

#30 – Maintenance Standards for Vegetated Roof (BMP LID.10):

√	Drainage System Feature	Defect or Problem	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
	Soil / Growth Medium	Water is Not Infiltrating Properly	Water does not permeate growth media (runs off soil surface).	Facility infiltrates as designed. Aerate or replace media until stormwater infiltrates freely through growth media.
	Soil / Growth Medium	Water is Not Infiltrating Properly	Growth medium thickness is less than design thickness (due to erosion and plant uptake).	Facility infiltrates as designed. Supplement growth medium to design thickness.
	Soil / Growth Medium	Water is Not Infiltrating Properly	Fallen leaves or debris are present.	No leaves or debris present.
	Soil / Growth Medium	Erosion/Scouring	Areas of potential erosion are visible.	Steps taken to repair or prevent erosion. Fill, hand tamp, or lightly compact, and stabilize with additional soil substrate/growth medium and additional plants.
	Erosion Control Measures	Erosion/Scouring	Mat or other erosion control is damaged or depleted during plant establishment period.	Erosion control measures repaired/replaced until 90 percent vegetation coverage attained. Avoid application of mulch on extensive vegetated roofs.
	System Structural Components	Deteriorating Flashing, Gravel Stops, Utilities, or Other Structures on Roof	Flashing, utilities or other structures on roof are deteriorating (can serve as source of metal pollution in vegetated roof runoff).	Structural components inspected for deterioration or failure. Repair/replace as necessary.
	Roof Drain	Sediment, Vegetation, or Debris Accumulation	Sediment, vegetation, or debris blocks 20 percent or more of inlet structure.	Blockages cleared. Problems that led to blockage identified and corrected.
	Roof Drain	Damaged Inlet Pipe	Inlet pipe is in poor condition.	Repaired/replaced.
	Roof Drain	Clogged Inlet Pipe	Pipe is clogged.	Roots or debris removed.
	Vegetation	Plant Coverage	Healthy vegetative coverage falls below 90 percent (unless design specifications stipulate less than 90 percent coverage).	Bare areas planted with vegetation. If necessary, install erosion control measures until percent coverage goal is attained.

#30 – Maintenance Standards for Vegetated Roof (BMP LID.10):

√	Drainage System Feature	Defect or Problem	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
	Vegetation (sedums)	NA	Extensive roof with low density sedum population.	Sedums are mulch mowed, creating cuttings from existing plants to encourage colonization.
	Vegetation	Presence of Noxious Weeds	Listed noxious vegetation is present. See Thurston County Noxious Weed List .	No danger of poisonous vegetation where maintenance personnel or the public might normally be. Noxious and nuisance vegetation removed according to applicable regulations. By law, class A & B noxious weeds must be removed, bagged, and disposed as garbage immediately. Reasonable attempts must be made to remove and dispose of class C noxious weeds. It is strongly encouraged that herbicides and pesticides are not used in order to protect water quality. <i>(Coordinate with Thurston County.) Complete eradication of noxious weeds may not be possible. Compliance with state or local eradication policies required.</i>
	Vegetation	Presence of Weeds	Weeds are present.	Weed material removed and disposed of, with roots manually removed with pincer-type weeding tools, flame weeders, or hot water weeders as appropriate. It is strongly encouraged that herbicides and pesticides are not used in order to protect water quality.

#30 – Maintenance Standards for Vegetated Roof (BMP LID.10):

√	Drainage System Feature	Defect or Problem	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
	Vegetation (extensive vegetated roof)	Under Fertilization	Poor plant establishment and possible nutrient deficiency in growth medium.	Organic debris allowed to replenish and maintain long-term nutrient balance and growth medium structure. Conduct annual soil test 2-3 weeks prior to the spring growth flush to assess need for fertilizer. Utilize test results to adjust fertilizer type and quantity appropriately. Minimum amount slow-release fertilizer necessary to achieve successful plant establishment is applied. Apply fertilizer only after acquiring required approval from facility owner and operator. Note that extensive vegetated roofs are designed to require zero to minimal fertilization after establishment (excess fertilization can contribute to nutrient export).
	Vegetation (intensive vegetated roof)	Under Fertilization	Fertilization may be necessary during establishment period or for plant health and survivability after establishment.	Annual soil test conducted 2-3 weeks prior to the spring growth flush to assess need for fertilizer. Utilize test results to adjust fertilizer type and quantity appropriately. Apply minimum amount slow-release fertilizer necessary to achieve successful plant establishment. Apply fertilizer only after acquiring required approval from facility owner and operator. Intensive vegetated roofs may require more fertilization than extensive vegetated roofs.
	Vegetation (trees and shrubs on an intensive vegetated roof)	NA	Pruning as needed.	All pruning of mature trees performed by or under the direct guidance of an ISA certified arborist.
	Irrigation system (if any)	NA	Irrigation system is not working or routine maintenance is needed.	Manufacturer's instructions for O&M have been followed.
	Vegetation (extensive vegetated roof)	NA	Summer watering – Plant establishment period (1-2 years).	Watered weekly during periods of no rain to ensure plant establishment (30 to 50 gallons per 100 square feet).

#30 – Maintenance Standards for Vegetated Roof (BMP LID.10):

√	Drainage System Feature	Defect or Problem	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
	Vegetation (extensive vegetated roof)	NA	Summer watering – Longer term period (2+ years).	Watered during drought conditions or more often if necessary to maintain plant cover (30 to 50 gallons per 100 square feet).
	Vegetation (intensive vegetated roof)	NA	Plant establishment period (1-2 years).	Watered deeply, but infrequently, so that the top 6 to 12 inches of the root zone is moist. Use soaker hoses or spot water with a shower type wand when irrigation system not present.
	Vegetation (intensive vegetated roof)	NA	Longer term period (2+ years).	Watered during drought conditions or more often if necessary to maintain plant cover.
	Spill Prevention and Response	NA	Storage or use of potential contaminants in the vicinity of facility.	Spill prevention measures exercised whenever handling or storing potential contaminants.
	Spill Prevention and Response	Release of Pollutants.	Any evidence of contaminants such as oil, gasoline, concrete slurries, paint, etc.	Spills are cleaned up as soon as possible to prevent contamination of stormwater. No contaminants or pollutants present. <i>(Coordinate removal/cleanup with Thurston County Water Resources 360-754-4681 and/or Thurston County Spill Hotline 360-239-8369.)</i>
	Training and Documentation	NA	Training / written guidance is required for proper O&M.	Property owners and tenants provided with proper training and a copy of the Maintenance and Source Control Manual.
	Safety	NA	Insufficient egress /ingress routes and fall protection.	Egress and ingress routes maintained to design standards and fire codes. Ensure appropriate fall protection.
	Aesthetics	Poor Aesthetics	Damage/vandalism/debris accumulation.	Facility restored to original aesthetic conditions.
	Pest Control	Mosquitoes	Standing water remains for more than three days following storms.	Standing water removed. Cause of the standing water identified, and appropriate actions taken to address the problem (e.g., aerate or replace medium, unplug drainage).