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**Comment Response Document  
Regarding the Total Maximum Daily Loads (TMDLs) of Trash and Debris in the Middle  
Branch and Northwest Branch Portions of the Patapsco River Mesohaline Tidal  
Chesapeake Bay Segment, Baltimore City and County, Maryland**

The Maryland Department of the Environment (MDE) has conducted a public review of the proposed Trash/Debris TMDL for the Baltimore Harbor, Curtis Creek/Bay, and Bear Creek portions of the Patapsco River Mesohaline (PATMH) Tidal Chesapeake Bay Segment. The public comment period was open from September 13, 2012 through October 29, 2012. MDE received six sets of written comments. MDE also received a set of comments postmarked significantly after the end of the public comment period. These comments are not included in this document but the comments presented in that letter are similar to those presented by other commentors below.

The commentors, their affiliations, the date comments were submitted, and the numbered references to the comments submitted are identified below. In the pages that follow, comments are summarized and listed with MDE’s response.

**List of Commentors**

<b>Author</b>	<b>Affiliation</b>	<b>Date</b>	<b>Comment Number</b>
Christina Meyers	Baltimore Harbor Waterkeeper	Sept. 21, 2012	1-3
Nathaniel Brown	Maryland Port Administration	October 3, 2012	4-9
Alfred Foxx	Baltimore City Department of Public Works	October 26, 2012	10-19
Christina Meyers & Jennifer Chavez	Baltimore Harbor Waterkeeper/Earthjustice	October 29, 2012	20-29
Brent Bolin and Julie Lawson	Anacostia Watershed Society	October 29, 2012	30-36
271 Citizens via Baltimore Harbor Waterkeeper	Citizens	October 29, 2012	37-41
Amy Johanson	Citizen	October 29, 2012	37-41

**Comments and Responses**

1. The commentor states that Baltimore Harbor Waterkeeper is working on behalf of Blue Water Baltimore, Inc., Waterfront Partnership of Baltimore, Trash Free Maryland, Anacostia Watershed Society, Baltimore Community Foundation, Phil Lee, and Judd Anderson.

The commentor has requested a public hearing on the draft of Baltimore Harbor Trash/Debris TMDL.

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**Response:** MDE staff had a conference call with the commentor to discuss their request. On that call, the commentor indicated that the public hearing was requested because many interested parties were not able to attend the informational meeting on September 21, due to the overlap with the Baltimore City Municipal Storm Sewer System (MS4) public comment period. It was also noted that the public hearing would be beneficial to parties that may not otherwise submit written comments, to verbally present their comments and have them recorded to the public record. MDE appreciates this clarification.

MDE officially responded to Ms. Meyers' letter on September 28, 2012 and indicated that any comments submitted within the public comment period become part of the public record and, by requirement, must be addressed by MDE prior to submitting the final TMDL to the United States Environmental Protection Agency (USEPA). The comment and response correspondence is submitted as part of the full TMDL package for USEPA approval. USEPA then evaluates the completeness of the responses to ensure that comments are adequately addressed. For this reason, MDE felt that holding a public hearing is unnecessary and redundant and denied the request. A determination on this matter is within the discretion of MDE. State law does not provide a right to a contested case hearing or other agency adjudication on this decision. Although a public hearing is not being held, MDE remained open to and welcomed dialogue on this and related matters.

2. The commentor requests any and all documents used to support the draft of the Baltimore Harbor Trash TMDL, pursuant to §§ 10-611 to 10-628 ("Maryland Public Information Act") of the state government article of the Maryland Annotated Code. The commentor has requested the following documents: all monitoring data and analysis relied on in producing the trash TMDL; all documents and monitoring data submitted during data solicitation for the trash TMDL; all documents relied on in developing the draft of the trash TMDL; and any other documents, data or information related to and/or supporting the development of the draft trash TMDL.

**Response:** MDE and the commentor conducted a conference call to discuss the request and to narrow the focus of the request so as not to overload the interested parties with possibly extraneous information. An agreement was reached that further clarification of requested information was to be provided by the interested parties to MDE via email and MDE would provide the specific information at that time via the most convenient method (e.g. electronic or printed). A CD of the requested information was provided to Blue Water Baltimore on October 8, 2012.

3. The commentor requests an extension of the current public comment period by 60 days.

**Response:** MDE extended the public comment period to October 29, 2012. This determination is consistent with the maximum public comment period timeframe that has been provided in other select TMDLs. It is MDE policy to conduct the Department's activities in an open manner and provide the public with a maximum amount of accurate and timely information concerning its activities.

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MDE values the input from public participation and as such has provided numerous opportunities for stakeholder input while developing this proposed TMDL. Specific outreach activities conducted for this particular TMDL included:

- A data solicitation of all known data sources within the watershed (November 2011)
- A notice of intent letter sent to all interested parties in the watershed (February 2012)
- A second letter inviting all interested parties to an informational meeting about the project (March 2012) and the occurrence of said meeting (April 2012)
- A 30 day public comment period announced in local papers, on MDE's website, available in libraries and interested parties also received a letter with information on how to access the TMDL available for public review (September 2012)
- A second informational meeting was held during the public comment period (September 2012)
- A third informational meeting with representatives from Blue Water Baltimore, et. al. (October 2012)

4. The commentor references page 11, section 1.3 Harris Creek Small Watershed Action Plan stating Paragraph 4 should be further clarified with regard to the section numbers being referenced. Are these referring to the sections of this report or of "the Plan"?

