



Assessing Barriers to LID in Local Regulations

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Disconnection Workshop Series
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Naugatuck Valley
Council of Governments



Naugatuck Valley Council of Governments

1 of 9 COGs in CT

19 Municipalities

Transportation, Environmental and Land Use
Planning

Provide technical assistance to members

18 Municipalities subject to MS4 GP



MS4 and LID Local Regulations Assessments

Clearly identify and summarize local regulation requirements in MS4

Reviewed local regulations in context of new requirements:

- Zoning
- Subdivision
- Inland Wetland and Watercourses
- Code of Ordinances
- Others



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Resources

American Association of State Highway and Transportation Officials (AASHTO) "A Policy on Geometric Design of Highways and Streets"
http://nacto.org/docs/usdg/geometric_design_highways_and_streets/ashto.pdf

Connecticut Department of Energy and Environmental Protection (CT DEEP) Municipal Separate Storm Sewer Systems (MS4) General Permit:
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CT DEEP Stormwater Quality Manual:
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CT DEEP Native Plant Species List:
http://www.ct.gov/deep/lib/deep/wildlife/pdf_files/habitat/ntvtree.pdf

Invasive Plant Species List:
http://cipwg.uconn.edu/invasive_plant_list/

University of Connecticut Nonpoint Education for Municipal Officials (NEMO) CT MS4 Guide: <http://nemo.uconn.edu/ms4/index.htm>

NEMO "Developing a Sustainable Community"
<http://nemo.uconn.edu/publications/LIDPub.pdf>

Greenwich Stormwater Drainage Manual
http://www.greenwichct.org/government/departments/public_works/engineering_division/stormwater_information/drainage_manual/

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Construction Site Stormwater Runoff Control – MS4 General Perm Section 6(a)(4)

Deadline: First fiscal year beginning after 7/1/2019

What the MS4 permit requires:

- The municipality shall implement and enforce a program to control stormwater discharges to its MS4 associated with land disturbance (including re-development) activities from sites with **1 acre or more of soil disturbance**.
- Establish legal authority that requires:
 - Development is **consistent with CT DEEP** Guidelines for Soil Erosion and Sedimentation Control and Stormwater Quality Manual and all Stormwater permits issued by DEEP within the municipality
 - The implementation of **additional measures to protect/improve water quality** as deemed necessary by the municipality
 - Municipality shall carry out **inspection, surveillance and monitoring** to determine compliance with municipal regulations related to management of the MS4 (specifically, to inventory the number of privately-owned retention/detention ponds and other stormwater basins that discharge to/receive drainage from the MS4)
 - Owners seeking development approval to provide and comply with a **long term maintenance plan** and schedule for privately-owned retention and detention ponds and other stormwater basins that discharge to or receive discharge from the MS4
 - The municipality to control through **interagency or inter-jurisdictional agreements**, the contribution of pollutants between MS4.

Currently Implemented:

- Zoning: 10.3.d: Special Permit Components: Sediment and Erosion Control Plan: The plan shall contain provisions to control sedimentation and erosion and reduce danger from stormwater runoff. The plan shall contain existing and proposed contours, graded and cleared areas, proposed alterations, and the location of control measures. The narrative shall describe the project, schedule of major construction activity, detail grading and design criteria, conservation practices, and maintenance program.
- Zoning: 10.7.e: Special Permit General Standards: The project shall not commence unless the control measures have been installed and are operating. Controls shall be maintained in effective working order to ensure compliance.
- Zoning: 14.9: Sedimentation and Erosion Control Measures: The Enforcement Officer shall inspect all control facilities to ensure they are in compliance with approved plans, properly installed, functioning, and maintained by the applicant.
- Zoning: 19: The Commission shall secure a bond to enforce, stabilize, and control any adverse environmental impacts resulting from a lack of facilities or non-compliance with the approved sedimentation and erosion control plan. A bond shall be required if the disturbance is in excess of a 0.5 acre.
- Subdivision: 8: Provisions shall be made for erosion and sediment control and to reduce stormwater runoff on the site.

