MDE Bacteria TMDL Workshop - Response to Comments/Questions

Workshop Date: May 16, 2024

1. **How can a County best identify which beaches are public use? While there are designated bathing areas, there are also some that are used recreationally that are not designated as bathing beaches. What is the distinction between a designated bathing beach and one which isn't designated? Does MDE have guidance on how to determine what beaches should qualify as designated bathing beaches?**
    a. MDE does not have specific guidance on beach designation, however one suggestion is to evaluate beaches and define them based on areas where ingestion is likely (such as areas where submerged recreation is common). Likewise, if it is anticipated that the public will not be entering the water, that location would not qualify as a "beach". Counties should utilize their best judgment in determining how many people using the beach qualifies it as a public use area or non-designated bathing area.
    b. Streams with adjacent "easily" accessible public lands should be examined as exposure vectors, since there is higher likelihood citizens are using that area for water contact recreation. For example, where a parking lot is next to a stream (e.g. Meadowood Regional Park), the ease of access can contribute to use.
    c. County Health Departments are integral to the Beaches Program with regard to designating beaches. Jurisdictions should collaborate with County Health Departments when deciding on how to prioritize public beaches. COMAR 26.08.09.07 states:
        i. *The approving authority shall maintain a list of all beaches. The monitoring priority for each area shall be based on frequency and nature of use, proximity of pollution sources, and effects of storm events on the waters. The approving authority shall identify each beach as Tier 1 (High Priority), Tier 2 (Medium Priority), or Tier 3 (Low Priority) and provide appropriate public notification.*
    d. Chapter 2 of the *Guidance for County Recreational Water Quality Monitoring and Notification Programs* discusses how local health departments can identify and prioritize beaches. The document is on the Beaches website: https://mde.maryland.gov/programs/water/Beaches/Documents/MDBEACHrev2023.pdf

2. **Number of users plays a role in determining if a beach becomes a designated bathing area. For small and informal beaches that aren't designated yet, jurisdictions have an interest in how to move forward with identifying these beaches where possible. Is there any guidance on the number of users that qualifies a beach for public use, or is that up to the jurisdiction completely?**
    a. There is no number of swimmers required in COMAR 26.08.09. However, in the U.S. Environmental Protection Agency (USEPA) studies that the criteria and Beach Action Values (BAVs) are based on, there were hundreds to thousands of swimmers immersed at the beaches.

3. **What is MDE's priority between TMDL watersheds and recreational/shellfish areas for monitoring or implementation?**
    a. The priority for implementation and monitoring remains TMDL watersheds. MDE encourages prioritizing areas **within TMDL watersheds** where the public would come into contact with the water.
    b. For implementation, recreation and shellfish areas of equal priority. For monitoring, since MDE already monitors all shellfish harvesting areas, recreational areas would be of greater priority. This is reflected in the MS4 monitoring requirements, which state that jurisdictions are not required to do monitoring in shellfish TMDL watersheds. While not required, MDE highly encourages jurisdictions to perform their own monitoring in shellfish TMDL watersheds, in particular in the non-tidal portions, for the purposes of source identification.

4. **When working on TMDLs, we have found that desktop source assessments help to identify potential sources, but the desktop assessment doesn't always identify hotspots. Often, there isn't a lot of monitoring available for these watersheds. Would an appropriate approach in this scenario be to monitor bacteria sources before beginning to develop mitigation strategies?**
    a. MDE agrees that this is the appropriate approach. It is acceptable for an implementation plan to focus on monitoring rather than remediation for watersheds which lack detailed monitoring to identify sources.

5. **In some jurisdictions, the wastewater authority is separate, and it can be more difficult to manage implementation planning across agencies. How do you work through the remediation process in cases where it requires collaboration between multiple agencies?**
    a. While actual remedial activities and actions for fecal bacteria may be outside of the direct authority of the local jurisdictions' MS4/TMDL programs, the reductions are still ultimately the responsibility of the local jurisdiction per the TMDLs. Developing and maintaining partnerships with the local Department of Public Works (DPW), Health Departments, and other entities that may have the authority to remediate will be key to eliminating and reducing sources of fecal bacteria.

