

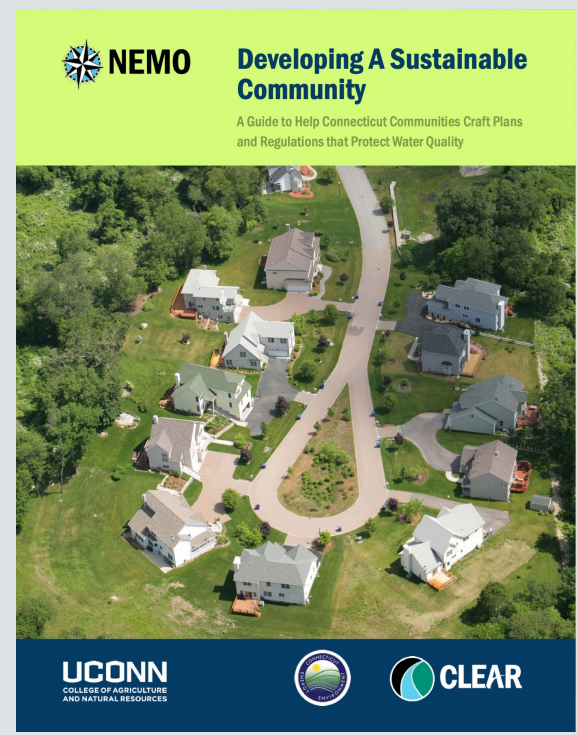
# **MS4 COMPLIANCE: MEETING DISCONNECTION TARGETS**

NVCOG MS4 Education  
April 20, 2022

Mary Looney  
CT NEMO

# IN THIS PRESENTATION:

- DCIA disconnection overview and examples
- How to reach DCIA targets:
  - Legal Authorities

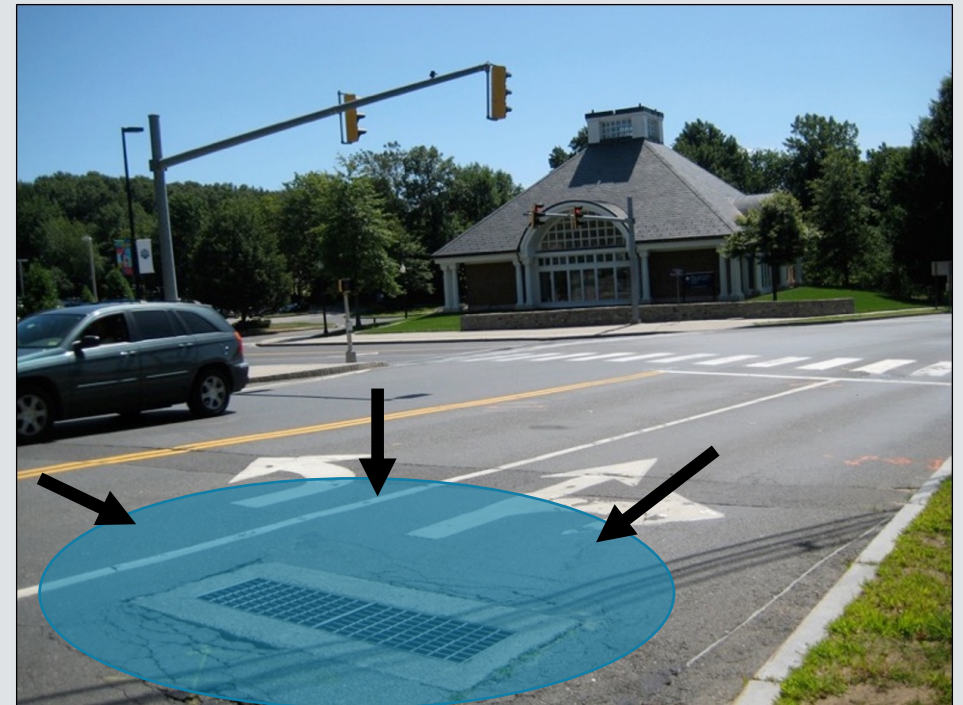


# DCIA DISCONNECTION

A quick overview / reminder:

- **D**irectly **C**onected **I**mpervious **A**rea (DCIA):

Impervious area which drains stormwater runoff into catch basins or directly into waterbodies





# DCIA DISCONNECTION

A quick overview / reminder:

- Disconnecting DCIA:

When the minimum amount of the  
"Water Quality Volume" is retained on  
site = **infiltrate**

**DCIA < 40% = 1<sup>st</sup> inch**

**DCIA > 40% = 1<sup>st</sup> 1/2 inch**

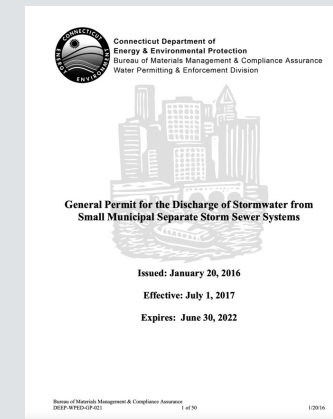




# DCIA DISCONNECTION

What the permit requires:

- Create plan to disconnect 2% of DCIA by 2022
  - 5 year lookback (2012)
- Disconnect 1% annually after that
- Track and Report progress in Annual Report



### 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)	acres
DCIA disconnected (redevelopment plus retrofits)	acres this year / acres total
Retrofit projects completed	#
DCIA disconnected	% this year / % total since 2012
Estimated cost of retrofits	\$
Detention or retention ponds identified	# this year /# total

LM

Looney, Mary

The DCIA calculation shall be based upon the criteria available through the DEEP stormwater webpage ([www.ct.gov/deep/municipalstormwater](http://www.ct.gov/deep/municipalstormwater)) and the precise methodology and assumptions shall be described in the permittee's Plan and initial annual report. Each annual report shall document the progress of this task until its completion (pg. 30)

## SOME THINGS TO THINK ABOUT

- Municipal / Public areas
  - Large expanses of IC
  - Education / signage
  - Maintenance
  - Think about future projects
- Incentivize homeowners and businesses



