

Cavalier Country Stormwater Management Meeting



Presented by:

*The Calvert County Department of Public Works
& Community Planning & Building*



November 3, 2016

Cavalier Country SWM

The County has received a Watershed Assistance Grant awarded by:



The Chesapeake Bay Trust, Chesapeake Bay Program Office, The Maryland Department of Natural Resources, The Environmental Protection Agency, & The Maryland Department of the Environment



Cavalier Country SWM

- Watershed Assistance Grants support local WIP implementation projects
- The Calvert County Grant is to support the design of three stormwater retrofit projects in the Hall Creek watershed
- Cavalier Country was given a Priority 1 rating in the Hall Creek Watershed Implementation Plan and was selected based on high pollutant removal potential and a known history of drainage issues



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Chesapeake Bay Stormwater Background

- Lengthy history of poor water quality
- Bay placed on Federal Impaired Waters List for Nutrients and Sediment
- EPA was sued to enforce Clean Water Act including meeting Total Maximum Daily Load (TMDL) for nutrients & sediment ("pollution diet")

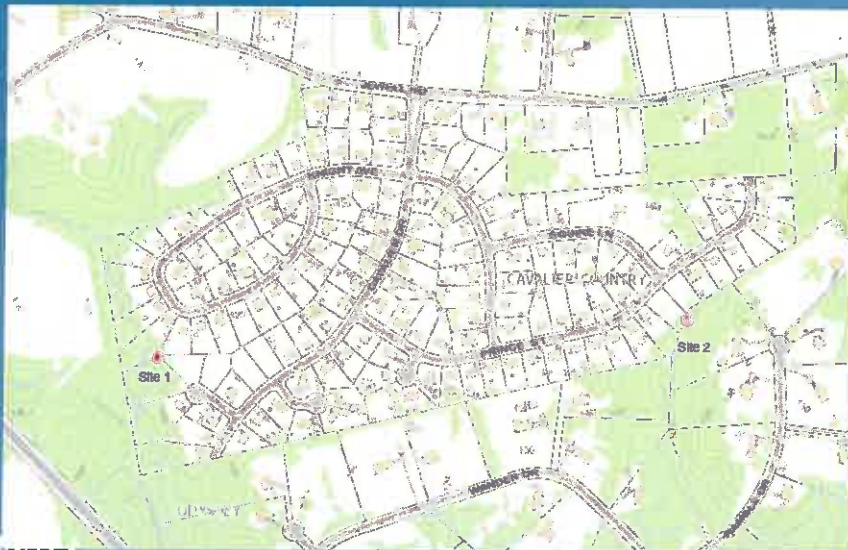


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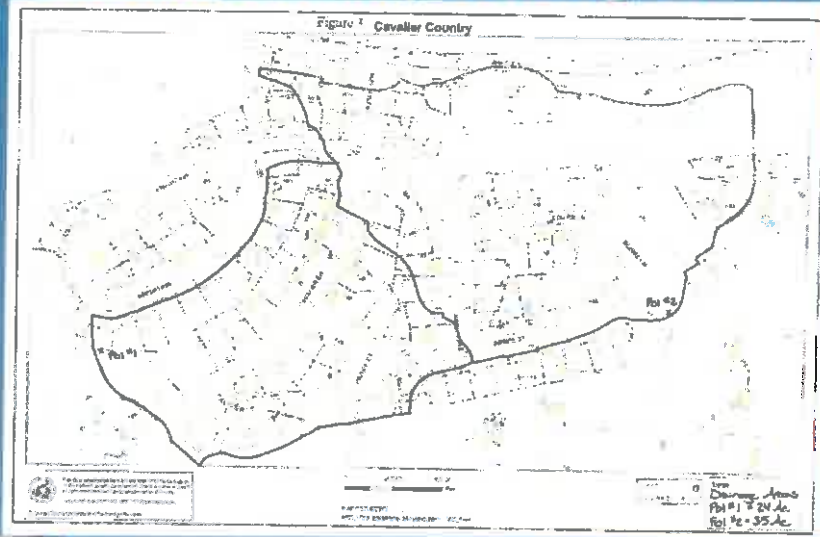
Chesapeake Bay Stormwater Background (continued)

