

Carroll County National Pollutant Discharge Elimination System (NPDES)

***Municipal Separate Storm Sewer System (MS4)
Discharge Permit***

**Informational Presentation to
Environmental Advisory Council**

February 15, 2023



NPDES Permit Administration

National Pollution Discharge Elimination System (NPDES)

Impaired/Polluted Waters of U.S.
Clean Water Act (1972)



NPDES Permit Program
Designed to Protect Waters of U.S.
Authorizes Discharges
Address Water Quality Impairments
Controls/BMPs/Restoration/Reporting/Enforcement

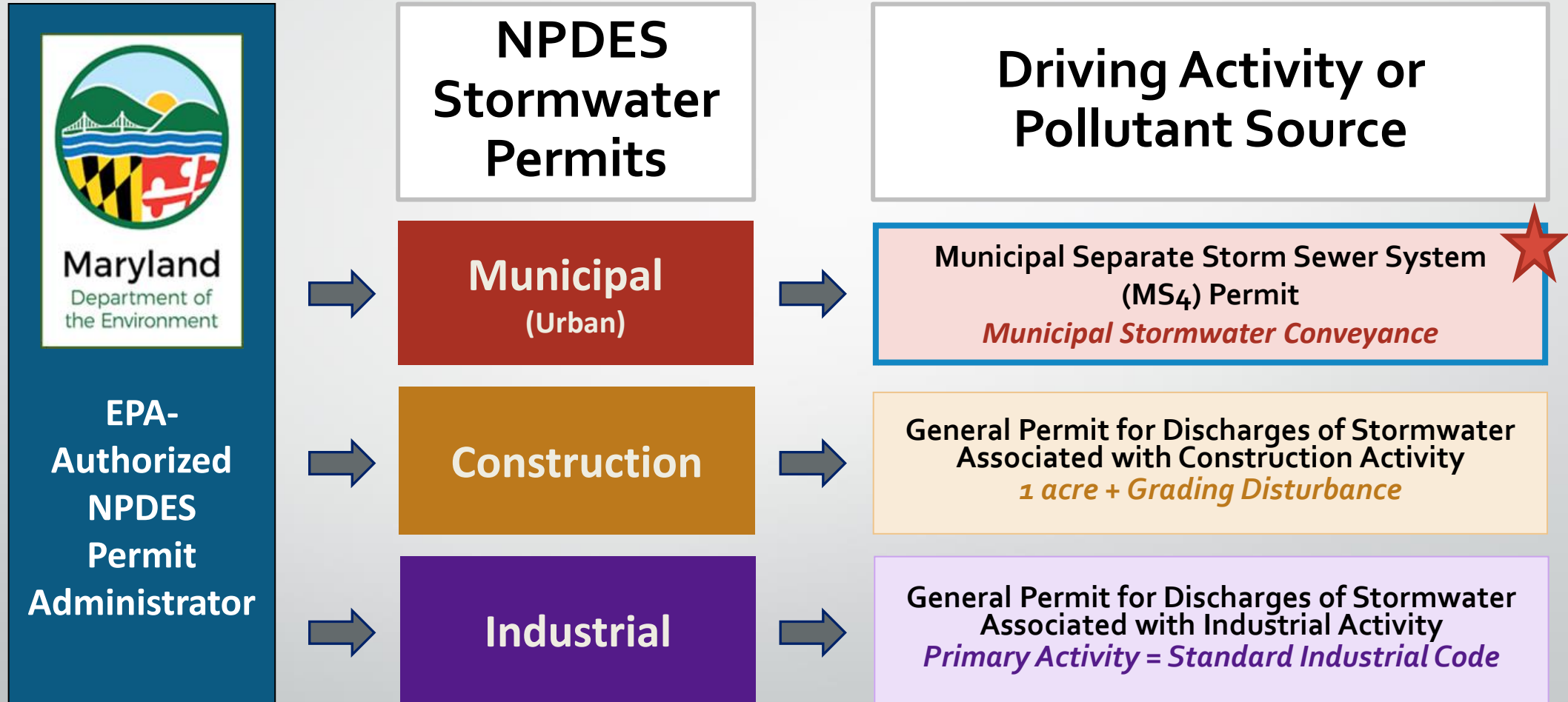


NPDES Program Areas

- Pretreatment (WWTPs etc.)
- Combined Sewer Overflows
- Industrial Wastewater
- Pesticides
- Vessel Discharges
- Concentrated Animal Feeding Operations (CAFO's)
- **Stormwater**



NPDES Stormwater Permits



Timeline of County Permits

- *May 30, 1995* – First-Generation Permit Issued
- *December 29, 2014* – Fourth-Generation Permit Issued; Municipalities added as co-permittees
 - MOA
 - Coordination and Cost Savings
 - Shared Cost of Compliance Specialists
 - 80%/20% Cost Share on Capital Costs
- *December 30, 2022* – Fifth-Generation Permit Issued



NPDES Phase 1 MS₄ Permit Parts I, II, & III



Permit Parts I, II, III, & IV

- Part I – Identification
- Part II – Definitions
- Part III – Water Quality – Compliance tied to Clean Water Act



Part IV.

