

EPA Region 1 MS4 Stormwater General Permits and LID Training Clinic



Track A: Planning & Budget
**Funding Stormwater
Programs**
NHDES
Concord, NH
May 12, 2011

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Drivers of a Sustainable Stormwater Funding Source

- Flooding;
- Aging/failing infrastructure;
- Development pressures;
- Water/environmental quality;
- Regulatory Mandates
- Quality of Life;
- Property values;
- Drinking water protection/replenishment;
- Recreation (fishing, boating, swimming);
- Erosion of stream/creeks;
- Lawsuits

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Three Funding Truths

(and one strongly held opinion)

- It is cheaper to protect than to restore;
- Taking action today is cheaper than taking action tomorrow;
- There is not, has never been, and never will be enough grants - public or private - to fund water resources protection and restoration;
- *Local problems require local solutions*

“Courtesy Dan Nees Environmental Finance Center
University of Maryland”

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So, What's the Problem?



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Stormwater Management is Complex

- Multiple regulations:

- MS4
- Zoning
- Const GP - Subdivision
- TMDL
- NH Surface WQ Regs.
- NH Wetland Rules
- NH Alteration of Terrain

- And regulators:

- Federal
- State
- Local

City's Stormwater Regulations May Be In For Rough Weather

By MICHAEL FINN

Free Press Staff Writer

1. NASHVILLE — Another storm may be brewing over the city's compliance with federal and state stormwater regulations.

State Rep. Brenda Turner wants Chattanooga city officials to explain why they haven't complied with some provisions of the state law on stormwater fees that the Legislature passed two years ago.

She said she's also concerned about some of the "heavy-handed" tactics that Chattanooga is using to collect the fee from citizens

al report for the Legislature on section 8. It is taking pertaining to the stormwater fee and its efforts to comply with the federal Clean Water Act that mandated action from cities with a population of 100,000 or more.

The provision requiring cities to report was added to the state law through an amendment sponsored by Rep. Turner.

The city is supposed to make an annual report to the federal government on its stormwater compliance, said Rep. Turner, adding, "It would not be an additional burden to the city to give the Legislature the same report that they

"On the tax notice the city tries to say that Congress mandated that tax," Rep. Turner said. "But Congress enacted the Clean Water Act. It was the city that placed a tax burden on its citizens and businesses to do what city officials thought was needed to do to clean up the water."

"People are confused about who did what."

"The city wants to say that Congress placed a tax on them. But they (Congress) didn't. It was the city that established the rate. It was the city that chose to put it on property tax bills," Rep. Turner said.



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Stormwater is Complex

- Multiple issues:

- Flooding and drainage
- Water quality
- Groundwater recharge
- Habitat/resource protection
- Drinking water protection



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Stormwater Management Costs Money

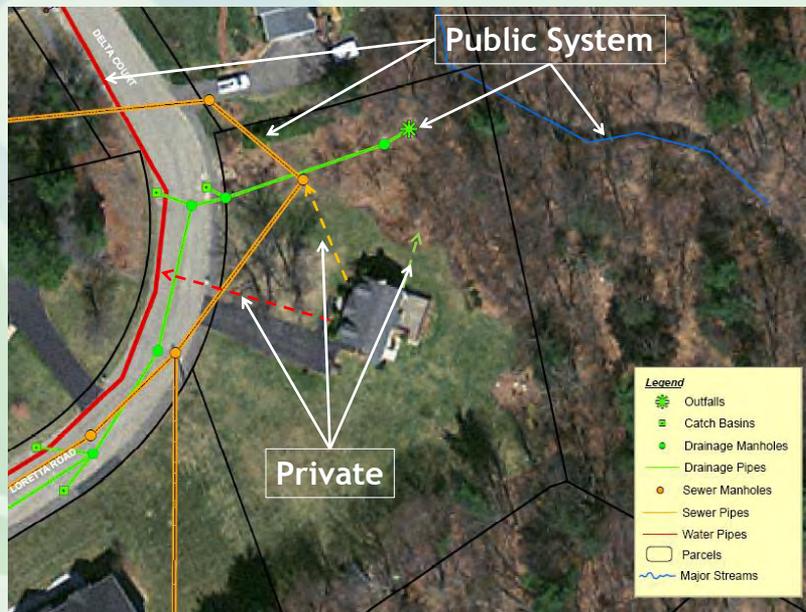
- Capital infrastructure;
- Operations and maintenance;
- Administration and enforcement; and
- Education and outreach.



