

## Appendix C. Technical Criteria for Non-LID Treatment Facilities

Non-LID Treatment Facilities may be either tree-box-type high-flow rate biofilters or vault-based high-flow rate media filters. Other facility types for treatment and/or retention may be allowed subject to review and approval by the permitting municipality.

### General

1. Design inflow rate for flow-based treatment systems on the runoff generated by a continuous rainfall intensity of 0.2 inches per hour; or, at least two times the 85<sup>th</sup> percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths.
2. Design inflow rate for volume-based treatment systems on the runoff generated by the 85<sup>th</sup> percentile 24-hour storm event.
3. Use the runoff factors in Table 4-1 (on p. 4-4) of the *Stormwater Technical Guide*.
4. The applicant's Final Stormwater Control Plan (Plan) must include, as an attachment, a letter from the manufacturer stating the manufacturer has reviewed the Plan, the proposed device meets these technical criteria, and the manufacturer will provide a warranty for two years following activation of the facility.
5. Facilities with subsurface storage (underground chambers, dry wells, etc.) require permanent structural pre-treatment of stormwater, excepting in the instance of a one (1) single-family-dwelling (SFD) project. All other project types including but not limited to SFD subdivision or common plan of development, industrial, commercial, multi-family, institutional (such as schools, government buildings, etc.), transportation, or other projects with subsurface retention shall include pre-treatment per manufacturer recommendations or equivalent as approved by the permitting jurisdiction.

### High-Flow Rate Tree-Box-Type Biofilters

1. Design surface loading rate for tree box-type filter media shall not exceed 50 inches per hour for any facility that has not received a General Use Level Designation (GULD) or higher level of treatment from the Washington State Department of Ecology (WA) based on independently verified field testing following the Technical Assessment Protocol - Ecology (TAPE), as applicable to the proposed project's land use.
2. If concrete box-type biofilter, it shall be precast concrete construction, or equivalent as approved by the permitting jurisdiction.
3. Inlet design to capture flows at least up to the maximum design surface loading rate and to bypass high flows.
4. Minimum media depth of 24 inches for any facility that has not received WA TAPE GULD-level or higher water quality treatment testing certification.
5. Media and facility configuration supports a healthy tree or other vegetation.

### Vault-Based High-Flow Rate Media Filters

1. Replaceable cartridge filters.
2. Maximum design filter surface loading rate (for cartridge filters) is 1 gpm/ft<sup>2</sup>.
3. Storage volume detains runoff and allows settling of coarse solids prior to filtration.
4. Flow through the cartridge filters is controlled by an orifice or other device so that the design surface loading rate is not exceeded.

Alternatively, applicants may specify treatment systems that have received a WA TAPE GULD or higher level of treatment. Treatment systems must be sized to treat the water quality flow rate at the design operating rate for which they received WA TAPE GULD certification as applicable to the proposed project's land use. Approval by the local jurisdiction is required, and not guaranteed, for these alternatively proposed treatment systems.

Media filters and high flow rate tree box filters currently holding WA TAPE GULD certifications may be found at the following link:

<http://www.ecy.wa.gov/programs/wq/stormwater/newtech/technologies.html>