A-C. Standard Permit Conditions



Part IV – Standard Permit Conditions

A. Permit Administration

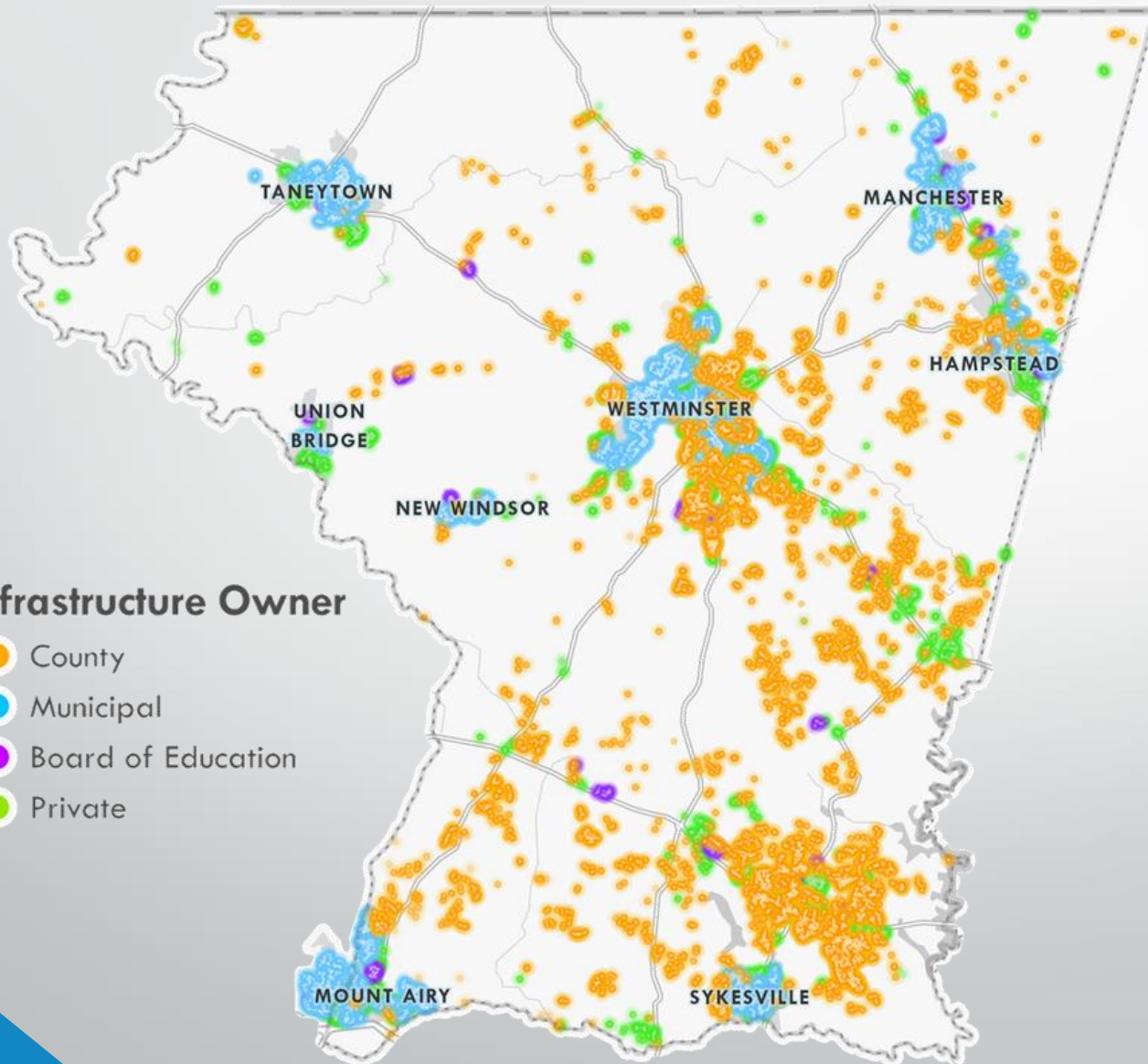
B. Legal Authority

C. Source Identification

- Storm drain system
- Industrial and commercial sources
- Urban best management practices
- Impervious surfaces
- Monitoring locations
- Water quality improvement projects