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Is Stormwater so Different?



Range of Stormwater Management Services

- Flood reduction/protection;
- Stream channel erosion protection/restoration;
- Street sweeping;
- Catch basin cleaning;
- Culvert repair/replacements;
- Improved stormwater planning/watershed management;
- Leaf litter pick-up/disposal
- Public education, outreach and engagements;
- Maintenance of drainage systems;
- Construction and post construction inspections;
- Construction of new capital facilities;
- Maintenance of existing and new stormwater practices

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Phosphorus Free Fertilizers



In the spring of 2005, nearly all homeowners in Madison and Dane County had to purchase phosphorus-free yard fertilizers like this from area stores.



GreenX
A nitrogen-free and phosphorus-free product - keeps your lawn green and flexing during the nitrogen ban.

Soil Biologicals • Better root growth • Increases organic matter in the soil • Helps photosynthesis • Balances soil
Organic carbon • Growth stimulators • Minerals • Potassium • Buffers soil pH

INSTRUCTIONS: And Application: apply at rate of 1/2 to 1 lb. per 1,000 sq. ft. of lawn with maximum of 2 gallons of water per each 1,000 sq. ft. every 2 to 4 weeks, or as needed. Initial application: Apply 1/2 lb. of GreenX per 1,000 sq. ft. of lawn with maximum of 2 gallons of water. For soil test results, please contact your local retailer for more information. For more information, visit www.envirogreen.com. © 2005 EnviroGreen of Florida. All Rights Reserved.



2008 Grand Rapids MI ,

Spokane WA Detergent Phosphorus ban

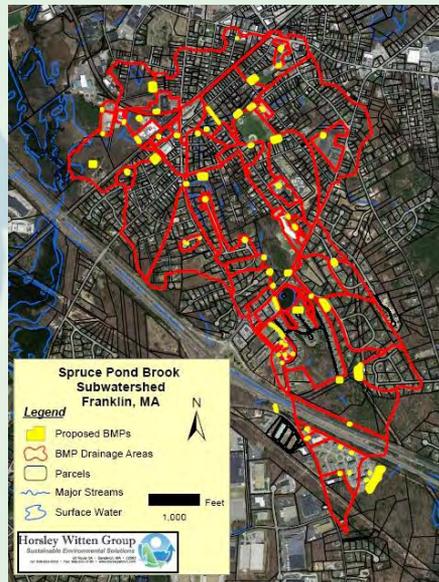
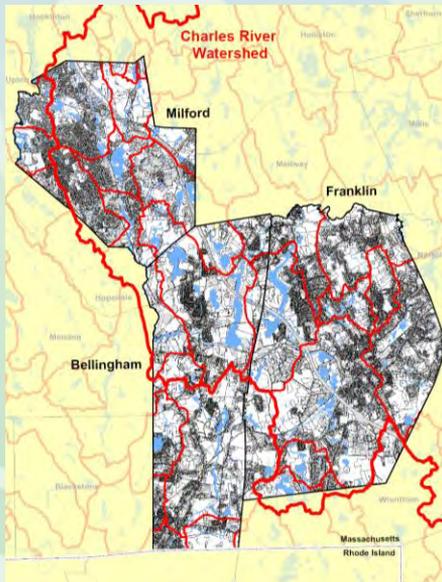


Suds-Smugglers Thwart Eco-Friendly Law
Mar 28, 2009 8:13 AM CDT

Enhanced Non-Structural Controls



Watershed Planning (subwatershed prioritization and practice identification)



Failed Sand Filter



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Construction of new sand filter completed



