

Stormwater Education Best Practices

A review of communication practices and strategies to inform stormwater management decisions and behaviors



pec

Purpose and Methods

- *Determine communications/messaging strategies for stormwater education*
- *Review examples from region and nation*
- *Interview managers*
- *Lessons Learned*
- *Adapt to DWRI*



American Rivers
Thriving By Nature

Messages for Change:

Using Stormwater Communications Research to Inform Advocacy for Environmental Site Design Solutions (2008)

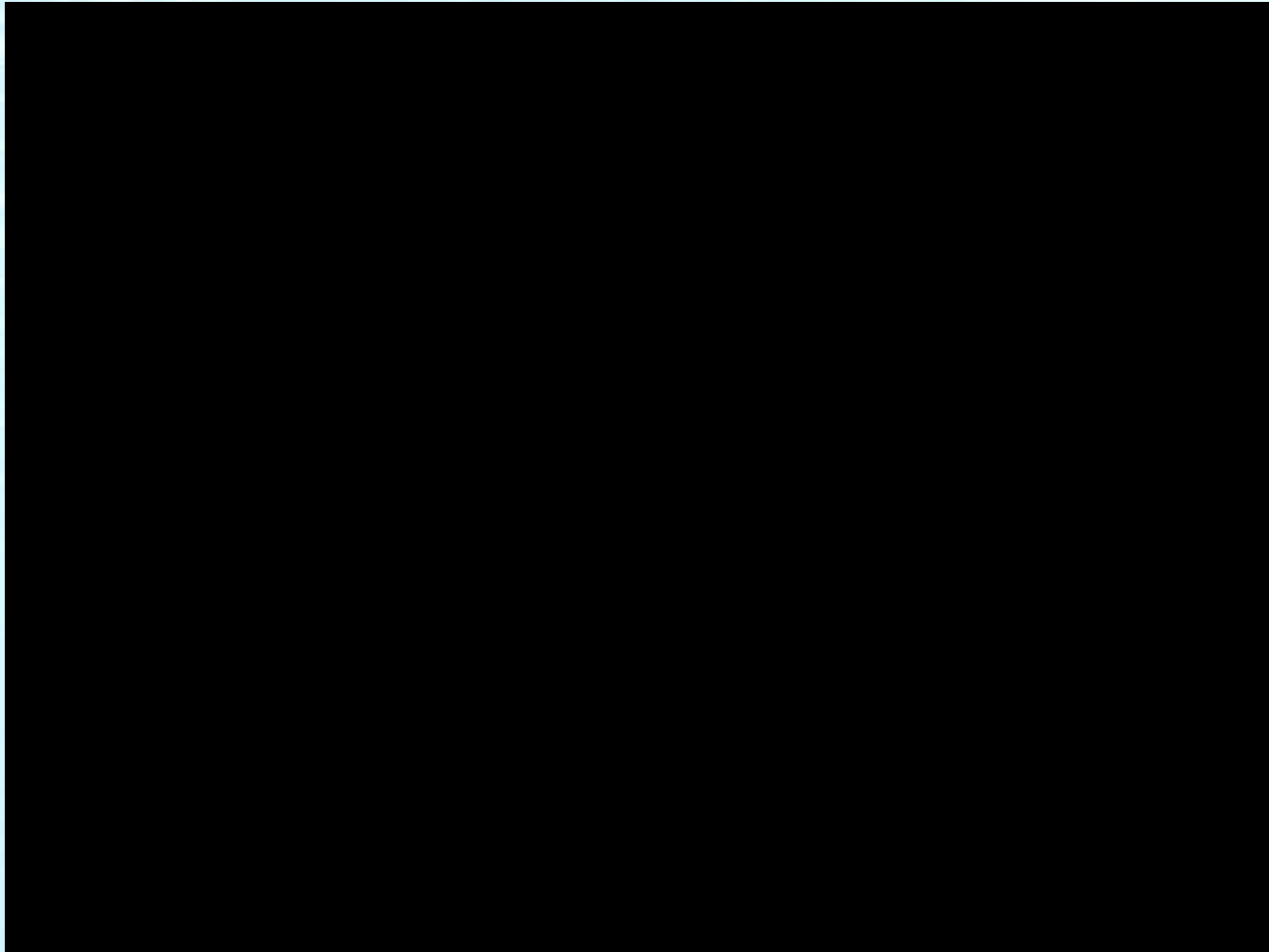
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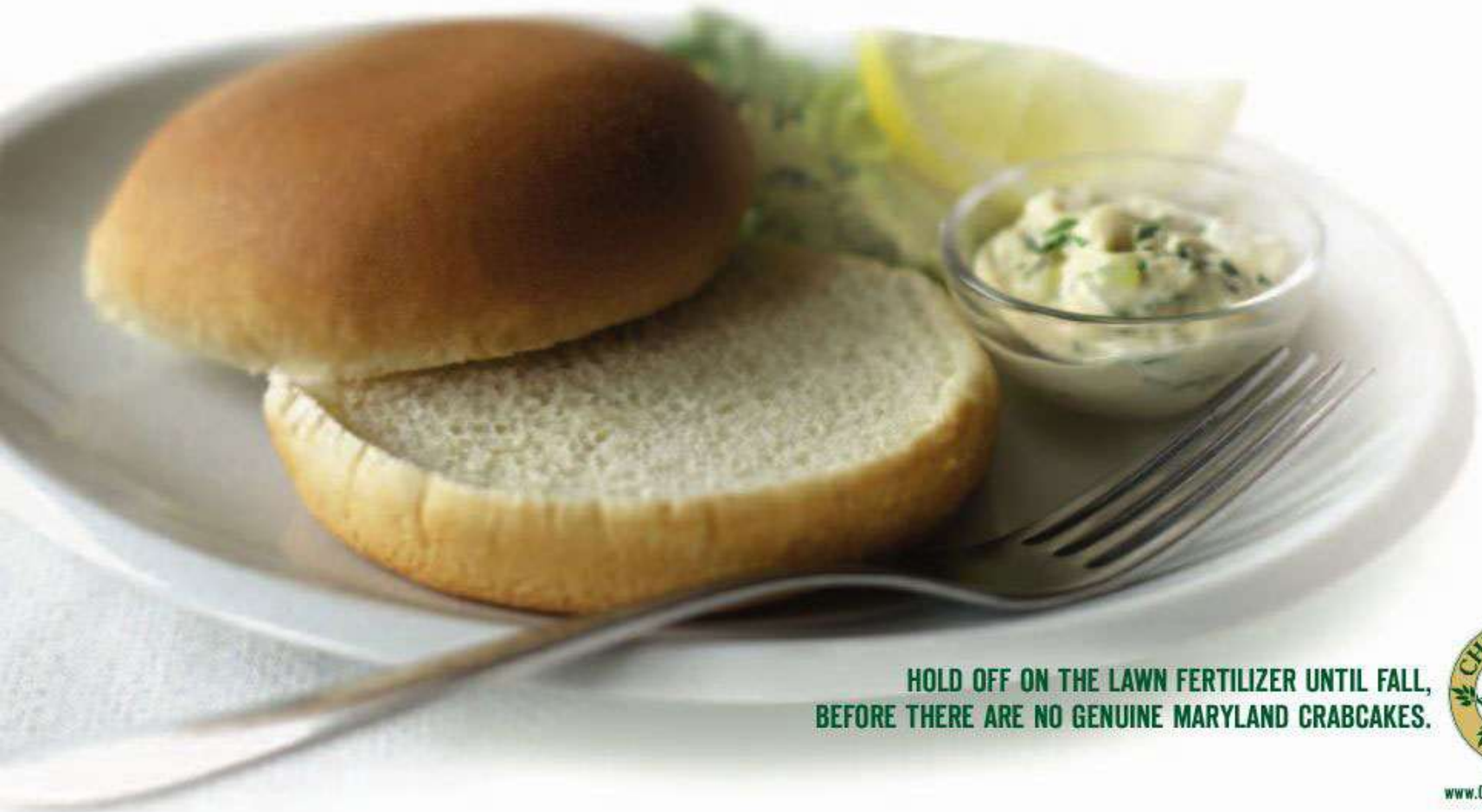
Winning Public Policy Campaigns

- *Clear Objective*
 - *What is the specific policy that we want adopted?*
- *Defined Audience*
 - *Who needs to take what action?*
 - *What do they think, believe, feel about the issue?*
- *Effective Message*
 - *The bridge from where your audience is, to where you want them to be*

