**Overview of Most Effective Basins**

Principle: the major river basins that contribute the most to Bay water quality problems must do the most to resolve those problems.

Term and use of the principle resulted from the 2017 Midpoint Assessment when the “Bay Model” (Water Quality and Sediment Transport model) was calibrated in preparation for the Phase III WIPs. Calibration included years of monitoring data, higher resolution imagery (30 Meter to 1 Meter Land Use Cover), and better information about stream delivery of direct pollution loads. It also includes the Bay’s ability to assimilate/absorb pollution and how it is delivered through tides, etc... The Phase 6 Model (current model) shows which geographic locations have the most impact on the main segment of the Bay.

Essentially, what makes a river basin “effective” is relative to the other river basins. The river basins are ranked so those with the most impact or highest “Nitrogen/Phosphorus Relative Effectiveness” on the Bay can be prioritized for BMP implementation AND for the purpose of the TMDL, receive higher allocation reduction targets in the Phase III WIPs.

It is interesting that even if a river is close to the Bay, it doesn’t necessarily mean that it has a big impact on delivering pollution to the Bay. If looking through the lens of strictly managing for water quality attainment in the Bay, it makes sense to target funds and implementation in higher effective basins.

The most effective basins for Nitrogen are the MD Susquehanna Basin and the VA Eastern Shore. DC Potomac is more effective than DE Eastern Shore and the VA James River is toward the end of the ranking with WV James River Basin as the least.

The below graphic shows added precision the Bay 6 Model provides as compared to the earlier Bay 5 Model. The Bay watershed is divided into small hydraulic units and the geographic location of Nitrogen Relative Effectiveness becomes more precise in the Phase 6 Model. Thus, the Most Effective Basins approach is based on a more precise understanding of the locations that contribute the most pollution.

*Phase 5 Model Nitrogen Phase 6 Model Nitrogen*