**Response:** The section numbers are referring to the *Harris Creek Small Watershed Action Plan*. This section of the TMDL has been updated to better reflect this.

5. The commentor references page 24 Table 11: Site G-MC-1 does not appear to be in the subject watersheds, based on Figure 5.

**Response:** It is correct that site G-MC-1 is outside the subject watersheds. The discrepancy occurs between the DNR delineation of the Gwynns Falls Watershed, and that of Baltimore County. Since the Baltimore County delineation of Gwynns Falls watershed includes Maiden Choice Run, they included this site in their sampling program. While MDE does not agree with this delineation, due to the close proximity of this site to the subject watersheds, MDE considers the data relevant to the TMDL and has included it in the analysis.

6. The commentor references page 31, Section 5.1.2, last paragraph, next to last sentence (in brackets) stating this sentence needs clarification. Is it the only station in the watershed with long term annual rainfall data?

**Response:** Based on this comment, information in Sections 5.1.1 and 5.1.2 has been corrected. The long term data used was actually from Baltimore Washington International (BWI) airport and was the 30-year normal, not the 30-year mean annual rainfall.

Climate normals are calculated by National Oceanic and Atmospheric Administration (NOAA)/National Climatic Data Center (NCDC) for thousands of stations across the United States every decade, and are updated using the most recent 30-year period of data (currently 1981 – 2010). Normals are more than just a 30-year averaging of meteorological parameters

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as they incorporate other factors than just the raw data into the computation. There are three normals presented for our region, at the three regional airports, Reagan, Dulles, and BWI. Data from BWI was used, based on its proximity to the TMDL study area.

7. The commentor references page 48, Section 6.31. Item 5.b.iv. Please define MEP.

**Response:** MEP stands for Maximum Extent Practical. This information has been added to the TMDL.

8. The commentor references page 49, Section 6.3.2 stating the MS4 permit number referenced in the text here is for Baltimore City's permit, not the County. The County permit number is MD0068314.

**Response:** This information has been corrected.

9. The commentor suggests a consistent format for references – either Abbreviation (Definition) or Definition (Abbreviation), but not both.

**Response:** The format used for references should be Definition (Abbreviation). MDE has corrected the reference section.

10. The commentor states that there is a lack of City-specific data represented in the calculation of the baseline loads. The commentor specifically refers to nonpoint source loading rates that did not use any data from Baltimore City, including skimmer data from the Northwest Branch. The loading rate was instead based solely on Baltimore County data. The commentor continues to state that Baltimore City and County have a number of differences that would cause the nonpoint source loading rates in the two counties to be dissimilar.

**Response:** MDE received one spreadsheet from Baltimore City with skimmer data. It included no information on the location of this data or the composition of the "trash" that was collected. MDE was not able to receive clarification on this data from Baltimore City. Therefore, MDE determined that this data was not compatible with the data that had been collected specifically for the TMDL nor with the TMDL methodology. For these reasons, MDE chose to apply the nonpoint source loading rate from Baltimore County to the Baltimore City acreage. While this is not ideal, it is certainly allowable by EPA guidance on TMDL data requirements. Similar substitutions were used in the Anacostia Trash TMDL, which was approved by the USEPA.

11. The commentor states the City is concerned that MDE's decision to base its waste allocation/load allocation determination on the size of trash, rather than the source of the trash, will have an unfair impact on MS4 permittees in the TMDL implementation phase. The commentor continues to state that small sized trash that may not have actually entered the waterway through the MS4 system, will be unfairly attributed to the MS4 system. Additionally, due to the nature of the Baltimore City waterways (i.e. many are paved into tunnels), there is less chance for large items to be dumped directly into the waterway.

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**Response:** MDE acknowledges Baltimore City's concern about the distinction between point and nonpoint source loads. However, because it is not feasible, if not impossible, to determine the origin of each individual piece of trash, this assumption to define the distinction was deemed necessary. The distinction was made to comply with the USEPA requirement to express the TMDL in terms of a load allocation (LA) and waste load allocation (WLA) and also to avoid double counting sampled waste during the calculation of the baseline load.

With regards to the larger trash items considered in the load allocation, MDE agrees that within the Baltimore Harbor Watershed, the majority of the streams are underground or otherwise closed to dumping. However, there are certainly portions of the Gwynns Falls and Jones Falls watersheds within Baltimore City that allow access to dumping, namely Gwynns Falls in the Carroll Park area and Jones Falls along the JFX. If Baltimore City has data regarding which acreages considered in this TMDL have no open stream access (e.g. Baltimore Harbor Direct watershed), this information should be provided to MDE as it could be used if the TMDL was revised in the future.

12. The commentor states there is a lack of data for Baltimore Harbor Watershed citing MDE only considered end-of-pipe data from the Gwynns Falls and Jones Falls watersheds in its estimation of historical trash data. The commentor goes on to state that MDE declined to use data collected by the City and others for the Baltimore Harbor watershed and did not collect any data itself. Finally, the commentor states that Baltimore Harbor watershed is significantly different than Gwynns Falls and Jones Falls and it is not scientifically defensible to simply substitute this irrelevant data.

