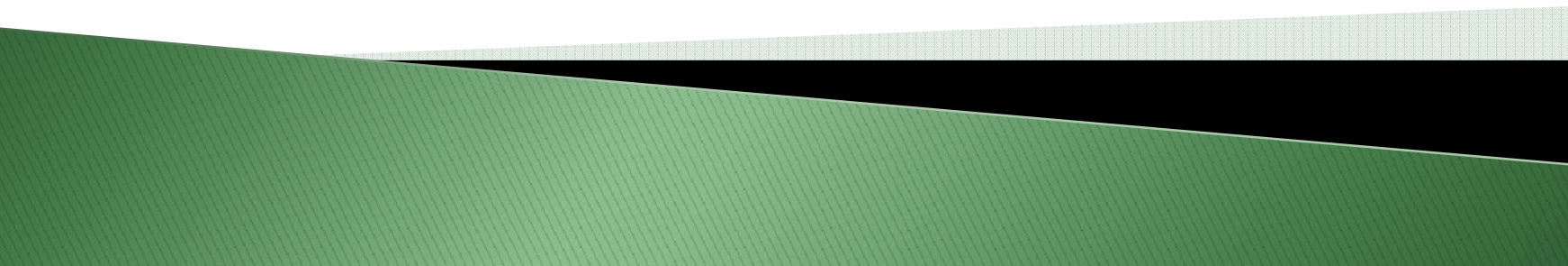


# Green Streets and Highways

The Maryland State Perspective



# The Maryland Framework

MDOT includes all transportation modes.

The State Highway Administration (SHA) is responsible for only one quarter of the lane miles in MD.

# Maryland's SWM Framework

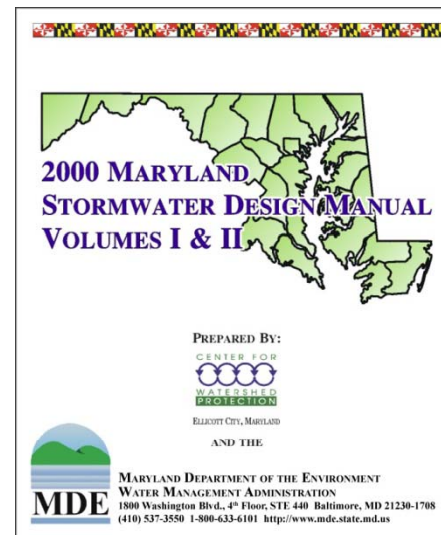
Statewide Regulation for SWM evolved through 80s and 90s.

Bay Critical Areas Law, 1984

Statewide Stormwater Manual 2000.



**Critical Area Commission**  
**Chesapeake and Atlantic**  
**Coastal Bays**



# New Regulatory Drivers

Stormwater 2007

The Bay TMDL and Maryland's Watershed  
Implementation Plans

Sustainable Growth & Agricultural  
Preservation Act of 2012



# New State Requirements

## Environmental Site Design (ESD) to the Maximum Extent Practicable (MEP)

- *Capture and treat from 1 inch to 2.6 inches of rainfall depending on the design and site conditions.*
- *ESD must be used to treat runoff from 1 inch of rainfall.*
- *ESD must be exhausted before any structural BMP is used.*

# State Requirements

The ESD standard is met when:

- *post-development hydrology is restored to woods in good condition*
- *channel stability is maintained,*
- *predevelopment groundwater recharge is replicated,*
- *nonpoint source pollution is minimized, and*
- *structural SWM practices are used only when determined to be absolutely necessary.*



from this...



to this.



# ay TMDL Requirements

Maryland's Watershed Implementation Plan (WIP) affects the State Highway Administration through the MS4 Permit:

