

## Stormwater Management Practice Maintenance Guide

This project located at 123 Named Road involved the construction of a 1-story building and associated walkways and parking lots. The stormwater from the site is proposed to be managed by two bioinfiltration basins, one subsurface detention basin, one cistern, one blue roof, one green roof, one permeable paver area, pavement disconnection, as well as new and existing trees. All of these Stormwater Management Practices (SMPs) can be found on the Site Map included in this guide. There are four inlets and one trench drain that collect run-off from the ground level impervious areas and direct the stormwater to the bioinfiltration basins and detention basin. Roof runoff is managed by the green roof, blue roof, and cistern. The cistern is collecting and storing water to be used for toilet flushing.

The Stormwater Management Practice (SMP) Maintenance Guide contains a Site Map and a separate Maintenance Schedule Form for each SMP. The Site Map identifies the on-site SMPs and other key features which require maintenance.

The attached SMP Maintenance Schedule Form(s) have been provided as a guide to track all maintenance activities at the site. The Schedule Form lists the recommended maintenance activities and frequency for each SMP. The property owner is required to document all maintenance activities for the life of each SMP. In the **Date of Maintenance** section, please indicate the date of when maintenance is completed for each SMP. Any additional information should be recorded in the **Notes** section provided at the bottom of each SMP Maintenance Schedule Form or attached to the form as a separate document as necessary.

Please be aware that, for safety reasons, it may be necessary for a maintenance professional to complete some or all the maintenance on site. For areas that are considered confined spaces a professional, certified in confined space entry, must be contacted to perform maintenance activities.

The activities listed within the SMP Maintenance Guide are an estimate of the maintenance that must be completed to keep the SMP performing to its designed function. Additional maintenance may be necessary due to site specific conditions. The property owner is responsible for maintaining the performance of their SMPs even if additional measures are necessary.

### Supplementary Documentation

Electronic copies of inspection reports, labeled photo log, and receipts for work performed should be kept with the SMP Maintenance Guide for documentation purposes. Similar information must be provided to PWD when applying for [credit towards the stormwater charge of the property's Water bill](#).

### **Maintenance Questions?**

PWD's Post-Construction Program staff are available to answer stormwater maintenance and any other related questions about your site. Staff can be reached at (215)-685-0798. Additional information is also available on our website ([www.pwdplanreview.org](http://www.pwdplanreview.org)).



Maintenance Activity	Frequency	Date of Maintenance					
Water vegetation at the end of each day for two weeks after planting is completed.	Daily for two weeks after installation						
Water vegetation regularly to ensure successful establishment after planting.	Every four days during periods of four or more days without rain, June through August for the first year after installation.						
Inspect inlet controls, outlet structures, and storage areas for trash and sediment accumulation. Remove debris and sediment as necessary.	Monthly for the first year after installation						
Remulch void areas.	Semiannually during Growing Season						
Inspect vegetation for signs of disease or distress. Treat diseased trees and shrubs or replace as necessary.	Biweekly for the first year after installation/Quarterly						
Remove any invasive vegetation by hand.	Monthly						

Party Responsible for Maintenance: \_\_\_\_\_

Revised: 09/06/2019

Phone Number: \_\_\_\_\_

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Thin overgrown areas of vegetation.	Monthly						
Keep overflow free and clear of leaves.	Monthly						
Inspect soil and repair eroded areas.	Monthly						
Remove litter and debris.	Monthly						
Clear leaves and debris from overflow.	Monthly						
Inspect trees and shrubs to evaluate health, replacing if necessary.	Quarterly						

Party Responsible for Maintenance: \_\_\_\_\_

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Inspect underdrain cleanouts.	Quarterly						
Ensure river rock layout is sufficient to dissipate flow and check for downstream erosion. Replace river rock as necessary and repair erosion issues.	Quarterly						
Inspect for sediment build-up, erosion, and vegetative conditions. Remove sediment build-up, stabilize eroded areas and add vegetation if necessary.	Quarterly						
Evaluate the drain down time of the SMP after a storm of at least one inch in no more than 24-hours to ensure an SMP drain down time of less than 72 hours.	Concurrent with Storm Events						
Notes:							