**Response:** MDE received communication from Baltimore City that Baltimore Harbor watershed was not included in their sampling study because it was not feasible to collect outfall samples there due to wet weather flow rates damaging equipment or the limitation of sub-watershed sizes. Therefore, only end-of-pipe data from Gwynns Falls and Jones Falls watersheds was collected and used in the TMDL. The data referenced in the comment that was previously submitted by the City and others was not compatible with the TMDL methodology, as stated in the TMDL. This data was for bulk debris removed from the Baltimore Harbor and included both trash and organic material. The reported weight was also based on the wet weight of the debris. This data is not compatible with the data received from the Gwynns Falls and Jones Falls sampling study, as this data included only the weight of trash which had most of the water removed, though was not completely dry.

Additionally, while MDE does appreciate the unique nature of the Baltimore Harbor Watershed, it does not have adequate data to quantify that it is "significantly different" than other areas of Baltimore City that were sampled. If the City has additional data specific to the Baltimore Harbor Watershed, it should be submitted to MDE. Currently, MDE is using the best readily available data to calculate the TMDL as required by the USEPA.

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13. The commentor states MDE failed to include the peninsula occupied by the Maryland Port Administration (MPA), though acknowledges that MDE has previously addressed this issue to say that the MPA is downstream of the impaired area and therefore will not contribute trash loads to the impaired area. The commentor states that this is contrary to the observations of the City's staff and the City's operating procedures to provide for additional resources for the additional trash loadings in the Northwest Branch during high tides and certain wind directions.

**Response:** The peninsula was not included in the TMDL given that it is downstream of the impairment, but also because no data was available for the MPA shoreline when the impairment was listed. MDE also has no information regarding Baltimore City's standard procedures to provide additional resources for trash loadings during specific weather conditions, and therefore this is not reflected in the TMDL.

As to whether or not trash generated by the Maryland Port Administration is transported into the Northwest Branch, the following information has lead MDE to believe that upstream transport of trash from the MPA shoreline to the Northwest or Middle Branch shoreline is limited. First, as reported in numerous publications<sup>1</sup>, the tidal influence in the Northwest and Middle Branches is weak and variable. This is further verified by NOAA's table of tidal locations and ranges for the Chesapeake Bay, which shows a mean tidal range of 1.0 – 1.2 ft for five Patapsco River stations<sup>2</sup>. The second factor of consideration for upstream transport of trash would be predominant wind direction. Based on EPA information<sup>3</sup>, the three most predominant wind directions (with highest speeds) for the Baltimore area are WNW, W, and NW. All of these would indicate transport out of the Northwest and Middle Branches, into the main channel.

Therefore, MDE acknowledges that while under certain conditions trash can be transported upstream from the MPA to the impaired shoreline, this is not a predominant contribution for this TMDL.

14. The commentor states MDE failed to consider direct contributions of trash by people, and that the basis for this assumption is unclear and runs counter to the experience of City staff. The commentor continues that the extent to which litter is discharged directly into impaired waters should be reflected in the TMDL so that acknowledgement of necessary human behavior change is accurately represented. Finally, the commentor recommends that the TMDL should consider (and allow credit for) reduced loads resulting from changes in human behavior rather than focusing solely on collecting trash from the impaired waterways.

**Response:** The TMDL states MDE believes that the amount of trash discarded directly into water is most likely insignificant compared to the amount of trash discarded onto the land

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<sup>1</sup> 2006 Harbor report, 2011 ecocheck report, PATMH nutrients TMDL

<sup>2</sup> NOAA website link

<sup>3</sup> EPA windrose website link

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and then transported into the water by way of the MS4 system. However, this does not negate the fact that people are directly contributing to the trash load.

In Section 6.6 of the TMDL, it is clearly stated that nonstructural practices, including public education and outreach are acceptable ways to achieve the TMDL. Additionally, some of the structural best management practices (BMPs) (e.g. catch basin inserts) prevent trash from being transported to the waterway. Based on these statements, MDE does not believe that the TMDL focuses solely on collecting trash from the impaired waterways.

15. The commentor refers to MDE normalized point source trash data based on rainfall, stating the effect of data normalization creates inaccuracies since unlike pollutants such as phosphorus, nitrogen and total suspended solids; there is no correlation between total rainfall and pounds of trash generated.

**Response:** The purpose of the normalization by rainfall was to account for inter-annual rainfall variability. This does not imply that in a year with more rain that more trash will be generated, but that more trash will likely be transported to the water. As reported in the TMDL, the 30-year normal rainfall for the Baltimore area is 41.88 inches per year. In 2011, when sampling occurred, the rainfall total was over 50 inches. By using the rainfall normalization, this variability can be reduced.

16. The commentor states that the margin of safety (MOS) added to the TMDL calculation is unnecessarily conservative, setting jurisdictions up for failure.

**Response:** TMDLs are required to include a MOS to account for uncertainties in a manner that is conservative toward protecting the environment. There are no strict guidelines or methodologies provided by the USEPA for selecting a MOS, except to suggest that a MOS may be an explicit value held aside or conservative assumptions built into the analysis. The margin of safety proposed in this TMDL analysis is based on other TMDLs approved by USEPA and was adopted in consideration of built-in conservative assumptions of the analysis. The MOS for the TMDL was selected with the understanding that the analysis and the MOS may be revised in the future as better information comes available.

