



Town of Greenwich Drainage Manual

Low Impact Development
and Stormwater Management

February 2012
Revised Feb 2014



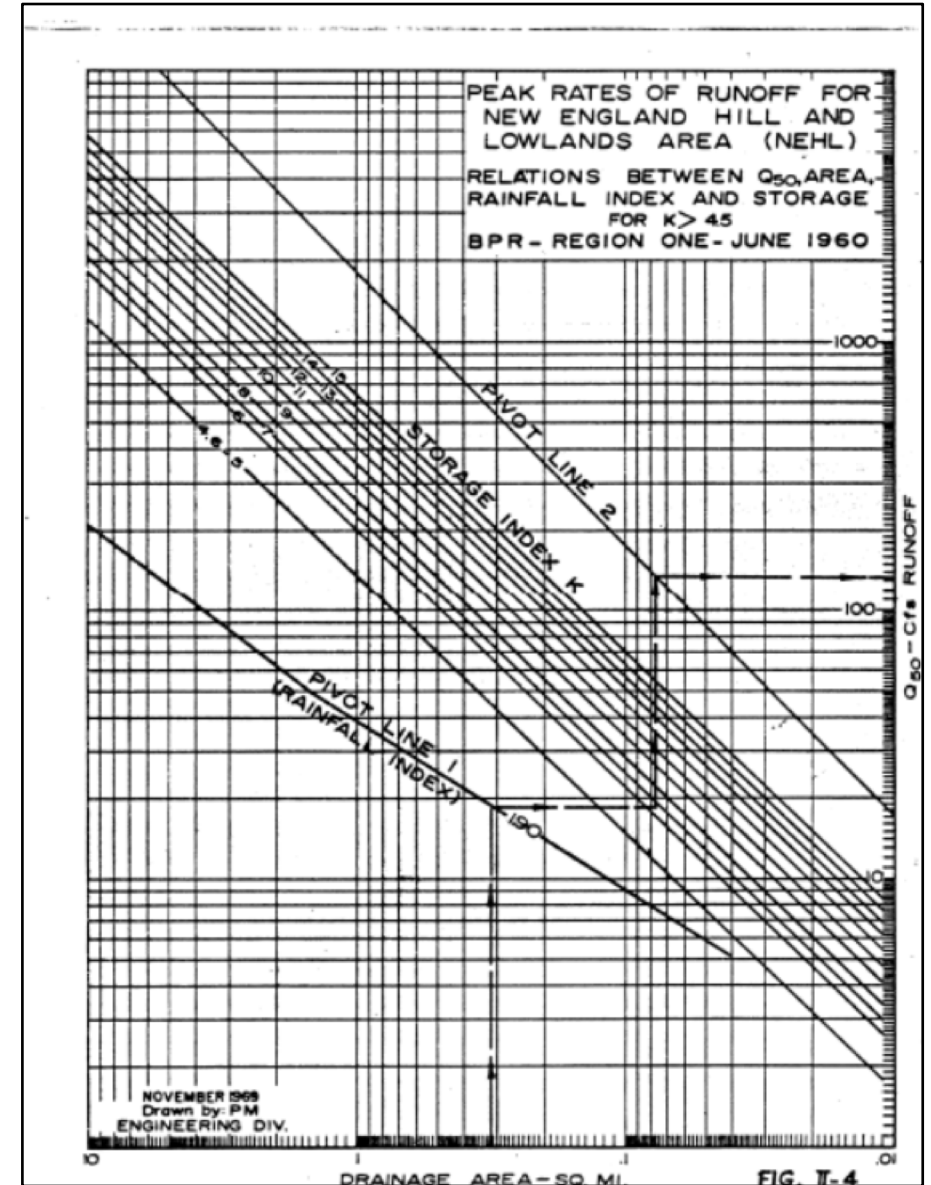
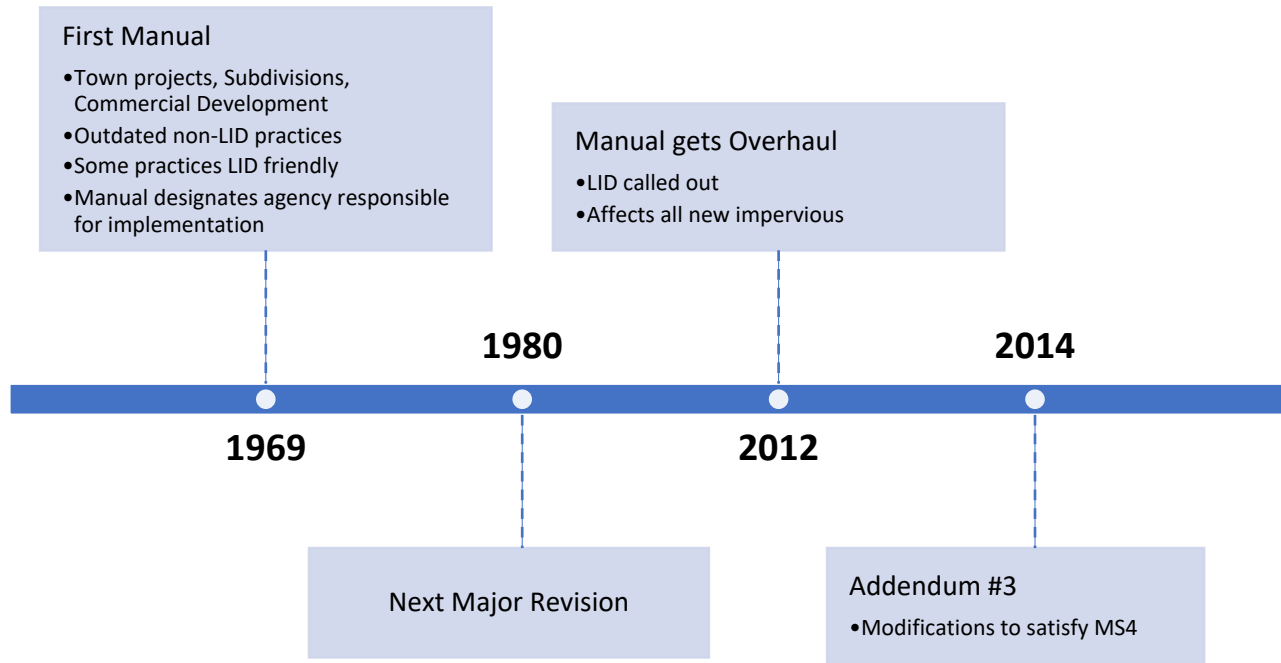
December Disconnection Workshop Series

