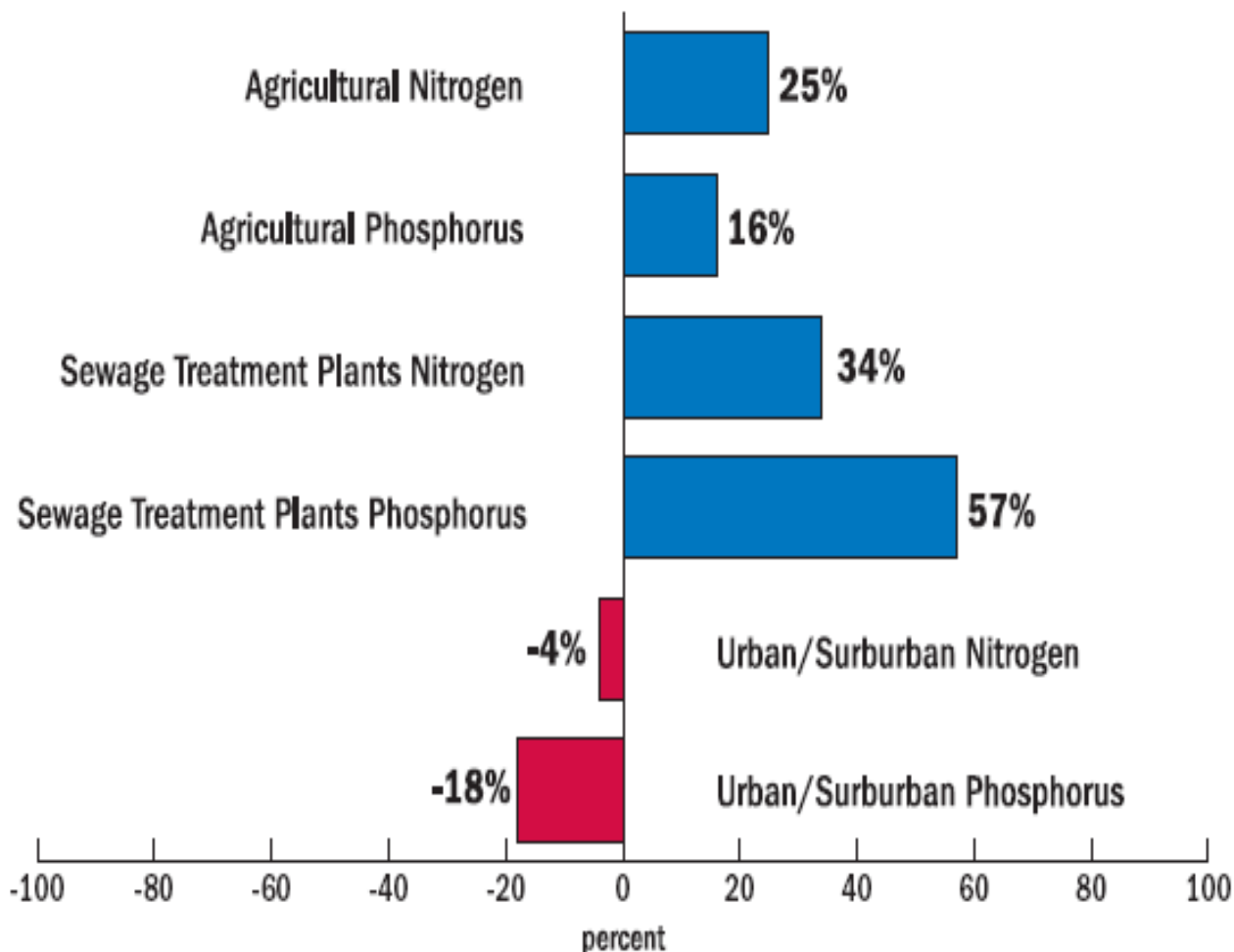


*Task Force on the Future for
Growth and Development in
Maryland*

*Stormwater Management Forum
January 15, 2010*

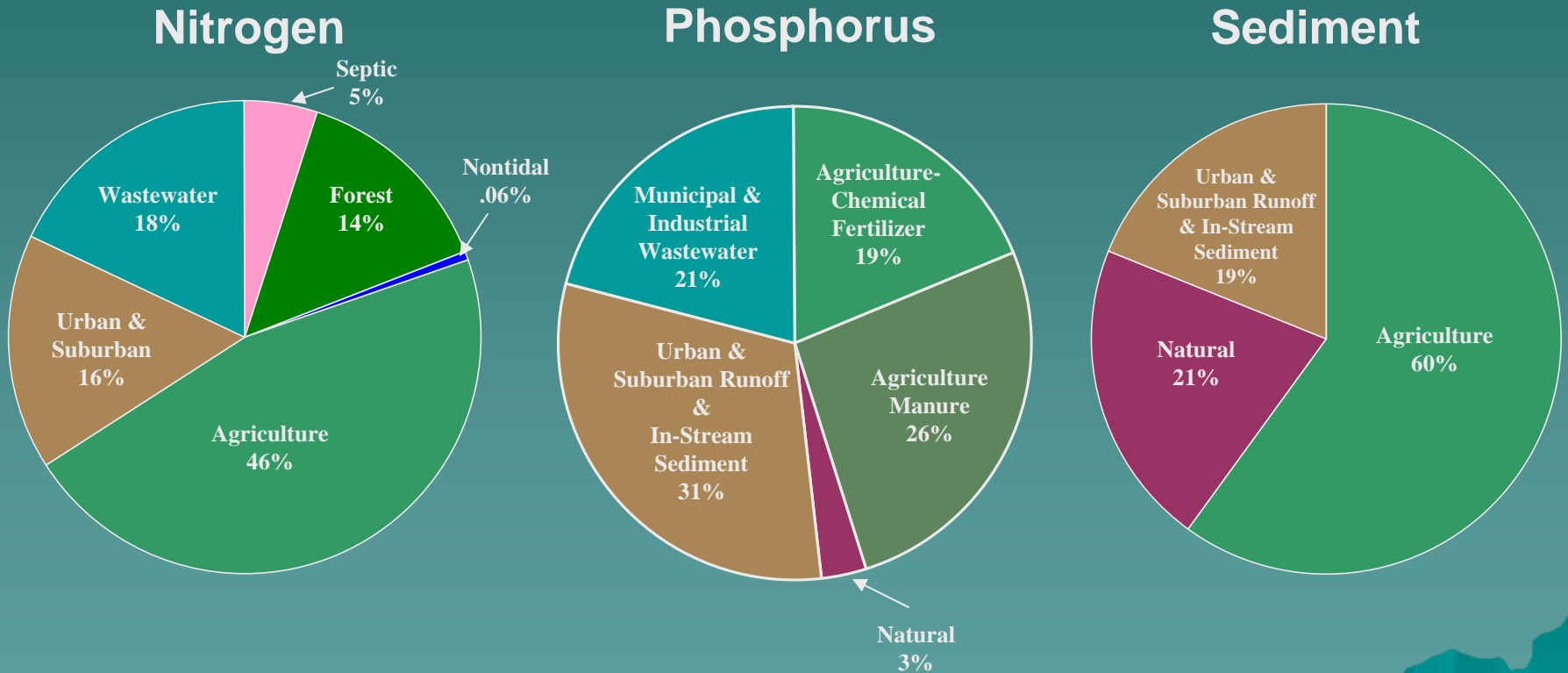
*Lee Epstein, Chesapeake Bay Foundation
Diane Cameron, Audubon Naturalist Society
(and on behalf of Natural Resources Defense Council)*

2008
Progress from 2000
Meeting Nitrogen and Phosphorus Pollution Reduction Goals



Source: Chesapeake Bay Program modeled estimates calculated on a 10-year average.