17. The commentor states requiring 100% removal of the baseline is neither legally necessary nor attainable.

**Response:** Section 303(d) of the Clean Water Act (CWA) requires TMDLs to be established for impaired or threatened waters at a level necessary to implement the applicable water quality standards. Federal regulations at 40 C.F.R. §130.7(c) track the statute and require TMDLs to be developed at levels necessary to attain and maintain the applicable narrative and numerical water quality standards. Neither the CWA nor the USEPA's implementing regulations require the state or the USEPA to consider the costs or the technology required to implement the TMDL when establishing the TMDL at a level necessary to implement the applicable water quality standards. In the best professional

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judgment of MDE, 100 percent removal of the baseline trash load is an appropriate TMDL endpoint that, when achieved, will result in compliance with water quality standards.

18. The commentor states that the TMDL is unclear on how compliance will be measured.

**Response:** The purpose of the TMDL is to determine the maximum amount of a pollutant that a waterbody can assimilate and still meet water quality standards. Neither the Clean Water Act (CWA) nor USEPA regulations require states to develop a detailed implementation plan as part of the TMDL development and approval process. Maryland's rationale for not including a detailed implementation plan within the TMDL documentation is to allow flexibility for those other government programs and stakeholders currently developing mechanisms to reduce trash/debris loads to the Middle Branch and Northwest Branch of the Baltimore Harbor. However, MDE will continue to work with municipalities and other stakeholders during the implementation of this TMDL to determine the terms of compliance.

19. The commentor states that MDE should allow for the use of a graduated implementation schedule and inclusion of a reconsideration and refinement provision. The commentor goes on to state the implementation period should be 10 years and provided that once a 50% trash reduction has been achieved from the rough baseline assigned in the TMDL, the results of a baseline monitoring program by the MS4 permittees could be incorporated into a refined WLA.

**Response:** Please see the response to Comment #18. In addition, Baltimore City and Baltimore County are required by their MS4 permits to perform many implementation related activities. Compliance and implementation requirements will be defined through the permitting process.

20. The commentor states that the draft does not contain "total maximum daily loads" as the Clean Water Act ("CWA") clearly requires, but instead employs "negative" allocations, rendering the TMDLs legally defective. The commentor goes on to cite portions of the CWA {33 USC 1313(d)(1)(C)} and CFR {40 CFR 130.2(f – i), 130.7(c)(1)}, concluding that they require the TMDL allocations to be set equal to the greatest amount of trash that can be discharged and still ensure compliance with water quality standards – i.e. zero.

**Response:** Federal regulations at 40 CFR 130.2(i) provide flexibility on how TMDLs can be expressed in terms of "either mass per time, toxicity, or other appropriate measures." In this case, expression of the WLAs and LAs in terms of trash to be removed is an appropriate measure.

21. The commentor states the final TMDLs must establish maximum loads, not amounts to be removed from the estimated baseline load, that this approach simply does not meet the plain-language requirement of the CWA and EPA's implementing regulations to identify the "greatest amount of loading" allowable while still protecting water quality and is unlikely to pass legal muster. The commentor continues by citing *Friends of Earth, Inc. v. EPA*, 446

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F.3d 140, 144 (D.C. Cir. 2006), the Merriam Webster definition of maximum, and EPA's definition of load as "[a]n amount of matter or thermal energy that is introduced into a receiving water." 40 CFR 130.2(e)

**Response:** See Response # 20.

22. The commentor states that the final TMDLs must set maximum loads at zero because MDE has no way of showing that any amount of trash can be discharged into the impacted waterways while still ensuring compliance with water quality standards. MDE has not performed a "loading capacity" or "assimilative capacity" analysis, and without such an analysis, allowing any loads to be higher than zero is arbitrary and capricious. The commentor then cites *City of Arcadia v. State Water Res. Control Bd.*, 135 Cal. App. 4th 1392, 1412-13, 38 Cal. Rptr. 3d, 373, 386 (2006), which supports this statement and also supports a trash load of zero. The commentor goes on to offer examples of how any trash could be considered unsightly and not support recreational uses or aquatic life. Additionally, the commentor again cites *City of Arcadia v. State Water Res. Control Bd.* position that since littering is unlawful, a zero load is the only defensible position.

**Response:** Section 303(d) of the Clean Water Act requires TMDLs to be established for impaired or threatened waters at a level necessary to implement the applicable water quality standards. USEPA regulations at 40 C.F.R. §130.7(c) require TMDLs to be developed at levels necessary to attain and maintain the applicable narrative and numerical water quality standards. Currently in Maryland, there are no water quality standards that are an absolute zero, and no TMDLs have been developed in Maryland with zero load allocations, even extremely toxic substances have acceptable discharge limits. MDE's interpretation of Maryland's narrative water quality criteria related to trash and debris is represented in the TMDL. As indicated, the endpoint for this TMDL is equal to 100 percent removal of the calculated baseline trash load. It is the best professional judgment of the Maryland Department of Environment (MDE) that this TMDL endpoint will result in compliance with the narrative water quality criteria for trash, which describe unacceptable trash levels in subjective terms such as *objectionable*, *nuisance*, and *unsightly*.

In regards to the necessity of a "loading capacity" or "assimilative capacity" analysis, neither is required by the CWA or USEPA regulations. Additionally, in reference to your citation of *City of Arcadia v. State Water Res. Control Bd.*, this case confirms that this type of study is not necessary and that due to the nature of trash, such a study would be difficult to conduct and likely be of little value.

