

Large Monitored Onsite Systems – Reporting for Phase 6 Chesapeake Bay Model

Currently, large monitored onsite systems are not differentiated from the total onsite septic load allocation. By reporting load data for monitored onsite systems, the onsite septic load will be further refined in the Phase 6 Chesapeake Bay Model. Large monitored onsite systems are onsite septic systems which are inspected and undergo effluent sampling on a regular basis, at least annually, and record data for flow and total nitrogen at a minimum.

- 1) Reporting Frequency – Flow and TN concentration are to be reported for annual averages at a minimum. If data is available for flow and TN concentration on a more frequent sampling schedule than annual, this can also be submitted for a more accurate load allocation.

Justification – Residential septic BMPs are reported annually with estimates for load reductions. Reporting data on large systems with annual averages will align with residential onsite BMPs.

- 2) Drainfield Attenuation Rates – Flow and TN concentration are to be sampled and reported from the end of pipe, prior to entering the drainfield portion of the system. Attenuation rates for septic system drainfields are currently being developed and approved by the Attenuation Expert Panel. If additional nitrogen reduction is achieved through the drainfield, a reduction factor can also be reported for the system.

Justification – The drainfield portion of a large onsite system is similar in nature to that of single-family residential onsite systems. The approved attenuation rates determined by the expert panel will apply to all standard drainfields in the onsite septic sector. If additional nitrogen reduction is achieved through drainfield design, such as low pressure drip dispersal or shallow placement, the nitrogen reduction can be additionally applied to the approved standard drainfield attenuation rates.

- 3) Avoiding Double-Counting – A shapefile of the service area of large monitored onsite systems will be provided to properly account for load and nitrogen reductions. Alternatively, if shapefiles of the service area are not available, data will be reported for the population served by the large onsite system and the land-river segment in which the system is located.

Justification – Reporting on the service area for large monitored onsite systems will identify the portion of population served by the system, similar to the method by which public sewer areas are identified as part of the wastewater load allocation. The alternative reporting method of population served within a land-river segment will achieve the same objective of identifying the location and portion of the population served by a large onsite system.

- 4) Identifying Residential and Commercial Systems – Each system will include data on the residential or commercial nature of the system.

Justification – Large onsite systems serving properties such as schools, businesses, and churches may serve a portion of the population simultaneously accounted for in the estimated residential onsite septic load. To reduce double-counting of this segment of the population, a standard reduction factor may be applied to commercial large onsite systems, to be determined by the Modeling Workgroup. This reduction factor would account for the intermittent nature of these commercial monitored large onsite systems.

At a minimum, jurisdictions reporting for large monitored onsite systems will include the following data fields:

- Estimated Daily Flow (GPD)
- Total Nitrogen Concentration of Effluent at End-of-Pipe (mg/L)
- Residential or Commercial Designation
- Population Served (if not providing shapefiles)
- Land-River Segment (if not providing shapefiles)

Additionally, a spatial representation of the service area for the large onsite system will be provided in ESRI ArcGIS shapefile or geodatabase format.