



**Town of Marlborough, Connecticut**

**2022 Annual Report**

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

**Permit Number 000073**

**MS4 General Permit  
Town of Marlborough 2022 Annual Report  
Permit Number GSM 000073  
January 01, 2022 - December 31, 2022**

Primary MS4 Contact: Wade M. Thomas, Nathan L. Jacobson & Associates, Inc., wthomas@nlja.com, 860.526.9591

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This report documents Town of Marlborough’s efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 01, 2022 to December 31, 2022.

**Part I: Summary of Minimum Control Measure Activities**

Greg Lowrey replaced Amy Traversa as First Selectman in November 2019.

Mike Previti was hired as the Public Works Highway/Fleet Foreman and started on February 22, 2021. Mike Previti resigned as Public Works Highway/Fleet Foreman effective March 04, 2021.

James Grossmann was hired as the Public Works Highway/Fleet Foreman in May 2021.

Tony Gallicchio resigned as Public Works Facilities/Ground Foreman effective May 2021.

In 2022 the town began the transition from a Board of Selectmen government to a Town Manager government. It is anticipated that the transition will be complete in 2023.

**1. Public Education and Outreach** (Section 6 (a)(1) / page 19)

**1.1 BMP Summary**

<b>BMP</b>	<b>Activities in Current Reporting Period</b>	<b>Sources Used</b> (if applicable)	<b>Method of Distribution</b>	<b>Audience (and Number of People Reached)</b>	<b>Measurable Goal</b>	<b>Person Responsible, Department</b>	<b>Additional Details</b>
1-1 Implement public	2017 through 2022- None	NEMO Fact Sheets	Town Website <a href="https://marlboroughct.net/">https://marlboroughct.net/</a>	100s	Improving	Peter Hughes, Director of Planning &	

education and outreach	Before July 01, 2023 Clean Waters Starting in Your Home and Yard Fact Sheets prepared by a collaborative effort between the Connecticut Sea Grant Extension Program and the University of Connecticut Cooperative Extension System NEMO Program will be made available to the public on the town website.					Development, Building Department	
1-2 Address education/outreach for pollutants of concern	2017 through 2022 - None  Before July 01, 2023 Clean Waters Starting in Your Home and Yard Fact Sheets specific to bacteria will be made available to the public on the town website.	NEMO Fact Sheets	Town Website <a href="https://marlboroughct.net/">https://marlboroughct.net/</a>			Peter Hughes, Director of Planning & Development, Building Department	
1-3 Salmon River Watershed Partnership (SRWP) Activities	Pat Young, SRWP Coordinator, represents the Partnership on statewide issues relating to water quality and non-point source pollution and related information is shared with the 10 watershed towns.				Public Education and Outreach	Pat Young, SRWP Coordinator	
	2017 March SRWP Annual Newsletter		<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator	Watershed resource protection and water quality preservation
	2017 May to September HOBO stream temperature loggers were used to obtain hourly readings of temperature at 10 locations	Field sampling and analyses	<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  The data can be accessed at: <a href="http://db.ecosheds.org/">http://db.ecosheds.org/</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator  2 College Interns and Town land-Use Staff	Four sampling locations are located in Marlborough:  Blackledge River at Jones Hollow Road  Foot Sawmill Brook at

						South Buckboard Road  Flat Brook at Standish Drive  Lyman Brook at Papermill Road
2017 June to August Field monitoring of 11 stream segment continued. Weekly samples were analyzed for temperature, pH, dissolved oxygen, conductivity, total dissolved solids and salinity.	Field sampling and analyses.	<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  A report was also prepared and forwarded to all 10 watershed towns	100s	Public Education and Outreach	Pat Young, SRWP Coordinator  1 Summer Intern and 8 community volunteers	Four stream sampling locations are in Marlborough:  Cattle Lot Brook N 41.6040 W -72.4707  Fawn Hill Brook N 41.6128 W -72.4750  Flat Brook N 41.6761 W -72.4637  Foot Sawmill Brook N 41.6756 W -72.4606
2017 - October Pond Life and Water Quality		Field Trip	100s	Public Education and Outreach	Pat Young, SRWP Coordinator	Impacts of water quality on pond life.
2018 - March - SRWP Annual Newsletter		<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator	Watershed resource protection and water quality preservation

	<p>2018 May to September HOBO stream temperature loggers were used to obtain hourly readings of temperature at 10 locations</p>	<p>Field sampling and analyses</p>	<p><a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a></p> <p>The data can be accessed at: <a href="http://db.ecosheds.org/">http://db.ecosheds.org/</a></p>	<p>100s</p>	<p>Public Education and Outreach</p>	<p>Pat Young, SRWP Coordinator</p> <p>2 College Interns and Town Land-Use Staff</p>	<p>Three sampling locations are located in Marlborough:</p> <p>Blackledge River at Jones Hollow Road</p> <p>Foot Sawmill Brook at South Buckboard Road</p> <p>Lyman Brook at Papermill Road</p>
	<p>2018 June to August Field monitoring of 11 stream segment continued. Weekly samples were analyzed for temperature, pH, dissolved oxygen, conductivity, total dissolved solids and salinity.</p>	<p>Field sampling and analyses.</p>	<p><a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a></p> <p>A report was also prepared and forwarded to all 10 watershed towns</p>	<p>100s</p>	<p>Public Education and Outreach</p>	<p>Pat Young, SRWP Coordinator</p> <p>1 Summer Intern and 8 community volunteers</p>	<p>Four stream sampling locations are in Marlborough:</p> <p>Cattle Lot Brook N 41.6040 W -72.4707</p> <p>Fawn Hill Brook N 41.6128 W -72.4750</p> <p>Flat Brook N 41.6761 W -72.4637</p> <p>Foot Sawmill Brook N 41.6756 W -72.4606</p>

	2019 - March - SRWP Annual Newsletter		<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator	Watershed resource protection and water quality preservation
	2019 May to September HOBO stream temperature loggers were used to obtain hourly readings of temperature at 10 locations	Field sampling and analyses	<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  The data can be accessed at: <a href="http://db.ecosheds.org/">http://db.ecosheds.org/</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator  2 College Interns and Town Land-Use Staff	Three sampling location were located in Marlborough:  Blackledge River at Jones Hollow Road  Dickinson Creek at Austin Drive  Fawn Hill Brook at Conn Route 66 and Flood Road
	2019 June to August Field monitoring of 11 stream segment continued. Weekly samples were analyzed for temperature, pH, dissolved oxygen, conductivity, total dissolved solids and salinity.	Field sampling and analyses.	<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  A report was also prepared and forwarded to all 10 watershed towns	100s	Public Education and Outreach	Pat Young, SRWP Coordinator  1 Summer Intern and 8 community volunteers	Four stream sampling locations are in Marlborough:  Cattle Lot Brook N 41.6040 W -72.4707  Fawn Hill Brook N 41.6128 W -72.4750  Flat Brook N 41.6761 W -72.4637

