



Stormwater Management in Lancaster City



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Stormwater Program Manager

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One Water

“Irrigation on a farm. Water from the tap. Stormwater. Water flowing toward a treatment plant. Water, in all its forms, is valuable, and our collective future depends on water.”

-US Water Alliance

Penn's Woods

"For the Province, the general condition of it, take as follows:

- I. The country itself, its soil, air, water, seasons and produce, both natural and artificial, is not to be despised.
- II. The air is sweet and clear, the heavens serene.
- III. The waters are generally good; for the rivers and brooks have mostly gravel and stony bottoms; and in number hardly credible."

--Letter to Committee of the Free Society of Traders in London, William Penn, August 16,

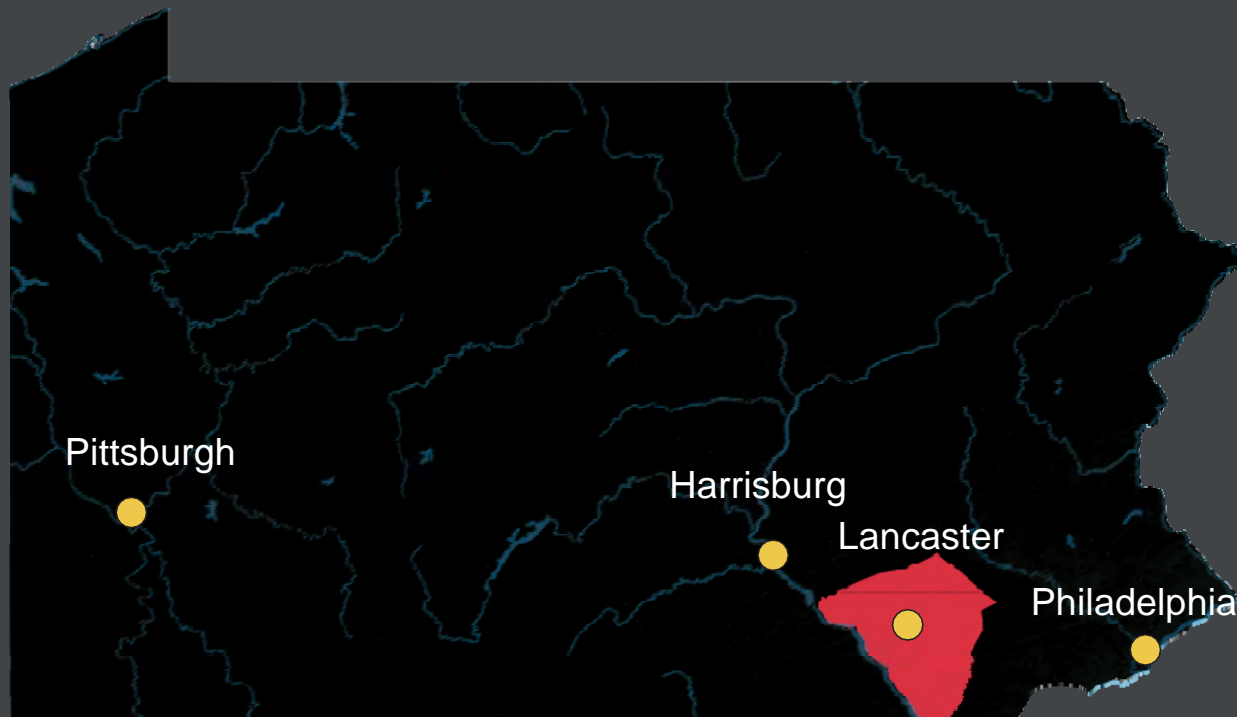


A NEW MAP OF NEW JARSEY AND PENSILVANIA BY ROBT. MORDEN, 1688





Lancaster City



1742
incorporated

60,000
people

7.4
sqmi

50%
impervious

750 Million
gallons CSO

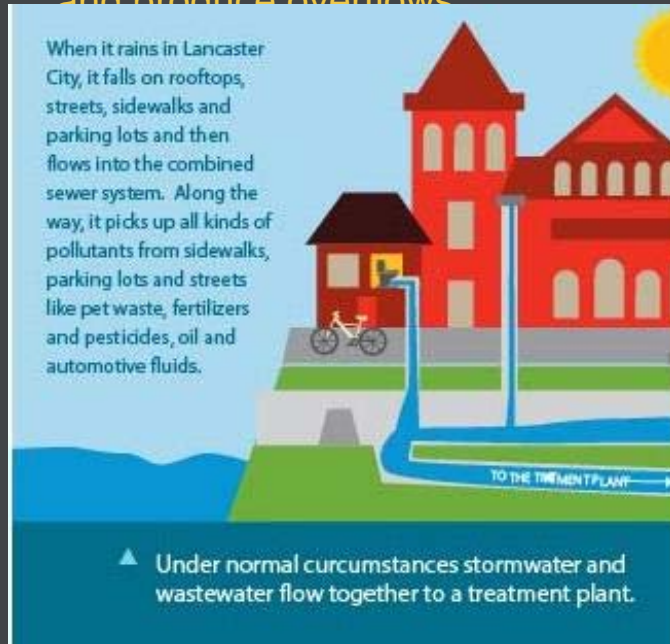


CSS = Combined Sewer System

CSO = Combined Sewer Overflow

A type of sewer system that collects sanitary sewage and stormwater runoff in a single pipe system.

Heavy rains overwhelm the system and produce overflows.