- States with Bay drainage area are to comply via Watershed Implementation Plans
 - (Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York, & DC)
- State requires Counties to develop County WIPs based on State set targets load reductions in nutrients and sediments

Cavalier County Water Quality Monitoring Sites



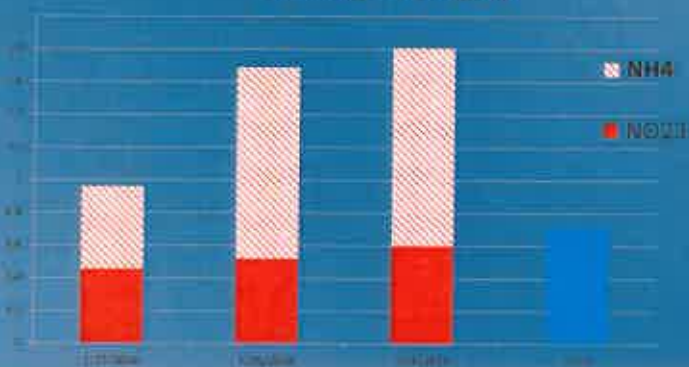
Cavalier Country Drainage Areas



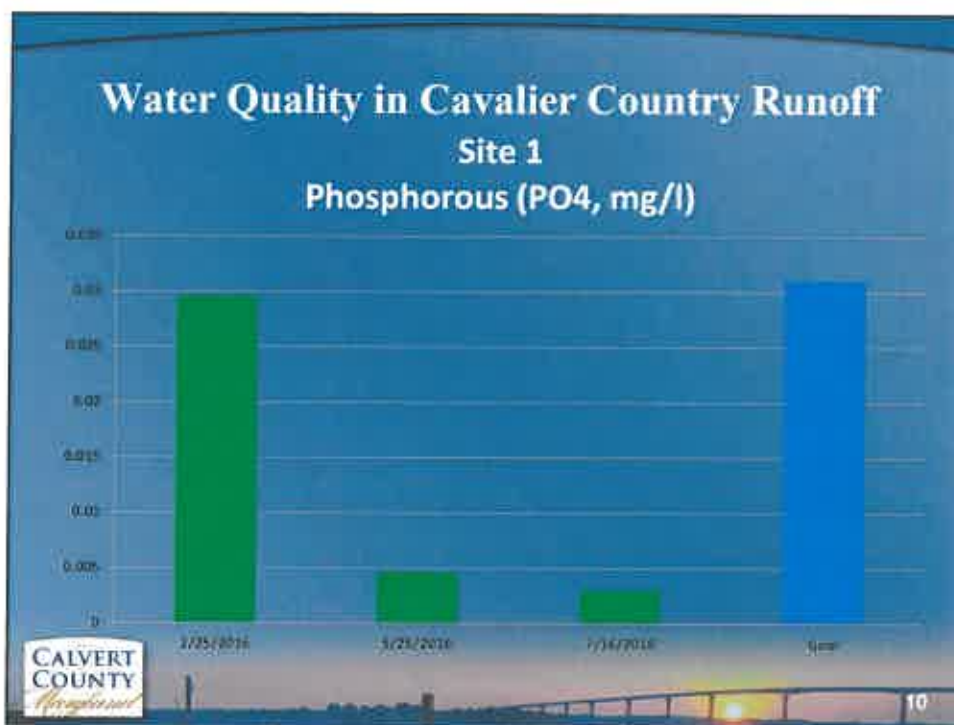
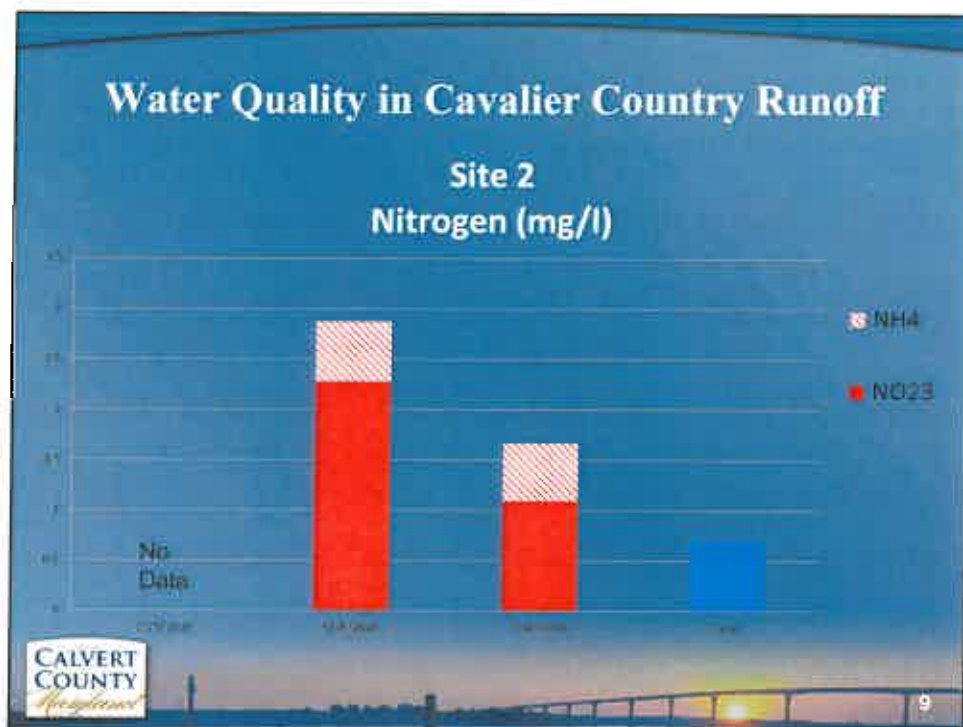
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Water Quality in Cavalier Country Runoff