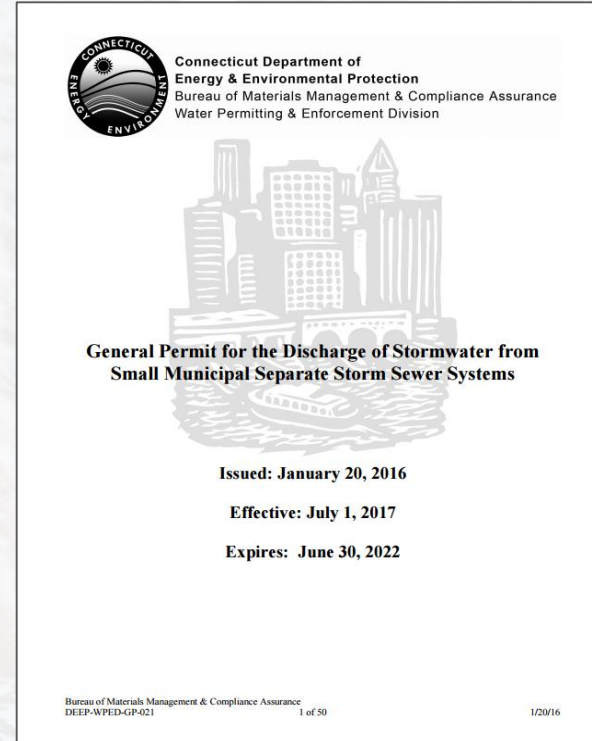
Suggested Changes for Compliance:

- Add reference to the Stormwater Quality Manual section 10.3.d of the Zoning Regulations, regarding the Soil Erosion and Sedimentation Control plan.
- Adopt or include in the Zoning Regulations recommendations that will be posted at the UConn Nonpoint Education for Municipal Officials [NEMO CT MS4 Guide](#).

LID Regulation Assessment

5(A)(i) Post Construction Stormwater Management:

*All permittees shall **identify** and, where appropriate, **reduce or eliminate** existing local regulatory barriers to implementing LID and runoff reduction practices to the MEP.*

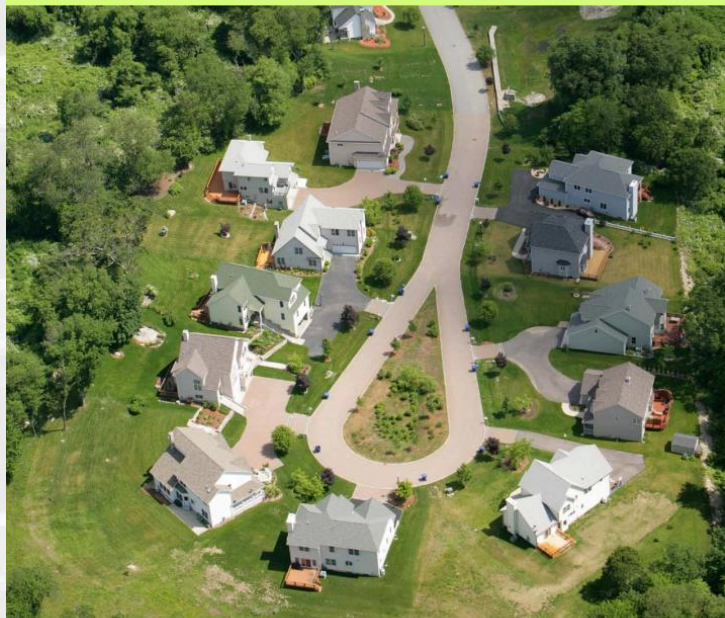




NEMO

Developing A Sustainable Community

A Guide to Help Connecticut Communities Craft Plans and Regulations that Protect Water Quality



UConn
COLLEGE OF AGRICULTURE
AND NATURAL RESOURCES



LID Regulation Assessment

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Part II - LID Barriers Assessment

What follows is an assessment of the procedural barriers to LID Implementation and suggestions to resolve them. The list of LID practices and the criteria for allowing and encouraging them is based on the list that UConn CLEAR and NEMO created for their publication, "[Developing a Sustainable Community](#)", which should be used as a guide to the LID practices listed below.