# GREEN STORMWATER INFRASTRUCTURE

- Rain Gardens / Bioretention
- Bioswales
- Rain Barrels
- Pervious pavement

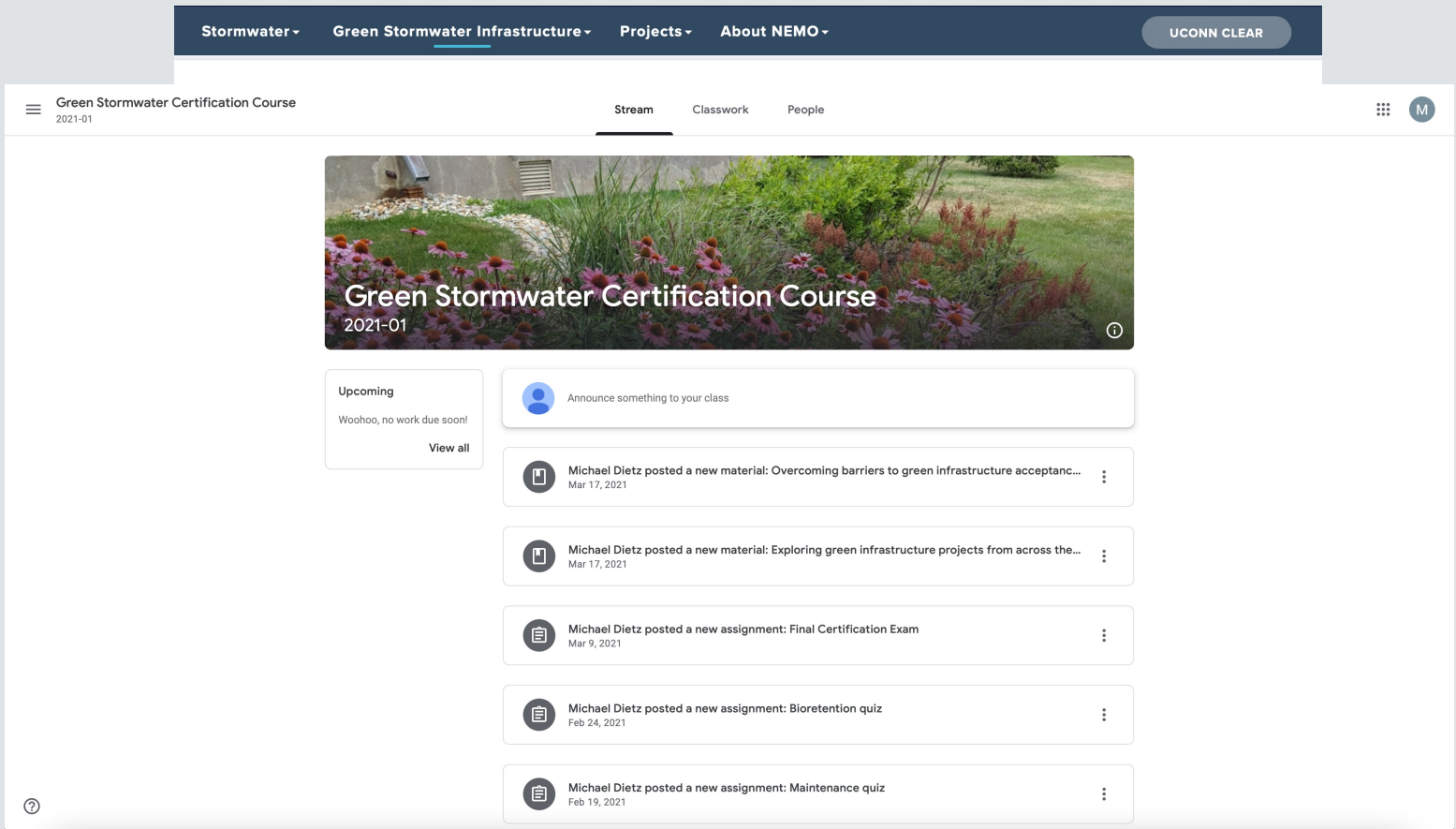


# RAIN GARDENS / BIORETENTION



# RAIN GARDENS / BIORETENTION

## Rain Garden Website, App, and Certification

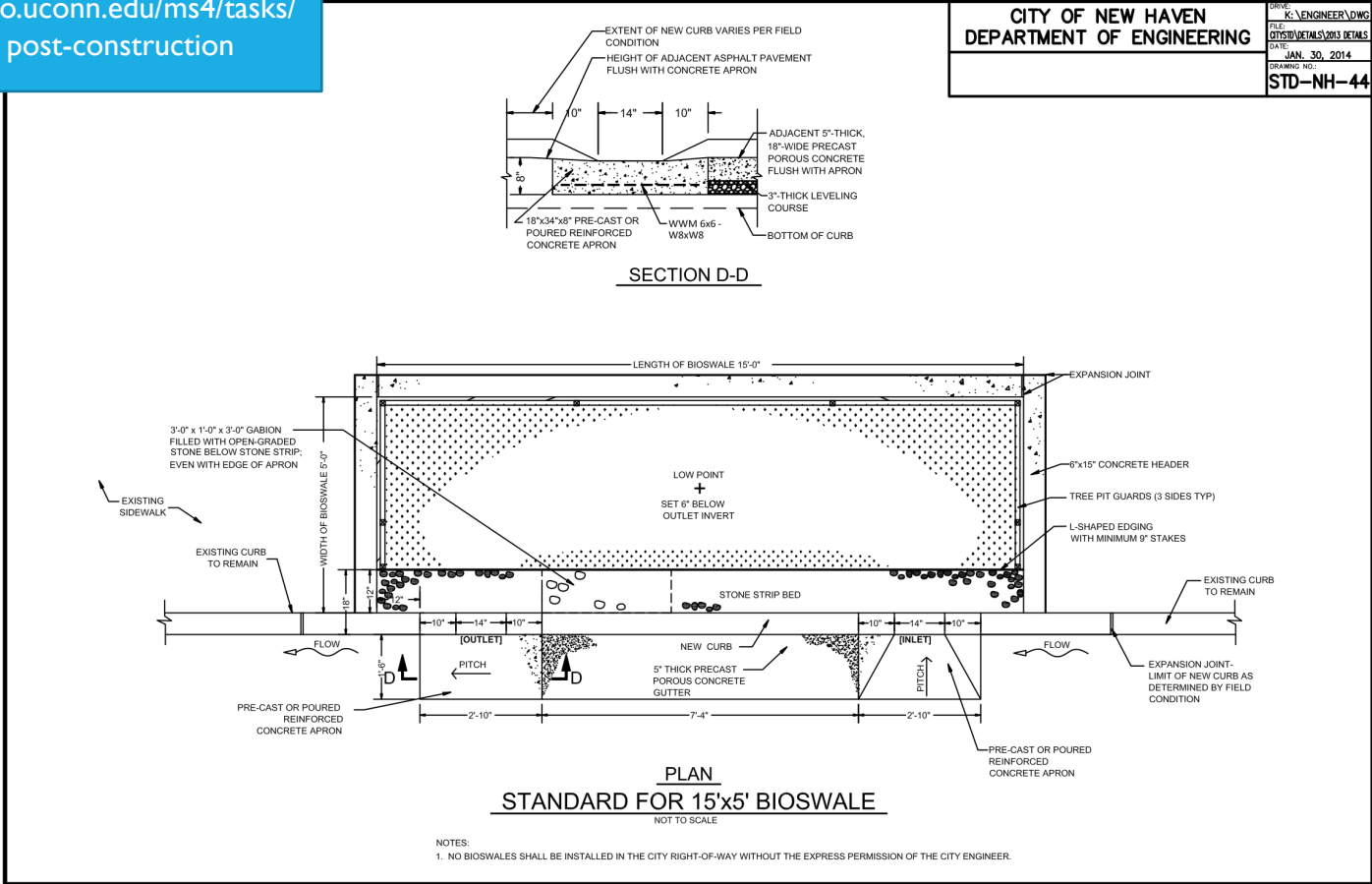


NEMO

# BIOSWALES



nemo.uconn.edu/ms4/tasks/  
post-construction





# RAIN BARRELS

HARTFORD CLIMATE STEWARDSHIP INITIATIVE  
*Our website is moving! Find us at [www.hartfordct.gov/sustainability](http://www.hartfordct.gov/sustainability)*

WELCOME ▾ OUR VALUES OUR PLAN ▾ NEWS ▾ GET INVOLVED ▾ THE ENERGY ECONOMY HARTFORD



Thank you very much for your interest in our rain barrel, composter, and tree initiative, Retain the Rain. Although we were looking forward to giving out rain barrels throughout March 2020, our distribution events are postponed indefinitely due to coronavirus / COVID-19 precautions. Please stay tuned for rain barrel program and other sustainability updates by signing up for our newsletter under the [“Get Involved”](#) section of our website. For the latest guidance on the coronavirus in English and Spanish visit: <http://www.hartford.gov>

Topics:

- 1. [What's the Problem, and Why Does It Matter?](#)
- 2. [What's the Solution?](#)
- 3. [How Can You Help? Sign up for a free Rain Barrel!](#)
- 4. [Frequently Asked Questions](#)
- 5. [Helpful Resources for Installing Your Rain Barrel](#)
- 6. [Interested in Learning More?](#)

