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# Stormwater Pond Task Force Presentation



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Michael D. Johnson, P.E.  
Director

# WHAT IS A SWM FACILITY AND PURPOSE?

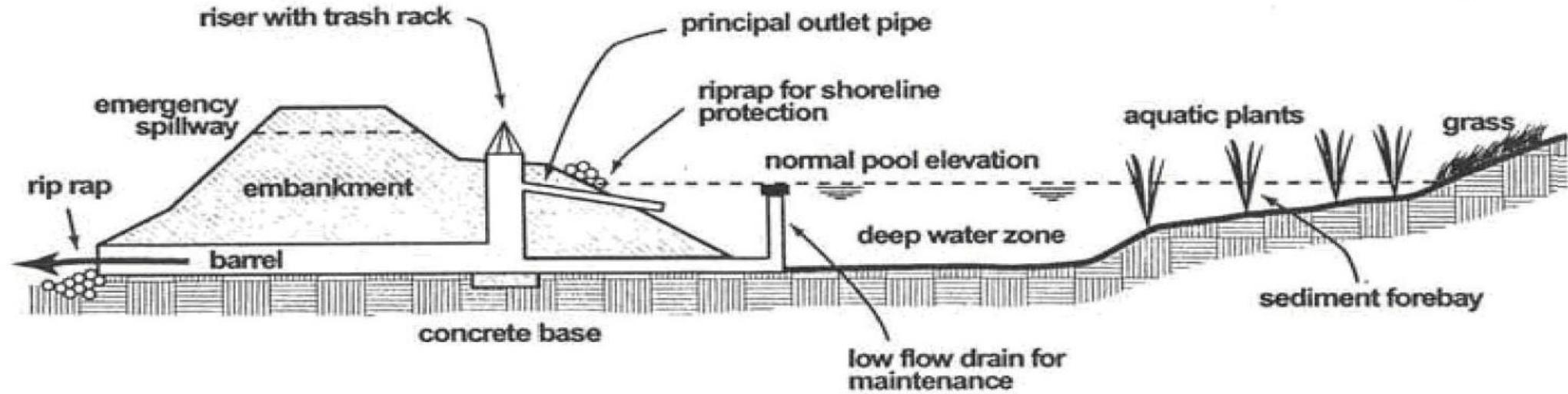
## WHAT IS A SWM FACILITY AND PURPOSE?

- There are a variety of stormwater facilities in Prince George's County, such as ponds, sand filters, bioretentions, bioswales, and others.
- Managing both the quantity (a crucial measure to prevent flooding) and quality of stormwater runoff entering Maryland's waterways, both of which are key tools for improving water quality and reducing flooding.

Title 4, Subtitle 2 of the Environment Article of the Annotated Code of Maryland states that "...the management of stormwater runoff is necessary to reduce stream channel erosion, pollution, siltation and sedimentation, and local flooding, all of which have adverse impacts on the water and land resources of Maryland."

