

THE MAINE DRAIN: STORMWATER MANAGEMENT STRATEGIES AND SOLUTIONS

URBAN IMPAIRED STREAMS

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SOURCES OF CLEAN WATER ACT OBLIGATIONS FOR MUNICIPALITIES

Municipal Clean Water Act (CWA) Obligations include not only:

- 1. Small MS4 regulation;**
- 2. Combined Sewer Overflows; but also**
- 3. Urban Impaired Streams.**

SOURCES OF URBAN IMPAIRED STREAM OBLIGATIONS

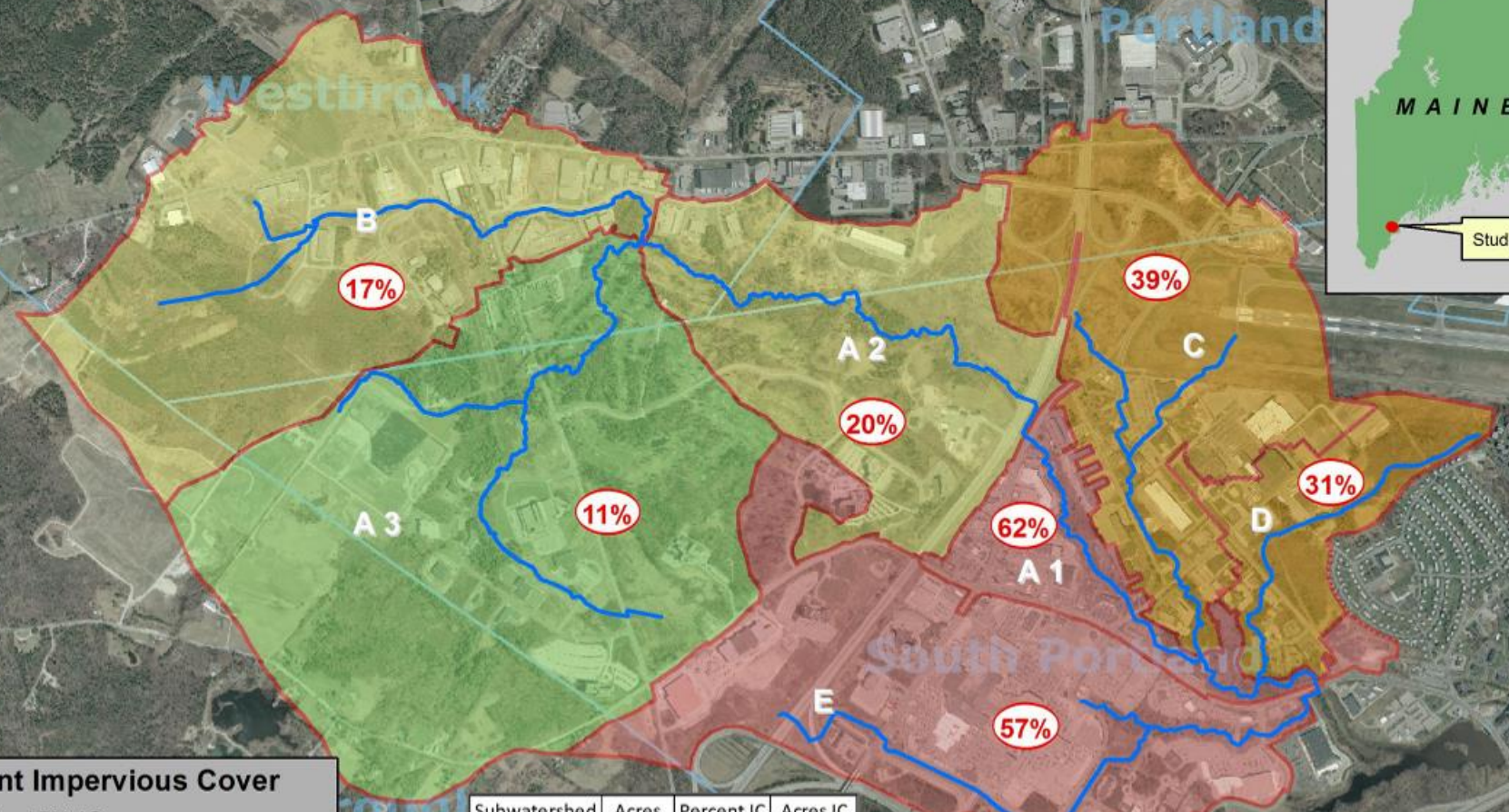
Urban Impaired Streams obligations arise out of:

- 1. 1972 CWA Amendments (Section 303(d) list and TMDL);**
- 2. 1987 CWA (Stormwater) Amendments (Residual Designation Authority);**
- 3. Small MS4 permit conditions; and**
- 4. Threat of citizen suits and petitions.**

LONG CREEK WATERSHED



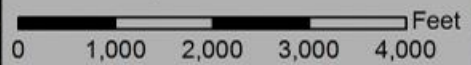
Long Creek Impervious Cover by Subwatershed



Percent Impervious Cover

- 10 - 15% IC
- 15 - 25% IC
- 25 - 40% IC
- > 40% IC

Data Sources: Maine DEP; Maine OGIS
 Coordinate System: NAD83, UTM Zone 19N, Meters
 Date: 12/19/07 by F. Dillon



Subwatershed	Acres	Percent IC	Acres IC
A1	105.1	61.8	64.9
A2	284.7	19.5	55.4
A3	620.6	10.6	65.5
B	435.6	16.8	73.2
C	308.5	39.2	120.9
D	109.7	31.4	34.5
E	377.7	57.1	215.5
Totals:	2242		630
% IC for Entire W'shed:		28%	



URBAN IMPAIRED STREAM EXAMPLES IN MAINE

- A. Long Creek Watershed. Located in Portland, South Portland, Scarborough and Westbrook.**
- **3.45 square miles in Maine Mall area – commercial and industrial uses, jetport, interstate highway, parking lots, shopping centers – much impervious area.**
 - **Long Creek does not meet State water quality standards: low dissolved O₂; heavy metals; high suspended solids and chlorides.**
 - **Threat of enforcement action and of citizen action resulted in collaborative action by public and private landowners.**
 - **First in nation use of RDA to require stream restoration.**

URBAN IMPAIRED STREAM EXAMPLES IN MAINE

- **Interlocal Agreement and nonprofit corporation to create Long Creek Watershed Management District.**
- **Over 110 public and private landowners implementing a Long Creek Watershed Management Plan to restore the urban impaired stream within ten years.**
- **\$14 million cost shared by annual assessments; remediation capital projects focused on most cost-effective BMPs.**
- **Potential model for urban impaired stream remediation.**

URBAN IMPAIRED STREAM EXAMPLES IN MAINE

B. Other streams and models –municipal restoration:

- 1. Penjawoc Marsh, Bangor**
- 2. Capisic Brook, Portland**
- 3. Red Brook, South Portland and Scarborough**

Finance remediation through tax base? Separate stormwater charge for this and other stormwater costs? Separate stormwater utility?

URBAN IMPAIRED STREAM RESTORATION

Urban Impaired Stream Restoration Strategies:

- 1. Low Impact Development**
- 2. Onsite infiltration of stormwater**
- 3. Reduced impervious surface area**
- 4. Proactive steps to protect streams before become urban impaired streams**