

~~Five~~ Seven Strategies to Improve Your Community's Stormwater Program

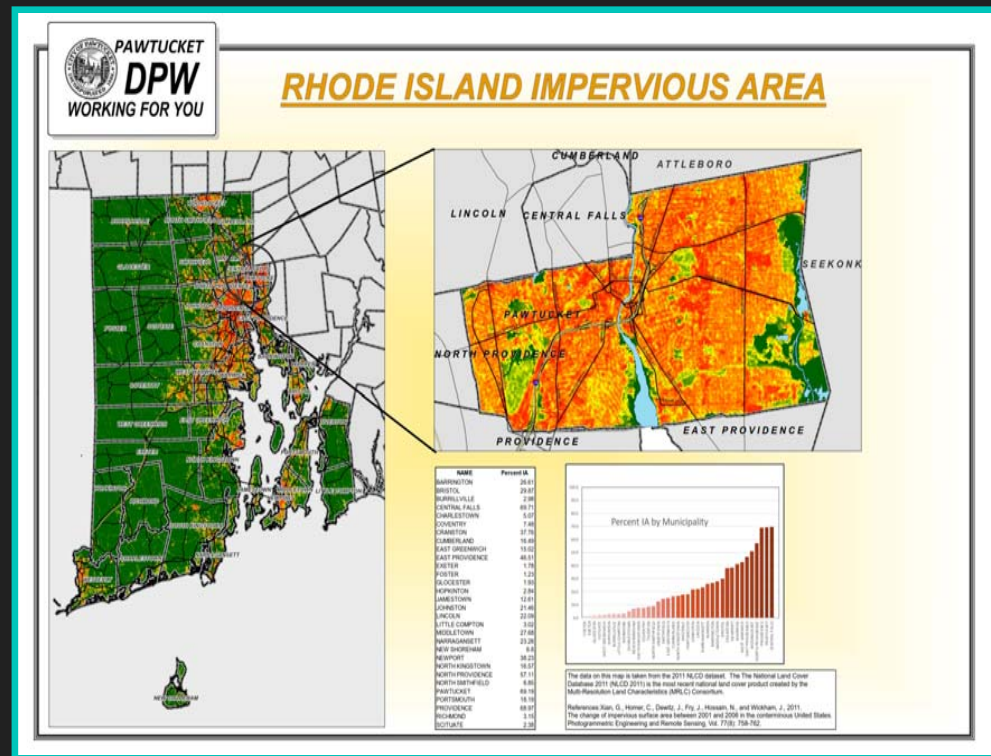
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GREEN INFRASTRUCTURE IS THE SOLUTION. WHAT IS THE PROBLEM?

THIS MUCH IMPERVIOUS
AREA...



GREEN INFRASTRUCTURE IS THE SOLUTION. WHAT IS THE PROBLEM?