Movie Break



PROTECT THE CRABCAKE POPULATION



HOLD OFF ON THE LAWN FERTILIZER UNTIL FALL,
BEFORE THERE ARE NO GENUINE MARYLAND CRABCAKES.



www.ChesapeakeClub.org

NO APPETIZERS WERE INJURED IN THE MAKING OF THIS LAWN



EXCESS FERTILIZER WASHES TO THE BAY, WHERE BLUE CRABS ARE RAPIDLY DISAPPEARING.



www.ChesapeakeClub.org

Example: Chesapeake

- Desired Behavior
 - Don't fertilize lawn in the spring
- Audience
 - Needs a positive reason to postpone desire
- Message
 - Common Ground – healthy bay that produces tasty seafood
 - “Save the Crabs, then eat them!”

Stormwater Education

- Who is the audience?
 - What do they know?
 - What do they need?
 - How to effectively deliver meaningful educational content

Audience

*Who are we
targeting?*

**Know what
they need to
know**

*Excessive information
is not always good!*

Municipal
Officials



Engineers



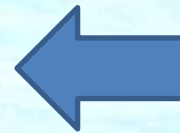
Private
Landowners



Local
Citizens



EACs



Watershed
Orgs.



Homeowners



Planners



Addressing Different Groups:

Decision Makers

- Make the case early and often
- Keep them involved in the program design process
- Use the process to assure them that the program design is solid and supported

Stormwater Education

- *Who is the audience?*
- *What do they know?*
- *What do they need?*
- *How to effectively deliver meaningful educational content*



The Spectrum of Knowledge is Wide

	High	Medium	Low
WHO	City/County Engineers Department of Public Works Soil Conservation District	County Executives Planning/Development Agencies City/County Council members	Board of Commissioners Board of Supervisors City/County Council members
WHAT THEY SAY	Priority issue Doing well (some say can do better) Regulations good and getting better Looking ahead to challenges	One of several priority issues Doing well but can do better In compliance with minimums but need to do more	Not an issue I hear much about from the public We have departments to deal with In compliance with state laws
WORDS THEY USE	Impervious surfaces Down-zoning Erosion sediment control TMDLs Watershed Tributary Point-source and non-point source	Run-off Rivers and streams Watershed Drainage Master plan Water and sewer Erosion	Pollution Compliance Rivers Education Motor Oil Fertilizer

Example (ANJEC in NJ): For Municipal Officials...

Don't need to know...

- How to meet required nonstructural management strategies
- BMP use or design

Need to know...

- How to ask the right questions
- Understand applicants have to satisfy standards
- Have confidence that your questions have been adequately answered

Stormwater Education

- *Who is the audience?*
- *What do they know?*
- *What do they need?*
- *How to effectively deliver meaningful educational content*

Example: Jacques Cousteau National Estuarine Research Reserve's (NJ) stormwater outreach efforts: Listening First

- **Advisory committee of local, state, and academic experts on stormwater management.**
- **Survey conducted to determine the municipalities' needs.**

Jacques Cousteau National Estuarine Research Reserve's (NJ) stormwater outreach efforts

- “We really used the results of that survey to **dictate the way in which we offered workshops and hands-on trainings** from that point on”
- “Local officials said they **needed help writing stormwater management plans, so the reserve brought in state officials to sit down and show them how to do it.**”

Jacques Cousteau National Estuarine Research Reserve's (NJ) stormwater outreach efforts

As a result...

First two years, six different Coastal Training Program workshops and opportunities for technical assistance


Audience: Municipal staff and elected and appointed officials

Survey

Southern Tier West Regional Planning Board(NY)

- Ask what they need, what they know, what the obstacles are
- Can be conducted easily online

9/20/15 Municipal Stormwater and Watershed Survey [Exit this survey](#)

 SOUTHERN TIER WEST
REGIONAL PLANNING & DEVELOPMENT BOARD

Municipal Stormwater and Watershed Survey

*What is your position title and for which municipality do you serve?

*In what position do you serve?

*How long have you been in this position (in years)? (Circle one)

<1
 1-3
 4-6
 >6

*Is/was your profession related to the topics you deal with in your position with your municipality?

Yes
 No

"Stormwater management" is a proactive way of addressing land use and development to decrease flooding and erosion. Communities have implemented these measures to reduce shared costs among taxpayers, ever-increasing burdens on municipal budgets, individual landowner property losses, and water resource impacts. The next series of questions relate to your municipality's effectiveness at addressing the various phases of stormwater management for small projects (disturbance < one acre), since the NYS DEC has stormwater regulatory authority for bigger projects. For each of the following statements, indicate yes, no, somewhat or I don't know.

