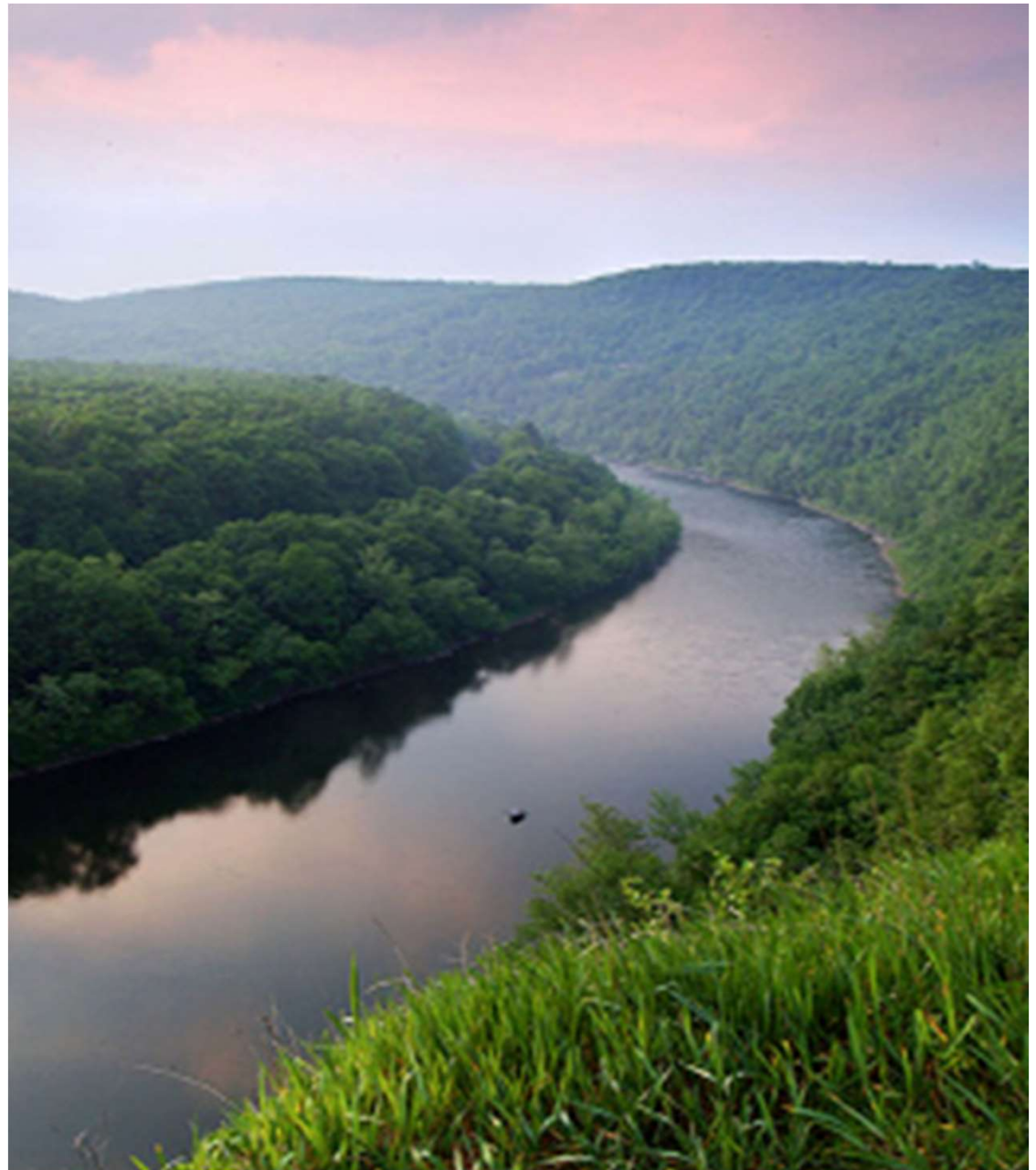


# **Using Stormwater Utilities to Provide Sufficient, Equitable and Sustainable Financing**



**October 2019**



**ENVIRONMENTAL  
FINANCE CENTER**



## ENVIRONMENTAL FINANCE CENTER

- UMD EFC is one of 10 regional centers started by EPA mostly based at universities.
- UMD EFC serves EPA Region 3 - PA, DE, MD, DC, VA, WV; Partner with Syracuse EFC serving Region 2 (NY, NJ, PR, VI).
- Strengthen the capacity of decision makers by providing technical, research, and policy assistance.
- Equip communities with the knowledge and tools they need to create more sustainable environments, more resilient societies and more robust economies.