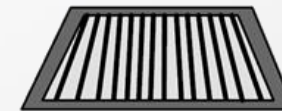


Storm Drain Infrastructure Mapping



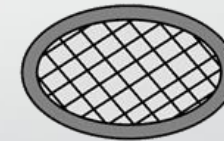
Pipes

23,208
8,966 County



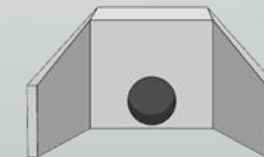
Inlets & inflows

16,476
6,281 County



Manholes & connections

7,394
2,412 County



Outfalls & outflows

3,726
1,897 County



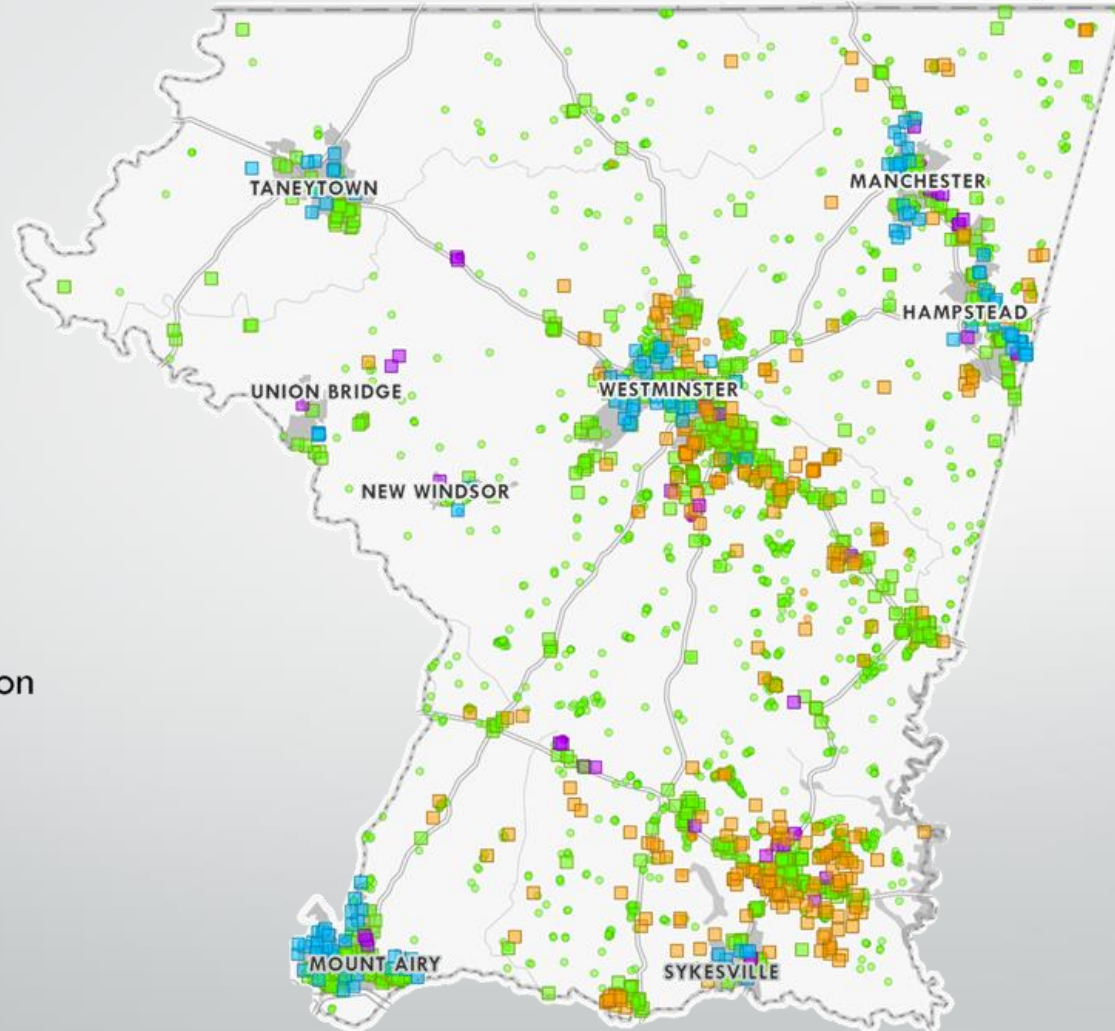
Best Management Practices (BMPs)

