

Appendix C3 – Source Identification (Urban Best Management Practices, [BMPs])



**BMP Geodatabase
December 2025 Submittal to MDE
Technical Memorandum**

Prepared for

Harford County Department of Public Works
Division of Construction Management
Watershed Protection and Restoration Office
212 S. Bond Street
Bel Air, Maryland 21014

Prepared by

EA Engineering, Science, and Technology, Inc., PBC
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
410-584-7000

December 2025
Version: Final
EA Project No. 1619920



EA Engineering,
Science, and
Technology, Inc., PBC

BMP Geodatabase Technical Memorandum
December 2025

This page intentionally left blank



Table of Contents

	<u>Page</u>
1 Introduction and Background	5
1.1 Purpose	5
2 HCBMP Geodatabase Users	6
2.1 Watershed Protection and Restoration Office (MS4 Office)	6
2.2 Division of Construction Management Inspection Bureaus	6
3 Supplemental MDE Geodatabase Schema for FY25.....	7
4 HCBMP Geodatabase Schema.....	8
5 HCBMP Geodatabase Population	9
5.1 Source Information	9
5.2 Geometry Population.....	9
5.3 Attribute Population	10
5.3.1 Project Specific	10
5.3.2 Engineering Review	11
5.3.3 Geospatial Calculations.....	11
5.3.4 Numbering	12
5.4 Cluster Feature Class	12
5.5 Geodatabase QAQC Population Rules.....	12
6 HCBMP Geodatabase Population Status	13
7. HCBMP Geodatabase Transformation	15
Appendix A – HCBMP Schema	17



List of Figures

	<u>Page</u>
Figure 1: Supplemental MDE Geodatabase	7
Figure 2: HCBMP Geodatabase.....	8

List of Tables

	<u>Page</u>
Table 1: Stormwater Management Inspection Responsibilities.....	6
Table 2: MDE MS4 Geodatabase Schema.....	7
Table 3: HCBMP Geodatabase Schema	8
Table 4: HCBMP Geodatabase Geospatial Calculations	11
Table 5: QAQC Rules	12
Table 6: BMP Table Population Status.....	13



BMP Geodatabase Technical Memorandum

1 Introduction and Background

Harford County's (County) National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit (Permit Number 22-DP-3310, effective 30 December 2022 through 29 December 2027) requires the County to conduct preventative maintenance inspections of all environmental site design (ESD) treatment systems and structural stormwater management practices on a triennial basis. As part of the MS4 annual report requirements, the County is required to populate and submit a geodatabase in compliance with the *Maryland Department of the Environment (MDE), National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4), Geodatabase Design and User's Guide* (May 2017). This geodatabase is referred to as the MDE MS4 Geodatabase in this document. MDE released a final update to their Geodatabase Design and User Guide in July 2025. The County has reviewed the Supplement documentation and observed significant changes to the MDE MS4 Geodatabase schema. The County is not prepared to invest in data changes for the previous Fiscal Year (FY) Best Management Practices (BMPs); however, BMPs installed after FY22 are formatted as separate feature classes in accordance with the Design and User Guide documentation. FY21 and prior BMPs will remain in the original schema.

The County is required to report MDE documentation annually identifying the stormwater management practices inspected, the number of maintenance inspections, the number of follow-up inspections, the enforcement actions used to ensure compliance, and the maintenance inspection schedule in the MDE MS4 Geodatabase.

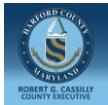
The MDE MS4 Geodatabase is not designed to assist in performing inspections of stormwater management infrastructure. The Harford County Department of Public Works, Watershed Protection and Restoration Office (MS4 Office) has developed a BMP Geodatabase schema with the assistance of EA Engineering, Science, and Technology, Inc., PBC (EA) to assist in gathering the data for triennial inspection requirements. The MS4 Office Inspection team has used Survey123 with this BMP Geodatabase since 2019 to complete the stormwater management triennial maintenance inspections.

1.1 Purpose

The MS4 Office contracted EA to assist in the design and population of the Harford County Best Management Practice (HCBMP) Geodatabase schema, and design and implementation of the ArcGIS Survey123 Triennial Inspection Application.

The purpose of this Technical Memorandum is to:

1. Identify the users of the HCBMP Geodatabase in the County
2. Layout the use of the Draft Supplemental MDE Geodatabase for FY25
3. Document the HCBMP Geodatabase use
4. Document the HCBMP Geodatabase schema
5. Document the procedures and source data for the HCBMP Geodatabase data population



6. Identify the data population rules

2 HCBMP Geodatabase Users

Stormwater management practices information is needed by various divisions within the Department of Public Works for various objectives. These users by division are described in the following subsections.

2.1 Watershed Protection and Restoration Office (MS4 Office)

The MS4 Office is responsible for compiling the information from various divisions and departments of the County and reporting that information to MDE for NPDES MS4 compliance.

The NPDES MS4 permit requires the County to conduct preventative maintenance inspections of all ESD treatment systems and structural stormwater management practices on a triennial basis. As part of those inspections, the County is required to report annually to MDE with documentation identifying the stormwater management practices inspected, the number of maintenance inspections, the number of follow-up inspections, the enforcement actions used to ensure compliance, and the maintenance inspection schedule in the MDE MS4 Geodatabase.

2.2 Division of Construction Management Inspection Bureaus

Stormwater management inspections are completed by two separate bureaus within the Department of Public Works, Division of Construction Management (Table 1). The Bureau of Construction Inspections completes stormwater management inspections for construction and one-year post-construction. The Bureau of Construction Inspections uses EnerGov to track their inspections, as their workflow is centered around building permit issuances, construction management, and permit closure.

The Bureau of Stormwater Management completes stormwater management triennial maintenance inspections after the building permit has been completed and closed. The HCBMP Geodatabase schema design was developed for the Bureau of Stormwater Management's stormwater management triennial maintenance inspections.

