

Technical Memorandum

Significant Sediment Point Sources in the Anacostia River Watershed

The U.S. Environmental Protection Agency requires that Total Maximum Daily Load (TMDL) allocations account for all significant sources of the impairing pollutant or pollutants. The TMDL analysis for the Anacostia watershed addresses the sediment loads during the annual average and growing season (April 1 – October 31) conditions. This technical memorandum identifies, in detail, the significant surface water discharges of sediment used as input when computing the TMDLs. The State of Maryland (MD) and the District of Columbia (DC) expressly reserve the right to allocate the loads among different sources in any manner that is reasonably calculated to achieve water quality standards (WQSs).

Waste load allocations have been made to National Pollutant Discharge Elimination System (NPDES)-regulated municipal and industrial wastewater treatment plants, municipal separate storm sewer system (MS4) discharges, and CSOs in the Anacostia watershed. Loads from urban land uses are broken down by MS4 jurisdiction. These urban loads also include loads from construction sites. The wastewater and industrial process water loads are estimated using permitted flows and total suspended solids (TSS) limits where available. If TSS limits are not specified, then TSS concentrations are estimated on a case-by-case basis.

In Maryland, there are two municipal wastewater treatment plants (WWTPs) contributing sediment loads to the Anacostia river: The Beltsville Agricultural Research Center (BARC) East Side and Beltsville U.S. Department of Agriculture (USDA) West WWTPs. In addition to these two municipal WWTPs, there are six industrial/mining point sources in MD contributing to the sediment loads into the Anacostia River: Laurel Sand & Gravel, U of MD Fire & Rescue, MD State Military Facility, National Archives at UMCP, NASA Goddard Center, and Percontee, Inc. In DC, there are three industrial WWTPs with NPDES permits regulating the discharge of sediments/solids to the Anacostia: Aggregate Super Concrete Industries, CTIDC, and PEPCO – Benning Road.

Waste load allocations (WLAs) are also given to DC and to two jurisdictions in MD with municipal stormwater discharges in the Anacostia watershed to address sediment loads from urban sources during storm events. DC, Prince George's County and Montgomery County are all covered under NPDES Phase I MS4 permits. WLAs have been made to these stormwater discharges based on the Hydrologic Simulation Program – FORTRAN (HSPF) model of the watershed from 1995 to 1997. Other NPDES regulated Phase I and Phase II stormwater entities, including federal lands, federal and state highways, parks and other land not under the jurisdiction of Montgomery or Prince George's Counties, have not been included in the Counties' MS4 WLA but have been grouped separately by tributary in aggregate WLAs named "Other SW" (regulated stormwater). The SW WLA was allocated between the counties and these other entities on the basis of an estimate of the impervious area outside county jurisdictions.

The stormwater sediment loads (WLAs) account for contributions from urban land and streambank erosion. Loads from forest and agricultural lands were calculated based on standard

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loading factors, loads from developed land were calculated based on the monitoring data from MS4 permits, and point source discharges were calculated from required monitoring.

Streambank erosion was determined by subtracting these loads from the monitored total load. Thus, the estimated streambank erosion load includes legacy sediment, current erosion and background loads. At this time, these components cannot be determined separately. Current monitoring requirements for new development will improve the accuracy of the streambank load estimate in the future. If there are significantly better estimates, MDE may determine to recalculate the TMDL or reallocate loads within the TMDL. The streambank erosion loads (legacy, current erosion, and background) in highly urbanized watersheds are primarily caused by high percentages of impervious surface, leading to alterations in natural hydrology. According to the results of this analysis, approximately 75% of today's sediment loads from the NWB and the NEB are due to alterations in hydrology.

The land use information was based on Maryland Department of Planning, Montgomery County DEP and the Maryland National Capital Park and Planning Commission – Prince George's County (M-NCPPC-PG) data, as described in section 2.1.2. In addition to municipal/industrial point sources and stormwater discharges, WLAs are also given for combined sewer overflows (CSOs) in DC, based on DC's Long Term Control Plan.

The potential sediment allocations for point sources, reflected in the TMDL analysis, are designed to protect aquatic life in both MD and DC tidal and non-tidal waters of the Anacostia River, meet MD and DC sediment-related WQs in their respective portions of the watershed, and also meet the numeric criteria for water clarity in the tidal waters.

The table below provides the average annual and growing season allocations of the sediment loads attributed to the point sources in the Anacostia watershed: municipal and industrial WWTPs, NPDES urban/stormwater discharges (MS4s and Other SW), and DC's CSOs.

Loads Attributed to Point Sources

<i>MD Point Source Name</i>	<i>Permit Number</i>	<i>TMDL - Annual (tons/year)</i>	<i>TMDL - Growing Season (tons/growing season)</i>
BARC East Side WWTP	MD0020842	22.13	10.43
Beltsville USDA West WWTP	MD0020851	7.34	3.56
Laurel Sand & Gravel	MD0001953	0.05	0.03
UM Fire & Rescue	MD0059161	3.42	2.00
MD State Military Facility	MD0065625, MD0067717	4.10	2.39
National Archives at UMCP	MD0065871	0.68	0.40
NASA Goddard Center	MD0067482	3.65	2.13
Percontee, Inc	MDG499863	16.55	9.66
Montgomery County MS4 – NWB	MD0068349	758.8	421.4
Other Mont. Co. SW – NWB		256.7	142.5
Montgomery County MS4 – NEB	MD0068349	342.4	150.3
Other Mont. Co. SW – NEB		67.4	29.6
Prince George's County MS4 – NWB	MD0068284	1090.5	574.7
Other PG Co. SW-NWB		147.9	77.9
Prince George's County MS4 – NEB	MD0068284	2449.4	988.5
Other PG Co. SW-NEB		678.1	273.7
Prince George's County MS4 – LBC	MD0068284	421.0	263.9
Other MD SW-LBC		57.8	36.2
Prince George's Co. MS4–Watts Br	MD0068284	25.8	15.3
Other MD SW-Watts		2.1	1.2
Total MD Non-tidal PS Loads		6355.8	3005.8
Prince George's County MS4 – Tidal	MD0068284	77.3	55.6
Other MD SW-Tidal		9.0	6.4
Total MD PS Loads		6442.1	3067.8

*SW = NPDES Regulated Stormwater

<i>DC Point Source Name</i>	<i>Permit Number</i>	<i>TMDL – Annual (tons/year)</i>	<i>TMDL – Growing Season (tons/growing season)</i>
Aggregate Super Concrete Industries	DC0000175	0.8	0.5
CTIDC	DC0000191	0.5	0.3
PEPCO*	DC0000094	*	*
Total DC Industrial PS Loads		1.3	0.7
DC MS4 - NWB	DC0000221	26.2	20.7
DC MS4 - LBC	DC0000221	0.6	0.4
DC MS4 - Watts Br	DC0000221	24.2	15.5
Total DC Non-tidal MS4 Loads		51.0	36.6
DC MS4 – Tidal Upper	DC0000221	84.6	60.4
DC MS4 – Tidal Lower	DC0000221	46.4	33.6
Total DC MS4 Loads		182.0	130.6
DC CSO Loads – Tidal Upper	DC0021199	83.9	61.7
DC CSO Loads – Tidal Lower	DC0021199	90.8	74.6
Total CSO Loads		174.7	136.3
Total DC PS Loads		356.7	266.9

NWB = Northwest Branch; NEB = Northeast Branch; LBC = Lower Beaverdam Creek; Watts Br = Watts Branch

* Included in stormwater (MS4) loads.