10/23/2003



Before Maintenance



After Maintenance

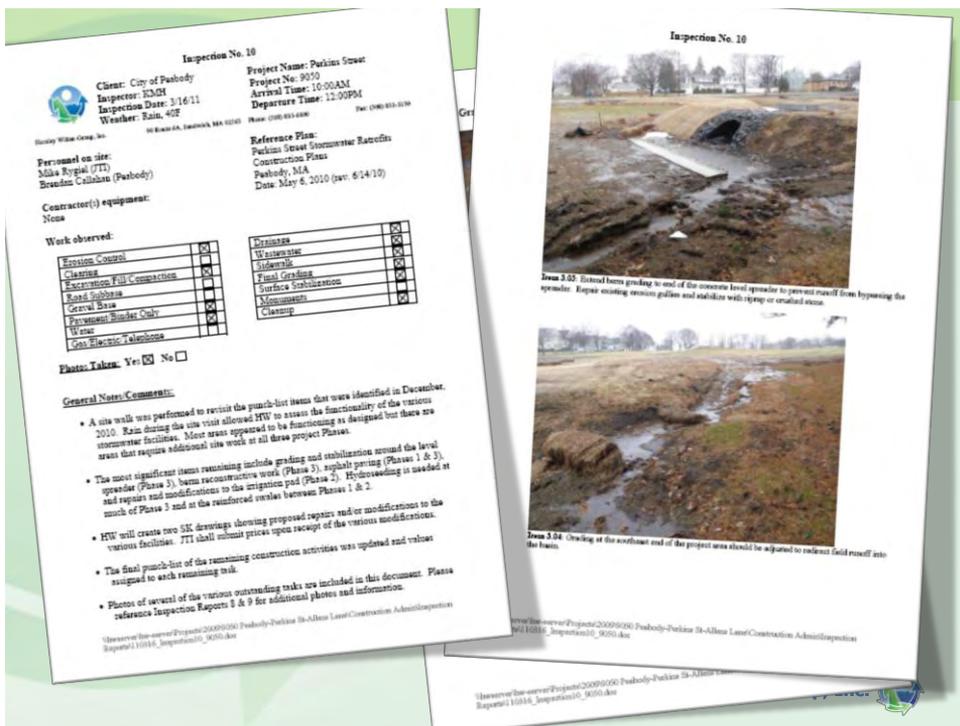


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Typical Public Maintenance Program

- Includes maintenance of both public and private stormwater facilities;
- Public facilities - parks, libraries, fire stations, DPW facilities, schools and others;
- Private facilities - Municipality typically performs structural maintenance, property owners will perform aesthetic maintenance.

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Example of Future Cost Items

- Update written Stormwater Mgmt Plan;
- Increased reporting/record keeping on annual reports;
- Targeted public education (2 messages to 4 audiences) and report results;
- Illicit discharge priority catchment assessments (including SSOs);
- Detailed outfall monitoring for both dry and wet weather;
- Written IDDE program with mapping and prioritization of problem catchments;
- Complete stormwater system mapping (all pipes/manholes/inlets/structures. Catch basin inspection/cleaning/inspection data;

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Future Cost Items (continued)

- Track # of site plan reviews, inspections, enforcement actions;
- ID/rank retrofit opportunities for municipally owned facilities;
- Develop a SWPPP for municipally owned facilities;
- Complete a code review and update/report;
- Impervious cover/DCIA tracking;
- Street sweeping optimization(2 times/yr);
- Written O&M procedures for municipal activities for trash, pet wastes, leaf litter control, fertilizer use & yard wastes;
- Pet waste & waterfowl mgmt plans.

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Resources, Funds & Revenue

- Resources are generally free such as volunteer labor or goods; technical information available for no cost;
- Funds are one-time \$, not dependable, not predictable, likely limited;
- Revenue is regular, predictable, dependable, provide cash flow (can be borrowed against)

The Universe of “Funding” Methods

- Modify local programs (fees/changes);
- Share Resources with other entities;
- Partner with non-profit organizations;
- Federal Programs
 - FEMA, COE, USGS, NRCS
 - FHWA (TEA 21)
- Corporate Sponsorship
 - Corp Wetland Partnership
 - Advertising
- State/Regional Programs;
 - Clean Water State Revolving Loan Fund Programs (SRF);
 - 319 Nonpoint Source;
 - 604(B) WQ Planning;
 - 104(b)3
 - NOAA Coastal Pollution Remediation
- Fees for Service
- General Fund (sales/income tax)
- Stormwater Utility Fees

New Hampshire State Revolving Fund

- SRF money is not free, but it is affordable.
- SRF loans have low interest rates and cover up to 100% of a project's costs with no matching requirement on behalf of the borrower (grants, typically require the grantee to provide matching funds that must be available at the start of a project).

