Maryland Phase II WIP Strategies

BALTIMORE CITY
Developed Land BMPs

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	**Unit**			
Bioretention / Raingardens	Acres	0	4,240	7,271
Bioswale	Acres	0	212	202
Dry Detention Ponds and Hydrodynamic Structures	Acres	298	223	213
Dry Extended Detention Ponds	Acres	44	42	40
Impervious Urban Surface Reduction	Acres	0	0	3,468
MS4 Permit Stormwater Retrofit	Acres	6,638	6,903	6,589
Urban Filtering Practices	Acres	156	858	10,831
Urban Forest Buffers	Acres	16	15	724
Urban Infiltration Practices	Acres	20	214	607
Urban Tree Planting / Urban Tree Canopy	Acres	0	2,091	3,455
Wet Ponds and Wetlands	Acres	39	4,540	4,325
Erosion and Sediment Control on Construction	Acres/Year	408	408	1,079
Erosion and Sediment Control on Extractive	Acres/Year	0	0	10
Forest Conservation	Acres/Year	132	431	490
Street Sweeping Mechanical Monthly	Acres/Year	0	0	2,082
Urban Nutrient Management	Acres/Year	7,632	6,817	13,222
Urban Stream Restoration / Shoreline Erosion Control	Linear Feet	0	250,000	450,000

• The BMP values represent the total amount of implementation in place.
• The BMP values are the amount credited in the Bay watershed model. It is the amount of BMP submitted minus the amount not given credit for (e.g., due to overlapping with other BMPs)

BALTIMORE CITY
Septic System BMPs

			2025 Final Strategy
BMP Name	**Zone**	**Unit**	
Septic Connection	Critical Area	Systems	5
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	0
	Within 1000 ft of a perennial stream	Systems	0
	Septic ConnectionTotal		***5***

• The BMP values represent the total amount of implementation in place.
• The BMP values are the amount credited in the Bay watershed model. It is the amount of BMP submitted minus the amount not given credit for (e.g., due to overlapping with other BMPs)

Maryland Phase II WIP Strategies

BALTIMORE CITY
Total Nitrogen Loads

		2010 Progress	2017 Interim Strategy	2025 Final Strategy	Final Target
Source Sector	**Landuse**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**
Agriculture	AFO	0.000	0.000	0.000	0.000
	CAFO	0.000	0.000	0.000	0.000
	Crop	0.000	0.000	0.000	0.000
	Nursery	0.000	0.000	0.000	0.000
	Pasture	0.000	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***	***0.000***
Forest	Harvested	0.000	0.000	0.000	0.000
	Natural	0.004	0.008	0.012	0.004
	Subtotal	***0.004***	***0.008***	***0.012***	***0.004***
Non-Tidal Atm	Non-Tidal Atm	0.002	0.002	0.002	0.002
	Subtotal	***0.002***	***0.002***	***0.002***	***0.002***
Septic	Septic	0.000	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***	***0.000***
Stormwater	CSS	0.000	0.000	0.000	0
	Construction	0.013	0.014	0.011	0.012
	Extractive	0.000	0.000	0.000	0.000
	Regulated Developed	0.396	0.346	0.259	0.285
	Subtotal	***0.410***	***0.360***	***0.271***	***0.297***
Wastewater	CSO	0.000	0.000	0.000	0.000
	Industrial	0.361	0.495	0.481	0.524
	Municipal	3.104	1.413	1.580	1.572
	Subtotal	***3.465***	***1.908***	***2.061***	***2.097***
	Total	***3.881***	***2.278***	***2.345***	***2.400***

• The agricultural sector strategies were set to meet basin targets rather than county targets. Therefore, agricultural strategies are likely to overshoot or undershoot county targets, which can be reflected in the total countywide target results.
• Stormwater sector strategies may overshoot the county target for nitrogen (N) to meet the phosphorus (P) target, or vice versa. This is because the N and P reduction targets differ and the same BMP has different effects on the reduction of N and P.

BALTIMORE CITY
Total Phosphorus Loads

		2010 Progress	2017 Interim Strategy	2025 Final Strategy	Final Target
Source Sector	**Landuse**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**
Agriculture	AFO	0.000	0.000	0.000	0.000
	CAFO	0.000	0.000	0.000	0.000
	Crop	0.000	0.000	0.000	0.000
	Nursery	0.000	0.000	0.000	0.000
	Pasture	0.000	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***	***0.000***
Forest	Harvested	0.000	0.000	0.000	0.000
	Natural	0.000	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***	***0.000***
Non-Tidal Atm	Non-Tidal Atm	0.000	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***	***0.000***
Septic	Septic	0.000	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***	***0.000***
Stormwater	CSS	0.000	0.000	0.000	0
	Construction	0.003	0.003	0.002	0.002
	Extractive	0.000	0.000	0.000	0.000
	Regulated Developed	0.033	0.028	0.019	0.018
	Subtotal	***0.036***	***0.032***	***0.021***	***0.020***
Wastewater	CSO	0.000	0.000	0.000	0.000
	Industrial	0.004	0.008	0.006	0.006
	Municipal	0.089	0.078	0.087	0.086
	Subtotal	***0.093***	***0.085***	***0.093***	***0.092***
	Total	***0.129***	***0.117***	***0.115***	***0.112***

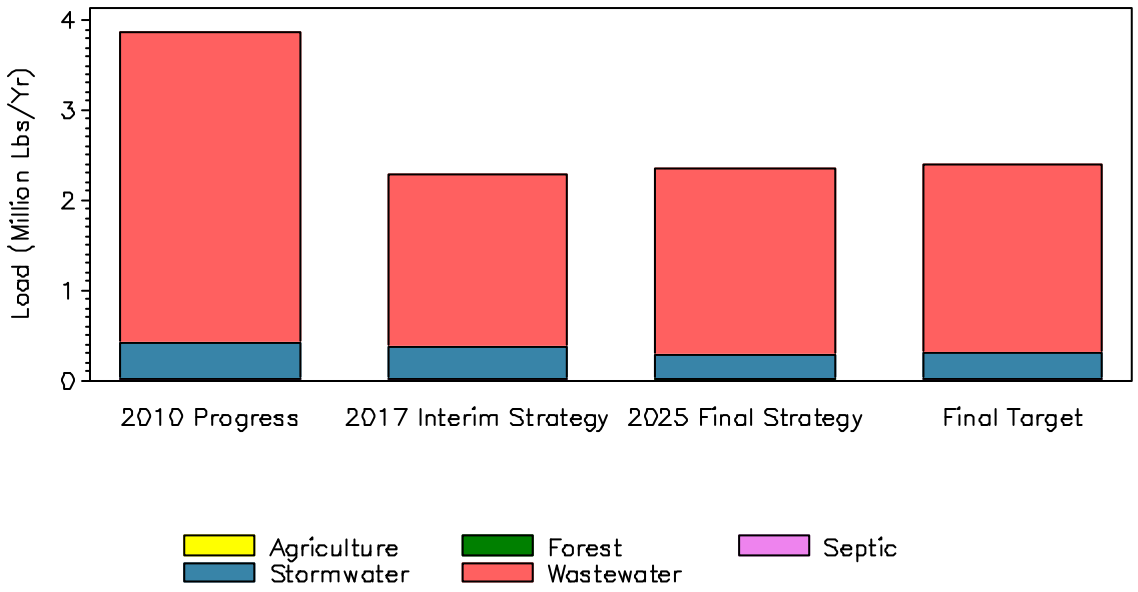
• The agricultural sector strategies were set to meet basin targets rather than county targets. Therefore, agricultural strategies are likely to overshoot or undershoot county targets, which can be reflected in the total countywide target results.
• Stormwater sector strategies may overshoot the county target for nitrogen (N) to meet the phosphorus (P) target, or vice versa. This is because the N and P reduction targets differ and the same BMP has different effects on the reduction of N and P.

BALTIMORE CITY
Total Sediment Loads

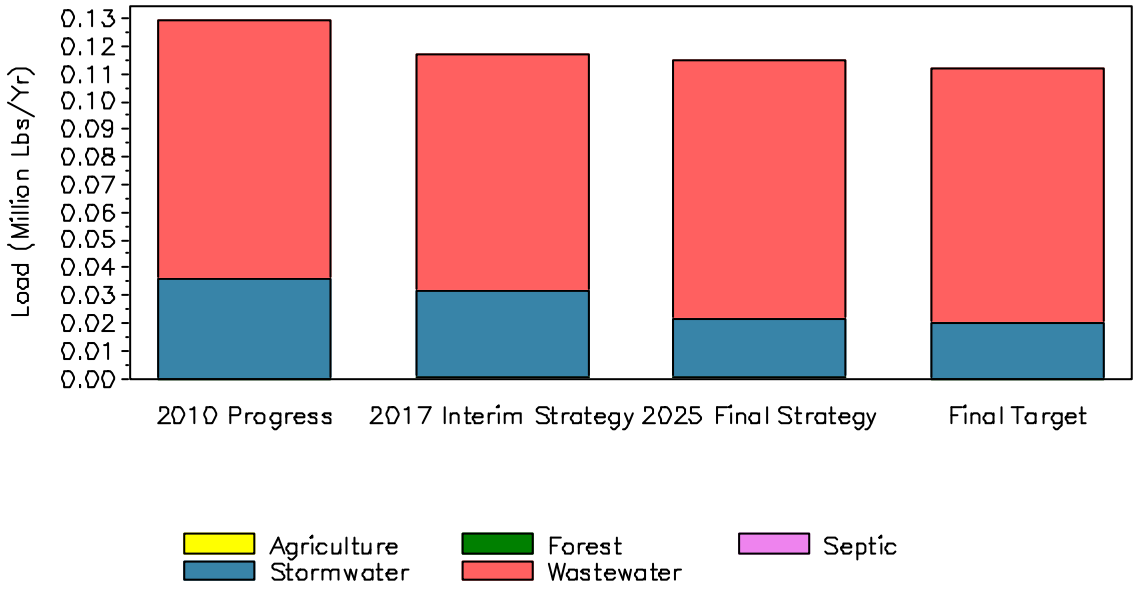
		2010 Progress	2017 Interim Strategy	2025 Final Strategy
Source Sector	**Landuse**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**
Agriculture	AFO	0.000	0.000	0.000
	CAFO	0.000	0.000	0.000
	Crop	0.000	0.000	0.000
	Nursery	0.000	0.000	0.000
	Pasture	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***
Forest	Harvested	0.012	0.012	0.012
	Natural	0.247	0.503	0.724
	Subtotal	***0.259***	***0.515***	***0.736***
Non-Tidal Atm	Non-Tidal Atm	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***
Septic	Septic	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***
Stormwater	CSS	0.000	0.000	0.000
	Construction	5.721	5.839	4.150
	Extractive	0.019	0.019	0.013
	Regulated Developed	34.947	28.347	17.056
	Subtotal	***40.688***	***34.205***	***21.218***
Wastewater	CSO	0.000	0.000	0.000
	Industrial	0.264	3.783	3.968
	Municipal	1.046	6.487	7.269
	Subtotal	***1.310***	***10.270***	***11.238***
	Total	***42.257***	***44.990***	***33.192***

• The State did not distribute EPA's state and basin targets at the county or sector scale for sediment. Hence a Final Target column is not shown.

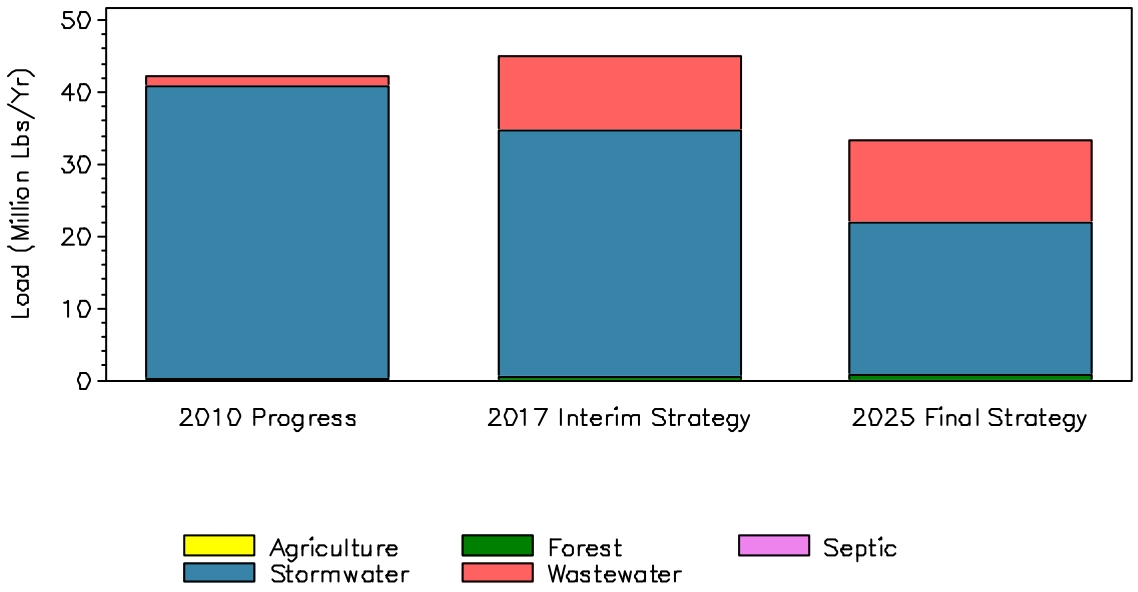
BALTIMORE CITY
Total Nitrogen Loads



BALTIMORE CITY
Total Phosphorus Loads



BALTIMORE CITY
Total Sediment Loads



• The State did not distribute EPA's state and basin targets at the county or sector scale for sediment. Hence a Final Target bar is not shown.

Maryland Phase II WIP Team MAST Submittals

BALTIMORE CITY
Developed Land BMPs

		2010 Progress	2017 WIP Team	2017 Interim Strategy	2025 WIP Team	2025 Final Strategy	Change in 2017 Submittal	Change in 2025 Submittal
BMP Name	**Unit**							
Bioretention / Raingardens	Acres	0	4,240	4,240	7,443	7,271	0	-172
Bioswale	Acres	0	212	212	207	202	0	-5
Dry Detention Ponds and Hydrodynamic Structures	Acres	298	223	223	218	213	0	-5
Dry Extended Detention Ponds	Acres	44	42	42	41	40	0	-1
Impervious Urban Surface Reduction	Acres	0	0	0	0	3,468	0	3,468
MS4 Permit Stormwater Retrofit	Acres	6,638	6,903	6,903	6,747	6,589	0	-158
Urban Filtering Practices	Acres	156	858	858	2,078	10,831	0	8,753
Urban Forest Buffers	Acres	16	15	15	15	724	0	709
Urban Infiltration Practices	Acres	20	214	214	622	607	0	-14
Urban Tree Planting / Urban Tree Canopy	Acres	0	2,091	2,091	3,137	3,455	0	318
Wet Ponds and Wetlands	Acres	39	4,540	4,540	4,428	4,325	0	-103
Erosion and Sediment Control on Construction	Acres/Year	408	1,079	408	1,079	1,079	-672	0
Erosion and Sediment Control on Extractive	Acres/Year	0	0	0	0	10	0	10
Forest Conservation	Acres/Year	132	431	431	431	490	0	59
Street Sweeping Mechanical Monthly	Acres/Year	0	0	0	2,357	2,082	0	-276
Urban Nutrient Management	Acres/Year	7,632	6,817	6,817	6,460	13,222	0	6,762
Urban Stream Restoration / Shoreline Erosion Control	Linear Feet	0	250,000	250,000	450,000	450,000	0	0

• The BMP values represent the total amount of implementation in place.
• The BMP values are the amount credited in the Bay watershed model. It is the amount of BMP submitted minus the amount not given credit for (e.g., due to overlapping with other BMPs)
• Acres of BMPs might be observed to decrease in subsequent scenarios for several reasons:
- To meet the countywide sector target, the State supplemented the Team scenarios with a generic set of BMPs.
- Some aspects of the State strategies were automated, such that BMP levels were computed as a percentage of available acres. The application of some BMPs convert the acres of developed land to forest land, or impervious to pervious. This reduces/increases the available acres so that, if the same percentage level of other BMPs is applied to these lands, then a decrease/increase in BMP acreage might be observed even though the implementation level was intedend to remain equal.
- Because the Bay watershed model is not able to account for BMPs that treat overlapping areas (nested BMPs), the acreage available for BMPs can be used up before the Final Target is achieved. In such cases the State gave precedance to the more effective BMPs.
• The columns labeled Team include the State Highway Administration (SHA) strategies as well as 2010 Progress levels for other entities.
• The columns for Interim and Final strategies include numbers for SHA, federal facilities, State lands, industrial facilities, Phase I and II MS4 and non-regulated stormwater where applicable. They also reflect changes made by the State.

BALTIMORE CITY
Septic System BMPs

			2025 Final Strategy	Change in 2017 Submittal	Change in 2025 Submittal
BMP Name	**Zone**	**Unit**			
Septic Connection	Critical Area	Systems	5	0	0
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	0	0	0
	Within 1000 ft of a perennial stream	Systems	0	0	0
	Septic ConnectionTotal		***5***	***0***	***0***

• The BMP values represent the total amount of implementation in place.
• The BMP values are the amount credited in the Bay watershed model. It is the amount of BMP submitted minus the amount not given credit for (e.g., due to overlapping with other BMPs)

Maryland Phase II WIP Team MAST Submittals

BALTIMORE CITY
Total Nitrogen Loads

		2010 Progress	2017 WIP Team	2017 Interim Strategy	2025 WIP Team	2025 Final Strategy	Final Target
Source Sector	**Landuse**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**
Stormwater	CSS	0.000	0.000	0.000	0.000	0.000	0
	Construction	0.013	0.011	0.014	0.011	0.011	0.012
	Extractive	0.000	0.000	0.000	0.000	0.000	0.000
	Regulated Developed	0.396	0.338	0.346	0.301	0.259	0.285
	Subtotal	***0.410***	***0.349***	***0.360***	***0.313***	***0.271***	***0.297***
Septic	Septic	0.000	0.000	0.000	0.000	0.000	0.000
	Subtotal	***0.000***	***0.000***	***0.000***	***0.000***	***0.000***	***0.000***

• The columns labeled Team include the State Highway Administration (SHA) strategies as well as 2010 Progress levels for other entities.
• The columns for Interim and Final strategies include numbers for SHA, federal facilities, State lands, industrial facilities, Phase I and II MS4 and non-regulated stormwater where applicable. They also reflect changes made by the State.

BALTIMORE CITY
Total Phosphorus Loads

		2010 Progress	2017 WIP Team	2017 Interim Strategy	2025 WIP Team	2025 Final Strategy	Final Target
Source Sector	**Landuse**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**
Stormwater	CSS	0.000	0.000	0.000	0.000	0.000	0
	Construction	0.003	0.002	0.003	0.002	0.002	0.002
	Extractive	0.000	0.000	0.000	0.000	0.000	0.000
	Regulated Developed	0.033	0.027	0.028	0.024	0.019	0.018
	Subtotal	***0.036***	***0.030***	***0.032***	***0.026***	***0.021***	***0.020***
Septic	Septic	0.000	0	0.000	0	0.000	0.000
	Subtotal	***0.000***	***0***	***0.000***	***0***	***0.000***	***0.000***

• The columns labeled Team include the State Highway Administration (SHA) strategies as well as 2010 Progress levels for other entities.
• The columns for Interim and Final strategies include numbers for SHA, federal facilities, State lands, industrial facilities, Phase I and II MS4 and non-regulated stormwater where applicable. They also reflect changes made by the State.

BALTIMORE CITY
Total Sediment Loads

		2010 Progress	2017 WIP Team	2017 Interim Strategy	2025 WIP Team	2025 Final Strategy
Source Sector	**Landuse**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**
Stormwater	CSS	0.000	0.000	0.000	0.000	0.000
	Construction	5.721	4.044	5.839	4.044	4.150
	Extractive	0.019	0.019	0.019	0.019	0.013
	Regulated Developed	34.947	27.821	28.347	23.589	17.056
	Subtotal	***40.688***	***31.884***	***34.205***	***27.653***	***21.218***
Septic	Septic	0.000	0	0.000	0	0.000
	Subtotal	***0.000***	***0***	***0.000***	***0***	***0.000***

• The columns labeled Team include the State Highway Administration (SHA) strategies as well as 2010 Progress levels for other entities.
• The columns for Interim and Final strategies include numbers for SHA, federal facilities, State lands, industrial facilities, Phase I and II MS4 and non-regulated stormwater where applicable. They also reflect changes made by the State.