LID Implementation

December 2, 2020

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Long History of Stormwater Management Requirements



2012 Drainage Manual

- Completely new manual
 - Coming MS4 precipitates action
 - Comprehensive
 - Municipal stakeholder input
 - Contracted with engineering firm to develop
 - Explicit priority for LID – 60% requirement
 - All new impervious surfaces subject to review



Implementation of Manual

- In Plan of Conservation and Development
- Regulators
 - Planning and Zoning Commission
 - Inland Wetlands and Watercourses Agency
 - Building Division
- All rely on staff engineers for review
- Manual only as good as its supporters

Inland Wetlands & Watercourses Agency Application Checklist

And the following, as listed:

- ___ 11. Complete Set of Site Plans, including Erosion and Sedimentation Control Plan; **(3 copies)***
- ___ 12. Evidence of compliance with the Town of Greenwich Drainage Manual including engineering reports, analysis and additional drawings; **(2 copies)**
- ___ 13. If applicant is not owner of the property, a letter of consent from the owner authorizing the applicant to act as the owner's agent; **(the original letter signed by the owner)**

Requirements based on impervious coverage

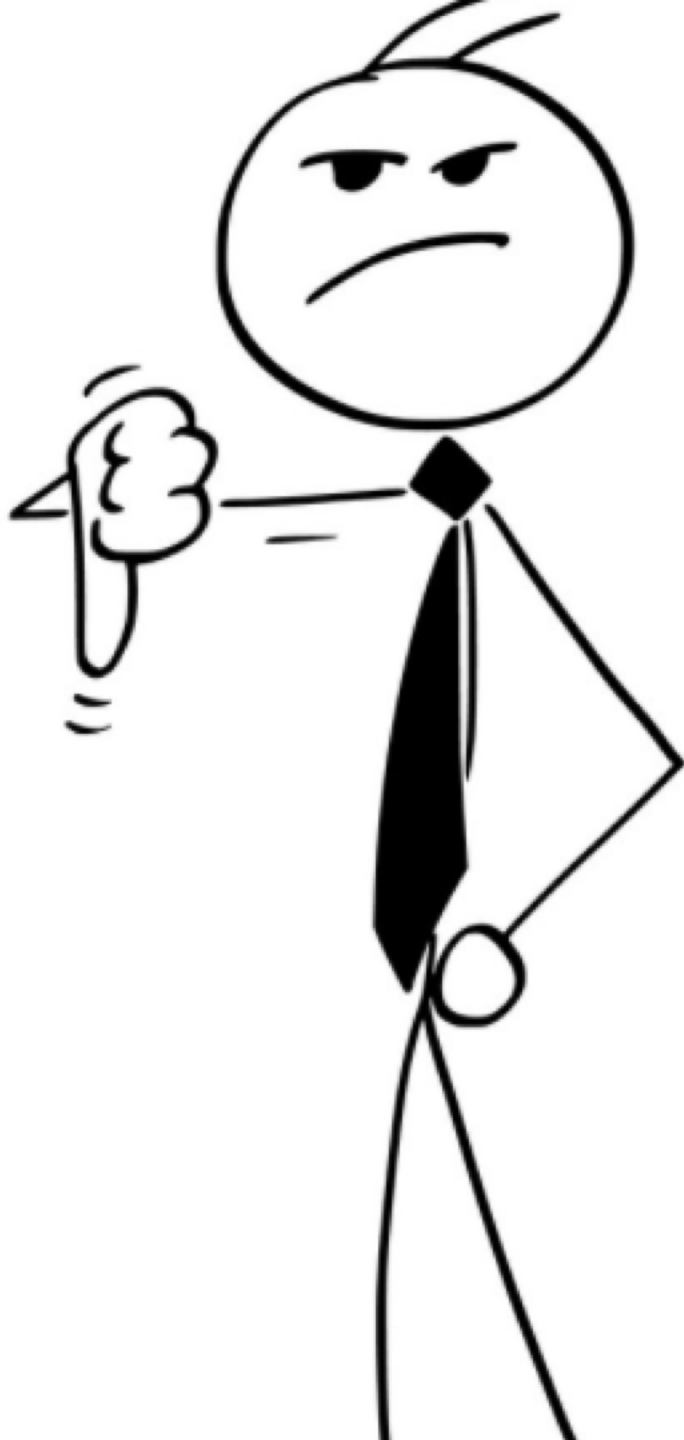
- Under 500 s.f. – exempt
 - Requires engineer certification
- 500 – 1,000 s.f. - disconnections
 - Requires plan and engineer certification
- Over 1,000 s.f. – full management plan



Allowances and Exemptions



- Exemption for 1,000 s.f. of new impervious coverage is cumulative
- Teardown exemption
 - Must keep to pre-existing footprint size
- Can remove existing impervious surface to compensate for new
- Decks can be considered pervious if area below is prepped



Pushback and Burden

- Engineers had and still have lots to say
- Occasionally Manual requirements conflict with land use goals
