

Post-Construction Stormwater Manufactured Treatment Device (MTD) VDOT Evaluation Criteria

In order for a Manufactured Treatment Device (MTD) to be considered for inclusion in VDOT's Approved Products List # 86, the device must have approval by the Virginia Department of Environmental Quality (DEQ) for use in Virginia, as noted on DEQ's Virginia Stormwater BMP Clearinghouse website. In order for VDOT to approve an MTD and include the product on the VDOT Approved Products List the additional criteria in this document must be met. The products approved by DEQ may be found online at: <https://swbmp.vwrrc.vt.edu/mtd-evaluation-process/>

The criteria against which the product will be evaluated for inclusion on the VDOT Approved Products List # 86 are provided below, and are in addition to having approval by DEQ. The criteria considers both the operation and performance of the device as well as a normalized life-cycle cost. In addition structural details with dimensions and accompanying calculations are required for precast or cast in place structures for the device. The VDOT Precast Concrete Shop Drawing Submittal Format may be accessed on the VDOT Location and Design Division website at: https://www.virginia-dot.org/business/locdes/standards_and_special_design.asp

VDOT reserves the right to change the criteria that was used to evaluate the original product submittal that led to an approved listing on the APL or rejection. If a product is listed on the VDOT APL, the product may not remain there indefinitely and can be removed at a later time. For example, if a certain key criterion was not in place at the time of the original submittal & evaluation, and is later added, a product may be re-evaluated. Should the product perform poorly after installation or reveals unacceptable in-service performance, VDOT reserves the right to modify or revoke this acceptance.

Any modifications to the approved design must be submitted to VDOT by the Manufacturer/Vendor and reviewed and approved by VDOT prior to use within the VDOT right of way.

All ferrous metals, (such as reinforcing steel, cast iron grates, access covers, manhole frames and lids) used in the construction of the device shall meet the requirements of Buy America. Documentation shall be provided with the submitted product noting the source of manufacture of any ferrous materials used in the structure.

VDOT reserves the right to request clarification, either through written correspondence or a face-to-face meeting, on information submitted.

Vendors with products on this particular approved product list will be required to provide updated information on the product in approximately 3 years so VDOT can ensure the product has not changed, the application is up to date regarding performance, or the evaluation criteria are still appropriate.

Guidance on the use and application of products approved for inclusion on VDOT's Approved Product List 86 are provided in the Location and Design Division IIM-LD-195. The most up-to-date version of IIM-LD-195 is maintained at the following website: <https://www.virginia-dot.org/business/locdes/rd-ii-memoranda-index.asp>

CRITERIA FOR VDOT APPROVED PRODUCTS LIST OF STORMWATER MANUFACTURED TREATMENT DEVICES (MTDs)

**This information is to be provided by the vendor in the application for approval NAME,
MODEL NUMBER AND PURPOSE OF DEVICE AND HOW IT WORKS**

1. Identify device:
 - a. Device name
 - b. Device model number
 - c. Device type (e.g., hydrodynamic swirl concentrator, filter, etc.)
 - d. Manufacturer/Vendor name
 - e. Name of Manufacturer/Vendor Representative
 - f. Manufacturer/Vendor Contact Information
 - 1) Mailing Address
 - 2) Email Address
 - 3) Telephone Number
 - g. Purpose of the device (e.g., what pollutants it removes)
 - h. How the device operates to accomplish that purpose (e.g., physical/chemical process).
 - i. Name and contact information of manufacturer contact for project design assistance, if different from 1e and 1f above

ADVANTAGES OF DEVICE

2. List of perceived advantages that use of the device will provide to VDOT, reflective of the kinds of construction in which VDOT is typically engaged (primarily linear roadway/highway construction).

COST (for consistency, costs ideally based on current dollars; state if otherwise)

3. Initial installation or capitol cost of the device or structure
4. The cost of the MTD per acre treated per year
5. Typical inspection cost and frequency for Washington DC metro region
6. Typical maintenance costs and frequency (based on the following):
 - a. Cost based on average labor, equipment and materials costs for the Washington DC metro region
 - b. Provide cost range and time in hours or days, to maintain the device. (from simple, routine inspection and maintenance, such as cleaning out the device, to the maximum cost likely to occur – e.g., structural repairs – based on manufacturer experience)

- c. Based on the device design and site constraints, include cost data regarding safety measures for lane closures and the potential need to follow confined space inspection/maintenance protocols
 - d. For purposes of calculating annualized costs per acre treated, use the value that is 1/4 x the average of that cost range, including inspection cost x frequency during one year
 - e. Cost of routine maintenance replacement parts (filter units, soil media, trees/shrubs, etc.) AND whether any of these items must be purchased from and/or installed by only the manufacturer or its service provider.
7. Service life (manufacturer's stated life-span, in years) of the device

PERFORMANCE

8. Provide the pollution removal efficiency rating assigned to the treatment device for removing Total Phosphorus (TP) by the Virginia Department of Environmental Quality (DEQ), as posted on the Virginia Stormwater BMP Clearinghouse website at: <https://swbmp.vwrrc.vt.edu/bmps/filtering-devices/>
9. State the hydraulic loading rate for the device associated with the testing of the device's pollution removal performance and the resulting removal efficiency rating.

DESIGN AND CONSTRUCTION

10. List of any national design/construction standards that must be met by the device and a certification that any of these standards that applied to the manufacturing of the device have been met. (AASHTO, ASTM)
11. List any (a) design/construction/sizing limits and (b) special installation considerations (e.g., specialized equipment, maneuvering space, etc.) that apply to the device.
12. Typical constructed surface footprint of the smallest and largest of the device (sq. feet).
13. Provide the manufacturer's website link for design-specific information and/or design assistance.
14. Provide the structure designs with calculations in accordance with the criteria for the precast shop drawing submittal process as described on page one of this document.

INSPECTION AND MAINTENANCE

15. List the items that must be inspected at each routine inspection.
16. Will maintenance of the device require confined space entry permits and procedures? If so, under all conditions, or only certain conditions (describe these)?
17. Will the location of this device typically be such that lane and/or shoulder closures, with additional safety measures, will be required in order to accomplish inspection and/or maintenance of the device?
18. List the activities that are considered routine maintenance, when necessary (e.g., sediment/debris removal, pressure washing, filter/cartridge replacement, refuse disposal, etc.)
19. Provide the manufacturer's website link for inspection and maintenance information and recommendations
20. Provide disposal costs for activities associated with routine and major maintenance of the device. (Does disposal of soils, sediments, filters, or cartridges, require special handling or disposal location other than a typical landfill?)