DRAFT for Comments 2022 updates in RED

MS4 General Permit Town of Brookfield 2017 Annual Report Existing MS4 Permittee Permit Number GSM 000006 January 1, 2022 – December 31, 2022

This report documents The Town of Brookfield's efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable from January 1, 2022 to December 31, 2022.

Part I: Summary of Minimum Control Measure Activities

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

1.1 BMP Summary

	Web Based Library of MS4 educational materials	UCONN Clear /WestCOG / Land Use	
	Foster partnerships with existing organizations	WestCOG / DPW / Land Use	
	Provide printed materials for municipal buildings	Land Use	
2	Targeted outreach	Land Use / Sanitarian / DPW / Zoning	
201	Develop/acquire education materials	UCONN / WestCOG / Land Use	
	Update Website	DPW / IT	
	Review Partnerships	WestCOG / DPW	
8	Targeted outreach	Land Use / Sanitarian / DPW / Zoning	
201	Review Education Materials	UCONN Clear /WestCOG / Land Use	
	Update Website	DPW / IT	
	Review Partnerships	WestCOG / DPW / Land Use	
<u>6</u>	Targeted outreach	Land Use / Sanitarian / DPW / Zoning	
201	Review Education Materials	UCONN Clear / WestCOG / Land Use	
	Update Website	DPW / IT	
	Review Partnerships	WestCOG / DPW / Land Use / HVA	
0	Targeted outreach	Land Use / Sanitarian / DPW / Zoning	
202	Review Education Materials	UCONN Clear / WestCOG / Land Use	
	Update Website	DPW / IT	
	Review Partnerships	WestCOG / DPW / Land Use	
2	Targeted outreach	Land Use / Sanitarian / DPW / Zoning	
202	Review Education Materials	UCONN Clear / WestCOG / Land Use	

1.2 Describe any Public Education and Outreach activities planned for the next year, if applicable.

In 2022 the Town of Brookfield continued to maintain its web based library by adding new links and deleting content no longer available. We continued to our subscription to "Stormwater" magazine and maintain copies in the DPW office in the Town Hall that are available to both the general public and town employees. We also continued sand strengthened our partnership with the Housatonic Valley Association by including IDDE track down as related to the Stuil River as part of our 2022 partnership. We also continued to share common regional resources through WestCOG to strengthen our public presence.

Previously Reported

In 2021 the Town of Brookfield updated its web based library of materials previously reported on. We also checked all of the links to make sure they were are working and updated. Any link that was not working was updated. We also reviewed and updated our materials in the DPW Office, Land Use Department and at our Library. We continued our subscription to "Stormwater" magazine and keep the latest copies in the DPW office available to employees and the public. We also strengthened our partnership with The Housatonic Valley Association particularly as it relates to the water quality of the Still River which runs down the middle of Brookfield flowing south to north.

In 2020 the Town of Brookfield updated its web based library of materials previously reported on. We also reviewed and updated our materials in the DPW Office, Land Use Department and at our Library. The Director of Public Works and Land Use Manager both attended a three part seminar given by UConn Clear focusing in LID and DCIA (December 2,9,16 of 2020). The knowledge gathered and some of the materials presented will be shared with other town employees in the coming months and put into action when possible.

The Town has Brookfield has started a web based source of educational materials by updating its website to include a section for Stormwater Management. This section is located under the Department of Public Works and is periodically updated with additional or new information. As part of the materials a digital version of the Towns Stormwater Management Plan is continually posted. There are also numerous links to various other websites that provide useful and educational materials and opportunities to the general public. Some of these are WestCOG, UCONN Clear, The Housatonic Valley Association (HVA), CT NEMO, the Candlewood Lake Authority, Still River Watershed and CT DEEP.

The towns Director of Parks and Recreation, WPCA and town Health Director have been regularly attending meetings held by the Housatonic Valley Association regarding water quality issues along the Still River. In 2019 the Parks and Recreation Department is coordinating a partnership with the Audubon Society to plan an "Ecology Walk" on Brookfield's recently constructed Still River Greenway open to the general public with the purposes of fun, exercise and education about the activities and issues that impact our environment both negatively and positively.

In the Department of Public Works within the Land Use Department we have printed materials available to all of the public for review. The DPW also receives a monthly publication "Stormwater" that reviews the most current stormwater issues, technology and solutions. This is also available for public review. A library of educational materials will be developed and maintained at the Brookfield Library. A Collection of materials and resources pertaining to stormwater management was completed as part of the previous permit. The materials will be

reviewed and updated as necessary. A copy of the Stormwater Management Plan will also be available at the library.

A brochure was developed in 2007 and is still being published as of today. It is available at the Library and the Town Hall and our Land Use Department. This brochure is still relevant but will be reviewed in 2018 to be sure the latest information is contained in it. It explains what stormwater management is, its importance, what the town is doing to limit stormwater contamination and suggestions to the general public on how to reduce pollution which could potentially contaminate water bodies in addition to

We also make available a brochure published by the Long Island Sound Study which provides general information and is subtitled "A Citizens Guide to Curbing Pollution Runoff"

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

2.1 BMP Summary

_	BMP	Responsible Person
~	Send out public notice for MSP public comment	DPW
201	Review public comments	DPW
ω	Send out public notice for annual report public comment	DPW
201	Review public comments	DPW
6	Send out public notice for annual report public comment	DPW
201	Review public comments	DPW
0	Send out public notice for annual report public comment	DPW
202	Review public comments	DPW
2021	Send out public notice for annual report public comment	DPW
	Review public comments	DPW

2.2 Describe the Public Notice Process

The Town of Brookfield's Stormwater Management Plan has been and will continue to be published on the Town of Brookfield website for public comment and review. An e-mail address, mailing address and phone number has been provided for public comment and suggestions. Public comments are welcome and encouraged.

The Town of Brookfield DRAFT annual report for 2022 was published on the town website by February 15, 2022 for review prior to submission to the CT DEEP on April 1, 2022.

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

3.1 BMP Summary

	BMP	Responsible Person
	Develop a written IDDE program	UCONN Clear / DPW / Land Use / Zoning/HVA
	Review Existing legal authority	DPW / Land Use / Zoning
	Establish legal authority to eliminate illicit discharges	Zoning
	Develop mapping platform and database	DPW
	Establish citizen reporting program	DPW
7	Track illicit abatement activities	DPW / Land Use / HVA
201	Inventory existing mapped infrastructure data	DPW
2018	Map remaining infrastructure	DPW
	Track illicit abatement activities	DPW / Land Use /HVA
	Perform ongoing screening and tracking (if needed)	DPW / Land Use / HVA
	Perform ongoing screening and tracking (if needed)	DPW / Land Use / HVA
	Finalize MS4 web map	DPW
6	Track illicit abatement activities	DPW / Land Use / HVA
201	Update mapping database	DPW
	Perform ongoing screening and tracking (if needed)	DPW / Land Use / HVA
2020	Track illicit abatement activities	DPW / Land Use / HVA
	Update mapping database	DPW
2021	Perform ongoing screening and tracking (if needed)	DPW / Land Use / HVA
	Track illicit abatement activities	DPW / Land Use / HVA
	Update mapping database	DPW

3.2 Update the Town's IDDE Program

The Town has a draft IDDE program. It used as its guide materials provided by WestCOG, UCONN Clear and CT DEEP. A copy is available upon request.

