

DRAFT

**Stormwater Treatment Facilities
Operation and Maintenance Plan**

[Name of Project]

[date]

This template is to be used in conjunction with the instructions, criteria, and minimum requirements in the Bay Area Stormwater Management Agencies Association's (BASMAA's) *Post-Construction Manual*.

Check www.basmaa.org for new information and updates to the *Post-Construction Manual* and this template.

[Name of Owner]
[Owner's Representative and Contact Information]

prepared by:

[Preparer's Name]
[Preparer's Contact Information]

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This Stormwater Facilities Operation and Maintenance Plan was prepared using the template dated February 2019.

I. Introduction

I.A. Project Description

[Summarize the development project, types of facilities, dates of construction]

II. Designation of Responsible Individuals

II.A. Designated Contact for Operation and Maintenance

[name, title or position]

[address]

[telephone and email]

II.B. Off-Hours or Emergency Contact

[name, title or position]

[address]

[telephone and email]

II.C. Corporate Officer (authorized to execute agreements with the City, Town, or County)

[name, title or position]

[address]

[telephone and email]

II.D. Initial Training of Responsible Individuals

[Describe the methods and schedule of initial training for staff or contractors regarding the purpose, mode of operation, and maintenance requirements for the facilities.]

III. Facilities to be Maintained

III.A. Facility Descriptions

[List and describe the stormwater treatment and hydromodification management facilities installed as part of the project. Use the information in the project Stormwater Control Plan, and update the information with any changes that occurred during project review, final design, and construction.]

III.B. Facility Locations and Tributary Drainage Areas

[Attach Figures from the Stormwater Control Plan showing the Drainage Management Areas on the site and the locations of bioretention and/or other stormwater treatment and hydromodification management facilities]

[Attach tabulation of Drainage Management Areas and calculations from the Stormwater Control Plan]

III.C. Facility Construction Details

[Describe, reference, and attach plans, elevations and details of the bioretention facilities as shown in the construction documents.]

[Describe details of construction and specifications of materials]

[Note native soils encountered, particularly those below each facility]

[Note details of connections to off-site discharge]

[Attach As-Built Drawings to Final O&M Plan]

IV. Schedule of Maintenance Activities

IV.A. Routine Activities

[Examples: Routine policing for trash, checking that inlets are not blocked by vegetation or debris, checking irrigation system, weeding, graffiti removal.]

IV.B. Following Significant Rain Events

[Examples: Observe facility to confirm it drains rapidly and completely; check inlets and outlets for accumulation of debris; check and repair any movement of mulch or sand/compost mix.]

IV.C. Annual Maintenance

[Examples: Cut back vegetation, replace plants as needed, add mulch if needed]

IV.D. Annual Self-Inspections

It is a requirement to perform an annual self-inspection using the attached form. Completed inspections must be sent annually to [your local stormwater authority having jurisdiction]. If certified inspection form is not received, the [local stormwater authority having jurisdiction] reserves the right to inspect the facility at owners' expense.

Maintenance and Performance Issues Key

Review the Stormwater Facility Maintenance Guide on the following page for a description of specific facility conditions when maintenance is needed and when the facility is properly maintained.

1. Standing/Flowing Water	2. Trash or Debris	3. Sediment	4. Erosion	5. Vegetation
6. Surface Materials	7. Contamination or Pollution	8. Structural Damage	9. Misc.	10. No Issue

Notes: (further explain any maintenance or performance issues. Attach records, photos, or any other relevant information)

Certification: I certify that this document and all attachments were prepared under my direction or supervision and the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are penalties for submitting false information, including the possibility of a fine for knowing violations.

Signature: _____

Date: _____

Printed Name: _____

Inspector Affiliation: _____

IMPORTANT:

Return this completed form annually to [county/municipality] by December 31st of each year. Forms can be sent to [address] or e-mailed to [email address]. If you have any questions, contact your local stormwater coordinator at [phone number].

If certified inspection form is not received, the [county/municipality] reserves the right to inspect the facility at owners' expense as per the facility O&M Agreement.

