Maryland Phase II WIP Strategies

SOMERSET
Agriculture - Annual Practices

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	**Unit**			
Conservation Tillage	Acres/Year	22,869	21,996	21,995
Cover Crop	Acres/Year	7,246	14,901	15,153
Cropland Irrigation Management	Acres/Year	0	1,215	1,215
Nutrient Management (All forms)	Acres/Year	20,471	31,147	32,321
Poultry Litter Incorporation	Acres/Year	0	8,999	14,999
Soil Conservation and Water Quality Plans	Acres/Year	30,148	29,603	33,032

• 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)

SOMERSET
Agriculture - Additional BMPs

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	**Unit**			
Barnyard Runoff Control	Acres	0	6	10
Forest Buffers	Acres	2,632	2,647	2,657
Grass Buffers / Vegetated Open Channel	Acres	2,510	2,579	2,624
Heavy Use Poultry Area Concrete Pads	Acres	0	20	8
Horse Pasture Management	Acres	0	30	50
Irrigation Water Capture Reuse	Acres	0	2	3
Land Retirement	Acres	96	99	109
Loafing Lot Management	Acres	0	12	20
Off Stream Watering Without Fencing	Acres	6	18	26
Prescribed Grazing	Acres	0	60	100
Sorbing Materials in Ag Ditches	Acres	0	438	730
Stream Access Control with Fencing	Acres	0	2	2
Tree Planting / Vegetative Environmental Buffers	Acres	448	548	614
Water Control Structures	Acres	106	2,646	4,411
Wetland Restoration	Acres	503	580	631

• 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.

SOMERSET
Forest BMPs

			2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	**Zone**	**Unit**			
Forest Harvesting Practices	harvested forest	Acres	1,255	1,239	1,239

• 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)

SOMERSET
Developed Land BMPs

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	**Unit**			
Bioretention / Raingardens	Acres	0	300	500
Bioswale	Acres	0	1,500	2,000
Dry Detention Ponds and Hydrodynamic Structures	Acres	116	85	100
Impervious Urban Surface Reduction	Acres	0	300	757
MS4 Permit Stormwater Retrofit	Acres	100	52	0
Stormwater Management Generic BMP (1985 to 2002)	Acres	936	939	0
Stormwater Management Generic BMP (2002 to 2010)	Acres	400	952	135
Urban Filtering Practices	Acres	4	3,503	6,175
Urban Forest Buffers	Acres	0	41	282
Urban Infiltration Practices	Acres	33	32	0
Wet Ponds and Wetlands	Acres	547	936	600
Erosion and Sediment Control on Construction	Acres/Year	151	151	150
Erosion and Sediment Control on Extractive	Acres/Year	0	75	100
Forest Conservation	Acres/Year	565	963	600
Urban Nutrient Management	Acres/Year	2,305	0	2,139
Urban Stream Restoration / Shoreline Erosion Control	Linear Feet	0	10,000	14,000

• 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)

SOMERSET
Septic System BMPs

			2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	**Zone**	**Unit**			
Septic Connection	Critical Area	Systems	0	84	84
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	0	93	93
	Within 1000 ft of a perennial stream	Systems	0	19	19
	Septic ConnectionTotal		***0***	***196***	***196***
Septic Denitrification	Critical Area	Systems	318	1,124	2,248
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	353	624	624
	Within 1000 ft of a perennial stream	Systems	73	257	257
	Septic DenitrificationTotal		***744***	***2,005***	***3,129***
Septic Pumping	Critical Area	Systems	0	1,686	2,248
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	0	624	624
	Within 1000 ft of a perennial stream	Systems	0	257	257
	Septic PumpingTotal		***0***	***2,567***	***3,129***

