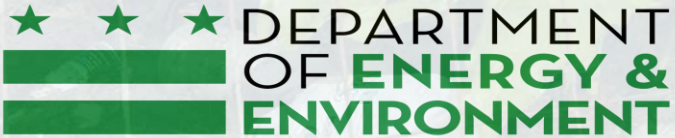




# STORMWATER 101

September 18, 2018



Credit: Krista Schlyer

# AGENDA

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1. Welcome & Introductions
2. Introduction to Stormwater Management
3. DOEE Programs to Restore District Waters and the Chesapeake Bay
4. Community Stormwater Solutions Part 1: Site Tour
5. Community Stormwater Solutions Part 2 : Grantee Presentations
6. Reflection and Q&A

# WHAT IS A WATERSHED?

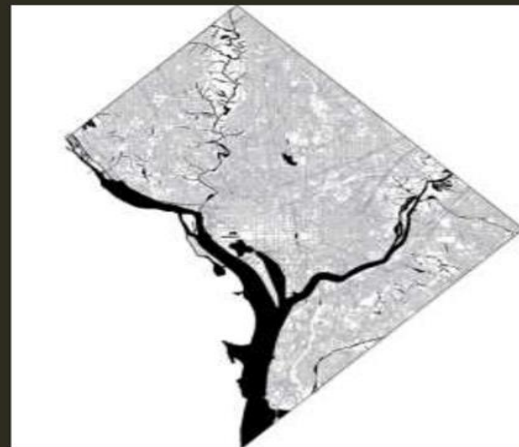
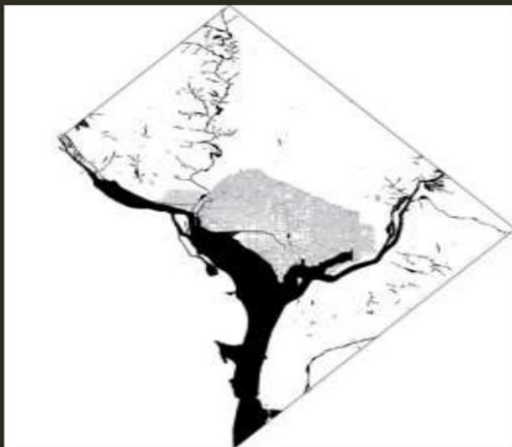
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Agriculture

Industrialization

Urbanization



# Pervious vs Impervious Surfaces

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## **Pervious**

(permeable) surfaces are those that allow water to infiltrate or percolate through (e.g. meadows, forest, bare ground).

## **Impervious**

(impermeable) surfaces are mainly artificial structures on land surfaces through which water cannot infiltrate (e.g. roads, rooftops, parking lots).

An aerial photograph of a vast parking lot filled with hundreds of cars, mostly from the mid-20th century. In the background, a large, multi-story building with many windows is visible. The image has a slightly faded, historical feel.