3.3 Legal Authority

Legal Authority is through the Town of Brookfield Zoning Commission enforced by a full time Zoning Enforcement Officer employed by the town. There are current regulations already approved that addresses Aquifer Protection performance and standards (Reg. 242-502G) Any development within the Aquifer Protection Area as per the Brookfield mapping, which includes most of Federal Road, needs a stormwater management plan. Any development within the CT DEEP designated Aquifer Protection Area also needs a stormwater management plan. Two other areas of development that need a stormwater management plan include the Watershed Protection District, which is the Candlewood Lake Drainage Basin, and the Still River Floodplain.

3.4 Mapping Platform

In 2022 the Town of Brookfield continued to maintain out MS4 maps through our consultant Tighe and Bond. We continue to refine and add to our maps. In 2022 we added a sanitary sewer layer. This layer will be important in 2023 to allow us to identify system vulnerability locations where storm and sanitary sewers cross.

Previously Reported

In 2021 the town hired Tighe and Bond to update its digital MS4 ArcGIS based maps with the data collected by WestCOG in 2020. It is expected that that data will be incorporated by April 1, 2022. Although our entire system is not mapped, the town has taken a big step forward through our partnership with WestCOG and their team.

In 2020 the town partnered with WestCOG who with their resources and personnel have agreed to map additional infrastructure not captured by aerial photography or maps on file within the town by conducting a systematic and comprehensive field investigation. It is anticipated that the field work will be completed in the spring of 2021 at which time WestCOG will work with our consultant Tighe and Bond to incorporate the data into our digital platform (ArcGIS)

In 2019 we continued to update our digital mapping platform by verifying catch basin locations, pipe sizes and locations and connections as time and budget permitted. We plan to continue that in 2020. We also worked with our consultant Tighe and Bond to establish an App for Brookfield that will enable us to view and update our digital maps in the field in real time as information becomes available and as changes take place.

In 2018 we were able to map all of our catch basins, manholes and many drainage culverts. We also identified all of our outfalls, priority outfalls, known interconnections, drainage basins, impaired waters and impervious surfaces.

The Town through the DPW has hired Tighe and Bond to establish a digital mapping platform where all of our stormwater infrastructure could be identified and mapped. To date we have completed the establishment of the platform. We have chosen Arc GIS. The platform will allow us to update information immediately either in the office or on location as infrastructure is added and removed.

3.5 Citizen Reporting

The town has in place a method to allow the general public report potential Illicit Discharges. The contact information is provided on the town website under the Department of Public Works Stormwater Management section. Part of the IDDE program is designed to respond to, investigate and track potential Illicit Discharges. As of the time of this report two potential Illicit Discharges have been identified or reported by the public and or town employees in 2022.

List of citizen reports of suspected illicit discharges received during this reporting period.

Date of Report	Location / suspected source	Response taken
8/1/2022	37 Ironworks Hill Rd	The Fire Marshall informed that a truck was leaking hydraulic fluid. The Fire Marshal resonded. Upon arriving to the site he ddetermined that in fact a truck was leaking and had leaked approximately 10- 20 galons of hydraulic fluid. The spill was in the proceess of being cleaned. Speedy dry was spread. The fire Marshal noticed a catch basin in the vicinity. He inspected the basin and did not notice any fluid enetering and there was no shean. He mad sure the basin was protected form potential contamination. The CT DEEP was norified.
11/7/2022	2 Deerfield Dr.	An unusual smell was reported by the homeowner believed from coming from a catch basin that entered a stream that flows through the property. An investigation was performed by ralph Tedesco the town engineer. It was a dry day approximately 75 degrees. There were no flows in any of the surrounding catch basins. No pungent odor was detected. The odor was most likely decaying leaves in the brook. A follow up was done the following week. Nothing unusual was seen or smelled.

12/23/2022	Christian Lane	While the DPWs plowing during a snowstorm a hydraulic line on the plow broke releasing approximately 20 gallons of fluid. The Fire Departmnet and CT DEEP were notified. Both showed to the scene. The Fire Dept. blocked the affected CB and added absorbing pads to collect any fluid that may reach the basin. The CT DEEP made a report and would continue to monitor the location. No further acton was taken.
7/26/2021 32 Merwin Brook Road		The homeowner called and reported a sheen on their pond where a tow catch basin outflowed. The site was visited by the Director of Public Works on the same day. The connect catch basins were inspected for unusual flows, discoloration or smell. The catch basins were dry. It was concluded that the sheen was natural and probably pollen.
1/11/2021	11 Deer Run Road	A citizen called to report a potential septic failure which was causing septic to flow into the tow drainage system. The area was inspected by the Town Sanitarian the same day. The Town Sanitarian reported that the fluid was water from a service line break. The home owner was notified and the line was repaired.
10/12/20	28 Del Mar Drive	The location was visited by the Director of Public Works on October 13, 2021. It was noticed that construction spoils were being stored on the private property adjacent to a town storm drain. Mud was entering the system during heavy rain. A blight violation was issued. Ultimately the debris and spoils were removed and the area was restored to its original condition
10/6/20	150 Laurel Hill Road	Inspection completed by Ralph Tedesco / Director of DPW. Standing water was note in the area CB's with a slight sheen. No infiltration was observed and there was no active flows at the time of inspection. Sheen was determined to be road residue. No odors or smells observed.
2019	None Reported	
10/24/18	167 Pocono Road	Inspection Completed by Ralph Tedesco/ Director of DPW who noted standing water in the sump with no infiltration or water running. There were no signs of contamination
2017	None Reported	

Provide a record of illicit discharges occurring during the reporting period and SSOs occurring through the end of reporting period using the following table.

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (If applicable)
NONE REPORTED in 2018, 2019, 2020, 2021						
Christian Lane 41.467, -73.384 Merwin Brook	12/23/22	yes	20 gallons	Broken Hydraulic line in the DPW plow truck	CT DEEP and Fire Dept. were notified. The CB was protected and fluid cleaned.	NA. CT DEEP would monitor the area as necessary

3.6 Briefly describe the method used to track illicit discharge reports, responses to those reports, and who was responsible for tracking this information.

Pollution Investigation:

The appropriate member of the Town staff will investigate all suspected illicit discharges and document field observations in case of enforcement action is taken. Standard field equipment will be used including but not limited to cameras, measuring tapes, gloves and sampling containers. Obvious discharges of hazardous materials such as gasoline, diesel, and unknown chemicals will be reported directly to the Town's 911 system. The investigation of unknown substances will be coordinated with the Hydro Technologies Inc. and the Connecticut DEEP. If needed water quality samples will be collected to identify illicit discharge contaminants and target potential waste streams. Sample results will be compared to reference waste stream "chemical fingerprints" if they have been previously compiled.

After the waste stream characteristics have been identified, the appropriate program managers will coordinate with the stormwater maintenance crews (primarily the towns Department of Public Works) to investigate potential illicit discharge sources. Standard investigative methods may be used such as cameras for infrastructure as well as dye, smoke testing, dams etc. Final determination of the illicit discharge will possibly require facility inspections. If an inspection of a facility is required, notification to the facility owner, manager and scheduling of the inspection will be required.