The assessment is color coded:

Practice is allowed or encouraged	Part of the practice is allowed or encouraged	There is a barrier to implementing this LID practice
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LID Practice	Current Regulations	Good LID Practices
Street Width	<ul style="list-style-type: none"> • Zoning: 21.2.d: Multiple dwelling units: The tract shall be served by private streets. Streets shall meet municipal construction standards. Pavement width is 24 ft. If the street pattern significantly improves traffic circulation in the area, the Commission may require that they be dedicated to the Town. • Zoning: 21.3.b: Housing for elderly and seniors: All projects shall contain 2 separate access points of which 1 may be on a State road. Each access shall have a width of 50 ft. The secondary access road need only be an emergency road suitable for evacuations and public safety vehicles. The development shall be served by a private road constructed to Town standards and designed to discourage through traffic. The Commission may require streets be dedicated to the Town whenever it would serve to improve traffic circulation. • Subdivision: 11.2: Streets shall be designed with a 26 ft. width of pavement centered between the street lines curb to curb. The Commission shall, after a careful review of the proposed subdivision plans and vehicular circulation patterns by the Town Highway Superintendent, Town Engineer and other public safety officials, have 	Currently Implemented
		Toward better LID practice <ul style="list-style-type: none"> • Correlate street pavement width to traffic volume and traffic speed. • Street pavement widths should follow the standards set out in "A Policy on Geometric Design of Highways and Streets," AASHTO, 2011, Pg. 5-6.

LID Practice	Current Regulations	Good LID Practices
Parking Sizing	<ul style="list-style-type: none"> • Zoning: 9.2: The front yard of any single family residence may be counted as 1 parking space. This does not apply to corner lots. • Zoning: 9.3: Accessory parking spaces may be provided on the same lot as the primary use or within 300 ft. of such lot. • Zoning: 9.4: Spaces shall be 10x20 ft. Handicapped parking shall be a minimum of 12x20 ft. • Zoning: 9.5: Access shall be provided to all streets. Access shall consist of 1, 10 ft. lane that contains 5 to 20 spaces and 2, 10 ft. lanes for parking containing over 20 parking spaces. • Zoning: 9.7: Joint Parking Facilities may be provided in areas designed to serve 2 or more businesses. The number of spaces shall not be less than the number required for each business. • Zoning: 12.4: Planned Industrial District (PID): Parking spaces shall not exceed 75 vehicles and must meet the requirements of Art. 9 If more parking is required, a second facility may be established. Spaces shall be landscaped from residential zones. • Zoning: 21.9.b.3: Accessory apartment (above commercial): 1 parking space shall be provided for all units up to 600 sq. ft. 2 parking spaces shall be provided for all units over 600 sq. ft. 	<p>Currently Implemented</p> <ul style="list-style-type: none"> • Parking lot design that minimizes impervious surface is encouraged, such as, narrow aisles (21 ft., 2 lanes). • There is a maximum parking requirement for the PID. • Smaller apartments associated with mixed use have a reduced parking requirement compared to other residential units.
		<p>Toward better LID practice</p> <ul style="list-style-type: none"> • Encourage parking lot design that minimizes impervious surface such as, minimal stall dimensions (9x18 ft.). • Allow a reduction in parking requirements when shared parking is used. • Allow reduction of parking requirements for properties with mixed use and/or access to transit. • Allow shared driveways for non-residential uses. • Change parking minimums to parking maximums. • Use parking standards based on local data. • Limit queue lengths for drive through windows.

