

Howard County Financial Assurance Plan 2020: Executive Summary

The National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit issued to Howard County on December 18, 2014, mandated that the County implement restoration efforts for 20% of its total impervious surface area that has not already been restored to the maximum extent practicable (MEP) by December 17, 2019. The submission of Howard County's Financial Assurance Plan (FAP) to the Maryland Department of the Environment (MDE) fulfills requirements specified in the Maryland Article – Environment, Section 4-202.1. This plan is being filed to MDE in order to document all actions implemented by Howard County to comply with the NPDES MS4 permit and demonstrate the County's ability to pay for these activities through the Watershed Protection and Restoration Fund.

Howard County implemented its stormwater utility fee, the Watershed Protection and Restoration Fee (WPRF), on July 1, 2013, as required by state law. Upon implementation of the Fee and the Watershed Protection and Restoration Fund, the County increased existing efforts to plan, design, construct, and monitor restoration projects necessary to meet the NPDES MS4 permit's 20% restoration goal. Per MDE guidance, all restoration projects implemented following June 10, 2010 are considered restoration that applies to the County's 20% restoration goal. In comments dated August 7, 2020, MDE acknowledges that Howard County's restoration requirement for the 2014-2019 permit term is 20% of its 11,019-acre baseline, or 2,204 acres. MDE also acknowledges that the County has exceeded its 20% requirement by completing additional impervious acres of restoration and "...is commended for this significant achievement."

This FAP reflects completed actions taken by the County during the 2014-2019 permit term and planned actions projected to meet the estimated restoration requirement of the next permit term, which MDE has stated is scheduled to begin sometime in calendar year 2021. Based on the [Maryland's Phase III Watershed Implementation Plan \(WIP\)](#), the estimated restoration requirement over the five-year permit term is 10% of the impervious surface area that has not already been restored to the MEP, implemented at a rate of 2% per year.

The County's current permit, which expired on December 17, 2019, is administratively continued and remains in effect until a new permit is issued. Therefore, the County continues to implement the numerous programs required by the MS4 permit. Best management practices (BMPs) will continue to be utilized to complete additional restoration work and improve water quality, including stream restoration, outfall stabilization, tree planting, construction of new BMPs, retrofitting existing BMPs, street sweeping, inlet cleaning, and septic system upgrades, pump-outs, and connections to the sanitary sewer system. Per MDE direction, any restoration credit for projects completed after the County met the restoration requirement for the 2014-2019 permit term will be recalculated using the draft *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated: Guidance for National Pollutant Discharge Elimination System Stormwater Permits* document (June, 2020) and will apply to the restoration requirements in the next permit term. The County also continues to research and develop the voluminous electronic data necessary to meet the ever-expanding geodatabase reporting requirements of the MS4 permit.

MS4 Information	
Jurisdiction	Howard County
Contact Name	Mark S. Richmond
Phone	410-313-6413
Address	9801 Broken Land Parkway
City	Columbia
State	MD
Zip	21046
Email	msrichmond@howardcountymd.gov
Impervious Acre Baseline (Untreated Acres)	2,204
Permit Number	MD0068322, 11-DP-3318
Reporting Year	2020

Check with MS4 Geodatabase:

Should match Permit Info table of Geodatabase.

These data reflect the 4th generation NPDES MS4 Permit.

VERSION 8/20/20

Article 4-202.1(j)(1)(i)1: Actions that will be required of the county or municipality to meet the requirements of its National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

Note: To identify all "actions" required under the MS4 permit, provide an executive summary of the jurisdiction's MS4 programs. See MDE's FAP Guidance. For proposed actions to meet the impervious surface restoration plan, fill in the table below.

Baseline:

1,102 *This is the estimated 10% impervious surface restoration requirement for the 5th generation NPDES MS4 Permit.*

REST BMP TYPE ¹	BMP CLASS	IMP ACRES	IMPL COST	% ISRP COMPLETE	IMPL STATUS ²	PROJECTED IMPL YR ³
Operational Programs⁴						
MSS	A	20	\$400,000	1.8%	Complete	FY2020 - 806 miles swept
MSS	A	20	\$400,000	1.8%	Under Construction	FY2021 - 806 miles swept
MSS	A	20	\$400,000	1.8%	Proposed	FY2022 - 806 miles swept
MSS	A	20	\$400,000	1.8%	Proposed	FY2023 - 806 miles swept
MSS	A	20	\$400,000	1.8%	Proposed	FY2024 - 806 miles swept
MSS	A	20	\$400,000	1.8%	Proposed	FY2025 - 806 miles swept
SDV	A	17	\$100,000	1.5%	Complete	FY2020 - 200,000 pounds
SDV	A	17	\$100,000	1.5%	Under Construction	FY2021 - 200,000 pounds
SDV	A	17	\$100,000	1.5%	Proposed	FY2022 - 200,000 pounds
SDV	A	17	\$100,000	1.5%	Proposed	FY2023 - 200,000 pounds
SDV	A	17	\$100,000	1.5%	Proposed	FY2024 - 200,000 pounds
SDV	A	17	\$100,000	1.5%	Proposed	FY2025 - 200,000 pounds
Average Operations Next Two Years (FY2021-FY2022) ⁵		37	\$1,000,000	3%		
Average Operations Next Five Years (FY2021-FY2025) ⁵		37	\$2,500,000	3%		
Average Operations All Years ⁵		292	\$3,000,000	3%		
Capital Projects						
Various Types	Various Classes	300	\$14,015,000	27.2%	Complete	FY19
Various Types	Various Classes	200	\$11,150,000	18.1%	Complete	FY20
Various Types	Various Classes	100	\$5,500,000	9.1%	Under Construction	FY21
Various Types	Various Classes	100	\$5,500,000	9.1%	Proposed	FY22
Various Types	Various Classes	100	\$5,500,000	9.1%	Proposed	FY23
Various Types	Various Classes	100	\$5,500,000	9.1%	Proposed	FY24
Various Types	Various Classes	100	\$5,500,000	9.1%	Proposed	FY25
Subtotal Capital Next Two Years (FY2021-FY2022)		200	\$11,000,000	18%		
Subtotal Capital Next Five Years (FY2021-FY2025)		500	\$27,500,000	45%		

