

MEDIA FILTER

Fact Sheet TR-2

DESCRIPTION

Storm water media filters are typically two-chambered including a pretreatment settling basin and a filter consisting of sand, gravel, or other adsorptive filtering media. As storm water flows into the first chamber, large particles settle out, and then finer particles and other pollutants are removed as storm water flows through the filtering media in the second chamber. There are a number of design variations including the Austin sand filter, Delaware sand filter, multi-chambered treatment train (MCTT), and manufactured storm water filters. Treated storm water is collected in an effluent chamber or underdrain, and subsequently discharged to a storm water conveyance system or other appropriate location.

Manufactured storm water filters are typically underground systems that utilize membranes of various materials or cartridges filled with different types of media to filter storm water runoff. For cartridge systems, the media used can be inert, such as sand, or adsorptive, such as peat or manufactured media. The effectiveness of these systems depends on the type of membrane or media being implemented, the filter loading rate, and the characteristics of the influent storm water. For some systems, the water chemistry will also determine the effectiveness of the filter in removing dissolved constituents.



Photo Source: Portland BES

MAINTENANCE CONSIDERATIONS

Media filters may exhibit decreased effectiveness after a single year of operation, depending on the activities occurring in the drainage area and filter loading. They clog easily when subjected to high sediment loads, and sediment reducing pretreatment practices placed upstream of the filter should be maintained properly to reduce sediment loads into the filter.

Maintenance efforts will need to focus on basic housekeeping practices such as removal of sediment and debris accumulations to prevent clogs and/or ponds of standing water. To minimize the potential for clogging, frequent maintenance and inspection practices are required. Waste sand, gravel, membranes, or filter media must be disposed of properly and in accordance with all applicable laws.

Media filters can become a nuisance due to mosquito or midge breeding if not properly designed and maintained. Installations should dewater completely (recommended 96 hour or less residence time) to prevent creating mosquito and other vector habitats.

If applicable, contact the proprietary product manufacturer for specific maintenance requirements.

REFERENCES

California Department of Transportation (Caltrans). 2010. Treatment BMP Technology Report. CTSW-RT-09-239.06. Available online at: [http://www.dot.ca.gov/hq/env/storm water/pdf/CTSW-RT-09-239-06.pdf](http://www.dot.ca.gov/hq/env/storm%20water/pdf/CTSW-RT-09-239-06.pdf)

California Storm water Quality Association (CASQA). 2003. California Storm water BMP Handbook – New Development and Redevelopment. BMP Fact Sheet TC-40: Media Filter and BMP Fact Sheet MP-40: Media Filter. Available online at: <https://www.casqa.org/resources/bmp-handbooks/new-development-redevelopment-bmp-handbook>

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Low Impact Development Center, Inc. 2010. Low Impact Development Manual for Southern California: Technical Guidance and Site Planning Strategies. Available online at: <https://www.casqa.org/resources/lid/socal-lid-manual>

Sacramento County, et al. 2014. Storm water Quality Design Manual for the Sacramento Region. Available online at: <http://www.beriverfriendly.net/newdevelopment/stormwaterqualitydesignmanual/>