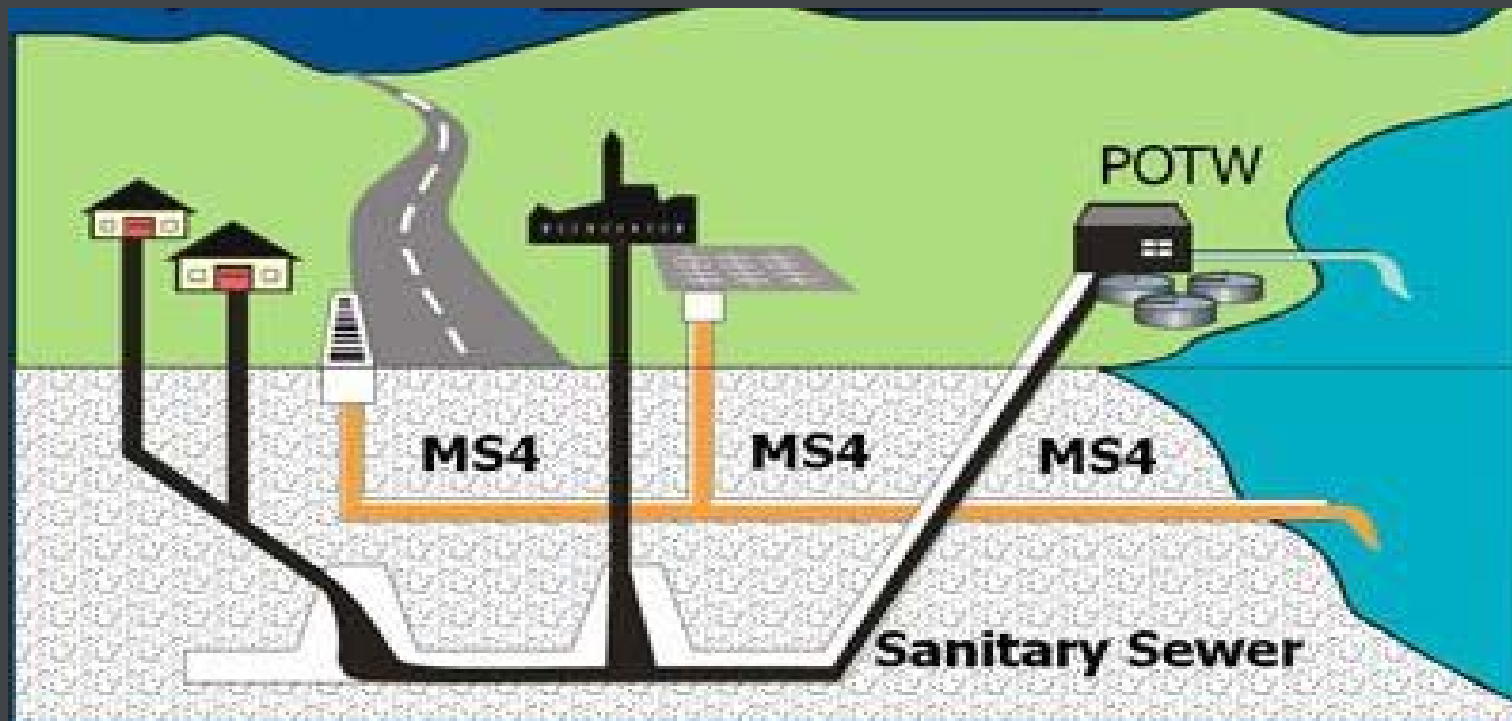




NPDES = National Pollution Discharge Elimination System

MS4 = Municipal Separate Storm Sewer System

The national system for the issuance of permits under Section 402 of the Federal Clean Water Act (33 U.S.C. § 1342) – industrial, construction, stormwater, commercial
A system of conveyances that include catch basins, curbs, gutters, ditches, man-made channels, pipes, tunnels, or storm drains that discharges into waters.





Building a Stormwater Program



2012



2014



2016



2019

Green
Infrastructure
Plan

SW Ordinance
& Bureau