Relative Responsibility for Pollution Loads to the Bay



Existing vs. New Development

- ◆ 13% of Bay watershed is developed
- ◆ 5 million developed acres are largely untreated
- ◆ 2.5 million acres of new urbanized acres expected by 2030
- ◆ 1 million acres of redevelopment possible by 2030

2009 MDE Regulation

- ◆ Treatment requirements higher for “greenfield” development
 - Greenfield Development:
 - ◆ Manage for CPv ~**2.5 inches** using ESD for first **1 inch**
 - ◆ Beyond 1 inch, ESD to MEP
 - Redevelopment:
 - ◆ 50% impervious reduction **OR**
 - ◆ 50% retention of WQv ≈ **0.5 inches** using ESD to MEP **OR**
 - ◆ Alternative management measures, off-site mitigation

Given differential, costs for meeting redevelopment requirements are designed not to disadvantage redevelopment



- ◆ Other jurisdictions have similar/higher requirements for redevelopment without stagnation of smart growth or redevelopment activity

<u>Location</u>	<u>Minimum management standard</u>
Philadelphia, PA	1 inch (retain/treat)
Los Angeles, CA	0.75 inch (treat)
Chicago, IL	0.5 inch (treat)
Federal facilities (infiltrate, evapotranspire, or re-use)	1.7 inches
North Carolina	1 inch or more
Montgomery County, MD	1 inch*

* Std is CPv, but 1 inch is absolute minimum



- ◆ SW management integrated into redevelopment is cheaper than after-the-fact retrofits.
 - **Estimated cost of stormwater compliance to meet Bay-wide TMDL: \$1.6 - 4.8 billion.**
 - **Montgomery County, MD estimates \$133 million to comply with new MS4 permit; spent > \$13M in 2009** on stormwater management program and ~ \$40M for stormwater retrofits in the 6-year CIP.
 - Between 2002-2009, **Baltimore City spent > \$16M** on retrofit projects alone (not including ongoing stormwater program activities).
 - **Charles County, MD is planning to spend ~ \$10M** to provide treatment for 126 suburban acres through 4 projects at a cost of > \$78,000/acre.

Philadelphia Redevelopment vs. Retrofit Costs

(modeled \$/imp ac treated to 1 inch)*

Site/project name	Site area (sq. ft.)	Redevel. cost	Retrofit cost
1919 Market	30,593	\$610,074	\$888,947
PAL Employee Lot	551,470	\$135,211	\$164,062
Nellie Reynolds Proj.	64,600	\$417,016	\$663,693
Commodore John Barry Elem.	52,254	\$78,582	\$102,415

* Source: City of Philadelphia, Philadelphia Water Department Study (2009)