Illicit Discharge Elimination:

After an illicit discharge is detected and tracked to the source, the stormwater team will work with the responsible party to abate the discharge and initiate remediation activities. Acute or chronic discharges may be issued violations per the Town of Brookfield's code resulting in a fine, court appearance and clean / up costs. Responsible parties with direct discharges (illicit cross connections) to the storm sewer system will be required to have a licensed qualified contractor re-route the pipe to an appropriate discharge point and repair any damage to the storm water infrastructure that their cost. Responsible parties with indirect discharges such as illicit dumping will be required to cease the discharge activities and may receive a ticket and may be required to remediate any damages to the infrastructure and environment. Compliance and enforcement activities will be coordinated through the appropriate Town staff and departments as specified. If needed

Police Department support will be utilized to address acute discharges, chronic offenders or enforcement activities when appropriate.

Ongoing Screening and Tracking:

Brookfield, upon completion of catchment investigation and illicit discharge removal and confirmation (if necessary) for the catchment outfall or interconnection, will schedule follow-up screening within five years, or sooner as determined by the catchment's illicit discharge priority. Follow-up screening shall consist of dry weather screening and sampling except where wet weather screening and sampling is required as detailed in Appendix B of the MS4 permit. We will share information with HVA along the Still River corridor through our partnership with them.

Track illicit abatement activities:

Brookfield will maintain a record of illicit discharge abatement activities including: location (identified with an address or latitude and longitude), description, dates of inspection, sampling data (if applicable), actions taken, date of removal or repair and responsible parties. This information shall be included in the permittee's Annual Report.

In 2018 the town installed a new Electronic Tracking System (Carmody System – SepticSearch.com) to monitor all systems in town and proactively warn residents of the need to pump out their systems on a regular 4 year cycle; except in highly susceptible areas where requirements will be more rigid.

Location and nature of structure with failing septic systems	Completion Date	Actions taken to respond to and address the failures	Impacted waterbody or watershed, if known	Nature of septic failure
36 Indian Trail, private home	1/13/2022	permit issued, system repaired	Candlewood Lake	bleed-out
120 Laurel Hill Road, private home	2/16/2022	permit issued, system repaired	Still River	bleed-out
26 Puritan Valley Road, private home	2/26/2022	permit issued, system repaired	Housatonic River	collapsed septic tank
27 Lakeview Drive, private home	6/3/2022	permit issued, system repaired	Candlewood Lake	bleed-out
26 Surrey Drive, private home	6/26/2022	permit issued, system repaired	Pond Brook	collapsed septic tank
63 Kellogg Street, private home	7/19/2022	permit issued, system repaired	Candlewood Lake	bleed-out
28 Obtuse Hill Road, private home	8/10/2022	permit issued, system repaired	Housatonic River	bleed-out
13 Skyline Drive, private home	8/15/2022	permit issued, system repaired	Candlewood Lake	bleed-out
74 Clearview Drive, private home	12/2/2022	permit issued, system repaired	Candlewood Lake	collapsed septic tank
1 Pine Street, private home	9/9/2022	permit issued, system repaired	Still River	bleed-out
5 Cherokee Drive, private home	12/21/2022	permit issued, system repaired	Pond Brook	collapsed pump chamber

3.7 Provide a summary of actions taken to address septic failures using the table below. (information provided by the town Sanitarian). Information is for the current reporting year.

Information has been provided by the Town Sanitarian. The town also maintains a list of septic repairs as its normal practice even if there was no evidence of a failure. That list is available upon request.

3.8	IDDE	reporting	metrics
0.0		reporting	11101103

Metrics	
Estimated or actual number of MS4 outfalls	350 +/-
Estimated or actual number of interconnections	None Identified
Outfall mapping complete	100%
Interconnection mapping complete	75%
System-wide mapping complete (detailed MS4 infrastructure)	90%
Outfall assessment and priority ranking	100%
Dry weather screening of all High and Low priority outfalls complete	100%
Catchment investigations complete	75%
Estimated percentage of MS4 catchment area investigated	75%

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

On November 16, 2022 the DPW conducted "in-house" training for our entire DPW crew. We focused on good house keeping, construction site runoff, the use of pesticides and vehicle maintenance best management practices. Materials used to conduct training were taken directly from the CT NEMO Program. We also reviewed best management practices for ice and snow removal particularly reducing the amount of chlorides used in order to protect the environment and use the chlorides in the most efficient and effective way.

Land Use

In 2022 the Land Use Department started collecting data regarding businesses that use or store toxic chemicals in Brookfield. The process will continue in 2023 and beyond to determine potential hazard zones and vulnerable locations. Once the data collection is complete the information will be incorporated into our MS4 maps.

Previously Reported

In 2021 we did not hold a formal training session due to COVID but did do individual "tailgate" training for the individuals involved in street sweeping and catch basin inspections. We plan to conduct more formal training as restrictions ease in 2022. The town also updated its Hazardous Mitigation Plan in 2021. As part of the updates, the town included the identification of toxic chemical users within Brookfield to identify "hazardous zones" and then inform those users about the CT DEEP small business chemical management initiatives. It was also recommended that the town host a CT DEEP presentation for municipal staff and local businesses about business chemical management for hazard resilience.

In 2020 all of our DPW employees were given an "in house" refresher conducted by the Town Engineer on the importance the six sections of the MS4 program and more specifically on IDDE and chloride application rates during a snow and ice event. We also trained two new DPW employees for the first time. The DPW Director also was given supplemental and up to date training on snow and ice control sponsored by WestCOG and given by Axiomatic on December 22, 2020.

In 2019 all of Park and Recreation employees attended the CTI "Green Snow Pro Training"

In addition to our normal stormwater training, in 2018 special attention was paid to chloride applications as they relate to ice and snow control. All of our full time DPW employees were required to attend at least one training session provided by either WestCOG or The Connecticut Transportation Institute (CTI). The focus of that training was to provide the information necessary to make educated chloride application rate determinations as it relates to a specific storm, Equipment calibration was also addressed. This information will prove useful in reducing the amount of chlorides which enter the environment that enter bodies of water and ultimately groundwater and wells.

In 2018 the town also partnered with WestCOG in developing a regional snow management plan. The plan addressed methodologies for treating and removing snow and ice, material specifications, application rates for various treatments, costs, equipment and personnel needs and running efficient snow plow routes. The Department of Public Workforce has been trained in house by the Town Engineer regarding the importance of Stormwater Management, IDDE and BMP's. They have been taught what to look for while working around stormwater infrastructure and how to respond. Additional training was schedule for 2018 to meet the annual training requirement. The training took place on April 5, 2018. Additionally the Director of Public Works/ Town Engineer attends monthly WestCOG meetings where MS4 has been a regular topic. People representing the CT DEEP, UCONNN Clear and HVA have also attended these meetings to present information and provide education and updates. The information gathered is shared with the relevant town personnel.

