Tackling Stormwater Education and Outreach: Developing A Master Strategy for Pawtucket

Education Goal #1:
Storm drains lead to local water bodies, regardless of whether some treatment is provided.

Primary Audience:
Could be city-wide, but especially in neighborhoods near the outfalls that dump directly into local waters, bypassing the combined sewer

Key Messages:

- When storm drains are not directed to a treatment plant, they flow directly to local water bodies. Anything that goes down those storm drains goes into local waters without treatment.
- Even storm drains that carry water to a treatment plant have the potential to pollute – treatment is partial, and during large storms, the sewers overflow taking both stormwater and sewage to local water bodies.
- Never dump anything down a storm drain. Wash water, leaves, and other seemingly harmless materials also pollute stormwater and can clog drains, causing flooding.
- Recycle motor oil at a local center; drop-off paint and other household wastes at the Eco-Depot.

Hooks To Incorporate Within Messages:

- Dumping anything down storm drains can contribute to nuisance flooding.
- Fishing and boating on the Blackstone and swimming at local beaches are directly affected by what goes down storm drains.

Overview of Possible Methods:

Method	Resources	Contact
Direct mail to residents using cartoons and *It's That Time of Year* Series (provided in English and Spanish[2]); direct mail costs could be minimized, if only neighborhoods with separate sewers are targeted	URI Binder[1] Section 1	
Ads in the Valley Breeze, using cartoons and *It's That Time of Year Series*	URI Binder Section 1	

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Op-Ed articles in the *Valley Breeze*, addressing general storm drain awareness and the issue of pet waste as a pollutant	URI Binder Section 1	
A static screen display for the Town Hall lobby TV, using elements from our 2008 statewide campaign[3] (Depending on whether or not a single, static image could be used, this might be aired on the Cox Cable program "What's Going On In Pawtucket.")		
Incorporate storm drain info through Kid's Watershed display, with accompanying fact sheets for parents, at a school, library program, or at the Dragon Boat Race[4] (if appropriate)	URI Binder Section 6	-School science teachers -Local library -Narragansett Bay Commission? -RI Resource Recovery -Keep Blackstone Valley Beautiful -Northern RI Conservation District -Audubon Society (Eugenia Marks) -Stormwater Education Programs (URI Binder Section 6)

Footnotes and Ways URI Can Help:

1. Most of our existing materials assume that outfalls discharge directly to water bodies, not to treatment facilities, as is the case with a combined sewer. So any materials targeting neighborhoods with combined sewers need to be edited. **When necessary, we can help adapt any of the existing materials contained within the binder, so that they are customized for Pawtucket. We currently are in contact with the Narragansett Bay Commission to determine their educational messages about combined sewers and their unique issues, and we will keep you apprised of our progress.**

2. We can contact URI's Spanish Language Program regarding translation may be able to help cover costs. We contacted Rhode Island Resource Recovery Corporation (Nate Hannon) about their previous translation work, but have no definitive answers yet. **We are currently coordinating a meeting between ourselves, RIRRC, and Keep Blackstone Valley Beautiful.** Although Keep Blackstone Valley Beautiful's VISTA intern, Emily Soergel, will be leaving in July, her supervisor has indicated that he is willing to help participate in stormwater education efforts within the Blackstone communities. We will keep you apprised of any progress we make.

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3. To check out the ads that we aired on buses in the summer of 2008, visit our website at: http://www.ristormwatersolutions.org/SW_statewidecampaign.html **We could customize the Speedo ad**, if you thought it was appropriate for your residents, so that: it includes a reference to local water bodies (Blackstone River, Ten Mile River, the Moshassuck); it mentions flooding; and/or includes the City's website in addition to ours.

4. If the Dragon Boat Race usually has vendors, one of the listed contacts might be interested in having a booth with a stormwater education display, such as our watershed display. The display could focus on a connection between the quality of the River being used for the race and what goes down storm drains. **During our conversations with the Narragansett Bay Commission, we learned that they have offered student programs in the past, and we are waiting for follow-up to determine if that would be a current possibility for Pawtucket.**

We can assist with any questions or coordination with other groups.

Education Goal #2:
Keeping water out of storm drains and on your property can help prevent nuisance flooding.