**Excess stormwater
damages roads and bridges.**

Montgomery County Gazette

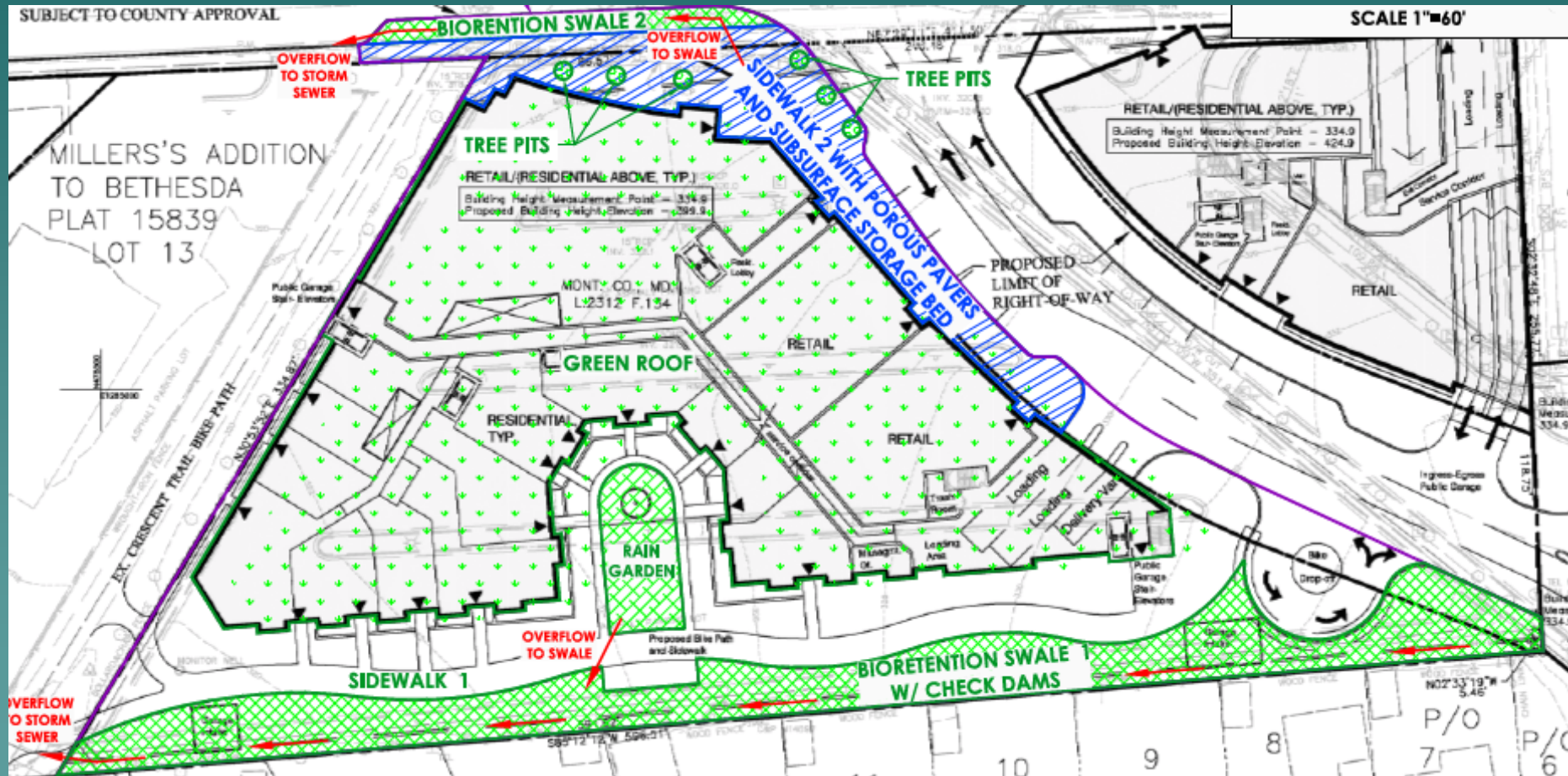
**\$300 million/6-year:
Partial estimate of SW
management and repair
costs for Mont. Co.**

Inadequate SW management = Infrastructure & Natural Resource Damages



**WSSC estimates sewer pipe
repair—due to SW damages—
will cost \$7M - \$45M / 6-yr**

Redevelopment Site Design (Meliora Report, 2008)



Meliora Report

Summary Table – Comparison Between ESD and Conventional Stormwater	
	Design for Water Quality Volume
LOT 31	
ESD	\$73,567
Conventional	\$132,684
DIFFERENCE	-\$59,117
CALVERTON	
ESD	\$104,164
Conventional	\$207,867
DIFFERENCE	-\$103,704
BALTIMORE	
ESD	\$263,010
Conventional	\$409,307
DIFFERENCE	-\$146,297

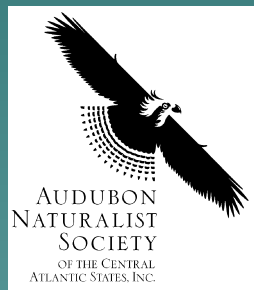
Conclusions

- ◆ Stormwater is a significant source of pollution - the only growing problem; costs for pollution reductions will rise for ALL sources;
- ◆ MDE rule sets modest, achievable standards for highly urban and less dense settings - including a differential standard for redevelopment that other jurisdictions are currently meeting;
- ◆ Redevelopment without stormwater controls transfers higher costs to local governments and the public;
- ◆ Stringent stormwater requirements, as a percentage of redevelopment costs, are typically 1.5% - 6.5% of total costs;
- ◆ ESD serves multiple objectives important to "Smart Growth"; density and location alone do not make growth "Smart."

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