...CAUSES THIS

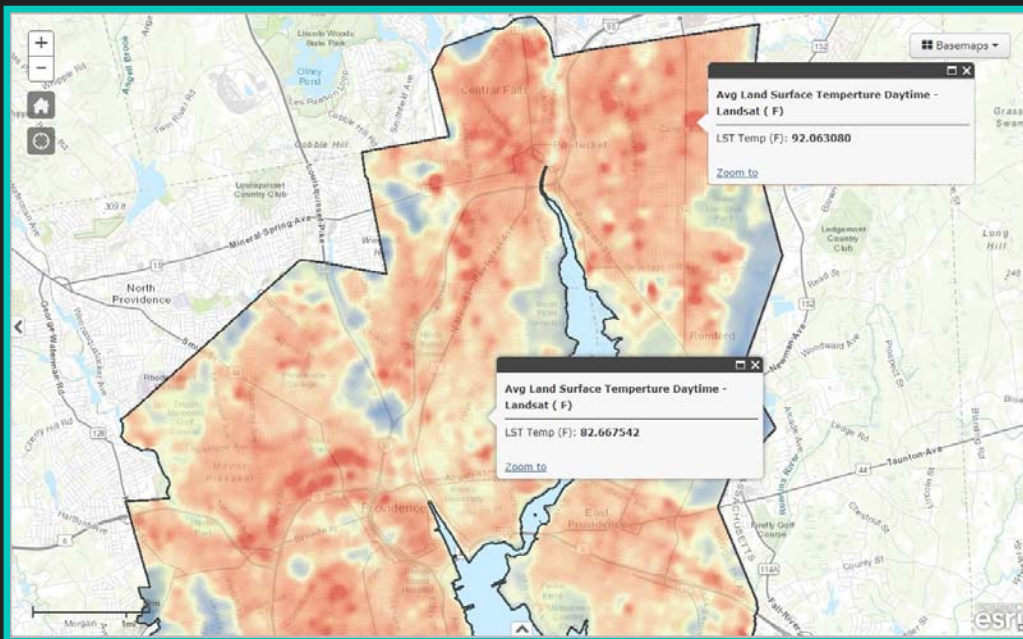


...AND THIS



GREEN INFRASTRUCTURE IS THE SOLUTION. WHAT IS THE PROBLEM?

...AND THIS



Stay cool, New England

Data from a new study helped to lower the threshold for regional heat index warnings from the National Weather Service.

As heat index climbs, emergency visits, deaths rise in New England

May 10, 2017 Media contact: [David Orenstein](#) 401-863-1862

New research shows that New Englanders are susceptible to serious health effects even when the heat index is below 100, a finding that has helped to change the National Weather Service threshold for heat warnings.

PROVIDENCE, R.I. [Brown University] — Better known for leaf peeping on crisp autumn days and the nor'easter blizzards that follow, New England is nevertheless subject to spells of punishing summer heat and humidity. A new study that analyzed the health effects of summer weather in small to midsize population centers in three states shows that deaths and emergency department visits begin to rise significantly across the region well before the heat index hits the triple digits.

Data from the study, published in *Environmental Research*, has helped to shape a new National Weather Service policy for the New England region, according to a [recently posted statement](#) from the service's eastern region headquarters.

"The old threshold of 100 to 104 degrees Fahrenheit for two or more consecutive hours has been lowered to 95 to 99 degrees Fahrenheit occurring for two or more consecutive days, or any duration of heat index 100 to 104 degrees Fahrenheit," the statement says.

Heat index is a measure that combines temperature and humidity to express what the heat actually feels like. An 86-degree day with 70 percent humidity, for example, is enough to produce a heat index of 95.

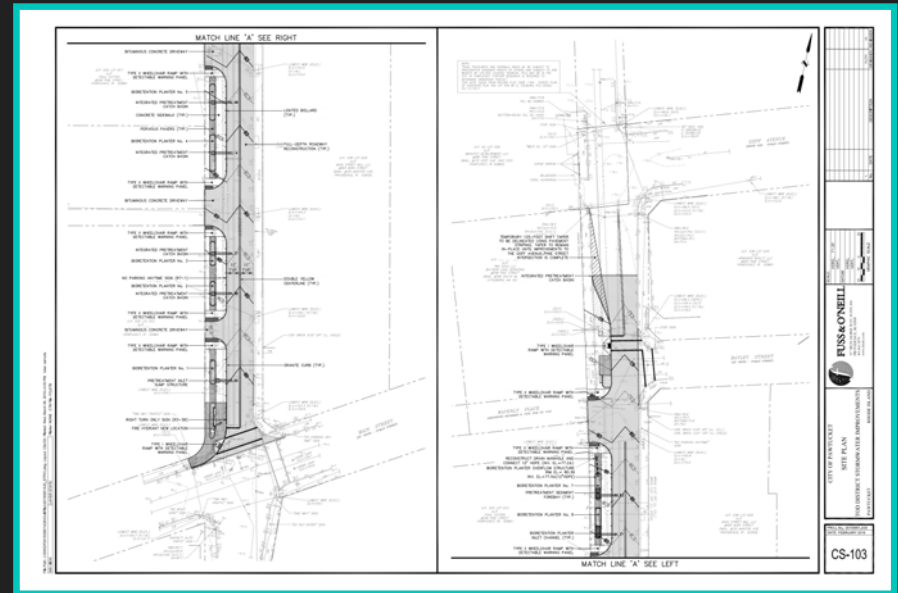
In the new analysis, researchers at Brown University and the state health departments of Maine, New Hampshire and Rhode Island found that compared to days with a comfortable heat index of 75, days with a heat index of 95