							Foot Sawmill Brook N 41.6756 W -72.4606
2020 March SRWP Annual Newsletter			<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator	Watershed resource protection and water quality preservation
2020 May to September HOBO stream temperature loggers were used to obtain hourly readings of temperature at 10 locations	Field sampling and analyses		<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  The data can be accessed at: <a href="http://db.ecosheds.org/">http://db.ecosheds.org/</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator  2 College Interns and Town Land-Use Staff	Four sampling locations were located in Marlborough:  Cattlelot Brook at Quinn Road  Dickenson Creek Downstream of Flood Road  Unnamed Tributary to Dickenson Creek Downstream of Flood Road  Unnamed Tributary to Blackledge River West of Conn. Route 66
2020 June to August Field monitoring of 11 stream segment continued. Weekly samples were analyzed for	Field sampling and analyses.		<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  A report was also prepared and forwarded to all 10 watershed towns.	100s	Public Education and Outreach	Pat Young, SRWP Coordinator	Four stream sampling locations are in Marlborough:

	temperature, pH, dissolved oxygen, conductivity, total dissolved solids and salinity.					1 Summer Intern and 8 community volunteers	Cattle Lot Brook N 41.6040 W -72.4707  Fawn Hill Brook N 41.6128 W -72.4750  Flat Brook N 41.6761 W -72.4637  Foot Sawmill Brook N 41.6756 W -72.4606
2021 March SRWP Annual Newsletter		<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator		Watershed resource protection and water quality preservation
2021 May to September HOBO stream temperature loggers were used to obtain hourly readings of temperature at 10 locations	Field sampling and analyses	<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  The data can be accessed at: <a href="http://db.ecosheds.org/">http://db.ecosheds.org/</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator  2 College Interns and Town Land-Use Staff		
2021 June to August Field monitoring of 11 stream segment continued. Weekly samples were analyzed for temperature, pH, dissolved oxygen, conductivity, total dissolved solids and salinity.	Field sampling and analyses.	<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  A report was also prepared and forwarded to all 10 watershed towns	100s	Public Education and Outreach	Pat Young, SRWP Coordinator  1 Summer Intern and 8 community volunteers		Four stream sampling locations are in Marlborough:  Cattle Lot Brook N 41.6040 W -72.4707  Fawn Hill Brook



							N 41.6128 W -72.4750  Flat Brook N 41.6761 W -72.4637  Foot Sawmill Brook N 41.6756 W -72.4606
	2022 January through December Ongoing Meetings with Community Leaders and Land Use Board Members Watershed Visioning Sessions. Initiated in 2021 and ongoing. Long term visioning process with a goal of establishing a path toward long term sustainability.			25 participants		Pat Young, SRWP Coordinator	
	2022 March SRWP Annual Newsletter		<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator	Watershed resource protection and water quality preservation
	2022 May to September HOB0 stream temperature loggers were used to obtain hourly readings of temperature at 10 locations	Field sampling and analyses	<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  The data can be accessed at: <a href="http://db.ecosheds.org/">http://db.ecosheds.org/</a>	100s	Public Education and Outreach	Pat Young, SRWP Coordinator  2 College Interns and Town Land- Use Staff	
	2022 June to August Field monitoring of 11 stream segment continued. Weekly samples were analyzed for temperature, pH, dissolved oxygen, conductivity, total dissolved solids and salinity.	Field sampling and analyses.	<a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>  A report was also prepared and forwarded to all 10 watershed towns	100s	Public Education and Outreach	Pat Young, SRWP Coordinator  1 Summer Intern and 8 community volunteers	Four stream sampling locations are in Marlborough:  Cattle Lot Brook N 41.6040

							W -72.4707  Fawn Hill Brook N 41.6128 W -72.4750  Flat Brook N 41.6761 W -72.4637  Foot Sawmill Brook N 41.6756 W -72.4606
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**1.2 Describe any Public Education and Outreach activities planned for the next year, if applicable.**

The Salmon River Watershed Partnership (SRWP) was formed in 2007 and has been conducting annual public education and outreach activities since then. It is anticipated that public education and outreach activities will continue to be conducted in 2023.

## 2. Public Involvement/Participation (Section 6(a)(2) / page 21)

### 2.1 BMP Summary

BMP	Status (Complete, Ongoing, In Progress, or Not started)	Activities in Current Reporting Period	Measurable Goal	Person Responsible, Department	Date Completed or Projected Completion Date (include the start date for anything that is 'in progress')	Location Posted	Additional Details
2-1 Final Stormwater Management Plan publicly available	Complete	2017 A hard copy of the Draft 2017 Stormwater Management Plan (SMP) was made available to the public for review and comment on the town website.	Complied with requirements	Peter Hughes, Director of Planning & Development, Building Department	The 2017 SMP was available to the public on April 20, 2017.	Town Website <a href="https://marlboroughct.net/">https://marlboroughct.net/</a>	No public comments were received by the Office of the First Selectman
2-2 Comply with public notice requirements for Annual Reports (annually by 02/15)	Complete	2018 The Draft 2017 MS4 Annual Report was made available for public review and comment on the town website.	Complied with Requirements	Peter Hughes, Director of Planning & Development, Building Department	February 22, 2018	Town Website <a href="https://marlboroughct.net/">https://marlboroughct.net/</a>	No public comments were received by the Office of the First Selectman
	Complete	2019 The Draft 2018 MS4 Annual Report was made available for public review and comment on the town website.	Substantially Complied with Requirements	Peter Hughes, Director of Planning & Development, Building Department	March 07, 2019	Town Website <a href="https://marlboroughct.net/">https://marlboroughct.net/</a>	No public comments were received by the Office of the First Selectman
	Complete	2020 The Draft 2019 MS4 Annual Report was made	Substantially Complied with Requirements	Peter Hughes, Director of Planning & Development,	February 14, 2020	Town Website <a href="https://marlboroughct.net/">https://marlboroughct.net/</a>	No public comments were received by the Office of

		available for public review and comment on the town website.		Building Department			the First Selectman
	Complete	2021 The Draft 2020 MS4 Annual Report was made available for public review and comment on the town website.	Substantially Complied with Requirements	Peter Hughes, Director of Planning & Development, Building Department	February 26, 2021	Town Website <a href="https://marlboroughct.net/">https://marlboroughct.net/</a>	No public comments were received.
	Complete	2022 The Draft 2021 MS4 Annual Report was made available for public review and comment on the town website.	Substantially Complied with Requirements	Peter Hughes, Director of Planning & Development, Building Department	April 18, 2022	Town Website <a href="https://marlboroughct.net/">https://marlboroughct.net/</a>	No public comments were received.
	Complete	2023 The Draft 2022 MS4 Annual Report was made available for public review and comment on the town website.	Substantially Complied with Requirements	Peter Hughes, Director of Planning & Development, Building Department	February 23, 2023	Town Website <a href="https://marlboroughct.net/">https://marlboroughct.net/</a>	Public comments are to be directed to Wade Thomas of Nathan L. Jacobson & Associates, Inc.
2-3 Town Planners Workshop	Complete	2017 Workshop with town land use staff to review upcoming large projects to incorporate stormwater quality measures	Improvement in water quality.	Pat Young, SRWP Coordinator	May 2017	SRWP Website <a href="https://www.sanmarlboroughct.org/">https://www.sanmarlboroughct.org/</a>	12 Town land use officials
2-4 Public Event	Complete	2017 A booth was set up at the Marlborough Business Day	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	May 2017	SRWP Website <a href="https://www.sanmarlboroughct.org/">https://www.sanmarlboroughct.org/</a>	Approximately 200 general public attendees

