



DEPARTMENT OF
**ENVIRONMENTAL
PROTECTION**

Working together for a cleaner, greener
economically vibrant community

Department of Environmental Protection

Stormwater Facility Maintenance and Inspection Program

Regional Stormwater Procurement Workshop

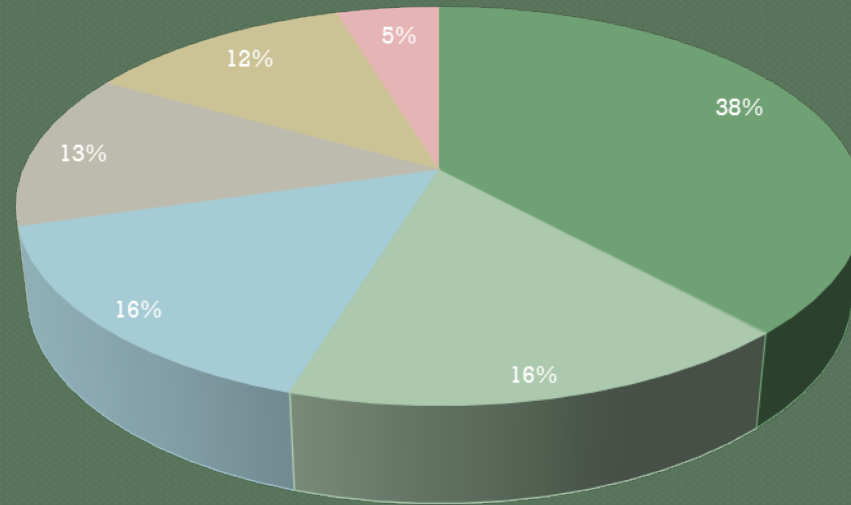
June 14, 2017

The MS4 Permit requires inspections and maintenance for all BMPs

- ▶ Preventative maintenance inspections on a triennial basis;
- ▶ Maintenance to ensure function of facilities;
- ▶ Follow-up inspections to ensure necessary repairs are complete; and
- ▶ Enforcement actions to ensure compliance.

Types of SWM Facilities in the County

% Types of SWM Facilities



- Environmental Site Design (ESD) 38%
- Filtration 16%
- Other 16%
- Ponds 13%
- Hydrodynamic Structures 12%
- Underground Storage 5%

Stormwater Facility Maintenance Program

- ▶ DEP is responsible for inspection of all stormwater management facilities*
- ▶ DEP is responsible for ensuring all stormwater facilities* are functioning properly
 - ▶ DEP maintained
 - ▶ Privately maintained
- ▶ Funded by Water Quality Protection Charge



Maintenance Responsibility

▶ DEP Maintained

- ▶ Publicly owned properties
- ▶ Structural practices on residential properties that were transferred into DEP's maintenance program

▶ Privately Maintained

- ▶ Facilities on commercial properties
- ▶ Pre- 2003 Facilities on residential properties that have not been transferred into DEP's program

- ▶ All property owners are responsible for non-structural maintenance
- ▶ County performs structural maintenance for DEP maintained facilities
- ▶ ESD practices are considered non-structural and are the responsibility of the property owner

Non-Structural Maintenance

- ▶ Landscaping
- ▶ Mowing
- ▶ Over grown vegetation
- ▶ Woody vegetation
- ▶ Trash removal
- ▶ Aesthetics

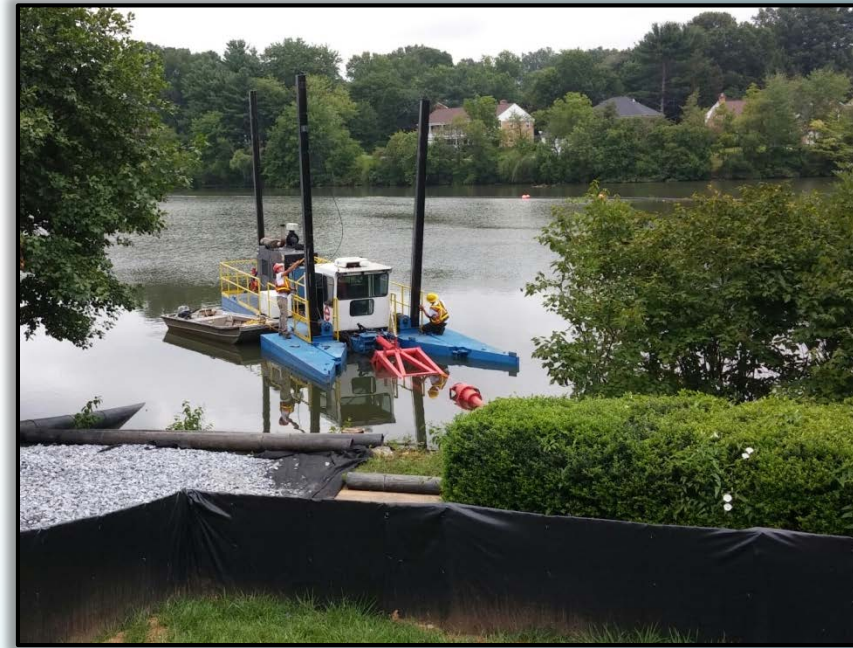
Structural Maintenance

- ▶ Typical - Routine
 - ▶ Blocked low flow
 - ▶ Animal burrows
 - ▶ Minor sediment removal
- ▶ Sand filter tilling
- ▶ Flow splitter cleaning
- ▶ Cleaning UG facilities



