TOWN OF GUILFORD

ENGINEERING DEPARTMENT
50 BOSTON STREET – TOWN HALL SOUTH
GUILFORD, CONNECTICUT 06437
SETTLED IN 1639

JANICE PLAZIAK, P.E.
TOWN ENGINEER

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May 12, 2023

Planning and Zoning Commission
50 Boston Street
Guilford, CT 06437

Re: Stormwater Management and Zoning Regulations

Dear Commissioners:

I am writing to support the proposed stormwater regulations as they have been drafted. In 2004 the State of Connecticut Department of Energy and Environmental Protection (CTDEEP) issued its first General Permit, MS4, requiring towns to submit a Stormwater Management Plan, including minimum control measures that a municipality will undertake to prevent and/or treat polluted runoff, submit Annual Reports on the progress with implementing the plan and requiring the town to monitor the quality of water bodies. Compliance with the permit for the Town of Guilford involves the cooperation and responsibility of many different departments and commissions in town as well as property owners.

The proposed Stormwater Regulations included in the Zoning Regulation re-write address requirements for the Town to be incompliance with the MS4 permit. In fact, Planning and Zoning plays a major roll in the Construction and Post Construction sections of the general permit. Since construction creates opportunities for erosion and added impervious surfaces create more run-off and opportunities for pollution to enter waterbodies, there are best management practices that are requirements in the permit that then get passed along to property owners through the zoning regulations. I will not go into detail on all of the best management practices but the ability to require developments and re-developments to implement stormwater management on their sites is imperative to the Town's compliance with the MS4 permit and the health of our inland waterbodies, streams and Long Island Sound.

We also need to have these stormwater systems maintained in order for them to work effectively into the future, that is why we include the requirement for a plan and a covenant. Annually we receive reporting from sites that have the covenant in place to report on their stormwater system to the engineering department, if they fail to do the reporting or required repairs and maintenance, we have a legal mechanism in place, that they agreed to, making it easier to address problems directly with the owners of the property. That is why staff may recommend that a plan and covenant be required as part of your approval process, your cooperation on these requests is important for consistency as well as for compliance with the zoning regulations and

the Town's MS4 permit. I have attached the cover page, signature page and sections of the MS4 annual report which indicates those tasks that are required for compliance and how vital these regulation updates help toward the Town's goal for compliance with the MS4 permit and the health of our inland waterbodies, streams and Long Island Sound. The entire annual report is available on the town's website.

The Town of Guilford has been consistent over many years with requiring new single family residential construction to include management of the roof water, while helpful towards compliance, this failed to address run-off from all new impervious surfaces for the site, including paved areas. Stormwater management for single family residences does not require a plan and covenant, but it does require simple solutions such as infiltration units, rain gardens, rain barrels and thoughtful grading to have impervious surfaces not create point discharges directly or indirectly into a piped stormwater system. Instead best management practices provide opportunities for the run-off to infiltrate and disperse without causing erosion.

The engineering department is developing handouts for owners and contractors to make this process as easy as possible while still achieving our goals for stormwater management. I have attached a draft of the handout, more examples and details for stormwater management options are under development. Also, in response to concerns about digging a test hole for the stormwater system being onerous, construction of a new house or addition includes excavation for foundation construction and/or septic system installation or expansion. A quick test hole is reasonable to be sure there is depth of soil without ledge or ground water present to properly construct some of the stormwater management options.

In closing, I encourage you to support the detailed stormwater regulations included in the draft Zoning Regulations. As always, I am available if you have any questions or concerns you would like to discuss.

Very truly yours,

Janice A. Plaziak, P.E.
Town Engineer

enclosures

MS4 General Permit

Town of Guilford 2022 Annual Report

Existing MS4 Permittee

Permit Number GSM000077

January 1, 2022 – December 31, 2022

Primary MS4 Contact: Janice A. Plaziak PE, Town Engineer, 203-453-8037, plaziakj@guilfordct.gov

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The Town of Guilford is pleased to present our 2022 MS4 Annual Report. This report documents the Town's efforts to comply with the conditions set forth by the **General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems** to the maximum extent practicable (MEP) from January 1, 2022 to December 31, 2022.

Please contact the Guilford Engineering Department with any comments, questions, or concerns regarding the content of this report.

