

## Maryland Phase II WIP Strategies

### WASHINGTON Agriculture - Annual Practices

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	Unit			
Conservation Tillage	Acres/Year	47,370	37,031	37,032
Cover Crop	Acres/Year	7,398	16,652	16,934
Cropland Irrigation Management	Acres/Year	0	857	857
Dairy Manure Incorporation	Acres/Year	0	1,200	2,000
Nutrient Management (All forms)	Acres/Year	48,355	90,759	92,486
Poultry Litter Incorporation	Acres/Year	0	41	73
Soil Conservation and Water Quality Plans	Acres/Year	55,131	67,255	75,051

- 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)

### WASHINGTON Agriculture - Additional BMPs

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	Unit			
Barnyard Runoff Control	Acres	104	153	194
Forest Buffers	Acres	1,217	1,300	1,356
Grass Buffers / Vegetated Open Channel	Acres	771	863	924
Land Retirement	Acres	1,977	3,257	4,320
Loafing Lot Management	Acres	0	10	16
Off Stream Watering Without Fencing	Acres	1,795	2,334	2,696
Precision Intensive Rotational Grazing	Acres	0	300	500
Prescribed Grazing	Acres	0	3,600	6,000
Stream Access Control with Fencing	Acres	69	106	106
Tree Planting / Vegetative Environmental Buffers	Acres	649	649	649
Wetland Restoration	Acres	52	55	57
Non Urban Stream Restoration / Shoreline Erosion Control	Linear Feet	0	2,898	4,830

- 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.

**WASHINGTON  
Forest BMPs**

			<b>2010 Progress</b>	<b>2017 Interim Strategy</b>	<b>2025 Final Strategy</b>
<b>BMP Name</b>	<b>Zone</b>	<b>Unit</b>			
Forest Harvesting Practices	harvested forest	Acres	1,000	1,073	1,073

- 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)

## WASHINGTON Developed Land BMPs

		2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	Unit			
Bioretention / Raingardens	Acres	0	20	19
Bioswale	Acres	0	48	127
Dry Detention Ponds and Hydrodynamic Structures	Acres	6,653	6,094	6,074
Dry Extended Detention Ponds	Acres	2,690	2,504	2,494
Impervious Urban Surface Reduction	Acres	0	0	1,252
MS4 Permit Stormwater Retrofit	Acres	1,082	1,268	1,332
Stormwater Management Generic BMP (1985 to 2002)	Acres	1,546	2,106	2,063
Stormwater Management Generic BMP (2002 to 2010)	Acres	5,164	4,806	4,786
Urban Filtering Practices	Acres	21	85	8,366
Urban Forest Buffers	Acres	0	19	931
Urban Infiltration Practices	Acres	350	437	463
Urban Tree Planting / Urban Tree Canopy	Acres	0	326	680
Vegetated Open Channels	Acres	0	752	709
Wet Ponds and Wetlands	Acres	680	1,055	1,029
Erosion and Sediment Control on Construction	Acres/Year	652	652	1,730
Erosion and Sediment Control on Extractive	Acres/Year	0	518	199
Forest Conservation	Acres/Year	1,048	1,345	1,345
Street Sweeping Mechanical Monthly	Acres/Year	0	560	0
Urban Nutrient Management	Acres/Year	8,775	1,731	8,352
Street Sweeping Pounds	Lbs/Year	0	561,423	561,423
Urban Stream Restoration / Shoreline Erosion Control	Linear Feet	0	38,090	40,471

- 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)

## WASHINGTON Septic System BMPs

			2010 Progress	2017 Interim Strategy	2025 Final Strategy
BMP Name	Zone	Unit			
Septic Denitrification	Critical Area	Systems	0	0	0
	Outside of the Critical Area, not within 1000 ft of a perennial stream	Systems	44	215	241
	Within 1000 ft of a perennial stream	Systems	28	19	7,367
	<b><i>Septic Denitrification Total</i></b>		<b>72</b>	<b>234</b>	<b>7,608</b>