		which included a Public TV interview. The booth displayed SRWP activities and a sign up for volunteering for water quality monitoring activities and the impact of water quality on macroinvertebrates.					
		2018 5 miles of riverbank cleanup was conducted as part of the Source to Sea event	Segments of the Salmon River, Jeremy River, Blackledge River	Pat Young, SRWP Coordinator	September	SRWP Website <a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	35 Community Volunteers
2-5 Water Quality Monitoring Hourly Stream Temperatures	Complete	2017 Summer Stream Temperature Readings at 10 Stream Locations utilizing HOBO Loggers	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	June to September	SRWP Website <a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	3 College Student Interns, 2 Community Volunteers and Town Land Use Board Members
	Complete	2018 Summer Stream Temperature Readings at 10 Stream Locations utilizing HOBO Loggers	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	May to September	SRWP Website <a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	2 College Student Interns, 2 Community Volunteers and Town Land Use Board Members
	Complete	2019 Summer Stream Temperature Readings at 10 Stream Locations utilizing HOBO Loggers	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	May to September	SRWP Website <a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	2 College Student Interns and Community Volunteers and Town Land Use Board Members
	Complete	2020 Summer Stream Temperature Readings at 10 Stream Locations	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	May to September	SRWP Website <a href="https://www.salmonriverct.org">https://www.salmonriverct.org</a>	2 College Student Interns

		utilizing HOBO Loggers					
	Complete	2021 Summer Stream Temperature Readings at 10 Stream Locations utilizing HOBO Loggers	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	May to September	SRWP Website <a href="https://www.samonriverct.org">https://www.samonriverct.org</a>	2 College Student Interns
	Complete	2022 Summer Stream Temperature Readings at 10 Stream Locations utilizing HOBO Loggers	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	May to September	SRWP Website <a href="https://www.samonriverct.org">https://www.samonriverct.org</a>	2 College Student Interns
2-5 Water Quality Monitoring  Weekly Stream Temperature, pH, Dissolved Oxygen, Conductivity, Total Dissolved Solids and Salinity	Complete	2017 Field Monitoring and Volunteer Training Handheld meters were used to obtain weekly Temperature, pH, Dissolved Oxygen, Conductivity, Total Dissolved Solids and Salinity at 11 stream segments. 8 new stream segments in the Lake Pocotopaug watershed. Lake Pocotopaug is an impaired waterbody	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	June to August	SRWP Website <a href="https://www.samonriverct.org">https://www.samonriverct.org</a>	12 Local Citizens
	Complete	2018 Field Monitoring and Volunteer Training Handheld meters were used to obtain weekly Temperature, pH, Dissolved Oxygen,	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	June to August	SRWP Website <a href="https://www.samonriverct.org">https://www.samonriverct.org</a>	2 Summer Interns and 11 Local Citizens in 10 Watershed Towns

		Conductivity, Total Dissolved Solids and Salinity at 11 stream segments and 8 sites in the Lake Pocotopaug Watershed. Lake Pocotopaug is an impaired waterbody					
	Complete	2019 Field Monitoring and Volunteer Training Handheld meters were used to obtain weekly Temperature, pH, Dissolved Oxygen, Conductivity, Total Dissolved Solids and Salinity at 11 stream segments and 8 sites in the Lake Pocotopaug Watershed.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	June to August	SRWP Website <a href="https://www.samonriverct.org">https://www.samonriverct.org</a>	2 Summer Interns and 11 Local Citizens
	Complete	2020 Field Monitoring and Volunteer Training Handheld meters were used to obtain weekly Temperature, pH, Dissolved Oxygen, Conductivity, Total Dissolved Solids and Salinity at 11 stream segments.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	June to August	SRWP Website <a href="https://www.samonriverct.org">https://www.samonriverct.org</a>	2 Summer Interns Due to the COVID-19 pandemic volunteers were not allowed to participate.
	Complete	2021 Field Monitoring and Volunteer Training Handheld meters were used to obtain weekly	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	June to August	SRWP Website <a href="https://www.samonriverct.org">https://www.samonriverct.org</a>	2 Summer Interns Due to the COVID-19 pandemic volunteers were not

		Temperature, pH, Dissolved Oxygen, Conductivity, Total Dissolved Solids and Salinity at 11 stream segments.					allowed to participate.
	Complete	2022 Field Monitoring and Volunteer Training Handheld meters were used to obtain weekly Temperature, pH, Dissolved Oxygen, Conductivity, Total Dissolved Solids and Salinity at 11 stream segments.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	June to August	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	2 Summer Interns Due to the COVID-19 pandemic volunteers were not allowed to participate.
2-5 Water Quality Monitoring  Hourly Stream Temperature and Conductivity	Complete	2017 Hourly Readings of Conductivity and Temperature. Dedicated loggers were installed and monitored at 3 stream segments.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator and GZA Inc. Green Team	Year Around	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	6 GZA Green Team Members, CT DEEP Fisheries Staff and SRWP Staff.
	Complete	2018 Hourly Readings of Conductivity and Temperature. Dedicated loggers were installed and monitored at 3 stream segments.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator and GZA Inc. Green Team	Year Around	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	6 GZA Green Team Members and CT DEEP Fisheries Staff.
	Complete	2019 Hourly Readings of Conductivity and Temperature. Dedicated loggers were installed and monitored at 3 stream segments.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator and GZA Inc. Green Team	Year Around	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	5 GZA Green Team Members, CT DEEP Fisheries and Water Quality Staff and SRWP Staff.
	Complete	2020	Public education and an	Pat Young, SRWP Coordinator	Year Around	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	5 GZA Green Team Members, CT



		Hourly Readings of Conductivity and Temperature. Dedicated loggers were installed and monitored at 10 new stream segments.	improvement in water quality.	and GZA Inc. Green Team			DEEP Fisheries and Water Quality Staff and SRWP Staff.
	Complete	2021 Hourly Readings of Conductivity and Temperature. Dedicated loggers were installed and monitored at 10 stream segments.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator and GZA Inc. Green Team	Year Around	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	5 GZA Green Team Members, CT DEEP Fisheries and Water Quality Staff and SRWP Staff.
	Complete	2022 Hourly Readings of Conductivity and Temperature. Dedicated loggers were installed and monitored at 10 stream segments.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator and GZA Inc. Green Team	Year Around	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	5 GZA Green Team Members, CT DEEP Fisheries and Water Quality Staff and SRWP Staff.
2-6 Field Assessment and Volunteer Training	Complete	2017 Macroinvertebrate Assessment of 2 stream segments	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	June to August	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	3 College Interns and 10 GZA Staff and Family Members
	Complete	2017 Macroinvertebrate Assessment of 11 stream segments	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	September to November	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	Local Citizens
	Complete	2018 Macroinvertebrate Assessment of 14 stream segments	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	September to November	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	Local Citizens
	Complete	2019 Macroinvertebrate Assessment of 14 stream segments	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	September to November	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	Local Citizens
	Complete	2020 Macroinvertebrate Assessment of 8 stream segments	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	September to November	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	Local Citizens

