



Land Use Brief

Volume 2, Issue 1

February 2025

STORMWATER MANAGEMENT: LAND USE TOOLS FOR WATER QUALITY & QUANTITY

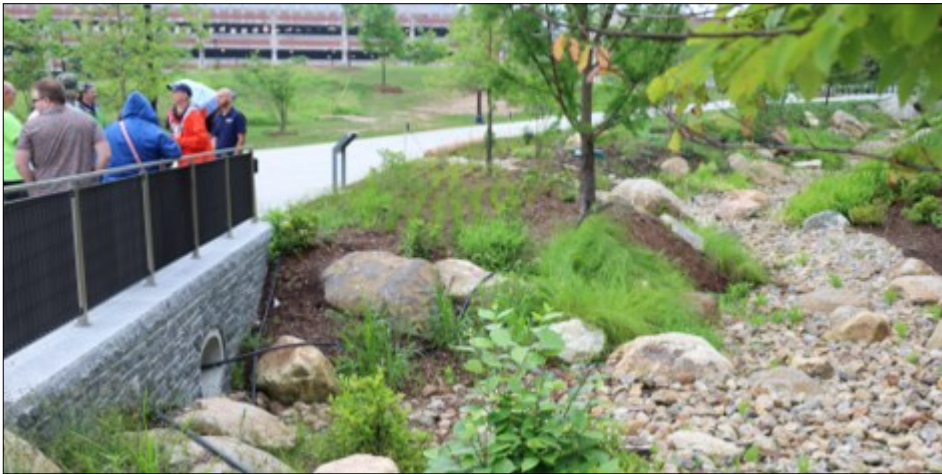


Figure 1 (Above). Low Impact Development and Green Infrastructure Tour, UCONN Campus, Storrs, CT. Photo Credit: NVCOG

Background

The Connecticut General Assembly has enacted several laws that require municipal land use decision-makers to regulate stormwater and consider related water quality and water quantity concerns.

The purpose of this Land Use Brief is to provide up-to-date information on requirements for municipalities and examples of land use tools that have been implemented to address these requirements. This issue covers:

- **Enabling State Statutes**
- **Land Use Tools**
- **Trainings & Resources**

The Naugatuck Valley Council of Governments' Land Use Brief is a resource for land use staff to support local land use decision making.

The information provided within this brief is for informational purposes only.

NVCOG recommends reaching out to your municipal attorney prior to action.

Questions? Comments?
Suggestions for future
Land Use Briefs?

Contact SN Villalba,
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MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OVERVIEW

MS4 Permit

CGS Sec. 22a-430 enables the Commissioner of the Department of Energy and Environmental Protection to issue a general permit related to discharges. The Municipal Separate Storm Sewer System (MS4) general permit is applicable to every municipality in the NVCOG Planning Region except for Bethlehem.

Legal Authorities of the MS4 Permit

Municipalities subject to the CT MS4 permit are required to adopt three types of legal authorities in their regulations:

1. Illicit Discharge Detection and Elimination,
2. Construction Site Stormwater Runoff Control, and
3. Post-construction Stormwater Management in New Development or Redevelopment.

Municipal Examples

- **Illicit Discharge Detection and Elimination (IDDE) Legal Authority:** Beacon Falls has an Illicit Discharge and Connection Stormwater Ordinance on [p. 72-81 of Town Ordinances](#).
- **Construction Site Legal Authority:** Naugatuck references Connecticut construction standards in multiple areas of their [Zoning Regulations](#), for example Sec. 37.
- **Post-Construction Legal Authority:** Waterbury requires low impact development to be considered in post-construction through the Special Use standards in their [Zoning Regulations](#), for example Sec 9.06.03.

State Updates

- The detailed requirements for the legal authorities can be found in [CT DEEP's General Permit](#) online.
- In 2024, the State released its updated [CT Stormwater Quality Manual](#) which provides guidance to address and implement the various regulations (federal, state and local) regarding stormwater management.
- CT DEEP is in the process of updating their current permit, which expires in September 2025. As per [CGS Sec. 22a-430b](#), the State's update must continue to meet the requirements of U.S. Environmental Protection Agency standards.



