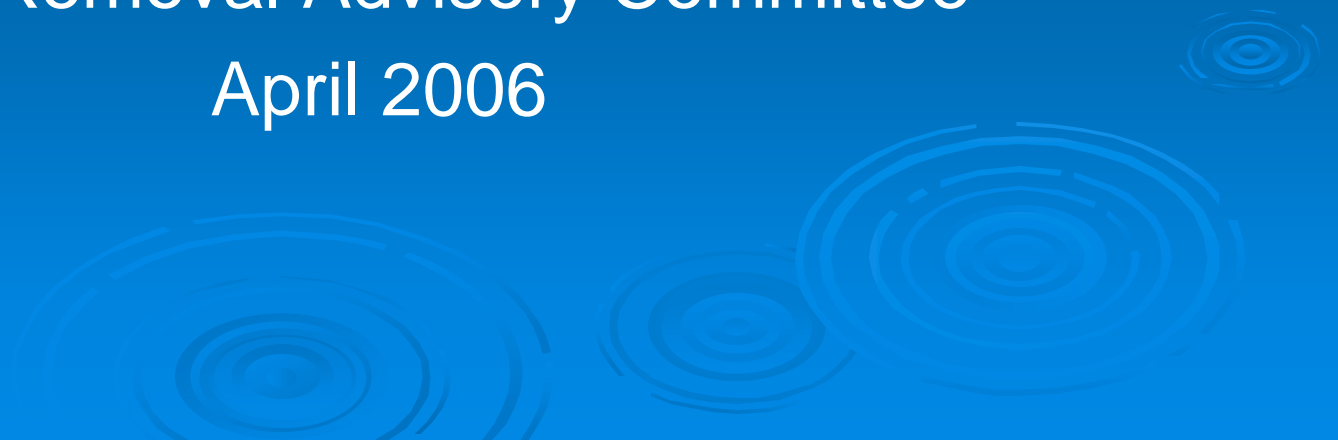


PROPOSED STORMWATER MANAGEMENT LOW IMPACT DEVELOPMENT BY-LAW

Earth Removal Advisory Committee
April 2006

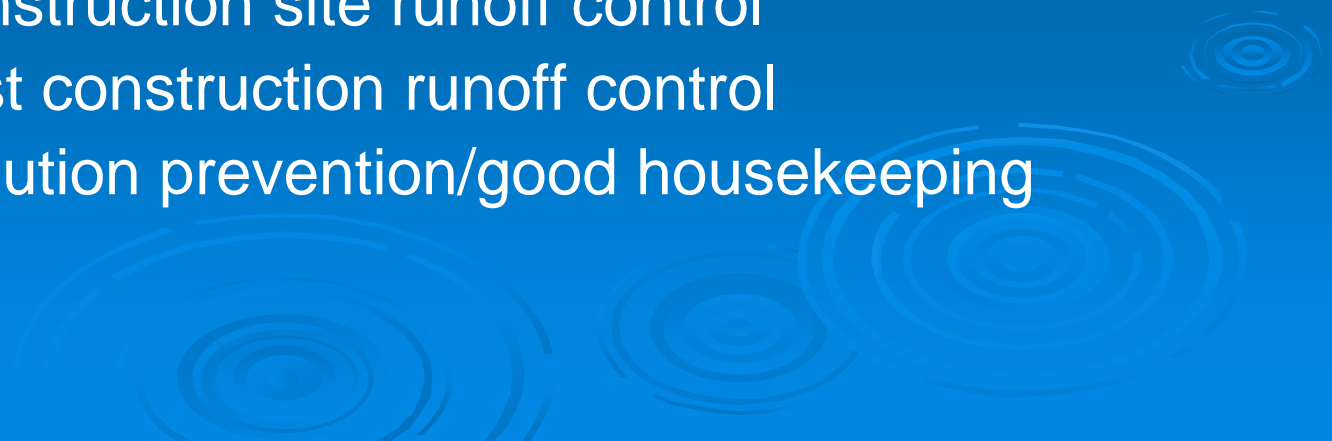


Regulatory Background

- EPA regulations - National Pollutant Discharge Elimination System (NPDES), established by the federal Clean Water Act, adopted in 1972
- Improve water quality by removing unwanted pollutants and sediments from stormwater runoff
- Stormwater Management Phase 1 – went into effect in 1990 and applies to medium sized municipalities (100,000 to 249,000 population) and large cities (250,000 population or more)
- Phase 2 – went into effect in 2003 and covers most, but not all municipalities with a population between 10,000 and 100,000

What the Town must do to comply with NPDES Phase II Requirements

Six Minimum Requirements:

1. Public education and outreach
 2. Public participation/involvement
 3. Illicit discharge detection/elimination
 4. Construction site runoff control
 5. Post construction runoff control
 6. Pollution prevention/good housekeeping
- 

Terminology

- *MS4 – Municipal Separate Storm Sewer System*
The Town's drainage system maintained by the Town's Highway Department
- *BMP – Best Management Practices*
The most effective practicable means of preventing or reducing the amount of pollution generated by point or non-point sources
- *LID – Low Impact Development*
Land-use planning, design practices and innovative technologies used to reduce infrastructure costs and protect the environment

Administration

- The Earth Removal Advisory Committee will administer the by-law with assistance from the Highway Surveyor
- The proposed Stormwater Management-Low Impact Development by-law will replace the existing Erosion and Sediment Control by-law adopted in 1998