	Complete	2021 Macroinvertebrate Assessment of 14 stream segments	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	September to November	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	Local Citizens
	Complete	2021 Macroinvertebrate Assessment of 14 stream segments	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	September to November	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	Local Citizens
2-7 Education Programs	Complete	2017 Pond Life and Water Quality. Presentation and field netting, identification and discussion on impacts of water quality on pond life.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	October	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	15 Boy Scouts in Marlborough  90 RHAM Middle School Students, Teachers and Parents in Hebron
	Complete	2019 Pond Life and Water Quality. Presentation and field netting, identification and discussion on impacts of water quality on pond life.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	October	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	80 RHAM Middle School Students, and Teachers
	Complete	2020 Pond Life and Water Quality. Presentation and field netting, identification and discussion on impacts of water quality on pond life.	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	October	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	80 RHAM Middle School Students, and Teachers
	Complete	2021 November Pond Life and Water Quality. Presentation and field netting, identification and discussion on	Public education and an improvement in water quality.	Pat Young, SRWP Coordinator	October	SRWP Website <a href="https://www.saimonriverct.org">https://www.saimonriverct.org</a>	80 RHAM Middle School Students, and Teachers

		impacts of water quality on pond life.					
	Compete	2022 October RHAM High School Stream Assessment Blackledge River and Fawn Brook in Marlborough	Classroom and Field Program	Pat Young, SRWP Coordinator	October 2022		
	Complete	2022 October Watershed Tour with Board Members and Town Officials	watershed tour to discuss various projects in the watershed to engage board members and town officials	Pat Young, SRWP Coordinator	October 2022		
2-8 SRWP Outreach	Complete	2017 through 2022 <b>SRWP</b> Outreach	Summary of watershed monitoring efforts	Pat Young, SRWP Coordinator	Ongoing	SRWP Website <a href="https://www.samonriverct.org">https://www.samonriverct.org</a>	
	Complete	2017 through 2022 <b>Facebook</b> Outreach	Summary of watershed monitoring efforts	Pat Young, SRWP Coordinator	Ongoing	<a href="https://www.facebook.com/10towns">https://www.facebook.com/10towns</a>	
	Complete	2019 through 2022 <b>Instagram</b> Outreach	Summary of watershed monitoring efforts	Pat Young, SRWP Coordinator	Ongoing	<a href="https://www.instagram.com/salmonriverct">https://www.instagram.com/salmonriverct</a>	
2-9 Consider Establishment of a Stormwater Committee	In progress	Begin process of identifying committee members if implemented.	Provide forum to coordinate SWMP implementation across departments. and land use commissions.	Peter Hughes, Director of Planning & Development, Building Department	Summer 2022		Committee will represent town departments & commissions with stake in stormwater management.

**2.2 Describe any Public Involvement/Participation activities planned for the next year, if applicable.**

2017 through 2022 - The Salmon River Watershed Partnership was formed in 2007 and has been conducting public outreach and participation activities. It is anticipated that public outreach and participation activities will continue in 2023.

Hold semi-annual stormwater committee meetings to review Stormwater Management Plan implementation progress if the committee is formed.

DRAFT

### 3. Illicit Discharge Detection and Elimination (Section 6(a)(3) and Appendix B / page 22)

#### 3.1 BMP Summary

<b>BMP</b>	<b>Status</b> (Complete, Ongoing, In Progress, or Not started)	<b>Activities in Current Reporting Period</b>	<b>Measurable Goal</b>	<b>Person Responsible, Department</b>	<b>Date Completed or Projected Completion Date</b> (include the start date for anything that is 'in progress')	<b>Additional Details</b>
3-1 Develop written IDDE program (Due 07/01/19)	In progress	A written IDDE program using the IDDE program template available from the CT DEEP is being developed.	Develop written plan of IDDE program	Nathan L. Jacobson & Associates, Inc., Town Engineer	Anticipate completing by December 01, 2023.	The Department of Public Works will be the listed contact.
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas (Due 07/01/20)	Complete	MS4 stormwater outfall mapping was conducted from May 2007 to July 2007. The stormwater outfall mapping was compiled on a ESRI GIS layer. The MS4 stormwater outfall mapping will be updated to include impaired waters as contained in the State of Connecticut, Department of Energy and Environmental Protection 2018 Integrated Water Quality Report if applicable. The stormwater outfalls in the impaired waters will be identified.	Development of an ESRI GIS map layer with MS4 stormwater outfalls.	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2019.	
3-3 Implement citizen reporting program (Ongoing)	In Progress	A program to allow the general public to report suspected illicit discharges is in the process of being set up.	Under Development	Tony Gallicchio, Public Works Supervisor, Department of Public Works	Anticipate completing by December 01, 2023.	The Department of Public Works will be the listed contact.
3-4 Establish legal authority to prohibit illicit discharges (Due 07/01/19)	Complete	An Illicit Discharge Detection and Elimination Ordinance and Citation Hearing Procedure was enacted at a	Completed	Board of Selectmen	June 04, 2010	

		Town Meeting on June 04, 2010.				
3-5 Develop record keeping system for IDDE tracking (Due 07/01/17)	To Be Developed	2017 through 2022 - None A suspected Illicit Discharge Record Keeping System will be developed using a Microsoft Excel spreadsheet.	To Be Completed	Tony Gallicchio, Public Works Supervisor, Department of Public Works	Anticipate completing by December 01, 2023.	
3-6 Address IDDE in areas with pollutants of concern	Not Applicable	The 3.82 Mile Segment of Lyman Brook is impaired by Chlorides which most likely is a result of deicing agents applied by the Conn DOT on Route 2 as the Town of Marlborough salt storage facility is not located within the Lyman Brook watershed.	Not Applicable	Not Applicable	Not Applicable	

**3.2 Describe any IDDE activities planned for the next year, if applicable.**

The written IDDE Program will be posted on the town website and a link listed in each Annual Report. The town will update the written IDDE program as needed throughout the permit term.

The Department of Public Works will maintain the master IDDE tracking spreadsheet and ensure all employees involved in IDDE program understand the logging process.

**3.3 Provide a record of all citizen reports of suspected illicit discharges and other illicit discharges occurring during the reporting period and SSOs occurring July 2017 through end of reporting period using the following table.**

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

<b>Location</b> (Lat long/ street crossing /address and receiving water)	<b>Date and duration of occurrence</b>	<b>Discharge to MS4 or surface water</b>	<b>Estimated volume discharged</b>	<b>Known or suspected cause / Responsible party</b>	<b>Corrective measures planned and completed</b> (include dates)	<b>Sampling data</b> (if applicable)

2017 through 2022 – No suspected illicit discharges were reported

**3.4 Provide a summary of actions taken to address septic failures using the table below.**

<b>Method used to track illicit discharge reports</b>	<b>Location and nature of structure with failing septic systems</b>	<b>Actions taken to respond to and address the failures</b>	<b>Impacted waterbody or watershed, if known</b>	<b>Dept. / Person responsible</b>

**3.5 Briefly describe the method and effectiveness of said method used to track illicit discharge reports.**

Will be described upon method implementation.

### 3.6 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	231
Estimated or actual number of interconnections	To Be Determined
Outfall mapping complete	95%
Interconnection mapping complete	50%
System-wide mapping complete (detailed MS4 infrastructure)	50%
Outfall assessment and priority ranking	0%
Dry weather screening of all High and Low priority outfalls complete	10%
Catchment investigations complete	0%
Estimated percentage of MS4 catchment area investigated	95%

### 3.7 Briefly describe the IDDE training for employees involved in carrying out IDDE tasks including what type of training is provided and how often it is given (minimum once per year).