NVCOG provided MS4 legal authority reviews to municipalities in the region in 2017. Your municipality may request a copy of this document by contacting Tom Dougherty, tdougherty@nvcogct.gov.

Figure 2 (Above). Photo: NVCOG Local Regulations Assessment for MS4 and LID. Photo Credit: Screenshot.



MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OVERVIEW

Low Impact Development (LID) Connections

Low Impact Development is an approach that uses or mimics natural landscapes to mitigate stormwater and flooding while also preventing pollution. Communities across the Naugatuck Valley Planning Region are implementing LID to enjoy these benefits and to meet their state statute requirements, as previously outlined.

The CT MS4 Permit calls for municipalities to require that developers consider the use of LID in their projects. For comprehensive implementation of this goal, communities may incorporate LID into their Zoning, Wetlands, and Subdivision regulations. This brief will include LID regulation examples in each section using “LID Connections” boxes.

In addition to explicitly referring to LID in regulations, there are numerous standards that can be requirements which incorporate an LID approach, such as open space, riparian buffers, tree conservation, parking size reduction, sidewalk policies, parking runoff, driveways, street widths, cul-de-sac design, roof runoff and setbacks/frontages.

Action Items

- ❑ For municipalities with MS4 permits: Review and update legal authorities as necessary.
- ❑ If applicable, update regulations to remove “2004” when referencing the “CT Stormwater Quality Manual”.
- ❑ For non-MS4 municipalities: Consider adding similar standards into your regulations, subject to the recommendations of your municipal lawyer.
- ❑ As necessary, amend the Zoning, Wetlands and/or Subdivision regulations to incorporate low impact development. Municipalities may amend all three, for comprehensive implementation.

Resources:

- See NVCOG’s webpages on [Stormwater Management](#) and [MS4 Compliance](#).
- Visit UCONN NEMO’s [MS4 Map](#) with regulation examples across CT.
- For further details of regulations that promote LID visit UCONN’s [The State of Low Impact Development in Connecticut](#) Story Map.
- Visit the NVCOG [Low Impact Development and Green Infrastructure](#) webpage for more information.
- National Association of City Transportation Officials (NACTO) has an [Urban Street Stormwater Guide](#) that can inform regulations development.



PLANNING OVERVIEW

Plan of Conservation and Development

CGS Sec. 8-23(a-e) requires the consideration of water supplies to be incorporated into municipal Plans of Conservation and Development. An existing Plan of Conservation and Development may be a helpful resource to review when seeking to make improvements in municipal policies and programs on these topics.

Subdivisions

CGS 8-25 requires subdivision regulations to make “proper provisions” for water, drainage, flood protection, and open space. As new information is identified by research, it is important to continue to update local standards to ensure effective measures are taken in future subdivisions.

Open Space Designations and Acquisition

Preservation of intact ecosystems, such as forests and wetlands, are important tools to protect stormwater quality and prevent excess stormwater runoff. Municipalities have also strategically acquired open space to prevent development in floodplains or preserve water quality and more.

Regional Example: Beacon Falls’ Riverbend Park

Riverbend Park was created over 20 years ago and over time has been expanded by the Town of Beacon Falls through strategic land acquisition.

The park provides numerous benefits as far as water quality and quantity. It is located in FEMA’s designated floodplain and provides a buffer to the neighborhood from Naugatuck River waters during flooding events.

It also provides a riparian buffer for the river from stormwater runoff from the neighborhood. Additionally, it offers habitat benefits and recreational waterfront public access.



Figure 3 (Above). Evidence of flooding in August 2024 at Beacon Fall’s Riverbend Park. This demonstrates the benefits the park provides as an open space buffer to the surrounding neighborhood. Beacon Falls, CT. Photo Credit: NVCOG.