SW Utility Fee

Expanded
Staff & Scope

GreenIt! Plan
Monitoring &
Assessment

Pilot/Demonstration Projects -----> Programmatic
Integration

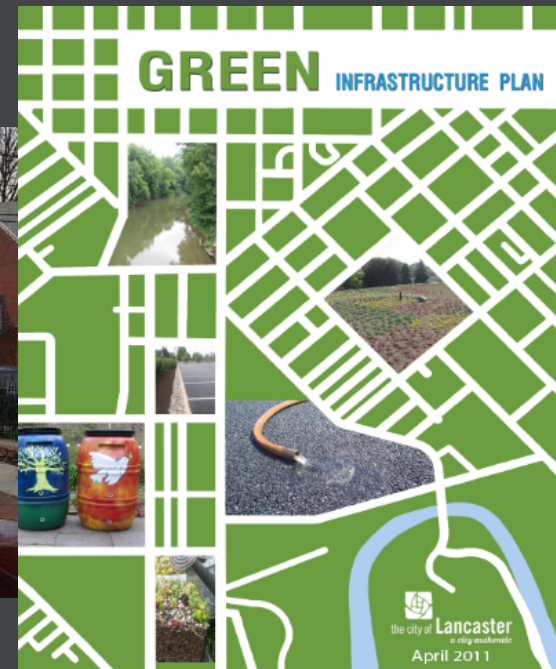
60+ complete

160+ in design



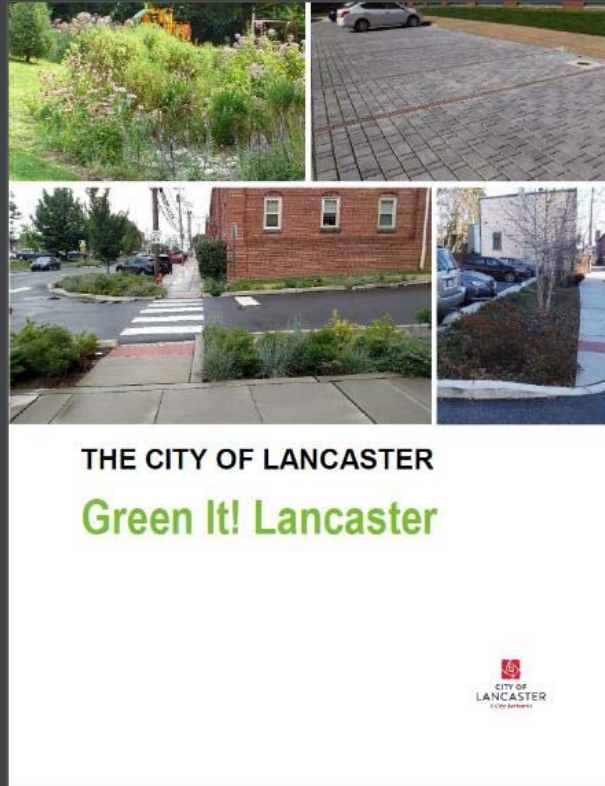
A Firm Foundation

- GI Plan in 2011
- Incorporate GI and Complete Streets concepts into plans and ordinances
- Implement projects that integrate GI and Complete Streets
- Implement policy actions
- Conduct extensive partnering and outreach
- Develop technical tools/studies to support GI





Continuing Success: GreenIt!