The Department of Public Works will be provided with a copy of the publication entitled *Illicit Discharge Detection and Elimination Manual, A Handbook for Municipalities*, Published January 2003, by the New England Interstate Water Pollution Control Commission.



#### 4. Construction Site Runoff Control (Section 6(a)(4) / page 25)

##### 4.1 BMP Summary

<b>BMP</b>	<b>Status</b> (Complete, Ongoing, In Progress, or Not started)	<b>Activities in Current Reporting Period</b>	<b>Measurable Goal</b>	<b>Person Responsible, Department</b>	<b>Date Completed or Projected Completion Date</b> (include the start date for anything that is 'in progress')	<b>Additional Details</b>
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit (Due 07/01/20)	Complete	Not Applicable	Compliance	Peter Hughes, Director of Planning & Development, Building Department	Complete	It is anticipated that UConn CLEAR and/or a Regional Planning Agency will provide a Construction Site Runoff Control template for use by all MS4 Towns.
4-2 Develop and Implement a plan for interdepartmental coordination in site plan review and approval (Ongoing)	Ongoing	Nathan L. Jacobson & Associates, Inc., Town Engineer, prepares land use review letters for most applications for the Inland Wetlands Commission, Planning Commission and Zoning Commission.	Interdepartmental Coordination	Peter Hughes, Director of Planning & Development, Building Department	Ongoing	
4-3 Review site plans for stormwater quality concerns (Ongoing)	Ongoing	Nathan L. Jacobson & Associates, Inc., Town Engineer, encourages the use of LID BMPs as contained in the 2004 Connecticut Stormwater Quality Manual.	Compliance	Nathan L. Jacobson & Associates, Inc., Town Engineer	Ongoing	
4-4 Conduct site inspections (Ongoing)	Ongoing	The town conducts construction site inspections for proper implementation and maintenance of soil erosion and sediment control measures.	Compliance with Approved Plans	Nathan L. Jacobson & Associates, Inc., Town Engineer	Ongoing	
4-5 Implement procedure to allow public comment on site development (Ongoing)	Ongoing	The land use application process allows for public comment on land use applications which are submitted to the Inland Wetlands Agency and the	Compliance	Peter Hughes, Director of Planning & Development, Building Department	Ongoing	

		Planning & Zoning Commission during the Public Hearing Process when applicable.				
4-6 Implement procedure to notify developers about DEEP construction stormwater permit (Ongoing)	Ongoing	Since the inception of the MS4 program Nathan L. Jacobson & Associates, Inc., Town Engineer, has made developer's engineers aware of the need to register for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities in engineering review letters which are typically prepared as part of the land use application process.	Compliance Awareness of the need to register for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities	Nathan L. Jacobson & Associates, Inc., Town Engineer	Ongoing	

**4.2 Describe any Construction Site Runoff Control activities planned for the next year, if applicable.**

Integrate stormwater compliance checklist into review process once completed.

## 5. Post-Construction Stormwater Management (Section 6(a)(5) / page 27)

### 5.1 BMP Summary

<b>BMP</b>	<b>Status</b> (Complete, Ongoing, In Progress, or Not started)	<b>Activities in Current Reporting Period</b>	<b>Measurable Goal</b>	<b>Person Responsible, Department</b>	<b>Date Completed or Projected Completion Date</b> (include the start date for anything that is 'in progress')	<b>Additional Details</b>
5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning (Due 07/01/22)	LID Guidelines are already in place in the Zoning Regulations and the Subdivision Regulations.  The modifications contained in the modified MS4 permit will be incorporated into the Zoning regulation and the Subdivision Regulations.	2017 through 2022 - None  The land use regulations will be revised to incorporate the requirements contained in Minimum Control Measure No. 5 - Post-Construction Runoff Control.	The additional requirements contained in Minimum Control Measure No. 5 - Post-Construction Runoff Control will be forwarded to the Director of Planning & Development.	Peter Hughes, Director of Planning & Development, Building Department	Anticipate completing prior to July 01, 2022.	It is anticipated that UConn CLEAR and/or a Regional Planning Agency will provide a Post-construction Stormwater Management template for use by all MS4 Towns.
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects (Due 07/01/22)	Ongoing	Continued to require LID Practices and stormwater quality measures to be incorporated into the site design during the engineering land use application process.	Met	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2017	
5-3 Identify retention and detention ponds in priority areas (Due 07/01/20)	Complete	Retention Ponds, Detention Ponds and Hydrodynamic Separators will be inventoried. A GIS Map Layer will be created after the inventory. Part of the inventory	Met	Nathan L. Jacobson & Associates, Inc., Town Engineer	2020	

		process will be facility operation and maintenance requirements.				
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures (Ongoing)	Developed  Implementation Needed	After the Retention Ponds, Detention Ponds and Hydrodynamic Separators have been inventoried a Long-Term Operation and Maintenance Plan will be implemented.	<i>A Post-Construction Stormwater Management Facility Operation &amp; Maintenance Plan Manual</i> with an Effective Date of July 01, 2019 was completed.	James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works	2021	It is anticipated that measures outlined in the <i>Post-Construction Stormwater Management Facility Operation &amp; Maintenance Plan Manual</i> will begin to be implemented in 2020.
	Complete	2021 CT Siteworks was awarded a contract to conduct detention basin clearing. The clearing was to be completed by August 01.	Detention Basin Maintenance	Peter Hughes, Director of Planning & Development, Building Department	August 01, 2021	
5-5 DCIA mapping (Due 07/01/20)	Complete	Completed the process of DCIA Mapping from base mapping prepared by UConn CLEAR.	The DCIA to MS4 stormwater outfalls discharging to waters identified as impaired in the 2018 Integrated Water Quality Report and in watersheds with a DCIA of greater than 11 percent will start in 2018.	Nathan L. Jacobson & Associates, Inc., Town Engineer	February 2019	

5-6 Address post-construction issues in areas with pollutants of concern	Not Required	Not Applicable. See 3-6.	Not Required	Not Applicable		

**5.2 Describe any Post-Construction Stormwater Management activities planned for the next year, if applicable.**

Procedures outlined in the Post-Construction Stormwater Management Facility Operation & Maintenance Plan Manual began to be implemented in 2021 with clearing of trees and brush from detention basins.

**5.3 Post-Construction Stormwater Management Reporting Metrics**

For details on this requirement, visit <https://nemo.uconn.edu/ms4/tasks/post-construction.htm>. Scroll down to the DCIA section.

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	6.42 Acres
DCIA disconnected (redevelopment plus retrofits)	2012 to 2016 - To Be Determined 2017 through 2022 - 0 Acres
Retrofit projects completed	2012 to 2016 - To Be Determined 2017 through 2022 - 0
DCIA disconnected	2012 to 2016 - To Be Determined 2017 through 2022 - 0%
Estimated cost of retrofits	\$0
Detention or retention ponds identified	0 this year / 0 total

**5.4 Briefly describe the method to be used to determine baseline DCIA.**

Based on information contained in the Factsheet: *Town of Marlborough Water Quality and Stormwater Summary*, prepared by the CT DEEP, 606.29 acres of the town has an impervious area exceeding 12% which is approximately 4.03% of the town. 201.34 acres have an impervious cover of ranging from 12% to 25%, 294.43 acres have an impervious cover ranging from 26% to 50%, 96.45 acres have an impervious cover ranging from 51% to 75% and 14.07 acres have an impervious cover ranging from 76% to 100%.