Table 1: Stormwater Management Inspection Responsibilities

	Bureau of Construction Inspections	Bureau of Stormwater Management
Purpose	Inspections during construction and one-year post-construction inspection	Triennial maintenance inspections
Tracking	EnerGov	EnerGov currently. Transitioning to ArcGIS Survey123.
Employees	Mike Davies	Robert Anderson Dave Butler



3 Supplemental MDE Geodatabase Schema for FY25

The MDE MS4 Geodatabase schema was provided by MDE in the Geodatabase Design and User's Guide (July 2025). This new schema was used when developing the BMP and Drainage Area feature classes for FY22 through FY25 only. The previous years, FY95–FY21, are stored in the HCBMP Geodatabase (see Section 4).

The MDE MS4 Geodatabase schema consists of two feature classes. Figure 1 is the expanded view of the MDE MS4 Geodatabase in ArcCatalog.

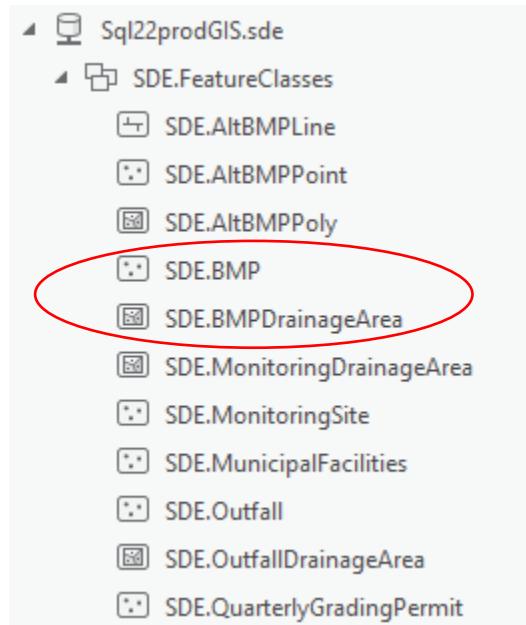


Figure 1: Supplemental MDE Geodatabase

Table 2 lists the purpose of each feature class in the MDE MS4 Geodatabase.

Table 2: MDE MS4 Geodatabase Schema

Feature Class Name	Type	Purpose
BMP	Point-Feature Class	This feature class shows a specific geographical point indicating an area in which there could be one or many BMPs and includes information associated with watershed, drainage area, and BMP construction. This feature class is not needed for the triennial inspection but is required for MDE reporting.
BMPDrainageArea	Polygon-Feature Class	The drainage area associated with a BMP point, this feature class is not needed for the triennial inspection but is maintained for MDE reporting.



4 HCBMP Geodatabase Schema

The HCBMP Geodatabase schema was developed using ArcGIS Desktop and is used to:

- Manage the Bureau of Stormwater Management's triennial stormwater maintenance inspections
- Provide MS4 permits compliance

The HCBMP Geodatabase schema consists of five objects: three feature classes, one flat table, and one relationship class. Figure 2 is the expanded view of the HCBMP Geodatabase in ArcCatalog.

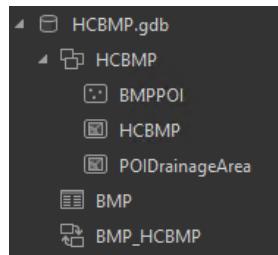


Figure 2: HCBMP Geodatabase

Table 3 lists the purpose of each object in the HCBMP Geodatabase.

Table 3: HCBMP Geodatabase Schema

Object Name	Type	Relationship	Purpose
BMP	Flat Table	<i>HCBMP</i>	Record of additional information about the BMP that is not necessary for the triennial inspections but is required for the MDE MS4 Geodatabase.
BMPOI	Point-Feature Class	<i>None</i>	POI is the point of interest for the POI Drainage Area. This feature class shows a specific geographical point indicating a study area or point of investigation (POI) in which there could be one or many BMPs and includes information associated with watershed, drainage area, and BMP construction. This feature class is not needed for the triennial inspection but is required for MDE reporting.
HCBMP	Polygon-Feature Class	<i>BMP</i>	Footprint of the BMP and attributed based on the inspector's needs.
POIDrainageArea	Polygon-Feature Class	<i>None</i>	The drainage area associated with the POI, this feature class is not needed for the triennial inspection but is maintained for MDE reporting.



5 HCBMP Geodatabase Population

5.1 Source Information

There are two types of stormwater management plans: engineered plans and standard plans. Both sets of plans are managed through EnerGov during the permitting process and given a Project Number. The acceptance of an As-Built is managed by the Engineer Associate from the Bureau of Stormwater Management and recorded in an Excel spreadsheet. The As-Built acceptance date is the date used to identify the fiscal year that the stormwater management practice was accepted by the County. The As-Built plans are scanned and managed in a Laserfiche file system by Project Number and Project Name.

Engineer Plans

Engineer Plan permits require a construction bond and are typically used for large development projects. Upon construction completion and approval of the stormwater management As-Built plans, the construction bond is converted into a maintenance bond. The maintenance bond is released after a one-year post-construction inspection is performed by the Bureau of Construction Inspections. The one-year post-construction inspection is recorded in EnerGov since it results in the release of a bond. After the one-year post-construction inspection is completed and accepted, the three-year triennial inspection cycle starts. These plans have been reviewed by EA and uploaded into the HCBMP Geodatabase.

Standard Plans

Standard Plan permits do not require a construction bond or maintenance bond. These plans are common for small single-family constructions. The Bureau of Construction Management completes the final inspection for standard plans concurrently with the As-Built acceptance. These plans have not been reviewed by EA and are not currently included in the HCBMP Geodatabase.

Property Information

Harford County Department of Planning and Zoning creates the cadastral layer and provides to the Maryland State Department of Assessments and Taxation (SDAT). The cadastral layer is maintained in the County Spatial Database Engine (SDE) and is used to populate the property information (BMP Address, BMP City, BMP Owner). An SDAT link is provided in the HCBMP feature class that enables the Bureau of Stormwater Management to access the latest property information during their triennial inspections.