• 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

SOMERSET
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	0.014	0.014	0.013	0.012
	CAFO	0.068	0.068	0.063	0.061
	Crop	1.325	0.893	0.815	0.969
	Nursery	0.002	0.001	0.001	0.002
	Pasture	0.061	0.011	0.011	0.015
	Subtotal	***1.470***	***0.988***	***0.903***	***1.059***
Forest	Harvested	0.014	0.014	0.014	0.015
	Natural	0.215	0.221	0.221	0.209
	Subtotal	***0.229***	***0.235***	***0.235***	***0.224***
Non-Tidal Atm	Non-Tidal Atm	0.079	0.079	0.079	0.079
	Subtotal	***0.079***	***0.079***	***0.079***	***0.079***
Septic	Septic	0.053	0.041	0.032	0.033
	Subtotal	***0.053***	***0.041***	***0.032***	***0.033***
Stormwater	CSS	0.000	0.000	0.000	0
	Construction	0.002	0.002	0.002	0.002
	Extractive	0.001	0.001	0.001	0.001
	Non-Regulated Developed	0.103	0.076	0.065	0.070
	Regulated Developed	0.001	0.000	0.000	0.000
	Subtotal	***0.107***	***0.079***	***0.068***	***0.074***
Wastewater	CSO	0.000	0.000	0.000	0
	Industrial	0.010	0.006	0.004	0.004
	Municipal	0.025	0.027	0.043	0.042
	Subtotal	***0.035***	***0.033***	***0.047***	***0.047***
	Total	***1.973***	***1.456***	***1.365***	***1.516***

• 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.

SOMERSET
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	0.002	0.002	0.002	0.002
	CAFO	0.011	0.010	0.009	0.008
	Crop	0.100	0.073	0.071	0.097
	Nursery	0.000	0.000	0.000	0.000
	Pasture	0.003	0.002	0.002	0.002
	Subtotal	***0.117***	***0.086***	***0.084***	***0.110***
Forest	Harvested	0.000	0.000	0.000	0.000
	Natural	0.007	0.007	0.007	0.006
	Subtotal	***0.007***	***0.007***	***0.007***	***0.007***
Non-Tidal Atm	Non-Tidal Atm	0.004	0.004	0.004	0.004
	Subtotal	***0.004***	***0.004***	***0.004***	***0.004***
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	0.000	0.000	0.000	0.000
	Extractive	0.000	0.000	0.000	0.000
	Non-Regulated Developed	0.007	0.005	0.004	0.003
	Regulated Developed	0.000	0.000	0.000	0.000
	Subtotal	***0.007***	***0.005***	***0.004***	***0.004***
Wastewater	CSO	0.000	0.000	0.000	0
	Industrial	0.001	0.000	0.000	0.000
	Municipal	0.001	0.002	0.003	0.003
	Subtotal	***0.003***	***0.003***	***0.003***	***0.003***
	Total	***0.138***	***0.106***	***0.103***	***0.128***