BMP Type

- Structural
- ESD

BMP Owner

- County
- Municipal
- Board of Education
- Private



972 Structural Facilities
202 County-Owned

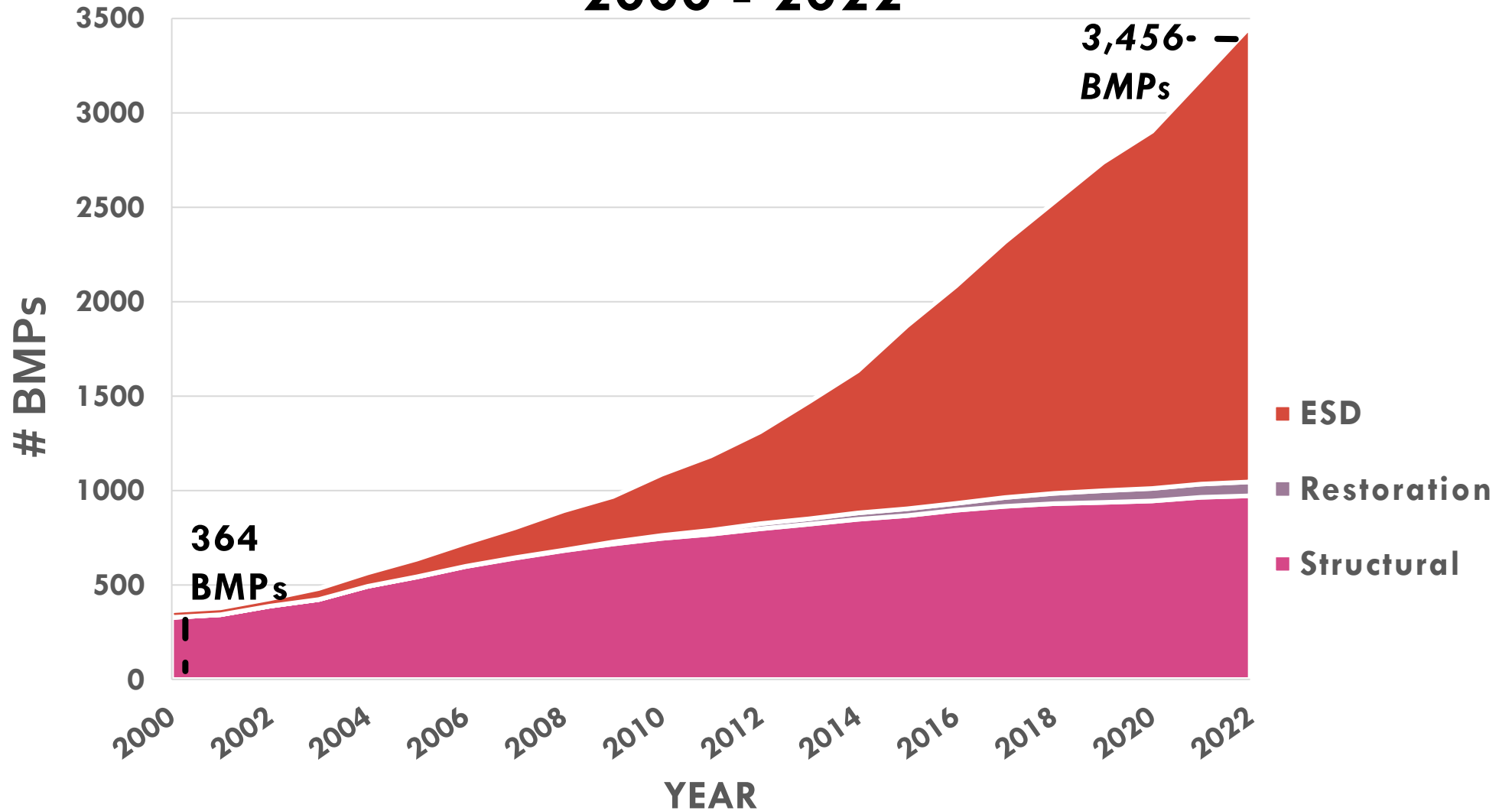
2,413 ESD Practices
61 County-Owned

76 Restoration BMPs
48 County-Owned



Growth of Stormwater BMPs

2000 - 2022



Part IV.

D. Management Programs



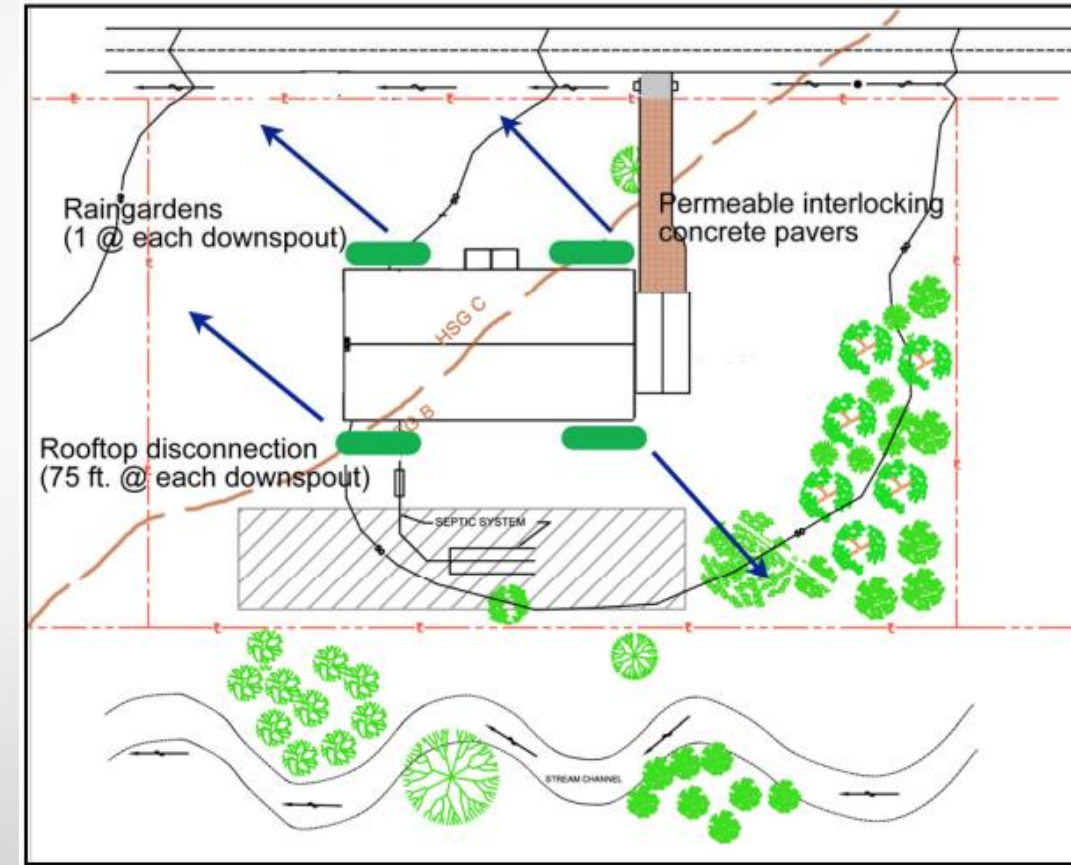
D. Management Programs

1. Stormwater Management
2. Erosion and Sediment Control
3. Illicit Discharge Detection and Elimination
4. Property Management and Maintenance
5. Public Education



1. Stormwater Management Program

- Required by Maryland Environment Article Title 4 Subtitle 2 §4-202
- Criminal and Civil Penalties for failure to enforce
- Tracking required
- Construction and Maintenance Inspections



Graphic from MDE ESD Guidelines

Requires triennial inspection of all BMPs – 3,456 and growing



2. Erosion and Sediment Control Program

- Delegated Authority from MDE
- Enforce Program Requirements
- Quarterly Reporting and Annual Delegation Renewal
- Bi-Annual MDE audit of program
- Inspectors Certified



3. Illicit Discharge Detection and Elimination (IDDE)

Illicit Discharge: *Any discharge into, through, or from a municipal storm drain system (MS₄) that is not composed entirely of stormwater.*



Municipal Separate Storm Sewer System (MS₄): *A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains).*