Based on information contained in the MS4 mapping tab of Connecticut Environmental Conditions Online The impervious surface area consists of 135.09 acres of buildings, 300.80 acres of roads and 273.19 acres of other impervious surfaces for a total impervious surface area of 709.08 acres. Of the total road impervious are of 300.80 acres, 197.76 are Town roads and 103.04 acres are State roads. The State roads constitute approximately 34.3% of the total road impervious area.

The DCIA Mapping was conducted in substantial accordance with the methodologies presented in the October 25, 2017 UConn CLEAR Webinar entitled *CT MS4 Mapping Details, Clarifications and Tools*, the October 19, 2018 UConn CLEAR Workshop entitled *CT MS4 Mapping Workshop* as well as information contained in the EPA reference entitled *Estimating Change in Impervious Area (IA) and Directly Connected Impervious Area (DCIA) for Massachusetts Small MS4 Permit utilizing Sutherland equations*.

The DCIA computations were prepared utilizing Connecticut Environmental Conditions Online MS4 base mapping prepared by UConn CLEAR.

Impaired waters were determined from the report entitled *2018 Integrated Water Quality Report*, dated August 01, 2019, prepared by the State of Connecticut Department of Energy and Environmental protection.

The method to determine the 2012 baseline DCIA was to first compile the CT DEEP drainage basin characteristics in a Microsoft Excel spreadsheet. Information on the Connecticut Environmental Conditions Online MS4 Mapping was used to determine the impervious area breakdown as Buildings, Roads and Other. For CT DEEP drainage basins that fell in two or more municipalities the advanced mapping tab of Connecticut Environmental Conditions Online was used to delineate and determine the applicable town CT DEEP basin area. It was assumed that the entire drainage basin characteristics were directly proportional to the applicable town CT DEEP drainage basin area.

In that ConnDOT has a MS4 Stormwater Program which applies to state owned roads and facilities which the town has no control over, it was decided that the impervious state road area would be determined and deducted from the total impervious road area for each CT DEEP drainage basin as the impervious road areas associated with state highways and facilities constitutes a considerable portion of the total town impervious road area.

The ConnDOT state highway, parking lot and facility impervious road areas were then determined for each CT DEEP drainage basin.

The ConnDOT state highway, parking lot and facility impervious road areas were then deducted from the total town impervious road area to determine a town owned impervious road area for each CT DEEP drainage basin.

Subsequent to the above deduction, the total impervious area in acres and percentage was then recomputed for each CT DEEP drainage basin.

The DCIA formula for each of four development types was then utilized to compute the DCIA. The impervious area in acres was assigned to each of the four Sutherland equations which were modified for the northeastern United State. The Sutherland equation to be utilized was determined using the following methodology:

For impervious percentage less than 6%:

100% of the impervious area was assigned to the slight connectivity Sutherland Equation where  $DCIA\% = 0.01*(IA\%)^{2.0}$

For an impervious area between 6% and 12 %:

50% of the area was assigned to the partial connectivity Sutherland Equation where  $DCIA\% = 0.04*(IA\%)^{1.7}$   
and  
50% was assigned to the average connectivity Sutherland Equation where  $DCIA\% = 0.10*(IA\%)^{1.5}$

For an impervious area between 12% and 18 %:

50% of the area was assigned to the average connectivity Sutherland Equation where  $DCIA\% = 0.10*(IA\%)^{1.5}$   
and  
50% was assigned to the high connectivity Sutherland Equation where  $DCIA\% = 0.40*(IA\%)^{1.2}$

For an impervious area of greater than 18 %:

100% of the area was assigned to the high connectivity Sutherland Equation where  $DCIA\% = 0.40*(IA\%)^{1.2}$

The DCIA for each CT DEEP drainage basin was then summed to determine the entire town DCIA.

Subsequent to completion of 2012 Baseline DCIA computations, UConn CLEAR Mapping available on Connecticut Environmental Conditions Online (CT ECO) was revised to separate road impervious area into State Road Impervious Area (Acres) and Town Road Impervious Area (Acres).

The original 2012 Baseline DCIA computations were revised utilizing the UConn CLEAR State Road Impervious Area (Acres) and Town Road Impervious Area (Acres). No major 2012 Baseline DCIA computation discrepancies were noted.

Land use files will be reviewed to determine disconnection of DCIA since July 01, 2012 for utilization in reaching the CT DEEP goal of 2% disconnection of DCIA by June 30, 2022.

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## 6. Pollution Prevention/Good Housekeeping (Section 6(a)(6) / page 31)

### 6.1 BMP Summary

<b>BMP</b>	<b>Status</b> (Complete, Ongoing, In Progress, or Not started)	<b>Activities in current reporting period</b>	<b>Measurable Goal</b>	<b>Person Responsible, Department</b>	<b>Date completed or projected completion date</b> (include the start date for anything that is 'in progress')	<b>Additional details</b>
6-1 Develop and implement a formal employee training program (Ongoing)	Ongoing	See 6.3 Below	Continuing	James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works and Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2017	
6-2 Implement MS4 property and operations maintenance (Ongoing)	Ongoing	2021 CT Siteworks was awarded a contract to conduct detention basin shrub and tree clearing. The clearing was completed by August 01.	Continuing	James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works	July 01, 2017	
6-3 Implement coordination with interconnected MS4s	Ongoing	The Town of Marlborough continued to coordinate MS4 responsibilities with the Towns of Glastonbury, Hebron, Colchester, and East Hampton as well as Conn DOT.	Continuing	James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works	July 01, 2017	
6-4 Develop and implement a program to control other sources of pollutants to the MS4	To Be Developed	2017 through 2022 - None		Nathan L. Jacobson & Associates, Inc., Town Engineer		



6-5 Evaluate additional measures for discharges to impaired waters*	Not Applicable	None	Not Applicable The only impaired water is Lyman Brook which is most likely impaired due to application of deicing materials to state highways as no town MS4 stormwater outfalls discharge directly or proximal to Lyman Brook.	Nathan L. Jacobson & Associates, Inc., Town Engineer		
6-6 Track projects that disconnect DCIA (Ongoing)	To Be Developed	2012 through 2022 - None		Peter Hughes, Director of Planning & Development, Building Department and Nathan L. Jacobson & Associates, Inc., Town Engineer		No municipal or private redevelopment project that resulted in DCIA disconnection has been approved.
6-7 Implement infrastructure repair/rehab program (Due 07/01/21)	To Be Developed	2017 through 2022 - None	Working to Compliance	Nathan L. Jacobson & Associates, Inc., Town Engineer And James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works		
6-8 Develop and implement a plan to identify/prioritize retrofit projects (Due 07/01/20)	To Be Developed	2017-2022 - None	Working to Compliance	Nathan L. Jacobson & Associates, Inc., Town Engineer and		