### What's the Problem, and Why Does It Matter?

Approximately 40% of Hartford's land area is comprised of impervious surfaces, and much of the remaining area is covered with clay-heavy soils with low infiltration rates. Impervious surfaces prevent rain from being absorbed into the soil underneath, resulting in excess stormwater runoff and causing added burden and stress on the city's aging infrastructure. Hartford has a 150 year-old combined sewer system, which means that rainwater combined with wastewater can exceed the system's capacity during

## Hartford, CT



# PERVIOUS PAVEMENT

## UConn Storrs





# LEGAL AUTHORITIES

- Establish a legal authority by July 2021/2022 (MEP!)
- Legal Authority Guide

[nemo.uconn.edu/ms4/tools/legal-authorities](https://nemo.uconn.edu/ms4/tools/legal-authorities)

### A Guide to Meeting the MS4 Post-construction Legal Authority Requirements

We compiled example regulatory language / mechanisms to help towns and institutions get started in meeting the legal authority requirements in the CT MS4 General Permit Section 6(a)(5)(A) and (B) – also known as the post-construction legal authority requirement.

This is one of the more complex sections of the permit and towns are sure to implement this requirement in many ways. The example regulatory language that follows may be adapted to fit the particular needs and circumstances in each town and by no means is any of this required to be used. **Finally, the resources we're providing don't constitute legal advice. Please be sure to consult your lawyer!**

#### What are the requirements?

In a nutshell, the post construction legal authority requires (to the maximum extent practicable) that MS4 towns and institutions establish a legal authority that:

1. Requires developers and contractors to default to using LID practices in their projects and prioritize LID over other municipal requirements or guidance. If LID isn't feasible on a particular site, the developer / contractor must explain why LID can't be used in their application to the town.  
**The Runoff Reduction Checklist can be used or adapted to review projects for compliance with this requirement.**
2. Set the following minimum stormwater retention standards:
  - a. Water Quality Volume (WQV) for sites with less than 40% DCIA
  - b. ½ the WQV for sites with more than 40% DCIA

**The Stormwater Retention regulatory language example below can be adapted and used to add this requirement to town regulations.**

3. If the relevant stormwater retention volume cannot be achieved, then two options are offered:
  - a. Whatever remaining volume that cannot be retained may instead be retained by an off-site mitigation project;  
**See example regulatory language in the Off-site Mitigation regulatory language section below.**



nemo.uconn.edu/ms4/tasks/post-construction

# Review local guidances & regulations for barriers


- Review for barriers
  - Ex: zoning regulations, street design requirements, etc
- Reduce/eliminate barriers where appropriate
- Check in with NVCOG suggestions for your town!

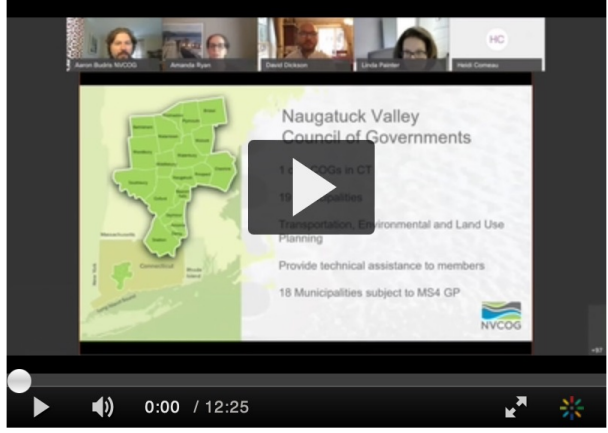
Stormwater ▾ Green Stormwater Infrastructure ▾ Projects ▾ About NEMO ▾ UCONN CLEAR

## Resources

Low Impact Development ▾

### Assessing barriers to LID in local regulations - Aaron Budris, NVCOG





- [Bioswale cross section](#) from the City of New Haven.
- CT NEMO's [Rain Garden App](#) and [website](#).