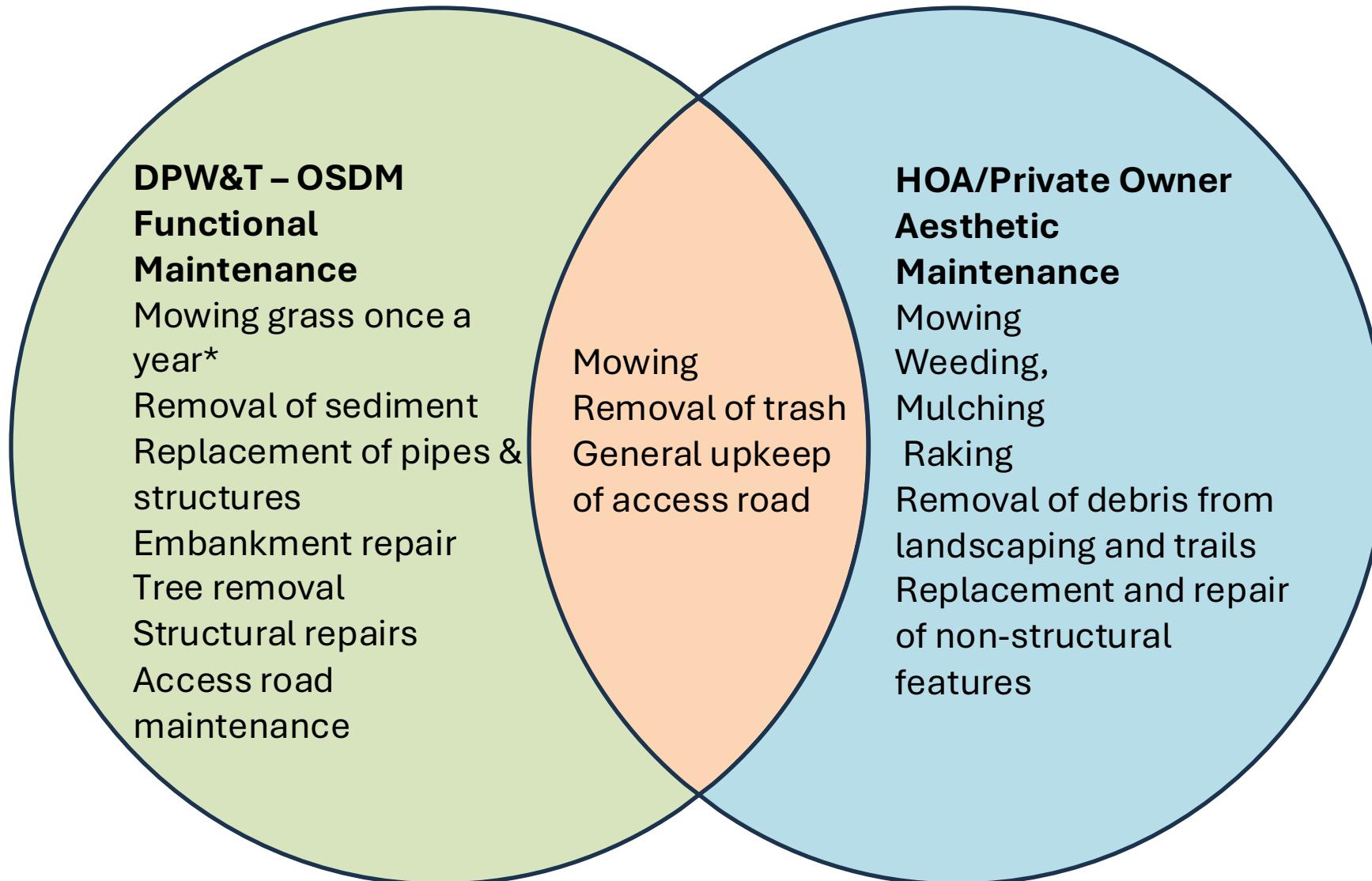


# Components of a Stormwater Management Pond



# Public SWM Pond Maintenance

## What to Expect?





Angela D. Alsobrooks  
County Executive

# SWM Facility Functional Maintenance



Michael D. Johnson, P.E.  
Director

DPW&T is responsible for the **Functional and Life Cycle maintenance** of county public stormwater management facilities.

- **Functional Maintenance:** Functional maintenance of SWM Facilities include mowing of grass once a year, removal of sediment build up which results in clogging or loss of function, erosion repair along the side slopes or other issues impacting stability of the facility, tree removal, and structural repairs.
- **Life Cycle Maintenance** including replacement of pipes, structures, clogged filters, damaged or inoperable valves, riser structure stairs, trash racks and other appurtenances, and repair to the structural integrity of earthen embankments, outfalls, and maintenance access road.

Section 5.2.5 of SWM Design Manual defines standards for public versus private storm drain and SWM systems.