Site 1
Nitrogen (mg/l)



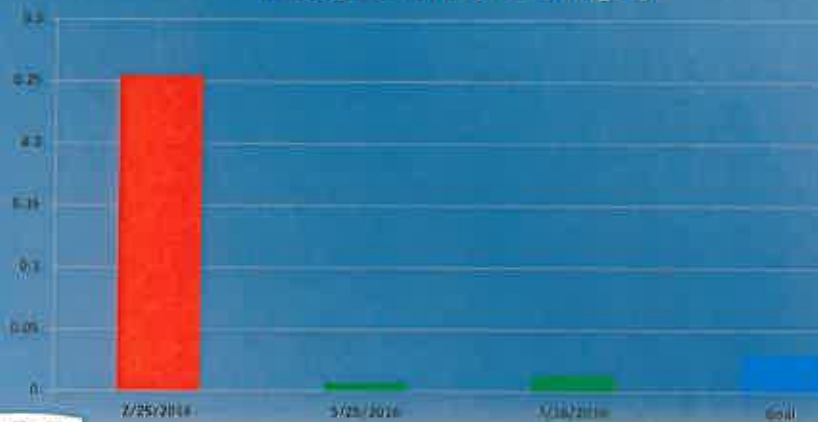
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Water Quality in Cavalier Country Runoff

Site 2

Phosphorous (PO₄, mg/l)



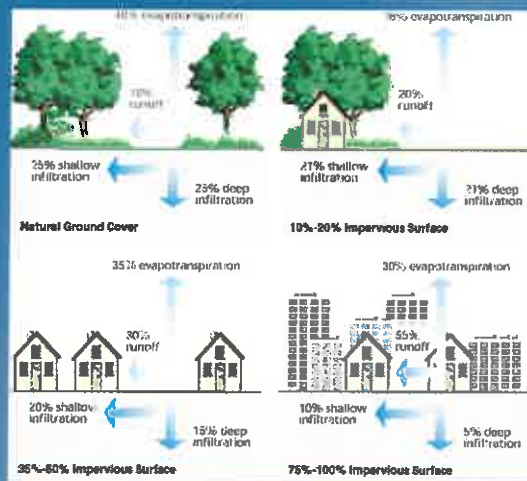
Chesapeake Bay Stormwater Background (continued)