Maintenance Activity	Frequency	Date of Maintenance					
Water vegetation at the end of each day for two weeks after planting is completed.	Daily for two weeks after installation						
Water vegetation regularly to ensure successful establishment after planting.	Every four days during periods of four or more days without rain, June through August for the first year after installation.						
Inspect inlet controls, outlet structures, and storage areas for trash and sediment accumulation. Remove debris and sediment as necessary.	Monthly for the first year after installation						
Remulch void areas.	Semiannually during Growing Season						
Inspect vegetation for signs of disease or distress. Treat diseased trees and shrubs or replace as necessary.	Biweekly for the first year after installation/Quarterly						
Remove any invasive vegetation by hand.	Monthly						

Party Responsible for Maintenance: \_\_\_\_\_

Revised: 09/06/2019

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Thin overgrown areas of vegetation.	Monthly						
Keep overflow free and clear of leaves.	Monthly						
Inspect soil and repair eroded areas.	Monthly						
Remove litter and debris.	Monthly						
Clear leaves and debris from overflow.	Monthly						
Inspect trees and shrubs to evaluate health, replacing if necessary.	Quarterly						

Party Responsible for Maintenance: \_\_\_\_\_

Phone Number: \_\_\_\_\_

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Email Address: \_\_\_\_\_



Inspect underdrain cleanouts.	Quarterly						
Ensure river rock layout is sufficient to dissipate flow and check for downstream erosion. Replace river rock as necessary and repair erosion issues.	Quarterly						
Inspect for sediment build-up, erosion, and vegetative conditions. Remove sediment build-up, stabilize eroded areas and add vegetation if necessary.	Quarterly						
Evaluate the drain down time of the SMP after a storm of at least one inch in no more than 24-hours to ensure an SMP drain down time of less than 72 hours.	Concurrent with Storm Events						
Notes:							

Maintenance Activity	Frequency	Date of Maintenance					
Inspect erosion control and flow spreading devices until soil settlement and vegetative establishment of contributing areas has occurred.	Biweekly						
Mow grass in permeable paver or grid systems that have been planted with grass.	Biweekly						
Vacuum porous asphalt or concrete surfaces with regenerative air sweeper or commercial vacuum sweeper (traditional street sweepers are not appropriate). Replace pea gravel in paver void areas after vacuuming. Consult with a professional for proper techniques.	Annual (non-vehicular traffic areas)						
	Semiannually (vehicular areas)						
Vacuum inlet structures within or draining to the structural SMP beneath the porous pavement surface.	Semiannually						
Inspect underdrain cleanouts, if any.	Semiannually						
Notes:							

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Revised: 09/06/2019

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Maintenance Activity	Frequency	Date of Maintenance					
Water vegetation at the end of each day for two weeks after planting is completed.	Daily for two weeks after installation						
Water vegetation regularly to ensure successful establishment after planting.	Every four days during periods of four or more days without rain, June through August for the first year after installation.						
Thin overgrown areas of vegetation.	Monthly						
Remove debris and sediment from impervious areas adjacent to green roof vegetation.	Monthly						
Inspect vegetation for signs of disease or distress. Treat or replace as necessary.	Biweekly for the first year after installation/Quarterly						

<p>Roof drains must be cleared when soil substrate, vegetation, debris or other materials clog the drain inlet. Under normal operating conditions, all roof discharge must be filtered and medium must not be vulnerable to migration toward the drains. Sources of sediment and debris must be identified and corrected.</p>	<p>Quarterly</p>						
<p>Plant material must be maintained to provide a minimum of 90% foliage cover during warm months. If coverage rate is declining, determine the reason (e.g., soil nutrition or soil moisture conditions) and implement remedial measures. Consult with a professional for remediation measures.</p>	<p>Quarterly</p>						
<p>Weed non-target/invasive plants. Preferentially, weeding must be done manually, with herbicide use limited to extreme instances of weed infestations that compromise the plant cover integrity. Weeds must be removed entirely.</p>	<p>Monthly - During Growing Season</p>						
<p>Inspect root development. If root zone is not well developed, determine the reason (e.g., soil nutrition or soil moisture conditions) and implement remedial measures. Consult with a professional for remediation measures.</p>	<p>Quarterly</p>						