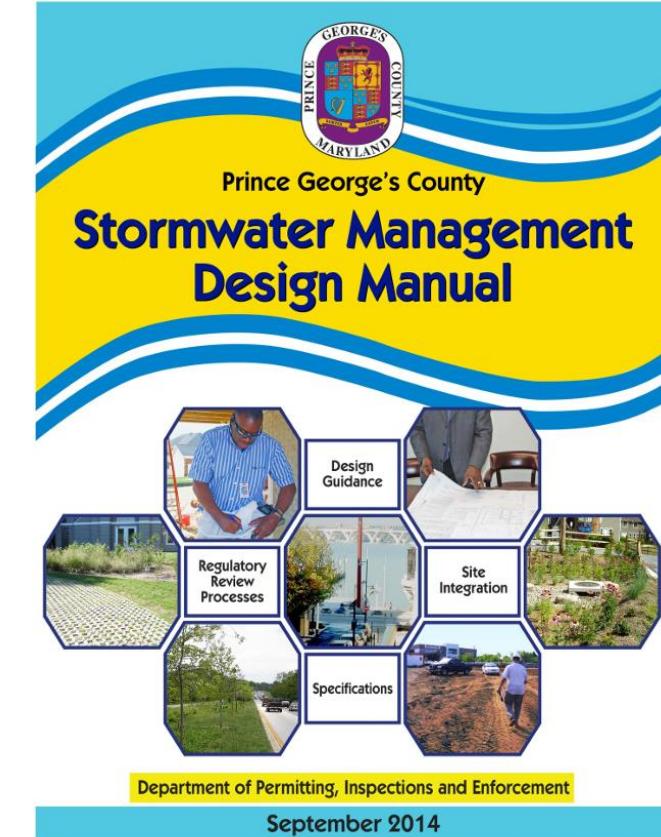


# SWM Facility Aesthetic Maintenance



Aesthetic maintenance of public SWM facilities is the duty of the property owner, homeowners' association (HOA), condominium association, or business park association.

- **AESTHETIC MAINTENANCE:** Aesthetic maintenance of SWM Facilities includes mowing, weeding, mulching, raking, removal of debris, replacement of landscaping, restoration and repair of existing features including grass, lawn, walkways, trails, fencing, and signs. For instance, this could involve trimming overgrown grass, replacing faded signs, or repairing damaged walkways (walking paths).



Section 5.2.5 of SWM Design Manual defines standards for public versus private storm drain and SWM systems.

# DPW&T SWM Pond Inventory

800+  
stormwater  
Management  
facilities



Resolve customer  
service requests (311)

OSDM is responsible for the Functional Maintenance of 800 SWM Facilities\*.

- Prince George's County performs functional maintenance of county public stormwater management facilities.
- DPW&T performs Routine Pond Mowing Operations (Limited Aesthetic). Publicly owned facilities are mowed **twice a year – Spring/Summer and Fall.**
- DPW&T performs Triennial Inspections as required by MDE.
- DPW&T performs Life cycle maintenance/ restoration, which includes replacing pipes, structures, damaged or inoperable valves, stairs, trash racks, and repair to the structural integrity of embankments, outfalls, and access roads.

\* As of 2023. The inventory is estimated to reach 1,200 by 2035 due to development

# DoE SWM Pond Inventory

## Privately-owned SWM Facilities

BMP TYPE	QUANTITY
Bioretention	506
Bioswale	100
Runoff Disconnect	235
Swales Wet/Dry/Grass	126
Dry Well	1645
Enhanced Filters	1
Flood Mgmt Area	83
Green Roof	14
Infiltration Device	12
Microbioretention	1026
Oil Grit Separator	218
Sand Filter/Underground Filter	171
Permeable Pavement	210
Rain Garden	74
Rainwater Harvesting	196
Reinforced Turf	3
Sheetflow to Conservation	7
Step Pool Storm Conveyance	5
<b>Submerged Gravel Wetland</b>	<b>50</b>
Dry Pond	20
Extended Detention Dry	13
Extended Detention Wet	53
Infiltration Basin	3
Pocket Pond, Shallow Marsh	4
Retention Pond Wet	114
Wetland	2
 • Total Ponds = 259	
<b>TOTAL SWM Facilities = 5152</b>	

The Stormwater Management Division (SMD) is responsible for the inspection of 5152 privately-owned SWM Facilities\*, including 259 stormwater management ponds.