- Urban Runoff source can be broken down into:
 - New development
 - Existing development
- New development is being handled by the "Stormwater Management Act of 2007" which requires ESD to the MEP for all new development projects

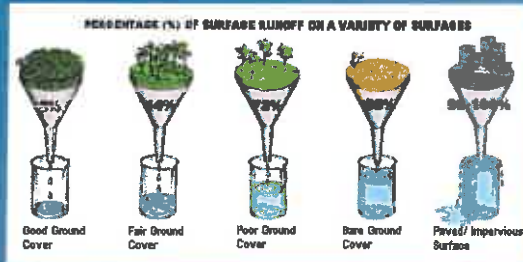
Chesapeake Bay Stormwater Background (continued)

- Existing Development
 - One of the WIP strategies is "to provide impervious area restoration on existing developed lands that have little or no SWM"
 - This involves implementing water quality treatment practices on unmanaged urban areas such as Cavalier Country

WHY DO WE DO SWM?

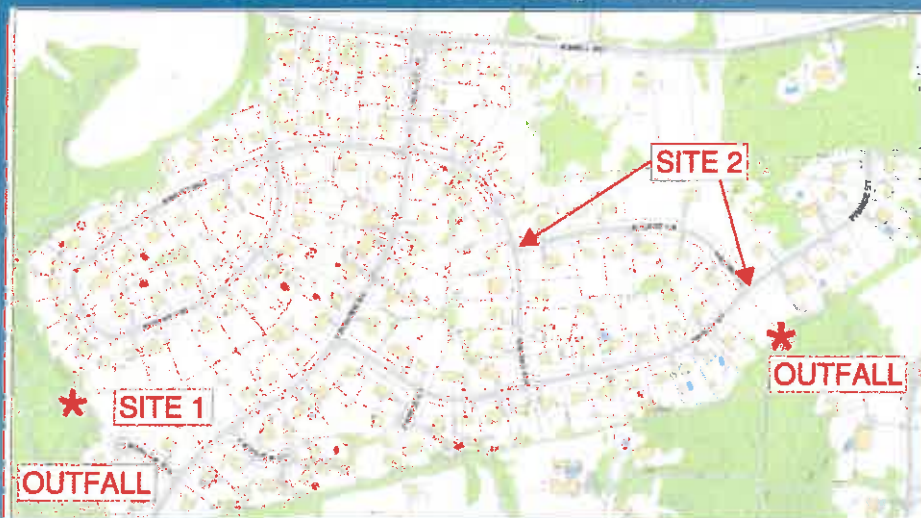


WHY DO WE DO SWM?



- Increased impervious area causes more runoff which carries more nutrients and sediment to the receiving waters
- SWM attempts to mimic the natural hydrologic cycle