# MS4 PERMIT REQUIREMENTS

## Six minimum control measures (MCMs)

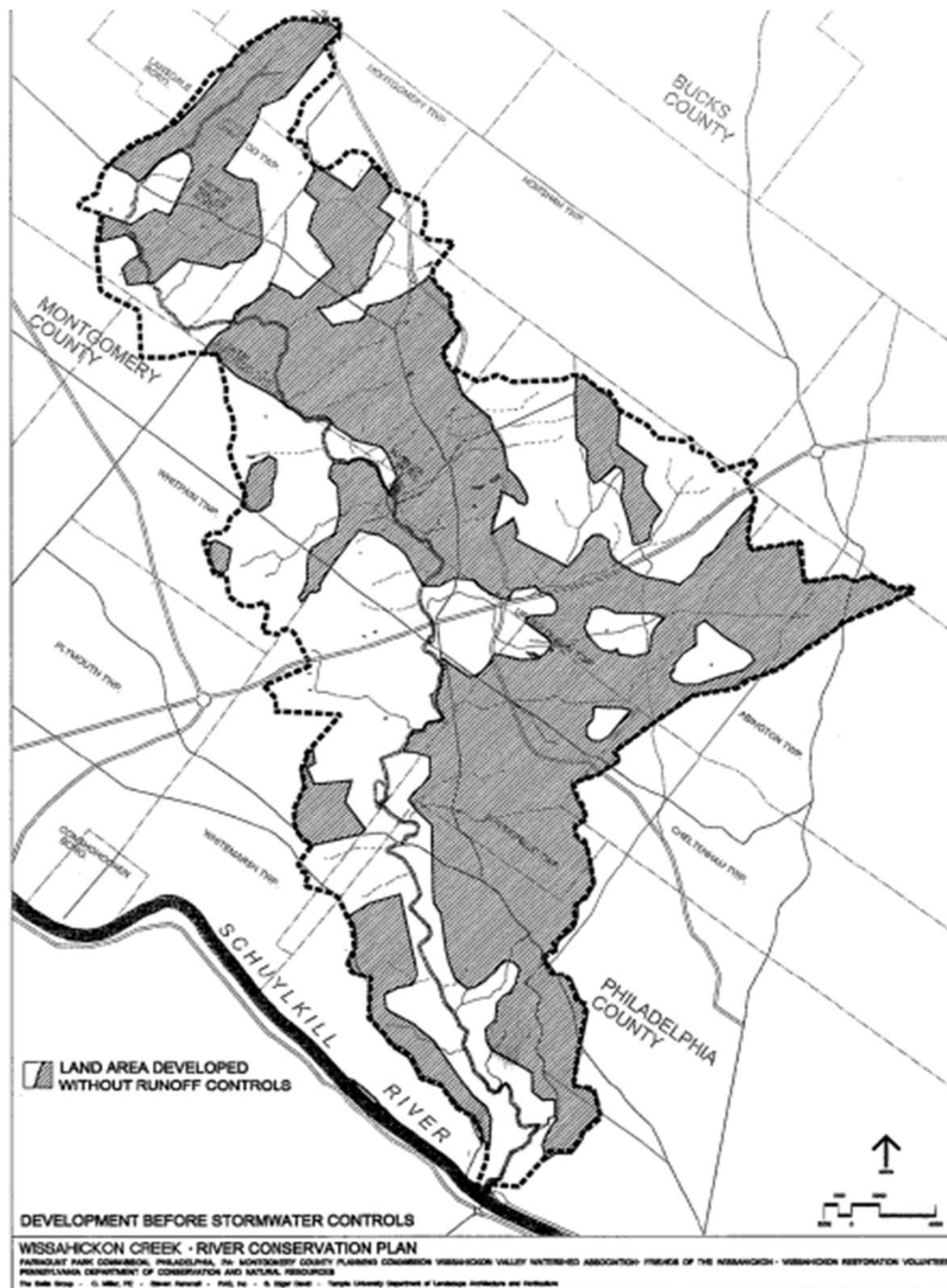
- Public education and outreach
- Public engagement and involvement
- Illicit discharge detection and elimination
- Construction stormwater runoff control
- Post-construction stormwater runoff control
- Good housekeeping and pollution prevention