PLANNING OVERVIEW

Low Impact Development (LID) Connections

The Borough of Naugatuck has incorporated low impact development into its subdivision regulations so that best management practices are followed in the design of new developments.

Consider [Naugatuck Subdivision Regulations](#) Sec. 2.2, Sec. 5.3.1, Sec. 5.3.4, Sec. 5.8.1.a.2., Sec. 5.8.1.e and additional standards throughout. For example:

- Sec. 5.8.1 “In all districts, all stormwater management systems in new developments shall be designed, constructed, and maintained with Best Management Practice (BMP) to minimize runoff volumes, prevent flooding, reduce soil erosion, protect water quality, maintain or improve wildlife habitat, and contribute to the aesthetic values of the project.
- Sec. 5.8.1.a.2 “Design of the stormwater management system shall meet the following general standards:
 2. Provide water quality measures and pursue Low Impact Development techniques in accordance with the 2004 Connecticut Stormwater Quality Manual, as amended.”

Action Items

- Review the current Plan of Conservation and Development for policies relating to stormwater, drinking water supplies, and more. Consider implementing strategies that have yet to be implemented.
- Review subdivision regulations as they relate to water quantity and quality impacts as well as open space and low impact development. Update regulations as necessary.

Resources:

- Upon request, NVCOG staff can review municipal Plans of Conservation and Development at any time during their drafting and provide feedback.
- Upon request, NVCOG staff conduct regulation reviews, including subdivision, wetlands & watercourses, and zoning regulations, and provide recommendations for updates.



Figure 4 (Above). Pervious pavement demonstration. UCONN Campus. Storrs, CT. Beacon Falls, CT. Photo Credit: NVCOG



INLAND WETLANDS & WATERCOURSES OVERVIEW

Inland Wetlands and Watercourses

CGS Sec. 22a-42 requires municipalities to regulate and protect wetlands and watercourse areas through the creation of Inland Wetlands and Watercourse Commissions. The statute recognizes the critical importance of wetlands and watercourses for the protection of environmental quality and more.

Regulation example: Enfield’s Inland Wetlands and Watercourses Regulations

Incorporating detailed definitions of “regulated activities” can allow an Inland Wetlands and Watercourses Commission jurisdiction to preserve and protect water quality and quantity as it relates to effects on wetlands and watercourses.

Enfield’s Inland Wetlands and Watercourses Regulations expand the upland review area for areas surrounding specific waterbodies of concern, as well as areas with certain slopes. This technique may allow a municipality further jurisdiction to protect existing impaired waterbodies. For example:

Sec. 2.1 "Regulated activity" 2. All areas within 200 feet of the Connecticut, and Scantic Rivers, Beamans Brook and Freshwater Brook, up stream of Elm Street crossing (excluding tributaries). (Structures that require minimal soil disturbance during installation like a shed, gazebo, deck or similar structure shall not be considered a regulated activity if such activity is located greater than 50 feet from a wetland or watercourse.)



Figure 5 (Above). Naugatuck River in the winter. Naugatuck, CT. Photo Credit: NVCOG



INLAND WETLANDS & WATERCOURSES OVERVIEW

Low Impact Development (LID) Connections

The Town of Newington has integrated recognition of low impact development techniques into its regulations so that applicants are aware of LID alternatives that can mitigate impacts to the environmental quality of wetlands and watercourses.

Consider [Newington Wetland Regulations](#), Sec. 2.1, Sec. 7.5, Sec. 10.2, Sec. 10.4, Sec. 12.1 and additional standards throughout.