	Yes	Somewhat	No	I Don't Know
My municipality requires small project proposals to be				

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Case study: Three Oregon Communities: Portland/Metro, Grants Pass, and Brookings

- *Issues and barriers*
- *What education, training, & resources needed?*
 - *Targeted to what audiences?*

Identified Barriers with Opportunities & Tactics

Themes:

Theme: Lack of basic understanding of planning and the impacts of growth



Tactics:

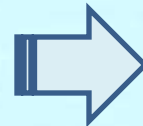
Computer visualizations, forums, CBA

Theme 2: Need for active leadership



Forums, training, education and communication coordination, consistent standards

Theme 3: Technical Assistance



Introductory workshop, funding and technical consultations, regional outreach person

Theme 4: Barrier: Funding, economics, and incentives



Public Forum

Stormwater Education

- *Who is the audience?*
- *What do they know?*
- *What do they need?*
- *How to effectively deliver meaningful educational content*

Case Study: Lancaster County, PA

Goal:

Identify ways Lancaster County municipalities can work **collaboratively to manage stormwater and reduce long-term costs collectively**

Lancaster Recommendations

- Increase Access to Available Information and Resources
- Increase Level of Understanding of Overall Stormwater Program Requirements
- Relay the Importance of Stormwater Management to Elected Officials, General Public, and Businesses

Lancaster Recommendations

- Stormwater Management Training for Municipal Staff
- Long Term Planning for Implementation of Stormwater Projects

City Of Lancaster - Stormwater Fee

- Set up Environmental Advisory Board
- Discuss solutions, not problems
- Set Stage for fee – Compare & Contrast
- Early on – Demonstration Projects
- Lead by Example
- Engage Elected Officials
- **BRANDING VERY IMPORTANT**



The U.S. Environmental Protection Agency enforces strict regulations on polluted stormwater. The City faces potential fines of up to \$37,500 per day if we cannot show progress towards eliminating at least 750 million gallons of polluted water discharged into the Conestoga River. To recover the costs of services the City is mandated to provide, the City has adopted a stormwater management fee—an equitable, fair and low-cost solution.

Revenue raised through the fee would be specifically dedicated to important infrastructure repairs and improvements that will not only help avoid Federal fines, but also make Lancaster a healthier and greener place to live.

Why does the City need to deal with stormwater? Older cities like Lancaster have a combined sewer system—water from storm runoff and our commercial and household sewage are carried together to the city's treatment plant in the same underground pipes. During heavy storms, the capacity of the treatment plant is overwhelmed and this polluted rain/sewage mix is dumped directly into the Conestoga River without being treated. Parts of the City have separated sewers, where stormwater running off of hard surfaces picks up oil, litter, pet waste, and other pollutants and carries them directly to our streams.

Federal environmental regulations limit the quality and quantity of runoff that flows into our streams, and the EPA has recently increased scrutiny to clean up the Chesapeake Bay. Lancaster is already facing fines of up to \$37,500 per day if we continue to dump this polluted mix of stormwater and sewage.

What is the City doing to fix this? Lancaster is working to ensure the existing Infrastructure maximizes the capture and treatment of wet weather flows at the wastewater treatment plant, and has invested more than \$30 million since 2001. Additionally, the city is investing in new green infrastructure projects throughout the city to reduce the polluted runoff and catch the water before it enters the sewer system.

Newly renovated Broaden Park Basketball courts and Parking lot



There are over 100,000 sq. feet of green roofs in Lancaster City.



What exactly is Green Infrastructure? Green infrastructure uses natural systems to manage or treat rainwater where it falls, allowing water to soak into the ground, evaporate into the air or collect in a rain barrel or cistern.

There are many types of green infrastructure technologies. These include tree canopies, native shrubs, green roofs, rain gardens, porous pavement, stone infiltration beds, rain barrels and cisterns.

Why not just expand the treatment plant to handle these overflows? Enlarging the treatment plant and building holding tanks to store the mixed stormwater and sewage would cost the City an estimated \$300 million to build and another \$750,000 each year for treatment. The city's Green Infrastructure Plan is estimated to cost \$140 million to keep the same volume out of our streams, saving the city over \$160 million.