Management Company Information

Owners of the stormwater management practice hire companies that specialize in stormwater management maintenance to maintain the facility. These companies, along with the owners, receive a copy of the triennial inspection. The information about each management company is provided by the Bureau of Stormwater Management.

5.2 Geometry Population

The As-Builts are georeferenced using ArcGIS Pro, and the HCBMP polygon and POI Drainage Area are digitized from those plans. All BMPs are mapped even if they are not providing a water



quality credit. BMPs that extend beyond property boundaries may be separated by the property line to account for the individual owners responsible for the maintenance of the BMP. Practices that are separated by the property line are grouped into one MDE BMP identification (ID) number and the Inspection of Cluster ESD Practice may apply (see Section 5.4). For development with more than one drywell on a single lot, the BMP Polygon is a multipolygon with the same BMPid and MDEid. The BMP POI location is the downstream point of the POI Drainage Area and is typically a study point in the stormwater design report.

BMP POI locations were selected to relate to the major contributing watersheds within a project. These locations are where stormwater management facilities and associated quality treatment and quantity control from the project are provided. Typically, these locations were established at the outfalls from ponds or large treatment practices and selected just outside of the watershed boundary. While there could be multiple sub-watersheds within the major POI watershed, the intent was to set up major POI locations within the larger watershed to report the overall impervious area treated. BMP POIs have not been populated since the adoption of the new MDE Geodatabase requirements were introduced in FY23.

As more projects are permitted, such as previously undeveloped areas and/or property redevelopments, new POI locations/watersheds will be created that could be located within or partially within the mapped watershed assigned to a POI. This will create a “nesting” or overlap of the watersheds.

The new POI will result in the reporting of additional impervious areas being treated. Facilities will be updated for locations where a modification to an existing facility is proposed. Generally, modifications are based on the original and increased treatment requirements for the proposed project. These values are then documented to report the added impervious area treated in the new POI. Therefore, the nesting of the POI locations/watersheds will not require revision to the existing POI data.

5.3 Attribute Population

The management of the stormwater BMPs involves various divisions, thus, it is important to note the sources and procedures for data population in the HCBMP Geodatabase. The source of information for each attribute is detailed in the following sub-sections.

5.3.1 Project Specific

Project-specific data are required for attribute population of the HCBMP, BMP POI, and POI Drainage Area feature classes. The As-Builts provide the information to populate the HCBMP Geodatabase objects identified above. These As-Built provided attributes appear in multiple objects and are listed below:

- ProjectNo
- ProjectName
- BMPType
- BMPName
- NumBMP
- As-built Link
- ApprovedPlanLink



- PermitNo
- PermitApproval
- BMPAsbuilt
- Planapproval
- yearconstructed

The layout of the objects and associated attributes are available in Appendix A. This information is populated when the geometry of the features classes is delineated.

5.3.2 Engineering Review

A Professional Engineer reviews the As-Builts and the stormwater design report to determine the PE addressed, PE required, and Impervious Area Treated at the BMP POI. This information is recorded in the BMPPOI feature class. The MS4 Office has also elected to record the volume of each BMP in the BMP table. This information is recorded after the geometry is digitized. The engineer also reviews the drainage area and BMP footprint to confirm the geographic information system (GIS) data matches the As-Builts.

5.3.3 Geospatial Calculations

The POI Drainage Area, HCBMP feature class, and BMP table require geospatial calculations. Table 4 identifies the HCBMP Geodatabase object, attribute, source data, and geoprocessing tool used for geospatial calculations.

Table 4: HCBMP Geodatabase Geospatial Calculations

HCBMP.gdb Object	Attribute	Harford County GIS Source Data	Geoprocessing Tool
POI Feature Class	NORTH	NA	Calculate geometry (X coordinate of Centroid, Y coordinate of Centroid)
	EAST		
	WATERSHED8DGT	Watershed8digit	Overlay
	WATERSHED12DGT	Watershed12digit	Overlay
	LAND_USE	Predominant	Overlay
	LU_COUNTY		
HCBMP	PERMIT_NUM	NA	Field Calculator (Current MDE Number)
	BMPAddress	Cadastral	Overlay
	BMPCity		
	BMPZip		
	TaXID		
	TaxIDLink	SDAT website	Overlay
BMP Table	Asbuilt Link	Laserfiche	Copy a link using Laserfiche and project number
	BMPClass	NA	Field Calculator of BMP Class (ESD or Structural) based on BMP Type (Sql statement in the field calculator)
	BMPStatus	NA	Field Calculator (Active)
	ConPurpose	NA	Field Calculator (NEWD)



Table 4: HCBMP Geodatabase Geospatial Calculations

HCBMP.gdb Object	Attribute	Harford County GIS Source Data	Geoprocessing Tool
	BMP_Drain_Area	POIDrainageArea	Join POI Drainage Area and copy Drainage Area from POIDrainageArea

5.3.4 Numbering

The BMPOI_ID field in the BMPOI feature class and the BMP_DRAIN_ID field in the POIDrainageArea feature class are populated according to the fiscal year that the As-Builts were accepted by the County.

The BMPid is populated sequentially in the HCBMP feature class and the BMP table.

The MDEid is populated sequentially in the BMP table. An Excel spreadsheet, HCBMP.gdb Numbering, is the official record of the numbering system and is stored on Harford County's WRE drive under GIS Projects. The Excel spreadsheet is utilized to facilitate the population of the IDs and prevent duplicates.

5.4 Cluster Feature Class

The County has opted to group or cluster BMPs of the same type that drain to the same POI for triennial inspections. In November 2019, the County adopted the inspection of Clustered ESD Practices to apply this cluster inspection protocol. The cluster BMP will be revisited in FY25.

5.5 Geodatabase QAQC Population Rules

To assist in standardized data population, specific QAQC Population Rules were created. The rules are based on the County's Triennial Inspection Program and the MS4 Permit requirements. The QAQC population rules, applicable feature classes, and exceptions are listed in Table 5.