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NH SRF Eligible Projects

“The SRF shall be used to provide financial assistance as authorized by a specific capitalization grant to governmental entities for the planning, design, and construction of pollution abatement projects, whether covered under §212, §319, or §320 of the WQA or a specific capitalization grant, including but not limited to the following:

- (a) Wastewater facilities;
- (b) **Stormwater management...;**”

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NH SRF Eligible Projects

Allowable Pollution Abatement Project Construction Costs

“Other stormwater management measures implemented as specified in Env-Wq 1508”

Other allowable costs for eligible projects shall include

“Allowable planning and design costs for an eligible pollution abatement project shall consist of all costs directly related to the planning and design of the project”

<http://des.nh.gov/organization/commissioner/legal/rules/documents/env-wq500.pdf>

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Lets Dig into the Stormwater Utility Option

Flexible

- Primary source for the whole program;
- Other fees still exist provide equity;
- Credits to encourage/promote desired behavior;
- Geographically based?
- Can take into account variable environmental costs.

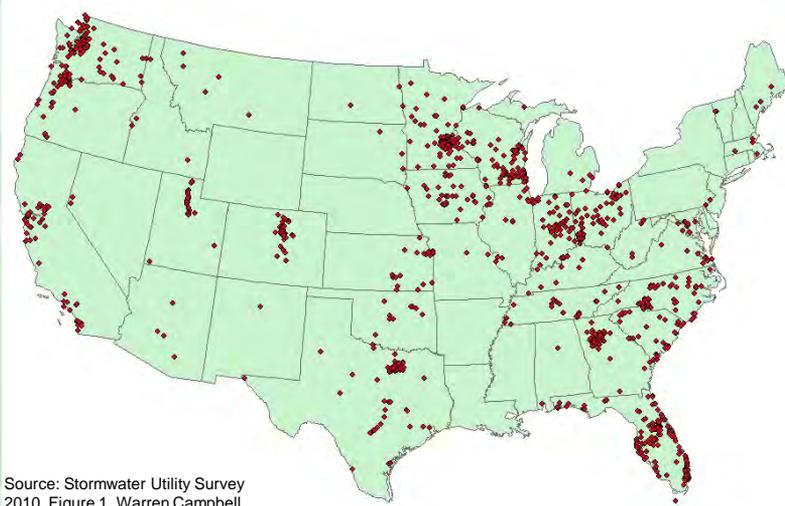
Equitable

- Costs a function of:
 - Runoff volume
 - Runoff rate
 - Pollutant loading
- Each of the above are directly related to amount of impervious cover.

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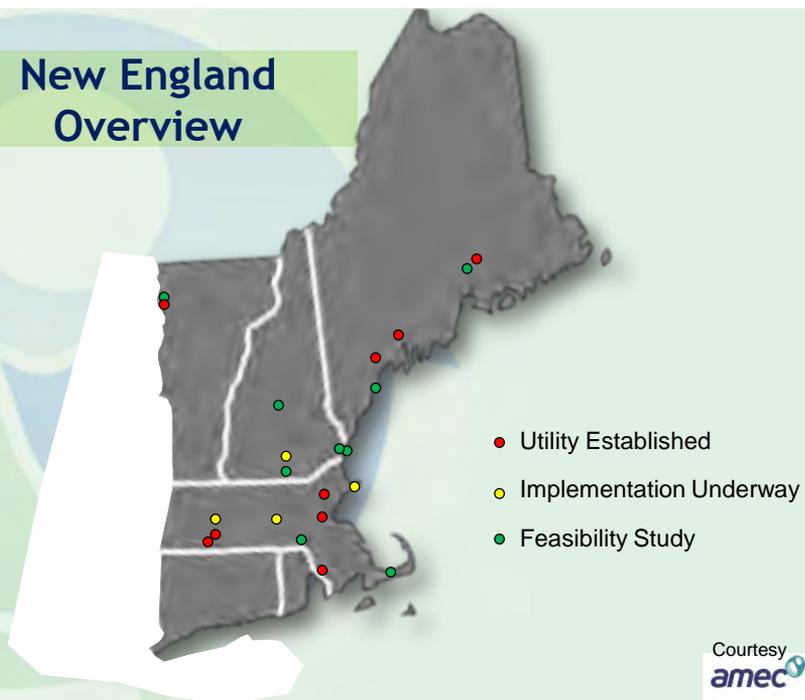
Existing Stormwater Utilities