The beauty of the Green Infrastructure approach is that it will not only save the City millions of dollars in important Infrastructure improvements, but the planned projects will make Lancaster a greener, cleaner, more vibrant city in which to live and visit.

Why is green infrastructure good for Lancaster? The planned projects will have significant environmental, social and economic benefits for the City. Studies show that green infrastructure brings about cleaner air and water, reduced energy use, greener streets, parks, and recreational areas; increased property values; healthier, happier people and even less crime. For more information on these benefits, visit www.saveitlanaster.org

WHAT IS AN IMPERVIOUS SURFACE?

An impervious surface refers to any surface that water cannot soak into: asphalt (streets), concrete (sidewalks), highly compacted crushed stone and gravel, and rooftops. When water cannot soak into the ground, it either sits in one place or moves along to a place where it can soak into the ground or be collected. As it moves along these hard surfaces it gathers pollutants like trash, oil, brake dust, fertilizer, salt and pet waste.

Approximately 50% of Lancaster City is covered by impervious surfaces.

How was the fee developed? The Stormwater Management Fee (SWMF) is the result of two years of study, recommendations, and hard work by Lancaster's Green Infrastructure Advisory Committee (GIAC). GIAC members include business owners, citizens, institutions, environmental groups, state government, and Lancaster city and county government.

The committee was charged with reviewing green infrastructure and funding options. They evaluated three approaches: a dedicated property tax, an increase in sewer fees, and impervious area-based stormwater management fee. The GIAC concluded that the impervious area based fee was the most equitable and fair solution because fees are based on how much runoff is actually generated from each property.

How will the fee be used? The fee will be placed into a dedicated fund used only for the stormwater management program. It will cover costs associated with improved operation and maintenance of existing stormwater systems, such as catch basin cleaning/repair and street sweeping, and capital improvements such as: green streets, sidewalks, and alleyways; green parking lots, green roofs, downspout disconnection; rain gardens; rain barrels; tree plantings; and green parks. For more specific projects, please visit www.saveitlanaster.org.

What are the benefits of a Stormwater Management Fee?

It's fair: all contributors to stormwater runoff share the costs of maintaining and improving the storm drainage system.

It's stable: ensures that stormwater management receives adequate financial support, independent of City taxes.

It's restricted: revenues must be used solely for stormwater management.

Who will pay? The fee will be paid by all property owners in the City of Lancaster whose property has impervious surfaces such as roofs, driveways, sidewalks, walkways, and roads.

How much will the fee be for residential property owners? Fees will be based on the average amount of impervious area on whatever category of property you own. The stormwater management fee for most single-family homeowners is approximately \$4-\$12 per quarter. Most multi-family residential property owners will pay approximately \$66 per quarter.

How much will the fee be for commercial property owners? A typical city commercial property will pay an average of \$237 per quarter.

How will I be charged? The SWMF will appear as a line item on your water and sewer bill.

I rent my property. Will I have to pay the fee? The Stormwater Management Fee Ordinance allows a property owner to delegate responsibility for the payment of the fee to a property management company or tenant(s) in the same way that responsibility for payment of water/sewer bills can be delegated. If you currently require your tenant(s) to directly pay the water/sewer bill for your property, the SWMF will be added to their bill. Your tenant(s) will NOT be receiving a separate notification about the SWMF. If you delegate payment responsibility to your tenant(s), please notify them about the SWMF so they are aware this fee will be charged on their water/sewer bill. While property owners can delegate responsibility to



A Lancaster City green roof.

their tenant(s), property owners are ultimately responsible for payment of the SWMF bill if the tenant fails to pay the bill.

Do tax exempt properties have to pay? Yes, because it is a fee, not a property tax. Property taxes are based on the assessed value of the property. The SWMF is based on how much a property contributes to stormwater runoff.

Are government-owned properties exempt? All government owned properties will be assessed the stormwater management fee.

Is the Stormwater Management Fee deductible from my federal or state income tax? No, the SWMF is not deductible from Federal or State income taxes.

I own land with no impervious surface. Do I have to pay a fee for that? No, because there is no impervious area associated with your property.

Do I have to pay for any unoccupied properties that I own? Yes, if the property contains impervious area because stormwater continues to be generated from this property.