# 43%

**Impervious Surfaces in DC**

# WHEN IT RAINS...



*Credit: Krista Schlyer*





# WHY DO WE CARE?



*Credit: Krista Schlyer*



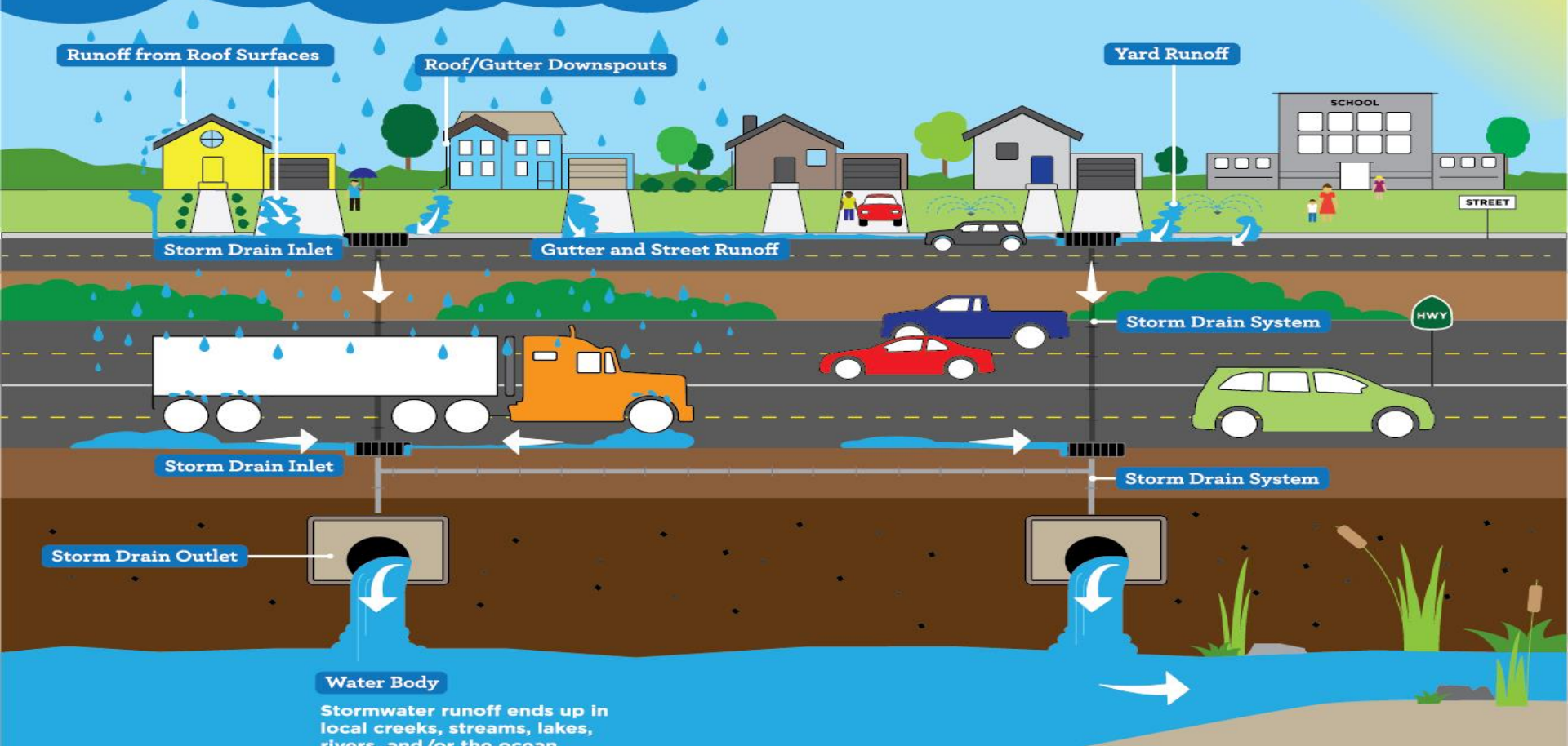
*Credit: Krista Schlyer*







# Stormwater Runoff

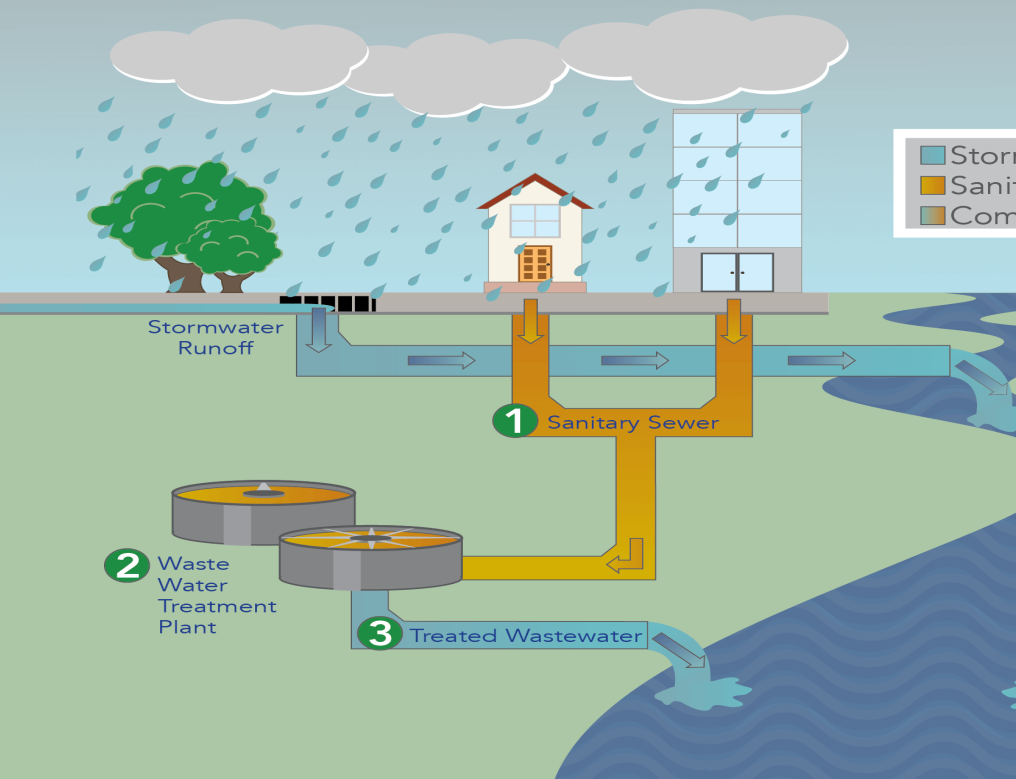


# MS4

## MUNICIPAL SEPARATE STORM SEWER SYSTEM

inspiregreen™

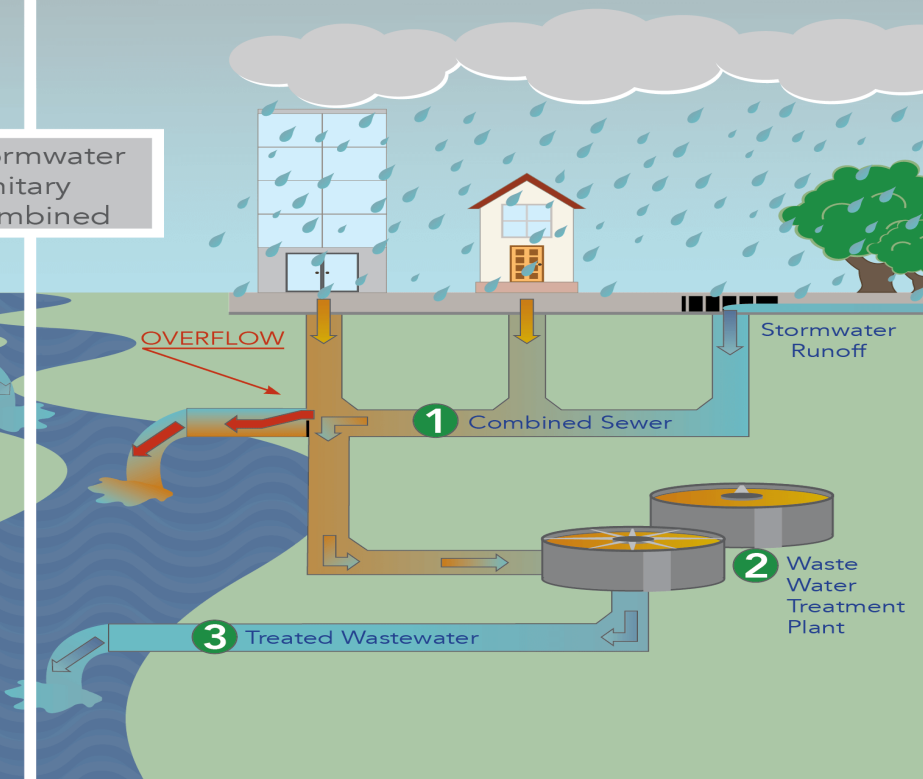
This system uses **separate pipes** for sanitary sewage and stormwater flow.