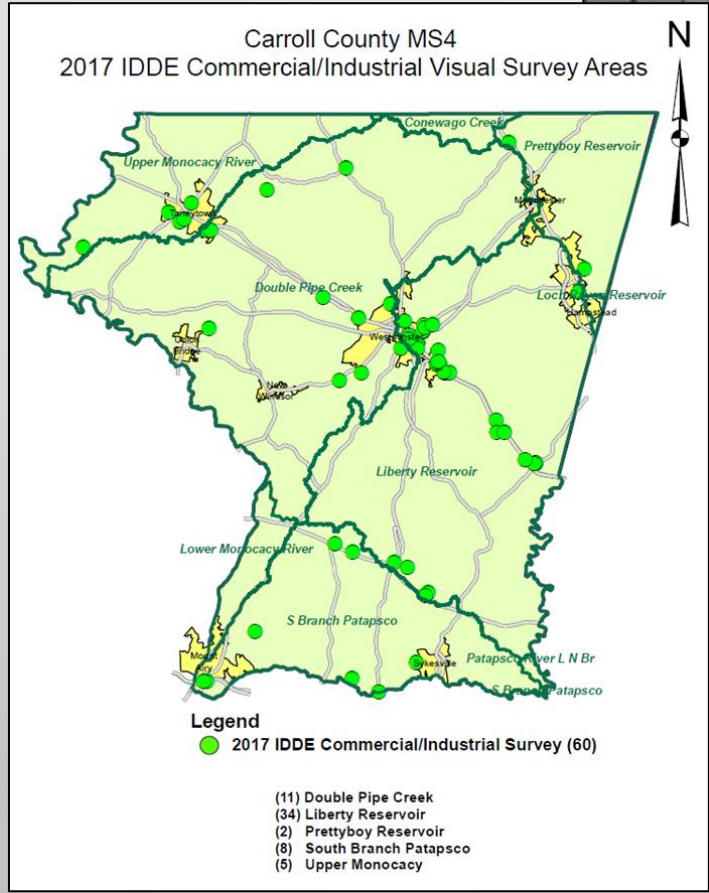
3. Illicit Discharge Detection and Elimination (IDDE)



**Outfall Sampling
100 Sites Annually**



3. Illicit Discharge Detection and Elimination (IDDE)



**Commercial/
Industrial
Visual Surveys**



3. Illicit Discharge Detection and Elimination (IDDE)

Protecting Carroll County Waters (CC Website)



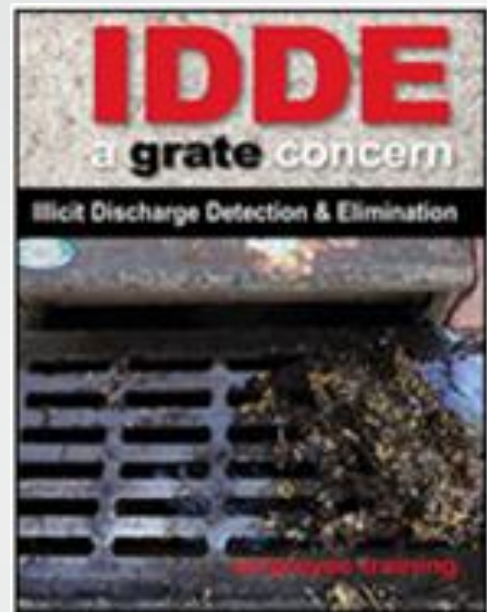
Please call if you are concerned about the release of pollutants or possible illegal dumping into a storm drain. Stormwater in Carroll County and the eight incorporated municipalities is regulated by law under Phase I and Phase II Municipal Separate Storm Sewer System (MS4) permits under EPA's National Pollutant Discharge Elimination System program administered through the Maryland Department of the Environment.

Stormwater Pollution Hotline (410) 386-2210

**Reported
Illicit
Discharge
Investigations**



3. Illicit Discharge Detection and Elimination (IDDE)



Business Outreach by EAC, WRCC, and LRM Staff



Training & Public Outreach



Annual Fall Manager/Supervisory Level Training



4. Property Management and Maintenance

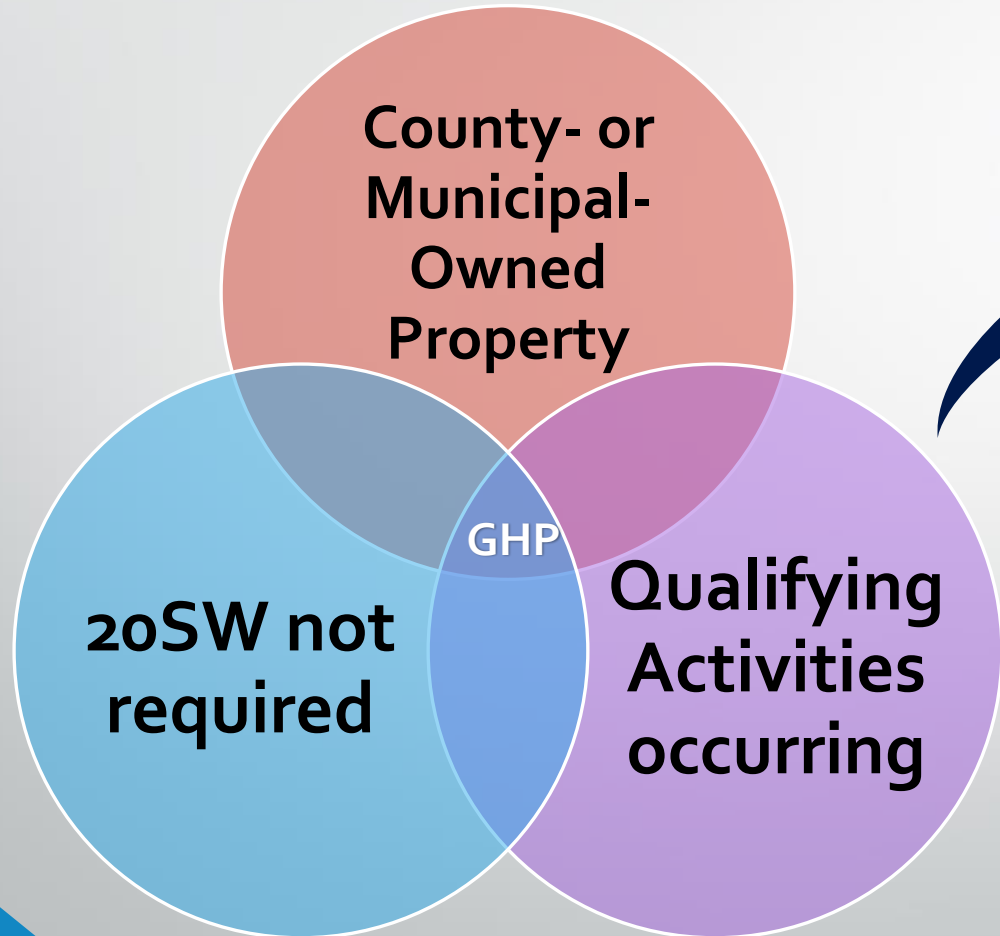
- a. Industrial Permits
- b. Good housekeeping plans *
- c. Pollutant reduction practices – street sweeping, infrastructure cleaning, reduce pesticide, herbicide, and fertilizers
- d. Salt Management Plan*
- e. Litter control*
- f. Report program changes

