



Maintenance Costs

Maintenance costs vary depending on drainage area, storage volume, and type stormwater BMP technology in place. O&M costs are predicted to be 10% of total construction costs for BMPs costing \$10,000 and 5% of those costing \$100,000. While exact cost of maintenance is difficult to estimate and is site specific, it is important that BMP owners allot funds for maintenance.

Do's and Don'ts of Private Stormwater BMP Ownership

Do expect BMPs to collect pollutants and trash that need to be properly disposed.

Do expect BMPs to hold water onsite as designed.

Do not disrupt the drainage area carrying stormwater to your BMP.

Do not ignore drainage path issues, such as the following:

- 💧 Sediment build-up in BMPs
- 💧 Nutrient build-up (i.e. algae in wet pond)
- 💧 Maintaining the overland flow path for major storms

If not addressed, drainage path issues will limit the effectiveness of your BMP to hold and treat stormwater.

The ABC's of Private Post-Construction Stormwater BMP Ownership

BMP Ownership can be as easy as A B C...

- 💧 **A**lways receive a copy of the SWMFR, which outlines operation and maintenance activities, at the time of purchase of the property containing the BMP.
- 💧 **B**udget for maintenance, routine and non-routine, as outlined in your maintenance schedule. Costs vary per BMP technology installed.
- 💧 **C**heck-up on your stormwater BMP. Regular inspections help minimize the need for major repairs



Private Post-Construction Stormwater Best Management Practices (BMPs)

Ownership and Maintenance



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What is a BMP?

Post-construction Stormwater Best Management Practices (BMPs) are private stormwater facilities used to prevent or reduce the pollutants in storm water runoff. The St. Louis County Phase II Storm Water Management Plan (SWMP) addresses potential sources of pollutants in stormwater as required by federal and state regulations. Accordingly, these stormwater management facilities are required in all new development and redevelopment projects designed after 2006. Detention basins have been required since the late 1980's. Post-construction BMPs and detention basins are installed to retain and/or treat a specified volume of stormwater at the site. Post-construction stormwater BMPs installed are required to be maintained by the owner of the property or trustee association for those on common ground.



Types of BMPs

Two basic categories of post-construction stormwater BMPs are **structural** and **non-structural**.

Structural Stormwater BMPs, such as rain gardens and filtration systems, are physical devices designed to capture and/or treat stormwater at its source. Many structural stormwater BMPs are actually based on natural systems, and rely upon vegetation and soil mechanisms in order to perform as intended. These are considered "green" technologies. Others are considered more conventional "grey" techniques, such as hydrodynamic separators. Since all BMPs remove pollutants, they must be maintained to sustain their design capacity.

Examples of Structural BMPs:

- ◆ Stormwater Ponds
- ◆ Filtration
 - ◆ Bioretention (i.e. Rain Gardens)
 - ◆ Sand and Organic Filter Systems
- ◆ Infiltration Trenches
- ◆ Hydrodynamic Separators
- ◆ Permeable Pavement
- ◆ Wet and Dry Grass Swales
- ◆ Wetlands
- ◆ Stormwater Harvesting/Cisterns

Non-structural Stormwater BMPs focus on preserving open space, protecting natural systems, and incorporating existing landscape features, such as wetlands and stream corridors, into a site plan to manage stormwater at its source. These areas must be maintained as designed, in perpetuity.

Examples of Non-structural BMPs:

- ◆ Natural Area Conservation
- ◆ Buffer Zones
- ◆ Low Impact Development (LID)
- ◆ Open Channel Use
- ◆ Disconnection of Rooftop
- ◆ Disconnection of Non-Rooftop Runoff

Private BMP Owner Responsibilities

Maintenance

Generally, BMP inspection and maintenance falls into two categories: routine maintenance and non-routine (repair) maintenance. A Stormwater Management Facilities Report (SWMFR) was written for each BMP by the design engineer. It is the owner's handbook to BMP ownership. It outlines all routine maintenance and inspection activities that are required.

A MSD Maintenance Agreement is signed by the property owner prior to site design approval. This document is a formal agreement from the property owner to maintain the BMP in perpetuity. Failure to maintain BMPs is a violation of MSD ordinance. The BMP owner is responsible for coordinating proper restoration of BMPs if needed. For example, if utility work is needed within the BMP reserve area, the BMP owner must ensure that the BMP is restored properly by the entity performing work in the area.

Inspections

Inspection frequency varies based on the BMP technology in place. Routine inspections should be completed as outlined in the SWMFR. Inspections should be documented and any corrective actions taken should be included in the inspection reports. The effectiveness of post-construction stormwater best management practices depends upon regular inspections. MSD inspectors may also periodically inspect the BMP.

Annual Report

To ensure BMP maintenance, MSD requires an Annual BMP Maintenance Report to be submitted to MSD. This Annual Report should provide documentation that maintenance was performed in accordance with the Stormwater Management Facilities Report (SWMFR). The Annual Report typically consists of a completed inspection checklist and/or maintenance log, narrative description of corrective action measures taken, and photographs. Annual Reports should be submitted to MSD no later than March 31st of each year