Table 5: QAQC Rules

Feature Class	QAQC Rule	Exception
HCBMP POI Drainage Area	HCBMP must be inside the POI Drainage Area	The drainage areas for drywells, non-rooftop disconnect, or sheet flow to conservation areas is the rooftop unless the identified practice is part of a larger POI drainage area. Therefore, not all drywells, non-rooftop disconnect, or sheet flow to conservation area may be in the POI drainage area.
HCBMP	HCBMPs do not overlap	Not Applicable
POI Drainage Area	POI Drainage Areas do not overlap	Historically, BMPs may have been nested within another POI Drainage Area. These nested drainage areas are now removed.



Table 5: QAQC Rules

Feature Class	QAQC Rule	Exception
BMP POI POI Drainage Area	BMP POI point is always outside of the POI Drainage Area	A BMP POI for pervious pavement that is not associated with other BMPs is located inside at the centroid of HCBMP. A BMP POI for sheet flow and drywell that is not associated with other BMPs is located outside of the POI Drainage Area and may not be immediately adjacent to the POI Drainage Area.
BMP POI Imp_Arces POI Drainage Area	BMP POI Imp_Acres attribute cannot be larger than the BMP POI Drainage Area. (Note: Imp_Acres has units in acres and BMP POI Drainage Area has shape size units in square feet. Unit conversion is used to check and verify this rule.)	Not Applicable

6 HCBMP Geodatabase Population Status

EA continues to review the As-Built plans and update the HCBMP Geodatabase. Table 6 displays the number of BMPs and number of As-builts based on the fiscal year. The information in Table 5 is based on the BMP Table in the HCBMP Geodatabase as of 23 December 2025. EA has not reconciled all the historical GIS data with the BMP table entries; therefore, the HCBMP polygon feature class contains more records than identified in Table 6.

Table 6: BMP Table Population Status

Fiscal Year MDE ID Number	BMPs	Number of As- builts	Source of input data	Reviewed
FY25	62 ¹	19 ²	EA	EA (PE Complete)
FY24	75 ¹	19 ³	EA	EA (PE Complete)
FY23	259 ¹	24 ³	EA	EA (PE Complete)
FY22	180	37	EA	EA (PE Complete)
FY21	321	61	EA	EA (PE Complete)
FY20	587	72	EA	EA (PE Complete)
FY19	218	46	EA	EA (PE Complete)
FY18	205	47	EA	EA (PE Complete)
FY17	134	35	EA	EA (PE Complete)

¹ Total number of BMPs subject to change.

² 5 pending projects to be added for FY25 in next annual report.

³ Total number of projects subject to change.



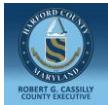
Table 6: BMP Table Population Status

Fiscal Year MDE ID Number	BMPs	Number of As- built	Source of input data	Reviewed
FY16	424	44	Other Consultant	EA (GIS)
FY15	240	52	Other Consultant	EA (GIS)
FY14	189	33	Other Consultant	EA (GIS)
FY13	135	42	Other Consultant	EA (GIS)
FY12	198	41	EA	EA (GIS)
FY11	80	41	EA	EA (GIS)
FY10	87	44	EA	EA (GIS)
FY09	91	50	EA	EA (GIS)
FY08	87	48	EA	EA (GIS)
FY07	84	49	EA	EA (GIS)
FY06	127	45	EA	EA (GIS)
FY05	49	36	EA	EA (GIS)
FY04	42	31	EA	EA (GIS)
FY03	82	51	EA	EA (GIS)
FY02	34	32	EA	EA (GIS)
FY01	49	35	EA	EA (GIS)
FY00	23	23	EA	EA (GIS)

Notations used in the table above specify the type of review completed.

- EA (PE Complete): a Professional Engineer reviewed the drainages to the POI, verified BMP locations and footprint, identified POI locations, and provided the calculations for PE addressed, PE Required, Impervious Acres Treated for each POI, and the ESDv for all the BMPs. This step was done after EA (GIS) review occurred, meaning the EA (GIS) review below was also completed for these fiscal years.
- EA (GIS): a GIS Analyst georeferenced the As-Built plans to delineate BMP locations, drainages, and POI locations. Attribute information for ProjectNo, ProjectName, BMPtype, BMPname, Num_BMP, AsBuiltLink, ApprovedPlanLink, PermitNo, Permitapproval, BMPasbuilt, Planapproval, YearConstructed, BMPaddress, BMPcity, and BMPzip was populated from the As-Built plans. In addition, the GIS Analyst assigned the POI ID, Drainage Area ID Number, MDE ID Number, and BMP ID based on the years and sequentially added. A separate Excel spreadsheet to facilitate the population of the IDs and prevent duplicates was maintained.

It is important to note that the unpopulated features are decreasing as the fiscal year reviews are completed and updated in the HCBMP Geodatabase.



EA Engineering,
Science, and
Technology, Inc., PBC

BMP Geodatabase Technical Memorandum

December 2025

7. HCBMP Geodatabase Transformation

For the December 2025 submittal, the HCBMP Geodatabase schema does not match the MDE MS4 Geodatabase. In the future, EA may assist the County in transforming the data from the HCBMP Geodatabase to the MDE MS4 Geodatabase. The documentation for the HCBMP Geodatabase to the MDE MS4 Geodatabase transformation will be documented in this section when completed.