STRATEGY #1 – GIVE A DAMN

- THIS WON'T BE EASY. YOU WILL NEED RESILIENCE TO OVERCOME PERSISTENT PUSHBACK, e.g.:
 - "IT'S TOO DIFFICULT"
 - HALF TRUE! THIS WORK IS DIFFICULT, *BUT*
 - MUNICIPALITIES OVERCOME LOTS OF COMPLICATED CHALLENGES. THEY MAKE THE EFFORT WHERE THEY CARE.
 - YOU HAVE HELP IN RHODE ISLAND (MORE ON NEXT SLIDES)
 - "IT'S TOO EXPENSIVE"
 - THEN GET CREATIVE. DO SOMETHING INEXPENSIVE!
 - PAWTUCKET – 3RD LOWEST PER CAPITA INCOME IN RI – IS MAKING LOTS OF INEXPENSIVE IMPROVEMENTS. WHAT'S YOUR LOCAL GOVERNMENT'S EXCUSE?

STRATEGY #2 – START SMALL, EXPAND INCREMENTALLY

- CHALLENGE: FOR MANY COMMUNITIES, STORMWATER MANAGEMENT IS A NEW PRACTICE. UNKNOWNs AROUND, AND RISK AVERSION IS A POWERFUL FORCE.
 - SOLUTION: START SMALL. EXPAND INCREMENTALLY.
 - EXAMPLE FROM PAWTUCKET:
 - 2014: EXPANDED EXISTING TREE PLANTING PROGRAM
 - 2015: SMALL, GRANT-FUNDED PROJECT
 - 2017: SMALL, CITY-FUNDED RAIN BARREL PROGRAM
 - 2018: LARGE, GRANT-FUNDED PROJECT
 - END GOAL: STORMWATER ENTERPRISE FUND (STORMWATER UTILITY)



STRATEGY #2 – START SMALL, EXPAND INCREMENTALLY

EXAMPLES OF SMALL-SCALE, INEXPENSIVE (<\$1,000) IMPROVEMENTS



ROOF DOWNSPOUT DIVERSION
\$10±



RAIN BARREL
\$50±



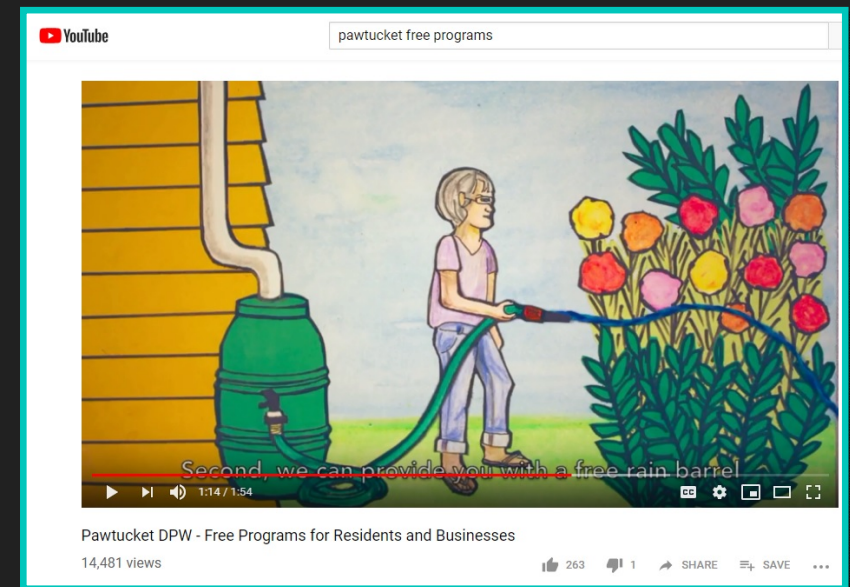
PAVEMENT REMOVAL / GRASS STRIP
\$35± PER SY