To provide a livable, sustainable, and safe community with clean rivers and streams.



Integrating GI



parks



streets



other ROWs



private property









Stormwater Fee Development



- GIAC to determine funding options and policies :
 - Business owners
 - Citizens
 - Institutions
 - Environmental groups
 - State government
 - Lancaster County government
 - Lancaster City government
- Stormwater Fee and Credit Program initiated 2014
- Impervious area delineated for all parcels
 - 2012 Aerial imagery and planimetrics update in 2017
 - Reassessment approximately every five years
- Criteria for fee evaluation
 - Equity/Fairness
 - Simplicity
 - Transparency
 - Efficiency/Ease of Implementation
 - Consistency with other City goals and objectives



Stormwater Fee Rate/Structure

Tier Assignment	Impervious Area	Base Rate	Base Rate %	Annual SWMF	Quarterly SWMF
Tier 0	0-300 sq. ft.	No fee will be charged for Tier 0 properties			
Tier 1	301 – 1,000 sq. ft.	\$59.00	50%	\$29.50	\$7.38
Tier 2	1,001 – 2,000 sq. ft.	\$59.00	150%	\$88.50	\$22.13
Tier 3	2,001 – 3,000 sq. ft.	\$59.00	250%	\$147.50	\$36.88
Tier 4	3,001 or more sq. ft.	\$59.00	See below for Tier 4 Fee Calculation		

Tier 4 Calculation:

Actual Impervious Area/1000 = Number of Base Units

Number of base Units x Base Rate = SWMF

Example: Property with 16,765 square feet of Impervious Area:

$16,765/1000 = 16.765$ Base Units

Fee Calculation	Annual SWMF	Quarterly SWMF	Monthly SWMF
$16.765 \times \$59.00$	\$989.14	\$247.28	\$82.43



Stormwater Incentives and Credits

Help property owners reduce their annual stormwater fee

Provide incentive for implementing green infrastructure on private property

Provide incentive to maintain facilities

- 'Early Adopter' Grants – one time assistance with construction cost

- Residential Grant Program – new or retrofit; reimbursement up to \$2,500 with 1:1 match;

- Credits – a percentage reduction in the annual impervious area fee
 - Applications: 61 received – 54 approved, 3 denied; 4 incomplete, 25 renewal applications

- **Credit Policy**

- Provides equity by reducing fee to offset cost of maintaining facilities.
- Incentive to implement BMPs.
- Promotes proper maintenance of BMPs.
- Available to Residential and Non-Residential Properties.
- Annual self-inspection reports required
- No application fee
- Policy and Procedures Manual undergoes routine update



Credit Program Details

Credit Description	Maximum Credit Amount
Rate Controls	25%
Volume Controls/GI	50%
Water Quality Controls	25%
Non-structural Controls <ul style="list-style-type: none"> • Tree Canopy Cover • Downspout Disconnection 	15%
NPDES Industrial Stormwater Permitted Sites	15%
Education Credit	15%

Maximum Total Credit = 50%

- Property owner must submit an annual self-inspection report to maintain credit.
- Inspections are done with each credit application and renewal to ensure proper maintenance and function.





Credit Program Status

Credit Type	Applications Approved	Avg.% Reduction in SWMF	IA Managed (sq. ft.)
Rate Controls	18	25%	2,317,432
Volume Controls/GI	30	50%	503,588
Water Quality Controls	--	--	--
Non-structural Controls			
•Tree Canopy Cover	2	15%	242
•Downspout Disconnection			
NPDES Industrial Stormwater Permitted Sites	2	15%	--
Education Credit	2	15%	--
TOTAL	54	28% (avg)	2,821,262
TOTAL IA in City			108,159,480
% SWMF Lost to Credit Program			3%

Educational Credit is approximately \$27/year.
 NPDES Credits are approximately \$6800 and \$8500/year



Yes, you need a permit.

