Technical Criteria for Non-LID Treatment Facilities

Non-LID Treatment Facilities may be used only in specific circumstances. See "Other types of treatment facilities" on pp. 3-5 and 3-6 of the *BASMAA Post-Construction Manual*. Non-LID Treatment Facilities may be either tree-box-type high-flowrate biofilters or vault-based high-flowrate media filters.

General

- Inflow rate is that generated by a continuous rainfall intensity of 0.2 inches per hour.
- Landscape and non-impervious surfaces should be made self-treating or self-retaining and not drain to treatment facilities, if feasible.
- Use the runoff factors in Table 4-1 (on p. 4-5) of the *BASMAA Post-Construction Manual.*
- The applicant's 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.

High-Flowrate Tree-Box-Type Biofilters

- Maximum design surface loading rate of 50 inches per hour.
- Precast concrete construction.
- Inlet design to capture flows at least up to the maximum design surface loading rate and to bypass high flows.
- Minimum media depth of 1.8 feet (may be reduced, but maintaining the same media volume, if required because of inadequate head to discharge point).
- Media and facility configuration supports a healthy tree or other vegetation.

Vault-Based High-Flowrate Media Filters

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

Example Calculations

Given a project with the following Drainage Management Areas draining to a non-LID facility:

DMA 1: 2050 ft^2 Roof, runoff factor 1.0

DMA 2: 3035 ft^2 Asphalt, runoff factor 1.0

DMA 3: 250 ft^2 Solid Unit Pavers Set in Sand, runoff factor 0.5

High-Flowrate Tree-Box-Type Biofilter

Equivalent Impervious Area = (2050 + 3035) × 1.0 + (250 × 0.5) = 5,210 ft^2

Sizing factor = 0.2"/hr ÷ 50"/hr = 0.004

Minimum biofilter surface area = 0.004 × 5,210 ft^2 = 20.84 ft^2

Vault-Based High-Flowrate Media Filter

Design flowrate = ((3035 + 2050) ft^2 × 1.0 + (250 ft^2 × 0.5)) × 0.2"/hr ×
1 ft/12" × 1 hr./60 min. × 7.48 gal/ft^3 = 54 gpm

Cartridge surface area = 10.7 ft^2/cartridge (obtain from manufacturer and verify)

No. of cartridges required = 54 gpm/1 gpm/ft^2 ÷ 10.7 ft^2/cartridge = 5.04 cartridges (round to 5)