

Anne Arundel County – Response to MDE Comments

On July 14, 2017 MDE SSA provided comments to Anne Arundel County on the County's TMDL restoration efforts in the Little Patuxent, Upper Patuxent, Patapsco Lower North Branch and Baltimore Harbor. The County's response to those comments follows:

Sediment TMDL Compliance (Little Patuxent, Upper Patuxent, Patapsco Lower North Branch)

MDE Comment 1.

It would be helpful if the county could provide additional information regarding where TSS load reductions are coming from. SSA understands that BayFAST does not output load reductions for individual types of BMP, but this estimate could be conducted outside of BayFAST using loading rates and BMP efficiencies from BayFAST. SSA has created a reporting spreadsheet the county could use to do so, which has posted to the TMDL Data Center at: <http://www.mde.state.md.us/programs/water/TMDL/DataCenter/Pages/TMDLStormwaterImplementation.aspx> (see "optional worksheet for MS4 SW-WLA Implementation Planning"). This would help explain some oddities in the reported load reductions. For instance, the Patapsco LNB SW-WLA implementation plan indicates that the county achieved an 80 ton/yr reduction (711 ton/yr - 632 ton/yr) over a 10 year period since the TMDL baseline conditions (2005-2015). Then, in the Local TMDL tracking table of the county's gdb, the county indicates the current 2016 fiscal year progress load = 503 ton/yr, which represents a 129 ton/yr reduction since 2015. This single year load reduction is greater than the entire reduction achieved over the prior 10 years. The current loading of 503 ton/yr is also below the target load (553 ton/yr) for the watershed. Where does this significant reduction over the span of one year come from? Providing load reductions by individual BMP types could answer this question.

County Response

Calculating reductions from the information submitted in the geodatabase, we show a reduction for Patapsco Lower North Branch at the end of FY2016 of 165,325 lbs/yr or 82.7 tons/yr. This is comparable to the load reduction reported at the end of FY2015 of 158,928 lbs/yr or 79 tons/yr.

Checking to see if loads were transposed, converting 503 tons to 1,006,000 lbs and querying our Local Stormwater Watershed Assessment table submission, we do not come up with a value in that range. We are unsure where MDE calculated 503 ton/yr. The closest reported progress load to 503 tons/yr was 521 ton/yr for Patapsco Lower North Branch.

The County is submitting progress reports with their FY2017 annual report with more details.

MDE Comment 2.

The county indicates in its restoration plans that they intend to use monitoring data to adaptively manage implementation in sediment TMDL watersheds. This is good. SSA would like to reiterate the importance of using biological and habitat assessment monitoring data in the watersheds to assess progress towards meeting local sediment TMDLs. Furthermore, even though the county's current load reduction accounting indicates that the Patapsco LNB watershed county MS4 target loading reductions have been met, the county should continue to implement BMPs that will reduce sediment inputs to the 1st through 4th order streams in the watershed. Based on the content of the Patapsco LNB sediment TMDL restoration plan, it would seem that the county does intend to continue implementing sediment reducing BMPs in the watershed.

County Response

Comment noted. The County intends to continue assessing biological and habitat quality in watershed across the entire County. The TMDL assessment reports submitted with the County's FY2017 annual report includes biological and physical habitat monitoring data related to the sediment impairment.

MDE Comment 3.

Based on the amount of stream restoration that the county has already implemented and plans to implement in sediment TMDL watersheds (i.e., Patapsco LNB: 1,150 feet restored and 14,000 feet planned for restoration), SSA feels it necessary to point out that the county should ensure that a design goal of these projects should be biotic uplift. Restoration design that does not consider habitat conditions for benthic macroinvertebrates would be considered inconsistent with nontidal sediment TMDL endpoints (biotic integrity).

County Response

Comment noted, the County will implement stream restoration projects that have biotic uplift as a design goal as is appropriate considering the watershed conditions and project setting. The County monitors many restoration projects for a variety of parameters including biological components including benthic macroinvertebrates and fish.

MDE Comment 4.

As previously mentioned, in the Patapsco LNB sediment TMDL restoration plan, the county indicates that 14,000 linear feet are planned for the watershed. However, Table 14 of the restoration plan indicates no cost for stream restoration between FY 2016 and FY 2025.

County Response

Specific projects had not yet been identified in the plan, so estimates of project cost using a \$/linear foot were used. As mentioned in the plan, stream restoration project costs for lumped projects were estimated using \$503 per linear foot. The stream restoration cost of \$503 came from the average cost per linear foot from all projects on the County's CIP list at the time in the Baltimore Harbor and Patapsco Lower North Branch watersheds. Costs for streams were inadvertently not included in Table 14 of the plan. The total cost to complete 14,000 lf would be just over \$7 million.