				James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works		
6-9 Implement retrofit projects to disconnect 2% of DCIA (Due 07/01/22)	To Be Developed	2017 through 2022 - None		Nathan L. Jacobson & Associates, Inc., Town Engineer And James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works		No municipal or private redevelopment project that resulted in DCIA disconnection has been approved.
6-10 Develop and implement a street sweeping program (Ongoing)	Ongoing	The Town of Marlborough currently implements a road sweeping program whereby all town roads are swept at one time per year.	Ongoing	James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works	July 01, 2017	
6-11 Develop and implement a catch basin cleaning program (Ongoing)	To Be Developed	2017 - None The Town of Marlborough implemented a catch basin cleaning program in 2018.	Catch basin cleaning will be conducted	James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works	December 31, 2018	
6-12 Develop and implement snow management practices (Due 07/01/18)	Ongoing	The town uses treated NaCl salt for road deicing. The treated salt has resulted in a marked decrease in road sweeping and catch basin cleaning volumes.		James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works	July 01, 2017	

6-13 Map and Inventory highly erosive areas in town road right-of-ways.	Not started	Collect information on eroding areas in town road right-of-ways from highway maintenance personnel over course of normal operations	Identify areas contributing large volume of sediment to town watercourses or waterbodies.	James Grossmann, Public Works Highway/Fleet Foreman, Department of Public Works	December 01, 2023	Reduce sedimentation of waterways near town road right-of-ways.
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## 6.2 Describe any Pollution Prevention/Good Housekeeping activities planned for the next year, if applicable.

2023 - It is anticipated that all roads will be swept and a minimum of 33% of catch basins will be cleaned.

## 6.3 Pollution Prevention/ Good Housekeeping Reporting Metrics

Metrics	
Employee training provided for key staff	DPW Employees are encouraged to attend the Connecticut Interlocal Risk Management Agency (CIRMA) Snow Plow Safety course and the Connecticut Training & Technical Assistance Center training programs. 2017 through 2021 - None 2023 - It is anticipated that employee training will occur.
Street sweeping	
Curb miles swept	2017 through 2022 - 121.88 (60.94 Road Miles)
Volume (or mass) of material collected	2017 Undetermined 2018 - 150± C.Y. to 175± C.Y. 2019 - 150± C.Y. to 175± C.Y. 2020 - 150± C.Y. to 175± C.Y. 2021 - 150± C.Y. 2022 - 150± C.Y.
Catch basin cleaning	
Total catch basins in priority areas (value will be less than or equal to total catch basins town-wide)	2018 through 2020 - All catch basins which drain to Lake Terramugus are cleaned every year. No Town outfalls discharge directly to Lyman Brook
Total catch basins town-wide	1,400±
Catch basins inspected	2017 - 0 2018 - 479 2019 - 555 2020 - 502 2021 - 500 2022 - 500
Catch basins cleaned	2017 - 0 2018 - 479 2019 - 555

	2020 - 502 2021 - 500 2022 - 500
Volume (or mass) of material removed from all catch basins	2017 - 0 C.Y. 2018 - 10± C.Y. to 15± C.Y. 2019 - 10± C.Y. to 15± C.Y. 2020 - 10± C.Y. to 15± C.Y. 2021 - <20 C.Y. 2022 - <20 C.Y.
Volume removed from catch basins to impaired waters (if known)	0 C.Y. No town MS4 stormwater outfalls discharge directly to Lyman Brook
Snow management	
Type(s) of deicing material used	NaCl Salt treated with Ice B'Gone at the rate of 6-8 gallons per ton obtained from DRVN in New London.
Total amount of each deicing material applied	Winter 2017 to 2018 - 1,000-1,200 Tons Winter 2018 to 2019 - 900-1,000 Tons Winter 2019 to 2020 - 1,000 Tons Winter 2020 to 2021 - 1,000 Tons Winter 2021 to 2022 - 1,300 Tons Winter 2022 to 2023 - 800 Tons (Estimated)
Type(s) of deicing equipment used	Nine Large Snow Plow/Spreaders. Two Small Snow Plow/Spreaders. The nine large snow plow/spreaders are ground speed controlled and set at an application rate of 250-300 pounds per lane mile. The manually controlled spreaders are also calibrated to an application rate of 250-300 pounds per lane mile. Two significant icing storm events occurred that required an application rate of 500-600 pounds per lane mile. Appication rates vary depending upon winter storm characteristics.
Lane-miles treated (A lane-mile is a mile of roadway in a single driving lane)	2017 through 2022 - 121.88 (60.94 Road Miles)
Snow disposal location	Roadside Only
Staff training provided on application methods & equipment	See Above Spreaders are calibrated prior to the snow plowing season.
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	0 %
Reduction in turf area (since start of permit)	0 acres
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	\$0

## 6.4 Catch Basin Cleaning Program

### **Provide any updates or modifications to your catch basin cleaning program.**

There are approximately 1,400 catch basins in the Town of Marlborough.

2017 - None of the catch basins were cleaned

2018 - 479 catch basin were cleaned.

2019 - 555 catch basin were cleaned.

2020 - 502 catch basin were cleaned.

2021 - 500 catch basins were cleaned.

2022 - 500 catch basins were cleaned.

Based on the current program, all catch basins are clean at least once every three years. Approximately 30 catch basins in known high loading areas are cleaned every year.

## 6.5 Retrofit Program

### **Briefly describe the Retrofit Program identification and prioritization process, the projects selected for implementation, the rationale for the selection of those projects and the total DCIA to be disconnected upon completion of each project. (Due 07/01/20)**

Storm Drainage Retrofit prioritization will be given to stormwater outfalls that are known to result in soil erosion and sedimentation. Prioritization will be given to the outfalls within the impaired water drainage basins with particular emphasis placed on stormwater outfalls which are located on fine grained glacial till soils. The retrofit program will be prioritized based on setback distance from watercourse and/or waterbodies.

### **Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection annually in future years.**

(Due 07/01/22)

Redevelopment projects in town will be required to implement LID practices whenever possible to meet or exceed the CT DEEP DCIA disconnection goal.

## Part II: Impaired Waters Investigation and Monitoring

### 1. Impaired Waters Investigation and Monitoring Program

For details on this requirement, visit <https://nemo.uconn.edu/ms4/tasks/monitoring.htm>. Refer to the yellow column of the Monitoring comparison chart and the Impaired waters monitoring flowchart.

#### 1.1 Indicate which stormwater pollutant(s) of concern occur(s) in your municipality or institution.

This data is available on the MS4 map viewer: <http://s.uconn.edu/ctms4map>.

Nitrogen/ Phosphorus       Bacteria       Mercury   
Other Pollutant of Concern       Chlorides - Lyman Brook

#### 1.2 Describe program status

**Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.**

The impairment of Lyman Brook is most likely the result of Conn DOT pavement deicing activities. There are no direct town owned MS4 stormwater outfalls discharges to Lyman Brook.

The impairment is most likely the result of ConnDOT pavement deicing activities associated with Connecticut Route 2.

## 2. Screening Data for Outfalls to Impaired Waterbodies (Section 6(i)(1) / page 41)

### 2.1 Screening Data

Complete the table below to report data for any wet weather sampling completed for MS4 outfalls that discharge directly to a stormwater impaired waterbody during the reporting period. For details on this requirement, visit [www.nemo.uconn.edu/ms4/tasks/monitoring.htm](http://www.nemo.uconn.edu/ms4/tasks/monitoring.htm). Refer to the yellow column of the Monitoring comparison chart and the Impaired waters monitoring flowchart.