Sec. 7.5 “All applications shall include the following information in writing or on maps or drawings:

e. the purpose and a description of the proposed activity and proposed erosion and sedimentation controls and other management practices and mitigation measures, such as low impact development techniques, which may be considered as a condition of issuing a permit for the proposed regulated activity including, but not limited to, measures to (1) prevent or minimize pollution or other environmental damage, (2) maintain or enhance existing environmental quality, or (3) in the following order of priority: restore, enhance and create productive wetland or watercourse resources;

f. alternatives, including low impact development techniques, which would cause less or no environmental impact to wetlands or watercourses and why the alternative as set forth in the application was chosen; all such alternatives shall be diagramed on a site plan or drawing;”

Action Items

- Review wetland regulations to identify opportunities for updates, such as those included above, that can help strengthen review processes and protect inland wetlands and watercourses.



ZONING OVERVIEW

Zoning

CGS Sec. 8-2 requires Zoning regulations to be designed for numerous public benefits including water, public health, and environmental resources.

Regulation Example: Farmington River Protection Overlay District

Zoning Commissions have significant flexibility in the development of regulations for stormwater, water quality and water quantity. In addition to the incorporation of Low Impact Developments standards (see p 9), municipalities have utilized other techniques for the implementation of these protections into zoning.

For example, five municipalities in Connecticut (Hartland, Colebrook, Barkhamsted, New Hartford and Canton) have implemented the Farmington River Overlay Protection District, which focuses on areas 100 feet from the Farmington River. The Overlay prohibits the construction of new buildings, installation of septic systems, and excavation of sand and gravel, and limits vegetation removal, unless determined but special exception. The Zoning Regulations examples of the Overlay districts:

- [Barkhamsted Overlay District](#)
- [Canton Overlay District](#)
- [Hartland Overlay District](#)
- [New Hartford Overlay District](#)

Action Item

- Identify priority areas in your municipality that face issues relating to stormwater, water quality, or water quantity. Consider potential zoning remedies such as overlay zones or other protections.

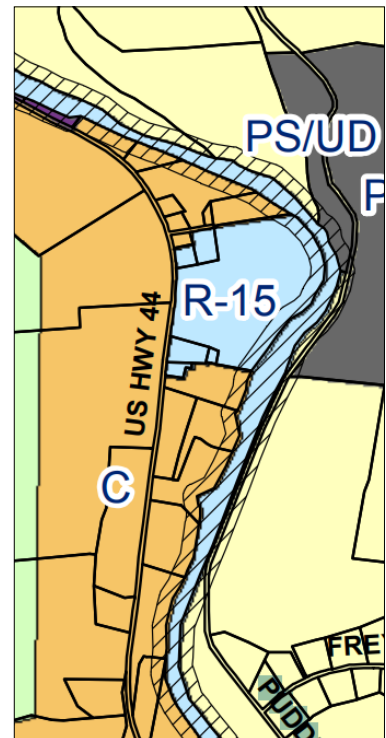


Figure 6 (Above). Photo: Zoom in of New Hartford's Zoning Map which shows the Farmington River Overlay District with black cross stripes. Photo Credit: Screenshot.



ZONING OVERVIEW

Low Impact Development (LID) Connections

The Town of Woodbury includes low impact development techniques as standards for multiple zoning districts. Their zoning regulations also have detailed requirements relating to storm water standards for all site development.

Consider [Woodbury Zoning Regulations](#) Sec. 4.3.7, 5, 6.4, 7.3, 7.4 and additional standards throughout.

Sec. 5.2.3 J. “Low Impact Development Techniques: A Special Permit Application for development shall include a narrative outlining the Low Impact Development Techniques which have been incorporated into the site plan. Reference shall be made to the 2004 Connecticut Stormwater Quality Manual and the 2011 LID Appendix, and as may be amended from time to time.”

Sec. 7.3.2.4 vi. “retention, infiltration, and treatment of storm water on the site shall be maximized using a designed storm water management system combining infiltration, rain gardens, detention basins, pollution control devices, and other environmentally acceptable components as described in the State of Connecticut Department of Energy and Environmental Protection Storm water Quality Manual [2004] as may from time to time be revised.”