23. The commentor states that the inverse-TMDL approach also creates a technical defect by linking wasteload allocations to "baseline" data that is highly limited, unpredictable, and unreliable. The commentor gives several examples as to why the data is flawed, including: establishment of the load allocation using only Baltimore County data, errors in Baltimore City data of failed sampling devices and high leaf loading, too few sample points in Baltimore City to capture the variability of the acreage, Baltimore City data coverage of only six months of data, bias in selection of Baltimore City sampling sites for ease of

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accessibility, non-representative land use sampling in Baltimore County, Baltimore County sampling of stormwater management facilities and not direct outfalls, and elimination of Baltimore County site SWM #270. The commentor offers the opinion that these perceived flaws result in an under-estimation of actual loads.

**Response:** It is the requirement of the CWA and USEPA regulations that TMDL development use the best readily available data. Additionally, *City of Arcadia v. State Water Res. Control Bd.*, gives the statement of Dave Smith, an EPA Region 9 team leader, that “states are required to move forward to make TMDL decisions based on available information and data, not to wait again and again for better information to come forward.” MDE strongly believes that these requirements were met in the preparation of this TMDL.

Additionally, MDE is fully aware of the high variability in trash sampling data. It is for these reasons that we have included the following conservative measures in the TMDL methodology:

- Including upstream loads from Jones and Gwynns Galls watersheds, not just loads from Baltimore Harbor watershed
- Using the average versus the median for the loading rate analysis
- Applying the nonpoint source loading rate (LA) to all acres in the three watersheds, not only to developed land.
- Additional explicit margin of safety of 5%.

In regards to the use of Baltimore County data being used for the Baltimore City load allocation, please see Response # 10. (MDE received one spreadsheet from Baltimore City with skimmer data. It included no information on the location of this data or the composition of the “trash” that was collected. MDE was not able to receive clarification on this data from Baltimore City. Therefore, MDE determined that this data was not compatible with the data that had been collected specifically for the TMDL nor with the TMDL methodology. For these reasons, MDE chose to apply the nonpoint source loading rate from Baltimore County to the Baltimore City acreage. While this is not ideal, it is certainly allowable by EPA guidance on TMDL data requirements. Similar substitutions were used in the Anacostia Trash TMDL, which was approved by the USEPA.)

In regards to errors in the Baltimore City sampling data, MDE acknowledges that several of the sampling events included comments indicating damage to the sampling device. The comments range from “damaged post/slight damage” to “major damage/bag broken.” Based on the information provided, MDE can’t make a determination if the various levels of damage had any impact on the amount of trash collected. However, some of the sampling events with damage comments had very high loading rates, compared to other events at the same site. This would indicate that inclusion of this data was not lowering the loading rate. For these reasons, MDE believes the impact of these noted events was minimal and decided to include the data. In response to these comments, and to corroborate this latter statement, MDE did a brief analysis of the data without the impacted samples and the loading rates were found to be less than that those calculated using the damaged samples. Again, this is an indication that the noted damage was not causing lower trash loading rates.

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In regards to the comment within the sampling data of high leaf loading, this would not affect the loading rate as all organic debris was removed from the sample before weighing the trash.

In regards to the number of sampling points in Baltimore City, MDE agrees that more sample points would be desirable, but believes that even with the limited number of samples, Baltimore City captured a variety of loading rates. Two loading rates were very low, two rates were very high, and one was in the middle. The range of the loads was 0.46 to 16.83 lb/ac/yr. The average loading rate calculated for Baltimore City, 7.88 tons/ac/yr, captures the variability in the rates. Additionally, MDE believes the loading rate is acceptable for Baltimore City, because while it is not exactly the same as the rates in Baltimore County (0.02 – 7.91 lb/ac/yr) or in the Anacostia Trash TMDL (0.32 – 19.26 lb/ac/yr), it is reasonably similar.

In regards to Baltimore City data coverage of only six months of data, three of the sites had 10 months of data (1/1/11 – 10/28/11), one site had seven months (3/9/11 – 10/4/11), and one site had six months of data (3/9/11 – 8/26/11). MDE is uncertain as to the reason for the discrepancy between the sampling periods, but views this as a majority of the sites having adequate seasonality capture.

In regards to bias in selection of Baltimore City sampling sites for ease of accessibility, MDE has no proof that the sites were targeted with bias for lower loading, as the commentor states. It is unreasonable to expect that monitoring can be conducted at every stormwater outfall or even the majority of outfalls. For this reason monitoring was conducted at a representative set of outfalls. While there is certainly variability between loading rates at individual outfalls, time and funding limit the extent of the monitoring plan. MDE reiterates that the five sample sites adequately represent the different landuses in the City with a variety of loading rates which adequately capture the variability of Baltimore City trash loading rates. MDE has determined that this monitoring data constitutes the best available Baltimore City data for the TMDL.

In regards to non-representative land use sampling in Baltimore County, extensive criteria was used for site selections including: selection of a site within each subwatershed of Jones Falls and Gwynns Falls, monitoring access and safety, type of stormwater management facility (SWMF) and ownership by the County, and representation of land use type. Unfortunately, the distribution of land use type sampled did not match the land use distribution for the watershed. Given the numerous constraints they had to work with, MDE believes that Baltimore County selected sites to the best of their ability.