**New Permit Requirement*



b. Good Housekeeping Plans

New requirement to develop, implement, and maintain a good housekeeping plan (GHP) for:



Qualifying activities for 12SW/20 SW General Discharge Permit:

- Maintenance of vehicles or equipment
- Storage of vehicles or equipment
- Storage of fertilizers, pesticides, hazardous materials, or landscaping materials
- Storage of other materials that could pollute stormwater runoff

d. Salt Management

New requirement to develop, submit, & implement salt management plan

- Develop and submit Salt Management Plan to MDE
- Based on MDOT/SHA's current Salt Management Plan
- Implement Salt Management Plan
 - Evaluate new equipment, methods and strategies for program improvement
 - Training (Personnel and Contractors)
 - Create "Salt Academy" or participate in another MS4 permittee or agency training
 - Public Outreach
 - Tracking and Reporting



e. Litter Control (Collection)

*New requirement to collect **11 Tons** of litter and debris annually*

- Can be staff or public. Examples include:
 - Routine litter collection at a park by staff
 - Clean up of reported dumping incidents
 - Hosting a stream clean-up event
 - Adopt-A-Road programs
 - Individual citizen efforts
- Specific weights not needed
 - # bags or bulk item description will allow us to estimate tonnage



5. Public Education and Outreach

New requirement to conduct 25 public education and outreach efforts annually

Topics can include:

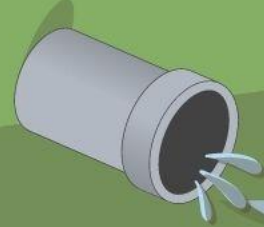
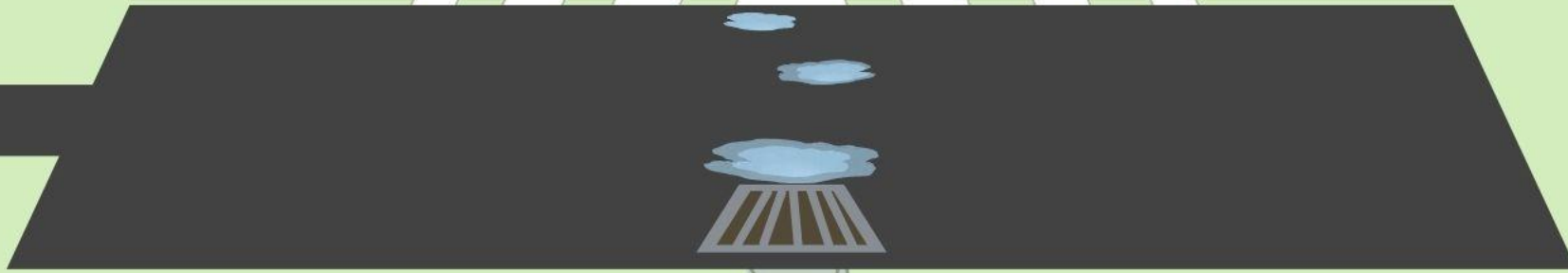
- Water conservation
- Stormwater BMPs & maintenance
- Erosion & sediment control practices
- Household hazardous waste disposal
- Lawn care & landscape management (e.g. chemical & salt application)
- Residential car care & washing
- Litter
- Solid waste & recycling
- Pet waste