Project Type	Criteria	Permit/ Application	E&S Controls *	Volume Management	SWM Site Plan**	Permit Fee
Very Small Project	$\leq 100 \text{ ft}^2$ of new impervious	Small Projects Application	Yes	No	No	\$0
Very Small Project	§260-502.6.a.-d. Gardens and vegetative landscaping that do not increase impervious coverage and meet the following criteria: a. Located on slopes less than eight percent (8%). b. Not within 150 feet of any permanent watercourse. c. Less than 1,000 square feet in aggregate area. d. Hardscaped areas within gardens and vegetated landscape areas such as patios, walls, paved walkways and pools or ponds, shall be considered impervious areas and are not exempt if the total hardscaped area exceeds 100 square feet	Small Projects Application	Yes	No	No	\$0
Small Project	Net decrease in impervious <u>and</u> $> 1,000 \text{ ft}^2$ to $< 5,000 \text{ ft}^2$ of earth disturbance	Small Projects Application	Yes	Yes***	Yes	\$30
Small Project	$\leq 100 \text{ ft}^2$ of new impervious <u>and</u> $> 1,000 \text{ ft}^2$ to $< 5,000 \text{ ft}^2$ of earth disturbance	Small Projects Application	Yes	Yes	Yes	\$30
Small Project	$> 100 \text{ ft}^2$ to $< 1,000 \text{ ft}^2$ of new impervious <u>and</u> $> 1,000 \text{ ft}^2$ to $< 5,000 \text{ ft}^2$ of earth disturbance	Small Projects Application	Yes	Yes	Yes	\$30

* E&S controls are required for all regulated activities; however, City review and approval is not required for small projects.