In regards to Baltimore County sampling of SWMFs and not direct outfalls and the possibility that this excludes older MS4 jurisdictions with possibly higher loadings, MDE has no information that would support this assertion. In order to evaluate whether or not trash loading rates are higher at direct MS4 outfalls compared to outfalls that drained to SWMF, a thorough analysis would need to be completed comparing the two.

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In regards to elimination of Baltimore County site SWMF #270, this elimination was requested by Baltimore County and MDE agreed it was an outlier, as its loading rate was approximately four times that of the other high density residential sites. Additionally, if the loading rate calculation included this site, the Baltimore County baseline load would increase by approximately 10%. Given the conservative assumptions within the TMDL and the additional 5% explicit margin of safety (MOS), MDE believes that it is appropriate to eliminate this site.

24. The commentor states that the inverse-TMDL approach that the Maryland Department of the Environment (“MDE”) has taken does not ensure that trash discharges after implementation of the TMDLs will be at or near zero, as required by Maryland’s water quality standards. The TMDL also does not contain a mechanism for revisiting the baseline load, should future information become available, in particular projected population growth in both Baltimore City and County. The commentor again recommends a zero load allocation, which would not be affected by future changes.

**Response:** See Responses 20 and 22 regarding requirements for TMDLs.

In Maryland’s MOU with USEPA, there is a provision which describes when a re-evaluation of previously developed TMDLs would occur. Subject to available funding, factors prioritizing a reevaluation of previously developed TMDL include: the age of the TMDL, the promulgation of new requirements for TMDL development, changes in water quality standards, revisions of related modeling efforts, completion of major implementation and significant changes to point sources including but not limited to point source and nonpoint source trading. This trash TMDL would be subject to this same scrutiny as other TMDLs.

Additionally, due to the unique challenges of addressing trash as a water quality impairing pollutant, MDE will make it a priority to revisit the TMDL allocation values to ensure the allocations are based on accurate, representative and up-to-date data. Because the implementation of the TMDL is strongly linked to the MS4 permit requirements, the TMDL will be reevaluated in coordination with the MS4 renewal process.

Criteria to be considered for reevaluating the TMDL allocations will include:

- Evaluation of all new data presented by Baltimore City, Baltimore County, and other third parties over the five-year permit cycle;
- Public participation in the reevaluation process.

MDE has added clarifying language to the TMDL regarding this topic.

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25. The commentor states that because the TMDL allocations are expressed as removal of baseline load, the TMDLs actually provide a disincentive for addressing the upland sources of trash in the Northwest and Middle Branches, and therefore do not actually address the impairment of these waterways. The commentor goes on to state their interpretation of the TMDL to require collection of the trash at the end-of-pipe of the MS4. The commentor further states that the TMDL disincentivizes trash from getting into the stormwater system, encourages the continued presence of trash in order to be able to collect the allocated load, and will never address the impairment by not requiring the elimination of the upland sources of trash.

**Response:** MDE is uncertain as to the source of this and other commentors' interpretation that the TMDL discourages upland trash removal or that the trash must be collected only from the discharge of the stormwater system. The TMDL clearly states that the allocation is expressed "in terms of quantities of trash that must be removed or *prevented from entering* the waterbody." (emphasis added) As with many TMDLs, the spatial extent of this TMDL includes the upland areas draining to the impairment. Therefore, trash collected or reduced from anywhere in this system will be considered progress towards meeting the TMDL.

Additionally, due to the concerns of the commentor, MDE has added clarifying language to the TMDL to reinforce that collection of the baseline load, as required by the negative TMDL allocation, can be done from any point within the spatial extent of the TMDL.

26. The commentor states that because the TMDL allocations are expressed as pounds of trash to be removed or captured, it incentivizes removal of heavier trash over light, small trash (like plastics) that are ubiquitous and unsightly, and toxic to aquatic life.

**Response:** The TMDL presents load allocations (LA) and waste load allocations (WLA), and defines the allocations based on trash size. Therefore, extremely heavy items could not be used to account for removal of the WLA. Additionally, MDE will also need to approve the implementation plans that will be generated by the municipalities and would not support a plan that did not have adequate provisions for collection of all types of trash.

27. The commentor states that the TMDL applies to the shoreline, not the waterways as is required under the CWA and the impairment listing. The commentor also states that the TMDL methodology is not consistent with the 303 (d) listing and requests that MDE remove the references to the "shoreline" from the TMDL.

**Response:** Interpretation of the CWA's "navigable waters" is an often debated topic. In Maryland, we believe it is applicable to our Waters of the State which include the flood plain, which would include the shoreline.

According to COMAR 26.08.01.01.103:

(103) "Waters of this State" includes:

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(a) Both surface and underground waters within the boundaries of this State subject to its jurisdiction, including that part of the Atlantic Ocean within the boundaries of this State, the Chesapeake Bay and its tributaries, and all ponds, lake, rivers, streams, tidal and nontidal wetlands, public ditches, tax ditches, and public drainage systems within this State, other those designed and used to collect, convey, or dispose of sanitary sewage;

(b) The flood plain of free-flowing waters determined by the Department of Natural Resources on the basis of the 100-year flood frequency.

In regards to the comment that the TMDL is not in agreement with the Integrated Report, this is not correct. While it may not be explicitly stated in the 2010 Integrated Report, for clarification, the areas listed as impaired by trash are the littoral zones of the Middle Branch and Northwest Harbor described in the listing notes. The listing is limited to these nearshore waters because of the original data submitted in 2008, a shoreline survey that described trash density covered only these shoreline areas.