- 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

### WASHINGTON 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	0.081	0.025	0.023	0.034
	CAFO	0.001	0.001	0.001	0.003
	Crop	1.529	1.359	1.314	1.372
	Nursery	0.011	0.011	0.011	0.011
	Pasture	0.227	0.214	0.213	0.202
	<b>Subtotal</b>		<b>1.849</b>	<b>1.609</b>	<b>1.561</b>
Forest	Harvested	0.025	0.025	0.025	0.032
	Natural	0.469	0.477	0.482	0.470
	<b>Subtotal</b>	<b>0.494</b>	<b>0.502</b>	<b>0.507</b>	<b>0.503</b>
Non-Tidal Atm	Non-Tidal Atm	0.043	0.043	0.043	0.043
	<b>Subtotal</b>	<b>0.043</b>	<b>0.043</b>	<b>0.043</b>	<b>0.043</b>
Septic	Septic	0.094	0.093	0.070	0.071
	<b>Subtotal</b>	<b>0.094</b>	<b>0.093</b>	<b>0.070</b>	<b>0.071</b>
Stormwater	CSS	0.000	0.000	0.000	0
	Construction	0.062	0.062	0.051	0.060
	Extractive	0.010	0.008	0.009	0.009
	Regulated Developed	0.550	0.547	0.478	0.479
	<b>Subtotal</b>	<b>0.622</b>	<b>0.617</b>	<b>0.539</b>	<b>0.548</b>
Wastewater	CSO	0.000	0.000	0.000	0
	Industrial	0.029	0.038	0.035	0.035
	Municipal	0.188	0.120	0.137	0.137
	<b>Subtotal</b>	<b>0.217</b>	<b>0.158</b>	<b>0.173</b>	<b>0.172</b>
<b>Total</b>		<b>3.319</b>	<b>3.023</b>	<b>2.893</b>	<b>2.958</b>

- 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.

## WASHINGTON 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	0.010	0.003	0.003	0.004
	CAFO	0.000	0.000	0.000	0.000
	Crop	0.059	0.058	0.057	0.068
	Nursery	0.002	0.002	0.002	0.002
	Pasture	0.017	0.015	0.015	0.015
	<b>Subtotal</b>		<b>0.088</b>	<b>0.078</b>	<b>0.077</b>
Forest	Harvested	0.001	0.001	0.001	0.001
	Natural	0.010	0.010	0.010	0.010
	<b>Subtotal</b>	<b>0.010</b>	<b>0.011</b>	<b>0.011</b>	<b>0.011</b>
Non-Tidal Atm	Non-Tidal Atm	0.002	0.002	0.002	0.002
	<b>Subtotal</b>	<b>0.002</b>	<b>0.002</b>	<b>0.002</b>	<b>0.002</b>
Septic	Septic	0.000	0.000	0.000	0.000
	<b>Subtotal</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
Stormwater	CSS	0.000	0.000	0.000	0
	Construction	0.005	0.005	0.004	0.005
	Extractive	0.001	0.001	0.001	0.001
	Regulated Developed	0.018	0.018	0.015	0.014
	<b>Subtotal</b>	<b>0.024</b>	<b>0.024</b>	<b>0.020</b>	<b>0.020</b>
Wastewater	CSO	0.000	0.000	0.000	0
	Industrial	0.004	0.002	0.002	0.002
	Municipal	0.011	0.009	0.010	0.010
	<b>Subtotal</b>	<b>0.015</b>	<b>0.011</b>	<b>0.012</b>	<b>0.012</b>
<b>Total</b>		<b>0.139</b>	<b>0.125</b>	<b>0.121</b>	<b>0.134</b>