Please visit the 'Stormwater Management & Pollution Prevention' page located on the Town of Guilford's website for all thing's stormwater!
https://www.guilfordct.gov/town_departments/engineering_department/stormwater_management___pollution_prevention.php

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

4.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date	Additional details
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit	In Progress	Comprehensive rewrite of P&Z regulations	Ensure revised regulations meet MS4 Stormwater requirements	**Jaime Stein,** Town Planner **Nigel Mills,** Assistant Town Planner/ZEO	*Planned completion May 1, 2023*	Public hearings have been held over the last 3 years for public input
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	Ongoing	Weekly staff meetings	Interdepartmental communication	**Jaime Stein,** Town Planner	*Ongoing since July 1, 2017*	
4-3 Review site plans for stormwater quality concerns	Ongoing	Weekly staff meetings	All site plans reviewed in timely manner	**Janice Plaziak,** Town Engineer **Kevin Magee,** Environmental Planner/IWEO	*Ongoing since July 1, 2017*	
4-4 Conduct site inspections	Ongoing	Inspect in progress construction sites	Ensure compliance with regulations	**Nigel Mills,** Assistant Town Planner/ZEO **Kevin Magee,** Environmental Planner/IWEO	*Ongoing since July 1, 2017*	
4-5 Implement procedure to allow public comment on site development	Ongoing	Public hearings at P&Z Commission meetings	Ensure public comments are received	**Jaime Stein,** Town Planner	*Ongoing since July 1, 2017*	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit	Ongoing		Notify Developers of State/Federal requirements	**Jaime Stein,** Town Planner **Janice Plaziak,** Town Engineer	*Ongoing since July 1, 2017*	Revised P&Z regulations will include notification
4-7 Develop stormwater compliance checklist	Complete	Revisions ongoing as part of the comprehensive rewrite of P&Z regulations	Integrate stormwater compliance into review process	**Jaime Stein,** Town Planner **Janice Plaziak,** Town Engineer	*July 1, 2019*	

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

Construction Site Runoff Control activities planned for 2023 include:

- Comprehensive rewrite of the P&Z Regulations planned for completion May 1, 2023
- Continued inspections of construction sites by the ZEO, IWEO, Town Engineer, and Health Director to ensure compliance

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

5.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date	Additional details
5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning	In Progress	Comprehensive rewrite of P&Z regulations	Ensure regulations meet MS4 Stormwater requirements	**Jaime Stein,** Town Planner **Nigel Mills,** Assistant Town Planner/ZEO	*Planned completion May 1, 2023*	Public hearings have been held over the last 3 years for public input
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Ongoing	Site inspections of existing construction sites by the ZEO, IWEO, and Town Engineer	Ensure requirement compliance	**Nigel Mills,** Assistant Town Planner/ZEO **Kevin Magee** Environmental Planner/IWEO **Janice Plaziak,** Town Engineer	*Ongoing since July 1, 2017*	
5-3 Identify retention and detention ponds in priority areas	In Progress	Identifying all existing retention and detention ponds	Visit all ponds to determine if improvements are needed	**Michael Ciacciarella,** Assistant Town Engineer	*Planned completion July 1, 2023*	
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	Ongoing	Developers required to submit bonds that are used to maintain structures and submit maintenance reports to town	Require all structures to be maintained and documented	**Michael Ciacciarella,** Assistant Town Engineer **David Castro,** Public Works Director	*Ongoing since July 1, 2019*	

5-5 DCIA mapping	Complete	Engineering Department will reassess and recalculate DCIA for the Town when significant development occurs	Mapping available for public review	**Janice Plaziak,** Town Engineer **Michael Ciacciarella,** Assistant Town Engineer	*July 1, 2020*	DCIA mapping current based on 2020 local sub-basin DCIA percentages. See Appendix D
5-6 Address post-construction issues in areas with pollutants of concern	Ongoing		Ensure new developments are not resulting in illicit discharges	**Janice Plaziak,** Town Engineer **Sonia Marino,** Health Director	*Ongoing since* July 1, 2022	Progress initially delayed due to staff changes

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

Post-Construction Stormwater Management activities planned for 2023 include:

- Comprehensive rewrite of the P&Z Regulations planned for completion May 1, 2023
- Continue to received stormwater maintenance reports for private developments as applicable.
- Visit all retention/detention ponds and assess need for maintenance
- Implement a maintenance plan and/or inspection schedule for detention and retention basins
- (2) DCIA disconnection projects developed by students with UCONN CLEAR in Summer 2021. Projects planned for construction in Spring 2023 (Delayed due to funding issues at UCONN)
- The Town's Wastewater program (Sewer Avoidance Program) will be redefining areas of special concern for further water sampling.