EA Engineering,
Science, and
Technology, Inc., PBC

BMP Geodatabase Technical Memorandum
December 2025

This page intentionally left blank



EA Engineering,
Science, and
Technology, Inc., PBC

BMP Geodatabase Technical Memorandum

December 2025

Appendix A – HCBMP Schema



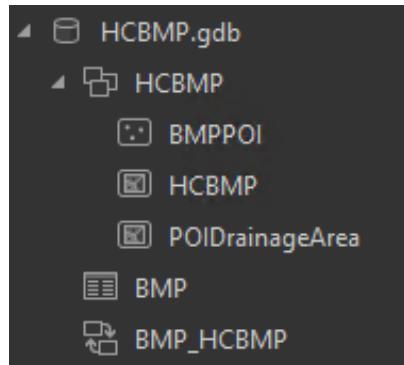
EA Engineering,
Science, and
Technology, Inc., PBC

BMP Geodatabase Technical Memorandum
December 2025

This page intentionally left blank



HCBMP Geodatabase – Schema December 2025



BMP Table – Related to HCBMP Many to One HCBMP			HCBMP - Geometry Polygon One to Many BMP Table		
Attribute	Description	Source	Attribute	Description	Source
BMPid	Unique Harford County specific ID	Sequential	BMPid	Unique id for Harford County	Sequential number
MDEbmpid	MDE unique ID	Sequential	BMPType	Using domain table from MDE Guidance May 2017	As-Builts
BMPPOID	BMPs POI's unique ID	BMPPOID	Num_BMP	Number of BMPs of the same type to the same POI	As-Builts
BMPDrainID	POI Drainage Area's unique ID	POIDrainageArea	PermitNo	Using County Construction Permit System	As-Builts
BMPType	Using domain table from MDE Guidance May 2017	As-Builts	ProjectName	Project Name	As-Builts
BMPname	Name of the Project	As-Builts	ProjectNumber	Project Number	As-Builts
PermitNo	Using County Construction Permit System	As-Builts	AsbuiltLink	Laserfiche location	Laserfiche
Permitapproval	When the construction permit was approved	As-Builts	Year_Constructed	Year the BMP was constructed	As-Built/Aerials
BMPAsbuilt	Date of As-built	As-Builts	BMPAddress	Closest physical address to BMP	GIS
PlanApproval	Date the plans were approved	As-Builts	BMPcity	The city the BMP is in	
Complink	Link to the computations	Laserfiche	BMPZip	The zip code the BMP is in	
BMPClass	MDE required- ESD or Structural	As-Builts	.PropertyType	Type of Property (Using domain table from MDE Guidance May 2017)	
BMPStatus	MDE Required-Active	All BMPS recorded are active	ManagerCo	The Management company	Bureau of Stormwater Management
BMPDrainageArea	The drainage area to the POI in acres	POIDrainage Area	Ownership	HOA, Beneficial Users, No HOA	GIS
Volume	Calculated ESDV to each BMP	Stormwater Design Report	Ownername	Property Owner's Name	
Con_Purpose	MDE required – New development of redevelopment of site	All BMPs recorded are New Development	Ownercity	Property Owner's City	
			OwnerState	Property Owner's State	
			OwnerZip	Property Owner's Zip Code	
			TaxID	SDAT ID	SDAT
			TaxIDLink	SDAT Link	SDAT
			MaintenanceAgreement	Maintenance pdf	Bureau of Stormwater Management

POIDrainageArea - Geometry Polygon			BMPPOI-Geometry Point		
Attribute	Description	Source	Attribute	Description	Source
BMP_Drain_ID	Unique ID	Sequential number based on Fiscal Year	BMPPOID	POI's unique ID	Sequential number based on Fiscal Year
BMPPOI_ID	POI's unique ID	BMPPOI	MD_NORTH	Northing	GIS
BMPDrainageArea	The drainage area to the POI in acres	Field Calculated	MD_EAST	Easting	GIS
Permit_Num	Permit Number	MDE permit number	Land_Use	Predominant land use	GIS
Gen_Comments	Any important comments	GIS	LU_County	County unique land user (predominant)	GIS
			Watershed8DGT	Maryland 8 digit hydrologic unit code	GIS
			Watershed12DGT	USGS 12 digit hydrologic unit code	GIS
			Imp_Acres	Impervious Acres	Stormwater Design Report
			Last_Change	Date Field	
			Permit_Num	Permit Number	MDE permit number
			General Comments	Any important comments	GIS
			PE_REQ	PE required	Stormwater Design Report
			PE_ADR	PE addressed	Stormwater Design Report