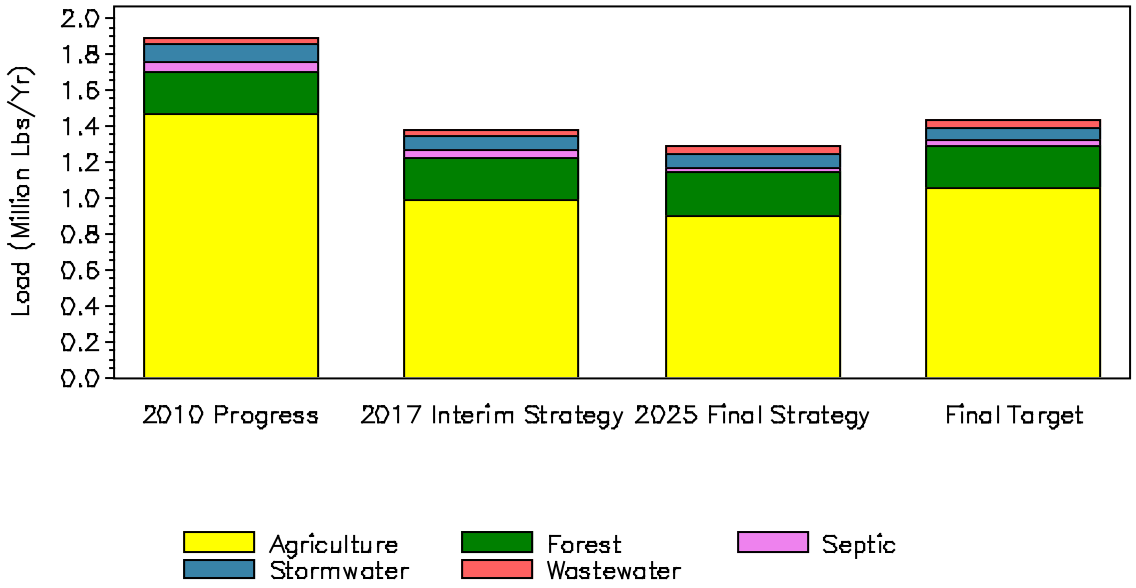
• The agricultural sector strategies were set to meet basin targets rather than county targets. Therefore, agricultural strategies are likely to overshoot or undershoot county targets, which can be reflected in the total countywide target results.
• Stormwater sector strategies may overshoot the county 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.

SOMERSET
Total Sediment Loads

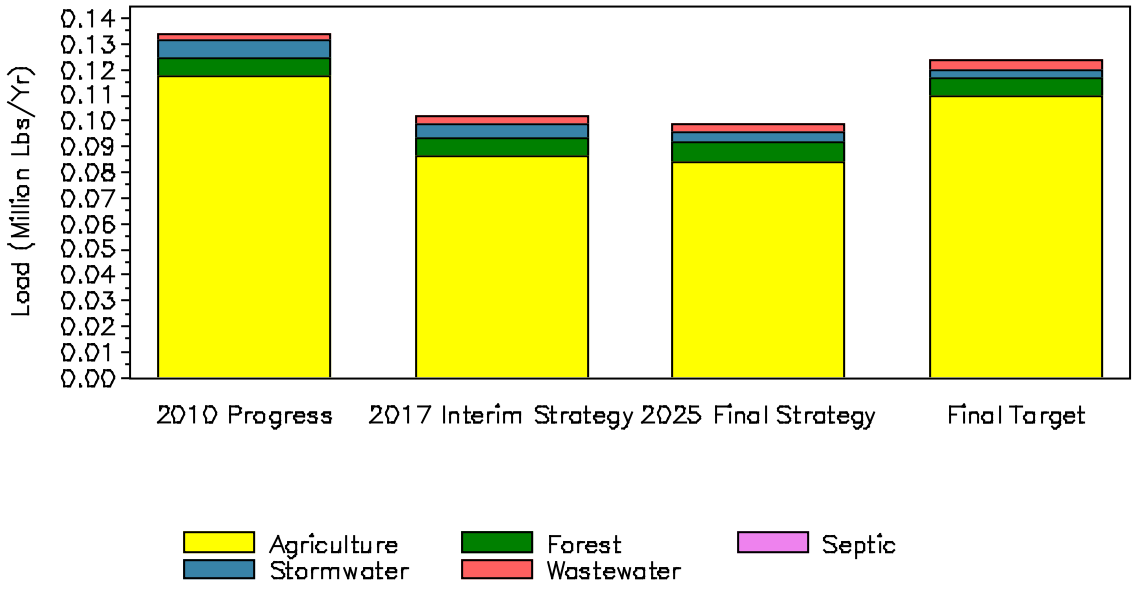
		2010 Progress	2017 Interim Strategy	2025 Final Strategy
Source Sector	**Landuse**	**Million Lbs/Yr**	**Million Lbs/Yr**	**Million Lbs/Yr**
Agriculture	AFO	0.000	0.000	0.000
	CAFO	0.001	0.001	0.001
	Crop	2.904	2.433	2.395
	Nursery	0.000	0.000	0.000
	Pasture	0.018	0.012	0.012
	Subtotal	***2.923***	***2.447***	***2.407***
Forest	Harvested	0.203	0.218	0.218
	Natural	1.723	1.767	1.767
	Subtotal	***1.926***	***1.985***	***1.985***
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	0.158	0.161	0.161
	Extractive	0.096	0.070	0.062
	Non-Regulated Developed	1.965	1.410	1.167
	Regulated Developed	0.011	0.011	0.009
	Subtotal	***2.231***	***1.652***	***1.399***
Wastewater	CSO	0.000	0.000	0.000
	Industrial	0.018	0.025	0.025
	Municipal	0.015	0.184	0.323
	Subtotal	***0.033***	***0.209***	***0.348***
	Total	***7.113***	***6.293***	***6.140***