** For purposes of this policy, SWM Site Plan refers to the site plan requirements for Small Projects.

*** Management of 1-inch volume may be demonstrated through impervious area removal.

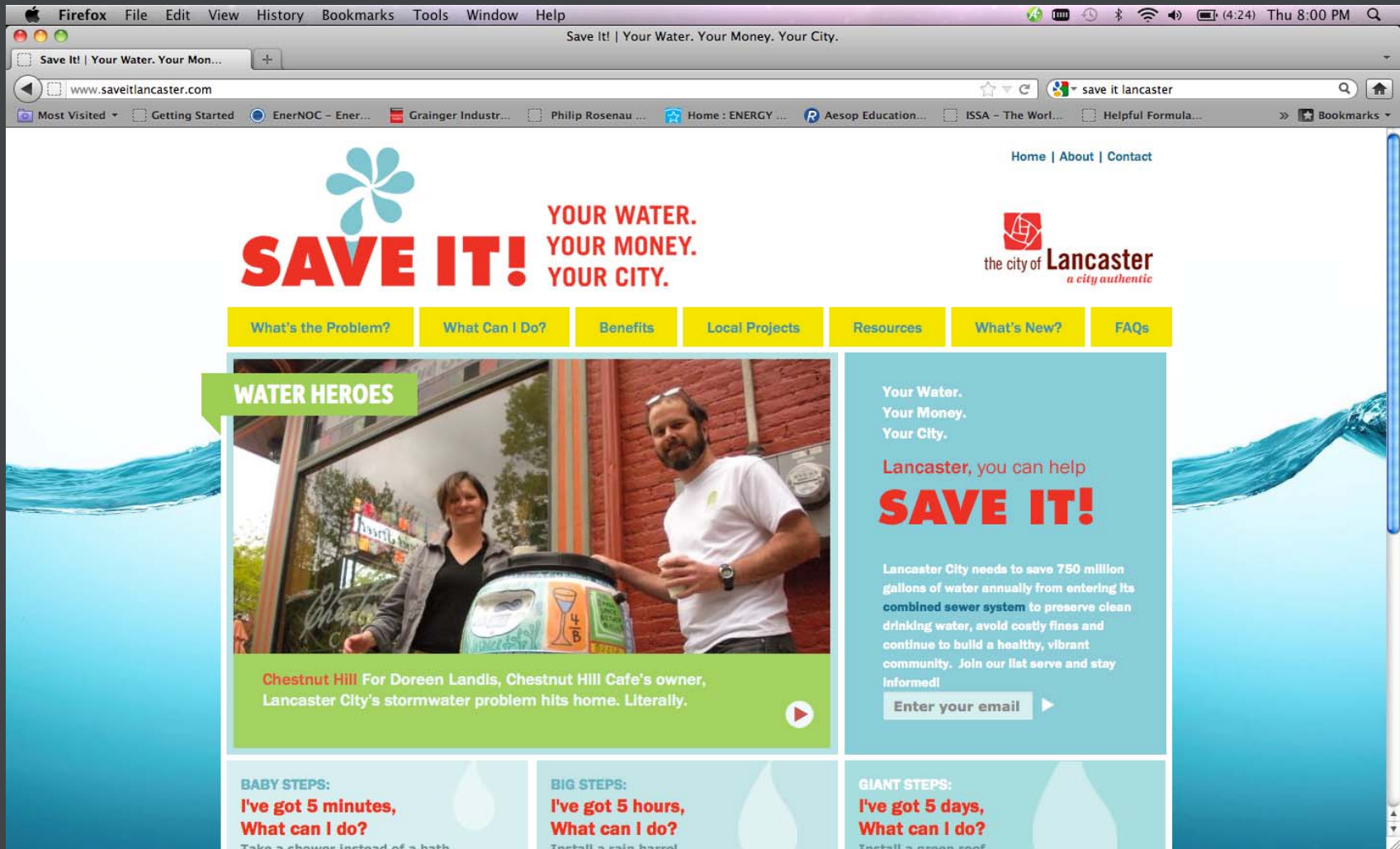


Community Engagement

Adopt-A-BMP



Internet and Social Media



The screenshot shows a Firefox browser window displaying the 'Save It! Your Water. Your Money. Your City.' website. The browser's address bar shows 'www.saveitlanaster.com'. The website features a blue and red color scheme with a stylized flower logo. The main heading reads 'SAVE IT! YOUR WATER. YOUR MONEY. YOUR CITY.' and the City of Lancaster logo is in the top right. A navigation bar includes links like 'What's the Problem?', 'What Can I Do?', 'Benefits', 'Local Projects', 'Resources', 'What's New?', and 'FAQs'. A large section titled 'WATER HEROES' features a photo of a man and a woman with a water-saving device, with text about Chestnut Hill For Doreen Landis. To the right, a call to action says 'Lancaster, you can help SAVE IT!' and 'Lancaster City needs to save 750 million gallons of water annually...'. At the bottom, three columns list 'BABY STEPS', 'BIG STEPS', and 'GIANT STEPS' for water conservation.

SAVE IT! YOUR WATER. YOUR MONEY. YOUR CITY.

the city of **Lancaster**
a city authentic

Home | About | Contact

What's the Problem? What Can I Do? Benefits Local Projects Resources What's New? FAQs

WATER HEROES

Chestnut Hill For Doreen Landis, Chestnut Hill Cafe's owner, Lancaster City's stormwater problem hits home. Literally.

Your Water.
Your Money.
Your City.

Lancaster, you can help
SAVE IT!

Lancaster City needs to save 750 million gallons of water annually from entering its combined sewer system to preserve clean drinking water, avoid costly fines and continue to build a healthy, vibrant community. Join our list serve and stay informed!

Enter your email ▶

BABY STEPS:
I've got 5 minutes,
What can I do?
Take a shower instead of a bath...

BIG STEPS:
I've got 5 hours,
What can I do?
Install a rain barrel...

GIANT STEPS:
I've got 5 days,
What can I do?
Install a green roof...



Thank You!



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More Information:

<http://www.cityoflancasterpa.com>

<http://www.cityoflancasterpa.com/government/stormwater>

<http://www.cityoflancasterpa.com/resident/city-tree-map>

<http://www.saveitlancaster.com/>