- DoE performs **Triennial Inspections** of all privately-owned stormwater management facilities, per the Maryland Department of the Environment, National Pollutant Discharge Elimination System, Municipal Separate Storm Sewer System Discharge Permit.
- DoE notifies appropriate property owners of completed inspection.
- Maintenance Responsibility for 259 Ponds:
  - Board of Education – 4
  - HOA/Private Landowner – 229
  - MNCPPC – 7
  - Office of Central Services – 2
  - CWP - 17

\* This BMP inventory increases each year by an estimated 50 BMPs on average.

# SWM Pond Inspection

## Triennial Inspections:

- DPW&T performs inspections on publicly owned facilities
- DoE performs inspections on privately owned facilities
- Both agencies perform inspections utilizing Arc GIS Survey 123. Data is updated in geodatabase in real time.



## DPW&T

DPW&T - Focus is on regulatory compliance and safety of public facilities.

- DPW&T – Ranks facilities based on functional scores.
- Maintenance programming/ scheduling maintenance based on severity and fund availability.
- DPW&T inspects around 275-300 facilities every year.
- Performs joint inspections with MDE on Classified facilities.
- An average of 5 facilities are added to inventory annually.
- 75-100 facilities fail each year.

## DoE

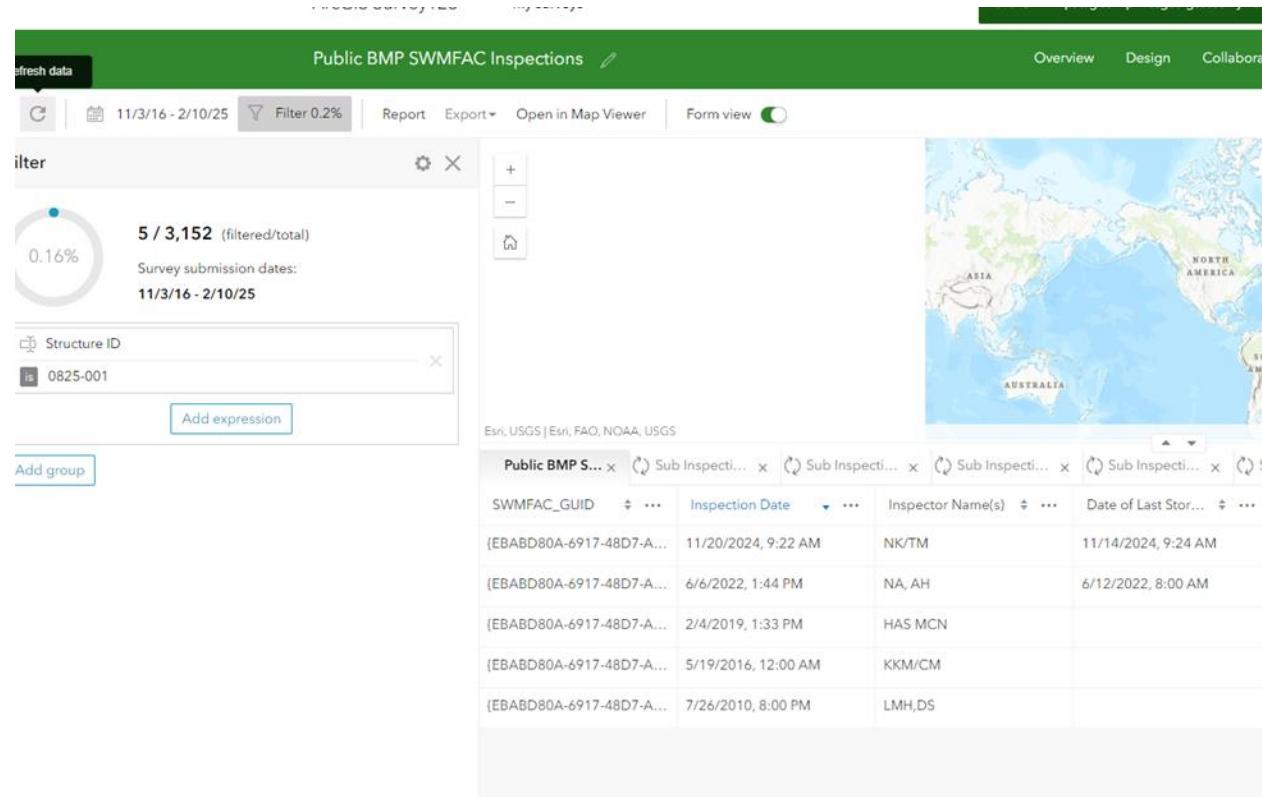
DoE - Focus is on compliance and enforcement for private facilities .