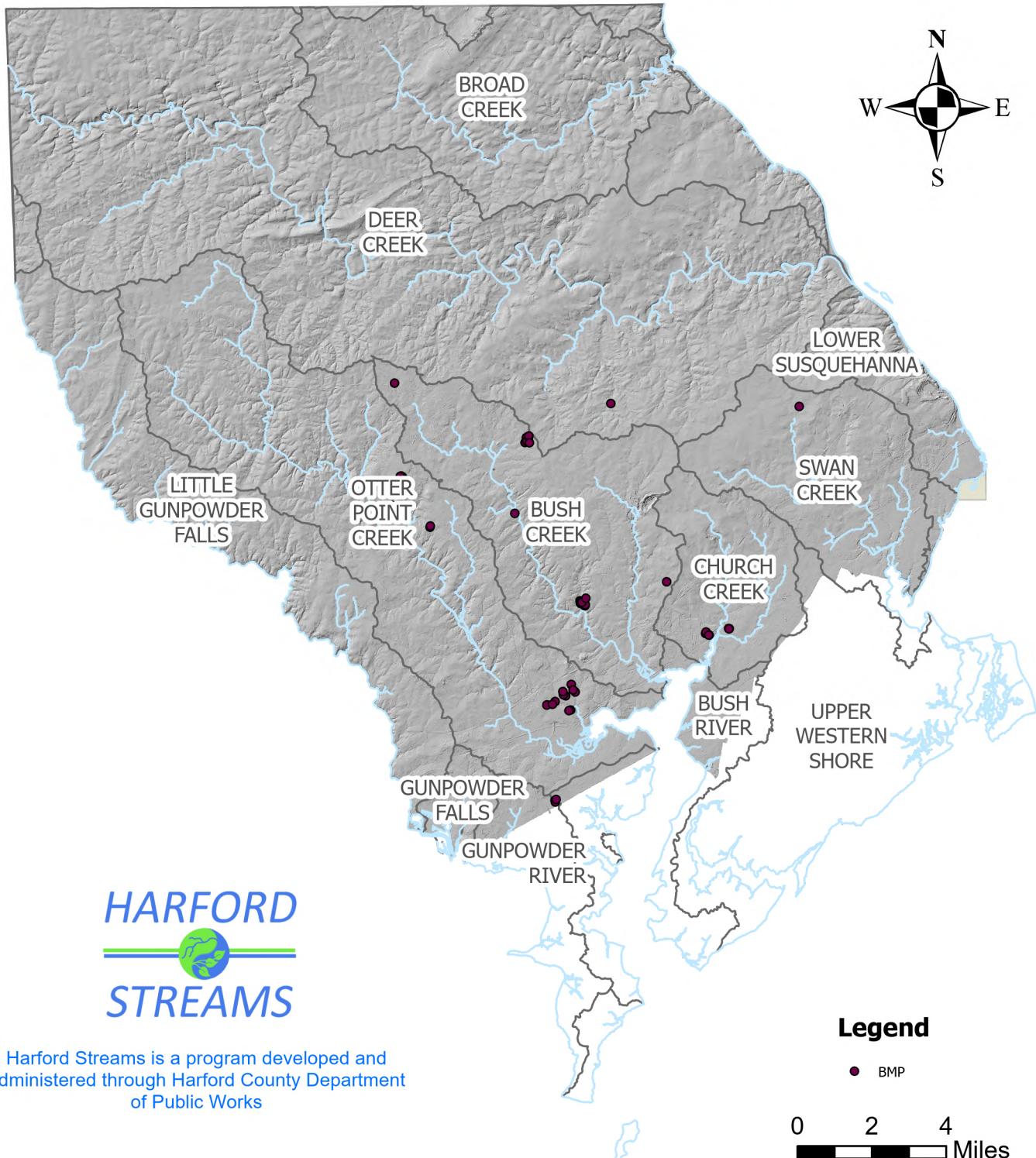
This page intentionally left blank

Appendix C3

Harford County, MD Department of Public Works Watershed Protection and Restoration Stormwater As-builts (July 1, 2024 - June 30, 2025)



Robert Cassilly
County Executive



HARFORD STREAMS

Harford Streams is a program developed and administered through Harford County Department of Public Works

Harford County
NPDES Phase 1 MS4 Permit 22-DP-3310
FY2025 Annual Report

Printed 12/2025

www.HarfordCountyMD.gov
HarfordStreams@HarfordCountyMD.gov
www.Facebook.com/HarfordStreams
(410) 638-3217

Harford County, MD Department of Public Works

Watershed Protection and Restoration

Stormwater Manual Projects Asbuilt during Fiscal Year 2025 (MS4 Permit 22-DP-3310)



Robert Cassidy

County Executive

Project Name	As-Built	MDE BMP ID	BMP TYPE
ABINGDON BUSINESS PARK CLOSE OUT	6/10/2025	HA25BMP000048	Grass Swale
		HA25BMP000049	Grass Swale
		HA25BMP000050	Grass Swale
		HA25BMP000051	Dry Extended Detention Structure
		HA25BMP000052	Grass Swale
		HA25BMP000053	Grass Swale
		HA25BMP000054	Grass Swale
		HA25BMP000055	Grass Swale
		HA25BMP000056	Dry Extended Detention Structure
		HA25BMP000057	Dry Extended Detention Structure
Ainsley Forest 928 Fenario Circle	7/22/2024	HA25BMP000001	Dry Well
		HA25BMP000002	Dry Well
		HA25BMP000003	Rooftop Disconnect
		HA25BMP000004	Rooftop Disconnect
		HA25BMP000005	Rooftop Disconnect
		HA25BMP000006	Non-Rooftop Disconnect
		HA25BMP000007	Non-Rooftop Disconnect
		HA25BMP000008	Grass Swale
		HA25BMP000009	Grass Swale
		HA25BMP000010	Grass Swale
		HA25BMP000011	Dry Well
Encore at Glenwood Lot 5	9/30/2024	HA25BMP000063	Dry Well
EVA MAR PONDS 6&7	5/15/2025	HA25BMP000040	Bio-Swale
		HA25BMP000041	Micro-Bioretention
		HA25BMP000042	Micro-Bioretention
		HA25BMP000043	Micro-Bioretention
		HA25BMP000044	Bio-Swale
		HA25BMP000045	Dry Extended Detention Structure

		HA25BMP000046	Micro-Bioretention
		HA25BMP000047	Dry Extended Detention Structure
FOREST HILL BUSINESS CENT	4/8/2025	HA25BMP000027	Dry Pond
Harford Memorial Gardens	12/26/2024	HA25BMP000012	Rain Garden
Harlans Glance	9/26/2024	HA25BMP000028	Surface Sand Filter
MCI Worldcom	11/21/2024	HA25BMP000013	Wet Extended Detention Pond
NUTTAL AVENUE PARK	1/16/2025	HA25BMP000031	Micro-Bioretention
		HA25BMP000032	Bio-Swale
		HA25BMP000033	Micro-Bioretention
RIVERSIDE BUSINESS PARK LOT 32	5/14/2025	HA25BMP000023	Bio-Swale
		HA25BMP000024	Bio-Swale
		HA25BMP000058	Underground Filter
		HA25BMP000059	Bioretention
		HA25BMP000060	Micro-Bioretention
		HA25BMP000061	Micro-Bioretention
Shebalou LLC	3/19/2025	HA25BMP000034	Rain Garden
		HA25BMP000035	Rain Garden
		HA25BMP000036	Dry Pond
Stack and Store Annex	11/20/2024	HA25BMP000029	Other
		HA25BMP000030	Other
Vale Woods Lot 35	4/20/2025	HA25BMP000038	Non-Rooftop Disconnect
		HA25BMP000067	Dry Well
Vale Woods Lot 36	4/20/2025	HA25BMP000037	Non-Rooftop Disconnect
		HA25BMP000039	Grass Swale
		HA25BMP000065	Dry Well
Vale Woods Lot 37	4/20/2025	HA25BMP000062	Non-Rooftop Disconnect
		HA25BMP000066	Dry Well
WILLIAM PACA IND PARK LOT	3/19/2025	HA25BMP000025	Micro-Bioretention
		HA25BMP000026	Micro-Bioretention
WINTERS RUN LOTS 10-14	4/28/2025	HA25BMP000020	Dry Well
		HA25BMP000021	Dry Well
		HA25BMP000022	Micro-Bioretention
		HA25BMP000064	Dry Well
		HA25BMP000068	Dry Well