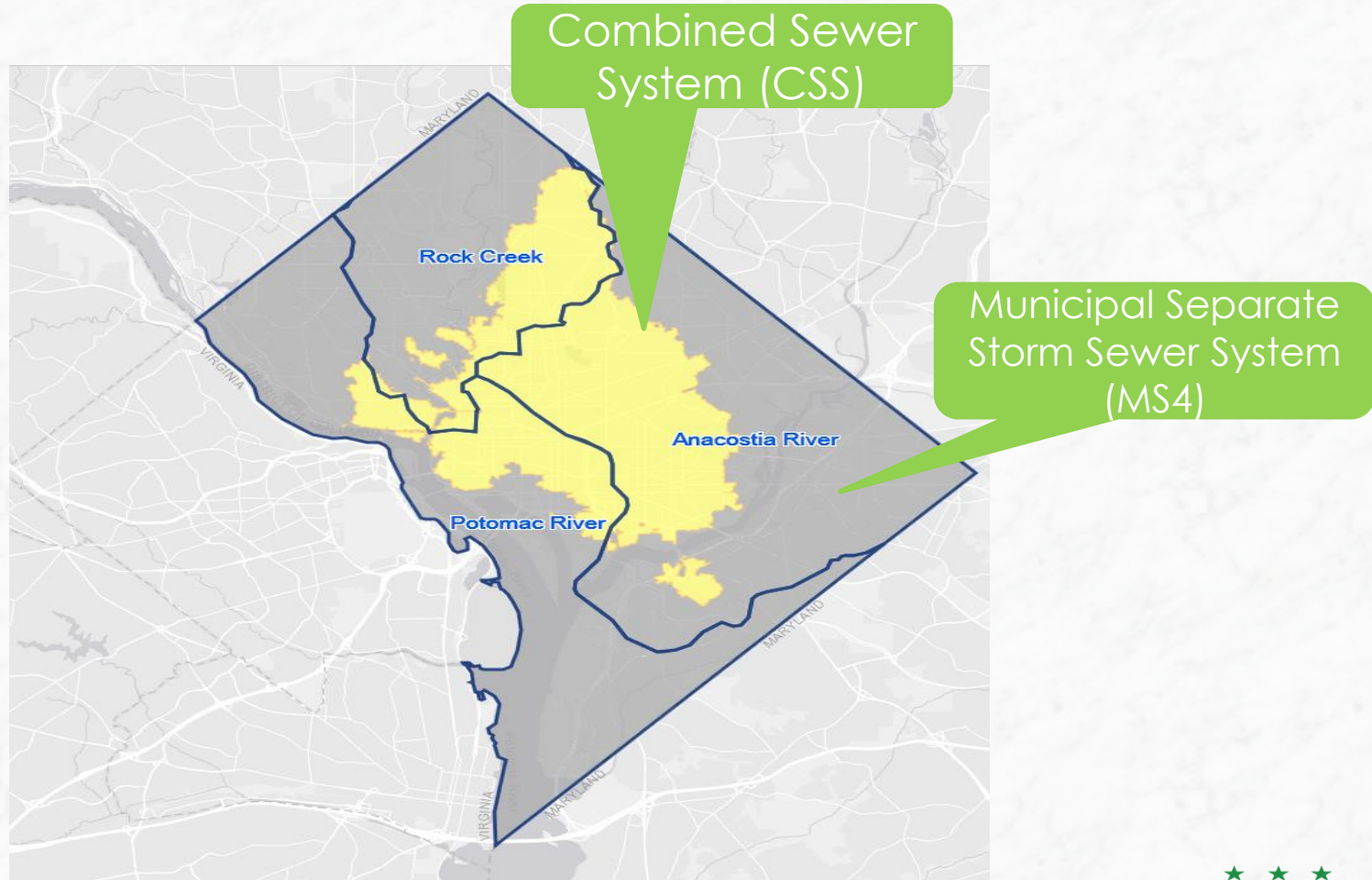


# CSS

## COMBINED SEWER SYSTEM

This system uses the **same pipes** for sanitary sewage and stormwater flow.





# Green Infrastructure

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**Green infrastructure** allows stormwater to be absorbed into the ground, reducing the impact of stormwater runoff on District water bodies.

These are engineered to **mimic the natural environment**.