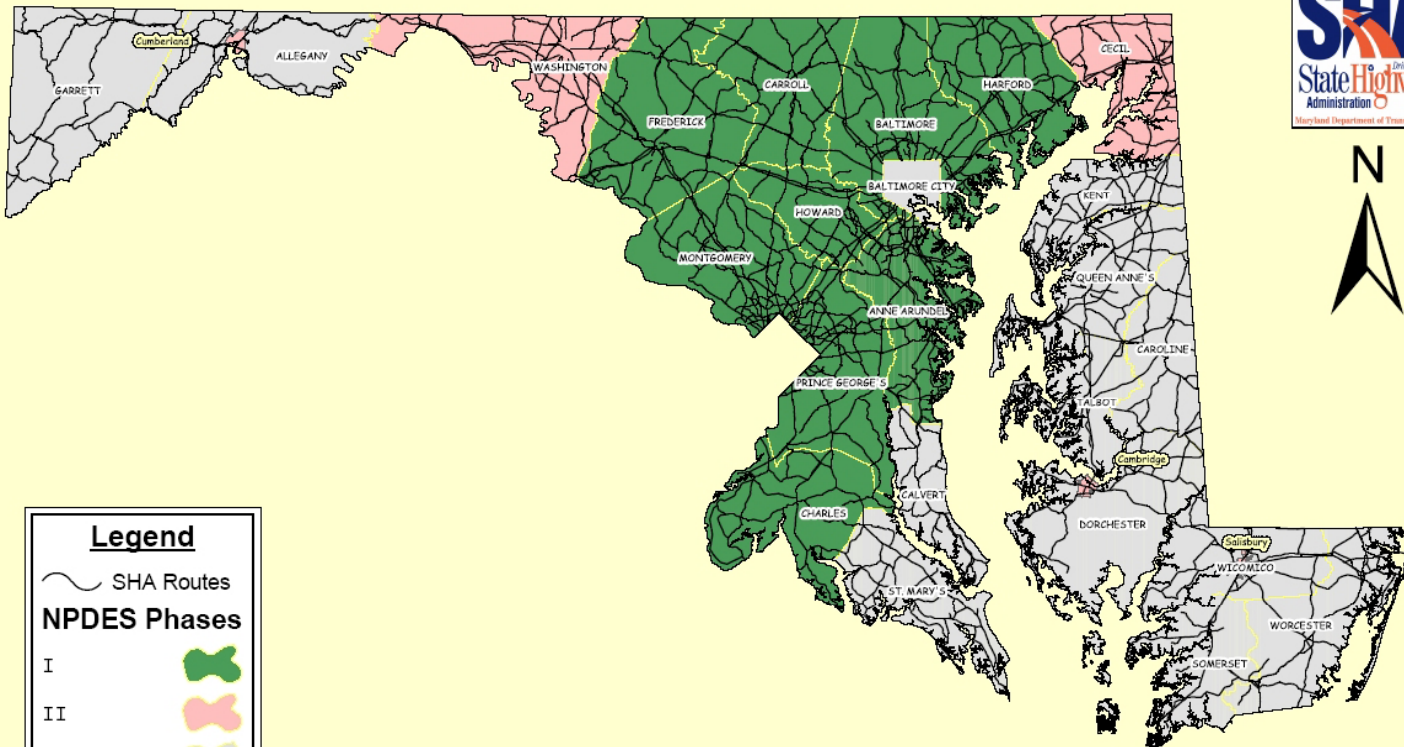
SHA to provide treatment for:

- 30% of pre 1985 developed land in MS4 Phase I areas, and
- 20% of pre-1985 developed land in MS4 Phase II area.



# HA MS4 Permit Areas

## NPDES Jurisdictions



# practical Effects

ESD requirement for small on-site facilities  
rather than collection and storage (ponds)

+

Retrofitting of thousands of acres of existing  
impervious surface with ESD

=

Dramatic increase in the number of SWM  
facilities to be implemented.

# Challenges for Highways

Cross multiple watersheds and jurisdictional boundaries

Have safety as a high priority

Limited Right of Way

# Challenges

## SD to the MEP + Complete Streets

- Motorists and freight carriers
- Transit users
- Bicyclists, and
- Pedestrians

And you are talking about a lot of activity going on within the highway right of way.

# Challenges

ESD to the MEP

+

Complete Streets

+

Compact walkable development with density to  
support transit

# possibilities for integration

How to accomplish the goals of

- Compact walkable development of high density that can accommodate future growth.
- Numerous small on-site SWM practices serving no more than one acre each.
- Complete streets with facilities for pedestrians, bicyclists and transit passengers of all ages and abilities as well as trucks, buses and automobiles

# Watershed Approach

Collaboration.

“Many counties have performed restoration assessments on targeted watersheds. The planning process described ...allows individual site development to be evaluated in the context of these larger resource protection efforts.” MDE Stormwater Manual

Identifying SWM opportunities in local area plans.