MDE Comment 5.

In the county's response to prior comments submitted by SSA, detailed methods and calculations for street sweeping and inlet cleaning load reductions are provided. The county uses the following assumptions in these calculations: 300 lbs TSS per inlet cleaned and 70% wet to dry weight conversion factor. Can the county indicate where these assumptions come from? There also appears to be an error in the street sweeping calculations. The county applies the rate of 420 lbs TSS reduced/2000 lbs total solids collected from sweeping to estimate street sweeping load reductions. This would be correct if the county were actually using data on total weight of solids collected from street sweeping activities in the watershed. Rather, the county applies this conversion rate to a TSS load estimated from the BayFAST No Action impervious loading rate in the watershed and the impervious acres swept. This loading rate is only reflective of fine sediments from the impervious area, not total solids. The 420 lbs TSS reduced/2000 lbs collected is a rate of fine sediments to total solids. The county should just apply the CBP street sweeping removal rate of 9% to the estimated TSS No Action load from impervious acres swept.

County Response

The County is now using the 420 lbs TSS per ton of material removed for both inlet cleaning and street sweeping. The County measures the total wet mass of material removed from inlets and by street sweeping.

MDE Comment 6.

The county indicates in its response to prior SSA comments that it updated its implementation plans so as to not account for growth that has occurred since TMDL baseline conditions, when assessing progress towards required SW-WLA reductions. However, in the gdb local TMDL table, it would appear as though the loads have not been updated to reflect this new approach, since the estimated current county MS4 loads for the Patuxent River Upper and Little Patuxent River are greater than the baseline loads.

County Response

Submitted FY2016 loads for TSS, N, and P calculated in BayFAST are all lower than the baseline loads. From the submittal - baseline load for Little Patuxent = 1,207,534 lbs/yr, FY2016 current load = 1,042,141.

MDE Comment 7.

The reported baseline year for the Patapsco LNB in the local TMDL table of the gdb is 1995. The correct year is 2005. This is also the implementation model baseline, as reported in the Patapsco LNB sediment TMDL restoration plan.

County Response

Comment noted, baseline year for Patapsco Lower North Branch has been corrected to 2005 in the geodatabase. The baseline used in the restoration plan and all analyses is 2005. This is not to be confused with the Baltimore Harbor nutrient (TN and TP) TMDL which does have a 1995 baseline year and overlaps with the Patapsco LNB.

MDE Comment 8.

In the revised Patapsco LNB restoration plan, the reported 2006-2015 restoration in Table 10 indicates that 16.5 acres of extended dry detention were used as a restoration BMP. How is this possible? The county indicates in its response to prior SSA comments that growth was removed from the load reduction accounting. Is this correct? This might explain the misclassification of extended dry detention being used as a restoration BMP post 2005.

County Response

BayFAST / CAST models give removals for extended detention dry facilities at a rate of TN = 20%, TP = 20%, and TSS = 60%. Although no longer planned for or used as a prioritized restoration type, older extended detention projects, likely converted from a basic dry pond to get extended detention, should get conservative load reduction credit. The County lists these projects (completed in FY2005 and FY2007) as extended detention facilities upgraded to meet Cpv and Wpv criteria.

MDE Comment 9.

In the revised restoration plans, the county classifies dry pond conversions as SW retrofits. Does this mean that the reported wet pond restoration represents newly constructed wet ponds to treat older impervious area that previously had no stormwater management?

County Response

Typically wet pond BMPs identified in the restoration plans represent newly constructed wet ponds to address old construction without stormwater management. These are not conversions of older stormwater management dry ponds.

Nutrient TMDL Compliance (Baltimore Harbor)

MDE Comment 1.

Can the county clarify whether or not it is including new development post baseline conditions in its load accounting?

County Response

Loads associated with new post baseline development are not included in the accounting. This is addressed at the bottom of page 3 and fully in section 3.3 of the plan.

MDE Comment 2.

The county uses 2000 land-use conditions and 1995 BMP implementation levels for its model baseline scenario. Even though the TMDL baseline is 1995, SSA recommends using 2000 BMP implementation levels for consistency purposes in its baseline condition load estimates. By using 1995 BMP implementation levels with 2000 land-use, the county could be over estimating the load from any development that occurred between 1995 and 2000, and/or over-estimating load reductions from any restoration BMPs implemented between 1995 and 2000. Using 2000 BMP implementation levels would make for a much “cleaner” analysis.

County Response

The County did not want to assume that a shift to using all 2000 conditions would be acceptable; therefore a conservative approach using 2000 land use and 1995 BMPs was used. The County will take the comment under consideration and may make revisions to the methodology in the future. Changes related to the phase 6 model may also need to be considered in the coming year.