Each Annual Report will add on to the previous year's data showing a cumulative list of sampling data.

Outfall ID	Latitude & Longitude	Sample Date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results	Name of Laboratory (if used)	Follow-Up Required? *

A 3.82 mile segment of Lyman Brook from just south of Avalon Lane to the Blackledge River has been the only impaired waterbody in Marlborough from 2017 through 2021.

The impairment is most likely the result of ConnDOT pavement deicing activities associated with Connecticut Route 2.

2021 - Dry weather screening was conducted for all MS4 stormwater outfalls in December 2021.

Based upon dry weather screening conducted in 2021, and the fact that no town MS4 discharges directly to Lyman Brook, no follow-up investigations were required.

Follow-up investigation required (last column) if the following pollutant thresholds are exceeded:

Pollutant of concern	Pollutant threshold
Nitrogen	Total N > 2.5 mg/l
Phosphorus	Total P > 0.3 mg/l
Bacteria (fresh waterbody)	<ul style="list-style-type: none"> <li>E. coli &gt; 235 col/100ml for swimming areas or 410 col/100ml for all others</li> <li>Total Coliform &gt; 500 col/100ml</li> </ul>
Bacteria (salt waterbody)	<ul style="list-style-type: none"> <li>Fecal Coliform &gt; 31 col/100ml for Class SA and &gt; 260 col/100ml for Class SB</li> <li>Enterococci &gt; 104 col/100ml for swimming areas or 500 col/100 for all others</li> </ul>
Other pollutants of concern	Sample turbidity is 5 NTU > in-stream sample

Based upon dry weather screening conducted in 2021, and the fact that no town MS4 discharges directly to Lyman Brook, no follow-up investigations were required.

**3. Follow-up Investigations** (Section 6(i)(1)(D) / page 43)

Provide the following information for outfalls exceeding the pollutant threshold.

Outfall ID	Status of drainage area investigation	Control measure to address impairment

Based upon dry weather screening conducted in 2021, and the fact that no town MS4 discharges directly to Lyman Brook, no follow-up investigations were required.

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**4. Prioritized Outfall Monitoring** (Section 6(i)(1)(D) / page 43)

Once outfall sampling has been completed for at least 50% of outfalls to impaired waters, identify 6 of the highest contributors of any pollutants of concern. Begin monitoring these outfalls on an annual basis by July 01, 2021.

<b>Outfall</b>	<b>Latitude &amp; Longitude</b>	<b>Sample Date</b>	<b>Parameter(s)</b>	<b>Results</b>	<b>Name of Laboratory (if used)</b>

Based upon dry weather screening conducted in 2021, and the fact that no town MS4 discharges directly to Lyman Brook, no follow-up investigations were required.

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### Part III: Additional IDDE Program Data

#### 1. Assessment and Priority Ranking of Catchments Data (Appendix B (A)(7)(c) / page 5)

Provide a list of all catchments with ranking results (DEEP basins may be used instead of manual catchment delineations).

1. Catchment ID (DEEP Basin ID)	2. Category	3. Rank
4707-12-01	Impairment	1
4708-00-2-L1	13.35% Impervious	2
4707-12-1	11.98% Impervious	3
4708-00-2-R1	14.43% Impervious	4

## 2. Outfall and Interconnection Screening and Sampling Data (Appendix B (A)(7)(d) / page 7)

### 2.1 Dry Weather Screening and Sampling Data from Outfalls and Interconnections

For details on this requirement, visit <https://nemo.uconn.edu/ms4/tasks/monitoring.htm>. Refer to the blue column of the Monitoring comparison chart and the IDDE baseline monitoring flowchart.

Provide sample data for outfalls where flow is observed. Only include Pollutant of concern data for outfalls that discharge into stormwater impaired waterbodies.

Outfall or Interconnection ID	Latitude & Longitude	Screening Sample Date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of Concern	If required, follow-up actions taken

2017 through 2020 - No dry weather screening or sampling was conducted.

2021 - Dry weather screening of all MS4 stormwater outfalls was conducted in December.

Based upon dry weather screening conducted in 2021, and the fact that no town MS4 discharges directly to Lyman Brook, no follow-up investigations were required.

### 2.2 Wet Weather Inspection and Sample Data

For details on this requirement, visit <https://nemo.uconn.edu/ms4/tasks/monitoring.htm>. Refer to the green column of the Monitoring comparison chart and the IDDE catchment investigation flowchart.

Provide sample data for outfalls and key junction manholes of any catchment area with at least one System Vulnerability Factor.

Outfall / Interconnection ID	Latitude & Longitude	Sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern

2020 through 2022 - No wet weather sampling or inspection was conducted.

Based upon dry weather screening conducted in 2021, and the fact that no town MS4 discharges directly to Lyman Brook, no follow-up investigations were required.

### 3. Catchment Investigation Data (Appendix B (A)(7)(e) / page 9)

For details on this requirement, visit [www.nemo.uconn.edu/ms4/tasks/monitoring.htm](http://www.nemo.uconn.edu/ms4/tasks/monitoring.htm). Refer to the green column of the Monitoring comparison chart and the IDDE catchment investigation flowchart.

#### 3.1 System Vulnerability Factor Summary

For those catchments being investigated for illicit discharges (i.e. categorized as high priority, low priority, or problem) document the presence or absence of System Vulnerability Factors (SVF). If present, report which SVF's were identified. An example is provided below.

Outfall ID	Receiving Water	System Vulnerability Factors

Where SVFs are:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
2. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
3. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
4. Common or twin-invert manholes serving storm and sanitary sewer alignments.
5. Common trench construction serving both storm and sanitary sewer alignments.
6. Crossings of storm and sanitary sewer alignments.
7. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system.
8. 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.
9. Areas formerly served by combined sewer systems.
10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.
11. 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 than poor owner maintenance).
12. 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 than poor owner maintenance).

### 3.2 Key Junction Manhole Dry Weather Screening and Sampling Data

Key Junction Manhole ID	Latitude & Longitude	Screening / Sample date	Visual/ olfactory evidence of illicit discharge	Ammonia	Chlorine	Surfactants

2017 through 2021 - No key junction manhole dry weather screening or sampling was conducted. Based upon dry weather screening conducted in 2021, and the fact that no town MS4 discharges directly to Lyman Brook, no follow-up investigations were required.

### 3.3 Wet Weather Investigation Outfall Sampling Data

Outfall ID	Latitude & Longitude	Sample date	Ammonia	Chlorine	Surfactants

2020 through 2022 - No wet weather outfall investigations were conducted. Based upon dry weather screening conducted in 2021, and the fact that no town MS4 discharges directly to Lyman Brook, no follow-up investigations were required.

### 3.4 Data for each illicit discharge source confirmed through the catchment investigation procedure.

Discharge Location	Source Location	Discharge Description	Method of Discovery	Date of Discovery	Date of Elimination	Mitigation or Enforcement Action	Estimated Volume of Flow Removed

To be developed at a later date if an illicit discharge is identified.

## Part IV: Certification

"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."

Chief Elected Official or Principal Executive Officer	Document Prepared by
Print Name: Gregory J. Lowrey, First Selectman	Print Name: Wade M. Thomas, CPMSM
Signature: Date: April , 2023	Signature: Date: April , 2023
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