REST BMP TYPE ¹	BMP CLASS	IMP ACRES	IMPL COST	% ISRP COMPLETE	IMPL STATUS ²	PROJECTED IMPL YR ³
Subtotal Capital All Years		1,000	\$52,665,000	91%		
Other						
SEPP	A	18	\$0	1.6%	Complete	FY20
SEPP	A	18	\$0	1.6%	Under Construction	FY21
SEPP	A	18	\$0	1.6%	Proposed	FY22
SEPP	A	18	\$0	1.6%	Proposed	FY23
SEPP	A	18	\$0	1.6%	Proposed	FY24
SEPP	A	18	\$0	1.6%	Proposed	FY25
Subtotal Other Next Two Years (FY2021-FY2022)		36	\$0	3.3%		
Subtotal Other Next Five Years (FY2021-FY2025)		90	\$0	8.2%		
Subtotal Other All Years		108	\$0	9.8%		
Total Next Two Years (FY2021-FY2022)		273	\$12,000,000	24.8%		
Total Next Five Years (FY2021-FY2025)		627	\$30,000,000	56.9%		
Total All Years		1,400	\$55,665,000	103.9%		

REST BMP TYPE ¹	BMP CLASS	IMP ACRES	IMPL COST	% ISRP COMPLETE	IMPL STATUS ²	PROJECTED IMPL YR ³
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Check with MS4 Geodatabase:

Type, class, impervious acres, implementation cost and implementation status should match the various geodatabase tables for BMPs (AltBMPLine, AltBMPPoint, AltBMPPoly, and RestBMP) - aggregated by type and status.

Notes:

1. Use BMP domains from the MS4 Geodatabase.
2. Complete, Under Construction, Planning, or Proposed.
3. Use Fiscal Year (FY)
4. For street sweeping indicate the annual frequency that the streets are swept, and for storm drain or catch basin cleaning report the pounds of material removed.
5. Average IMP ACRES for Operational BMPs should be the average of BMP 1 + the average of BMP 2, etc.

IMPL COST is a summation and not an average.

VERSION 8/20/20

Article 4-202.1(j)(1)(i)2: Projected annual and 5-year costs for the county or municipality to meet the impervious surface restoration plan requirements of its National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

DESCRIPTION	PAST UP THRU FY 2019	CURRENT YEAR FY 2020	PROJECTED YEAR 1 FY 2021	PROJECTED YEAR 2 FY 2022	PROJECTED YEAR 3 FY 2023	PROJECTED YEAR 4 FY 2024	PROJECTED YEAR 5 FY 2025	TOTAL COSTS
Operating Expenditures (costs)								
Street Sweeping Program	\$3,295,239	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$2,400,000
Inlet Cleaning	\$226,535	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$600,000
Support of Capital Projects								\$0
Debt Service Payment	\$550,000	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000	\$3,900,000
Other (please stipulate program expenditure)*	-	-	-	-	-	-	-	\$0
Capital Expenditures (costs)								
General Fund (Paygo)								\$0
WPR Fund (Paygo)								\$0
Debt Service								\$0
Grants & Partnerships								\$0
Other (please stipulate capital expenditure)*	-	-	-	-	-	-	-	\$0
Total capital expenditures	\$48,747,002	\$11,150,000	\$5,500,000	\$5,500,000	\$5,500,000	\$5,500,000	\$5,500,000	\$38,650,000
Subtotal Operation and Paygo:	\$4,071,774	\$1,150,000	\$1,150,000	\$1,150,000	\$1,150,000	\$1,150,000	\$1,150,000	\$6,900,000
Total Expenditures:	\$52,818,776	\$12,300,000	\$6,650,000	\$6,650,000	\$6,650,000	\$6,650,000	\$6,650,000	\$45,550,000

Total ISRP costs except debt service: \$41,650,000

Compare ISRP costs (except debt service) / total ISRP proposed actions: 75%

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Check with MS4 Geodatabase:

The total current FY2020 expenditure should be less than the combined total of the "OP_COST" and "CAP_COST" fields in the Fiscal Analyses table of the geodatabase.

The total projected FY2021 expenditure should be less than the combined total of the "OP_BUDGET" and "CAP_BUDGET" fields in the Fiscal Analyses table of the geodatabase.

*Insert additional rows as needed.

Total capital expenditures | added by Howard County 9/24/2020

VERSION 8/20/20

Article 4-202.1(j)(1)(i)3: Projected annual and 5-year revenues or other funds that will be used to meet the cost for the county or municipality to meet the impervious surface restoration plan requirements under the National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

DESCRIPTION	PAST UP THRU FY 2019	CURRENT YEAR FY 2020	PROJECTED YEAR 1 FY 2021	PROJECTED YEAR 2 FY 2022	PROJECTED YEAR 3 FY 2023	PROJECTED YEAR 4 FY 2024	PROJECTED YEAR 5 FY 2025	TOTAL NEXT 2-YEARS FY 21-22 ¹	TOTAL
Annual Revenue ² Appropriated for ISRP	\$85,818,000	\$11,150,000	\$6,650,000	\$6,650,000	\$6,650,000	\$6,650,000	\$6,650,000	\$13,300,000	\$130,218,000
Annual Costs towards ISRP ³	\$52,818,776	\$12,300,000	\$6,650,000	\$6,650,000	\$6,650,000	\$6,650,000	\$6,650,000	\$13,300,000	\$98,368,776

Compare revenue appropriated / annual costs: 100%

WPRP 2020 Reporting Criteria: 100%

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ISRP = Impervious Surface Restoration Program

Notes:

1. Article 4-202.1(j)(2): Demonstration that county or municipality has sufficient funding in the current fiscal year and subsequent fiscal year budgets to meet its estimated cost for the 2-year period immediately following the filing date of the FAP.
2. Revenue means "dedicated revenues, funds, or sources of funds (per Article 4-202.1(j)(4)(ii)).
3. See table of ISRP Cost.