 - Clearing more land to accommodate stormwater controls
- Cost added to project
 - Engineering
 - Stormwater management system

Regulatory Shortcomings



Regulators not very good at enforcing subjective aspects

- Limit envelope of disturbance
- Maintain existing topography

Doesn't necessarily limit development

- If I can afford it, I can do it

Need to rely on consulting engineer if no staff resources available to verify manual compliance



Favored LID

- Rain gardens are #1
 - Lawn is technically allowable
 - Soil mixture equivalent to a sand trap – needs revision
 - Can be under-drained and lined
 - P&Z and IWWA work to maximize value beyond Manual minimums
 - Consultants need to be reminded the Manual is not the last word



Favored LID

- Porous Pavement #2
 - Doesn't take up yard space
 - Options for its finish – porous asphalt, pavers, gravel
 - Easy box to check
 - Not so sure about it's long term success



Short & Long Term Enforcement

- Permit conditions of approval
 - Require engineer sign off
 - Stormwater management system
 - Soil decompaction
 - Conditions must be met for bond release
 - Building Division won't issue building permit
- Deed restriction
 - Filing on land records required – maintenance declaration
 - Filing includes 5-year maintenance submission
 - IWWA sends out reminder letter – 80% compliance
- Homeowners' guide to management features
 - Questionable value, but it can't hurt

Imperfection

Lastly, Imperfections

- **Applications to Building Division only – no staff review**
 - Report useful when something goes wrong
- **No installation inspections**
 - rely entirely on engineer of record
- **No comprehensive follow up**
 - Only IWWA sends letters
- **No clear path for enforcement of 5-year inspections**

Thank you!

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<https://www.greenwichct.gov/242/Stormwater-Drainage-Manual>