Additionally, MDE believes the TMDL for the shoreline to be acceptable because the 303(d) listing was approved by USEPA.

28. The commentor states that failures with the implementation of the Anacostia River Trash TMDLs support a zero load allocation in the Baltimore Harbor Trash TMDL because they use the same methodology. The commentor also cites comments by various entities submitted during the Anacostia TMDL public comment period that were similar/supporting to all the comments they are submitting.

**Response:** MDE is uncertain as to what constitutes “the failures with the implementation of the Anacostia River Trash TMDLs.” The TMDL was approved in 2010, with the requirement of preparing an implementation plan to address the TMDL within one year. Since then, several positive actions have taken place, including preparation of the implementation plan, installation of several structural BMPs, and passing of legislation (i.e. bag bills) that reduce trash. MDE in no way sees this as a failure or a reason to support a zero allocation TMDL.

29. The commentor states that the above deficiencies can be resolved very simply in the final TMDL document by establishing the TMDLs allocations at zero. The commentor also requests that the waste load and load allocations be expanded to include volume and visible presence.

**Response:** See Response # 22.

Regarding the inclusion of volume or visible presences measures, MDE believes that weight is a more applicable unit of measure than volume because the disposal of trash is often based on weight (e.g. tipping fees). MDE would recommend that a visible presence

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measurement would be better addressed as part of the implementation plan and not the TMDL.

30. The commentor states that their organization is interested in the Baltimore Harbor Trash TMDL because there are many similarities in the challenges faced by the Anacostia River and the Baltimore Harbor waterways. The commentor continues that many comments provided by BWB for this TMDL mirror comments submitted by Anacostia Watershed Society (AWS) and colleagues for the Anacostia Trash TMDL in 2010. These comments were not incorporated into the Anacostia River TMDL and the commentor states they are seeing some impacts from that decision. The commentor specifically references Natural Resources Defense Council (NRDC) comments on the Anacostia River TMDL that the TMDL be set at or near zero.

**Response:** MDE appreciates your interest in this TMDL and acknowledges the similarity between comments received for the Anacostia Trash TMDL and those for this TMDL. Responses to all Anacostia TMDL comments were answered and published in its respective comment response document (CRD). In regards to the NRDC comment of setting the TMDL at or near zero, the following response was given, which MDE still supports:

*“... While an endpoint of zero would meet these narrative criteria, this does not mean that any endpoint other than zero would not achieve the narrative criteria. Indeed, the more logical reading of these terms is that they do not require an endpoint of zero. As explained in Response #2, there are no water quality criteria in the District or Maryland that require the complete elimination of a given pollutant. Even extremely toxic substances have acceptable discharge limits....”*

31. The commentor states that they understand and appreciate that the intent driving the development of the Anacostia Trash TMDL was to get a number on the record and move forward with clean-up, and also the difficulty in developing a TMDL for a new and unique pollutant such as trash. The commentor acknowledges that the TMDL has even been a catalyst for positive trash reduction actions. However, the commentor recommends that we move beyond stopgap solutions and create a TMDL that is easier to monitor and incentivizes upland best management practices.

**Response:** MDE disagrees with the commentor’s assessment that the Anacostia Trash TMDL was written as a stopgap, but appreciates the acknowledgement of the difficulty in developing a Trash TMDL. Though it is outside the scope of the Baltimore Harbor Trash TMDL, MDE would like to point out the extensive effort that was put into developing the Anacostia TMDL, including the input of multiple stakeholders groups, over a year of sampling studies in three jurisdictions, analysis of data by University of Maryland, and extensive involvement of MDE, District Department of Environment, and USEPA. In regards to creating a TMDL that is easier to monitor, MDE believes that this should be a part of the implementation planning and not the TMDL. In regards to incentivizing upland BMPs, the TMDL clearly states that the TMDLs are expressed in the negative, or “in terms of quantities of trash that must be removed or *prevented from entering* the waterbody.”

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32. The commentor states that after two years of a trash TMDL for the Anacostia River watershed, there is still no evidence of improvement. The commentor goes on to detail the difficulty in collecting data for TMDL compliance, including that of citizen clean-ups and reductions due to bag legislation. The commentor recommends that if the target were instead a zero load, visual monitoring of representative sites would provide more rapid feedback on the success of implementation. The type of monitoring would be similar to monitoring of other water quality criteria.

**Response:** See Response # 28. Also, several positive steps that have been taken since the approval of the TMDL are listed, by the commentor, in Comment #34.

33. The commentor states that a load-based standard would also incentivize source reduction policies and other BMPs that prevent trash from entering the system in the first place. The commentor states that jurisdictions that focus on removing the baseline load will always bear that expense, as the amount of trash generated will not decrease on its own. In fact, the generation of trash continues to increase and the increase combined with population growth means the amount of litter and trash in our waterways will only continue to grow unless jurisdictions act to reduce usage and littering behavior.

**Response:** See Response #25.

34. The commentor states the District of Columbia's bag fee has proven to effectively change behavior and reports that 75% of District residents have reduced their use of disposable bags and retailers have reported approximately 50% reduction in bags distributed. The commentor states that the effects of the bag fee are also evident in volunteer stream clean-ups, which collect fewer bags. Also, Montgomery County has enacted a similar program however, not enough data has been collected yet to make a determination on effectiveness.