Source: Stormwater Utility Survey
2010, Figure 1, Warren Campbell,
Western Kentucky University

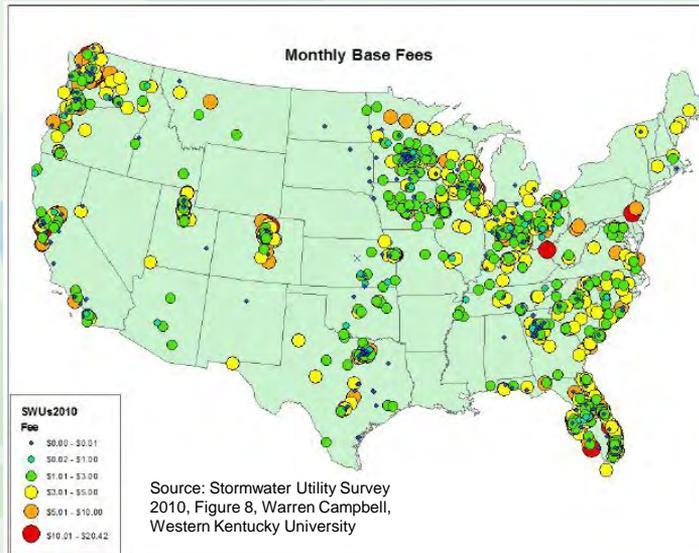
Courtesy
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New England Overview



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Distribution of SM Utility Monthly Fees Across the US



Status of NE Stormwater Utilities

Existing Established Entities: Feasibility Studies in NH:

- S. Burlington, VT;
- Lewiston, ME;
- Chicopee, MA;
- Reading, MA;
- Newton, MA
- Manchester;
- Nashua;
- Portsmouth;
- Dover

Augusta & Orono, ME &
Fall River & Westfield, MA
(i.e., Quasi-utilities - line item on a
sewer bill)

NH Legal Considerations

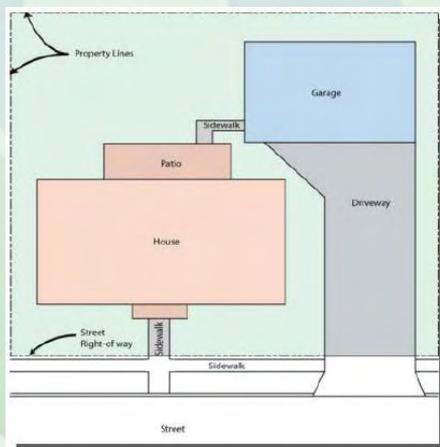
- Clear provisions in Title X: Public Health: Chapter 149-I SEWERS
 - Enter into contracts to provide stormwater services;
 - Charge for the use of sewers and main drains.
- But not fully vetted in an application
 - There is a “due diligence” process required by local government to establish the fee.
- Regulatory Fees:
 - Needed to regulate activities for the public good;
 - **Not** related to the cost of providing the service;
 - Typically a secondary funding method for specific purpose (e.g., peer review fees).
- User Fees requirements:
 - Be able to be identified separately from other services (**not general funds a Stormwater Utility Fund**);
 - Allow for abatements as a way to reduce or avoid the fee (**through credits**);
 - Be related to the level of “use” of the services (**rational nexus directly related to the cost of service**).

