit Set	EPA 365.2t	None	11/1/2016
Total Kjeldahl Nitrogen as N	1.53	mg/L	No Limit Set	M4500NH30	0.2	11/3/2016
<b>Organic Compounds</b>						
Oil & Grease	<1	mg/L	No Limit Set	1664A	1	12/5/2016
<b>Oxygen Demand</b>						
Chemical Oxygen Demand	17	mg/L	No Limit Set	H8230	5	11/11/2016
<b>Physical</b>						
Conductivity	48	uS/cm	No Limit Set	EPA 120.1	1	10/28/2016
PH	7.1	SU	2 - 10	SM4500HB	0	10/27/2016
Suspended Solids	8.4	mg/L	No Limit Set	SM2540D	None	10/28/2016
Temperature	7.0	C	No Limit Set	170.1-C	1	10/27/2016
Turbidity	30.6 *	NTU	5	EPA 180.1	0.05	10/28/2016

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