

Technical Memorandum

Significant Sediment Nonpoint Sources in the Bynum Run Watershed

The U.S. Environmental Protection Agency (EPA) requires that Total Maximum Daily Load (TMDL) allocations account for all significant sources of each impairing pollutant (CFR 2009). This technical memorandum identifies the significant nonpoint sources of sediment in the Bynum Run watershed. Detailed allocations are provided for those nonpoint sources included within the Load Allocation (LA) portion of the Bynum Run Watershed Sediment TMDL. These allocations are designed to meet the TMDL thresholds. The State reserves the right to allocate the TMDLs among different sources in any manner that protects aquatic life from sediment related impacts.

The Bynum Run Watershed Sediment TMDL is presented in terms of an average annual load established to ensure the support of aquatic life. The computational framework chosen for the Bynum Run watershed TMDL was the Chesapeake Bay Program Phase 5.2 (CBP P5.2) watershed model. The nonpoint source sediment loads generated within the Bynum Run watershed are calculated as the sum of corresponding land use *edge-of-stream* (EOS) loads within the watershed and represent a long-term average loading rate. Individual land use EOS loads are calculated as a product of the land use area, land use target loading rate, and loss from the *edge-of-field* (EOF) to the main channel (US EPA 2009). Further details of the nonpoint source sediment load calculations can be found in Section 2.2.1 of the main report.

In order to attain the TMDL loading cap, reductions were only applied to the urban sediment sources, since urban land was identified as the only predominant controllable source at 76.7% of the total watershed sediment load (see Table 4 of the main report). However, within this TMDL, the entirety of the urban sediment load is used to represent the National Pollutant Discharge Elimination System (NPDES) regulated stormwater load, which is considered a point source that must be included in the Waste Load Allocation (WLA) portion of a TMDL (US EPA 2002). Therefore, the reductions to the urban load are defined in the point source technical memorandum. When reductions are applied to the solely the urban load, the TMDL can be achieved without requiring further reductions from the LA. Thus, there are no nonpoint source reductions applied to achieve the sediment loading cap for the watershed (see Sections 4.5 and 4.6 of the main report for further description of the nonpoint source allocations).

Table 1 provides one possible scenario for the distribution of the annual nonpoint source loads between different land use categories in the Bynum Run watershed. The source categories in Table 1 represent aggregates of multiple sources (e.g. crop source is an aggregate of high till, low till, hay, animal feeding operations, and nursery sources).

Table 1: Bynum Run TMDL Allocation by Nonpoint Source Category

Nonpoint Source Category	Baseline Load (ton/yr)	LA (ton/yr)	Reduction (%)
Crop	895.0	895.0	0.0
Extractive	4.0	4.0	0.0
Forest	295.5	295.5	0.0
Pasture	35.4	35.4	0.0
Total	1,229.9	1,229.9	0.0

FINAL

REFERENCES

CFR (Code of Federal Regulations). 2009. *40 CFR* 130.2(i).

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US EPA (U.S. Environmental Protection Agency). 2002. *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs*. Washington, DC: U.S. Environmental Protection Agency.

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