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<p>Projects with permanent irrigation must be inspected and irrigation dosing rates adjusted to optimize plant performance and water use efficiency.</p>	<p>Quarterly</p>		
<p>Growing medium must be inspected for evidence of erosion from wind or water. If erosion channels are evident, a problem with the drainage system or with the green roof medium is indicated. Surface ponding or runoff must not occur except during very large rainfall events. After correcting the problem, refresh the affected areas with additional growth medium and provide temporary soil stabilization. Consult with the Green Roof Manufacture for guidance on making repairs to green roof.</p>	<p>Quarterly</p>		
<p>Manually cut detrital herbaceous vegetation from the previous growing season to four to six inches above the ground.</p>	<p>Annually</p>		
<p>Inspect drain inlet pipe and containment system.</p>	<p>Annually</p>		
<p>Test growing medium for soluble nitrogen content. Fertilize as needed.</p>	<p>Annually</p>		

Notes:

Maintenance Activity	Frequency	Date of Maintenance					
Inspect inlet structures, outlet structures, and storage areas for trash and sediment accumulation.	Monthly for the first year after installation.						
Regularly clean out gutters, gutter screening, first-flush chamber, and catch basins to reduce sediment load to the cistern. Clean intermediate sump boxes, replace filters, and otherwise clean pretreatment areas in directly connected systems.	Monthly						
Remove sediment and debris from cisterns according to the manufacturer's recommendations or the site-specific maintenance plan.	Monthly						
Test sediment in accordance with federal, state and local agencies for toxicants in compliance with current disposal requirements if land uses in the catchment include commercial or industrial zones, or if indications of pollution are present.	Quarterly						
Brush the inside surfaces and thoroughly disinfect.	Annually						

Party Responsible for Maintenance: \_\_\_\_\_  
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Phone Number: \_\_\_\_\_  
 Email Address: \_\_\_\_\_

SMP MAINTENANCE SCHEDULE - CISTERN  
 SMP Label (on plans): Cistern

SITE ADDRESS: 123 Named Road

TRACKING NUMBER: FY23-SAMP-1234-01

Prior to freezing weather, to avoid structural damage perform winterization of cisterns as per manufacturer's requirements or design professional's specifications.	Annually		
Inspect cistern and control structures for defects and proper operation.	Quarterly		
Remove floating debris and accumulated petroleum products from system and all components.	Quarterly		

Notes:

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Email Address: \_\_\_\_\_

Maintenance Activity	Frequency	Date of Maintenance					
Inspect outlet structures and storage areas for trash and sediment accumulation.	Monthly for the first year after installation						
Remove debris from drainage outlets and outlet screens to prevent clogging.	Monthly						
Remove debris from secondary drainage/overflows.	Monthly						
Remove excessive buildup of sediment around the outlet controls or within the storage cells.	Monthly						
Inspect for leaks.	Monthly						
Inspect for ice formation around outlets and overflows.	Biweekly - During Winter Season						

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SMP MAINTENANCE SCHEDULE - BLUE ROOF

SMP Label (on plans): Blue Roof

SITE ADDRESS: 123 Named Road

TRACKING NUMBER: FY23-SAMP-1234-01

Notes:

Party Responsible for Maintenance: \_\_\_\_\_

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Email Address: \_\_\_\_\_

Maintenance Activity	Frequency	Date of Maintenance					
Inspect erosion control and flow spreading devices until soil settlement and vegetative establishment of contributing areas has occurred after installation.	Biweekly						
Inspect inlet controls, outlet structures, and storage areas for trash and sediment accumulation. Remove debris and sediment as necessary.	Monthly for the first year after installation/Quarterly						
Regularly clean out gutters and catch basins to reduce sediment load to detention system. Clean intermediate sump boxes, replace filters, and otherwise clean pretreatment areas in directly connected systems.	Monthly						
Remove sediment and debris from subsurface detention SMP pretreatment sediment/grit chamber or separator, if applicable, when the sediment zone is 3/4 full. Sediment and debris build up may need to be removed by a professional. Consult with a professional as necessary.	Monthly						

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SMP MAINTENANCE SCHEDULE - SUBSURFACE DETENTION

SITE ADDRESS: 123 Named Road

SMP Label (on plans): Subsurface Detention Basin

TRACKING NUMBER: FY23-SAMP-1234-01

Remove sediment and debris from pipe/vault systems. Sediment depth is not to reach a maximum depth of four inches below the SMP's outlet invert elevation. Removal of sediment from grid systems must be per manufacturer's recommendations or as per the site-specific maintenance schedule.	Monthly						
Inspect subsurface detention facility and control structures.	Quarterly						
Remove floating debris and accumulated petroleum products from system and all components.	Quarterly						
Notes:							

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Maintenance Activity	Frequency	Date of Maintenance					
Rake filter media surface for the removal of trash and debris from control openings.	Monthly						
Repair leaks from the sedimentation chamber or deterioration of structural components.	Quarterly						
Inspect filter for standing water (filter drainage is not optimal) and discoloration (organics or debris have clogged filter surface).	Quarterly						
Remove the top few inches of filter media and cultivate the surface when filter bed is clogged.	Annually						
Clean out accumulated sediment from filter bed chamber.	Annually						
Clean out accumulated sediment from sedimentation chamber. Sediment and debris build up may need to be removed by a professional. Consult with a professional as necessary.	Annually						
Follow manufacture's guidelines for proprietary devices.	According to Manufacture Guidance						

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SMP MAINTENANCE SCHEDULE - MEDIA FILTER

SITE ADDRESS: 123 Named Road

SMP Label (on plans): Media Filter

TRACKING NUMBER: FY23-SAMP-1234-01

Notes:

Party Responsible for Maintenance: \_\_\_\_\_

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Maintenance Activity	Frequency	Date of Maintenance					
Inspect energy dissipaters after storms for displaced stones, slumping, and erosion at edges, particularly downstream or downslope. Repair or replace damaged riprap.	Monthly/Concurrent with Storm Events						
Inspect dissipater area for sediment and other debris accumulations. Remove sediment and other debris accumulations from dissipater area.	Quarterly						
Inspect for woody vegetation build-up. Remove woody vegetation from the riprap.	Quarterly						
Inspect stream for obstructions, such as debris, fallen trees, and sediment bars, if riprap is located on a channel bank. Remove obstructions.	Quarterly						
Inspect any underlying fabric for damage. Repair or replace damaged fabric.	Quarterly						
Notes:							

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Revised: 09/06/2019

Phone Number: \_\_\_\_\_

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Maintenance Activity	Frequency	Date of Maintenance					
Inspect erosion control and flow spreading devices until soil settlement and vegetative establishment of contributing areas has occurred.	Monthly						
Water vegetation at the end of each day for two weeks after planting is completed.	Daily for two weeks after installation						
Water vegetation regularly to ensure successful establishment after planting.	Every four days during periods of four or more days without rain, June through August for the first 24 months after installation.						
Inspect vegetation for signs of disease or distress. Treat or replace as necessary.	Biweekly for the first year after installation/Quarterly						
Mow and/or trim vegetation (not applicable to all filter strips). Filter strips that need mowing are to be cut to a height no less than four inches. Greater than five inches is preferred.	Monthly - During Growing Season						
Inspect all vegetated strip components expected to receive and/or trap debris and sediment for clogging, excessive debris, and sediment accumulation; remove sediment during dry periods.	Quarterly						