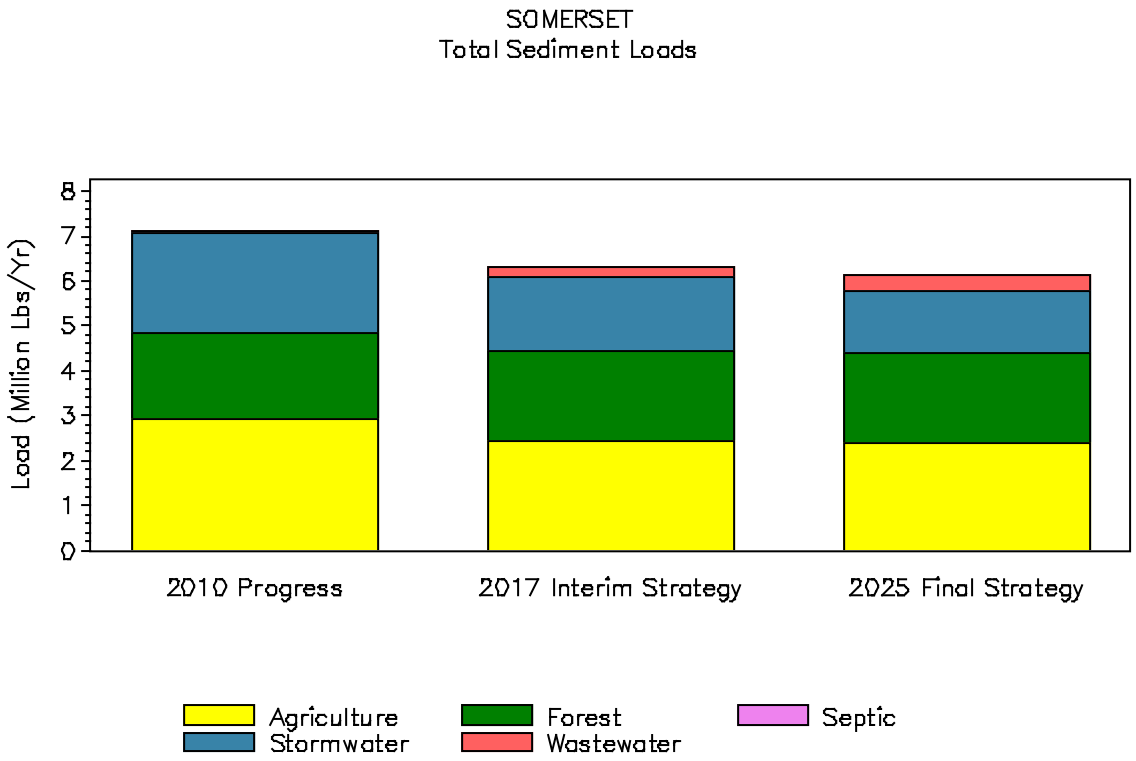
• The State did not distribute EPA's state and basin targets at the county or sector scale for sediment. Hence a Final Target column is not shown.