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

4.1 BMP Summary

	BMP	Responsible Person
	Review existing language on construction site storm water management	Zoning / Land Use
	Develop interdepartmental coordination plan	Zoning / Land Use
	Implement interdepartmental coordination plan	Zoning / Land Use
	Implement site review and inspections program	Zoning / Land Use
2	Implement public involvement component into development	Zoning / Land Use
201	Implement process to notify developers of MS4 permit requirements	Zoning / Land Use
ω	Establish legal authority for construction site stormwater control	Zoning / Land Use
201	Continue implementing previous practices	Zoning / Land Use
2019	Continue implementing previous practices	Zoning / Land Use
2020	Continue implementing previous practices	Zoning / Land Use
2021	Continue implementing previous practices	Zoning / Land Use

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

In 2022 the Town of Brookfield continued its enforcement of previously approved regulations.

Previously Reported

In 2020 Development was approved for 731 Federal Road. The Northwest Conservation District will monitor and inspect the property during construction. LID measures have been incorporated into the construction plans. Final sediment basins and rain gardens will be inspected by Steve Trinkaus with expertise in low impact development. The site will be taking stormwater from the Federal Road, Route 7 and the site into two proposed storm water basins to improve water quality before it enters the Still River. The entire site measures 7.2 acres.

Brookfield has addressed all MS4 requirements within their new zoning regulations rewrite, a process the town is currently undergoing. Internal and interdepartmental inspection and coordination processes have been created. Developers and contractors will be aware of the Town's MS4 requirements as they are stated and enforced within our zoning regulations.

During the initial stages of the development process there have been public workshops. There will be a public hearing of the complete rewrite of regulations before the Town adopts the new regulations. MS4 requirements will be incorporated in the zoning regulations. Each developer will be required to present plans that meet the requirements when developing or re-developing property in Brookfield

The ZEO has created an inspection spreadsheet and schedule for current and future developments. The ZEO will be responsible for overseeing the inspection and review process.

The Zoning Enforcement Officer shall have the legal authority to inspect erosion or sediment control measures for their effectiveness.

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

	ВМР	Responsible Person
7	Review existing legal authorities for post-construction storm water management	Zoning / Land Use
201	Develop DCIA Mapping Methodology	WestCOG / DPW
	Require developers to incorporate "LID" measures	Zoning
	Develop maintenance plan for detention/retention ponds	Zoning
8	Develop maintenance plan for stormwater treatment structures	Zoning
201	Provide an update on DCIA Mapping	Zoning
9	Establish legal authority for post-construction stormwater management	Zoning
201	Complete DCIA Mapping	WestCOG / DPW
2020	Update DCIA Mapping	WestCOG / DPW
2021	Update DCIA Mapping	WestCOG / DPW

5.1 BMP Summary

The Zoning Enforcement Officer shall have the legal authority to inspect erosion or sediment control measures for their effectiveness.

5.2 Post-Construction Stormwater Management reporting metrics

Metrics			
Baseline (2012) Directly Connected Impervious Area (DCIA)	acres		
DCIA disconnected (redevelopment plus retrofits)	acres this year / acres total		
Retrofits completed	<u>#</u>		
DCIA disconnected	% this year / % total since 2012		
Estimated cost of retrofits	<u>\$</u>		
Detention or retention ponds identified	# this year /# total		

5.3 Briefly describe the method to be used to determine baseline DCIA.

The town of Brookfield has chosen to use the CT NEMO impervious cover maps to determine its baseline impervious area as follows:

Assume Impervious Cover (IC) is 100% connected and is equal to DCIA. If you choose this method you'll likely overestimate the amount of DCIA but the advantage is this information is already available in the <u>MS4 map viewer</u> (use the 'IC by basin' layer).

Based on the map the DCIA as of 2022 is 13%.



In 2022 Brookfield continued to pursue a grant through the NFWF through the HVA to install a drainage retrofit at its town garage at 81 Grays Bridge Road adjacent to the Still River.

Previously Reported

In 2021 we continued our partnership with the Housatonic Valley Association (HVA) who is sponsoring a grant application through the NFWF to install a drainage retrofit at our Town Garage at 81 Gray's Bridge Road. The retrofit will filter storm water runoff from the site before it enters the Still River. The process is ongoing.

In 2021 Zoning still does not require LID, but it continues to encourage it through its regulations.

In 2020 both the Land Use Department Manager and Director of Public Works attended a three part educational seminar sponsored by UConn Clear focusing on DCIA and LID measures and techniques. We will use the knowledge gained to institute them in future and existing development projects for both the town

and private development. We have also partnered with the Housatonic Valley Association who is sponsoring a grant application to install a drainage retrofit at our Town Garage at 81 Gray's Bridge Road to filter storm water runoff before it enters the Still River.

The Town is working with WestCOG to satisfy the DCIA mapping requirements. The amount of DCIA based on the amount of impervious cover and the land use for that area within a parcel. This information is applied to equations the EPA has adopted to estimate DCIA.

In 2018 the town mapped working with its various partners mapped and calculated all of its impervious surfaces.

The town adopted new Zoning Regulations in 2018. Zoning Article 6.8 of the new regulations address LID measures and provides maintenance requirements for detention ponds and stormwater treatment structures. The following are excerpts from the new regulations relating to the permit requirements.

Require developers to incorporate "LID" measures:

1. A Stormwater Management Plan ("SWM Plan") prepared in accordance with these Regulations is required to be include as part of the site plan for all applicable developments.

2. Guiding Principles: The SWM Plan shall be consistent with the purposes of Subsection 6.8(A) above, the principles and guidance set forth in the 2004 Connecticut Stormwater Quality Manual, and sound engineering and site planning practices, including known low impact development (LID) best management practices (BMPs). Bio retention techniques are preferred.

Develop maintenance plan for detention/retention ponds:

- 1. A Stormwater Management Plan ("SWM Plan") prepared in accordance with these Regulations is required to be include as part of the site plan for all applicable developments.
- F. Required Stormwater Management Plan and Data

All new building construction, or an addition, alteration, or enlargement that results in an increase in the amount of impervious surface (paved drives, walks, patios, etc.) on a lot where the total impervious surface is ten percent or greater, shall require a Stormwater Management Plan. In addition to the data required elsewhere in these Regulations, the following data shall be required:

- A narrative report prepared by a licensed engineer indicating:
- Any risk or threat to Candlewood Lake or the water resources in its watershed from site development, site improvements, or on-site operations proposed in the application and measures

- Methods of assessment and best management practices to prevent and reduce any such risk or threat
- Supporting documentation, including calculations and engineering details, shall be provided to illustrate the existing and proposed development's compliance with these Regulations, which development shall be designed in accordance with the stormwater management design guidelines of the "Connecticut Stormwater Quality Manual" of 2004, as revised.
- A site plan indicating
- All relevant data required under Section 5.4(F)
- Location and area of all impervious surfaces on the site
- Location and area of turf cover (lawn areas)
- Location and area of all existing woodland areas
- Location and area of all existing and proposed vegetative buffer areas
- Location and description of all potential runoff and pollution sources including erosive soils and steep slopes
- Location and specification of all existing and proposed stormwater best management practices

G. Best Management Practices

The following practices and methods shall be incorporated into all Stormwater Management Plans where practicable:

- Vegetated swales, buffers, filter strips
- Level spreaders
- Grassed drainage swales, wet or dry
- Maintain or restore predevelopment vegetation
- Minimize creation of steep slopes
- Bio retention structures/residential rain gardens
- Rainwater harvesting/rain barrels
- Dry detention ponds
- Underground detention ponds
- Proper location and reduction of impervious surface area on site
- Disconnect flows from multiple impervious surfaces
- Permeable pavement choices
- Groundwater infiltration systems (curtain drains, drywells, galleries, etc.)

