

**Comment Response Document
Regarding the Total Maximum Daily Loads of Fecal Bacteria for the Double Pipe Creek Basin in
Carroll and Frederick Counties, MD**

The Maryland Department of the Environment (MDE) has conducted a public review of the proposed Total Maximum Daily Loads (TMDLs) of Fecal Bacteria for the Double Pipe Creek Basin. The public comment period was open from July 2, 2007 through July 31, 2007. MDE received two sets of written comments.

Below is a list of commentors, their affiliation, the date comments were submitted, and the numbered references to the comments submitted. In the pages that follow, comments are summarized and listed with MDE’s response.

List of Commentors

Author	Affiliation	Date	Comment Number
Sher Horosko	Carroll County Environmental Advisory Council	July 21, 2007	1 through 7
Shannon Moore	Frederick County Division of Public Works – Watershed Management Section	July 31, 2007	8 through 12

Comments and Responses

1. The commentor asks: What impact does such a high fecal count in the water have on the water itself, the plant and aquatic life, the microorganisms? In other words, apart from the fact that the watershed is not meeting the standards set in the Clean Water Act, why should people care about this?

Response: The overriding concern with fecal bacteria impairments in streams and rivers is the risk posed to public health. High levels of bacteria can cause illness in humans and make the water unfit for swimming and other recreational activities. They can also increase the burden on drinking water treatment facilities. Additionally, pet and animal waste contribute to nutrient over-enrichment that can result in oxygen depletion, which can in turn have adverse effects on aquatic plants, fish and microorganisms.

2. The commentor asks further: “What is the allowable standard? What is the watershed's average daily load of fecal bacteria? If you were to give a non-numerical example of how bad the situation is, what would you say?”

Response: The State standard used in the study is based on protection of the designated uses of Water Contact Recreation and Protection of Aquatic Life and translates to a criterion that is a concentration limit: 126 Most Probable Number (MPN) of the indicator organism (*E. coli*) per 100 milliliters of water. Concentration x Flow = Load, and since both bacteria concentrations and flows are in constant flux, much computation is involved in determining overall long-term average concentrations and loads, based on monitoring data. As shown in

the report, the baseline loads ("current" loads during the study period) frequently range from 10 to 100 times beyond allowable loads based on the criterion concentration. In other words, the long-term average concentrations of *E. coli* in the various subwatersheds of Double Pipe Creek indicate the presence of very high levels of fecal bacteria throughout the watershed. The impairment may be characterized as severe, and will require large reductions in fecal bacteria loads in order to achieve water quality standards, i.e., restore water quality in Double Pipe Creek and its tributaries so that the water will be clean and safe for all to use.

3. The commentor states that it appears that a significant cause of the high fecal bacteria count comes from both domestic and farm animals. The commentor asks how the fecal matter of domestic animals in people's yards or on green areas near sidewalks makes its way into the watershed. The commentor asks the same question for farm animals.

Response: For an overview, see the November 2006 MDE article on the sources of fecal bacteria pollution and ways to address this problem in both urban and rural areas:
<http://www.mde.state.md.us/ResearchCenter/Publications/General/eMDE/vol2no7/fecalpollution.asp>

The fecal matter gets into the water in various ways depending on the watershed and land use. In an urban area pet waste left on or near sidewalks can be washed by rain into storm drains, through stormwater sewers, and into the waterbody. In some urban areas near streams (parks and/or trails) where people walk their dogs, waste can be either directly deposited into the stream or washed into it. In agricultural areas, animal waste can be directly deposited into the stream when animals drink or try to cool off during the summer. It can also be washed into the stream during rain events.

4. The commentor asks: What are other communities doing to address the problem posed by fecal material from domestic animals? Are there any examples of good policy you could direct me toward?

Response: Most communities have policies to address pet waste. County health departments may be contacted for information on available public education and awareness resources, like posting signs and providing bags and receptacles in parks for removing pet waste. Community and homeowners associations often initiate such campaigns in their neighborhoods or areas.

5. The commentor asks: Same question for farm animals...

Response: The Maryland Department of Agriculture has various programs and best management practices (BMPs), like: animal crossings, fencing, preventing direct contact with streams, providing alternative watering and shade areas, etc. The following links will indicate some programs that qualify for State funding, like manure transportation to alternative use facilities, feeding area runoff catchments and filtering mechanisms. Also, contact the Carroll County Soil Conservation District office for more information (410-848-8200 ext.3).

MACS Program: http://www.mda.state.md.us/pdf/MDA_MACS_bro_proof4.pdf

LILAC: http://www.mda.state.md.us/pdf/2005_lilac.pdf

6. The commentor inquires: What methods should waste water treatment plants take to reduce the release of fecal coliform? Or can they continue to do so provided they are within state limits?

Response: The waste treatment plants are designed to reduce the presence of bacteria in waste water before it is discharged to a stream or river through established disinfection technology. They operate within the limits set by their State permits which are written based on meeting water quality standards, i.e. on allowable concentrations relative to their maximum design flows. The bacteria loads from WWTPs are consequently well below allowable loads and therefore are not assigned reductions in the TMDL

7. The commentor asks: How do communities like ours deal with failing septic systems? How do we identify them? Are there financial incentives to homeowners to replace them?

Response: Contact the local county health department for information on addressing the problem of failing septic systems. County health departments often provide dye testing for the identification of such failing systems. Funding for upgrading or replacing septic systems may be available at the county level. The State's Bay Restoration Fund program for septic systems is primarily targeted on the Critical Areas in close proximity to the Chesapeake Bay, but may be able to provide some direction and information regarding incentives, etc. See: <http://www.mde.state.md.us/Water/CBWRF/index.asp>

8. The commentor asks if the stormwater WLA (p. 46) accounts for the amount of urban land use in each subwatershed by County, or, if not, that MDE consider allocating the load by the proportion of urban land use in each watershed by county, as it is the urban land uses that are regulated by the NPDES permit and therefore the WLA.