6. **Jurisdictions have increasing concerns about water contact recreation with regards to skin rashes and other impacts from bacteria impairment. In order to mitigate these impacts, it may require significant monetary input and would represent a challenge for implementation planning. Are there areas where a jurisdiction can take adaptive measures for mitigation? These measures may include education, installing showers, etc. If we have an adaptive measure and recognize that the criteria doesn't have to be so high, how does this relate to the IR?**
    a. While such adaptive measures may not explicitly make any progress toward assigned TMDL WLAs and/or achieving water quality criteria, these adaptive measures that would

mitigate risk post-hoc are great ideas, and MDE believes they would be excellent ideas for inclusion in a Bacteria TMDL Implementation Plan.

b. While MDE is fully supportive of adaptive measures intended to mitigate the risk of bacteria contamination, the referenced adaptive measures would have no impact on reducing actual bacteria concentrations, and therefore would have no impact on Integrated Report impairment listings.

c. MDE recognizes that the water quality criteria applies to full body contact recreation. USEPA has released a technical note on developing a criteria for secondary contact recreation that MDE is evaluating.

d. There are tips that can be used while recreating in natural waters at: https://mde.maryland.gov/programs/water/Beaches/Pages/beaches_tips.aspx

7. **While it is good that MDE is allowing for a more nuanced approach for implementation planning, eventually there will be a need for data to inform future models and bacteria load calculations. What kind of data requirements will you have for modeling, etc?**

   a. Implementation modeling is currently not being applied for fecal Bacteria TMDLs. The implementation strategy for fecal Bacteria TMDLs focuses on source identification and remediation using desktop analyses and monitoring data. MDE is also recommending the use of monitoring data rather than modeling data to document progress towards achieving Bacteria TMDL WLAs and the achievement of water quality criteria.

8. **The criteria in COMAR for recreational contact - is that from Health departments, or DNR, or MDE?**

   a. The water quality criteria for fecal bacteria at bathing beaches were developed by EPA. Further information on the development of these criteria can be found here: https://www.epa.gov/wqc/recreational-water-quality-criteria-and-methods#rec1.

9. **When calculating bacteria counts, should high or low flow be used?**

   a. High vs. low flow no longer has any impact on criteria assessment. It is assumed that the required frequency of data collection for criteria assessment implicitly captures the variability in flow regimes. For the purposes of identifying and assessing trends in fecal bacteria concentrations and loads, it is recommended that jurisdictions use flow data to analyze trends in high vs. low flows.

   b. While MDE might not use flow data directly for Integrated Report purposes, the flow is important for detecting and interpreting trends. This is why we include flow stratification in the monitoring guidance.

10. **Does MDE have specific certification requirements for bacteria/flow data?**

    a. For the purposes of IR and criteria assessment, there are specific lab methods that must be used, and the data must come from a certified lab (see the Bacteria Listing Methodology for more details). For trend analysis and source identification, the use of a certified lab is not required but highly recommended.

11. **Is there precedent for water bodies being delisted? How long does it take?**
    a. There is currently no precedent for waters being delisted for bacteria. MDE is currently working toward developing a biological delisting methodology that involves delineating sub-watersheds or individual stream reaches that are improving. In the future, MDE would like to be able to do this for bacteria too. If a subwatershed from the 8-digit TMDL watershed is doing well, MDE will consider delisting the small area incrementally. While a whole 8 digit watershed would be challenging for delisting, MDE is looking into delisting at a smaller scale.
    b. While they may not represent a significant portion of all the 303d water quality impairments, there are a number of delistings that have occurred via restoration activities, natural attenuation, and other means. In terms of predicting a timeframe for achieving water quality impairment delistings, given the number of confounding variables, watershed variability, and the uniqueness of individual pollutants, it would be extremely difficult to estimate an expected timeframe for achieving water quality impairment delistings.

12. **For water bodies with a TMDL for shellfish consumption, is the appropriate test to use one for fecal bacteria?**
    a. If the jurisdiction is considering a monitoring station at a shellfish harvesting area, the indicator recommended is fecal coliform. However, if the monitoring station is upstream and outside of the shellfish harvesting area, the recommended indicator will differ depending on if the waterbody is tidal/marine (*Enterococcus)* or nontidal (*E. coli)*. These indicators are more appropriate for the designated use of the monitored waters (water contact recreation) and can still represent fecal indicator bacteria contributions upstream of the shellfish harvesting area. The main goal of the monitoring strategy for TMDL WLA implementation is to identify and remediate bacteria hotspots, therefore, using the EPA recommended indicators would be most appropriate.

       The counts of *E. coli* to fecal coliform can be roughly extrapolated using use the geometric mean *E. coli* / fecal coliform (EC/FC) ratio of 0.63 (based on comparing EPA's 1986 200 cfu/100 mL fecal coliform criteria with the 2012 126 cfu/100 mL E. coli criteria), or the EC/FC ratio of 0.77 could also be used based on results from a USGS study in Kansas (Rasmussen & Ziegler, 2003). A site-specific ratio or *Enterococcus*/ fecal coliform ration could be derived using a regression analysis from locally-collected data.