Develop maintenance plan for stormwater treatment structures:

A program for operation, monitoring, and maintenance of the stormwater management system, including scheduling of operation, monitoring, and maintenance activities, and observable physical signs of significant inadequate maintenance or function of the stormwater management system

EPA Code	Land Use	Watershed Selection Criteria	Sutherland Equation (where IA(%) >1)
1	Commercial	<u>Average</u> : Mostly storm sewered with curb & gutter, no dry wells or infiltration, residential rooftops not directly connected	DCIA%=0.1(IA%)^1.5
2	Industrial	<u>Average</u> : Mostly storm sewered with curb & gutter, no dry wells or infiltration, residential rooftops not directly connected	DCIA%=0.1(IA%)^1.5
3	Low Density Residential	Somewhat connected: 50% not storm sewered, but open section roads, grassy swales, residential rooftops not connected, some infiltration	DCIA%=0.04(IA%)^1.7
4	Medium Density Residential	<u>Average</u> : Mostly storm sewered with curb & gutter, no dry wells or infiltration, residential rooftops not directly connected	DCIA%=0.1(IA%)^1.5
5	High Density Residential	Highly connected: Same as above, but residential rooftops are connected	DCIA%=0.4(IA%)^1.2
6	Urban Public/ Institutional	<u>Average</u> : Mostly storm sewered with curb & gutter, no dry wells or infiltration, residential rooftops not directly connected	DCIA%=0.1(IA%)^1.5
7	Agriculture	<u>Mostly disconnected</u> : Small percentage of urban area is storm sewered, or 70% or more infiltrate/disconnected	DCIA%=0.01(IA%)^2

Table 2: EPA Land Use Classes and Corresponding Sutherland Equations

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

6.1 BMP Summary

	BMP	Responsible Person
	Continue implementing employee MS4 training	DPW / Land Use
	Develop catch basin cleaning plan	DPW
	Track disconnected DCIA Acreage	Land Use
	Establish and Implement Procedures for	Land Use / P&R / DPW
	parks and open space	
	pet waste	
	waterfowl	
	buildings and facilities	
	vehicles and equipment	
	leaves	
	street sweeping (including plan for outside priority area)	
	Street Sweeping plan for non-priority areas	
	Deicing Material	
17	Snow and ice control	
50	Begin MS4 Monitoring	DPW / Consultant
	Track disconnected DCIA Acreage	Land Use
18	Develop Retrofit Project Plan	Land Use
8	Continue MS4 Monitoring	DPW/ Consultant
<u>6</u>		
20,	Track disconnected DCIA Acreage	Land Use
	Continue MS4 Monitoring	DPW / Consultant
	Track disconnected DCIA Acreage	l and lise
20		
202	Continue MS4 Monitoring	DPW / Consultant
	Have 2% DCIA disconnected. Every additional year 1% disconnection.	Land Use
	Track disconnected DCIA Acreage	Land Use
021	Continue MS4 Monitoring	
5	Continue MS4 Monitoring	DPW / Consultant

6.2 Describe any Pollution Prevention/Good Housekeeping activities planned for the next year, if applicable.

In 2022, we continued our partnership with the HVA to monitor and test the outfalls along the Still River with the addition of illicit discharge detection and track down. The 2022 report is attached as an appendix to this report. The town also conducted testing of outfalls along Lake Lillinonah as well as several of the outfalls that the town considers vulnerable with the highest potential for IDDE. The testing data and HVA Still River report are attached as appendices.

All of our DPW employees were trained on good housekeeping, the use of pesticides, and chloride distribution for ice control and best management practices for fleet maintenance.

All town streets were swept at least once. All catch basins were inspected at least once and vacuumed when needed. For 2023, we expect to have a new Vac truck.

The town also continued to operate its brush yard permitted by the CT DEEP where we collected over 300 tons of leaves from residential properties and our parks.

Previously Reported by DPW

In 2021 we continued our partnership with the HVA to monitor and test the outfalls along the Still River. The 2021 report is attached as an appendix to this report. The town also conducted testing of outfalls along Lake Lillinonah as well as several of the outfalls that the town considers vulnerable with the highest potential for IDDE. The testing data and HVA Still River report are attached as appendices.

In 2021 the DPW hired four new plow drivers. All of them were trained in the proper use of chlorides for the purpose of snow and ice control.

In 2020 partnered with the HVA we have tested all of the outfalls along the Still River owned by the town. In addition we continued our testing along Lake Lillinonah. Test Results for 2020 are attached.

On January 7, 2020 we met with the Housatonic Valley Association (HVA) to strengthen our partnership going forward as it relates to The Still River Watershed in Brookfield. Pollution detection and tracking and stormwater and water quality testing were part of that discussion. The HVA through the Clean Water Act has created a Still River Watershed Management Plan designed to identify and track pollution to the source and then eliminate it. This partnership has been formed in order to use limited resources as efficiently as possible since the town of Brookfield owns several outfalls on the river that fall under MS4. Through our partnership we plan on testing all of the outfalls in 2020.

In 2019 we continued testing all of our know outfalls to Lake Lillinonah. We did some testing on outfalls leading to the Still River and will do additional detailed testing as well as Pollution Tracking through a partnership we have created with the Housatonic Valley Association who is doing their work on the Still River as part of the Clean Water Act (which in some respects overlaps with the MS4 requirements.).

In 2018 and 2019 we will continue our relationship with Hydro Technologies who has been doing our MS4 and Industrial Stormwater testing for many years. MS4 testing was expanded in 2018 to test all outfalls that lead to impaired waters at least one time. Where we not deficiencies or where results are "red flagged" we will conduct follow up investigations.

The DPW conducted employee training in April of 2018. Part of that training addressed the identification of potential stormwater pollution sources as well has pollution identification and reporting.

In 2018 the DPW implemented a more formal catch basin inspection program. The most economical way to do that is to combine it with our street sweeping operation when it is necessary to clean around each basin to enable the street sweeper to pick up that debris. While cleaning around each basin the employee will be instructed to inspect each basin for deficiencies, dry weather flow or sumps that need cleaning. Where issues are observed the basin will be noted and the information will be sent to the appropriate individuals as part of the IDDE protocol.

The DPW is also in the process of formulating a more formal snow and ice control procedures. In 2018 we worked with WestCOG who has hired a consultant Axiomatic LLC who completed a regional study on our plow routes as well as material selection and application. The plan addressed methodologies for treating and removing snow and ice, material specifications, application rates for various treatments, costs, equipment and personnel needs and running efficient snow plow routes. Our ultimate goal is to minimize the amount of chlorides we introduce into the environment without compromising the safety of our residents.