## Chesapeake Bay TMDL Pollutant Load Requirements

## Local Stream impairments/TMDLs



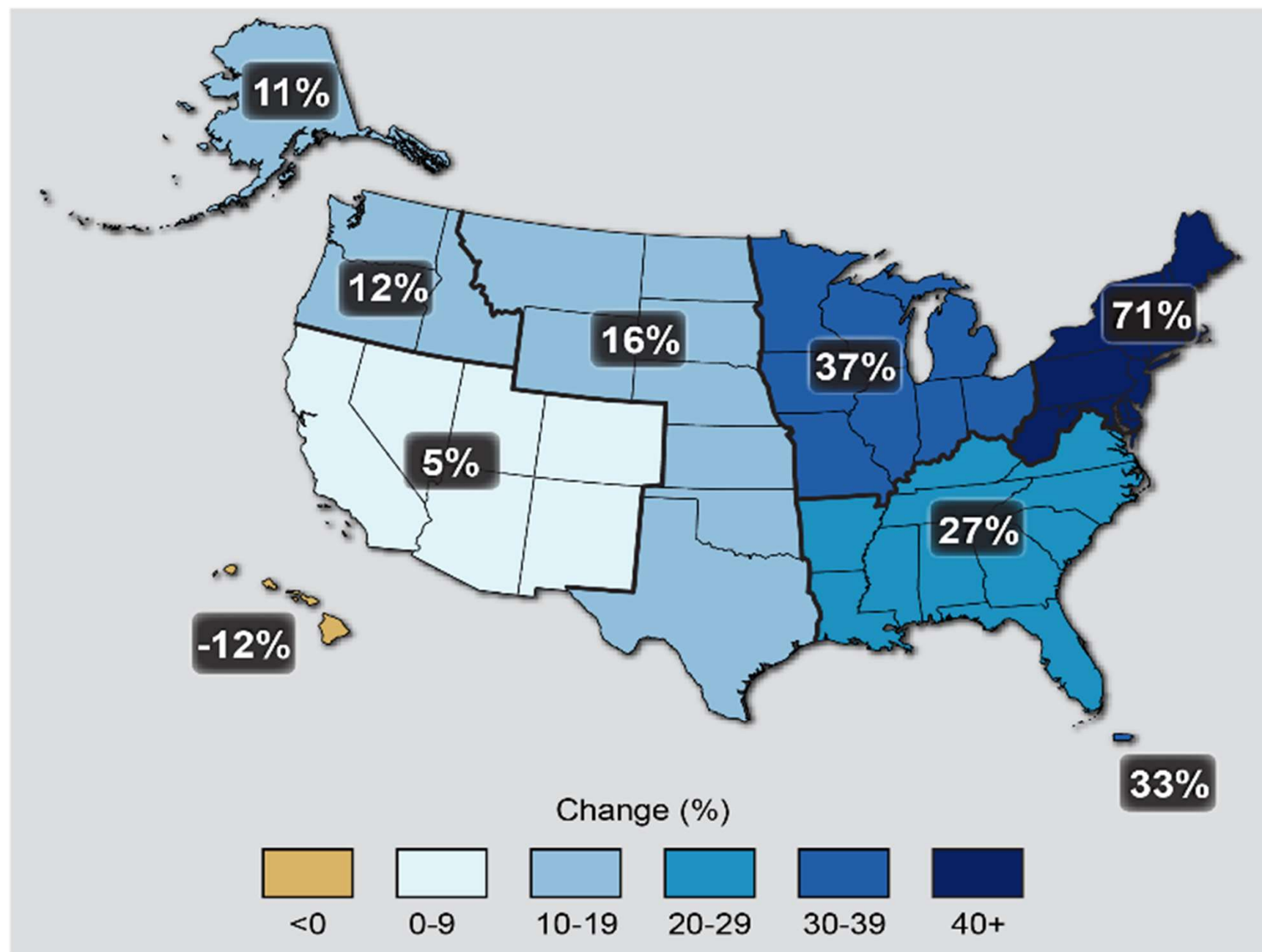




**Figure 2-3 Development in the Wissahickon Creek Watershed Prior to Stormwater Management Controls**

**Source:** Wissahickon Creek River Conservation Plan, 2001

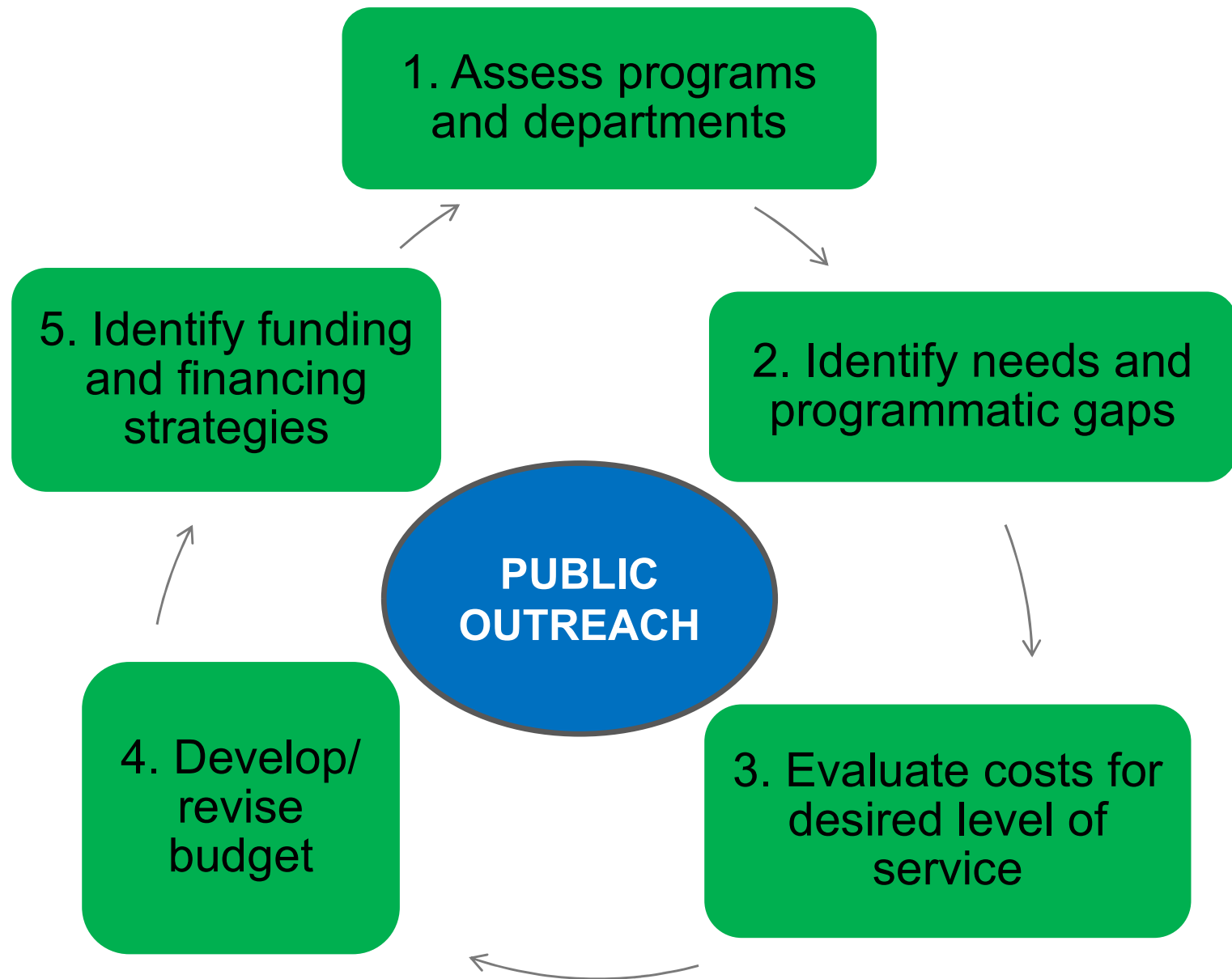
## Observed Change in Very Heavy Precipitation



