BIORETENTION

Fact Sheet TR-1

Bioretention facilities, also known as rain gardens and storm water planters, are planted depressions that slow, treat, and infiltrate storm water to improve water quality and manage hydromodification. They can be located in a variety of settings such as along roadsides or incorporated into a site's landscaping but should be designed by a qualified professional. Bioretention cells receive runoff from roofs and other impervious surfaces and provide treatment through settling, filtration, and biological processes as storm water ponds and percolates through planting soil media and into a subsurface gravel storage bed. Runoff volume is reduced by evapotranspiration and, if conditions are suitable, by infiltration into the underlying soils and groundwater. Bioretention facilities are effective at removing a variety of pollutants including trash, sediment, metals, nutrients, bacteria and hydrocarbons. Bioretention areas are usually designed to allow shallow ponding, with an overflow outlet to prevent flooding during heavy storms. The overflow can be directed to a storm drain system or to another BMP.

Roadside bioretnetion. Source: sitephocus.com

Two general types of bioretention facilities are allowable in the Permit including infiltrating bioretention and flow-through planters. Flow-through planters are used in locations not suitable for infiltration and include impermeable liners and an underdrain pipe to collect the treated water and discharge it to the municipal storm drain or other appropriate location.

INPECTION AND MAINTENANCE REQUIREMENTS

A maintenance plan shall be provided with the Final SWQP. The maintenance plan shall include recommended maintenance practices, state the parties responsible for maintenance and upkeep, specify the funding source for ongoing maintenance, with provisions for full replacement when necessary, and provide site specific inspection checklist.

At a minimum the following inspections and maintenance activities should be conducted on an annual basis or more frequently if necessary:

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

Maintenance Indicator	Required Maintenance Activit
Is litter, excess sediment or debris present in the upstream drainage or in the bioretention facility?	Remove litter, sediment/debris. Inspect the areas upstream of the bioretention facility to make sure the tributary area is properly stabilized.
Is standing water present in the facility for longer than 72 hours after a storm?	Remove any accumulated sediment and flush drainage system including underdrain. Remove and replace top few inches of soil. Remove and replace all soil, re-grade and re-plant.
Are dead plants, weeds present?	Remove dead vegetation and replace as necessary. Pull weeds and trim excess plant growth.
Is erosion occurring within the facility or drainage system?	Repair erosion and stabilize to prevent recurrence
Are holes or voids present in the facility?	Inspect underdrain and replace soil if needed.
Are unwanted rodents or other pests present?	Implement environmentally friendly pest control practices. Do not use pesticides or herbicides in the bioretention facility.

REFERENCES

City of Salinas Department of Engineering and Transportation. 2014. Storm water Standard Plans (SWSPs). Available online at: https://www.cityofsalinas.org/search/site/stormwater%20standard%20plans

Placer County, 2012. Placer County Low Impact Development (LID) Guidebook. Available online at: http://www.placer.ca.gov/departments/communitydevelopment/planning/documentlibrar