<http://www.gencourt.state.nh.us/rsa/html/x/149-i/149-i-mrg.htm>

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How are Fees Typically Calculated? Equivalent Residential Unit (ERU)



Graphic courtesy AECOM
Pewaukee Feasibility Study

- Average single-family residential impervious cover (based on best GIS or statistical sample) = 1 ERU
- Impervious area = house, patio, garage, driveway, and on-lot sidewalk
- Typical value = 2,700 sq ft to 3,500 sq ft

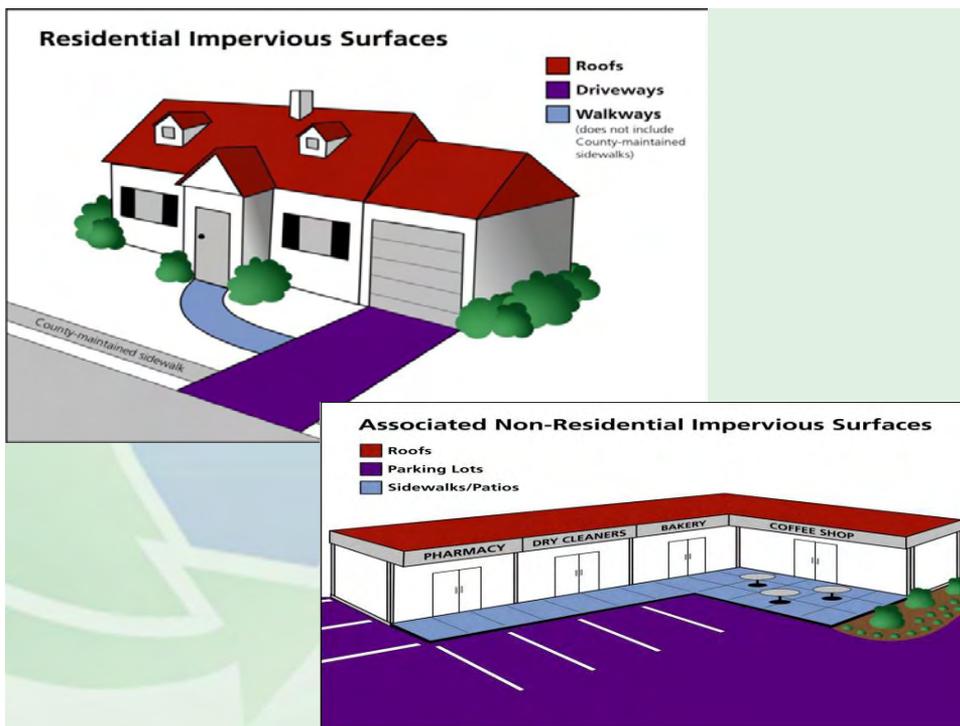
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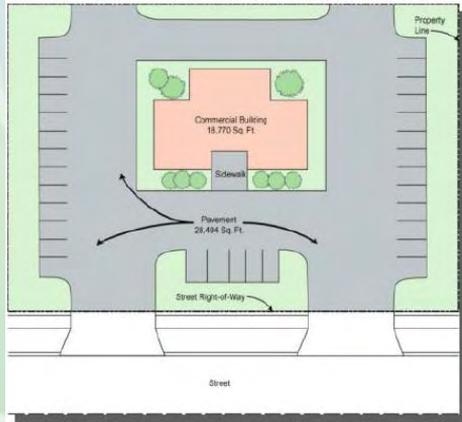
Residential Tiers

- Allows for variations in ERU fee structure for the range of development patterns and demand on municipal stormwater service;
- Tier analysis required (assessor's data, zoning info, review required services/cost);
- Typically no more than 3 tiers (high, medium, low density residential) - for example.
 - HDR = 1.5 ERU
 - MDR = 1.0 ERU
 - LDR = 0.75 ERU

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Non-Residential Properties Billed as Multiples of the ERU



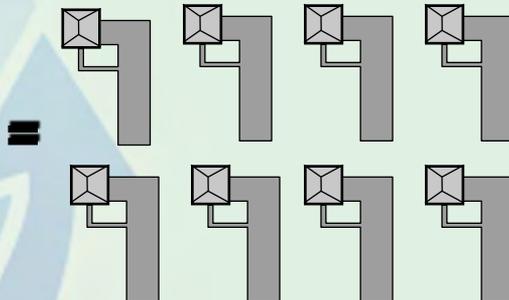
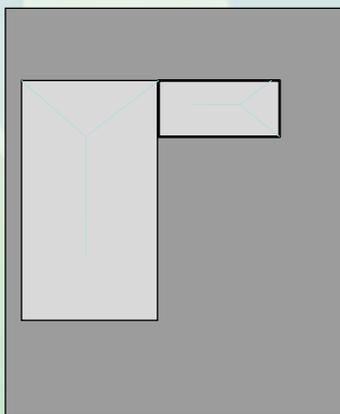
- Total site impervious area/ERU = # of ERUs

Example:
Total commercial site
IA = 47,260 sf / 3,500 sf
= 13.5 use 14 ERUs.