# Components of Stormwater Program

- Capital Improvements (BMPs)
- Operations and Maintenance
- Public Education and Involvement
- Technical Support
- Engineering and Planning
- Regulation and Enforcement
- Administration
- Billing and Finance





# Financing Strategy

## ACTIVITIES

- Capital Improvements (BMPs)
- Operations and Maintenance
- Public Education and Involvement
- Technical Support
- Engineering and Planning
- Regulation and Enforcement
- Administration
- Billing and Finance



## PARTNERS

- Internal Municipal Partners (Parks & Rec, Road Crew, Admin)
- Watershed Organizations
- Conservation District
- County Planning Department
- Township Committee (EAC, Open Space, Parks & Rec)
- Existing Municipal Authorities
- Other Municipalities

## RESOURCES

- General Funds
- CIP Funds
- Grants
- Partnerships
- Fees





# BASIC COSTS

- ✓ Capital projects
- ✓ Personnel
- ✓ Equipment
- ✓ Operations & Maintenance



Source	Cost Coverage		Strengths	Weakness
	Capital	O&M		
General Fund	Yes	Yes	Can be used to support all program costs	Competes with other community priorities, changes from year-to-year, less equitably spreads costs across payers
Grants	Yes	No	Good source for “shovel ready” project implementation, demonstration projects and initial program staff	Not guaranteed, highly competitive, suitable for demonstration projects, not sustainable in the long-term
SRF & Loan Programs	Yes	No	Can offer up-front capital for larger projects	Not guaranteed fund source, highly competitive, must repay often with interest
Bond Financing	Yes	No	Can be used for large, long-term expenditures	Dependent on fiscal capacity, must repay with interest, cost of securing bond may be high
Permit, Development & Inspection Fees	Yes	No	Offers nexus to system and program expansion needs	May not sufficiently cover program costs, may deter development
Stormwater Utility Fee	Yes	Yes	Can generate sufficient revenue, sustainable, dependable, equitable depending on design, support all program costs	Requires significant public dialogue, can create administrative challenges
Tax Districts	Yes	Yes	Can generate sufficient revenue, sustainable, dependable	Necessitates enabling statute, can have equity problems due to property value basis



# BERLIN, MD

## Berlin, MD Proposed Stormwater Budget, 10 Year Projection

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Revenues</b>										
Residential properties	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000
Commercial properties	\$391,846	\$391,846	\$391,846	\$391,846	\$391,846	\$391,846	\$391,846	\$391,846	\$391,846	\$391,846
<b>Total Revenues</b>	<b>\$461,846</b>	<b>\$461,846</b>	<b>\$461,846</b>	<b>\$461,846</b>	<b>\$461,846</b>	<b>\$461,846</b>	<b>\$461,846</b>	<b>\$461,846</b>	<b>\$461,846</b>	<b>\$461,846</b>
<b>Expenditures</b>										
<b>Personnel Costs</b>										
Cleaning (inlets, ditches, drains) staff	\$90,000	\$92,250	\$94,556	\$96,920	\$99,343	\$101,827	\$104,372	\$106,982	\$109,656	\$112,398
Comprehensive trash collection staff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Green Infrastructure Plan staff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IDD&E staff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Public outreach & education staff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
GIS management intern	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total Personnel Costs</b>	<b>\$90,000</b>	<b>\$92,250</b>	<b>\$94,556</b>	<b>\$96,920</b>	<b>\$99,343</b>	<b>\$101,827</b>	<b>\$104,372</b>	<b>\$106,982</b>	<b>\$109,656</b>	<b>\$112,398</b>
<b>Capital Improvements - includes equipment, installation, and inspection</b>										
Area 2 (Cedar, Pine, Maple, Franklin, etc.)	\$1,018,582									
Area 3 (Williams Street near Electrical Plant)	\$395,617									
Area 5 (Henry's Mill/Henry's Green)		\$1,114,293								
Area 1 (West St Near Abbey Lane)		\$1,913,814								
Area 6 (Hudson Branch @ Flower/Showell)			\$570,000							
Area 16 (Decatur Farms)			\$112,500							
Annual savings for truck	\$30,000	\$30,750	\$31,519	\$32,307	\$33,114	\$33,942	\$34,791	\$35,661	\$36,552	\$37,466
<b>Total Capital Improvements</b>	<b>\$1,444,199</b>	<b>\$3,058,857</b>	<b>\$714,019</b>	<b>\$32,307</b>	<b>\$33,114</b>	<b>\$33,942</b>	<b>\$34,791</b>	<b>\$35,661</b>	<b>\$36,552</b>	<b>\$37,466</b>
<b>Operations &amp; Maintenance</b>										
Vehicle maintenance	\$5,000	\$5,125	\$5,253	\$5,384	\$5,519	\$5,657	\$5,798	\$5,943	\$6,092	\$6,244
Trash collection promotional materials	\$500	\$513	\$525	\$538	\$552	\$566	\$580	\$594	\$609	\$624
Erosion control measures and BMPs	\$100,000	\$102,500	\$105,063	\$107,689	\$110,381	\$113,141	\$115,969	\$118,869	\$121,840	\$124,886
IDD&E inspection equipment & analysis	\$3,000	\$3,075	\$3,152	\$3,231	\$3,311	\$3,394	\$3,479	\$3,566	\$3,655	\$3,747
Public outreach & education	\$10,000	\$10,250	\$10,506	\$10,769	\$11,038	\$11,314	\$11,597	\$11,887	\$12,184	\$12,489
Redevelopment projects	\$45,000	\$46,125	\$47,278	\$48,460	\$49,672	\$50,913	\$52,186	\$53,491	\$54,828	\$56,199
<b>Total Operations &amp; Maintenance</b>	<b>\$163,500</b>	<b>\$167,588</b>	<b>\$171,777</b>	<b>\$176,072</b>	<b>\$180,473</b>	<b>\$184,985</b>	<b>\$189,610</b>	<b>\$194,350</b>	<b>\$199,209</b>	<b>\$204,189</b>
<b>Total Expenditures</b>	<b>\$1,697,699</b>	<b>\$3,318,695</b>	<b>\$980,352</b>	<b>\$305,298</b>	<b>\$312,931</b>	<b>\$320,754</b>	<b>\$328,773</b>	<b>\$336,992</b>	<b>\$345,417</b>	<b>\$354,053</b>
<i>Surplus (deficit)</i>	<i>(\$1,235,853)</i>	<i>(\$2,856,849)</i>	<i>(\$518,506)</i>	<i>\$156,548</i>	<i>\$148,915</i>	<i>\$141,092</i>	<i>\$133,073</i>	<i>\$124,854</i>	<i>\$116,429</i>	<i>\$107,793</i>