# Types of Green Infrastructure

Green Roofs



Credit: DesignGreen LLC

Rainwater harvesting



Credit: Jonathan Hsu

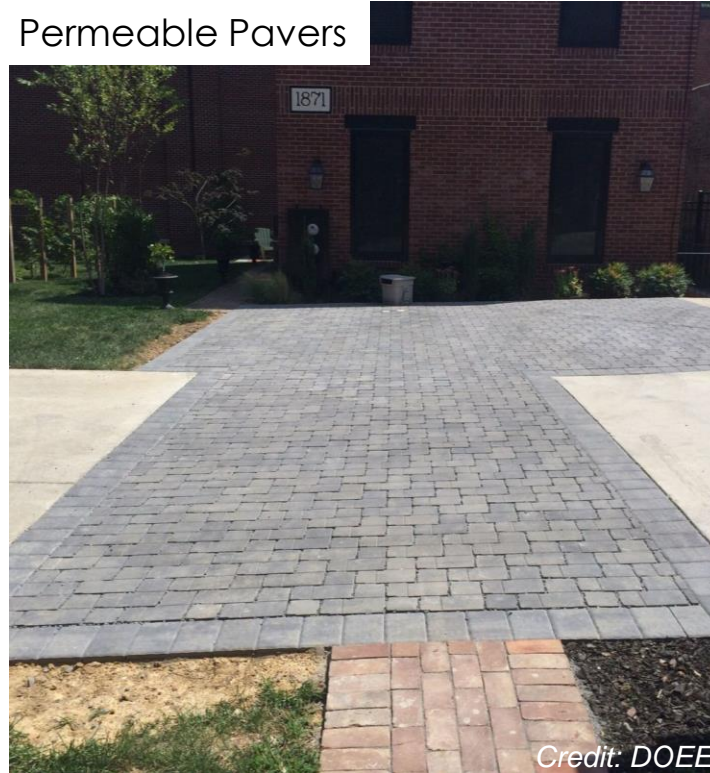
# Types of Green Infrastructure

Bioretention



Credit: DOEE

Permeable Pavers



Credit: DOEE

# DOEE Programs to Restore District Waters and the Chesapeake Bay

**Katherine Antos, Branch Chief**

Partnering & Environmental Conservation Branch  
Department of Energy & Environment