Article 4-202.1(j)(1)(i)4: Any sources of funds that will be utilized by the county or municipality to meet the requirements of its National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

SOURCE	PAST UP THRU FY 2019	CURRENT YEAR FY 2020	PROJECTED YEAR 1 FY 2021	PROJECTED YEAR 2 FY 2022	PROJECTED YEAR 3 FY 2023	PROJECTED YEAR 4 FY 2024	PROJECTED YEAR 5 FY 2025	TOTAL NEXT FIVE YEARS
Paygo Sources								
Stormwater Remediation Fees for Capital (WPR Fund)	\$ 51,607,000	\$ 2,150,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
General Fund (Operating)	\$ 16,470,000	\$ 1,830,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Stormwater Remediation Fees for Operating (WPR Fund)	\$ 24,968,497	\$ 5,193,420	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
General Fund (Capital)	\$ 2,650,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Funds 2 (please stipulate funding source)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Funds 3 (please stipulate funding source)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal Paygo Sources	\$ 95,695,497	\$ 9,173,420	\$ -	\$ -				
Debt Service (paygo sources will be used to pay off debt service. Note that previous appropriations for debt service used for ISRP is listed in FY 2017).								
County Transportation Bonds	\$ -	\$ -	\$ -			\$ -	\$ -	\$ -
General Obligation Bonds	\$ 26,121,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Stormwater Revenue (Utility) Bonds	\$ 19,400,000	\$ 6,900,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
State Revolving Loan Fund	\$ 4,200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Public-private partnership (debt service)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal Debt Service	\$ 49,721,000	\$ 6,900,000	\$ -	\$ -				
Grants and Partnerships (no payment is expected)								
State funded grants	\$ 16,910,000	\$ 2,100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Federal funded grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Public-private partnership (matched grant)	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal Grants and Partnerships	\$ 17,410,000	\$ 2,100,000	\$ -	\$ -				
Total Annual Sources of Funds	\$ 162,826,497	\$ 18,173,420	\$ -	\$ -				
Percent of Funds Directed Toward ISRP	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Compare total permit term paygo ISRP costs / subtotal permit term paygo sources: #DIV/0!

Compare total permit term ISRP costs / total permit term annual sources of funds: #DIV/0!

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* WPR Fund: Watershed Protection and Restoration Fund

Check with MS4 Geodatabase:

The total sources related to WPR Funds in Current FY2020 should match the "WPR_FUND" field of the geodatabase.

Article 4-202.1(j)(1)(i)5: Specific actions and expenditures that the county or municipality implemented in the previous fiscal years to meet its impervious surface restoration plan requirements under its National Pollutant Discharge Elimination System Phase I Municipal Separate Storm Sewer System Permit.

Baseline: 2,204 *This is the 20% restoration requirement for the 4th generation NPDES MS4 Permit.* Requirement: 20%

REST BMP ID	REST BMP TYPE ¹	BMP CLASS	NUM BMP	IMP ACRES	BUILT DATE	IMPL COST	% ISRP Complete	IMPL STATUS ²	GEN COMMENTS
Operational Programs³									
	MSS	A	7	546	6/30/2011	\$440,068	24.8%	Complete	2011 total - 806 miles swept 4 times per year
	MSS	A	7	423	6/30/2012	\$411,755	19.2%	Complete	2012 total - 806 miles swept 4 times per year
	MSS	A	7	337	6/30/2013	\$358,619	15.3%	Complete	2013 total - 806 miles swept 4 times per year
	MSS	A	7	220	6/30/2014	\$329,843	10.0%	Complete	2014 total - 806 miles swept 4 times per year
	MSS	A	7	398	6/30/2015	\$400,000	18.1%	Complete	2015 total - 806 miles swept 4 times per year
	MSS	A	7	372	6/30/2016	\$400,000	16.9%	Complete	2016 total - 806 miles swept 4 times per year
	MSS	A	7	293	6/30/2017	\$332,580	13.3%	Complete	2017 total - 806 miles swept 4 times per year
	MSS	A	7	287	6/30/2018	\$227,074	13.0%	Complete	2018 total - 806 miles swept 4 times per year
	MSS	A	7	284	6/30/2019	\$395,300	12.9%	Complete	2019 total - 806 miles swept 4 times per year
	SDV	A	85	42.9	6/30/2017	\$119,970	1.9%	Complete	2017 total - 214,569 pounds of material removed
	SDV	A	87	34.9	6/30/2018	\$96,657	1.6%	Complete	2018 total - 174,666 pounds of material removed
	SDV	A	108	125.4	6/30/2019	\$9,908	5.7%	Complete	2019 total - 635,925 pounds of material removed
Average Operations Complete To Date ⁴			343	419		\$3,521,774	19.0%		
Capital Projects									
HO10RST900044	WSHW	S	1	3.9	8/1/2010	\$165,569	0.2%	Complete	VRH Shallow Marsh
HO10ALN000168	STRE	A	1	20.8	8/31/2010	\$409,063	0.9%	Complete	Paul Mill Road
HO10RST900038	FBIO	S	2	1.0	9/1/2010	\$153,745	0.0%	Complete	Cedar Lane Park - North
HO10ALN000014	OUT	A	1	0.7	12/15/2010	\$50,000	0.0%	Complete	Hickory Ridge
HO11ALN000015	STRE	A	1	13.4	1/31/2011	\$521,967	0.6%	Complete	Old Willow Way
HO11ALN000049	STRE	A	1	15.3	3/22/2011	\$500,000	0.7%	Complete	Beechwood
HO11ALN000016	STRE	A	1	4.3	3/25/2011	\$50,000	0.2%	Complete	Great Drum Circle
HO11RST900356	FBIO	S	1	0.7	4/1/2011	\$100,000	0.0%	Complete	Savage Park
HO11RST900357	FBIO	S	1	0.5	4/1/2011	\$100,000	0.0%	Complete	Savage Park
HO11ALN000048	STRE	A	1	3.3	4/4/2011	\$104,839	0.1%	Complete	Autumn Harvest - Phase 2
HO11RST900062	FBIO	S	1	4.6	5/1/2011	\$100,000	0.2%	Complete	Savage Park
HO11RST900043	FSND	S	1	3.4	5/1/2011	\$290,547	0.2%	Complete	Stratford Downs

