

Appendix E

Baseline Loads and TMDL Load Allocations by County and Source

Table E.1 provides average annual baseline loads by county and source used in the Baseline or Calibration Scenario. Average annual TP loads are given for Triadelphia and Rocky Gorge Reservoirs. Average annual sediment loads are given for Triadelphia Reservoir only. In Table E.1 and subsequent tables in this Appendix, the “Crop” land use type includes conventional tillage crops, conservation tillage crops, and hay. In addition to instream scour, the “Scour” source may include gulley erosion and other sources of sediment and sediment-bound phosphorus not captured by sheet erosion described by the Universal Soil Loss Equation. Other land use categories may include scour and sediment-bound phosphorus from small tributaries not explicitly represented in the Patuxent Reservoirs HSPF Model. The accompanying modeling report, *Modeling Framework of Simulating Hydrodynamics and Water Quality in the Triadelphia and Rocky Gorge Reservoirs, Patuxent River Basin, Maryland* (ICPRB, 2007), provides additional details on how land uses and associated loads were determined.

Table E.2 presents one possible set of load and wasteload allocations to sources by county, based on Section 4.5 of *Total Maximum Daily Loads of Phosphorus and Sediments for Triadelphia Reservoir (Brighton Dam) and Total Maximum Daily Loads Phosphorus for Rocky Gorge Reservoir*, the main TMDL document; *Technical Memorandum: Significant Phosphorus and Sediment Nonpoint Sources in the Triadelphia Reservoir and Rocky Gorge Reservoir Watersheds*; and *Technical Memorandum: Significant Phosphorus and Sediment Point Sources in the Triadelphia Reservoir and Rocky Gorge Reservoir Watersheds*. It must be repeated that Table E.2 represents only one possible allocation to sources; the Maryland Department of the Environment (MDE) expressly reserves the right to allocate the TMDLs among different sources in any manner that is reasonably calculated to achieve water quality standards. Table E.3 shows the percent reduction from baseline loads which the allocations in Table E.2 represent. As in previous phosphorus TMDLs for Baltimore City’s Prettyboy and Loch Raven Reservoirs (MDE 2006), the wasteload allocation for municipal stormwater systems was set at 85% of baseline load, representing a 15% reduction. No reduction was assumed from forested land. Equal reductions necessary to meet the load allocation were applied to scour and agricultural land. Total allocated loads do not include the 1,385 lbs phosphorus Margin of Safety (MOS) for Triadelphia Reservoir and the 1,220 lbs MOS for phosphorus for Rocky Gorge Reservoir.

Table E.1: Baseline Scenario Loads By County and Source

Total Phosphorus (lbs/yr), Triadelphia Reservoir				
Type	Montgomery	Howard	Prince George's	Total
Crop	8,994	23,869		32,864
Developed	725	5,496		6,221
Forest	693	1,822		2,514
Animal Waste	641	1,632		2,273
Pasture	1,247	2,598		3,845
Scour	1,110	17,126		18,236
Point Source				
Total	13,410	52,542		65,953
Total Phosphorus (lbs/yr), Rocky Gorge Reservoir				
Type	Montgomery	Howard	Prince George's	Total
Crop	9,379	2,102	0	11,480
Developed	6,566	1,779	181	8,526
Forest	1,804	743	97	2,644
Animal Waste	1,666	325	0	1,991
Pasture	2,307	550	0	2,857
Scour	3,302	478	24	3,804
Point Source	6			6
Triadelphia Reservoir				15,627
Total	25,030	5,976	302	46,935
Sediment (tons/yr), Triadelphia Reservoir				
Type	Montgomery	Howard	Prince George's	Total
Crop	4,753	12,397		17,150
Developed	47	354		400
Forest	360	936		1,296
Animal Waste	0	0		0
Pasture	334	713		1,047
Scour	2,634	9,614		12,247
Point Source				
Total	8,127	24,014		32,141

Table E.2: One Possible Scenario For Distribution of TMDL Loads By County and Source

Total Phosphorus (lbs/yr), Triadelphia Reservoir				
Type	Montgomery	Howard	Prince George's	Total
Crop	2,910	7,723		10,633
Developed	616	4,672		5,288
Forest	693	1,822		2,514
Animal Waste	207	528		735
Pasture	404	840		1,244
Scour	359	5,541		5,900
Point Source				
Total	5,189	21,126		26,315
Total Phosphorus (lbs/yr), Rocky Gorge Reservoir				
Type	Montgomery	Howard	Prince George's	Total
Crop	3,050	684	0	3,734
Developed	5,581	1,512	154	7,247
Forest	1,804	743	97	2,644
Animal Waste	542	106	0	648
Pasture	750	179	0	929
Scour	1,075	156	8	1,239
Point Source	182			182
Triadelphia Reservoir				6,563
Total	12,985	3,379	259	23,186
Sediment (tons/yr), Triadelphia Reservoir				
Type	Montgomery	Howard	Prince George's	Total
Crop	3,297	8,601		11,898
Developed	47	354		400
Forest	360	936		1,296
Animal Waste	0	0		0
Pasture	232	495		726
Scour	1,827	6,671		8,499
Point Source				
Total	5,763	17,056		22,820

Table E.3: Percent Reductions Under One Possible Scenario For Distribution of TMDL Loads By County and Source

Total Phosphorus Reductions, Triadelphia Reservoir				
Type	Montgomery	Howard	Prince George's	Total
Crop	0.68	0.68		0.68
Developed	0.15	0.15		0.15
Forest	0.00	0.00		0.00
Animal Waste	0.68	0.68		0.68
Pasture	0.68	0.68		0.68
Scour	0.68	0.68		0.68
Point Source				
Total	0.61	0.60		0.60
Total Phosphorus Reductions, Rocky Gorge Reservoir				
Type	Montgomery	Howard	Prince George's	Total
Crop	0.67	0.67	0.67	0.67
Developed	0.15	0.15	0.15	0.15
Forest	0.00	0.00	0.00	0.00
Animal Waste	0.67	0.67	0.67	0.67
Pasture	0.67	0.67	0.67	0.67
Scour	0.67	0.67	0.67	0.67
Point Source	1.00			1.00
Triadelphia Reservoir				0.58
Total	0.48	0.43	0.14	0.51
Sediment Reductions, Triadelphia Reservoir				
Type	Montgomery	Howard	Prince George's	Total
Crop	0.31	0.31		0.31
Developed	0.00	0.00		0.00
Forest	0.00	0.00		0.00
Animal Waste	0.00	0.00		0.00
Pasture	0.31	0.31		0.31
Scour	0.31	0.31		0.31
Point Source				
Total	0.29	0.29		0.29