Is there a way to reduce my fee? Yes, Lancaster's stormwater management fee program will include rebates and credits. Rebates provide one-time assistance to offset the cost of construction for installing green infrastructure. Credits are an annual percent reduction in the stormwater management fee for having and maintaining green infrastructure. The process and deadlines for applying for credits and rebates will be defined as the program is rolled out.

750 million gallons

The amount of polluted runoff the city must save each year

\$37,500

The amount Lancaster could be fined each day if progress is not made

\$160 million

The amount Lancaster can save by implementing green infrastructure projects

\$12

The amount an average homeowner will pay per quarter to address the stormwater problem

FOR MORE INFORMATION, VISIT WWW.SAVEITLANCASTER.ORG OR CALL THE DEPARTMENT OF PUBLIC WORKS AT 291-4739

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Make it Easy: Musconectcong Watershed Association (NJ)

- New Jersey municipalities required to provide public education to residents.
 - NJDEP lists education programs and activities with assigned point value.
 - Municipality must earn a total of 10 points each year.



Stormwater Education Program Offerings

NJDEP Stormwater Education Activity	Musconetcong Watershed Association Role	Total NJDEP Points
<p>Educational Activity –educational activity concerning pet waste, littering, improper disposal of waste, wildlife feeding, yard waste, illicit connections, refuse containers.</p>	<p>MWA will organize, promote and present an educational activity on an appropriate topic at a municipal building or school.</p>	<p>5 points</p>
<p>Stormwater Training for Elected Municipal Officials – Conduct a program for all elected municipal officials which educates them on the Stormwater Management Rules (N.J.A.C. 7:8), Tier B Permit and what steps the municipality has already taken to minimize stormwater pollution.</p>	<p>MWA will conduct a program for elected officials on the NJ Stormwater Management Rules for Tier B municipality.</p>	<p>3 points</p>
<p>Mailing – Distribute any of the Department’s educational brochures, tip cards, or a municipally produced equivalent (e.g. calendar, recycling schedule), to every resident and business in the municipality.</p>	<p>MWA will provide municipality with locally focused material for educational mailing. (Not individual copies.)</p>	<p>3 points</p>
<p>Partnership Agreement / Local Event - Identify and enter into a partnership agreement with a local group such as a watershed organization, Riverkeeper, school, youth/faith based group and/or other nonprofit to carry out a minimum of two (2) watershed stewardship/education activities (e.g., litter march, stream/beach cleanup).</p>	<p>MWA will enter into a Partnership Agreement with the municipality to carry out two NJDEP approved activities.</p>	<p>3 points</p>
<p>Stormwater Display – Present a stormwater related display and materials at any municipal event (Earth Day, town picnic) or maintain a display at the municipal building</p>	<p>MWA will present a stormwater related display and materials at a municipal event.</p>	<p>2 points</p>
<p>Poster Contest – Organize a poster contest with a local school district. Poster themes shall have an appropriate stormwater message. Posters are to be displayed at buildings within the municipality such as at the town hall, library, or school.</p>	<p>MWA will organize a poster contest in your local elementary school. Posters will be displayed at the municipal building, library, or school.</p>	<p>2 points</p>
<p>School Presentations - Present educational classes/assemblies to local elementary, middle, and/or high school classes.</p>	<p>An MWA representative will present a compliant presentation in a school in the municipality.</p>	<p>1 point 5pts max</p>
<p>Website – Maintain a stormwater related page on the municipal website and include a link to www.cleanwaternj.org.</p>	<p>MWA will provide current content with links for a Stormwater Education page on the municipality’s website.</p>	<p>1 point</p>

Making the Message Accessible

- Use different formats to convey the message
- Face to face communication is still important
- Make education sessions fun and interactive!

Once Implemented, don't stop!

- Check in afterwards to measure effectiveness
- Keep engaging with other kinds of materials

Rechecking the Pulse (JCNERR, New Jersey) - 2005

- Found that people were still in need of the **public outreach** portion of the stormwater requirements.

“It’s one thing to talk about in theory,” It’s another to see them in place on the ground.”

Rechecking the Pulse (JCNERR, New Jersey)

Result:

- Created Information display/ handouts
- Site visits for officials
- Created model ordinance
- Produced newsletter
- Adopt-A-Drain Programs in 3 municipalities

Measuring Effectiveness (JCNERR, New Jersey) - 2007

- Increase in on-the-ground applications
- Four communities with an Adopt-A-Storm Drain program
- Communities adopting regular storm-drain maintenance and implementing other best management practices.

