MAINE NEMO

Nonpoint Education for Municipal Officials

Linking Land Use to Water Quality

Partnership for Environmental Technology Education
Maine’s Water Budget
Impacts of Development

Natural Cover 75-100% Impervious Surface

- Runoff: 10%
- Infiltration: 50%
- Evaporation: 40%
- 55%
- 30%
- 15%
Development Impacts on Water Quality

- Increased quantity
- Decreased quality

Bacteria
Sediments
Temperature
Nutrients
Petroleum Derivatives
Pesticides and Herbicides
Heavy Metals
More land is used per person with new development

- more than 1/4th of all the land converted from rural to urban and suburban uses since European settlement occurred in only 15 years.

1982-1997

Rate of Land Development and Rate of Population Growth

Source: Dana Beach, Pew Oceans Commission
Waterway Health & Imperviousness

WATERSHED IMPERVIOUSNESS (%)

STREAM DEGRADATION

- PROTECTED
- IMPACTED
- DEGRADED

ADAPTED FROM SCHUELER, ET. AL., 1992
Impervious Area and Stream Habitat

< 5%

20%
South Portland
Long Creek  5.8 million in retrofits
What does growth look like?

2 Acre Residential

0.21 acres impervious area per house
More than 400 Towns
Open Space Developments

From Randall Arendt
Open Space Developments
Manchester Cluster Development

- Open Space *option* for over a decade. No takers.
- 2006 Open Space *required* for most subdivisions over 5 lots. Approx 50 acres permanently protected so far.
Scarborough Conservation Subdivision Design

- Required on Subdivisions with 1 acre of wetlands
- To protect the Town’s wetlands, watercourses, farmlands, open space and natural features
- More than 180 acres permanently preserved since 2006
Holden 2008

- All subdivisions in the Town of Holden shall be Conservation Subdivisions
- Rural Area Requirement: at least 50% of the land suitable for development shall be preserved as open space.
Open Space Developments

READFIELD: Private 3 bdrm/2 bath ranch across from conservation land. Lots of home w/ sunroom, fireplace & potential in-law apt. $169,900

COME BUILD YOUR DREAM HOME in this new subdivision with protective covenants. Many lots to choose from. $39,000 #817780 Call SHERRI 582-9221
Rural Brunswick Smart Growth Overlay Districts

- Mitigation required
- Subdivisions avoiding impacts eligible for density bonus.
- Town maintains a list of landowners for “banking” habitat or development rights.
Casco Open Space Plan: Strategies for protection

- Conservation leases with willing landowners for 10-15 years. (leasing development rights with rights of first refusal)
- Town pays legal fees for conservation easements and for development rights
- Town purchase of land ($60,000/year)
Low-Impact Development (LID)—Control stormwater runoff close to the source.
York Site Plan and Subdivision Regs

Changed from a request to a requirement

Currently under review is York Fields with
grass pavers and rain gardens.
York Site Plan and Subdivision Regs

Each applicant is required to submit:

- Proposed LID for the site, which will help to reduce storm water volumes and help to enhance storm water quality.
- Technical documentation about the suitability of such designs with the request for LID features.
South Portland

- Currently working to integrate LID requirements for projects under 1 acre threshold
Single Family Lot Requirements
Raymond Single Family Lot Requirements

- SW management plan with review by SWCD
- Maintain natural drainage features
- Sheet flow to buffers (not roadside ditches)
- Compliance review of the as-built
I have a dream!