**Response:** MDE appreciates this information and considers this a positive step in the implementation of the TMDL.

35. The commentor suggests other BMPs that have been proven to change behavior and reduce litter are bans on food service polystyrene and deposits on plastic, glass and aluminum beverage containers, though neither of these policies currently exist in DC or Maryland. A container deposit would need to be implemented at the State level. Source reduction policies are significantly more economically efficient in the long run than structural BMPs and removal activities. The commentor continues that whether the standard is changed from removal to zero load or not these upland practices should be prioritized and highlighted for their efficiency benefits in Section 6.6, General Summary of Potential BMPs the Could be Used to Achieve the TMDL.

**Response:** While MDE agrees with you that these BMPs could have a positive impact on litter reduction, it is beyond the scope of the TMDL to recommend specific implementation

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methods. MDE believes it has provided an inclusive list of many types of BMPs which can be used to reduce trash, including the types of legislation described in the comment. It is up to the municipality, as part of their implementation plan, to determine which practices work most efficiently for them.

36. The commentor requests that the TMDL document include strong language toward a reassessment of the standard, the baseline and the methodology in 5 to 8 years. Because of the unusual nature of trash TMDL and the as-yet lack of evidence of effectiveness in the Anacostia and Los Angeles River TMDLs, the commentor encourages the agency to review the monitoring data and revise the document should stronger action be warranted in the future. The commentor would also encourage the same reassessment of the Anacostia River trash TMDL, to afford Maryland the opportunity for the most effective measures possible leading to trash-free urban waters.

**Response:** See Response # 24.

37. The commentor believe that, if issued as written, the proposed Baltimore Harbor Trash TMDL or ‘Clean Up Plan’ will fail to adequately reduce the severe trash pollution that continues to degrade Baltimore’s local streams and Harbor. The commentor asks the MDE, as the agency representing our health and our environment, strengthen the Trash Clean Up Plan so that it will ensure cleaner water and a trash-free environment.

**Response:** Using the term ‘Clean Up Plan’ is a misnomer for the TMDL as TMDLs set the reduction target to meet water quality standards and are not required to have implementation plans as part of the TMDL Development Process. TMDLs are required to provide assurance of implementation and identify mechanisms that would lead to implementation plans. Please also see the response to Comment #18 related to TMDL implementation plans.

38. The commentor cites Travel and Leisure magazine’s ranking of Baltimore as the third dirtiest city in the United States, largely due to the trash strewn throughout our streets and neighborhoods, and filling our Harbor and streams. This issue not only impacts the environment, but also the economy of Baltimore, and the quality of life and health of its citizens. If Baltimore has any chance for addressing this urgent issue in a real way, MDE must revise the Draft Trash Cleanup Plan to more accurately reflect the current state of trash pollution in Baltimore and to incentivize the elimination of all types of trash.

**Response:** While MDE appreciates the influence of popular media publications, the TMDL process generally considers only peer-reviewed scientific publications. Additionally, MDE would like to point out that the #1 dirtiest city from the referenced article was New York City, which is continually ranked as a top tourist destination.

That said, MDE certainly understands and agrees with you on the negative impacts of trash on the environment, as evidenced by development of this TMDL. Though the TMDL may have additional side benefits of improving land based pollution, quality of life and economic viability, it can only be written to address the aquatic impairment. It is the best professional

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judgment of MDE that the TMDL allocation, removal of 100% of the baseline trash load, will attain water quality standards in the impaired area.

39. Specifically, the commentor asks MDE to revise the Trash Cleanup Plan to include a more realistic estimate of the current amount of trash affecting Baltimore's streams and Harbor. If it is unknown as to how much trash pollution that is currently being dealt with, it will be unknown how much trash needs to be reduced to lead to the healthy waterways and livable communities is deserved by the community.

**Response:** See Responses 10 and 23.

40. The commentor continues that the Trash Cleanup Plan must require the Baltimore City and Baltimore County remove trash based not only by its weight, but also by its visibility along the shoreline. If MDE only incentivizes these jurisdictions to address the heaviest trash (i.e. cars, refrigerators, etc.), it will be completely missing some of the most chronic and destructive types of trash affecting Baltimore: the plastic bags and bottles that are seen on Baltimore's streets, stormdrains and floating in the waterways.

**Response:** See Responses 22 and 25.

41. The commentor states this Trash Cleanup Plan is one of the few regulatory opportunities that the commentor has to address the immense trash problem in Baltimore. The commentor asks the MDE take this rare opportunity to do it right the first time, and to ensure that the removal of trash on paper actually represents the removal of trash on the ground and in the water.

**Response:** MDE has developed this TMDL consistent with all State and federal regulations and following all corresponding guidelines, therefore the TMDL is appropriate and it will ensure that water quality in the impaired areas will be met. The Department values public input into the decision making process and therefore, offers a number of opportunities to provide comments on actions the Department proposes including development of water quality standards, identification of impaired waters, TMDL development, permit issuances (including wastewater treatment facilities and storm sewer systems). The new MS4 permit issued to the applicable jurisdictions has a requirement to develop implementation plans for TMDLs developed within the jurisdiction's watershed. In the development of these implementation plans, there is also a requirement for public participation. MDE suggests the commentor participate in that process as the implementation plans are developed for this impairment.