REST BMP ID	REST BMP TYPE ¹	BMP CLASS	NUM BMP	IMP ACRES	BUILT DATE	IMPL COST	% ISRP Complete	IMPL STATUS ²	GEN COMMENTS
HO11RST900037	FBIO	S	1	0.6	6/1/2011	\$206,792	0.0%	Complete	Atholton Park
HO11RST900056	FBIO	S	1	0.9	9/1/2011	\$188,922	0.0%	Complete	Dorsey Bldg Parking Lot
HO11ALN000056	STRE	A	1	18.0	11/30/2011	\$100,000	0.8%	Complete	Savage Park
HO11RST900059	PWED	S	1	3.8	12/1/2011	\$61,289	0.2%	Complete	Saint John's Green
HO11ALN000045	STRE	A	1	27.4	12/16/2011	\$216,775	1.2%	Complete	Hi Tech Road
HO12ALN000069	OUT	A	1	0.4	2/17/2012	\$50,000	0.0%	Complete	Meadowbrook Park
HO12ALN000070	OUT	A	1	0.3	2/17/2012	\$50,000	0.0%	Complete	Meadowbrook Park
HO12ALN000051	STRE	A	1	45.5	2/17/2012	\$1,232,322	2.1%	Complete	Meadowbrook Park
HO12ALN000075	STRE	A	1	45.2	2/20/2012	\$869,669	2.0%	Complete	Threshfield Stream
HO12ALN000057	STRE	A	1	11.7	2/21/2012	\$1,529,717	0.5%	Complete	Red Hill Branch
HO12ALN000088	STRE	A	1	14.3	2/29/2012	\$200,000	0.6%	Complete	LPPI
HO13ALN000091	STRE	A	1	9.8	2/29/2012	\$200,000	0.4%	Complete	LPPI
HO12RST900063	PWED	S	1	4.2	3/1/2012	\$216,336	0.2%	Complete	Waverly Woods
HO12ALN000052	STRE	A	1	0.9	3/2/2012	\$82,103	0.0%	Complete	Great Oaks
HO12ALN000087	OUT	A	1	0.4	3/4/2012	\$50,000	0.0%	Complete	Edmunds Way
HO12ALN000167	STRE	A	1	35.9	3/23/2012	\$1,077,365	1.6%	Complete	Bramhope Lane
HO12ALN000029	STRE	A	1	6.1	6/30/2012	\$100,000	0.3%	Complete	Trotter Road
HO12RST900060	PWED	S	1	2.1	7/1/2012	\$400,000	0.1%	Complete	Salterforth
HO12RST900061	PWED	S	1	2.9	7/1/2012	\$398,130	0.1%	Complete	Salterforth
HO12ALN000082	OUT	A	1	0.2	8/16/2012	\$50,000	0.0%	Complete	Bonnie Brae
HO12RST900041	XDED	S	1	0.0	9/1/2012	\$231,060	0.0%	Complete	Mount Hebron HS
HO12ALN000084	OUT	A	1	0.3	10/19/2012	\$50,000	0.0%	Complete	Cromwell Court
HO13ALN000054	STRE	A	1	5.5	1/1/2013	\$234,277	0.3%	Complete	Dower Drive
HO13ALN000050	STRE	A	1	18.9	1/9/2013	\$500,000	0.9%	Complete	Allview
HO13ALN000085	OUT	A	1	0.2	1/24/2013	\$50,000	0.0%	Complete	Cypress Bay
HO13ALN000089	OUT	A	1	0.1	1/24/2013	\$50,000	0.0%	Complete	Ilchester Point Court
HO13RST900039	PWED	S	1	6.3	1/24/2013	\$303,010	0.3%	Complete	Cypress Bay
HO13RST900318	SPSC	A	1	1.2	2/15/2013	\$578,896	0.1%	Complete	Oak West Drive
HO13RST900054	IBAS	S	1	4.9	3/1/2013	\$495,040	0.2%	Complete	Country Lane Pond #1
HO13RST900055	IBAS	S	1	3.3	3/1/2013	\$495,039	0.1%	Complete	Country Lane
HO13ALN000083	STRE	A	1	7.6	3/6/2013	\$50,000	0.3%	Complete	Chestnut Farms
HO13ALN000067	STRE	A	1	0.8	3/18/2013	\$50,000	0.0%	Complete	Elmmede Road
HO13ALN000068	STRE	A	1	31.9	3/18/2013	\$715,509	1.4%	Complete	Elmmede Road
HO13ALN000053	STRE	A	1	53.1	3/21/2013	\$1,031,583	2.4%	Complete	Stone Trail Stream
HO13ALN000074	OUT	A	1	0.3	4/10/2013	\$50,000	0.0%	Complete	Wheatfield Way
HO13ALN000019	STRE	A	1	26.1	4/10/2013	\$299,036	1.2%	Complete	Wheatfield Way
HO13RST900057	FSND	S	1	2.4	5/1/2013	\$578,896	0.1%	Complete	Oak West
HO13RST900052	IMPP	A	1	9.8	5/1/2013	\$218,828	0.4%	Complete	Dower Drive
HO13ALN000020	STRE	A	1	50.6	5/13/2013	\$668,920	2.3%	Complete	Windflower Drive
HO13RST900045	APRP	E	1	0.2	8/23/2013	\$17,751	0.0%	Complete	Ellicott City Lot B Pvmt
HO13ALN000090	STRE	A	1	3.1	10/10/2013	\$50,000	0.1%	Complete	Furnace Ave
HO14ALN000021	STRE	A	1	10.2	1/21/2014	\$291,112	0.5%	Complete	Tuscany Road
HO14RST900053	IBAS	S	1	2.4	1/30/2014	\$321,887	0.1%	Complete	Ashmede
HO14RST900032	WPWS	S	1	0.0	2/25/2014	\$718,740	0.0%	Complete	Shadow Lane

REST BMP ID	REST BMP TYPE ¹	BMP CLASS	NUM BMP	IMP ACRES	BUILT DATE	IMPL COST	% ISRP Complete	IMPL STATUS ²	GEN COMMENTS
HO14ALN000017	STRE	A	1	29.8	3/11/2014	\$482,471	1.4%	Complete	Whiterock Court
HO14ALN000081	OUT	A	1	0.3	3/26/2014	\$50,000	0.0%	Complete	Bill Lilly Court
HO14ALN000088	OUT	A	1	0.2	4/25/2014	\$50,000	0.0%	Complete	Falling Waters
HO14ALN000018	STRE	A	1	8.3	6/16/2014	\$144,512	0.4%	Complete	Tiller Drive Phase 2
HO14ALN000092	OUT	A	1	0.3	7/14/2014	\$50,000	0.0%	Complete	Rhode Valley
HO14RST900034	WSHW	S	1	1.0	7/17/2014	\$309,255	0.0%	Complete	Wimbledon
HO14RST900049	MMBR	E	1	0.2	9/30/2014	\$70,212	0.0%	Complete	SFES MB-1
HO14RST900050	MMBR	E	1	0.1	9/30/2014	\$70,213	0.0%	Complete	SFES MB-2
HO14RST900051	MMBR	E	1	0.1	9/30/2014	\$70,213	0.0%	Complete	SFES MB-2B
HO14RST900048	MSWB	E	1	0.0	9/30/2014	\$70,212	0.0%	Complete	SFES Bioswale
HO14RST900013	XDED	S	1	0.9	11/18/2014	\$363,355	0.0%	Complete	Old Mill Pond Retrofit
HO15RST900014	FBIO	S	1	0.1	4/20/2015	\$250,000	0.0%	Complete	Towering Oaks
HO15RST900317	SPSC	A	1	3.3	4/20/2015	\$50,000	0.1%	Complete	Towering Oaks SPSC
HO15ALN000139	STRE	A	1	3.6	4/20/2015	\$41,905	0.2%	Complete	Towering Oaks
HO15ALN000006	STRE	A	1	31.6	5/1/2015	\$528,929	1.4%	Complete	Pinehurst Court
HO15RST900017	PWET	S	1	40.7	5/8/2015	\$1,275,340	1.8%	Complete	Red Cravat
HO15RST900035	WSHW	S	1	1.6	6/1/2015	\$528,929	0.1%	Complete	Pinehurst Shallow Marsh
HO15RST900027	WEDW	S	1	2.1	6/8/2015	\$292,190	0.1%	Complete	Pebble Beach Pond 2
HO15RST900313	FBIO	S	1	1.0	7/21/2015	\$100,000	0.0%	Complete	Ellicott City Lot E
HO15RST900315	FBIO	S	1	0.8	7/21/2015	\$100,000	0.0%	Complete	Ellicott City Lot E
HO15RST900316	FBIO	S	1	0.8	7/21/2015	\$100,000	0.0%	Complete	Ellicott City Lot E
HO15ALN000030	STRE	A	1	6.5	9/3/2015	\$100,000	0.3%	Complete	D-1163Trotter Road
HO15ALN000093	OUT	A	1	0.2	9/17/2015	\$50,000	0.0%	Complete	Townhomes of Timberland
HO15RST900319	SPSC	A	1	1.5	11/3/2015	\$100,000	0.1%	Complete	Dorsey Hall Outfall B
HO15RST900320	SPSC	A	1	1.5	11/3/2015	\$100,000	0.1%	Complete	Dorsey Hall Outfall C
HO15RST900321	SPSC	A	1	1.5	11/3/2015	\$100,000	0.1%	Complete	Dorsey Hall Outfall E
HO15RST900322	SPSC	A	1	1.5	11/3/2015	\$100,000	0.1%	Complete	Dorsey Hall Outfall D
HO16ALN000095	OUT	A	1	0.4	2/10/2016	\$50,000	0.0%	Complete	Southview Road
HO16ALN000099	OUT	A	1	0.2	2/10/2016	\$50,000	0.0%	Complete	Southview Road
HO16ALN000096	STRE	A	1	83.5	2/10/2016	\$1,419,801	3.8%	Complete	Southview Road
HO16ALN000097	STRE	A	1	0.2	2/10/2016	\$50,000	0.0%	Complete	Southview Road
HO16ALN000098	STRE	A	1	0.7	2/10/2016	\$50,000	0.0%	Complete	Southview Road
HO16RST900018	WSHW	S	1	8.4	2/29/2016	\$649,515	0.4%	Complete	Whitworth Way
HO16ALN000100	STRE	A	1	7.1	3/1/2016	\$50,000	0.3%	Complete	Shallow Run
HO16ALN000101	STRE	A	1	3.1	3/1/2016	\$50,000	0.1%	Complete	Deep Run
HO16RST900400	PWET	S	1	2.1	3/22/2016	\$533,409	0.1%	Complete	Townhomes of Timberland
HO16ALN000094	OUT	A	1	0.2	5/6/2016	\$50,000	0.0%	Complete	Wetherburn
HO16RST900020	WPWS	S	1	3.3	6/24/2016	\$916,674	0.1%	Complete	TVO #3 Excelsior
HO17ALN000008	STRE	A	1	1.5	6/29/2016	\$50,000	0.1%	Complete	Turf Valley #3 Excelsior
HO16RST900026	PWET	S	1	3.1	7/15/2016	\$600,000	0.1%	Complete	Longridge Knolls
HO16RST900030	FBIO	S	1	2.1	8/10/2016	\$418,438	0.1%	Complete	Rusty Rim Pond Retrofit
HO17ALN000060	OUT	A	1	0.1	9/16/2016	\$50,000	0.0%	Complete	Greenway 1
HO17ALN000061	OUT	A	1	0.2	9/16/2016	\$50,000	0.0%	Complete	Greenway 1
HO16RST900024	PWET	S	1	0.8	10/5/2016	\$85,047	0.0%	Complete	Montgomery Run Pond 2

REST BMP ID	REST BMP TYPE ¹	BMP CLASS	NUM BMP	IMP ACRES	BUILT DATE	IMPL COST	% ISRP Complete	IMPL STATUS ²	GEN COMMENTS
HO16ALN000001	STRE	A	1	27.3	10/31/2016	\$719,801	1.2%	Complete	Bonnie Branch
HO16RST900021	PWET	S	1	0.6	11/22/2016	\$338,934	0.0%	Complete	Mary Lee Lane
HO16RST900022	WSHW	S	1	17.5	11/22/2016	\$680,353	0.8%	Complete	Deep Earth Lane
HO17RST900421	PWET	S	1	0.7	11/30/2016	\$513,445	0.0%	Complete	Lynwood Manor
HO16RST900023	FBIO	S	1	0.7	12/6/2016	\$200,000	0.0%	Complete	Rockburn Park Retrofit
HO15ALN000002	STRE	A	1	39.0	12/6/2016	\$1,178,220	1.8%	Complete	Dorsey Hall
HO15ALN000065	STRE	A	1	1.7	12/6/2016	\$100,000	0.1%	Complete	Dorsey G
HO15ALN000066	STRE	A	1	0.5	12/6/2016	\$100,000	0.0%	Complete	Dorsey F
HO15ALN000080	OUT	A	1	0.6	1/20/2017	\$50,000	0.0%	Complete	Harper's Choice Oufall
HO16ALN000004	STRE	A	1	3.1	3/1/2017	\$59,781	0.1%	Complete	Swansfield
HO17ALN000005	STRE	A	1	92.1	3/1/2017	\$974,897	4.2%	Complete	Davis Branch
HO17ALN000064	STRE	A	1	81.2	3/1/2017	\$1,147,050	3.7%	Complete	Rockburn Branch Park
HO17ALN000065	STRE	A	1	1.9	3/1/2017	\$50,000	0.1%	Complete	Rockburn Branch E
HO17ALN000066	STRE	A	1	2.0	3/1/2017	\$50,000	0.1%	Complete	Rockburn Branch G
HO18ALN000037	STRE	A	1	61.0	3/29/2017	\$1,025,518	2.8%	Complete	HCC
HO17ALN000133	OUT	A	1	0.3	5/19/2017	\$50,000	0.0%	Complete	Golden Star 2
HO18ALN000090	OUT	A	1	0.3	5/19/2017	\$50,000	0.0%	Complete	Linden Chapel
HO17RST900492	PWET	S	1	3.8	5/19/2017	\$290,609	0.2%	Complete	Linden Chapel
HO17RST900493	PWET	S	1	0.4	5/19/2017	\$428,314	0.0%	Complete	Golden Star #2
HO18RST901536	FSND	S	1	6.3	5/24/2017	\$1,668,194	0.3%	Complete	Rec and Parks
HO17ALN000068	OUT	A	1	2.0	5/24/2017	\$50,000	0.1%	Complete	Crestleigh Drainage
HO17ALN000134	OUT	A	1	0.5	5/24/2017	\$50,000	0.0%	Complete	Murray Hill 2
HO18ALN000003	STRE	A	1	1.5	6/13/2017	\$231,592	0.1%	Complete	Churchill Way
HO17RST900029	SPSC	A	1	4.4	6/16/2017	\$719,114	0.2%	Complete	Long Meadow 2
HO17RST900513	FSND	S	1	1.4	7/26/2017	\$662,636	0.1%	Complete	Velvet Path
HO18ALN000009	STRE	A	1	4.4	7/26/2017	\$50,000	0.2%	Complete	Velvet Path
HO17RST900515	PWET	S	1	1.1	8/23/2017	\$401,077	0.0%	Complete	Fairest Dream
HO17ALN000062	STRE	A	1	2.5	8/29/2017	\$50,000	0.1%	Complete	Fairest Dreams
HO17ALN000067	STRE	A	1	44.5	9/1/2017	\$1,088,692	2.0%	Complete	Dunloggin MS
HO17ALN000131	OUT	A	1	0.5	12/10/2017	\$50,000	0.0%	Complete	Beech Creek
HO17ALN000132	OUT	A	1	0.6	12/10/2017	\$50,000	0.0%	Complete	Garrand Road
HO17RST900347	PWET	S	1	5.6	12/10/2017	\$633,715	0.3%	Complete	Garand
HO17RST900348	PWET	S	1	2.0	12/10/2017	\$1,220,925	0.1%	Complete	Beech Creek
HO18ALN000095	STRE	A	1	10.2	2/12/2018	\$289,339	0.5%	Complete	Red Hill Way 2
HO18ALN000094	STRE	A	1	47.7	3/1/2018	\$1,283,855	2.2%	Complete	Timbers at Troy
HO18ALN000117	STRE	A	1	54.0	3/1/2018	\$1,274,633	2.5%	Complete	Heatherland
HO18ALN000118	STRE	A	1	0.8	3/1/2018	\$50,000	0.0%	Complete	Heatherland
HO18ALN000119	STRE	A	1	0.6	3/1/2018	\$50,000	0.0%	Complete	Heatherland
HO18ALN000011	STRE	A	1	15.7	3/19/2018	\$527,839	0.7%	Complete	Longview Drive
HO18ALN000135	OUT	A	1	0.6	3/20/2018	\$50,000	0.0%	Complete	Junction Industrial
HO18RST901535	PWET	S	1	4.3	3/20/2018	\$723,235	0.2%	Complete	Junction Industrial
HO18ALN000123	OUT	A	1	1.3	3/30/2018	\$50,000	0.1%	Complete	Starling Road
HO18ALN000129	STRE	A	1	45.6	3/30/2018	\$969,880	2.1%	Complete	Starling Road

REST BMP ID	REST BMP TYPE ¹	BMP CLASS	NUM BMP	IMP ACRES	BUILT DATE	IMPL COST	% ISRP Complete	IMPL STATUS ²	GEN COMMENTS
Subtotal Capital Complete To Date			144	1,390		\$48,747,002	63.06%		