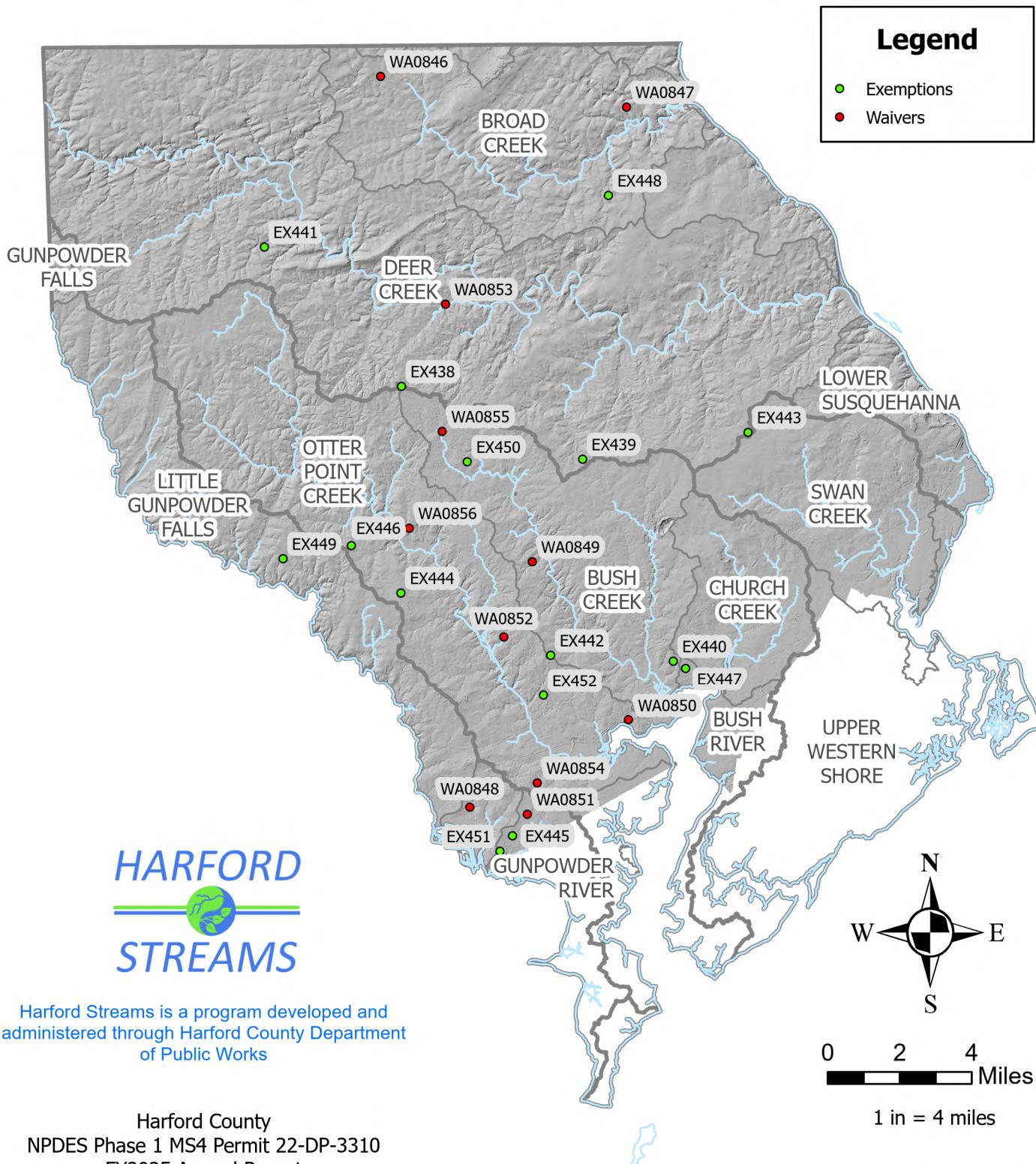
Appendix C3

Harford County, MD Department of Public Works Watershed Protection and Restoration

Stormwater Approvals (July 1, 2024 - June 30, 2025)



Robert Cassilly
County Executive



Harford County
NPDES Phase 1 MS4 Permit 22-DP-3310
FY2025 Annual Report

Printed 12/2025

www.HarfordCountyMD.gov

HarfordStreams@HarfordCountyMD.gov

www.facebook.com/HarfordStreams

(410) 638-3217

FY25 Waivers
Harford County Stormwater Management Waivers between 07/01/2024 and
06/30/2025