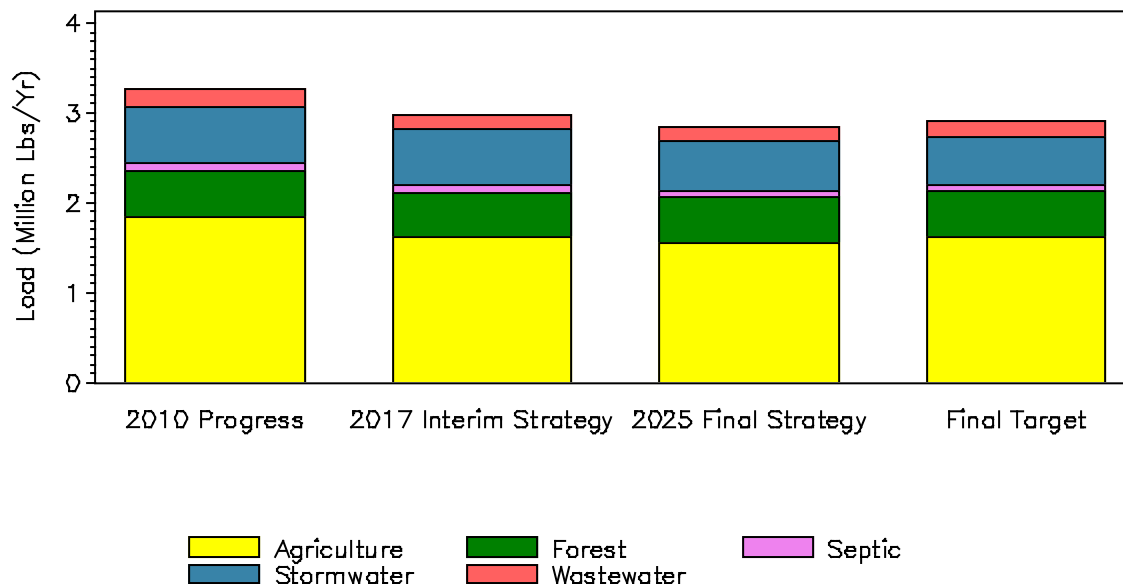
- The agricultural sector strategies were set to meet basin targets rather than county targets. Therefore, agricultural strategies are likely to overshoot or undershoot county targets, which can be reflected in the total countywide target results.
- Stormwater sector strategies may overshoot the county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

**WASHINGTON**  
**Total Sediment Loads**

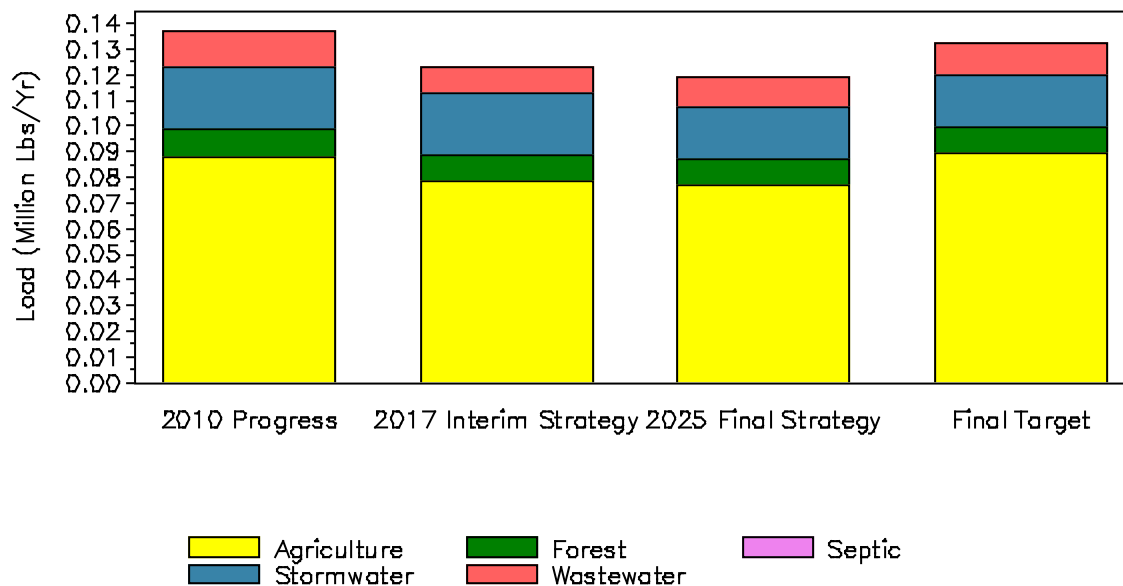
		2010 Progress	2017 Interim Strategy	2025 Final Strategy
Source Sector	Landuse	Million Lbs/Yr	Million Lbs/Yr	Million Lbs/Yr
Agriculture	AFO	0.571	0.500	0.442
	CAFO	0.000	0.000	0.000
	Crop	92.082	97.027	94.426
	Nursery	0.151	0.128	0.126
	Pasture	15.780	14.905	14.819
	<b>Subtotal</b>		<b>108.584</b>	<b>112.560</b>
Forest	Harvested	0.922	1.016	1.016
	Natural	17.827	18.120	18.284
	<b>Subtotal</b>	<b>18.749</b>	<b>19.136</b>	<b>19.300</b>
Non-Tidal Atm	Non-Tidal Atm	0.000	0.000	0.000
	<b>Subtotal</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
Septic	Septic	0.000	0.000	0.000
	<b>Subtotal</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
Stormwater	CSS	0.000	0.000	0.000
	Construction	9.711	9.776	7.032
	Extractive	1.707	1.103	1.475
	Regulated Developed	23.180	22.371	18.432
	<b>Subtotal</b>	<b>34.598</b>	<b>33.249</b>	<b>26.940</b>
Wastewater	CSO	0.000	0.000	0.000
	Industrial	0.095	0.193	0.193
	Municipal	0.083	0.837	0.989
	<b>Subtotal</b>	<b>0.178</b>	<b>1.029</b>	<b>1.182</b>
	<b>Total</b>	<b>162.109</b>	<b>165.974</b>	<b>157.234</b>