Part IV. E. Restoration Requirements



Untreated Impervious



Rooftops: 0.5 acre
Parking lot: 0.4 acre
+ Sidewalks: 0.1 acre
Total: 1 acres



Treated Impervious

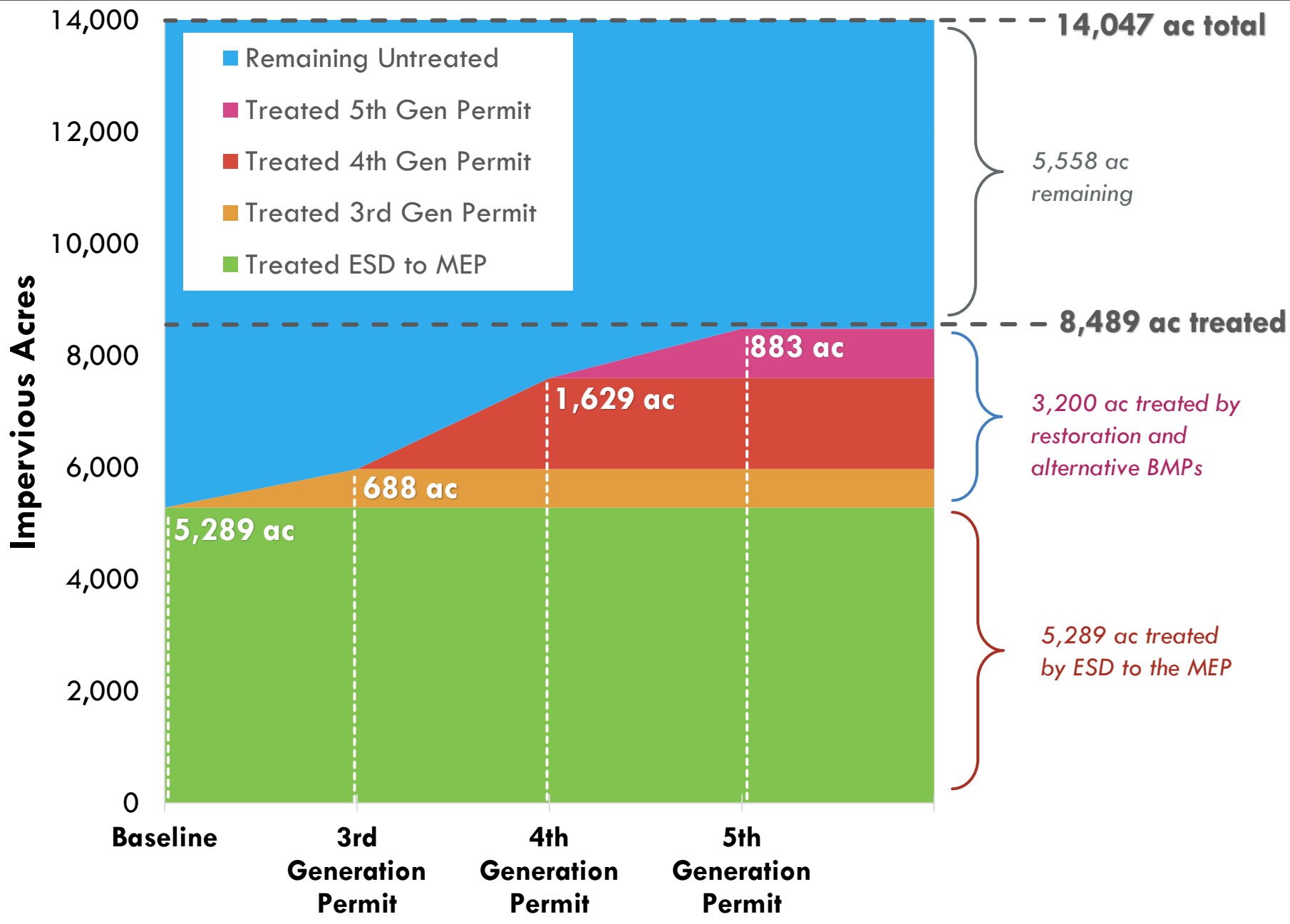


Alternative Practices

- Stream Restoration
- Outfall Stabilization
- Street Sweeping
- Inlet cleaning
- Tree planting
- Protective Easements
- Septic Upgrades



Carroll County Impervious Treatment Area Progress



Structural Restoration Projects



Mayberry Stream Restoration Project

“Equivalent Impervious Area”



Langdon Stormwater Facility – Schedule

- 2013 – Concept Initiated
- 2014 – Design consultant hired
- 2016 – Grant Applications Submitted
- 2016 – Property acquired
- 2019 – Final design and permitting
- 2019 – Construction bid
- 2020 (April) – Construction start
- 2021 (March) – Construction Complete



Part IV.

F. Total Maximum
Daily Loads (TMDLs)



Part IV F. Total Maximum Daily Loads (TMDLs)

- Required by the Clean Water Act
- Sets limits for specific pollutants in watersheds that are identified as being impaired for those pollutants
- Implementation Plan required
- If new TMDLs are established, required to create implementation plan
- Our Restoration Program and Reductions in Impervious Area are designed to satisfy TMDL requirements



Part IV.

G. Assessment of Controls



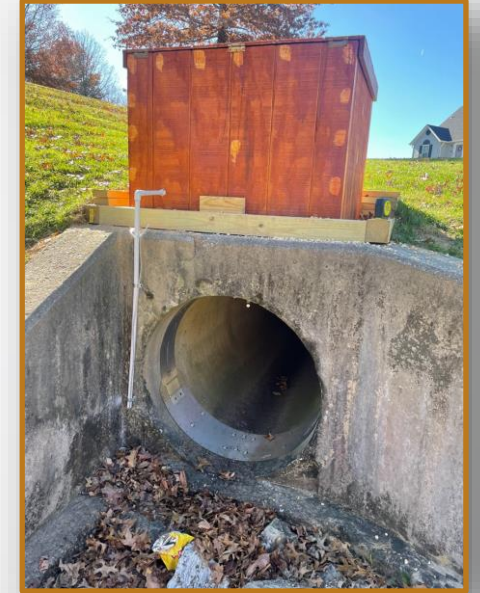
Part IV G. Assessment of Controls

1. BMP Effectiveness Monitoring
2. Watershed Assessment Monitoring
3. PCB Source Tracking – Does not apply to Carroll County