Cavalier Country SWM



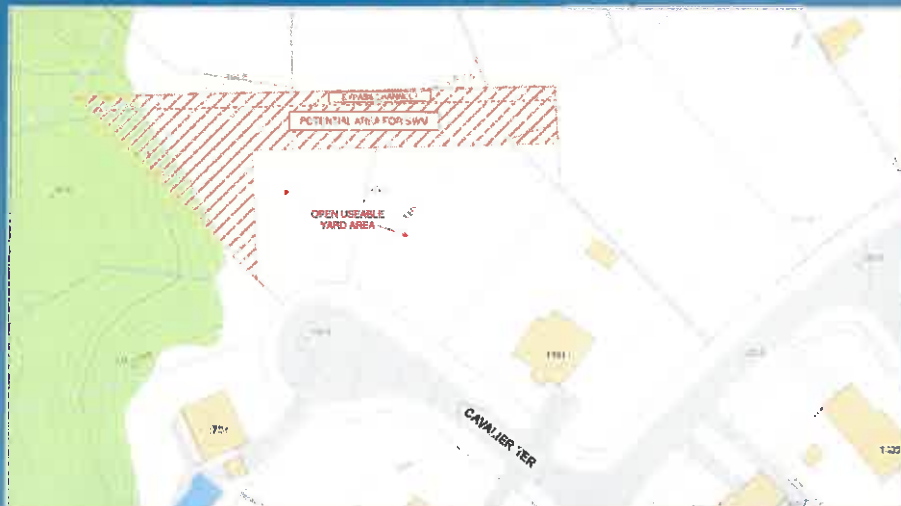
Cavalier Country SWM Site 1



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Virginia

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Cavalier Country SWM Site 1



CALVERT COUNTY
Virginia

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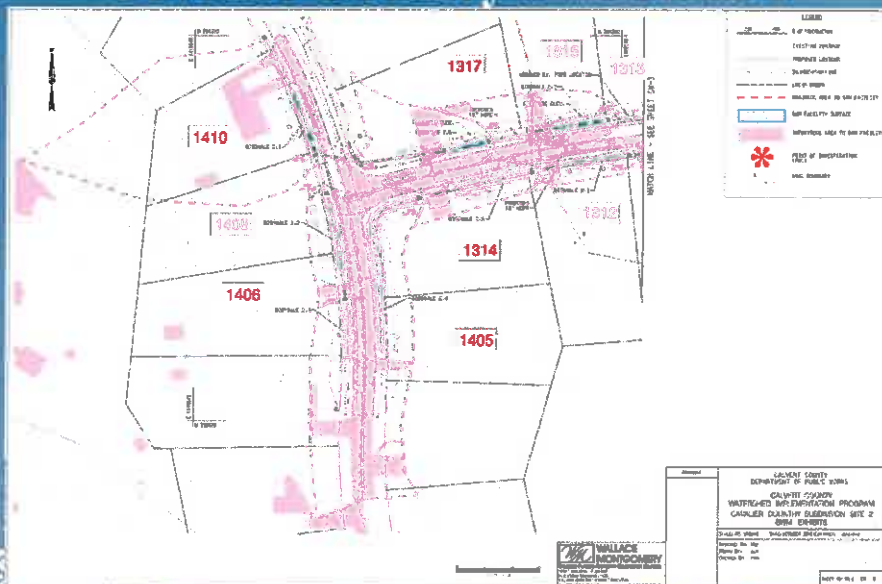
Cavalier Country SWM Site 2



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Montgomery

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Cavalier Country SWM Site 2



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Montgomery

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What is a Bio-Swale/Bio-Retention?



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 Maryland

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What is a Bio-Swale/Bio-Retention?



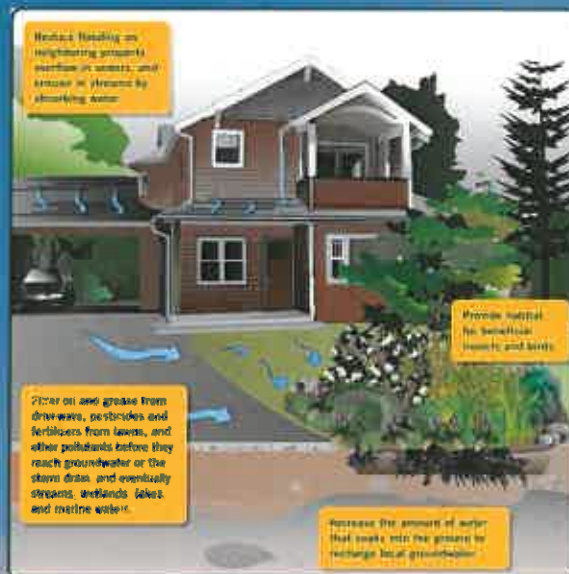
What is a Bio-Swale/Bio-Retention?



What is a Bio-Swale/Bio-Retention?



How does it work?



Questions?

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