LID Practice	Current Regulations	Good LID Practices
Parking Runoff	<ul style="list-style-type: none"> • Zoning: 26.4: All off street parking and loading spaces shall be suitable improved, graded, stabilized and maintained so as to cause no nuisance or danger from dust or from storm water flow onto any public street. • Subdivision: 5.4.1: All off-street parking areas shall be designed including drainage and constructed to the borough engineering standards. The Commission may allow an alternate surface to be used for the parking area when such surface is designed to minimize stormwater runoff. • Subdivision: 5.8.1 (D): On sites where little traffic is anticipated, the commission may approve the use of pervious surface materials for all or part of a parking area when such paving is part of an overall drainage design which minimizes concentration of stormwater runoff. • Subdivision: 5.8.3: The following measures shall be applied to individual lots where required by the Borough Engineer: <ul style="list-style-type: none"> ○ (B) Parking lots constructed over pervious soils shall be designed to encourage groundwater recharge via the use of infiltrative systems sized to contain 1 in. of parking lot runoff from a 10-year storm. Parking lots with heavy usage or near water supply sources shall include measures to reduce the chance of groundwater contamination, prior to infiltration systems. The use of grass median strips and depressed islands are encouraged. ○ (D) Runoff shall be designed into sheet flow across natural or artificially vegetated areas whenever possible. 	Currently Implemented
		<p>Toward better LID practice</p> <ul style="list-style-type: none"> • If landscape islands are required, require that they are built without curbs (either at or below-grade and in the optimal location to accept stormwater runoff) and are used for infiltration and bio-retention.

Town	Street Width	Culs -de-sac	Road Drainage	Parking Sizing	Parking Runoff	Open Sapce/ Conservation	Setbacks & Frontages	Sidewalks	Driveways	Roof Runoff	Stormwater Management	Riparian Buffers	Clearing and Grading	Tree Conservation	Total
Town 1	0	0	1	2	0	1	1	1	1	1	0	2	1	1	12
Town 2	2	1	0	1	1	0	2	1	2	0	2	2	2	1	17
Town 3	0	1	1	2	0	1	1	1	2	0	0	2	2	1	14
Town 4	1	2	1	0	0	1	1	1	0	1	0	2	2	1	13
Town 5	0	1	0	1	1	1	1	1	1	1	0	0	2	1	11
Town 6	1	1	0	1	1	1	1	1	0	1	1	0	2	2	13
Town 7	1	2	1	0	1	1	1	1	1	1	1	2	1	1	15
Town 8	0	1	1	0	2	1	1	1	1	2	2	2	1	1	16
Town 9	1	1	1	1	0	1	1	1	1	0	2	2	2	1	15
Town 10	2	0	0	1	0	1	1	0	1	1	1	2	1	1	12
Town 11	1	1	1	1	0	0	0	1	1	0	1	2	1	1	11
Town 12	0	0	1	1	0	0	1	1	1	1	2	2	1	1	12
Town 13	1	1	0	1	0	1	1	1	1	1	2		0	0	10
Town 14	2	1	1	1	0	1	1	0	1	0	1	1	2	1	13
Town 15	0	1	1	1	0	1	0	1	0	0	1	2	2	0	10
Town 16	1	1	1	1	1	2	1	1	2	2	1	2	1	1	18
Town 17	1	0	1	1	1	1	1	1	1	0	1	2	2	1	14
Town 18	1	0	1	1	0	1	1	0	1	1	2	2	0	1	12
Town 19	0	1	1	1	0	1	2	1	1	0	2	2	1	1	14
TOTAL:	15	16	14	18	8	17	19	16	19	13	22	31	26	18	

Some Barriers to LID

Roadways

- Excessive min. roadway width
- Mandatory curb

Parking

- Minimum parking space requirement
- Required curbs/ raised islands
- Excessive min. stall size
- Mandatory pavement type

Roof Runoff

- Required underground conveyance





Thank You!

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