SOMERSET
Total Nitrogen Loads



SOMERSET
Total Phosphorus 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

SOMERSET
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	300	300	500	500	0	-0
Bioswale	Acres	0	1,500	1,500	1,884	2,000	0	116
Dry Detention Ponds and Hydrodynamic Structures	Acres	116	85	85	100	100	0	0
Impervious Urban Surface Reduction	Acres	0	300	300	400	757	0	357
MS4 Permit Stormwater Retrofit	Acres	100	52	52	0	0	0	0
Stormwater Management Generic BMP (1985 to 2002)	Acres	936	939	939	0	0	0	0
Stormwater Management Generic BMP (2002 to 2010)	Acres	400	952	952	135	135	0	0
Urban Filtering Practices	Acres	4	3,503	3,503	6,000	6,175	0	175
Urban Forest Buffers	Acres	0	41	41	41	282	0	241
Urban Infiltration Practices	Acres	33	32	32	0	0	0	0
Wet Ponds and Wetlands	Acres	547	936	936	600	600	0	0
Erosion and Sediment Control on Construction	Acres/Year	151	100	151	150	150	51	0
Erosion and Sediment Control on Extractive	Acres/Year	0	75	75	100	100	0	0
Forest Conservation	Acres/Year	565	963	963	600	600	0	0
Urban Nutrient Management	Acres/Year	2,305	0	0	0	2,139	0	2,139
Urban Stream Restoration / Shoreline Erosion Control	Linear Feet	0	10,000	10,000	14,000	14,000	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.

SOMERSET
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	84	84	84	84	0	0
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	0	93	93	93	93	0	0
	Within 1000 ft of a perennial stream	Systems	0	19	19	19	19	0	0
	Septic ConnectionTotal		***0***	***196***	***196***	***196***	***196***	***0***	***0***
Septic Denitrification	Critical Area	Systems	318	1,124	1,124	2,248	2,248	0	0
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	353	624	624	624	624	0	0
	Within 1000 ft of a perennial stream	Systems	73	257	257	257	257	0	0
	Septic DenitrificationTotal		***744***	***2,005***	***2,005***	***3,129***	***3,129***	***0***	***0***
Septic Pumping	Critical Area	Systems	0	1,686	1,686	2,248	2,248	0	0
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	0	624	624	624	624	0	0
	Within 1000 ft of a perennial stream	Systems	0	257	257	257	257	0	0
	Septic PumpingTotal		***0***	***2,567***	***2,567***	***3,129***	***3,129***	***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

SOMERSET
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	0.002	0.003	0.002	0.002	0.002	0.002
	Extractive	0.001	0.001	0.001	0.001	0.001	0.001
	Non-Regulated Developed	0.103	0.076	0.076	0.071	0.065	0.070
	Regulated Developed	0.001	0.000	0.000	0.000	0.000	0.000
	Subtotal	***0.107***	***0.080***	***0.079***	***0.075***	***0.068***	***0.074***
Septic	Septic	0.053	0.041	0.041	0.032	0.032	0.033
	Subtotal	***0.053***	***0.041***	***0.041***	***0.032***	***0.032***	***0.033***

• 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.

SOMERSET
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	0.000	0.000	0.000	0.000	0.000	0.000
	Extractive	0.000	0.000	0.000	0.000	0.000	0.000
	Non-Regulated Developed	0.007	0.005	0.005	0.004	0.004	0.003
	Regulated Developed	0.000	0.000	0.000	0.000	0.000	0.000
	Subtotal	***0.007***	***0.005***	***0.005***	***0.005***	***0.004***	***0.004***
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.

SOMERSET
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	0.158	0.194	0.161	0.159	0.161
	Extractive	0.096	0.069	0.070	0.061	0.062
	Non-Regulated Developed	1.965	1.391	1.410	1.401	1.167
	Regulated Developed	0.011	0.011	0.011	0.011	0.009
	Subtotal	***2.231***	***1.666***	***1.652***	***1.631***	***1.399***
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.