- Compliance or non-compliance Letter with report is mailed to property owners
- Report includes corrective actions.
- Property owner has 30-45 days to address issues/ extensions are provided when needed.
- DoE inspects around 1718 BMPs every year.
- An average of 50 private BMPs are added to the inspection database.

# SWM Pond Inspection

## Inspected Elements

- 1) Access to facility is obstructed or limited.
- 2) Inlet/outlet structures for facility has trash and debris.
- 3) Facility has been removed/backfilled.
- 4) Maintenance Access road deficiencies.
- 5) Fence around facility damaged.
- 6) Overgrown vegetation and/or weeds present **in** facility.
- 7) Overgrown vegetation **around** facility.
- 8) Settlements, depressions, sinkholes, cracks, bulges observed on the facility's slope.
- 9) Animal Burrows observed on the facility's slope.
- 10) Trees and/or shrubs observed growing on the dam embankment.
- 11) Erosion observed around outfall pipe discharging into facility.
- 12) Sediment deposition in facility is more than 50%, minimizing facility's total capacity.
- 13) Trash rack/low flow orifice on riser structure is clogged.
- 14) Riser Structure is damaged.
- 15) Pipe joints from riser structure are displaced, are leaking, and/or have no joint material.
- 16) Trash and debris observed in the facility.
- 17) Seepage observed at toe of slope.
- 18) Rip-rap at outfall pipe is inadequate and causing erosion



The screenshot shows a software application for managing BMP (Best Management Practice) inspections. The main title is "Public BMP SWMFAC Inspections". The interface includes a map of the world with labels for Asia, North America, Australia, and South America. A filter panel on the left shows "0.16%" and "5 / 3,152 (filtered/total)" with a survey submission date range of "11/3/16 - 2/10/25". A search bar is present. The main area is a table with the following columns: SWMFAC\_GUID, Inspection Date, Inspector Name(s), and Date of Last Stor... The table contains six rows of data, each with a unique SWMFAC\_GUID and inspection details.

SWMFAC_GUID	Inspection Date	Inspector Name(s)	Date of Last Stor...
{EBABD80A-6917-48D7-A...}	11/20/2024, 9:22 AM	NK/TM	11/14/2024, 9:24 AM
{EBABD80A-6917-48D7-A...}	6/6/2022, 1:44 PM	NA, AH	6/12/2022, 8:00 AM
{EBABD80A-6917-48D7-A...}	2/4/2019, 1:33 PM	HAS MCN	
{EBABD80A-6917-48D7-A...}	5/19/2016, 12:00 AM	KKM/CM	
{EBABD80A-6917-48D7-A...}	7/26/2010, 8:00 PM	LMH, DS	

# SWM Pond Inspection Rating

TABLE 2.6 – POND PERFORMANCE RATING CATEGORIES

Rating	Description
A	The pond is functioning as designed with no problem conditions identified. No signs of impending deterioration. Candidate for multiyear inspections.
B	Minor problems are observed, however, pond is functioning as designed with no critical parameters with problem conditions. Candidate for multi-year inspections, however, depending on problem conditions may require annual inspection.
C	Moderate problems are observed, however, pond is functioning as designed with no critical parameters with problem conditions. pond performance is being compromised. Candidate for bi-annual inspection depending on problem conditions. Structural defects may require repair and/or restoration. Maintenance of the pond should be scheduled.
D	Major problems are observed, and facility is not functioning as designed with several critical parameters with problem conditions. Conditions associated with the facility have compromised the pond performance. Pond facility shows signs of impending deterioration with potential for failure. Maintenance should be performed immediately.
E	Severe problems are observed, and facility is not functioning as designed with several critical parameters with problem conditions. Conditions associated with the facility have compromised the pond performance. Pond facility shows signs of impending deterioration and/or failure. Maintenance should be performed immediately.
0	Not scored due to insufficient inspection or pond could not be accessed.
NA	Not Applicable

- DPW&T utilizes the Stormwater Management Pond Inspection &Data Collection Manual.
- Utilize to evaluate the existing conditions, while also considering impending conditions.
- Helps to prioritize maintenance schedules and possible repairs to the pond and potentially identify ponds at-risk for failure.
- Inspection considers all the pond components related to functionality and potential flooding.



