

Appendix S Proprietary Practices Approval Process

S.1 Proprietary Practice Consideration Overview

This appendix provides details on the DDOE approval process for the use of a proprietary stormwater best management practice (BMP). If a proposed BMP is not listed in Chapter 3 of the DDOE Stormwater Management Guidebook, or deviates significantly from the specifications listed in this Guidebook, an application with or prior certified approvals sufficient to demonstrate compliance with the stormwater performance standards of the District's stormwater program must be submitted to DDOE. To differentiate between a traditional stormwater BMP, a proprietary practice, or manufactured BMP, the term Manufactured Treatment Device (MTD) will be utilized for the class of practices that require an approval from DDOE.

DDOE recognizes the value of innovative stormwater pollutant removal technologies, especially in the ultra-urban landscape of the District, where available site area is limited and often constrained by utilities and other factors. However, DDOE also acknowledges that the resources required to develop and implement a testing program for the purposes of evaluating the performance of new MTDs are beyond the current capacity of DDOE's Stormwater Management Division. Further, DDOE recognizes that there are other state and potentially national programs being developed to provide for this testing. Therefore, until such time that DDOE develops a MTD performance testing and verification program, DDOE will accept performance testing and compliance with the New Jersey Department of Environmental Protection's (NJDEP) Protocol for Total Suspended Solids Removal as outlined in this Appendix.

S.2 Types of Manufactured Treatment Devices

There are numerous MTDs currently available. The various configurations and stormwater treatment objectives represented by this general category of stormwater BMPs will continue to evolve and expand along with stormwater regulations and land development trends. It is not expected that a standard categorization of MTDs here can accommodate this growing industry. However, in order to best address the current regulations and foreseeable regulatory framework, the following represents the types of MTDs and performance goals that will be considered by DDOE's stormwater program:

- **Hydrodynamic Treatment Devices.** The term "hydrodynamic" has been used to describe a family of MTDs that rely on a wet chamber or manhole to encourage gravity separation or dynamic settling of solids during flow conditions (as opposed to quiescent settling within vaults or chambers sized comparably to wet ponds). In most cases the total area of the wet chamber has been reduced through the application of dynamic settling, or vortex (as borrowed from technology applied to remove coarse solids from combined sewer overflows). The term "hydrodynamic" has therefore been loosely applied to the entire category of practices that are designed to achieve physical settling within a small treatment area, with or

without a vortex component. DDOE considers these practices to be applicable as pretreatment devices to be placed in series upstream of a primary (filtering) MTD or a retention or pollutant removal practice included in Chapter 3 of this Guidebook. Pretreatment is typically an essential element of the primary BMP's performance and designed maintenance interval and therefore no additional retention or pollutant removal credit is awarded.

- **Filtering Treatment Devices.** A broad category of MTDs utilize a filter media contained within an engineered structure. In some cases, the filter media itself may be the proprietary product, while others may also include the media container (cartridges, tubes, etc.), and/or the overall structure geometry and hydraulic components as the proprietary product. When necessary, DDOE will determine if the design, sizing, filter media, or other characteristics deviate significantly from the specifications listed in this Guidebook and therefore requires an approval.
- **Retention Devices.** The current category of retention devices is limited to storage chambers, vaults, perforated pipes, and other forms of supplemental storage volume. These devices generally serve to supplement a primary retention practice such as infiltration, bioretention, etc., by providing additional storage within or adjacent to the practice. Alternatively, these devices may also supplement a pollutant removal practice by creating additional runoff storage volume. In either case, the devices are not considered treatment MTDs. Rather, these storage elements allow the primary BMP to capture and retain or treat a larger volume of runoff and are therefore considered part of the primary BMP, and not an additional treatment mechanism. Therefore, no additional pollutant removal is credited.

S.3 Proprietary Practice Approval Process – Background

DDOE has reviewed different testing protocols and state sponsored MTD performance verification programs. In general, the evaluation and approval of MTD performance has traditionally been based on a combination of field monitoring and a rigorous review of the resulting data. While the consensus is that there is no substitute for field monitoring through the seasonal variations in rainfall, pollutant loading, temperature, and other factors to evaluate the performance of a stormwater BMP, there is anecdotal evidence that these studies can take a long time, be very expensive, and in some cases, be inconclusive.

The process and experience in New Jersey was derived from a multi-state testing protocol and reciprocity agreement: The Technology Acceptance Reciprocity Partnership (TARP 2003). TARP refers to a testing protocol that outlines the standard methods and procedures to be employed when testing a stormwater MTD. The concept was based on the belief that if a manufacturer followed the TARP protocol to test the MTD, then the data would be acceptable to all the partner states. The New Jersey Department of Environmental Protection (NJDEP), in partnership with the New Jersey Corporation for Advanced Technology (NJCAT), is a TARP member state that has developed a formal evaluation and acceptance process for MTDs. Unfortunately, the “reciprocity” element of the process did not evolve primarily due to the different partner states having established different treatment objectives and performance goals. The New Jersey program established TSS as the treatment objective, while other states included nutrients or other parameters in addition to TSS.