• 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.

WASHINGTON  
Total Nitrogen Loads

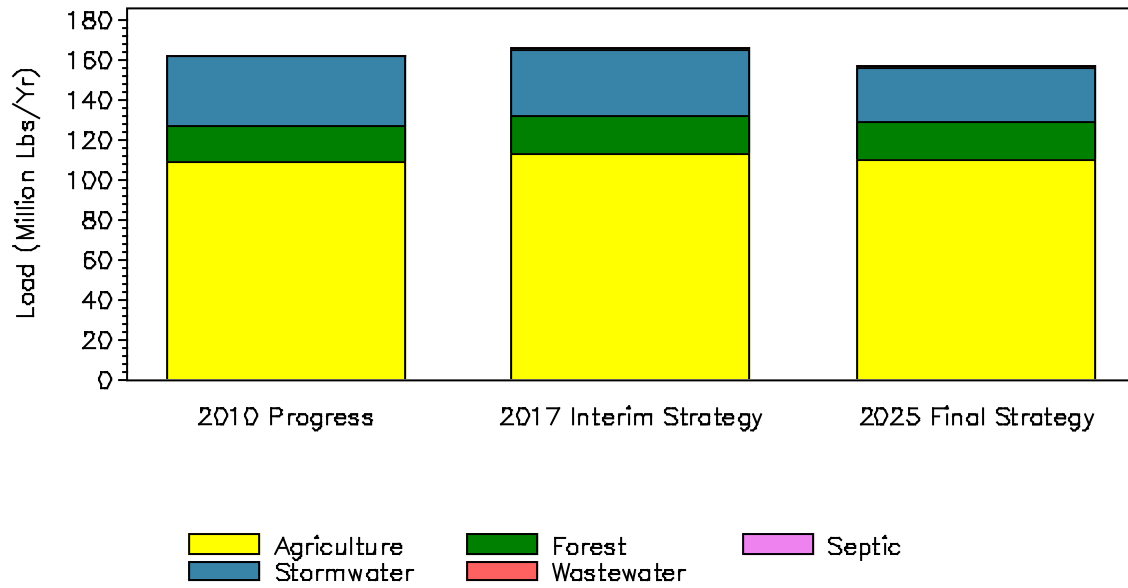


WASHINGTON  
Total Phosphorus Loads





WASHINGTON  
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

### WASHINGTON 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	20	20	9	19	0	10
Bioswale	Acres	0	48	48	127	127	0	0
Dry Detention Ponds and Hydrodynamic Structures	Acres	6,653	6,094	6,094	6,074	6,074	0	-0
Dry Extended Detention Ponds	Acres	2,690	2,504	2,504	2,494	2,494	0	0
Impervious Urban Surface Reduction	Acres	0	0	0	0	1,252	0	1,252
MS4 Permit Stormwater Retrofit	Acres	1,082	1,268	1,268	1,332	1,332	0	0
Stormwater Management Generic BMP (1985 to 2002)	Acres	1,546	2,106	2,106	2,063	2,063	0	-0
Stormwater Management Generic BMP (2002 to 2010)	Acres	5,164	4,806	4,806	4,785	4,786	0	0
Urban Filtering Practices	Acres	21	84	85	98	8,366	0	8,268
Urban Forest Buffers	Acres	0	19	19	3	931	-0	928
Urban Infiltration Practices	Acres	350	437	437	463	463	0	-0
Urban Tree Planting / Urban Tree Canopy	Acres	0	326	326	680	680	0	-0
Vegetated Open Channels	Acres	0	752	752	709	709	0	-0
Wet Ponds and Wetlands	Acres	680	1,055	1,055	1,029	1,029	0	-0
Erosion and Sediment Control on Construction	Acres/Year	652	1,730	652	1,730	1,730	-1,079	0
Erosion and Sediment Control on Extractive	Acres/Year	0	518	518	0	199	0	199
Forest Conservation	Acres/Year	1,048	1,345	1,345	1,345	1,345	0	-0
Street Sweeping Mechanical Monthly	Acres/Year	0	560	560	0	0	0	0
Urban Nutrient Management	Acres/Year	8,775	1,400	1,731	0	8,352	331	8,352
Street Sweeping Pounds	Lbs/Year	0	561,423	561,423	561,423	561,423	0	0
Urban Stream Restoration / Shoreline Erosion Control	Linear Feet	0	38,090	38,090	5,911	40,471	0	34,560

- 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.