Structural Maintenance- Major Structural Repair

- ▶ Capital Projects
 - ▶ Dredging
 - ▶ Slip-lining
 - ▶ Dam failures
 - ▶ Barrel replacements
 - ▶ Riser replacements
 - ▶ Safety improvements
 - ▶ Retrofits



There are 12,000 facilities in the Asset Management System

- ▶ BMP assets and their inspections and maintenance are tracked and scheduled through an asset management system
- ▶ Contractors must be able to use the asset management system
- ▶ The system integrates inspection and maintenance work order tracking and allows DEP to compile data to meet permit requirements
- ▶ Work orders are issued through the asset management system against blanket purchase orders.
- ▶ Work is invoiced according to contract prices

Contracts for Inspection and Maintenance

- ▶ Triennial inspections for aboveground, underground and ESD facilities are done under one contract. This contract expires in 2018.
- ▶ Maintenance work is done under multiple contracts by BMP category:
 - ▶ Above ground – one contract; expires in 2018
 - ▶ Underground – one contract; expires in 2018
 - ▶ Green Roofs – one contract; expires in 2018
 - ▶ Porous Pavement – TBD
 - ▶ CIP Contracts and Task Orders
 - ▶ Dredging Design and Construction Oversight– one contract; expires in 2021
 - ▶ Other Water Resources Engineering done under Capital Project Division Contracts

Triennial Inspection Contract

- ▶ RFP for Engineering Services for Stormwater Management Facility Inspections, January 2012
- ▶ \$1.5 million annual budget
- ▶ Compensation based on fully burdened hourly rates and unit price schedule.
- ▶ Inspections conducted with existing checklists, developed additional under contract
- ▶ Includes dam safety inspections, closed circuit TV inspections
- ▶ Also includes some engineering services:
 - ▶ Bathymetric surveys
 - ▶ Easement preparation- metes and bounds
 - ▶ Property ownership research
 - ▶ Ability to issue request for task order proposals for other inspection related engineering services
 - i.e. Natural resources delineation- for Joint Permit applications

Aboveground Maintenance Contract

- ▶ IFB -Repair and Maintenance of Aboveground Stormwater Management Facilities, November 2011
- ▶ \$2.0 million annual budget
- ▶ Firm fixed price, indefinite quantity contract for structural maintenance of DEP maintained aboveground stormwater management facilities
- ▶ Task Order issued for monthly maintenance of publicly owned and DEP maintained ESD facilities (other than green roof and porous pavement). Based on average time to maintain one vegetated facility- three hours of labor and one hour for a crew foreman.
 - ▶ Additional services (planting, mulching, mowing) provided at additional cost per unit.
 - ▶ Developing a separate RFP for future ESD maintenance

Underground Facility Maintenance Contract

- ▶ IFB-Routine Maintenance, Cleaning, and Repair of Underground Stormwater Management Facilities, December 2016
- ▶ Annual budget \$3 million
- ▶ Firm, fixed unit price contract.

Green Roof Maintenance and Inspection

- ▶ Informal solicitation for fixed number of roofs.
- ▶ About \$50,000/year
- ▶ For publicly owned green roofs on County buildings, DEP maintained green roofs
- ▶ Schedule of unit prices
- ▶ Allows for restoration as well as routine maintenance
- ▶ Contractor required to ensure that 90% of the vegetated roof is covered.

Porous Pavement

- ▶ RFP issued
- ▶ No bidders. Required specialized equipment for deep cleaning
- ▶ Evaluating options for completing work
- ▶ Currently using regenerative vacuum sweeper until appropriate contracting method is determined.

Procurement Challenges for the Stormwater Facility Maintenance Program

- ▶ Capacity
 - ▶ Rapidly increasing number of facilities- averaging 1500/ year
- ▶ Changing Technology
 - ▶ Maryland SWM Act 2007 and ESD
 - ▶ New SWM products

DEP is drafting a Workforce Development Strategy for green infrastructure maintenance

- ▶ Work with businesses and local non profits to facilitate a trained and skilled green infrastructure maintenance workforce.
- ▶ Partnering with WEF and other jurisdictions to develop and sponsor the National Green Infrastructure Certification (NGIC) Program. Next trainings are in Baltimore and Washington DC Fall 2017
- ▶ Partnering with Worksource Montgomery to provide assistance to contractors interested in green infrastructure maintenance. Encourage NGIC Certification.
- ▶ Planning an ESD maintenance (vegetated practices) workshop for interested contractors in July