**Grant-Writing Workshop**

September 18, 2018



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@doee\_dc

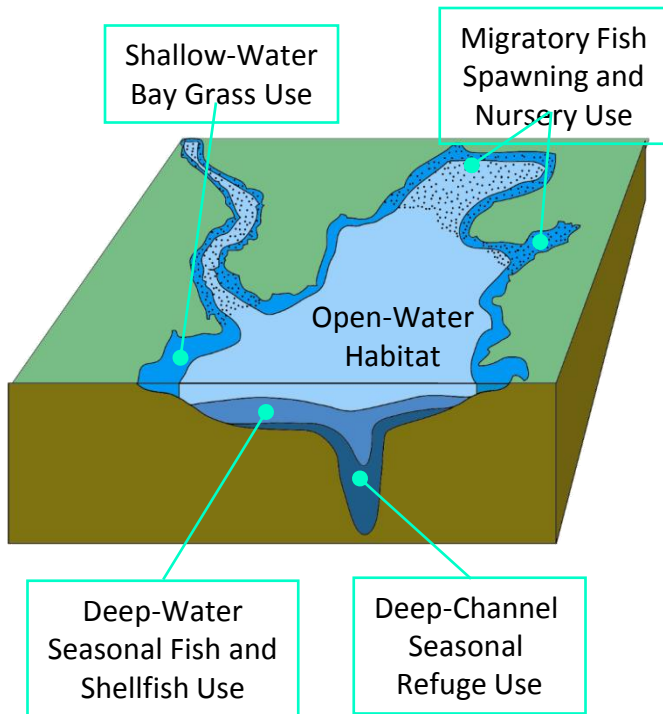


# Chesapeake Watershed

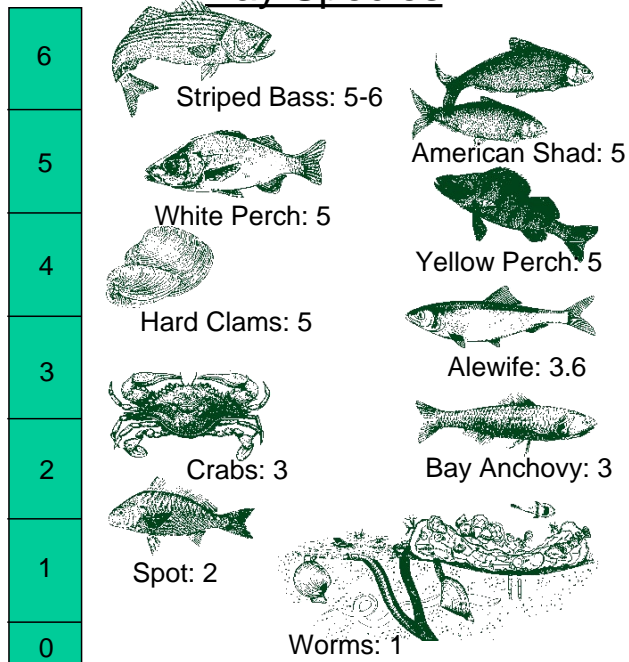


You Are Here

# Value of Chesapeake To Fish & Wildlife



## Oxygen Requirements (mg/L) of Bay Species



# What the Chesapeake Needs

Enough Air: Dissolved Oxygen

Enough Light: Water Clarity  
Bay Grass Abundance

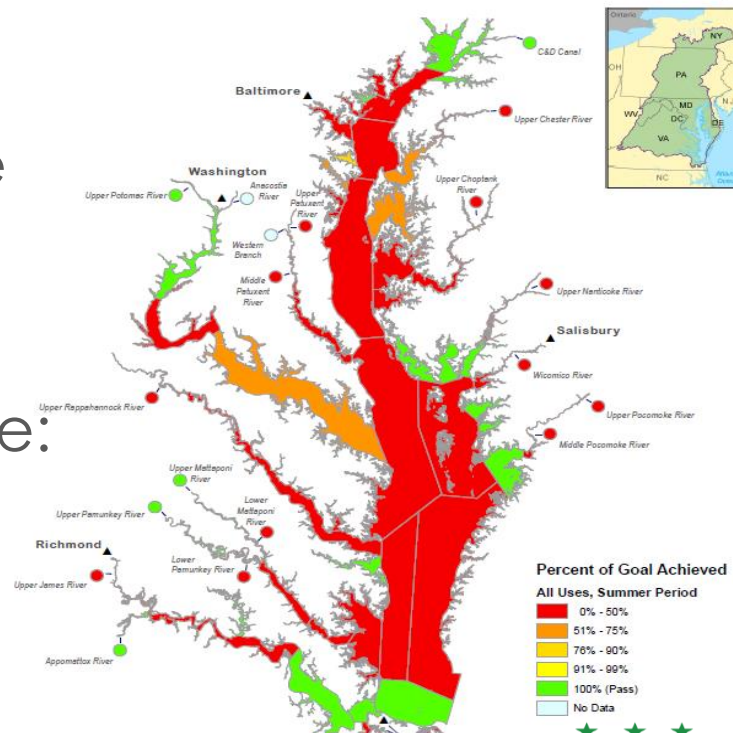
Not Too Much Algae: Chlorophyll a

To make this happen we must reduce:

- Nitrogen
- Phosphorus
- Sediment pollution

**Dissolved Oxygen (June - September, 2010 - 2012)**

Percent of Goal Achieved (3 Year Analysis)



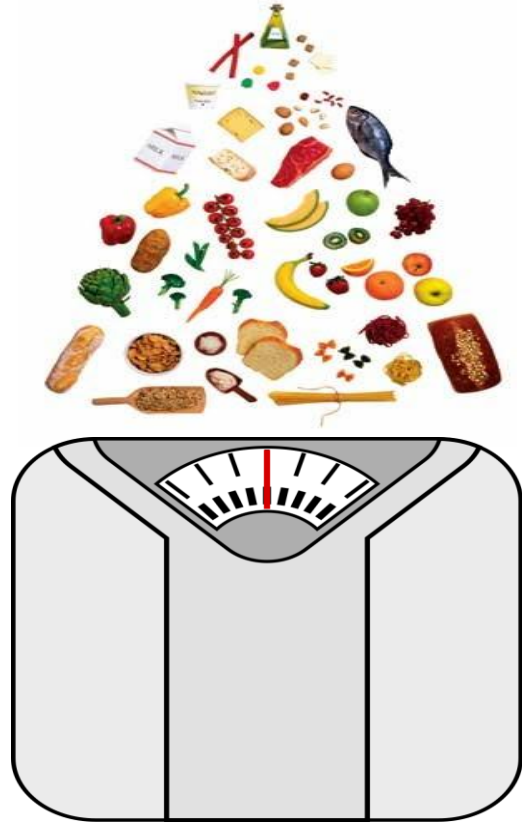
@doee\_dc

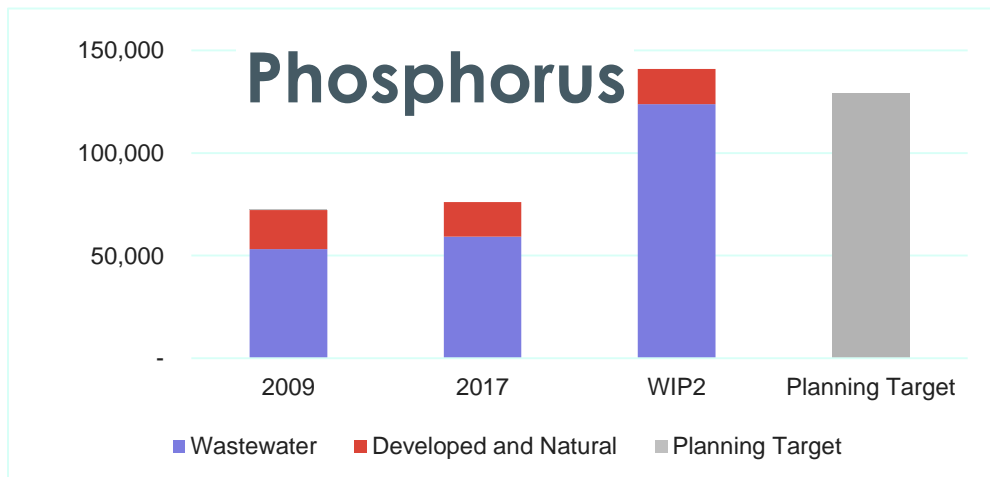
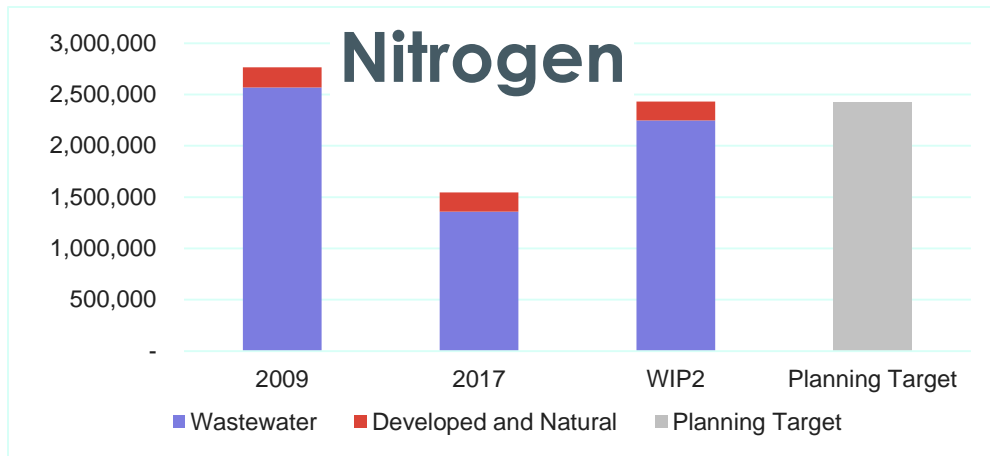