### Tools for Maintaining LID

- [Stormwater wet pond and wetland management guidebook](#) provides detailed guidance on how to maintain stormwater ponds.
- [In the Weeds: A Guide for Maintaining Vegetation in Stormwater Treatment Systems in Rhode Island](#) developed by the University of Rhode Island. They also created an app version of this guide which you can get [here](#).
- [Long-term Maintenance Plan for LID Installations on Town Property](#) from the Town of Mansfield.

nemo.uconn.edu/ms4/tasks/post-construction

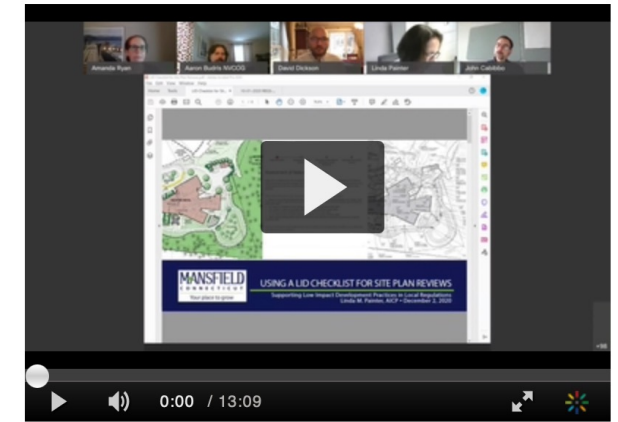
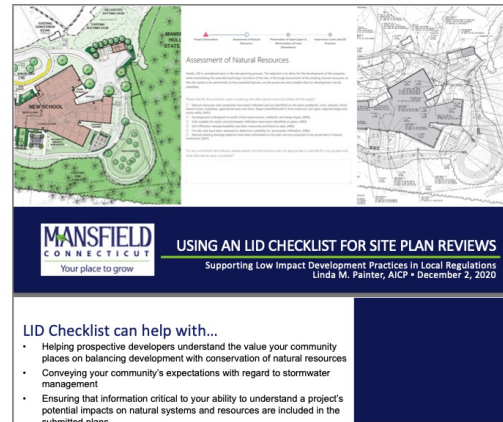
# Developers consider LIDs first

- Before consideration of other practices or local guidance
- Applies to new and redevelopment of sites 1/2 acre or larger
  - Unless smaller sites are already regulated by town

## Resources

Low Impact Development

### Using a LID Checklist for site plan reviews - Linda Painter, Town of Mansfield



- [LID & Bioswale design](#) from the City of New Haven.
- [Bioswale cross section](#) from the City of New Haven.
- CT NEMO's [Rain Garden App](#) and [website](#).

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# Infiltrate 1<sup>st</sup> inch of rainfall on-site

- DCIA disconnection!
- If not feasible = alternative options
  - Explain why in annual report
  - Propose alternative site/project; OR
  - Pay fee to be put towards other stormwater management

## Resources

nemo.uconn.edu/ms4/tasks/post-construction

Low Impact Development +

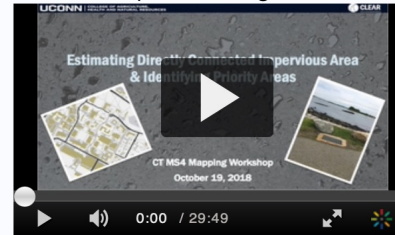
Directly Connected Impervious Area (DCIA) x

### Tracking DCIA

- [DCIA tracking spreadsheet](#) developed by CT NEMO long ago.