# **COST REDUCTION STRATEGIES**

- **Review your codes/ordinance**

Resource: Center for Watershed Protection  
Code and Ordinance worksheet

<https://owl.cwp.org/mdocs-posts/better-site-design-code-and-ordinance-cow-worksheet-2017-update/>

- **Reduce municipal stormwater runoff, shift risk and cost of compliance to those seeking to build more impervious cover**



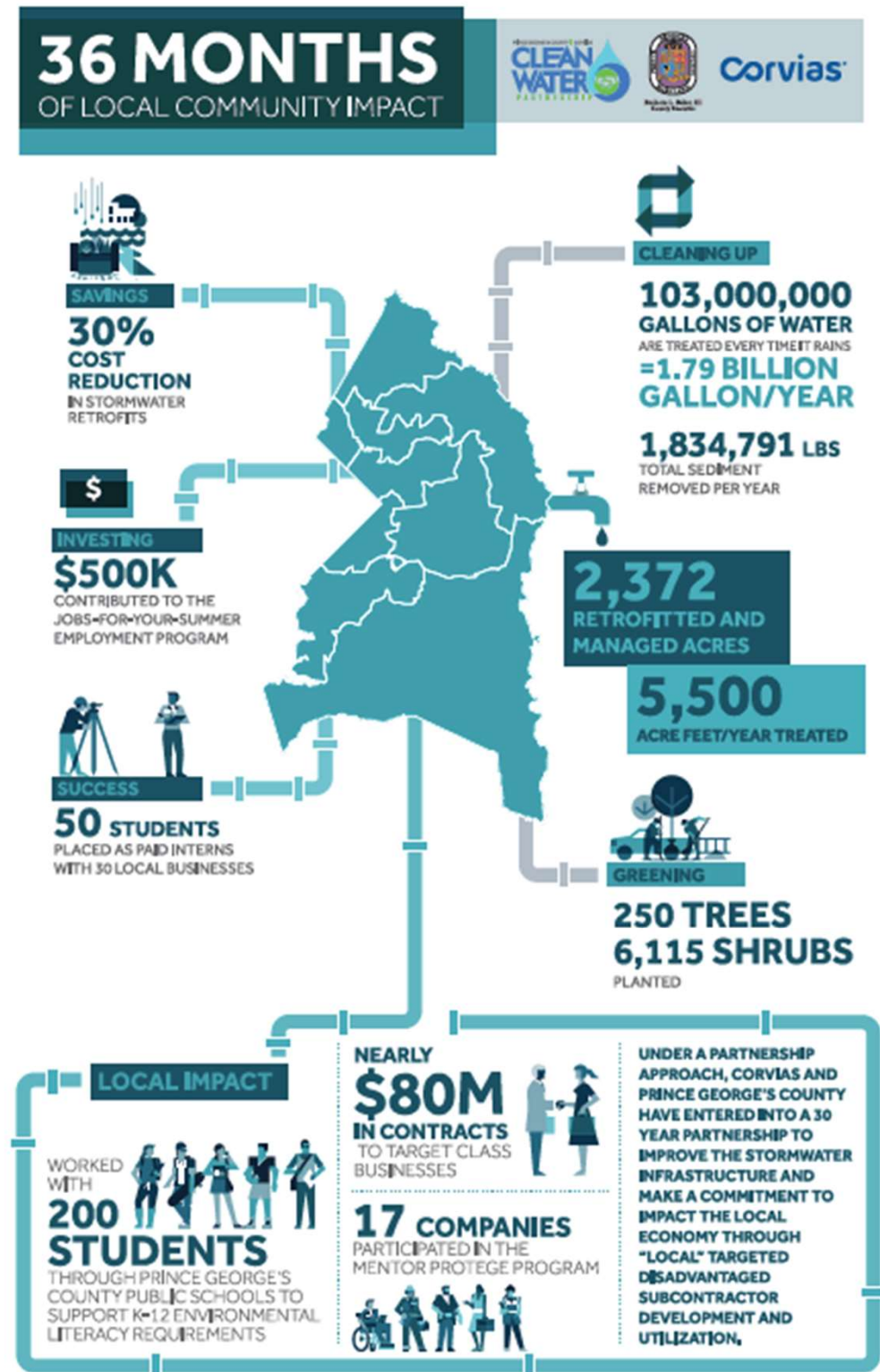
# “DIG ONCE”

“An examination of the City of Lancaster, Pennsylvania’s efforts to **incorporate green infrastructure into planned capital improvement projects indicated costs were 45% lower** than if these green infrastructure projects had been installed outside of the CIP process”

U.S. EPA Region 9 (2014) ASSET MANAGEMENT: Incorporating Asset Management Planning Provisions into NPDES Permits. Water Division.