Earth Removal Advisory Committee

The Earth Removal Advisory Committee was established in 1963 with the adoption of the Town's first Earth Removal By-law. The Committee consists of:

- Planning Board member
- Conservation Commission member
- Board of Health member
- Two members appointed by Selectmen

Technical advisors

- Nashua River Watershed Association
 - Middlesex Conservation District
 - Natural Resources Conservation Services
 - Town Counsel – Kopelman & Paige
- 

Field Work



The Highway Surveyor inspects
a drainage basin along a public way



The Water Department and Highway Department
use GPS to map the Town's drainage system
including catch basins, manholes and outfalls

Groton's MS4

- Maintained roadway 107 miles
- Catch basins 1075
- Manholes 476
- Outfalls 250
- Dry wells 63
- Drop Inlets 49

Drainage Structures in the Town Center



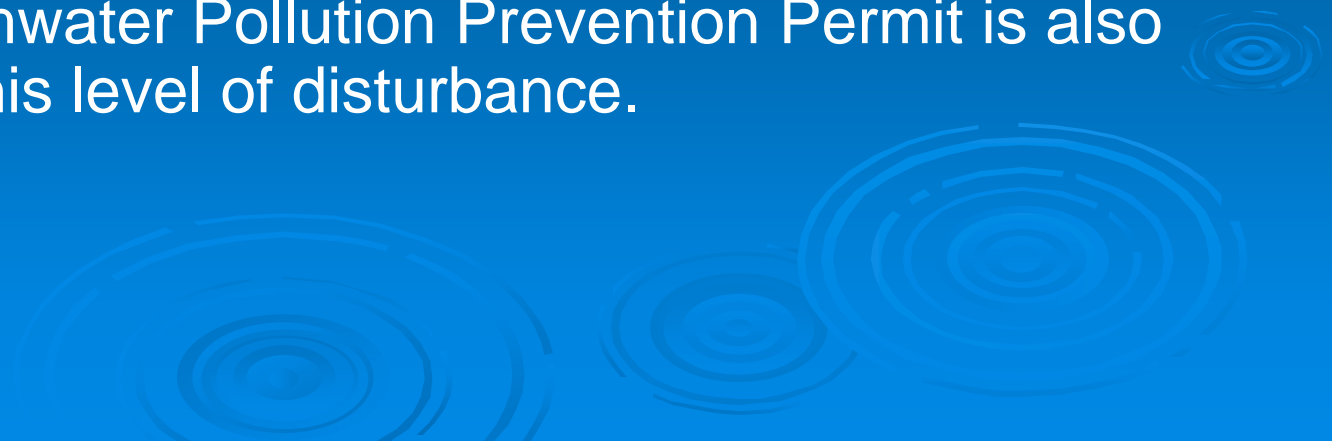
Application Thresholds

➤ *Limited stormwater permit:*

Land disturbance greater than 20,000 square feet but less than 40,000 square feet **or** land greater than 5000 square feet if the slope is 10% or greater (local requirement only).

➤ *Full stormwater permit:*

Land disturbance greater than 40,000 square feet. A NPDES Stormwater Pollution Prevention Permit is also required for this level of disturbance.




Exemptions

- Agricultural or forestry use
- The removal of hazardous trees
- Routine maintenance of vegetation and removal of dead or diseased limbs or trees
- Control of noxious weeds
- Repair of individual sewage disposal systems serving a single or two-family dwelling
- Normal maintenance of existing landscaping
- Construction of utilities other than drainage

Operating and Maintenance Plans

(Full Stormwater Permits only)

- The names of the record owners and all responsible parties
 - Long-term maintenance agreements
 - Stormwater management easements
 - Maintenance schedule for all drainage structures, including swales and ponds
- 

Enforcement

- Earth Removal Inspector
- Earth Removal Advisory Committee
- Highway Surveyor
- Board of Selectmen

Regulations

Consistency with town regulations including:

- Subdivision Regulations
 - Site Plan Review Regulations
 - Wetlands Protection Regulations
 - Board of Health Regulations
 - Highway Department Regulations
- 

Conventional vs. Low Impact

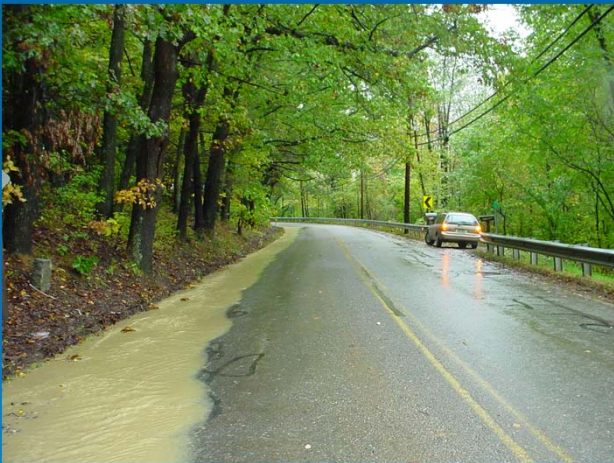


Conventional drainage



Low impact development

Environmental impacts



Public safety consequences



Flooding in Alstead, New Hampshire
October 2005



Retaining wall slump along
Hudson River Parkway, New York City

Nashua River at Flood Stage



Squannacook River at Flood Stage



We all live downstream.....