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Inspect vegetated areas for erosion, scour, and unwanted growth. This should be removed with minimum disruption to the planting soil bed and remaining vegetation.	Semiannually		
Inspect all level spreading devices for trapped sediment and flow spreading abilities. Remove sediment and correct grading and flow channels during dry periods.	Semiannually		

Notes:



Maintenance Activity	Frequency	Date of Maintenance					
Inspect inlets after several storms to ensure that they are functioning properly and that there are no erosion problems developing.	Monthly						
Identify and control source of sediment contamination when in situ soil is exposed or erosion channels are present.	Monthly						
Inspect for sediment and debris build-up. Remove sediment build-up exceeding two inches in depth or if it begins to constrict the flow path.	Semiannually						
Inspect all pipe connections and parge ensuring a watertight seal.	Quarterly						
Clean out leaves, trash, and debris.	Semiannually						
Notes:							

Party Responsible for Maintenance: \_\_\_\_\_

Revised: 09/06/2019

Phone Number: \_\_\_\_\_

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Maintenance Activity	Frequency	Date of Maintenance					
Inspect outlet control structures after several storms to ensure that they are functioning properly and that there are no erosion problems developing.	Monthly						
Identify any sources of sediment contamination and control when in situ soil is exposed or erosion channels are present.	Monthly						
Inspect all pipe connections and parge ensuring a watertight seal.	Quarterly						
Maintain and cut back vegetation directly surrounding outlet control structures if impairing function of SMP.	Monthly						
Clean out leaves, trash, and debris, from all structures, such as grates and orifices (Note: consult with professional vacuum cleaning service if subsurface pipes, including underdrains, appear to be clogged).	Monthly						
Inspect orifice for debris build-up.	Quarterly						

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Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

SMP MAINTENANCE SCHEDULE - OUTLET CONTROL

SMP Label (on plans): OS-1, OS-2, OS-3

SITE ADDRESS: 123 Named Road

TRACKING NUMBER: FY23-SAMP-1234-01

Inspect Trash Rack for debris build-up.	Quarterly		
Inspect for sediment and debris build-up. Sediment build-up exceeding two inches in depth or that begins to constrict the flow path must be removed.	Quarterly		

Notes:

Party Responsible for Maintenance: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

SMP MAINTENANCE SCHEDULE - TREES  
SMP Label (on plans): Tree Disconnection Credit

SITE ADDRESS: 123 Named Road  
TRACKING NUMBER: FY23-SAMP-1234-01

Maintenance Activity	Frequency	Date of Maintenance	
Inspect trees to evaluate health. Treat or replace diseased or dead trees as needed.	Semiannually		
Inspect growing medium for evidence of erosion from wind or water. If erosion channels are evident, stabilize with additional growth medium similar to the original material.	Semiannually		
Prune trees.	Annually		
Notes:			

Party Responsible for Maintenance: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Maintenance Activity	Frequency	Date of Maintenance					
Inspect sump manholes after several storms to ensure that there are no erosion problems developing.	Monthly						
Identify and control source of sediment contamination when in situ soil is exposed or erosion channels are present.	Monthly						
Inspect all pipe connections and parge ensuring a watertight seal.	Quarterly						
Inspect for sediment and debris build-up. Remove sediment build-up exceeding two inches in depth or if it begins to constrict the flow path.	Semiannually						
Clean out leaves, trash, and debris.	Semiannually						
Notes:							

Party Responsible for Maintenance: \_\_\_\_\_

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Maintenance Activity	Frequency	Date of Maintenance					
Remove trash, debris and sediment from pavement areas.	Monthly						
Mow and/or trim vegetation adjacent to pavement. Vegetated areas that need mowing are to be cut to a height no less than 4 inches.	Monthly During the Growing Season						
Vegetated areas should be inspected for erosion, scour, and invasive plants (e.g., weeds). Remove invasive plants with minimum disruption to the planting soil bed and remaining vegetation.	Monthly During the Growing Season						
Water vegetation regularly to ensure successful establishment.	Every four days during periods of four or more days without rain, June through August for the first 24 months after installation.						
Notes:							

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Phone Number: \_\_\_\_\_

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