Prince George's County DPW&T  
Stormwater Management Pond  
Inspection & Data Collection



Standard Operating Procedures Manual

December 2011 • Version 4

# SWM Facility Maintenance Cost

## Average Cost Estimates for Maintenance

- **A Rating** - Landscaping, trash and vegetation clean up.
- **B Rating** - Minor repairs, sediment removal at inflows and outflows, trash and vegetation removal.
- **C Rating** - Moderate repairs, structural repairs, moderate sedimentation, some erosion (animal burrows), trash and vegetation removal.
- **D Rating** - Major repairs, repairs of control structure, sediment dredging, embankment repairs, and/or inflow/outfall erosion.
- **E Rating** - Reconstruction of embankment, replacement of control structure, replacement of inflow pipes, replacement of outfall structure, sediment dredging.

A- Rating	B- Rating	C - Rating	D - Rating	E - Rating
\$45,000.00	\$75,000.00	\$117,500.00	\$325,000.00	\$475,000.00



# DPW&T Annual Maintenance Cost

## DPW&T SWM Pond Maintenance:

- 56 Facilities rehabilitated/reconstructed in FY24.
- 800 Facilities mowed in FY24 (Contractor and In-House Staff)
- 20 Facilities completed in FY25, total **cost to date** \$4.1M
- Additional 15-20 Facilities scheduled for FY25.
- Over 153 Facilities identified as failing in FY24 and FY25
- On average, 40-55 SWM Facilities can be restored with allocated funding.



### DPW&T – OSDM SWM Pond Restoration and Functional Maintenance (FY24)

Stormwater Structure Restoration & Construction	\$	7,000,000.00
SWM Pond Mowing (572 Ponds)	\$	487,000.00
SWM Maintenance (Operating)	\$	1,700,000.00
<b>FY 24 Budget</b>	<b>\$</b>	<b>9,187,000.00</b>

### DPW&T – OSDM SWM Pond Restoration and Functional Maintenance (FY25)

Stormwater Structure Restoration & Construction	\$	8,000,000.00
SWM Pond Mowing (572 Ponds)	\$	487,000.00
SWM Maintenance (Operating)	\$	1,100,000.00
<b>FY 25 Budget</b>	<b>\$</b>	<b>9,587,000.00</b>

# Typical Problems



collection of trash and debris



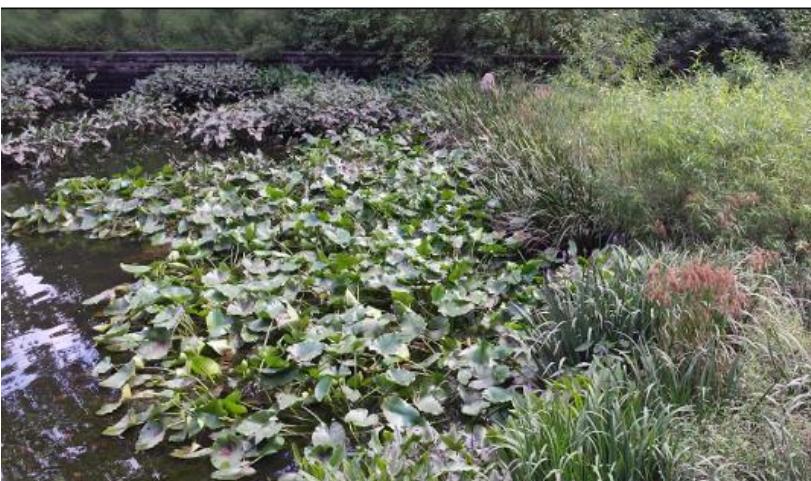
woody vegetation on embankment



control structure/flow restrictions



Sedimentation/ Siltation



overgrowth of vegetation



Structural Integrity