## WASHINGTON 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 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	44	215	215	241	241	0	0
	Within 1000 ft of a perennial stream	Systems	28	19	19	19	7,367	0	7,348
<b>Septic DenitrificationTotal</b>			<b>72</b>	<b>234</b>	<b>234</b>	<b>260</b>	<b>7,608</b>	<b>0</b>	<b>7,348</b>

- 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

### WASHINGTON 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	0.062	0.051	0.062	0.051	0.051	0.060
	Extractive	0.010	0.008	0.008	0.010	0.009	0.009
	Regulated Developed	0.550	0.548	0.547	0.544	0.478	0.479
	<b>Subtotal</b>	<b>0.622</b>	<b>0.607</b>	<b>0.617</b>	<b>0.606</b>	<b>0.539</b>	<b>0.548</b>
Septic	Septic	0.094	0.093	0.093	0.093	0.070	0.071
	<b>Subtotal</b>	<b>0.094</b>	<b>0.093</b>	<b>0.093</b>	<b>0.093</b>	<b>0.070</b>	<b>0.071</b>

- 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.

### WASHINGTON 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	0.005	0.004	0.005	0.004	0.004	0.005
	Extractive	0.001	0.001	0.001	0.001	0.001	0.001
	Regulated Developed	0.018	0.018	0.018	0.017	0.015	0.014
	<b>Subtotal</b>	<b>0.024</b>	<b>0.022</b>	<b>0.024</b>	<b>0.022</b>	<b>0.020</b>	<b>0.020</b>
Septic	Septic	0.000	0	0.000	0	0.000	0.000
	<b>Subtotal</b>	<b>0.000</b>	<b>0</b>	<b>0.000</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>

- 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.

**WASHINGTON  
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	9.711	6.860	9.776	6.860	7.032
	Extractive	1.707	1.024	1.103	1.707	1.475
	Regulated Developed	23.180	21.963	22.371	21.603	18.432
	<b>Subtotal</b>	<b>34.598</b>	<b>29.847</b>	<b>33.249</b>	<b>30.170</b>	<b>26.940</b>
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Septic	Septic	0.000	0	0.000	0	0.000
	<b>Subtotal</b>	<b>0.000</b>	<b>0</b>	<b>0.000</b>	<b>0</b>	<b>0.000</b>
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- 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.