Primary Audience:
Areas where frequent flooding and back-ups occur

Key Messages:

- Directing water onto vegetated areas such as lawns can help prevent flooding and sewer back-ups.
- If the runoff from your roof flows directly onto pavement, consider using downspout extenders to direct the water onto a landscaped area instead.
- Runoff can also be directed to a rain garden, which is a natural or dug shallow depression designed to soak up water.
- Roof runoff can be captured in a rain barrel and used later for irrigation.

Supporting Messages:

- It's best to wash your car at a certified car wash facility, but if you wash it at home, moving your car off a paved surface and onto a lawn or gravel driveway can help keep the polluted wash water out of storm drains.
- Always pick up your pet's waste and throw it in the trash – never in a storm drain. In addition to contributing pollutants such as bacteria, it can clog the drains, causing flooding.
- Adjust sprinklers so that they don't water paved surfaces.

Method	Resources	Contact
Hold a Rain Barrel Sale[1]	URI Binder Section 3	- New England Rain Barrel - Great American Rain Barrel - Narragansett Bay Commission? - Local environmental, watershed, or civic groups - Boys Club
Hold a Yard Care Workshop (emphasizing onsite stormwater management) at the local library or at a regularly-scheduled meeting of a local group[2]	URI Binder Section 3	-Vanessa Venturini (874-7142) or the Cooperative Extension Center to reach a Master Gardner who can give the workshop -Local civic groups, rotary clubs, plant societies, landscape centers

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Create a demonstration rain garden on City property (e.g. at a local school)	URI Binder Section 3	-DEM for potential 319 funds to fund the project - Local landscape architect who might donate his/her time - Local civic groups, rotary clubs, plant societies, landscape centers who might volunteer time or materials
Use the Rain Barrel Sale, Yard Care Workshop, or Demonstration Rain Garden to publicize key messages in the *Valley Breeze*	URI Binder Section 3 URI Binder Section 1: *It's That Time of Year* Series, fact sheets, and Op-Ed pieces can be customized for this purpose.	
A static screen display for the Town Hall lobby TV, emphasizing one behavior for keeping water onsite[3] (Depending on whether or not a single, static image could be used, this might be aired on the Cox Cable program "What's Going On In Pawtucket.")		
Incorporate a new column into the recycling newsletters (if those continue to be published) about "Recycling Water." These would focus on behaviors that keep water onsite.	URI Binder Sections 1 and 3: *It's That Time of Year* Series, fact sheets, and Op-Ed pieces can be customized for this purpose.	

Footnotes and Ways URI Can Help:

1. We called the Narragansett Bay Commission and were informed that they have held rain barrel sales, so they might be a potential contact with whom to work. We are expecting follow-up from them and will keep you apprised of any additional information.

2. Having a pre-determined attendance is essential. The Master Gardner will not hold the talk without having at least 20-25 attendees guaranteed. Having the workshop at an already-scheduled meeting (such as a Rotary Club meeting) might be the best approach.

3. We might be able to assist with the development of this.

When necessary, we can help adapt any of the existing articles and factsheets contained within the binder, so that they are customized for Pawtucket.

Education Goal #3:
Support adoption and promote compliance with a stormwater ordinance designed to keep stormwater runoff onsite with new construction, expansion and redevelopment on individual parcels. Incorporate into zoning, other ordinance or subdivision regulations.

Objectives:
Prevent increase in volume of stormwater runoff from existing or pre-development conditions to

- prevent nuisance flooding to neighboring properties;
- reduce stormwater volume and pollutants entering drainage system;
- promote pollutant removal by filtering and infiltration, maintain groundwater recharge and stream flow.

Primary Audience:

- Council, board and commission members
- Developers, builders
- Property owners
- Applicants for building permits.

Options:
Does a general ordinance already exist that applies to individual parcels? If so, educational materials can focus on existing requirements, information to be included in an application, and example solutions.

Example ordinances from other municipalities

1. The following East Providence zoning provision ties the allowable increase in impervious area to the lot building coverage.

East Providence
Code of Ordinances
Chapter 19 Zoning
http://clerkshq.com/default.ashx?clientsite=eastprovidence-ri

ARTICLE VIII. DEVELOPMENT PLAN REVIEW

Sec. 19-455. Drainage/erosion standards.