V.A. Stormwater Facility Maintenance Guide

Issue #	Type of System									Issue	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
	Bioretention	Bioretention Swale	Vegetated Swale	Sand Filter	Rock Infiltration Trench	Flow through Planter	Vegetated Green Roof	Cistern	Permeable Pavement			
1	X	X	X	X	X	X			X	Standing/Flowing Water	Water stands within the system between storms and does not drain within 24 hours after rainfall. Mosquito larvae observed. <i>Vegetated Swale:</i> When small quantities of water continually flow through the swale, even when it has been dry for weeks, and an eroded muddy channel has formed in the swale bottom	There should be no areas of standing water within 24-72 hours of rain event. Any of the following could apply (depending on the particular BMP): sediment or trash blockages removed, grade from head to foot of system area improved, underdrain clean-outs flushed in manner that does not cause an illegal discharge, media surface scarified, permeable pavement vacuumed. No mosquito breeding if standing water is removed. <i>Vegetated Swale:</i> A low-flow pea gravel drain can be added to the length of the swale or an underdrain can be installed to prevent an eroded or muddy channel
2	X	X	X	X	X	X		X	X	Trash and Debris	Trash and debris accumulated in the system and around the inlet and outlet. <i>Cistern:</i> Debris is clogging first flush diverter filter or inlet/outlet.	Trash and debris removed from the system and disposed of properly. <i>Cistern:</i> First flush should be diverted away when debris removed from diverter. Water should freely flow in or out of system. Cistern should drain as per the rate designed.
3	X	X		X	X	X		X	X	Sediment	Evidence of accumulated sediment in the system that causes low flow in or out of system or reduces infiltration.	Material removed so that there is no clogging or blockage. <i>Permeable Pavement</i> vacuumed to allow for infiltration. Material is disposed of properly.
4	X	X	X	X	X	X	X			Erosion	Channels or rills have formed, there are areas of bare soil, or there is other evidence of erosion. If a flow spreader is used it is uneven or clogged. Flows cause erosion when water cannot be uniformly distributed through entire swale width. <i>Green roof:</i> evidence of wind erosion impacting green roof vegetative coverage.	Obstructions and sediment removed so that water flows freely and disperses over a wide area. Obstructions and sediment are disposed of properly. Eroded area re-vegetated if applicable. <i>Green roof:</i> Media more resistant to wind erosion or media retention components installed.
5	X	X	X			X	X		X	Vegetation	Vegetation is dead, diseased or overgrown. Excessive weed growth. Vegetation blocking in-flow at curb cut; blocking O&M of other components; obstructing line of sight at roadway or intersection. <i>Permeable Pavement:</i> Vegetation around the perimeter of the pavement is dead, diseased, or overgrown. Weeds are growing on the surface of the pavement <i>Vegetated Swale:</i> Grass is sparse, bare, or eroded patches occur in more than 10% of the swale bottom. Grass is excessively tall (greater than 10 inches) or nuisance weeds and other vegetation start to take over. Vegetation growth is poor because sunlight does not reach swale.	Vegetation is healthy and attractive. Grass is maintained at least 3 inches in height. Weeds removed. Obstructing vegetation removed. <i>Permeable Pavement:</i> Areas adjacent to pavement are well maintained and no bare/exposed areas exist that could transfer soil to pavement and clog system. No weeds present in the pavement area <i>Vegetated Swale:</i> Vegetation coverage is in more than 90% of the swale bottom. Vegetation mowed at a height of 4-6 inches. Nuisance weeds removed so that flow is not impeded. Grass clippings removed. Overhanging limbs and brushy vegetation on side slopes trimmed back.
6	X	X			X	X				Surface Materials	Material is missing or patchy. Areas of bare earth are exposed, or mulch layer is less than 3 inches deep, or mulch is piled too high (i.e. within 6 inches of the overflow elevation)	All bare earth is covered, except mulch is kept 6 inches away from trunks of trees and shrubs. Mulch is even at a depth of 3 inches and is 6 inches below the elevation of the overflow
7	X	X	X	X	X	X	X	X	X	Contaminants and Pollution	Visual or olfactory evidence of oil, gasoline, sewage, contaminants, or other pollutants.	No visual or olfactory evidence of contaminants or pollutants present. Source of pollution removed or contained and disposed of properly.
8	X	X	X	X	X	X	X	X	X	Structural Damage	Planter edges, check dams, irrigation system, or outlet structure show damage. Surrounding impervious areas or structures damaged. Rodent or wildlife damage. Permeable pavement is cracked, paver blocks are misaligned or have settled. Cistern leaks or outlet allows excessive flow and drains in less than 24 hours. Green roof is leaking	Structures should have no signs of cracks or damage. Hydraulic restriction layers should prevent impacts from infiltration to surrounding structures. Permeable pavement should not show signs of settling or uneven areas. Cistern holds water. Repair or replace green roof liner as necessary.
9	X	X	X	X	X	X	X	X	X	Misc.	Unauthorized changes made to the facility OR Any condition not covered that needs attention for the system to function as designed.	The design specifications are met.