Addendum to the Stormwater C.3 Guidebook, 6th Edition

March 20, 2013

Contra Costa Clean Water Program Technical Criteria for Non-LID Treatment Facilities

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 4-5 of the *Stormwater C.3 Guidebook, 6th Edition*.
- 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 3.5 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 SF Roof, runoff factor 1.0

DMA 2: 3035 SF Asphalt, runoff factor 1.0

DMA 3: 250 SF 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 SF

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

Minimum biofilter surface area = 0.004 × 5,210 SF = 20.84 SF

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 SF/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)