<https://www.epa.gov/sites/production/files/2018-01/documents/incorporating-asset-mgmt-through-permits.pdf>

# PRINCE GEORGE'S COUNTY CLEAN WATER PARTNERSHIP



<b>2018</b>	<b>No. of munis</b>	<b>Sediment Load Reduction Target (lbs/yr)</b>	<b>No. of Projects</b>	<b>Total Funds under Agrmt</b>	<b>Cost Share formula</b>	<b>Term of Agrmt</b>
<b>York County Stormwater Consortium</b>	45	2,443,984 (10% of TMDL reduction requirement)	77	\$13 million (based on project cost estimates reduced by 20% assumed savings)	20% impaired stream miles 30% population 50% impervious	5 years
<b>Blair County Intergvmtl Stormwater Committee</b>	11	1,409,613 (10% of TMDL reduction requirement)	43	\$200,000 (based on agreed upon amount)	20 % stream length in UA 30% population 50% impervious cover	2 years
<b>Lebanon County Stormwater Consortium</b>	6	476,801 (10% of TMDL reduction requirement)	60	\$5 million (based on agreed upon amount; project estimates included in plan)	20% impaired stream miles 30% population 50% impervious	5 years
<b>Wyomissing Creek Watershed Coalition</b>	8	372,986 (10% of existing load)*	7	\$1,522,600 (based on estimates of project costs)	In process of revising	5 years
<b>Eastern Delaware County Stormwater Collaborative</b>	10	356,202 Darby Creek 208, 241 Cobbs Creek (10% of existing loads)	75 (Darby Creek) 39 (Cobbs Creek)		Equitable share based on municipal percentage of existing load; equal shares for admin costs	5 years

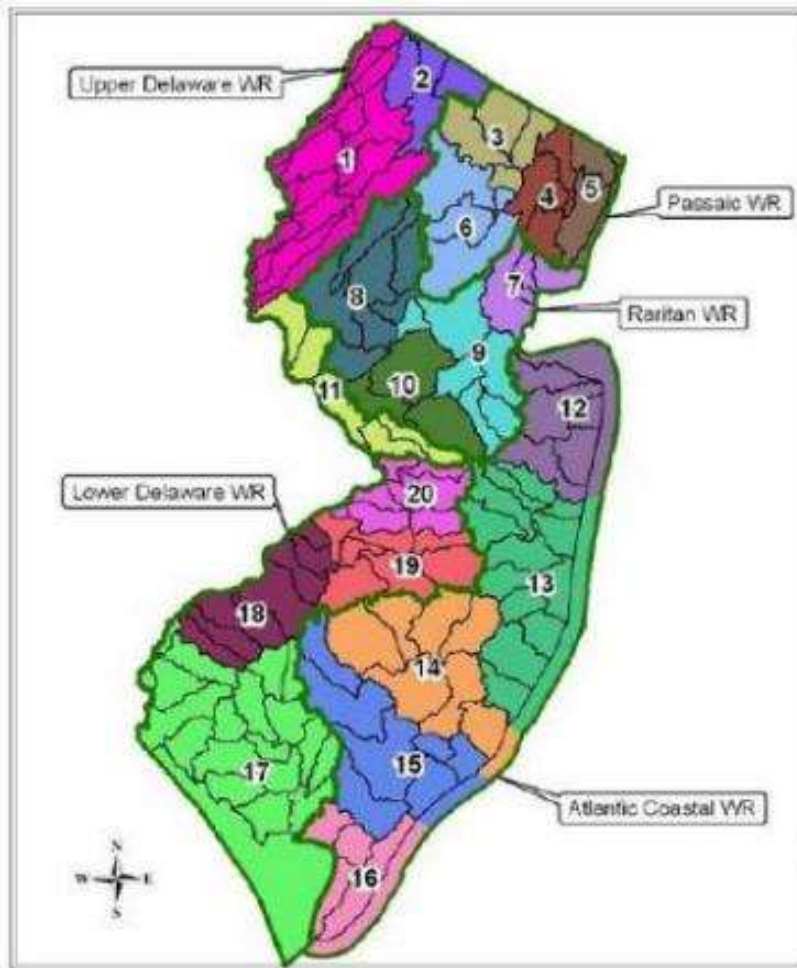
# EASTERN SHORE CIRCUIT RIDER

- **Shared staff person and other shared technical services**
  - Leverage limited resources
  - Plan and prioritize projects
  - Speed the delivery of stormwater BMPs
- **Serves for six municipalities:**
  - Talbot County
  - Queen Anne's County
  - City of Cambridge
  - City of Salisbury
  - Town of Easton
  - Town of Oxford
- **All water quality issues**
- **Housed at the Chesapeake Bay Foundation, East Shore office**