Figure 7 (Above). Rain Garden at Cheshire Byam Road Firehouse in 2018. Cheshire, CT. Photo Source: UConn NEMO website. For more information visit: <https://nemo.uconn.edu/stormwater-corps/projects/cheshire/>.

Regional Example: Cheshire Byam Road Firehouse

This photo shows a rain garden installed at the Cheshire Byam Road Firehouse in 2018, which treats an estimated 309,510 gallons of polluted stormwater runoff annually. See the [site plan here](#).

According to the CT Stormwater Quality Manual, bioretention techniques such as rain gardens are a best management practice. (P. 308-309).



TRAININGS & RESOURCES

Trainings & Resources

There are many available trainings and resources at the local, state, and federal levels to support municipal implementation of stormwater management.

- **CT Stormwater Quality Manual** – The State recently released its updated Stormwater Quality Manual which provides guidance to address the various regulations (federal, State, and local) regarding stormwater management. The Manual provides guidance to land use staff for informed land use reviews, while also serving as a resource for developers as they design stormwater management techniques. For more information on the updated Manual, **watch this introductory webinar** by CT NEMO.
- Related to the updated compliance requirements of **CGS Sec. 8-4c**, land use officials may utilize available training opportunities relating to “the impact of zoning on the environment, agriculture and historic resources” such as:
 - **NVCOG trainings**
 - **CLEAR trainings**
- **Complete Streets Guidebook** – Released in October 2024, the Complete Streets Guidebook is a resource for elected officials and public works staff working to transform streets in the NVCOG region into vital, safe community spaces that accommodate all residents. Contact Rich Donovan, **rdonovan@nvcogct.gov**, for more information.



Figure 6 (Above). Photo: Group gathers at Low Impact Development and Green Infrastructure Tour. UCONN Campus, Storrs, CT. Photo Credit: NVCOG.



FUNDING OPPORTUNITIES

Funding Opportunities

Building Resilient Infrastructure and Communities (BRIC) Program — A FEMA-funded program designed to support governments in projects that reduce their hazard risks by providing funding to support capability- and capacity-building activities, mitigation projects, management costs. Cost share is required. Please contact Tom Dougherty tdougherty@nvcogct.gov, for more information.

DEEP Climate Resilience Fund — The Fund aims to support Connecticut municipalities in developing a resilience project portfolio that can win federal grant support for construction and implementation. The current round can provide matching funds for the federal BRIC program. **Current applications are due to CT DEEP by March 3, 2025.** Contact Christine O’Neill, coneill@nvcogct.gov or DEEP.climate@ct.gov for more information.

DEEP Clean Water Act Section 319 Nonpoint Source Grants — Funding for projects that focus on targeted pollutant load reductions and/or restoring impaired waters, especially those connected to the implementation of Watershed-based Plans. Projects include but are not limited to habitat improvements, dam removal, improved stormwater runoff management, and improved agricultural practices. 40% Match Required. Contact Christine O’Neill, coneill@nvcogct.gov or DEEP.watershed@ct.gov for more information.

Open Space and Watershed Land Acquisition Grant — Outlined in **CGS Section 7-131d-k**, this semiannual program provides financial assistance to municipalities and nonprofit land conservation organizations to acquire land for open space, and to water companies to acquire land to be classified as Class I or Class II water supply property. Contact Christine O’Neill, coneill@nvcogct.gov, for more information.

Regional Example: PROTECT Grant

Did you know? Pending a Federal contract, NVCOG has received \$1.2 million to enhance transportation resilience through planning initiatives for updating roads, bridges and culverts to protect from flooding and extreme weather events through the **PROTECT Grant**. Contact Mark Nielson, mnielsen@nvcogct.gov for more information.

NVCOG Assistance

NVCOG Staff are always available to assist you.

Please contact Molly Johnson at mjohnson@nvcogct.gov for any questions about this Land Use Brief and Savannah-Nicole Villalba, AICP at snvillalba@nvcogct.gov with any requests for assistance.