The MTD performance certification program in New Jersey, implemented by NJDEP and NJCAT, provides a continuous evaluation of the effectiveness of the testing and verification protocol and, in an effort to establish a more reliable and consistent process, are currently transitioning to a prescriptive laboratory testing protocol. The laboratory testing of filter products may be supplemented by optional field testing to demonstrate system longevity and corresponding expected maintenance intervals.

The new protocol, entitled “New Jersey Department of Environmental Protection Process for Approval of Use for Manufactured Treatment Devices January 25, 2013” (NJDEP 2013a), requires that MTD’s obtain Verification through NJCAT. The NJCAT Verification process, entitled “Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advanced Technology January 25, 2013” (NJCAT 2013), and the NJDEP protocol can be found on NJDEP’s website, <http://www.njstormwater.org/treatment.html>.

The new protocol includes a formal transition process that recognizes existing MTD certification and allows sufficient time for recertification under the new protocol. In addition, the new NJ protocol remains consistent with the DDOE stormwater program’s treatment objectives (TSS) and performance goals (80 percent reduction). To allow for the use of effective MTDs in the District immediately and include an opportunity to transition to a more reliable and consistent testing protocol, DDOE will accept the existing NJDEP certifications, and implement the same expiration schedule of those existing certifications and accompanying verification/certification renewal as required by NJDEP’s new protocol. DDOE will apply the District’s SWRv treatment requirements (1.2-inch rainfall, or when over-treating, up to 1.7-inch rainfall) to the specific MTD unit sizing formula as verified and certified by NJCAT and NJDEP, respectively.

S.4 MTD Current Approval Status

DDOE will accept MTDs for use in the District that have a current NJDEP verification/certification as conditioned upon those items referenced in Transition for Manufactured Treatment Devices dated July 15, 2011 (NJDEP 2011) as follows:

- All MTDs that have a MTD Laboratory Test Certification for 80 percent TSS removal will be approved for use by DDOE until the NJDEP published certification expiration date (determined in conjunction with NJDEP’s January 25, 2013 adoption of the new testing protocols; NJDEP 2013b);
- All MTD’s that have a MTD Laboratory Test Certification for 50 percent TSS removal will be approved for use by DDOE for pretreatment upstream of MTDs and, on a case by case basis, upstream of applicable practices listed in Chapter 3 until the NJDEP published certification expiration date (determined in conjunction with NJDEP’s January 25, 2013 adoption of the new testing protocols; NJDEP 2013c);
- All MTDs that have a MTD Field Test Certification for 80 percent TSS removal will be approved for use by DDOE until the NJDEP published certification expiration date (determined in conjunction with NJDEP’s January 25, 2013 adoption of the new testing protocols; NJDEP 2013b).

All manufacturers seeking acceptance for use in the District based on certification by NJDEP must submit evidence of NJDEP Verification/Certification (Certification Letter) and documentation representing how the MTD design and sizing is affected by the application of the District's stormwater performance standards as detailed in Chapter 2 and as compared to that of the NJDEP. The application of a specific MTD sizing criteria or model on a given development site must be rated for a Treatment Flow Rate (as defined by the new 2013 protocol) equal to or greater than the District's Stormwater Retention Volume (SWRV) design storm peak flow rate. Refer to Appendix H for guidance on the computational methodology for computing the District's SWRV design peak flow rate. Developers and consultants may review available products that have been certified by the NJDEP and select the one most appropriate for their site. For most recent MTD approvals consult NJDEP website <http://www.njstormwater.org/treatment.html>.

S.5 MTD Approval Status Renewal

Prior to the expiration of the NJDEP verification/certification, as noted in Section S.4, all MTDs that wish to continue to be accepted for water quality treatment in the District shall formally request acceptance by DDOE and submit evidence of approval through NJDEP's 2013 MTD Laboratory Test Certification/Verification process.

S.6 MTD Application Fees

Submission of evidence of verification/certification through NJDEP's MTD Certification Program does not require a review fee. However, any requests for acceptance of an MTD for other treatment parameters, including but not limited to pathogens, metals, oil and grease, or runoff volume may be subject to alternate submittal requirements and a review fee commensurate with the services required for reviewing and approving the MTD.

S.7 References

- MDE. 2011. Facts About Maryland's Stormwater Program & Proprietary Practices. Maryland Department of the Environment. Available at: <http://www.mde.maryland.gov/programs/water/stormwatermanagementprogram/documents/www.mde.state.md.us/assets/document/proprietary%202005.pdf>
- The National Environmental Laboratory Accreditation Conference (NELAC) Institute (TNI) Available at: <http://www.nelac-institute.org/>
- New Jersey Corporation for Advanced Technology (NJCAT) Technology Verification Program and Testing Protocols available at: <http://www.njcat.org/>
- NJCAT 2013. Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advanced Technology January 25, 2013. Available at: <http://www.njstormwater.org/pdf/njcat-mtd-process-1-25-13.pdf>

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<http://www.njstormwater.org/pdf/mtd-certification-process-7-13.pdf>

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NJDEP 2013b. Laboratory Protocol to Assess Total Suspended Solids Removal by a Filtration Manufactured Treatment Device January 25, 2013. Available at:
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NJDEP 2013c. Laboratory Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device January 25, 2013. Available at: <http://www.njstormwater.org/pdf/hds-protocol-1-25-13.pdf>

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