Graphic courtesy AECOM
Pewaukee Feasibility Study

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Or Graphically Non Single Family Residential ERU Calculation



Building Footprint = 10,000 sq ft
Parking Lot = 14,000 sq ft
Total Impervious Area = 24,060 sq ft
ERU = 3,000 sq ft
Total = 24,060/3,000 = 8 ERUs

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Adjustments and Credits

- Adjustments:
 - For added or removed impervious cover
 - To correct data (where better/more accurate information is provided)
- Credits:
 - Required per state law (legal challenges);
 - Properties that don't drain to the MS4;
 - For created/mitigative conditions
 - On-site water quality treatment systems;
 - On-site flood controls
 - On-site operation & maintenance is occurring



Establishing the Fees

$$\text{ERU rate (\$/ERU)} = \frac{\text{Total \$ Needed for Services}}{\text{Total ERUs in Municipality}}$$



For Example: Assume annual service requirements = \$1.25M, and community has 11,000 ERUs;

$$\text{ERU} = \$1,250,000 / 11,000 = \$113/\text{yr or approx. } \$10/\text{month}$$



Sand Filters

Stormwater Utility Options

Obviously there are lots of them:

- Add-on to an existing entity (e.g., Wastewater Management District)
- Entirely new entity in each municipality;
- Entirely new regional entity.

Advantages of a Regional Approach

- Some things have no geographic boundaries (e.g. education);
- Some things will benefit from more opportunities to do them (e.g. potential phosphorous reduction sites);
- Some things have administrative fixed costs which could be spread across a bigger base.

Who might not like a stormwater utility?

- Tax exempt property owners;
- Properties with very large impervious surfaces;
- Those on fixed incomes;
- Some developers;

- And as my colleague Andy Reese likes to say: “**Maybe Everyone**”

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Implementation Details

Setting up a successful utility will require the community to pay particular attention to the details.

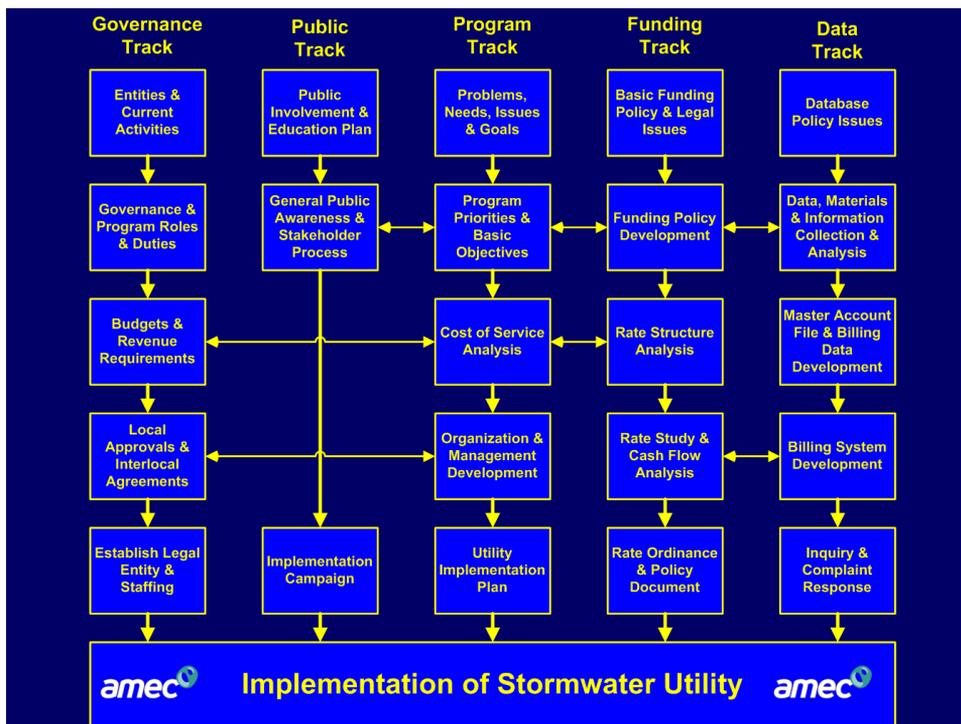
- Governance and consensus across municipal departments;
- The “Program” is clearly defined and a strong argument is made;
- Public and Political Education and Support;
- Financial procedures and policies; and
- Accurate and complete database and customer service is provided