# Chesapeake Pollution Diet: Bay TMDL

- ✓ Science tells us how much pollution Bay is receiving now and how much to reduce
- ✓ Chesapeake partnership divides that among states/DC
- ✓ State/DC writes a “watershed implementation plan” (WIP) to achieve the diet

*Each State/DC currently updating its WIP cleanup strategy*



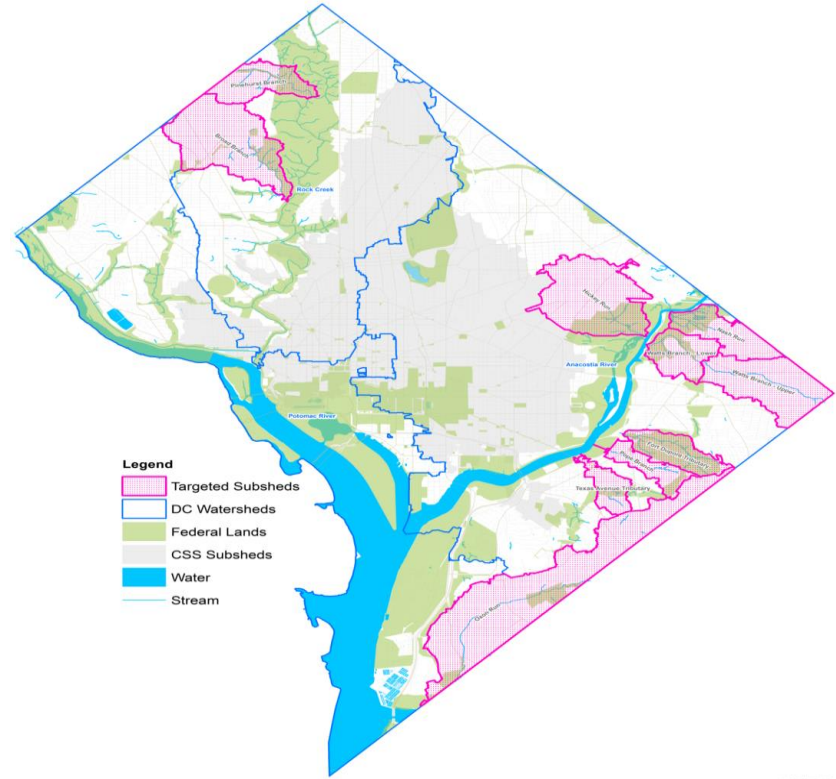


- ~90% pollution is from wastewater
- Much progress already
- Wastewater pollution will increase with growth
- Still more work to be done to reduce stormwater pollution

# Targeted Area For Local Benefits

Prioritize actions that:

- Help meet pollution diets for DC streams
- Protect existing or planned stream restoration sites
- Support residents and community assets vulnerable to extreme weather events



# DOEE Watershed Restoration Programs

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# Grant Programs

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- GZEP Watershed Protection Projects
- Clean Water Construction
- Community Stormwater Solutions
- Innovative LID
- RiverSmart Communities
- RiverSmart Schools
- Stormwater Retention Credit (SRC) Aggregator Startup



# Rebate Programs

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- Permeable Pavers
- RiverSmart Homes Rain Barrel
- RiverSmart Homes Rain Garden
- RiverSmart Rooftops

# Other Programs

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- Adopt Your District
- Large Parcel Tree Planting
- Stormwater Retention Credit (SRC) PriceLock
- Stormwater Retention Credit (SRC) Site Evaluation
- Watershed Stewards Academy



# Bottom Line

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- Can't meet pollution diet without actions by residents, businesses, churches, and community organizations
- DOEE has many programs to improve health of our waterways
- DOEE is currently updating its Watershed Implementation Plan to clean up the Chesapeake Bay and support local priorities
- Here to help you access these programs and learn how we can make them more effective

# Katherine Antos

Branch Chief

Partnering & Environmental Conservation Branch

Department of Energy & Environment

[katherine.antos@dc.gov](mailto:katherine.antos@dc.gov)

(202) 574-7606



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[@doee\\_dc](https://twitter.com/doee_dc)



# Community Stormwater Solutions Grants

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Credit: Building Bridges Across the River



Credit: Dance Place



Credit: Department of Energy and Environment

# Program History

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- An annual grant, launched in 2016
- In total, awarded 30 grants over three grant cycles and totaling nearly \$550,000
- Each year, we receive ~ 30 proposals and award ~ 10 grants
- Project budgets have ranged from \$2,000, with max being \$20,000



*Credit: National Housing Trust*

# Program Goals

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- Reduce impacts of stormwater runoff on the District's watersheds
- Fund community-oriented and inspired projects
- Expand DOEE's work with community partners and strengthen existing relationships
- Provide assistance to newer organizations to help them build capacity