1. BMP Effectiveness Monitoring

- Purpose: Evaluate the effects of stormwater management strategies on local water quality.
 - Chemistry analysis of 8 storms & 4 quarterly/seasonal baseflow samples.
 - Continuous monitoring for pH, flow, temperature, conductivity.
 - Stream Channel geomorphology surveys (w/ County Survey Crew).
- Option 1
 - Chesapeake Bay Trust Pooled Monitoring
 - Annual Cost: \$75,000
- Option 2
 - Internal Staff Monitoring
 - Annual Laboratory Cost: \$7,700
 - Equipment Replacement/Repair & supplies: ~\$10k/year



2. Watershed Assessment Monitoring

- Purpose: Evaluate overall water quality and aquatic life conditions within TMDL Watersheds.
 - 25 Biological Locations Countywide
 - Sampled yearly (Spring)
 - 19 Bacteria Trend Locations Countywide
 - Sampled monthly
 - 1 Chloride Trend Location
 - Continuous Readings (30 min.)
- Option 1
 - Chesapeake Bay Trust Pooled Monitoring
 - Annual Cost: \$165,868
- Option 2
 - Internal Staff Monitoring
 - Annual Laboratory Cost: \$21,038
 - Equipment replacement/repair & supplies: ~\$5k/year



Part IV. H. Program Funding



Completed Impervious Restoration

Project type	Restoration credits (# impervious acres)	Costs	
		Total (\$)	Grants Received (\$)
Structural Facilities	1,496	\$ 41,343,137	\$ 14,405,497
Stream Restorations & Tree Plantings	915	\$ 5,582,229	\$ 2,977,937
Buffers & Septic Upgrades	772	\$ 0	\$ 0
TOTAL	3,183	\$ 46,925,366	\$ 17,383,434



Financial Assurance Plan (FAP)

- FAP required to MDE every 2 years
- Demonstrate sufficient funding to meet anticipated costs
- Public hearing required

DESCRIPTION	CURRENT	PROJECTED	PROJECTED	PROJECTED	PROJECTED	PROJECTED	TOTAL ⁴
	YEAR	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	
	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	
Operating Expenditures (costs)							
Street Sweeping Program							\$0
Inlet Cleaning							\$0
IDDE							\$0
Support of Capital Projects	\$1,291,712	\$1,363,970	\$1,438,141	\$1,517,143	\$1,601,329	\$1,684,887	\$8,897,182
Debt Service Payment ¹	\$1,748,212	\$2,139,050	\$2,278,450	\$2,543,210	\$2,766,010	\$3,094,600	\$14,569,532
Other (please stipulate program expenditure) ²	-	-	-	-	-	-	\$0
Capital Expenditures (costs)³							
General Fund (Paygo)	\$543,774	\$1,450,000	\$750,000	\$250,000	\$2,550,000	\$225,000	\$5,768,774
WPR Fund (Paygo)							\$0
Municipalities							\$0
Debt Service	\$1,376,704	\$2,240,000	\$8,350,000	\$6,050,000	\$4,950,000	\$3,400,000	\$26,366,704
Grants & Partnerships	\$2,931,205	\$31,000					\$2,962,205
Other (please stipulate capital expenditure) ²	-	-	-	-	-	-	\$0
Subtotal operation and paygo:	\$3,583,698	\$4,953,020	\$4,466,591	\$4,310,353	\$6,917,339	\$5,004,487	\$29,235,488
Total expenditures:	\$7,891,607	\$7,224,020	\$12,816,591	\$10,360,353	\$11,867,339	\$8,404,487	\$58,564,397
					Total ISRP costs except debt service:		\$43,994,865
					Total capital expenditures:		\$35,097,683

Part V. Annual Reporting



Part V - Annual Reporting

- Data on all Activities Related to or Required by the Permit
- Program Funding
 - Expenditures
 - Upcoming Budget Year
- Monitoring Data
- Enforcement Actions
- Public Outreach
- Geodatabase Items
- Program Effectiveness

Carroll County Maryland



LANGDON STORMWATER FACILITY
County Engineers Association of Maryland | Project of the Year
Maryland Quality Initiative | Project of the Year



**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
MUNICIPAL SEPARATE STORM SEWER SYSTEM
DISCHARGE PERMIT**



2022 ANNUAL REPORT



Part VI. Special Programmatic Conditions



Part VI – Special Programmatic Conditions

Administrative language regarding State programs that mitigate new development, and that County policy aligns with these programs.



Part VII. Enforcement and Penalties



Part VII – Enforcement and Penalties

- A. Discharge Prohibitions
- B. Duty to Mitigate
- C. Emergency Reporting
- D. Duty to Comply
- E. Proper Operation and Maintenance
- F. Sanctions
- G. Permit Revocation and Modification
- H. Inspection and Entry
- I. Monitoring and Recordkeeping
- J. Property Rights
- K. Severability
- L. Authorization



Part VII - Sanctions

Section 309 (g)(2) Clean Water Act, 33 USC Section 1319 (g)(2)

- Civil Penalties
 - \$16,000 per day
 - \$177,500 total penalty
- Criminal Negligence
 - \$2,500-\$25,000 per day of violation
 - 1 year imprisonment
- Knowingly Violating
 - \$5,000 - \$50,000 per day violation
 - 3 years imprisonment



Annotated Code of Maryland Environment Article §9-342 and 9-343

- Civil Penalties
 - \$10,000 per day
 - Additional administrative and civil penalties up to \$50,000
- Criminal Penalties
 - 1st Offense - \$25,000 and 1 year imprisonment
 - 2nd offense - \$50,000 and 2 years imprisonment
- Knowingly Inaccurately Reporting or False Certification of Records
 - \$50,000 and 2 years imprisonment

County Staff

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