site	location	submit date	approval date	watershed	easting	northing	quantity	quality	ID
MLD (MLV 190D20 to Station 195) Dig 4750 Project	3006 WHITEFORD RD	2024-05-31	2024-07-03	021202050343	1482293.62	744408.7463	Section 214-28.B.(3)	Section 214-28.C.(3)	WA0846
Broad Creek Memorial Scout Reservation - Camp Saffron Comfort Stations	1929 SUSQUEHANNA HALL RD	2024-02-07	2024-07-11	021202050339	1517868.796	739975.0915	Section 214-28.B.(3)		WA0847
Lower Wheel Creek Stream Restoration Repairs	NORTH AND SOUTH SIDES OF WEST WHEEL ROAD	2024-06-04	2025-07-11	021307031132	1500118.694	663399.557	Section 214-28.B.(2)	Section 214-28.C.(1)	WA0852
Taylor Creek Stream Restoration	OFF FALCONER ROAD AND OFF SOURGHUM COURT	2024-06-04	2024-07-11	021308010293	1495199.563	638687.278	Section 214-28.B.(2)	Section 214-28.C.(1)	WA0848
Anita C. Leight Estuary Center Stream Restoration	700 Otter Point Rd, Abingdon, MD 21009	2024-12-30	2025-03-26	021307011127	1518134.827	651345.8744	Section 214-28.B.(2)	Section 214-28.C.(1)	WA0850
Glenwood Sewer Petition	Donegal Rd and Duncannon Rd	2024-06-28	2025-02-07	021307041131	1504229.658	674266.1612	Section 214-28.B.(3)		WA0849
North Reardon Stream Restoration	1702 TRIMBLE ROAD		2025-06-12	021308010293	1503508.197	637663.0212	Section 214-28.B.(2)	Section 214-28.C.(1)	WA0851
Melrose Lane Sewer Replacement	MELROSE LANE	2025-06-28	2025-06-30	021307041131	1491191.869	693101.672	Section 214-28.B.(3)	Section 214-28.C.(3)	WA0855
Edgewood Village Stream Restoration	EDGEWATER DR	2025-04-29	2025-06-30	021307021130	1504949.191	642193.576	Section 214-28.B.(2)(c)	Section 214-28.C.(1)(c)	WA0854
Simons Run Stream Restoration and Wetland Mitigation Project	PYLE RD	2025-05-23	2025-06-30	021202020325	1491680.367	711486.654	Section 214-28.B.(2)(c)	Section 214-28.C.(1)(c)	WA0853
Culvert Replacement at Tollgate over Tributary of Winters Run	TOLLGATE RD	2025-04-18	2025-06-13	021307031132	1486439.255	679109.976	Section 214-28.B.(2)(a)	Section 214-28.C.(2)(a)	WA0856

Waivers:

Section 214-28 B.(1-4): (Last Amended April 19, 2010)
 Section 214-28 B. (2)(a): (Last Amended April 19, 2010)
 Section 214-28 B. (2)(c): (Last Amended April 19, 2010)
 Section 214-28 C.(1,3): (Last Amended April 19, 2010)
 Section 214-28 C. (2)(a): (Last Amended April 19, 2010)
 Section 214-28 C. (2)(c): (Last Amended April 19, 2010)
 Section 214-28 H.(4): (Last Amended April 19, 2010)

FY25 Exemptions
Harford County Stormwater Management Exemptions between 07/01/2024 and 06/30/2025

site	location	submit date	approval date	watershed	easting	northing	type	ID
Forest Hill Elementary School-Retriever Terrace	2407 Rocks Rd, Forest Hill, MD 21050	2024-10-08	2024-10-09	021202020325	1485309.998	699607.8317	Section 214-3.B(1)b Section 214-27B.(3)	EX438
Church Creek Elementary School Portable Classroom	4299 Church Creek Rd, Belcamp, MD 21017	2024-10-17	2025-01-03	021307011129	1524624.555	659896.8799	Section 214-3.B(1)b	EX440
Prospect Mill Elementary School Portable Classroom	101 Prospect Mill Rd, Bel Air, MD 21015	2024-10-17	2025-01-03	021202020323	1511516.525	689085.6729	Section 214-3.B(1)b	EX439
3911 Eaton Drive (Pole Barn)	3911 Eaton Drive	2024-10-08	2025-01-13	021202020327	1465485.264	719751.6378	Section 214-3.B(1)b Section 214-27B.(3)	EX441
7 Brew Coffee Shop at 2912 Emmorton Road	2912 Emmorton Road, Abingdon, MD 21009	2025-01-21	2025-02-11	021307041131	1506887.599	660748.5351	Section 214-27B.(3)	EX442
Millbrook Creek Sod Farm	Level Rd, Churchville MD 21028	2025-01-14	2025-04-07	021202020322	1535432.476	692961.8883	Section 214-27B.(1)	EX443
1813 Harford Road	1813 Harford Rd, Fallston, MD 21047	2025-03-19	2025-04-30	021307031132	1485227.546	669746.501	Section 214-27B.(3)	EX444
1254 Collier Lane	1254 Collier Ln, Belcamp, MD 21017	2025-03-21	2025-05-02	021307011129	1526399.354	658849.7387	Section 214-27B.(3)	EX447
Fallston High School-Outdoor Court Resurfacing Project	2301 Carrs Mill Rd, Fallston, MD 21047	2025-04-02	2025-05-02	021307031132	1478062.733	676599.3938	Section 214-3.B(1)b Section 214-27B.(3)	EX446
Magnolia Middle School-Outdoor Court Resurfacing Project	299 Fort Hoyle Rd, Joppatowne, MD 21085	2025-03-20	2025-05-02	021308010293	1501368.023	634543.1616	Section 214-3.B(1)b Section 214-27B.(3)	EX445
Harford Christian Modular Classroom	1736 WHITEFORD RD	2025-05-06	2025-06-10	021202050339	1515237.267	727200.5422	Section 214-27B.(3)	EX448
2713 Fallsmont Drive- Garage Construction	2713 Fallsmont Drive		2025-06-10	021308040298	1468181.617	674711.9838	Section 214-3.B(1)b Section 214-27B.(3)	EX449
617 Loring Ave.- House Construction	617 Loring Ave		2025-06-12	021307041131	1494822.839	688717.1159	Section 214-3.B(1)b Section 214-27B.(3)	EX450
Riverside Elementary School Portable Classroom	211 STILLMEADOW DRIVE JOPPA, MD 21085	5/30/2025	6/27/2025	021308010293	632315.6602	1499553.92	Section 214-27B.(3)	EX451
Walmart Online Pickup Delivery (Abingdon)	401 CONSTANT FRIENDSHIP BLVD JOPPA, MD 21009	5/20/2025	6/27/2025	021307021130	654903.8768	1505843.58	Section 214-27B.(3)	EX452

Exemptions:
 Section 214-3.B(1)b: (Last Amended April 19, 2010)
 Section 214-27B.(1): (Last Amended April 19, 2010)
 Section 214-27B.(3): (Last Amended April 19, 2010)