Response: The stormwater WLA and other allocation categories are not estimated based on land use. MDE uses a method known as bacteria source tracking (BST) to identify the relative contribution of bacteria to the waterbody. Sources are defined as domestic pets, human, livestock, and wildlife. As explained in Section 4.8 of the TMDL report, livestock loads are all assigned to the LA (nonpoint sources). Domestic animal (pets) loads are assigned to the LA in watersheds with no MS4s or other NPDES-regulated stormwater systems. Since the entire Double Pipe Creek watershed is covered by NPDES MS4 permits, bacteria loads from domestic animal sources are assigned to the stormwater WLA, and wildlife sources are distributed between the LA and the stormwater WLA. Finally, in watersheds located in more than one jurisdiction with stormwater permits, the stormwater WLA is distributed based on the percentage of the watershed area in each county. Based on EPA's guidance, the stormwater WLA is presented as one combined load for the entire land area of each county in each subwatershed.

9. The commentor asks if MDE, since it is proposing a TMDL that it states can not be met, is proposing to spearhead the effort to develop a Maximum Practicable Reduction? Will this be

part of a Use Attainability Analysis? What level of effort is MDE expecting from Frederick County Government to establish the MPR?

Response: The reductions in fecal bacteria loads necessary to meet water quality standards in the Double Pipe Creek watershed can not be achieved by implementing effluent limitations and cost-effective, reasonable BMPs to nonpoint sources. Therefore, MDE proposes a staged approach to implementation, beginning with the maximum practicable reduction scenario outlined in the TMDL report, with regularly scheduled follow-up monitoring to assess the effectiveness of the implementation plan. Thus, the MPRs do not initiate a Use Attainability Analysis, but rather the first stage of an extensive implementation process.

MDE's TMDL Implementation Guidance document (2006) envisions TMDL implementation as a partnership between State and local governments. The Guidance encourages local jurisdictions to take the lead on TMDL implementation, in partnership with the State, to promote local control of the process. This is intended to help ensure that policy decisions are informed and relevant programs are managed in a way that complements other local priorities. To this end, the Guidance also encourages local governments to begin taking steps to acquire the technical and financial capacity to be able to have a meaningful role in TMDL implementation.

It would be in Frederick County's interest to work towards developing a record of the pollutant reduction actions taken to address this TMDL. This record, in conjunction with State water quality monitoring, will be valuable in the event a use attainability analysis is warranted in the future.

10. The commentor states that, given the way the TMDL is written, "it is difficult for us to ascertain our responsibility and monitor the success of Best Management Practices at meeting the WLA." The county is concerned with the legal implications of the TMDL, especially the potential for third party lawsuits.

Response: MDE advises that the counties in the watershed continue building on existing water quality management programs and any existing restoration and/or remediation efforts in the watershed to address the TMDL. Any such programs and activities should be explicitly tracked and recorded for potential credit towards achieving TMDL implementation goals. Many of the nonpoint source management activities associated with the Chesapeake Bay Tributary Strategies also help control bacteria. To that end, the State is presently recommending that Frederick County work on the Tributary Strategy basin implementation plans associated with the region. In the next several years, MDE will work with local jurisdictions to develop a framework for implementing the TMDLs at a more refined geographic scale. To the degree that the County is aware of failing septic systems and sewer collection infrastructure, it is encouraged to begin addressing those problems if it is not doing so already. MDE has grant and loan programs that can assist with those remedial actions.

11. The commentor asks whether MDE has any idea of the cause of such extremely high loads attributed to the MS4 WLAs, since there are only 39,191 people in the watershed as a whole. Are pets and septic systems from this number of people able to produce this size of a load?

Response: Results of the bacteria source tracking (BST) analysis indicates there are significant loads of fecal bacteria from human and domestic pet sources in the watershed. The most likely causes of the human source are failing septic systems and their associated drain fields, and/or leaking infrastructure (i.e., sewer systems). It must be concluded that conditions are such in the Double Pipe Creek watershed that a high percentage of these nonpoint sources of fecal bacteria is finding its way into the streams and creeks through runoff from the land surface and transport via stormwater sewer systems.

12. The commentor asks what Best Management Practices are acceptable to MDE for fecal coliform reduction from urban sources? Is there a list?

Response: For an overview, see the November 2006 MDE article on the sources of fecal bacteria pollution and ways to address this problem in both urban and rural areas: <http://www.mde.state.md.us/ResearchCenter/Publications/General/eMDE/vol2no7/fecalpollution.asp>. Also, MDE suggests the following outline of actions:

- Focus First on Human Sources
 - Extract & Assess Information from TMDL Document
 - Conduct Source Assessments
 - Illicit connections
 - Homeless populations
 - Popular outdoor areas without facilities
 - Failing Septic Systems
 - Failing Sewage Collection Networks
 - Raise Public Awareness
 - Cite human waste findings of BST in the TMDL
 - Conduct Questionnaire Surveys
 - Solicit Revenues
 - Go on record with financial requests
- Identify Hot Spots (even non-human)
 - Focus on TMDL Monitoring Site Locations
 - Conduct Intensive Source Assessment(s)
 - Interview People with Local Knowledge
 - Perform Wet vs. Dry Diagnosis
 - Use BST information for Diagnosis
 - Conduct Awareness Campaign(s)
 - General Public
 - Trash collectors & sanitarians responsible for rat control
- Seek State follow-up monitoring support

MDE would be happy to continue discussing this topic with County staff.