STREET TREE WITH FENCE
\$1,000±

STRATEGY #3 – KNOW YOUR AUDIENCE

- CHALLENGE: VAST MAJORITY OF PUBLIC DOESN'T HAVE A "STEM" BACKGROUND AND WON'T UNDERSTAND YOUR ACRONYMS AND INDUSTRY JARGON.
 - SOLUTION: USE BASIC, ACCESSIBLE LANGUAGE. MS WORD CAN HELP!
 - EXAMPLE FROM PAWTUCKET: YOUTUBE STORMWATER VIDEO
- CHALLENGE: GET TO KNOW DECISION MAKERS, AND WHAT THEY CARE ABOUT.
 - SOLUTION: FOCUS YOUR MESSAGING ON WHAT MATTERS TO YOUR AUDIENCE. *HINT*: THIS LIKELY WON'T BE YOUR MS4 PERMIT.
 - EXAMPLE FROM PAWTUCKET: TOD DISTRICT STORMWATER IMPROVEMENTS PROJECT, DIRECTLY ADJACENT TO ISLE BREWERS GUILD.



STRATEGY #4 – LEVERAGE PARTNERSHIPS

○ HELP IS AVAILABLE IN RI

○ GREEN INFRASTRUCTURE COALITION

- THE NATURE CONSERVANCY
- AUDUBON SOCIETY
- CLEAN WATER ACTION
- GROUNDWORK RI
- OTHER NON-PROFITS

○ LOCAL AND STATE GOVERNMENT

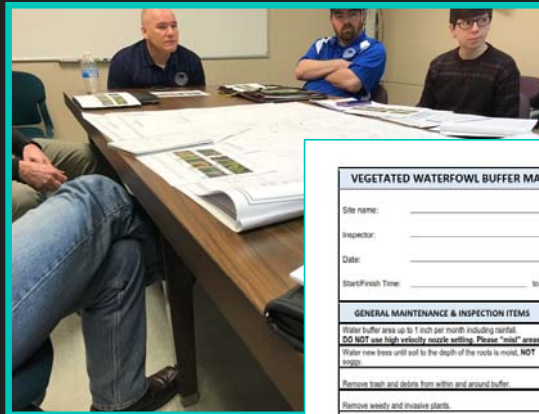
- RIDEM (JENNIFER STOUT, ERIC BECK)
- MUNICIPAL OFFICIALS (PVD: BRIAN BYRNES, SMITHFIELD: KEVIN CLEARY, NEWPORT: SCOTT WHEELER)

○ WATERSHED ORGANIZATIONS

- WOONASQUATUCKET RIVER WATERSHED COUNCIL

○ LOCAL INFLUENCERS

- CAMPAIGN DONORS, KEY BUSINESS INTERESTS, ETC.



VEGETATED WATERFOWL BUFFER MAINTENANCE & INSPECTION CHECKLIST				
Site name:	_____			
Inspector:	_____			
Date:	_____			
Start/Finish Time:	_____ to _____			
GENERAL MAINTENANCE & INSPECTION ITEMS	N/A	DONE	NEEDS REPAIR	COMMENTS
Water buffer area up to 1 inch per month including berms DO NOT use high velocity nozzle setting. Please "mist" areas. Water new trees until soil to the depth of the roots is moist. NOT spray.				
Remove trash and debris from within and around buffer.				
Remove weeds and invasive plants.				
Remove sediment build-up.*				
Check for and repair soil erosion gullies within the gardens.				
Check for standing water in planting beds B, C and D 48 hours after a storm event.				
Perform spring and fall clean-ups.				
Mow planting area D, Little Bluestem, to 1/3 height once in Apr or Nov.				
Mulch to a depth of 2 inches in loose thickness.				
Revegetate only large bare patches with approved plugs or seeds during growing season. Soak per planting plan specs.				
Repair erosion on all contributing areas within park.				
Fill in animal burrows within or near buffer areas.				
Repair signage if faded or legible, and replace if missing.				
Comments:	_____			

* Sediment shall be disposed of offsite in a pre-approved location.