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Process for Utility Implementation

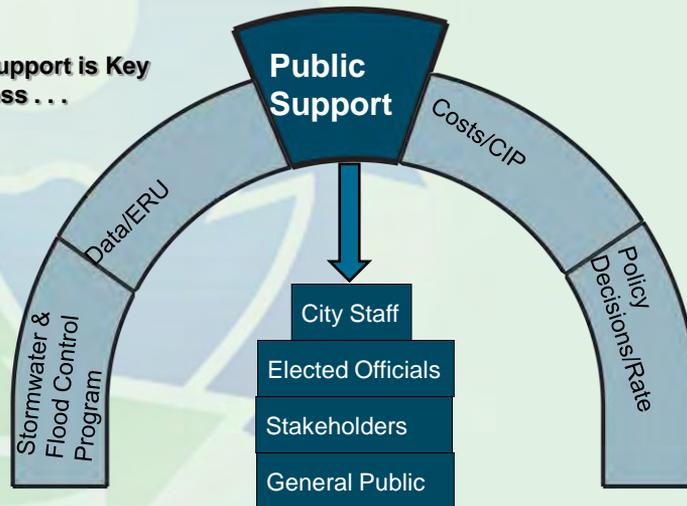
- Advisability Study (background-case-cost/revenue);
- Feasibility Study (business plan);
- Implementation
 - Public outreach
 - Develop/adopt utility ordinance
 - Adopt rate and credit resolutions
 - Incorporate into billing process

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This is NOT an Engineering Exercise . . .

Public Support is Key
to Success . . .



Success or Failure - It's All in the Process . . .

- ◆ Follow an **effective process** and get good advice.
- ◆ Involve the community **early** enough and in the right ways - GET PUBLIC SUPPORT.
- ◆ Make your program and user fee easy to understand.
- ◆ **Prepare your elected officials** for negative feedback - give them solutions.
- ◆ Think of the long-term benefits and recognize **the pain is worth the gain**.
- ◆ Spend the money it takes - you get what you pay for.

Courtesy
amec

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Additional Resources

- **Western Kentucky University Stormwater Utility Survey, 2010:**
<http://wku.edu/engineering/wp-content/uploads/2010/07/Western-Kentucky-University-SWU-Survey-2010.pdf>
- **Black and Veatch 2010 Stormwater Utility Survey:**
http://www.bv.com/markets/management_consulting/Stormwater_Survey.aspx
- **EPA Fact Sheet: Funding Stormwater Programs:**
<http://www.epa.gov/region1/npdes/stormwater/assets/pdfs/FundingStormwater.pdf>
- **DES Stormwater Utility** <http://des.nh.gov/organization/divisions/water/stormwater/utilities.htm>
- **Charles River Watershed Association: Assessment of Stormwater Financing Mechanisms in New England:** <http://www.crwawater.org/projects/stormwater/swutility.html>
- **New England Environmental Finance Center: Stormwater Utility Fees: Considerations and Options: 2005** <http://efc.muskie.usm.maine.edu/docs/StormwaterUtilityFeeReport.pdf>
- **U.S. Environmental Protection Agency, Watershed Academy. Catalog of Federal Funding Sources for Watershed Protection**
<http://cfpub.epa.gov/fedfund>
- **2011 Rhode Island LID Site Planning and Design Guidance Document**
<http://www.dem.ri.gov/programs/benviron/water/permits/ripdes/stwater/t4guide/lidplan.pdf>

The screenshot shows the Watershed Academy website. The main heading is "Catalog of Federal Funding Sources for Watershed Protection". Below this, there is a detailed description of the catalog, which is a searchable database of financial assistance sources. It lists various criteria for searching, such as subject matter, state, business type, and keywords. There are also links for "Home", "About Us", "Contact Us", and "Feedback".