

Chapter 6

BMP Maintenance

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1.0 Introduction

In order for stormwater BMPs to be effective, proper maintenance is essential. Maintenance includes both routinely scheduled activities, as well as non-routine repairs that may be required after large storms, or as a result of other unforeseen problems. BMP maintenance is the responsibility of the entity owning the BMP. Municipal separate storm sewer system (MS4) permittees are required to implement and enforce a maintenance program that results in maintenance of public and private BMPs. The City of Colorado Springs, City Engineering Division is the MS4 permittee responsible for ensuring maintenance of private and public BMPs within the City of Colorado Springs' boundaries.

This chapter hereby incorporates by reference maintenance guidelines and recommendations presented in the current version of the Urban Storm Drainage Criteria Manual (USDCM), Volume 3, Best Management Practices, Chapter 6 BMP Maintenance. However, maintenance requirements documented in site specific Maintenance Agreements and Inspection and Maintenance Plans take precedence over the USDCM, Volume 3 recommendations.

BMPs shall be designed with maintenance as one of the key design considerations. Planning-level design guidance pertaining to maintenance is included in the individual USDCM, Volume 3 Fact Sheets.

2.0 Defining Maintenance Responsibility for Public and Private Facilities

Identifying who is responsible for maintenance of BMPs and ensuring that an adequate budget is allocated for maintenance is critical to the long-term success of BMPs. Maintenance responsibility may be assigned in different ways:

- Publically owned regional drainage facilities and BMPs are typically maintained by the MS4 permittee.
- Privately owned BMPs must be maintained by the owner or contracted by the owner to property managers. Homeowners' Associations and Metro Districts may also be responsible for maintenance of privately owned residential BMPs.

There are exceptions to the above and these arrangements are defined in a written agreement with the owner or identified on plats.

For public facilities, one of the key issues is ensuring that adequate staff and budget are provided to the department responsible for maintenance.

For private facilities, such as those owned and maintained by homeowners' associations, there is often a lack of understanding of maintenance required for BMPs. Maintenance plans and agreements must be prepared and submitted as part of the development review/approval process and be recorded with the property. It is also important to educate the general public on the purpose and function of stormwater BMPs. This is critical in cases where Low Impact Development (LID) or other BMPs are distributed throughout multiple parcels in developments.



Photograph 6-1. Sediment removal from a forebay at the regional Shop Creek BMP System (UDFCD photo).

3.0 Inspection and Maintenance Plan/Maintenance Agreement

Inspection and Maintenance Plans (IM Plans) are prepared as an appendix to the Final Drainage Report or as stand-alone documents and developed concurrently with the design of the facility and submitted with the Erosion and Stormwater Quality Control Plan for approval. IM Plans are required to ensure the continued function of the BMPs as designed and constructed. Example IM Plans are available online (see the City of Colorado Springs website). IM Plans have the following key components:

1. A description of the stormwater BMP and inspection and maintenance procedures.
2. Standard Operating Procedures that provide a description of the maintenance requirements and expected frequency of actions, which can be obtained from discussion within this chapter or may be available online (see the City of Colorado Springs website). Include instruction on how to access each component of each BMP and with what equipment. It is important to identify maintenance requirements related directly to the water quality functions of the BMP and provide information concerning future site work that could potentially impact the integrity of the BMP. This is particularly true for vegetated BMPs. For example, the following maintenance requirements may be important for a rain garden (bioretention):
 - Provide frequent weed control in the first three years following installation and as needed for the life of the facility. Weeding should be performed mechanically, either by hand or by mowing (after establishment of the vegetation).
 - Remove debris from area and outlet.
 - Ensure cleanout caps remain watertight.
3. Self-inspection requirements for the responsible parties and inspection forms or checklists appropriate for the facilities in place at the site.
4. Maintenance forms that can be used by the responsible party to document activities performed.
5. Annual Inspection and Maintenance Reporting forms that are to be used by the responsible party to document activities and be submitted to the MS4 permittee. The responsible party is required to keep inspection and maintenance forms and other IM Plan documentation for 3 years. The responsible party is required to provide records of all maintenance and repairs to the MS4 permittee upon request.
6. As-built drawings that show the BMP as it was constructed.
7. PE Certification for the constructed BMP. Once construction is complete, as-built plan certification shall be submitted by a Professional Engineer (PE) in the State of Colorado to ensure that constructed stormwater management practices and conveyance systems comply with the specifications contained in the approved plans. At a minimum, as-built certification shall include a set of drawings comparing the approved plans with what was constructed. For public projects, a certificate of completion may be used as an alternate to the PE certification.