In 2019 the DPW took action by implementing the findings of the WestCOG /Axiomatic study. We reviewed our plow routes and updated them in order to make them more efficient. Additionally by the first snow fall of 2019 all of our DPW and Parks and Recreation plow drivers as well as key management were trained by the state of Connecticut through the Connecticut Transportation Institute (CTI) "Green Snow Pro Training" seminar in the best management practices of a snow plow operation which included equipment maintenance and calibration as well as proper material selection and appropriate application rates for the materials selected and weather conditions.

The town has on file with the CT DEEP a current Industrial Permit for our Town Garage where all of our vehicle maintenance is completed. Part of that permit includes a Pollution Prevention Plan which includes good housekeeping and maintenance procedures designed to minimize the possibility of introducing pollution resulting from these activities into the surrounding environment.

Although the town does not support a leaf pick-up program, it has established an area in our CT DEEP approved site to collect leaves where they are composted.

Approximately 142,000 square feet of turf thus assisting in the reduction of pesticides by 20%.

The Parks and Recreation Department also updated its storm water drainage system at its town beach on Candlewood Lake which will reduce the levels of bacteria in the bathing areas particularly. The total cost of mitigation was approximately \$175,000

Land Use:

Through the Land Use Department and via a grant obtained by CT DEEP and the Northwest Conservation District, the town retrofit a detention basin adjacent to the Police Department and along the Still River Trail in

2017. The basin is designed to collect and naturally filter runoff from the Municipal Complex, the town right of way and the trail. The total cost of this project was \$25,000 but no costs were billed to the town.

In 2018-19 The Land Use department is working in conjunction with Northwest Conservation District and CT DEEP to put signage at the newly constructed wetland for the stormwater runoff from the Brookfield Town Hall and the Police Station. This signage will be an opportunity to the public to understand a low impact method of stormwater management and also will give insight to developers on the type of stormwater management that the Wetlands and Conservation Commission are interested in seeing in town. The signage copy is still in draft form; however, the final should be complete and the sign installed by the spring of 2019.

During storm events, the Constructed Wetland captures and holds stormwater runoff from the drainage system for the Town Hall Complex. The impervious area associated with the complex generates a variety of pollutants including sand, salt, oil, pet waste, and lawn, household and automotive chemicals. The system has many components which work in a natural fashion to reduce the pollutants directed to it.

Parks and Recreation:

Parks and Recreation has nothing new to report in 2021. Actions previously reported are ongoing.

Previously Reported

Municipal turf management program actions (for permittee properties in basins with N/P impairments)

Parks and Recreation department Installed a rain garden at Cadigan Park which treats rain water that drains through to all- purpose synthetic athletic fields. These fields were installed in 2016 and completed during or just before the last MS4 permit application process. The synthetic fields replaced approximately 142,000 square feet of turf thus assisting in the reduction of pesticides by 20%.

Develop/Implement Parks & Open Space Management Procedures:

Fertilizers are used sparingly at municipal and school properties and athletic fields. Pesticides are used only when needed in accordance with the CT Pesticide Control Act.

Grass clippings are recycled into the lawns.

Leaf collection at municipal and school properties are composted at the Town's compost facility.

Implement pet waste management practices:

Garbage cans are provided and pet waste disposal requirements are posted at high use facilities.

There are no dog parks in Brookfield.

There are no known pet waste issues that pose a threat to wetlands or waterbodies.

Develop/Implement water fowl management practices:

Canada geese sometimes congregate at the Town Beach/Cadigan Park. We've employed deterrents including cut outs of dogs, temporary fencing, use of cat scat mats on docks, and addition of moving objects such as pinwheels. In 2019 we plan to begin using noise making devices to disperse geese. There is no known issue of residents feeding the geese.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	April 5, 2018, April 2, 2019 Nov 16, 2022
Snow and Ice Control (DPW)	October 2018
Street sweeping	
Curb miles swept	202
Volume (or mass) of material collected	500 tons +/- per year
Catch basin cleaning	
Total outfalls to Impaired Waters	24
Total catch basins in MS4	2000 +/-
Catch basins inspected	100%
Catch basins cleaned	351 in 2018
	1250 in 2019
Volume (or mass) of material removed from all catch basins	unknown
Volume removed from catch basins to impaired waters (if known)	unknown
Snow management	
Type(s) of deicing material used	NaCl / Magic-o liquid (MgCl)
Total amount of each deicing material applied	3000 tons +/- (average)
Type(s) of deicing equipment used	Plow trucks and spreaders
Lane-miles treated	202
Snow disposal location	Recycle Yard as needed
Staff training provided on application methods & equipment	Initially in October 2018 and is ongoing
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	Unknown P&R
Reduction in application of fertilizers (since start of permit)	20% (approx.)
Reduction in turf area (since start of permit)	142,000 sq. ft.
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	See above
Cost of mitigation actions/retrofits	\$700k+ capital outlay from the permit start date plus \$100k + annually for operating expenditures

6.4 Catch basin cleaning program

Briefly describe the method used to optimize your catch basin inspection and cleaning schedule. [Complete this section for the 2017 Annual Report only] In 2022 all of our catch basins were inspected, cleaned as necessary and all of our roads were swept. We conducted cross training of our employees so we have multiple people capable of running the street sweeper and vac truck to make our department more flexible and efficient as it relates to MS4. We obtained funding in the amount of \$490k to purchase a new vac truck necessary to meet the MS4 requirement for cleaning catch basins. The truck has been selected and we hope to complete a purchase in 2023.

Previously Reported

In 2021 all of our catch basins were inspected, cleaned as necessary and all of our roads were swept. In 2022 we plan to conduct cross training of our employees so we have multiple people capable of running the street sweeper and vac truck to make our department more flexible and efficient as it relates to MS4.

We have continued our catch basin cleaning routine in 2020. Over the course of each calendar year every catch basin is inspected as part of our street sweeping operation. When a catch basin is inspected that needs to be cleaned it will be noted. This information will be given to the Highway Supervisor at the end of each day who will schedule the catch basin for cleaning. Cleaning will be done in house with our own manpower and catch basin cleaning equipment including a vac-truck.

In 2020 all of our roads were swept

In 2019 all of our roads were swept.

In 2018 the town invested \$213,000 in a new street sweeper to replace our antiquated one that will make our sweeping operation better and more efficient.

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. [Provide information if available in 2017 report. Section to be completed for the 2019 Annual Report.]

In 2022 the DPW continued to pursue a NFWF retrofit grant through the HVA to be used at our town garage.

Previously reported

In 2021 the grant application process for the retrofit at 81 Gray's Bridge Road through HVA and the NFWF continued.

In 2020 we have also partnered with the Housatonic Valley Association who is sponsoring a grant application to install a drainage retrofit at our Town Garage at 81 Gray's Bridge Road to filter storm water runoff before it enters the Still River through the NFWF

Within the DPW as part of our paving program we will continue to evaluate the current drainage needs as part of our road reconstruction plans for each road on the list. When possible we will eliminate basins and connections and encourage natural sheet flow runoff. We will also identify leader drain, footing drain and sump pump connections from residential homes to our stormwater system. When possible we will eliminate these connections.

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years. [Provide information if available in 2017 report. Section to be completed for the 2019 Annual Report.]

The DPW will continue the process described above. Based on current budgets we pave approximately 3 to 5 miles of road per year. Since Brookfield has approximately 100 miles of road this accounts for approximately 3% to 5% of our road and drainage system. We plan to continue this strategy into the foreseeable future.