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)	535 acres
DCIA disconnected (redevelopment plus retrofits)	0.4 acres this year/0 acres total
Retrofit projects completed in 2022	1
DCIA disconnected	0.07% this year / 1.6% total since 2012
Estimated cost of retrofits in 2022	$40,000
Detention or retention ponds identified	Approximately 27, further review underway

The Engineering Department is working with the Planning & Zoning Department to fine tune DCIA reduction efforts on private property. This will ultimately improve the accuracy of the Towns tracking of DCIA disconnection projects.

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

Print name:
Matthew T. Hoey III, First Selectman

Signature / Date:
3/31/23

Email:
hoeym@guilfordct.gov

Document Prepared by

Print name:
Janice A. Plaziak PE, Town Engineer

Signature / Date:
3/31/23

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plaziakj@guilfordct.gov

Stormwater Management on Single-Family Residences

Applicant Guide

Regulatory Requirements

Any application involving a single-family dwelling, whether a new development or redevelopment, shall be exempt from providing a Stormwater Management Plan. However, on-site stormwater management is still required and shall be designed per the alternate stormwater treatment practices for single-family dwellings outlined in Section 7.6.H. of the Planning & Zoning Regulations.

Per section 7.6.H of the Planning & Zoning Regulations, new or redeveloped single-family residences must retain the first 1 inch of rainfall that falls onto all new impervious surfaces. Impervious surfaces include but are not limited to building roofs, driveways, sidewalks, and patios.

Common Types of Stormwater Management Practices found at Single-Family Residences

- Rain barrels
- Infiltrating subsurface stormwater chambers
- Rain gardens
- Green roofs
- Combination of the above methods.

What do I need to show on my proposed site plan to meet stormwater management requirements?

An application for a new development or redevelopment of a single-family residence must include the following standard information for review by municipal staff and ultimately the contractor.

1. Stormwater calculations that demonstrate the required sizing of the stormwater infrastructure for the home (See Section 7.6.H. of the Planning & Zoning Regulations).

2. Location of stormwater management infrastructure along with associated grading.
    - Stormwater management infrastructure including overflow outlets must be oriented in a way that overflow will not impact adjacent properties or create safety hazards during the winter (i.e. ice slicks).

3. A detail showing a cross sectional view of the stormwater management infrastructure.
    - When applicable, provide manufacturer details (i.e. for infiltrators, rain barrels, etc).

4. A brief description of the installation procedure and future maintenance plan.

5. Test pit results documenting the minimum separation to ledge and groundwater.

6. If applicable, a planting schedule shall be provided listing each plant to be installed (i.e. for rain gardens)

Stormwater Management – Example – Rain Garden

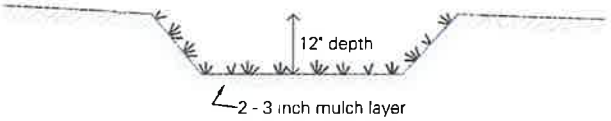
An applicant is proposing a single-family residence on an undeveloped lot here in Guilford. In order to comply with the Planning & Zoning Regulations on Stormwater Management, the applicant proposes designing a rain garden to capture and store the first 1 inch of rainfall that falls onto new impervious surfaces on the lot. The proposed single-family residence includes;

- 1,200 ft^2 of asphalt shingled roof area
- 75 ft^2 concrete patio
- 360 ft^2 square foot asphalt driveway

This means that there will be a total increase of 1,635 ft^2 of impervious surface to the lot. The first 1 inch of rainfall that falls onto these surfaces must be retained on site. The applicant provides the following calculations, planting schedule, standard details, and installation/maintenance plan.

Tv (ft^3) = 1/12 x Ra
Tv = Required total volume of stormwater storage/infiltration
Ra = Impervious Area (Ra) = 1,635 ft^2
Tv (ft^3) = 1/12 x 1,635 ft^2 = 136.25 ft^3 ≈ 137 ft^3
Tv = 137 ft^3
Length x Width x Depth = 12 ft x 12 ft x 1 ft = 144 ft^3 > 137 ft^3 ✓ (144 ft^3 is adequate)

Rain Garden Planting Schedule	
Suggested Planting List	
*All plants shall be native non-invasive species	
Common Name	**Scientific Name**
Leatherwood	*Dirca palustris*
Blue Flag Iris	*Iris versicolor*
Black-eyed Susan	*Rudbeckia birta*
Wolf Sedge	*Carex lupulina*
Installation & Maintenance Plan	
Rain garden shall be constructed per provided details. Plants will be watered till establishment. Weeding shall be performed as necessary to preserve storage space for stormwater. In the following years, dead plant materials shall be removed and replacement plants and/or mulching shall be installed.	



In addition to the above information, the applicant also shows the proposed location of the rain garden on the site plan as well test pit results providing the distance to groundwater and ledge.