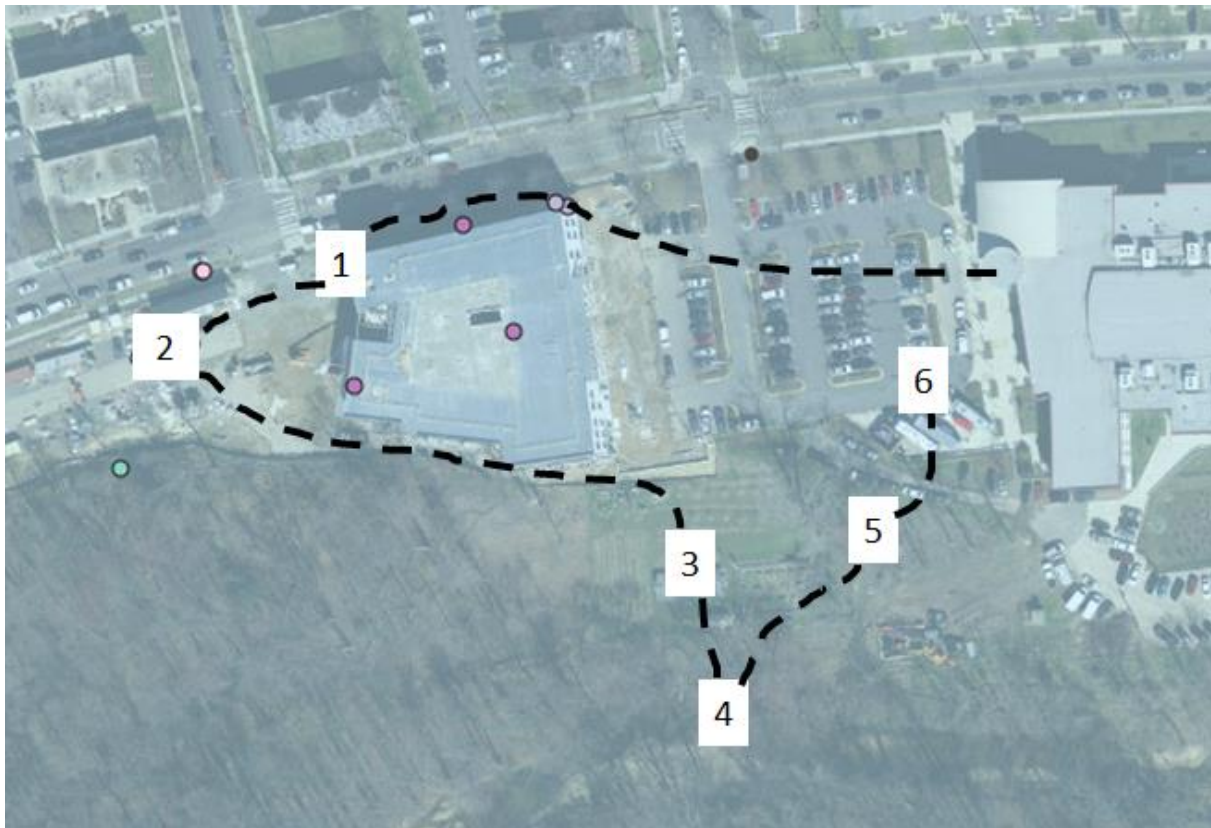
# Types of Projects

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- Install green infrastructure
- Maintain existing green infrastructure
- Provide pathways to green jobs
- Restore native habitat
- Litter clean up
- Engage communities, raise awareness, and bring about behavior change



# Green Infrastructure Site Tour





# Trash Talk

## FY18 DOEE Community Stormwater Solutions Grant

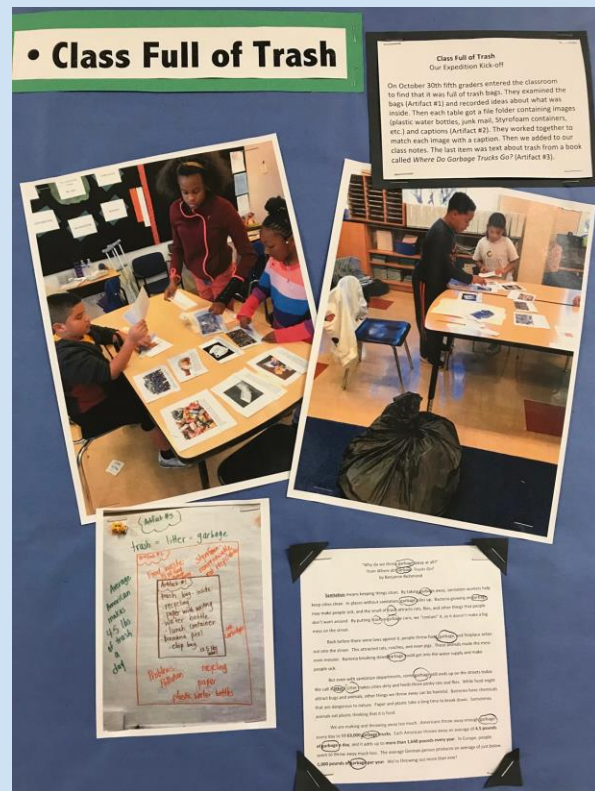
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18 September 2018  
DOEE Grant Writing Workshop

Pamela McKinney  
Capital City PCS

# Trash Talk - First Steps

- **Discussed with leadership areas of need**
  - What would we want our students to learn if we had the funds to make it possible?
- **Focused on 5th Grade**
  - Tied into the Overnight Meaningful Watershed Educational Experiences Program
  - Trash-focused science curriculum
- **Partnered with Alice Ferguson Foundation**



# Trash Talk – Planned Activities

- **Trash Audits**
- **Fieldwork trips**
  - Hard Bargain Farm - sustainable farming, introduction to watersheds & pollution
  - Ft. Totten Transfer Station
  - Prince George's Composting Facility
  - Montgomery County Recycling Center
- **In-class activities with AFF**
- **Student-led action projects**
  - Presented to DOEE, CCPCS Operations Staff, & Board of Directors



# Trash Talk – Student Data

- Collected 30 lbs of trash on school grounds
- 63% of cafeteria waste could have been composted
- 5.7 lbs of recycling is throw out each lunch period

This trash sometimes ends up on our school grounds & eventually in our water systems.