# **GENERAL THEMES FROM MUNICIPAL STORMWATER PROJECTS**

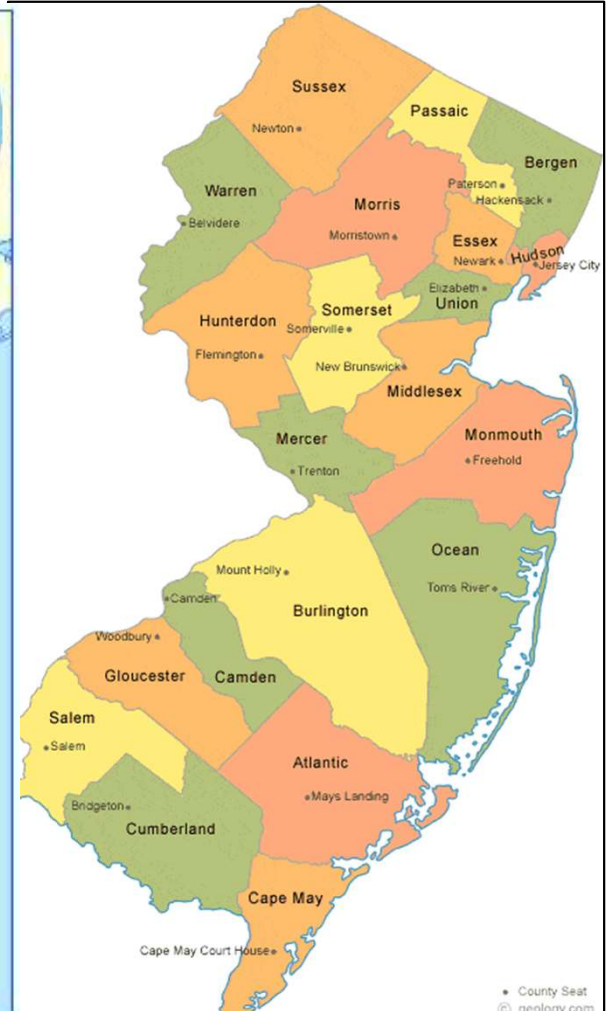
- **Chesapeake Bay TMDL is driving new strategies**
- **Fees spreading faster in Chesapeake Bay communities than in Delaware River basin communities**
- **Robust partnerships in the Delaware River basin – strong watershed groups, EACs partnering with municipalities**
- **Role of counties strong and important in both watersheds and across states**
- **Development without stormwater controls a larger problem around older urban centers**
- **O & M going forward – HUGE issue generally being ignored**



Watersheds



Municipalities



Counties

# FINANCING RECOMMENDATIONS

- **Review codes and ordinances to see where incentivizing impervious cover**
- **Reduce costs:**
  - Maximize opportunities = Dig Once
  - Coordinate and collaborate
  - Shift risk to entities creating more impervious cover
- **Diversify funding sources – general funds, grants, CIP funds, fees**
- **Consider the full life cycle and replacement costs in planning, implementing, operating and maintaining stormwater BMPs.**
- **O & M is about protecting your investment -- include O & M costs for at least first 5 years in requests for proposals for BMP project implementation.**
- **Track costs of all stormwater activities, BMP implementation and O & M consistently to support more accurate budgeting.**
- **Consider pay-for-performance contracting structure with local priorities**

# IF YOU DECIDE TO CONSIDER A STORMWATER FEE . . .

- Make sure you understand where your existing code allows for – or actually incentivizes -- impervious cover.
- Look to gain all efficiencies and leverage as much as possible.
- Understand your land uses – do you have a lot of tax exempt properties?
- Will administration costs outweigh new revenue?
- A fee or a fee + utility?
- Consider what to call the fee
- Create a stakeholder engagement group that includes a variety of different kinds of landowners and potential opponents.



# REASONS A STORMWATER FEE MIGHT NOT BE YOUR BEST SOLUTION

- Your program needs aren't a big monetary issue
- You don't have a lot of tax exempt properties contributing to stormwater issues
- The magnitude of tax collected for each parcel is in line with stormwater costs
- Administration/Billing would be too cumbersome
- The costs outweigh the benefits

**A stormwater fee is not the solution  
for every community!**

# DERRY TOWNSHIP MUNICIPAL AUTHORITY

Providing a cost effective public service to protect and enhance the water environment and quality of life for our local and regional community.



# INFRASTRUCTURE REVIEW IDENTIFIED NEEDS

**\$27,000,000 in needed improvements identified**

**Condition assessment and priority planning ~ \$0.5M**

- Partnership with USACE (50/50 cost share)
  - Mapping/Condition Assessment of Infrastructure (years 2016-2018)
  - Impervious Surface Development in GIS
  - Flood Modeling
  - Flood Emergency Access Study

**Replacement of failed infrastructure ~ \$11M**

- Significant portion of pipe and facilities anticipated to reach its useful life over next 10-20 years

**System improvements and new green infrastructure / stormwater best management practices (BMPs) to address flooding ~ \$15.5M**

	Level of Service	O&M	Planning & Compliance	Capital Improvements
Desired Level	Exceptional	Fully Preventative/ 100% Routine	Comp planning, NPDES compliance	Prioritized/Fully Funded
→	Comprehensive	Mix of routine & inspection based	Priority Planning	Phased/allocated budgets
Existing Level	Expanded	Inspection based	Reactionary Planning	Inspection-based/moderate budget
→	Average	Responsive only	Emergency	Critical needs only/minimal budget
	Minimal	Non-Responsive	No Planning	No planning/No budget