Land Use overhauled and adopted new Zoning Regulations in 2018. This item was taken into consideration for future re-development projects. Actual percentages of disconnect will most likely correlate with the development activity and is hard to project at this time. With that said for many years the Town of Brookfield has been ahead of the curve in this area. The town has not let any resident tie into storm drains. All commercial development goes through a LID or Cultec system.

Part II: Impaired waters investigation and monitoring [This section required beginning with 2018 Annual Report]

1. Impaired waters investigation and monitoring program

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: <u>http://s.uconn.edu/ctms4map</u>.

Nitrogen/ Phosphorus 🛛 Bacteria 🖾 Mercury 🗌 Other Pollutant of Concern 🕅

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.

In 2021 the town continued its relationship with Hydro- Technologies to conduct testing of outfalls along Lake Lillinonah as well as other critical locations in Brookfield. Due to COVID work restrictions, changes in personnel at Hydro- Technologies and the bad timing of applicable weather events we did not get the testing done until February 2022. We plan to be back on schedule in 2022. We did complete Industrial Testing along the Still River at our DPW facility on Grays Bridge Road. We also continued our partnership with HVA who did testing on all of the outfalls in Brookfield that empty into the Still River.

Previously Reported

In 2020 the town hired HVA to do additional testing outside of the requirements for MS4 from the town owned outfalls along the Still River.

2020 testing results are attached for all testing done in 2020 including the testing previously reported to the DEEP as well as the testing report and condition analysis completed by HVA for the Still River The Town is working with the Housatonic Valley Association (HVA) who has been for years and is currently actively monitoring the outfalls along the Still River which runs south to north through Brookfield. The HVA and

the town have created a partnership. The HVA has agreed to provide the data they collect to the town when it is available so it can be made part of our annual report.

The town has also conducted its own testing through our consultant Hydro Technologies. The town has identified twenty-three (23) outfalls that discharge to impaired waters. Eleven (11) are associated with the Still River and are continually monitored by the HVA. The other twelve (12) discharge to Lake Lillinonah. In 2018 the town conducted initial testing at each location. In addition we continued testing the original six (6) locations required under the previous permit for a total of nineteen (19) locations. Below is a chart of the results.

The Town Public Works Yard located at 81 Grays Bridge Road runs along the west bank of the Still River which is considered an impaired waterway. The property has two outfalls to the still river. Both outfalls are constructed with oil/grit separators. Visual inspections of the discharge is inspected at least once a month after significant rains to look for unusual colors, sediment and smells. Both of these outfalls are tested annually as part of our industrial Permit for the site. Results are filed with the CT DEEEP.

2. Screening data for outfalls to impaired waterbodies (Section 6(i)(1) / page 41)

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

Provide the following information for outfalls exceeding the pollutant threshold.

Outfall	Status of drainage area investigation	Control measure implementation to address impairment
NA 2022		
NA 2021		
NA 2020		
NA 2019		
NA 2018		

4. Prioritized outfall monitoring (Section 6(i) (1) (D) / page 43)

Once outfall screening 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 1, 2020.

See the appendix for the outfall testing reports for 2022. Reports for 2022 have also previously been filed with the CT DEEP Stormwater Division

Part III: Additional IDDE Program Data [This section required beginning with 2018 Annual Report]

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).

The areas of Brookfield with the highest percentages of impermeable surface are along the Federal Corridor which coincides with the route of the Still River flowing north. Although the Still River is not considered impaired in Brookfield it is still an area of concern, our most vulnerable area and is considered a top priority catchment area. The majority of the storm water system along this corridor and especially the areas with the most impervious surface is owned and maintained by the state of Connecticut although there are several town roads such as Grays Bridge Road, Dean Road, Del Mar Drive and Pocono Road which run adjacent to the Still River. Grays Bridge Road runs along the west bank of the river (with Route 84 on the east) from the Danbury town line heading north to the Gray's Bridge and then several town roads run along the east bank to a point at which the Still River crosses under state Route 25 as it approaches New Milford. The outfalls along this corridor are being tested as part of the HVA study and annual report on the condition on the overall condition of the Still River. The latest report was prepared in 2021 and is included as an attachment to Brookfield's annual report. We plan to continue this arrangement with the HVA in 2022.

In 2022 we continued or arrangement with Tighe and Bond to host and refine our MS4 maps. We also used UCONN NEMO maps as a source in order to determine basin ranking snd estimated impervious cover ijn each basin

		Cov	er 2022			
Basin #				Impervious %	Rank	sub-Region
6000	0	4	R4	20-29%	4	Housatonic River
6600	7	1		12-20%	5	Still River
6600	0	4	R5	12-20%	6	Still River
6600	7	1		12-20%	7	Still River
6600	9	1		12-20%	8	Still River
6018	4	1		8-12%	9	Pond Brook
6600	10	1		8-12%	10	Still River
6018	3	1		8-12%	11	Pond Brook
6000	47	1		8-12%	13	Housatonic River
6600	14	4	R6	8-12%	14	Still River
6018	0	3	R1	8-12%	16	Pond Brook
6000	43	1		8-12%	17	Housatonic River
6000	42	1		8-12%	18	Housatonic River
6000	44	1		8-12%	19	Housatonic River
6018	8	1		4-8%	20	Pond Brook

Watershed Data / Impervious

6018	9	1		4-8%	21	Pond Brook
6400	0	1	L5	4-8%	22	Lake Candlewood
6018	0	3	R3	8-12%	23	Pond Brook
6000	0	5	L1	4-8%	25	Housatonic River

Previously reported

The Town has hired Tighe and Bond to assist the Town in developing digital maps. We are currently in the process of identifying catchment areas and ranking the results. Data should be finalized for the 2019 report to include priority and ranking.

We have partnered with the WestCOG in order to prioritize our catchment areas in 2019. The data is currently available at the following link provided by WestCOG. In 2020 this information will be incorporated into this report.

http://www.arcgis.com/home/webmap/viewer.html?webmap=c02a359f13f2497b853c209a570093ac &extent=-73.9717,41.022,-72.3539,41.6623



8 to 12% 12 to 20% 20 to 29%

)%

The Town has hired Tighe and Bond to assist the Town in developing digital maps. We are currently in the process of identifying catchment areas and ranking the results. Data should be finalized for the 2019 report to include priority and ranking.

In addition in 2019 we added impervious cover and estimated impervious percentages to our town MS4 digital maps. We will continue to streamline this as we move forward.

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

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

In 2017, 2018, 2019, 2020,2021 and 2022 as part of our street sweeping program we inspected ALL of our catch basins, not only those that led directly to outfalls. Our street sweeping personnel have been trained and continued to receive training in 2019 and 2022 on how to identify an illicit discharge by noticing flows in extremely dry weather or by noticing an unusual color, texture or smell to the water flowing through each basin. When problems are identified the personnel on- site will inform their immediate supervisor who will start the investigation process. None were reported in 2021 or 2022. A log of catch basins cleaned is maintained in the DPW office.