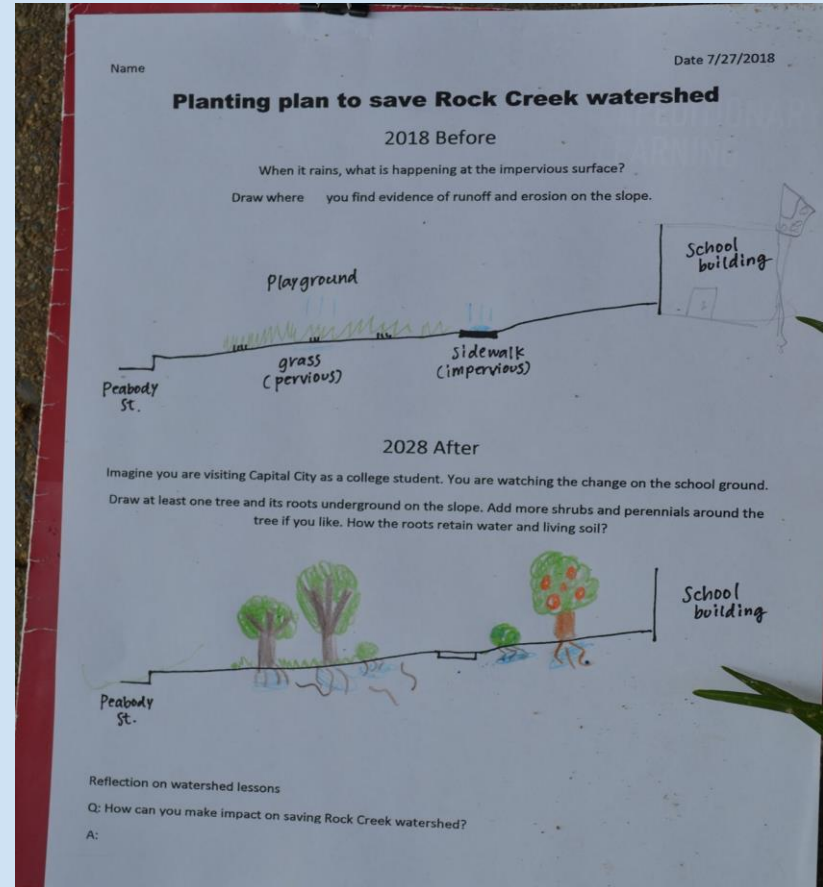
# Trash Talk – Additional Activities

- Green Team
- School-wide cleanups
- Summer program focused on stormwater runoff & pollution
- Native plantings
- High School joining efforts



# Contact Information

Pamela McKinney, Director of Development  
Capital City Public Charter School  
pmckinney@ccpcs.org  
202-808-9748





CHANGING  
**Perceptions**

# Goals of the Grant

## 3 Key Goals

### Signature Riversmart Showpiece

- Beautifully designed, environmentally friendly showpiece at our non-profit's headquarters
- Large bayscape around the property, upgraded rain garden, native plant education
- Show people can have great design that also reduces stormwater runoff

### Community Involvement

- No litter pledge and community clean ups
- Riversmart home sign ups

### Economic opportunity: Business launches and Job Training

- Training, mentorship, and experience to launch 2 Riversmart businesses
- On the job training and teaching to build Riversmart landscaping ability



# Why We Chose to Seek Funding

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Show Power of the Riversmart Program (that we have already seen)

- Pathway to business ownership
- Impact on local environment

Opportunity for Real Life Experience



# Lessons Learned

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Importance of Mentorship

Ending Thoughts



# Conservation Photographer, Krista Schlyer



*Credit: Krista Schlyer*



# River of Resilience

A Journey from Headwaters to Confluence on the Anacostia River

The Anacostia River story map commemorates the Year of the Anacostia by exploring the history and restoration of a national river watershed.

<http://storymaps.esri.com/stories/2018/anacostia/>

The **Anacostia River  
Watershed Photo Database**

was created to assist  
Anacostia River restoration  
advocates in their work.

The 200-image database  
includes a range of  
watershed themes and is  
available for free to promote  
your group's efforts towards  
river restoration.

To find out more, and register  
for the database, visit:

**[ANACOSTIAPHOTOS.PHOTOSHELTER  
.COM/P/INSTRUCTIONS](https://ANACOSTIAPHOTOS.PHOTOSHELTER.COM/P/INSTRUCTIONS)**



*Credit: Krista Schlyer*

# WHAT'S NEXT?



*Credit: Krista Schlyer*

### **Stormwater 101** *September 18th*

Learn how stormwater impacts your neighborhood, rivers, and the Chesapeake Bay and opportunities to fund community projects. Includes a site tour of green infrastructure at THEARC.

### **Project Description & Partners** *September 25th*

Join this workshop for the opportunity to work with community partners and learn how to write a strong project description. We will answer questions like "What does a grant application look like?" and "What should be included in a project description?"

### **Work Plan & Required Documents** *October 2nd*

Ever wonder what is the difference between outputs and outcomes? Overwhelmed by the amount of additional documents required with a proposal? Join this workshop and learn how to write a strong work plan and an explanation of the required supporting documents.

### **Budget & Narrative** *October 9th*

Budgeting not your strong suit? No worries! Join this workshop to learn the most critical aspects of a good budget and how to successfully write a budget narrative to explain how you will be spending the money.

### **You got the grant, now what?** *October 16th*

Congratulations! You got the grant, but now what? Join this workshop and learn what happens after you are awarded a grant and what is required.

**Questions?** Contact Kara Pennino at  
[kara.pennino@dc.gov](mailto:kara.pennino@dc.gov) or 202-654-6131