For private BMPs, a Maintenance Agreement is required that binds the owner to perform the requirements of the IM Plan and documents that the owner is aware of, and will abide by, their maintenance responsibilities. Unless a treatment BMP is dedicated to and accepted by the MS4 permittee, the responsible party must execute a Maintenance Agreement binding on all subsequent owners of land

served by the BMP. This agreement is a legally recorded document that acts as a property deed restriction, and therefore, provides for long-term maintenance of treatment BMP. If portions of the land are sold or otherwise transferred, legally binding arrangements shall be made to pass the inspection and maintenance responsibility to the appropriate successors in title. The agreement provides that in the event that maintenance or repair is neglected, or the treatment BMP becomes a danger to public health or safety, the MS4 permittee has the authority to enter the property, perform the maintenance work required, and to recover the costs from the owner.

The terms of the Maintenance Agreement shall provide for the MS4 permittee to enter the property at reasonable times and in a reasonable manner for the purpose of inspection or maintenance and to confirm the information in the annual inspection report submitted by the responsible party for maintenance. This includes the right to enter a property when there is a reasonable basis to believe that inspection and maintenance are not occurring or have not occurred and to enter when necessary to perform maintenance at the responsible party's expense. A template of the Maintenance Agreement is available online (City of Colorado Springs website).

Erosion and Stormwater Quality Plan financial assurances will not be released until the above IM Plan and Maintenance Agreement requirements have been met and the Maintenance Agreement is recorded.

4.0 Treatment BMP Inspections

Self-Inspections

The responsible party shall perform self-inspections of stormwater BMPs on a periodic basis in accordance with the approved IM Plan, document the inspection(s), and submit an annual inspection and maintenance report to the MS4 permittee (the City of Colorado Springs requires the reports be submitted by May 31 of each year).

MS4 Permittee Inspections

The MS4 permittee will inspect private and public facilities once during the first year of operation and then once every three (3) to five (5) years, depending on the type of BMP, maintenance history, and other factors. Facilities will also be inspected by the MS4 permittee once a notice of violation has been issued for not performing self-inspections. A Notification of Inspection Letter will be sent to the responsible party to inform them that an inspection is scheduled. The letter will include the date of the inspection, what to expect, and encourage the completion of routine maintenance actions by the responsible party prior to the inspection.

5.0 Enforcement

In the event that the self-inspections are not submitted to the MS4 permittee per the required deadline, the responsible party will be contacted and notified of the missed inspection. The responsible party must complete the self-inspection and return it by mail to the MS4 permittee within the timeframe identified in local code or otherwise a notice of violation (NOV) may be issued. Appeals of NOV's can be made using the process identified in local code.

If deficiencies are noted during the MS4 permittee inspection, the responsible party will be notified of the issues. The responsible party shall correct the deficiencies within the timeframe specified by local code. A follow-up inspection will be conducted by the MS4 permittee to verify the repairs. If repairs are not undertaken or are not found to be done properly, MS4 permittee staff or a hired contractor engaged by the MS4 permittee may enter upon the subject private property and complete the necessary maintenance at

the responsible party's expense. Recovery of the costs by the MS4 permittee shall follow practices permitted by local code.

If, during a MS4 permittee inspection, it is noted that the condition of a BMP presents an immediate danger to the public health or safety due to an unsafe condition or improper maintenance, immediate action can be taken by the MS4 permittee to protect the public and make the facility safe. Per local code, any cost incurred by the MS4 permittee is at the responsible party's expense.

6.0 References

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