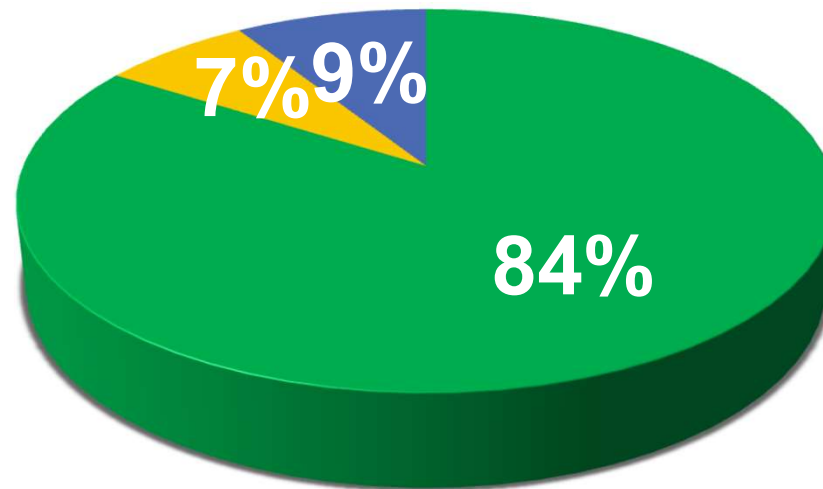
## Total Township Impervious Area (sq. ft.)

1.	Single-Family Residential	26,776,539
2.	Multi-Family Residential	2,655,592
3.	Commercial/Industrial	27,860,034
4.	Non-Profit/Tax Exempt	21,544,357
5.	Parks & Recreation	12,064,049
6.	Vacant/Unknown/Public Utility	4,610,600
7.	Agriculture	2,400,300
	<b>Total Township Impervious Area (sq. ft.):</b>	<b>97,911,471</b>
	<b>Total Township ERUs:</b>	<b>25,766</b>

## Projected Annual Budget (2017-2021)

Category	Projected Cost
Administrative / General	\$150,000
Operation & Maintenance	\$330,000
MS4 Compliance	\$290,000
Capital Improvements	\$560,000
<b>Total Annual Cost:</b>	<b>\$1,330,000</b>

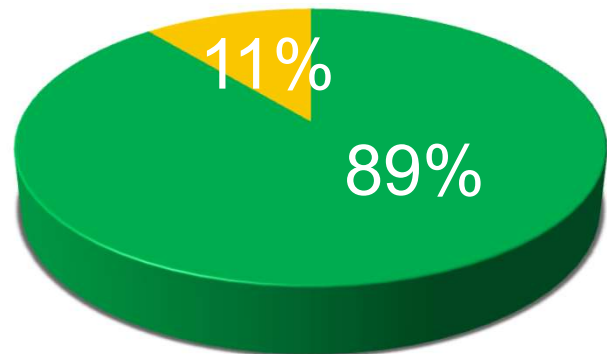
# BREAKDOWN OF STORMWATER ACCOUNTS



- Storm with Sanitary
- Storm Only
- Landlord Storm

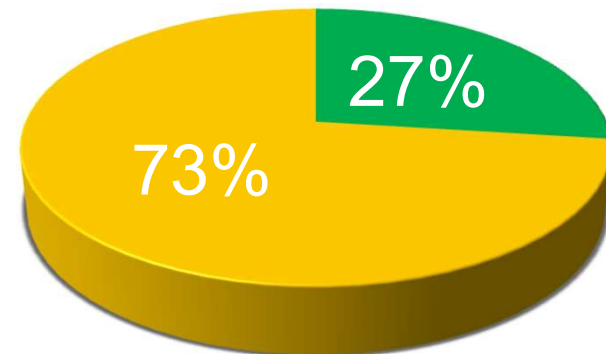
# ACCOUNTS V ERUS

Number of Accounts



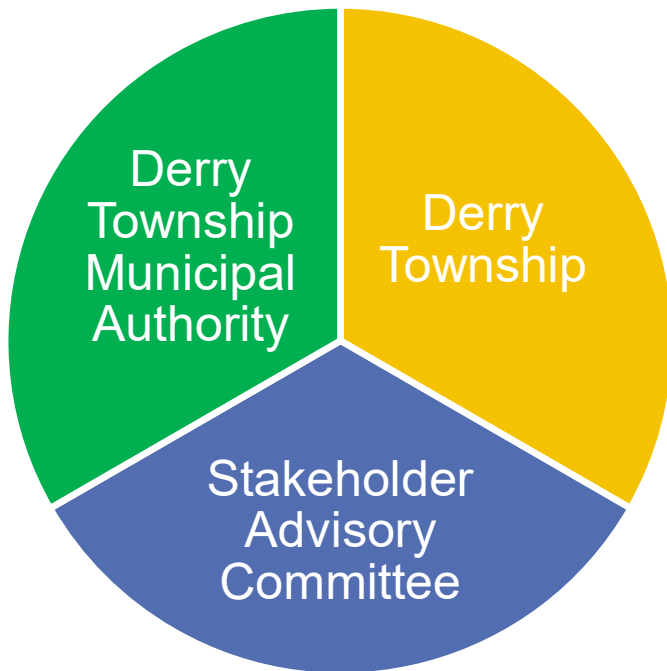
- Residential
- Non-Residential

Number of ERUs



- Residential
- Non-Residential

# DERRY TOWNSHIP STORMWATER PARTNERSHIPS



- Township Board of Supervisors recognized the need to develop a new model comprehensive Stormwater Management Program (SMP) for the Township
- Meeting held between Board of Supervisors, DTMA, and both staffs for 3-4 months to discuss pros, cons, and potential hurdles
- No downside for DTMA
- All upside for the Township residents
- Formed Stakeholder Advisory Committee to evaluate program further



# QUESTIONS?

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