Previously Reported

As part of our catch basin cleaning program every catch basin was inspected in 2018. Due to the extremely wet weather in addition to the fact the town was severely damaged by a macroburst on May 15, 2018 each basin was not able to be inspected within the parameters of the permit. With that said every basin was inspected by personnel trained to identify illicit discharges.

2.2 Wet weather sample and inspection data

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

In 2022, we have been working with the Brookfield Water Pollution Control Authority and Tighe and Bond to include the WPCA sanitary sewer maps on our MS4 maps. Once that work is complete, we can begin to identify SVF's as they relate to sanitary sewer and storm sewer crossings. Budgets are being prepared for 2023-24 that will include the completion of the work described. Once SVF's are identified, we will be able to add to review our testing locations and determine if more are needed or if we need to focus existing tests on more vulnerable locations.

Although no specific, SVF's have been identified to date. It should be noted current testing location have been selected by making educated guesses about what locations may be most vulnerable. Brookfields partnership with the HVA which includes testing along the Still River Corridor is perhaps the most populated, most imperviously covered and contains the majority of WPCA's sanitary sewer. It also spns several basins. Testing along with illicit discharge and detection is conducted along the entire length of the Still River as it spans Brookfield from south to north. (See the 2022 HVA report attached)

Previously reported

As of December 31, 2021 we have not identified any SVF's. There may be the potential for SVF's as the sanitary sewer system expands in Brookfield. We have been in contact with the WPCA to collect data and make a determination based on the criteria of this permit.

Outfall / Interconnection ID	Sample Date	NH3	CL	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern
NA for 2020									
NA for 2019									
NA for 2018									
NA for 2017									

- 3. Catchment Investigation data (Appendix B (A)(7)(e) / page 9)
 - 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
	NA for 2022	
	NA for 2021	
	NA for 2020	
	NA for 2019	
	NA for 2018	
	NA for 2017	

SVF identification will be a priority for 2022. Due to COVID and the necessary interaction between departments and agencies progress on this has been slowed over the past two years. (2020-2021)

Water Pollution Control Authority (WPCA) Response

In 2021 the town began to collaborate with the Brookfield Water Pollution Control Authority (WPCA) to determine the existence of SVF's as they relate to the sanitary sewer system. We are in the process of obtaining maps of the WPCA system to determine where there are significant crossings of sanitary and storm sewer with the potential for leaks and infiltration. The WPCA also regularly monitors inflow and outflow to determine vulnerability and identify potential failures. Sanitary Manholes are inspected regularly and maintenance is performed as necessary.

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.- **None identified**
- 2. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs-

Facility Name/Type	Physical Address	(GPS Coordinates
Silvermine Rd/Railroad	35A Silvermine Road	73° 23' 49.697" W	41° 28' 9.672" N
Del Mar Drive	56A Del Mar Drive	73° 23' 51.895" W	41° 26' 58.391" N
Commerce Road Brooks Quarry	115A Commerce Road 126A Laurel Hill Road	73° 23' 39.954" W 073° 24' 44.676" W	41° 26' 52.708" N 41° 29' 24.558" N

- 3. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.- **None identified.**
- 4. Common or twin-invert manholes serving storm and sanitary sewer alignments.- None
- 5. Common trench construction serving both storm and sanitary sewer alignments.- None
- 6. Crossings of storm and sanitary sewer alignments.-

In 2021 the following town roads have been identified as having both sanitary and storm sewer. Crossings are to be determined

Production Drive Laurel Hill Rd Both ends Station Rd Old Rt 7 Elbow Hill Rd Silvermine Rd Pocono Rd Commerce Rd Old New Milford Rd Greenknoll Sandy Lane Old State Rd Old Grays Bridge Rd Grays Bridge Rd Vale Rd West Whisconier Rd Stony Hill Rd Candlewood Lake Rd Nabby Rd

- 7. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;- None identified.
- 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.- No significant defects detected.in 2021
- 9. Areas formerly served by combined sewer systems.- None
- 10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.- The entire WPCA system is less than 40 years old.
- **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 that poor owner maintenance).- Not widespread

As of December 31,2021

Brookfield has not experienced widespread "code required" upgrades but current codes are enforced when systems are replaced many of which did not exist when the original system was installed.

As far as property transfers are concerned, they do drive a substantial portion of repairs/replacements of existing septic systems as licensed septic installers nearly always perform inspections of systems for potential buyers in Brookfield. These inspections did not occur 10 to 15 years ago or certainly not to the quality and quantity of the inspections. Often, these inspections reveal concerns, not necessarily failure, that can interfere with the buyer's ability to get financing. Even though the septic systems are most often not in failure, there are concerns that either certain components (distribution boxes, tank baffles, pipes) should be replaced or the

leaching fields are near the end of their useful life (flooded/holding too much water – either septage or groundwater or a combination). Often this happens when an elderly person or couple is selling their home who have a relatively low water usage and a young person or couple with family or planning a family are buying – hence the financer's concern.

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 that poor owner maintenance).

As of December 31, 2021

The town of Brookfield has not experienced widespread sewer failures although there are several areas in Brookfield that are of concern.

Orders to fix a failed septic system are issued on average approximately 2 to 6 times annually (that is, orders are to 2 to 6 homeowners per year). Relative to the number of households in Brookfield that is a low percentage.

It would be advantageous to the town to bring sanitary sewer to Pocono and Dean Roads due mostly to poor soils and drainage in a portion of the area (east) combined with very sandy soils in another area (west) very close to the Still River. The outfalls in this area are monitored and tested through our partnership with the HVA mentioned previously.

Other areas of concern where the town DOES NOT own and maintain a stormater system but are close to the Still River are as follows:

The area of 277 Whisconier Road and Tucks Road. Soils in this area are very sandy and very close to the Still River. Additionally, the 1 Tuck's Road system experiences back-ups (failure) and there is not enough room to fit a code-compliant septic system on the lot. Also, the 12 Tuck's Road system is in failure and cannot be repaired on site due to soil contamination from the industry there. The 3,000 gallon tank there is pumped frequently enough to prevent septage from leaving the tank. This is a stopgap measure and sanitary sewers are the only acceptable long-term answer.

The Candlewood Lake Shores peninsula is a private community with a privately owned and maintained stormwater system independent of the towns system. Septic issues are of particular concern due to the density of the lots, the fact that the original homes were built for summer use primarily (so less usage/less septage deposition/lower design flows) and many are now lived in year-round, the difficulty of fitting code-compliant repairs on the relatively small lots and the environmental sensitivity/probable negative impacts on the lake water quality.

3.2 Key junction manhole dry weather screening and sampling data

There are no known connections with other non- town owned and maintained drainage systems.

Key Junction Manhole ID	Screening / Sample date	Visual/ olfactory evidence of illicit discharge	Ammoni a	Chlorine	Surfactants
NA 2017					
NA 2018					
NA 2019					
NA 2020					
NA 2021					
NA 2022					

3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
NA 2017				
NA 2018				
NA 2019				
NA 2020				
NA 2021				

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
NA 2017							
NA 2018							
NA 2019							
NA 2020							
NA 2021							
NA 2022	see the	Appendix A	HVA IDDE report				

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: Tara Carr / First Selectperson	Print Name :Ralph Tedesco / Director of PW
Signature / Date:	Signature / Date: