

Maryland Phase II WIP Strategies

WICOMICO Agriculture - Annual Practices

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	Unit			
Conservation Tillage	Acres/Year	27,776	21,077	21,077
Cover Crop	Acres/Year	12,820	17,700	18,000
Cropland Irrigation Management	Acres/Year	0	7,955	7,955
Dairy Manure Incorporation	Acres/Year	0	300	500
Nutrient Management (All forms)	Acres/Year	35,505	37,717	37,077
Poultry Litter Incorporation	Acres/Year	0	12,522	20,867
Soil Conservation and Water Quality Plans	Acres/Year	30,935	37,450	41,787

- 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)

WICOMICO Agriculture - Additional BMPs

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	Unit			
Barnyard Runoff Control	Acres	0	6	10
Forest Buffers	Acres	1,711	1,756	1,786
Grass Buffers / Vegetated Open Channel	Acres	4,262	4,288	4,306
Heavy Use Poultry Area Concrete Pads	Acres	0	15	25
Horse Pasture Management	Acres	0	35	59
Irrigation Water Capture Reuse	Acres	0	69	69
Land Retirement	Acres	221	171	177
Off Stream Watering Without Fencing	Acres	10	28	40
Prescribed Grazing	Acres	0	136	226
Sorbing Materials in Ag Ditches	Acres	0	1,567	2,612
Stream Access Control with Fencing	Acres	1	1	1
Tree Planting / Vegetative Environmental Buffers	Acres	494	594	660
Water Control Structures	Acres	0	1,586	2,647
Wetland Restoration	Acres	871	1,788	2,399

- 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)

Please note: The Agricultural BMP tables represent Land BMPs that can be shown as acres or feet and do not show those BMPs that are based on percentages such as Animal Waste Storage and Poultry Litter Treatment (Alum). Manure Transport is also not represented in these tables.

**WICOMICO
Forest BMPs**

			2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	Zone	Unit			
Forest Harvesting Practices	harvested forest	Acres	1,392	1,301	1,301

- 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)

WICOMICO Developed Land BMPs

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	Unit			
Bioretention / Raingardens	Acres	0	850	1,350
Bioswale	Acres	0	236	315
Dry Detention Ponds and Hydrodynamic Structures	Acres	830	784	762
Dry Extended Detention Ponds	Acres	35	33	32
Impervious Urban Surface Reduction	Acres	0	0	0
MS4 Permit Stormwater Retrofit	Acres	146	138	134
Permeable Pavement	Acres	0	300	350
Stormwater Management Generic BMP (1985 to 2002)	Acres	2,217	3,540	4,434
Stormwater Management Generic BMP (2002 to 2010)	Acres	7,405	6,993	6,801
Urban Filtering Practices	Acres	100	94	92
Urban Forest Buffers	Acres	0	135	135
Urban Infiltration Practices	Acres	238	1,125	1,569
Urban Tree Planting / Urban Tree Canopy	Acres	0	2,000	3,000
Vegetated Open Channels	Acres	0	630	1,260
Wet Ponds and Wetlands	Acres	3,722	3,515	3,418
Erosion and Sediment Control on Construction	Acres/Year	911	911	911
Erosion and Sediment Control on Extractive	Acres/Year	0	0	0
Forest Conservation	Acres/Year	2,072	2,072	2,072
Street Sweeping Mechanical Monthly	Acres/Year	0	680	680
Urban Nutrient Management	Acres/Year	6,778	10,212	12,608
Urban Stream Restoration (interim)	Linear Feet	0	23,760	47,520
Urban Stream Restoration / Shoreline Erosion Control	Linear Feet	0	87,120	174,240

- 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)

WICOMICO Septic System BMPs

			2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	Zone	Unit			
Septic Connection	Critical Area	Systems	0	0	0
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	344	3,600	3,600
	Within 1000 ft of a perennial stream	Systems	150	150	150
	<i>Septic ConnectionTotal</i>		494	3,750	3,750
Septic Denitrification	Critical Area	Systems	0	0	0
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	134	4,391	4,391
	Within 1000 ft of a perennial stream	Systems	59	2,692	6,213
	<i>Septic DenitrificationTotal</i>		193	7,084	10,604

- 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

WICOMICO 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	0.002	0.002	0.002	0.003
	CAFO	0.068	0.072	0.071	0.074
	Crop	0.652	0.718	0.663	0.816
	Nursery	0.008	0.002	0.002	0.008
	Pasture	0.146	0.018	0.017	0.020
	Subtotal		0.877	0.813	0.754
Forest	Harvested	0.012	0.012	0.012	0.015
	Natural	0.258	0.269	0.272	0.253
	Subtotal	0.270	0.281	0.284	0.268
Non-Tidal Atm	Non-Tidal Atm	0.030	0.030	0.030	0.030
	Subtotal	0.030	0.030	0.030	0.030
Septic	Septic	0.161	0.116	0.099	0.099
	Subtotal	0.161	0.116	0.099	0.099
Stormwater	CSS	0.000	0.000	0.000	0
	Construction	0.017	0.017	0.017	0.017
	Extractive	0.001	0.001	0.001	0.001
	Non-Regulated Developed	0.193	0.160	0.143	0.146
	Regulated Developed	0.055	0.048	0.040	0.042
	Subtotal		0.266	0.225	0.200
Wastewater	CSO	0.000	0.000	0.000	0.000
	Industrial	0.005	0.004	0.004	0.004
	Municipal	0.445	0.120	0.137	0.137
	Subtotal		0.450	0.124	0.140
Total		2.054	1.589	1.508	1.664

- 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.

**WICOMICO
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	0.011	0.011	0.010	0.010
	Crop	0.035	0.047	0.045	0.065
	Nursery	0.003	0.001	0.001	0.003
	Pasture	0.005	0.003	0.002	0.003
	Subtotal		0.055	0.061	0.059
Forest	Harvested	0.000	0.000	0.000	0.000
	Natural	0.006	0.006	0.006	0.006
	Subtotal	0.006	0.006	0.007	0.006
Non-Tidal Atm	Non-Tidal Atm	0.001	0.001	0.001	0.001
	Subtotal	0.001	0.001	0.001	0.001
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	0.002	0.002	0.002	0.002
	Extractive	0.000	0.000	0.000	0.000
	Non-Regulated Developed	0.011	0.008	0.006	0.006
	Regulated Developed	0.004	0.003	0.002	0.002
	Subtotal		0.017	0.013	0.011
Wastewater	CSO	0.000	0.000	0.000	0.000
	Industrial	0.002	0.001	0.001	0.001
	Municipal	0.024	0.011	0.012	0.012
	Subtotal		0.025	0.012	0.012
Total		0.105	0.094	0.090	0.112

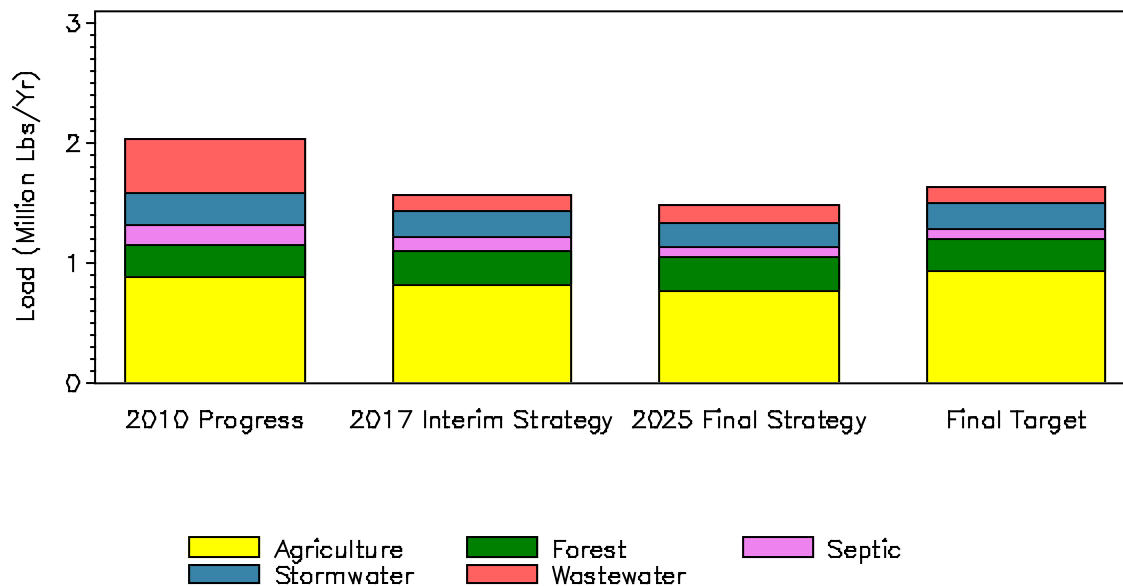
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- Stormwater sector strategies may overshoot the county target for nitrogen (N) to meet the phosphorus (P) target, or vice versa. This is because the N and P reduction targets differ and the same BMP has different effects on the reduction of N and P.

WICOMICO Total Sediment Loads

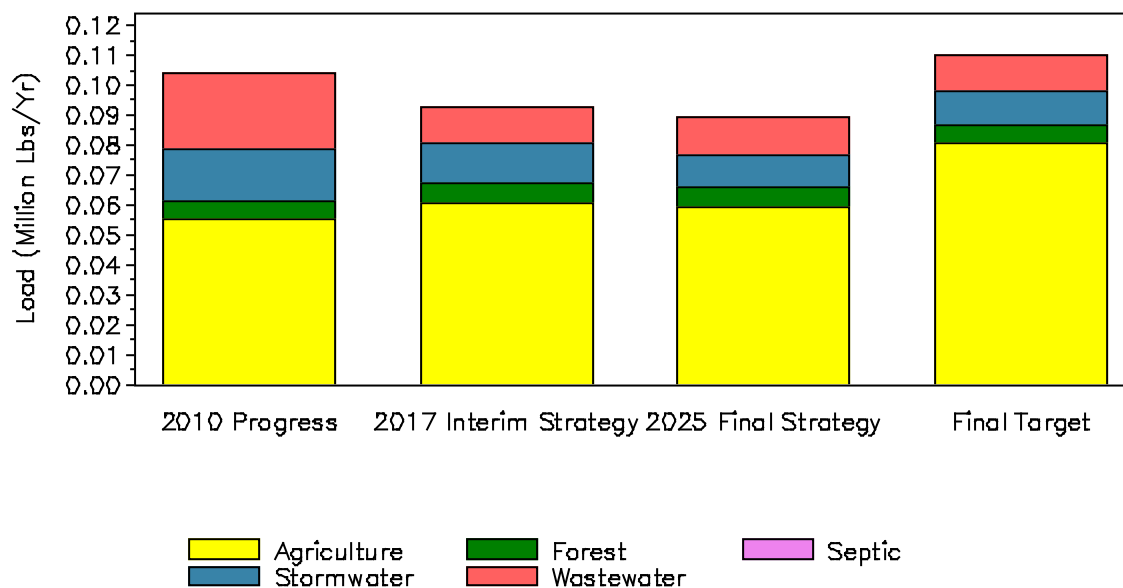
		2010 Progress	2017 Interim Strategy	2025 Final Strategy
Source Sector	Landuse	Million Lbs/Yr	Million Lbs/Yr	Million Lbs/Yr
Agriculture	AFO	0.001	0.001	0.001
	CAFO	0.005	0.004	0.004
	Crop	4.446	4.039	3.879
	Nursery	0.008	0.008	0.008
	Pasture	0.046	0.030	0.028
	Subtotal		4.506	4.082
Forest	Harvested	0.138	0.158	0.158
	Natural	1.338	1.389	1.404
	Subtotal	1.476	1.547	1.562
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	1.546	1.565	1.565
	Extractive	0.066	0.066	0.066
	Non-Regulated Developed	3.252	1.492	1.144
	Regulated Developed	1.437	1.085	0.910
	Subtotal		6.300	4.208
Wastewater	CSO	0.000	0.000	0.000
	Industrial	0.013	0.024	0.024
	Municipal	0.318	0.799	0.978
	Subtotal		0.330	0.824
Total		12.612	10.661	10.170

• 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.

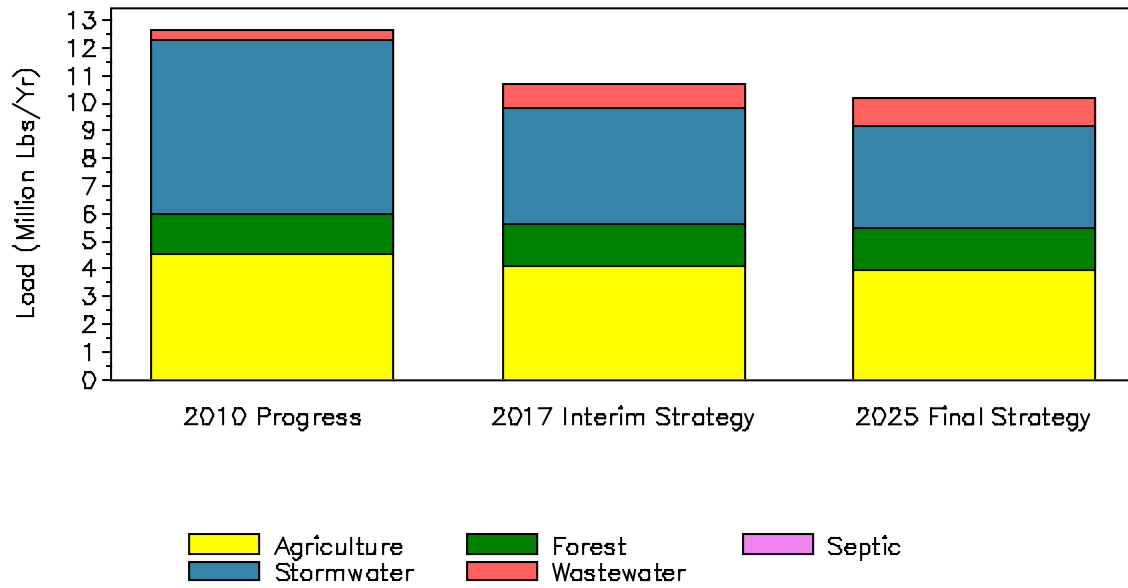
WICOMICO
Total Nitrogen Loads



WICOMICO
Total Phosphorus Loads



WICOMICO
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

WICOMICO 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	850	850	1,350	1,350	0	0
Bioswale	Acres	0	236	236	315	315	0	0
Dry Detention Ponds and Hydrodynamic Structures	Acres	830	784	784	762	762	0	-0
Dry Extended Detention Ponds	Acres	35	33	33	32	32	0	0
Impervious Urban Surface Reduction	Acres	0	0	0	0	0	0	0
MS4 Permit Stormwater Retrofit	Acres	146	138	138	134	134	0	-0
Permeable Pavement	Acres	0	300	300	350	350	0	0
Stormwater Management Generic BMP (1985 to 2002)	Acres	2,217	3,540	3,540	4,434	4,434	0	-0
Stormwater Management Generic BMP (2002 to 2010)	Acres	7,405	6,993	6,993	6,801	6,801	0	0
Urban Filtering Practices	Acres	100	94	94	92	92	0	0
Urban Forest Buffers	Acres	0	135	135	135	135	0	0
Urban Infiltration Practices	Acres	238	1,125	1,125	1,569	1,569	0	0
Urban Tree Planting / Urban Tree Canopy	Acres	0	2,000	2,000	3,000	3,000	0	0
Vegetated Open Channels	Acres	0	630	630	1,260	1,260	0	0
Wet Ponds and Wetlands	Acres	3,722	3,515	3,515	3,418	3,418	0	0
Erosion and Sediment Control on Construction	Acres/Year	911	911	911	911	911	0	0
Erosion and Sediment Control on Extractive	Acres/Year	0	0	0	0	0	0	0
Forest Conservation	Acres/Year	2,072	2,072	2,072	2,072	2,072	0	-0
Street Sweeping Mechanical Monthly	Acres/Year	0	680	680	680	680	0	0
Urban Nutrient Management	Acres/Year	6,778	10,212	10,212	12,608	12,608	0	0
Urban Stream Restoration (interim)	Linear Feet	0	23,760	23,760	47,520	47,520	0	-0
Urban Stream Restoration / Shoreline Erosion Control	Linear Feet	0	87,120	87,120	174,240	174,240	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 intended 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 precedence 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.

WICOMICO Septic System 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	Zone	Unit							
Septic Connection	Critical Area	Systems	0	0	0	0	0	0	0
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	344	3,600	3,600	3,600	3,600	0	0
	Within 1000 ft of a perennial stream	Systems	150	150	150	150	150	0	0
	Septic ConnectionTotal		494	3,750	3,750	3,750	3,750	0	0
Septic Denitrification	Critical Area	Systems	0	0	0	0	0	0	0
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	134	4,391	4,391	4,391	4,391	0	0
	Within 1000 ft of a perennial stream	Systems	59	2,692	2,692	6,213	6,213	0	0
	Septic DenitrificationTotal		193	7,084	7,084	10,604	10,604	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

WICOMICO 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	0.017	0.017	0.017	0.017	0.017	0.017
	Extractive	0.001	0.001	0.001	0.001	0.001	0.001
	Non-Regulated Developed	0.193	0.160	0.160	0.143	0.143	0.146
	Regulated Developed	0.055	0.047	0.048	0.040	0.040	0.042
	Subtotal	0.266	0.226	0.225	0.201	0.200	0.206
Septic	Septic	0.161	0.116	0.116	0.099	0.099	0.099
	Subtotal	0.161	0.116	0.116	0.099	0.099	0.099

- 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.

WICOMICO 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	0.002	0.002	0.002	0.002	0.002	0.002
	Extractive	0.000	0.000	0.000	0.000	0.000	0.000
	Non-Regulated Developed	0.011	0.008	0.008	0.006	0.006	0.006
	Regulated Developed	0.004	0.003	0.003	0.002	0.002	0.002
	Subtotal	0.017	0.013	0.013	0.011	0.011	0.011
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.

WICOMICO 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	1.546	1.546	1.565	1.546	1.565
	Extractive	0.066	0.066	0.066	0.066	0.066
	Non-Regulated Developed	3.252	1.474	1.492	1.122	1.144
	Regulated Developed	1.437	1.086	1.085	0.909	0.910
	Subtotal		6.300	4.172	4.208	3.642
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.
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