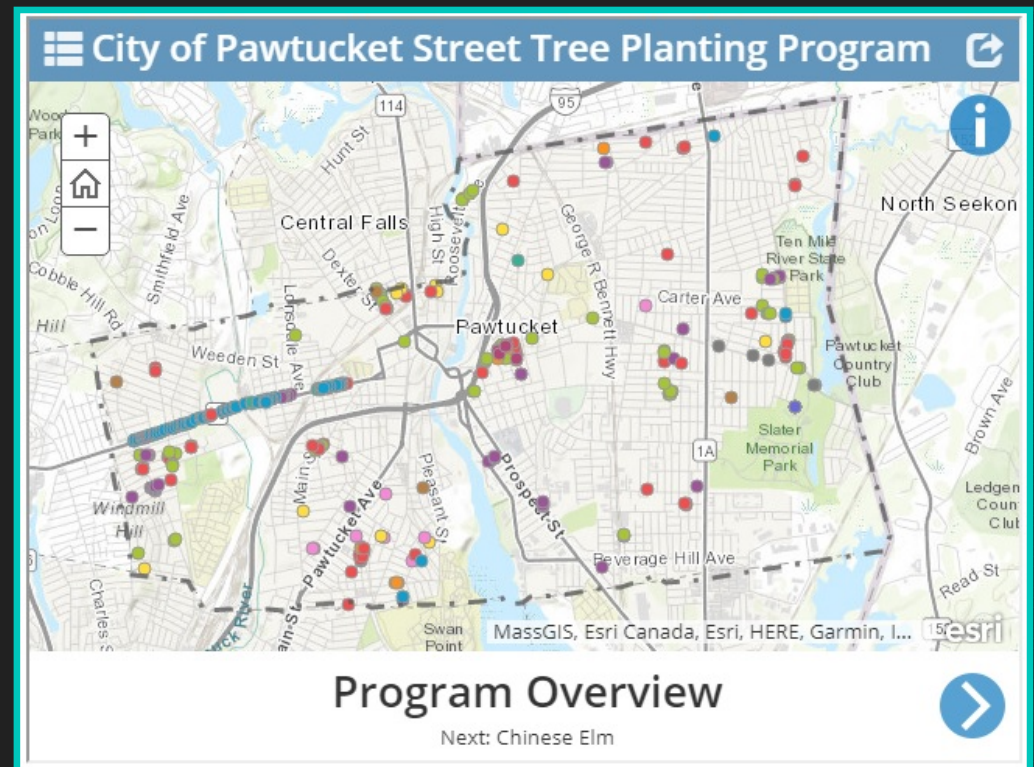
STRATEGY #5 – “INFILTRATE” PROJECTS

- EXAMPLE: PAYNE PARK REDEVELOPMENT
 - RAIN GARDENS USED TO CAPTURE AND INFILTRATE RUNOFF FROM PARK'S IMPERVIOUS SURFACES AND SPRAY PARK RUNOFF
 - WILL SAVE CITY \$5K± ANNUALLY IN SEWER BILLS. DESIGN TEAM DEMONSTRATED TO NBC THAT ALL SPRAY PARK RUNOFF WAS INFILTRATED ON SITE.
 - INCREASED NUMBER OF TREES ON SITE FROM 3 TO 43.



STRATEGY #6 – PLANT TREES, TREES, AND MORE TREES

- BENEFITS OF TREES ARE ALMOST ENDLESS
 - STORMWATER ABSORPTION
 - SHADE / COOLING
 - MENTAL HEALTH
 - PUBLIC SAFETY / CRIME REDUCTION
 - IMPROVES HABITAT, BIODIVERSITY
 - ETC.
- A FEW BEST PLANTING PRACTICES:
 - TREE WELL SIZE: 25-50± SQUARE FEET
 - ADD A PERIMETER FENCE AND MULCH ON SURFACE (REDUCES SOIL COMPACTION)
 - PLANT NUMEROUS SPECIES (BUILDS RESILIENCE TO PESTS & DISEASE)
 - AVOID CONFLICTS WITH UTILITIES, SIGNS, OTHER FEATURES



STRATEGY #7 – DON'T BE AFRAID TO FAIL

SOME ENGINEER I AM!

(THINGS LIKE THIS WILL HAPPEN.
DON'T BE DISCOURAGED.)