REST BMP ID	REST BMP TYPE ¹	BMP CLASS	NUM BMP	IMP ACRES	BUILT DATE	IMPL COST	% ISRP Complete	IMPL STATUS ²	GEN COMMENTS
Other									
	SEPP	A	1093	32.8	2015	\$0	1.5%	Complete	2015 total
	SEPP	A	1081	32.4	2016	\$0	1.5%	Complete	2016 total
	SEPP	A	1096	32.9	2017	\$0	1.5%	Complete	2017 total
	SEPP	A	1022	30.7	2018	\$0	1.4%	Complete	2018 total
	SEPP	A	385	11.5	2019	\$0	0.5%	Complete	2019 total
HO11RST900342	FBIO	S	1	0.2	4/23/2011	\$0	0.0%	Complete	A3-02
HO13ALN000033	OUT	A	1	0.2	2/17/2013	\$0	0.0%	Complete	Queen Maria Court
HO13ALN000031	STRE	A	1	3.5	2/17/2013	\$0	0.2%	Complete	Bugledrum Way
HO13ALN000032	STRE	A	1	6.0	2/17/2013	\$1,000,000	0.3%	Complete	Dobbin Road
HO13ALN000034	STRE	A	1	0.9	2/17/2013	\$0	0.0%	Complete	Spinning Seed Road
HO19RST902763	PWED	S	1	8.5	5/11/2013	\$0	0.4%	Complete	Pond Retrofit Board of Ed
HO15RST902521	MIDW	E	1	0.2	8/11/2014	\$600	0.0%	Complete	Richard White
HO14RST900334	APRP	E	1	0.2	10/16/2014	\$0	0.0%	Complete	A1-05
HO14RST900335	APRP	E	1	0.2	10/16/2014	\$0	0.0%	Complete	A1-05
HO14RST900364	APRP	E	1	0.2	10/16/2014	\$0	0.0%	Complete	PERMP 1
HO14RST900365	APRP	E	1	0.2	10/16/2014	\$0	0.0%	Complete	PERMP 2
HO14RST900336	FBIO	S	1	0.2	10/16/2014	\$0	0.0%	Complete	A1-05
HO14RST900338	FBIO	S	1	0.1	10/16/2014	\$0	0.0%	Complete	A1-05
HO14RST900367	FBIO	S	1	0.0	10/16/2014	\$0	0.0%	Complete	BIO 2
HO14RST900368	FBIO	S	1	0.0	10/16/2014	\$0	0.0%	Complete	BIO 1
HO14RST900337	ODSW	S	1	5.0	10/16/2014	\$0	0.2%	Complete	A1-05
HO14RST900366	ODSW	S	1	5.0	10/16/2014	\$0	0.2%	Complete	SW
HO15RST902568	MIDW	E	1	0.2	6/24/2015	\$600	0.0%	Complete	Stephen Purcell
HO15RST900343	MMBR	E	1	0.2	6/30/2015	\$0	0.0%	Complete	R2-01
HO15RST900393	MMBR	E	1	0.2	6/30/2015	\$0	0.0%	Complete	MB
HO15RST900005	MMBR	E	1	0.2	7/16/2015	\$0	0.0%	Complete	MB14
HO16RST902591	APRP	E	1	0.2	9/3/2015	\$1,200	0.0%	Complete	James Brenza
HO19APY100318	IMPP	A	1	0.0	10/15/2015	\$2,200	0.0%	Complete	TC1148
HO15RST900074	MIDW	E	1	0.2	10/15/2015	\$2,500	0.0%	Complete	Heritage Museum
HO16RST902586	APRP	E	1	0.2	10/27/2015	\$0	0.0%	Complete	Carl Uhrmacher
HO16RST900309	FBIO	S	1	2.5	4/30/2016	\$106	0.1%	Complete	Bethel Bioretention 1
HO16RST900310	FBIO	S	1	0.0	4/30/2016	\$47	0.0%	Complete	Bethel Bioretention 2
HO16RST900311	FBIO	S	1	0.0	5/31/2016	\$74	0.0%	Complete	Harvester Bioretention
HO16RST900312	FBIO	S	1	0.0	5/31/2016	\$133	0.0%	Complete	Seventh Day Bioretention
HO17RST900405	FBIO	S	1	0.0	7/19/2016	\$12,170	0.0%	Complete	Lakeside Associates
HO16RST901515	PWED	S	1	1.6	10/5/2016	\$0	0.1%	Complete	POND
HO16RST900008	MMBR	E	1	0.2	11/5/2016	\$0	0.0%	Complete	MB
HO16RST901516	PWET	S	1	0.0	11/30/2016	\$0	0.0%	Complete	POND
HO17RST900009	MMBR	E	1	0.2	1/27/2017	\$0	0.0%	Complete	MB
HO17RST900010	MMBR	E	1	0.2	2/9/2017	\$0	0.0%	Complete	MB 1
HO17RST900011	MMBR	E	1	0.2	2/9/2017	\$0	0.0%	Complete	MB 2
HO17RST900012	MMBR	E	1	0.2	3/17/2017	\$0	0.0%	Complete	MB
HO19RST901556	FBIO	S	1	0.1	4/10/2017	\$0	0.0%	Complete	GreenleafBio3

