

Chesapeake Bay Onsite Wastewater Nutrient Attenuation Expert Review Panel Charge

The main charge for the panel is to review available science on how to factor nutrient attenuation into Chesapeake Bay TMDL onsite wastewater treatment system load estimates and BMP efficiency factors. For the purposes of this Panel, “attenuation” is defined as the reduction in wastewater derived nitrogen and phosphorus between the on-site wastewater treatment systems (boundaries of the soil dispersal systems) and modeled surface waters.

The panel is specifically requested to:

- Determine whether the Bay TMDL model can be improved by using attenuation rates that vary based on soil, site and system characteristics, rather than the constant 60% total nitrogen (TN) attenuation rate currently used.
- Determine whether the currently used 100% removal of total phosphorus (TP) from onsite wastewater system effluents is warranted, whether it should be changed, or whether TP removal should be variable based on site/system characteristics.
- If it is determined, based on the available science, that the model can be improved, recommend a methodology or methodologies to be used and specific attenuation rates to be used in different contexts. The attenuation rate could vary based on:
 - Soil texture
 - Soil geochemistry
 - Soil wetness/water table depth or depth to restrictive horizons
 - System proximity to surface waters and surface water-groundwater interactions
 - Hydrogeological setting, groundwater recharge, and groundwater residence time
 - System age, maintenance, and biomat formation
 - Riparian buffers
 - Water use, wastewater, and source water chemistry
 - Topographic conditions between system and surface water
 - Lower order stream miles
 - Other factors supported by scientific review

Beyond this specific charge, the panel is asked to:

- Document data needs for supporting revisions to currently used or recommended nutrient attenuation rates.
- Recommend procedures for reporting, tracking and verifying the recommended credits, as practical, recognizing that such recommendations are not required for Phase 6 modeling since attenuation is not dependent upon management actions of the partnership.
- Critically analyze any unintended consequence associated with the methodology(ies) and potential for double or over-counting of nutrient reduction credit.

Specific charge points can be amended by recommendation of the Panel with concurrence of the CBPO lead. Throughout the process, detailed records need to be kept. In addition, panelists should follow the *Protocol for the Development, Review, and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model*.