### DCIA tutorial

This video explains all things DCIA in the MS4 permit:



## Resources

Stormwater Infrastructure Mapping +

Tools for Mapping your Stormwater System +

What is DCIA? +

Calculate DCIA +

DCIA Tutorial +

## EXAMPLE: COLCHESTER

- Colchester's pervious pavement
- Updated zoning regulations
  - No more than 75% of parking lots can be made up of impervious cover
    - Minimizing clearing
    - Conserving the natural, pervious surfaces already on site, such as trees and green spaces
    - Pervious materials for parking stall surfaces, overflow parking, and snow storage space
- More than 10 new private installations of pervious paving
- 3 projects for local schools in the works



# EXAMPLES: COLCHESTER



UConn COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES  
Winter 2022

- In This Issue**
- 2021 Annual Report Template Available
  - Pervious Pavement Encouraged in Colchester
  - MS4 Question of the Day
  - In Stormwater News
  - In case you missed it...

## CT NEMO MS4 Program

This newsletter was created to relay occasional updates and important information to MS4 regulated communities.

[2021 Annual Report Template Available](#)



It's MS4 annual report time again. Right on cue, a new, somewhat streamlined version of the annual report template is on the Annual Reports page of our website (<https://nemo.uconn.edu/ms4>). We worked with DEEP to try to reduce and condense the information that is required by the permit. No huge changes, but some tweaks here and there. To learn what changed, refer to our Guide to Changes and How-To video, also available on our website.

made, while also explaining what may be behind on some permit limited staff, key staff turnover, full weather during monitoring reduced budgets, pandemic progress, etc).

As a reminder, a public comment that your annual report available for review and comment be made by January 31st. Your annual report must then be signed and made available in town hall or a public library by April 15th. Your final annual report due to DEEP by April 1st!

Please don't hesitate to reach out if you have any questions about updating your report.



Primary MS4 Contact Mary Looney, Municipal Stormwater Educator  
Website: [nemo.uconn.edu/ms4](https://nemo.uconn.edu/ms4) • Email: [mary.looney@uconn.edu](mailto:mary.looney@uconn.edu)



NEMO MS4 Newsletter, Winter 2022

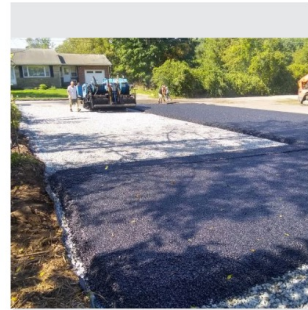
### Pervious Pavements Encouraged in Colchester

In an effort to reduce stormwater runoff volumes and impacts, in 2015, the Town of Colchester began requiring that impervious surfaces can occupy no more than seventy-five percent (75%) of any parking lot." The change in regulations was motivated by an evaluation of municipal land policy for the lower CT watershed by the environmental engineering firm, Horsley Witten, in 2009. We sat down with Colchester's Town Engineer, Sal Tassone, to see how the program is going.

cost and more labor-intensive installation process required for pervious pavements. However, much of that higher cost was due to it still being a newer product. The regulation helped increase demand for pervious paving materials and local contractors with experience in installing it. Local suppliers and contractors have since met that need, which has led to a significant decrease in cost. While the cost for the pervious asphalt used to be around \$140/ton, today the cost has dropped to \$120/ton. Only \$20 more than the \$100/ton cost for standard asphalt.

In order to satisfy the requirement, the [new zoning regulations](#) suggest the incorporation of pervious materials for parking stall surfaces, overflow parking, and snow storage space, as well as minimizing clearing and conserving the natural, pervious surfaces already on site. As a result, the town now has 10 new private installations

In addition to the decrease in cost, Colchester is reporting other benefits of the new requirement. Sal says that the permeable pavements are holding up well. The town has seen a decrease in the overall volume of stormwater runoff entering



# CENTER FOR LAND USE, EDUCATION, AND RESEARCH

*Mission: provide information and assistance to land use decision makers and other audiences in support of better land use decisions, healthier natural resources, and more resilient communities*

**Mary Looney**

*Municipal Stormwater Educator  
aka, all things MS4*

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CT MS4 Guide

[nemo.uconn.edu/ms4](https://nemo.uconn.edu/ms4)

CT NEMO

[nemo.uconn.edu](https://nemo.uconn.edu)