REST BMP ID	REST BMP TYPE ¹	BMP CLASS	NUM BMP	IMP ACRES	BUILT DATE	IMPL COST	% ISRP Complete	IMPL STATUS ²	GEN COMMENTS
HO17RST902159	FSND	S	1	2.1	5/3/2017	\$308,499	0.1%	Complete	First Evangelical
HO17RST900494	FBIO	S	1	0.0	5/19/2017	\$0	0.0%	Complete	Green Leaf Community
HO17RST900499	APRP	E	2	0.0	5/25/2017	\$0	0.0%	Complete	PP
HO17RST900501	MSWG	E	2	0.0	5/25/2017	\$0	0.0%	Complete	SW 4
HO17RST900500	MSWG	E	2	0.0	5/25/2017	\$0	0.0%	Complete	SW 3
HO17RST901517	WSHW	S	1	10.2	6/27/2017	\$0	0.5%	Complete	SM
HO17RST900511	FBIO	S	1	0.3	7/1/2017	\$0	0.0%	Complete	Long Look Bioretention
HO17ALN000070	STRE	A	1	5.1	8/1/2017	\$0	0.2%	Complete	Route 1
HO17RST900514	FSND	S	1	9.8	8/8/2017	\$478,652	0.4%	Complete	Howard Co General Hospita
HO17RST902158	FSND	S	1	1.0	11/10/2017	\$212,849	0.0%	Complete	Liberty Baptist
HO17RST900344	FBIO	S	2	0.0	12/10/2017	\$0	0.0%	Complete	BIO
	MRWH	E	4	0.0	FY 2010	\$112	0.0%	Complete	FY 2010 total
	FPU	A	11	1.8	FY 2011	\$297,589	0.1%	Complete	FY 2011 total
	SEPD	A	3	0.8	FY 2011	\$0	0.0%	Complete	FY 2011 total
	MRWH	E	175	0.3	FY 2011	\$5,992	0.0%	Complete	FY 2011 total
	MRNG	E	1	0.2	FY 2011	\$0	0.0%	Complete	FY 2011 total
	FPU	A	63	7.2	FY 2012	\$774,879	0.3%	Complete	FY 2012 total
	SEPD	A	3	0.8	FY 2012	\$0	0.0%	Complete	FY 2012 total
	MRWH	E	119	0.2	FY 2012	\$4,090	0.0%	Complete	FY 2012 total
	MRNG	E	4	0.6	FY 2012	\$6,513	0.0%	Complete	FY 2012 total
	FPU	A	47	7.4	FY 2013	\$102,493	0.3%	Complete	FY 2013 total
	SEPD	A	2	0.5	FY 2013	\$0	0.0%	Complete	FY 2013 total
	MRWH	E	198	0.3	FY 2013	\$4,306	0.0%	Complete	FY 2013 total
	MRNG	E	116	7.5	FY 2013	\$60,633	0.3%	Complete	FY 2013 total
	FPU	A	879	5.8	FY 2014	\$90,438	0.3%	Complete	FY 2014 total
	SEPD	A	27	7.0	FY 2014	\$0	0.3%	Complete	FY 2014 total
	MRWH	E	171	0.3	FY 2014	\$4,377	0.0%	Complete	FY 2014 total
	MRNG	E	118	17.7	FY 2014	\$193,802	0.8%	Complete	FY 2014 total
	FPU	A	388	8.8	FY 2015	\$62,721	0.4%	Complete	FY 2015 total
	SEPD	A	101	26.3	FY 2015	\$0	1.2%	Complete	FY 2015 total
	MRWH	E	117	0.2	FY 2015	\$5,734	0.0%	Complete	FY 2015 total
	MRNG	E	118	17.7	FY 2015	\$155,616	0.8%	Complete	FY 2015 total
	FPU	A	23	4.0	FY 2016	\$9,359	0.2%	Complete	FY 2016 total
	SEPC	A	5	2.0	FY 2016	\$0	0.1%	Complete	FY 2016 total
	SEPD	A	31	8.1	FY 2016	\$0	0.4%	Complete	FY 2016 total
	MRWH	E	127	0.2	FY 2016	\$6,852	0.0%	Complete	FY 2016 total
	MRNG	E	100	14.2	FY 2016	\$155,788	0.6%	Complete	FY 2016 total
	FPU	A	38	5.7	FY 2017	\$147,393	0.3%	Complete	FY 2017 total
	SEPC	A	6	2.3	FY 2017	\$0	0.1%	Complete	FY 2017 total
	SEPD	A	64	16.6	FY 2017	\$131,544	0.8%	Complete	FY 2017 total
	MRWH	E	117	0.2	FY 2017	\$6,296	0.0%	Complete	FY 2017 total
	MRNG	E	108	14.5	FY 2017	\$76,622	0.7%	Complete	FY 2017 total
	FPU	A	24	3.4	FY 2018	\$40,911	0.2%	Complete	FY 2018 total
	SEPC	A	11	2.3	FY 2018	\$157,780	0.1%	Complete	FY 2018 total

REST BMP ID	REST BMP TYPE ¹	BMP CLASS	NUM BMP	IMP ACRES	BUILT DATE	IMPL COST	% ISRP Complete	IMPL STATUS ²	GEN COMMENTS
	SEPD	A	3	0.8	FY 2018	\$0	0.0%	Complete	FY 2018 total
	MRWH	E	101	0.1	FY 2018	\$4,003	0.0%	Complete	FY 2018 total
	MRNG	E	88	8.8	FY 2018	\$42,004	0.4%	Complete	FY 2018 total
Subtotal Other Complete To Date			8,241	399		\$4,567,475	18.1%		
Total Complete to Date			8,728	2,208		\$56,836,251	100.2%		

Check with MS4 Geodatabase:

Rest BMP ID, type, class, number of BMPs, impervious acres, built date, implementation cost and implementation status should match the various geodatabase tables for BMPs (AltBMPLine, AltBMPPoint, AltBMPPoly, and RestBMP)-- aggregated by type and status.

Notes:

1. Use BMP domains from the MS4 Geodatabase.
2. Complete, Under Construction, Planning, or Proposed.
3. For street sweeping indicate the annual frequency that the streets are swept, and for storm drain or catch basin cleaning report the pounds of material removed.
4. Average IMP ACRES for Operational BMPs should be the average of BMP 1 + the average of BMP 2, etc.

IMPL COST is a summation and not an average.

VERSION 8/20/20

APRP	Permeable Pavements
FB	Forest Buffer
FBIO	Bioretention
FSND	Sand Filter
FUND	Underground Filter
IBAS	Infiltration Basin
MIBR	Infiltration Berm
IMPP	Impervious Surface Elimination (to pervious)
MIDW	Dry Well
MMBR	Micro-Bioretention
MRNG	Rain Gardens
MRWH	Rainwater Harvesting
MSWB	Bio-Swale
MSWG	Grass Swale
ODSW	Dry Swale
WEDW	Extended Detention - Wetland
PWED	Extended Detention Structure, Wet
PWET	Retention Pond (Wet Pond)
WPWS	Wet Pond - Wetland
SPSC	Step Pool Storm Conveyance
UGS	Underground Storage