(10) Stormwater management. All developments shall be constructed and maintained such that adjacent or neighboring properties are not unreasonably burdened with surface waters as a result of such developments. More specifically:

a. No development may be constructed or maintained such that development unreasonably impedes the natural flow of water from higher adjacent or neighboring properties across such development, thereby unreasonably causing substantial damage to such higher adjacent or neighboring properties;

b. No development may be constructed or maintained such that surface waters from the development are unreasonably collected and channeled onto lower adjacent or neighboring properties at such locations or at such volumes as to cause substantial damage to such properties. The drainage plan shall address potential impacts on downstream property based on a 25-year storm. Off-site analysis shall be included in the drainage plan when required by the DPR committee; and

c. Storm drains shall be designed based on a ten-year storm design.

(11) Impermeable surface coverage.

a. Impermeable surfaces. For the purposes of calculating the amount of impermeable surface coverage, impermeable surfaces shall include all roads, driveways, parking areas, buildings, decking, rooftop landscapes and other impermeable construction covering the natural landscape. Swimming pool surface water areas for pools which discharge to the storm drainage system shall also be included. Water quality and detention basins, swales, and conveyances for drainage purposes only shall be calculated as impervious cover.

b. Amount permitted. The maximum amount of the site that may be covered by an impermeable surface shall be determined by adding 20 percent of the site area to the maximum percent of lot building coverage established in schedules in sections 19-145 and 19-146, as applicable, of the zoning ordinance. For developments located near (within 200 feet of surface waters which are sensitive to runoff impacts, or for any developments from which runoff is discharged into any wetland or coastal feature, as defined by the state department of environmental management or the RI CRMC, the DPR committee may require a reduction of up to ten percent of the maximum allowable area of impermeable surface in order to mitigate the potential impact to the surface waters or wetland system. For developments located near wetlands or coastal features, compliance with requirements imposed by the DPR committee shall not remove the need to obtain appropriate state or federal approvals and to comply with any associated conditions.

c. Design. Applicants shall integrate the location of permeable surfaces with the overall drainage plan for the site. Natural buffer

strips should be maintained adjacent to surface waters. Where this is not possible, vegetative filter strips, using seed mixtures recommended for this purpose and which require minimal or no fertilization should be used.

d. Parking areas. For developments located near surface waters, or for any developments from which runoff is discharged into any wetland, the DPR committee may permit the use of permeable paving materials for surfacing parking areas, provided adequate provisions have been made for delineation of parking spaces and for maintenance. It is the intent of this section that permeable surface areas shall be landscaped, and use of permeable paving materials for parking areas shall be permitted only where warranted by water quality and drainage enhancement considerations.

2. The following Narragansett ordinance requires stormwater control for projects increasing impervious cover more than 10%. The standards for keeping runoff onsite could be stronger and also apply to redevelopment projects.

Narragansett
Code of Ordinances
Chapter 78 Utilities, Article III. Sewers
http://www.municode.com/resources/gateway.asp?pid=11204&sid=39

(Ch. 789, § 4, 9-20-1999; Ch. 811(1), § 1(7.6), 3-4-2002; Ch. 878, § 2, 7-3-2006)

7.7. Supplementary drainage requirements.
No land alteration, construction, or development in the town of Narragansett may result in an increase in the rate or volume of stormwater runoff, erosion, or sedimentation off-site or downstream. All proposed construction and development which will increase the impervious surface on any lot or tract by more than ten percent of the lot area shall include systems to manage stormwater and to control erosion and sediment.
(1) Stormwater *management.* The stormwater management system for any site shall be designed to offset the increase in the rate of stormwater resulting from the proposed development. It shall implement the techniques and measures recommended in the most current revision of or supplement to "Urban Hydrology for Small Watersheds, Technical Release No. 55," prepared by the United States Department of Agriculture, Soil Conservation Service.
The system shall incorporate, to the maximum extent practicable, the natural drainage features of the site, including natural drainageways and permanent and periodic ponding areas. It also shall include stormwater control facilities such as pipes, ditches, culverts, swales, and, if necessary, water retention areas and structures.

The system shall prevent the discharge of stormwater runoff onto adjoining property in a manner which causes flooding or impairs the use or development of the property. Temporary stormwater and erosion control facilities adequate to protect adjoining property shall be installed at the commencement of construction, excavation, grading, or removal of vegetation. For purposes of this section, any property which faces a construction site across any street or highway shall be deemed adjoining property.