Measuring Effectiveness (JCNERR, New Jersey)

Sharing lessons learned

“They had never been brought together for any reason before...Without that evaluation, we would never have known that they considered that face time as one of the most useful aspects.”

- Result: networking times are now being scheduled at meetings

Measuring Effectiveness (JCNERR, New Jersey)

“It’s very gratifying to know that **outreach efforts with a certain subset really pays off over time. We’re helping implement changes that hopefully will pay off in the health of the estuarine system.”**

Talk to others



“Selling” Stormwater Authorities:

Tips for Gaining Community Support

Eric Eckl
10/21/2014



About this Project

- Between June and October 2014, Water Words That Work LLC conducted a series of research projects to explore Pennsylvanians' attitudes towards the issues surrounding stormwater authorities
- Our goal is to help you introduce a stormwater authority to your residents in a way that maximizes their understanding and minimizes unnecessary backlash
- It is not our intention to answer the question “Is a stormwater authority right for my community?”



Recommendation #1:

Call it a Pollution Control and Flood Reduction Fee

Name	% Answer
Pollution Control and Flood Reduction Fee	51.70%
Stormwater Control Fee	11.70%
Rain Tax	11.70%
Stormwater Authority Fee	7.30%
Stormwater Utility Fee	6.40%
Runoff Management Fee	5.60%
Stormwater System Fee	5.60%

In our survey, Pennsylvanians strongly preferred the name “Pollution Control and Flood Reduction Fee” to all others that we tested.

Recommendation #2:

Clearly show ratepayers how the money will be invested.



The best argument for an authority -- before-and-after photos of the work that will be done!



Recommendation #3:

Present the fee as a solution to local problems and providing local benefits

Here are reasons to SUPPORT a new charge. Rank them from best (on top) to worst (on bottom).

1. **Clean Water.** Your fees will go to clean up water for drinking, recreation, and wildlife (Average Score 2.3)
2. **Fairness.** All properties pay for the pollution and flood control services they receive (Average Score 3.2)
3. **Flood Damage Reduction.** Your fees will be used to protect the community from floods(Average Score 3.2)
4. **Accountability.** Local governments must use the money for pollution and flood prevention (Average Score 3.4)
5. **Economic Development.** The investments create local jobs and improve the business climate (Average Score 4.4)
6. **It's the Law.** The community has a legal responsibility to clean up its waterways somehow (Average Score 5.4)
7. **Chesapeake Bay.** The investments help clean up the Chesapeake Bay downstream from us (Average Score 6)

In our survey, Pennsylvanians rated reasons for an authority between 1 (best reason) and 7 (worst reason)

Sample Outreach Materials





A new option for Pennsylvania local governments to protect your water supplies, reduce floods, and improve their communities

Recognizing that Pennsylvania communities face increasing pressure to manage stormwater and protect residents from floods and pollution, the state legislature passed Act 68 in July, 2013. This law authorizes localities to create new stormwater authorities, or add stormwater responsibilities to any existing authorities that serve their residents.

The organizations that have created this website are all standing by to you explore this option and determine if it is right for your community. We have prepared the following materials for your use:

- A suite of market research reports that provide insights into residents concerns and attitudes
- Sample FAQs for you to customize and present to ratepayers
- A collection of photos to illustrate stormwater problems and solutions
- A customizable PowerPoint presentation that you can use to brief community groups and civic organizations

Market Research					
<input type="checkbox"/>	 Stormwater Fee Literature Review.pdf View Download	A review of case studies, market research, and other studies from across the country that shed light on how to successfully introduce a stormwater fee.	839k	v. 2	30 minutes ago Eric Eckl
<input type="checkbox"/>	 Survey of Pennsylvania	A survey of 1,000	1883	v. 2	30 minutes ago Eric Eckl

Sponsors

Funding and content for this website, the market research, and outreach materials provided by:



NFWF



<http://stormwater.pennsylvaniawatersheds.org>

Recap: what's important?

- Find out who the audience is and what they want with surveys and advisory councils
- Awareness of what each specific audience needs to know

- See what kind of technical assistance and knowledge is needed
- Gather feedback
- Face to Face communications are important!

- Sharing lessons learned has proven very valuable to previous stormwater education and outreach programs
- Many online learning tools!
- Talk to other groups

