



Stormwater and Grading Design Standards

## CHAPTER 8

### *Operation and Maintenance*

## CHAPTER 8. OPERATION AND MAINTENANCE

One purpose of the City of Oregon City's (City) operation and maintenance (O&M) program is to manage stormwater runoff from new development and redevelopment within the boundaries of the city and as required in the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit. The program is required to provide a mechanism to ensure long-term functionality of constructed stormwater management facilities.

### 8.1 Introduction

The O&M requirements in this chapter apply to all stormwater management facilities constructed as a requirement of these standards. Maintenance activities, including routine maintenance, restorative maintenance, and rehabilitation are required to ensure the long-term function and effectiveness of stormwater management facilities and infrastructure. Initial site planning must incorporate provisions for adequate access and space to perform maintenance activities for all stormwater management facilities.

### 8.2 General Requirements

The City is responsible for ensuring the O&M of stormwater management facilities within the city boundary. All facility designs will be held to the same standards regardless of the organization or entity that has accepted responsibility for the maintenance. There are two categories of maintenance for stormwater management facilities.

- R. ***Privately-owned and maintained.*** These are stormwater management facilities which benefit one owner. They include residential, multi-family, commercial, and industrial types of developments. These stormwater management facilities require a maintenance covenant recorded with the title that describes the types of facilities and necessary maintenance.
- S. ***Publicly-owned and maintained.*** These are regional and sub-regional stormwater management facilities which benefit the public in general and any facility located within the public right-of-way. These stormwater management facilities can be utilized for any type of development if shown to have sufficient capacity. Stormwater management facilities that serve multiple properties (e.g., facilities for residential subdivisions) shall be transferred to public ownership following the 2-year maintenance warranty period.

### 8.3 O&M Plans

All stormwater management facilities require the applicant to execute and record an O&M plan. The plan shall ensure that owners maintain and operate the stormwater management facility to preserve and continue its function. O&M plans require stormwater management facility owners to properly maintain, repair, modify or reconstruct (if necessary) the facility, and provide a schedule for the maintenance frequency for the facility.

#### 8.3.1 O&M Plan Development

O&M plans shall be required for all permanent stormwater best management practices (BMP) facilities to ensure that they function as designed. The purpose of an O&M plan is to provide guidance to those who are responsible for the long-term inspection and maintenance of the facility.

To ensure functionality of the stormwater BMP facilities, owners are required to inspect facilities regularly per the approved O&M plan to determine maintenance needs. Routine

inspection and maintenance can help to keep overall maintenance costs low by detecting problems early and avoiding large repair or replacement costs.

The facility design and maintenance specifications in **Appendix C** can be used to create the O&M plan. If the proposed facility types do not match a stormwater management facility in **Appendix C**, the applicant and design engineer will be responsible for creating any drawings, maintenance specifications, and an inspection checklist to be incorporated into the O&M plan.

O&M plans for privately owned/maintained facilities shall be recorded with the Clackamas County Clerk's office as an exhibit to the maintenance covenant referenced in **Section 8.4.1** before issuance of a building permit or final plat approval.

### 8.3.2 O&M Plan Elements

The following outline can be used to prepare an O&M plan.

1. Introduction and general information
  - a. Facility Information. Facility type and identifying name or number, as applicable.
  - b. Contact. Name and contact information for the responsible organization or individual.
  - c. Narrative. Written overview describing the site, drainage areas, and intended function of the facility.
2. Operations and Maintenance
  - a. Operating Procedures. Normal operating procedures for facility function, including any seasonal modifications or adjustments.
  - b. Regular Maintenance. Required maintenance activities and schedule (i.e., landscape maintenance, sediment removal, pipe cleaning).
  - c. Inspections. Required inspection frequency to verify facilities are being maintained and functioning as designed.
  - d. Maintenance Standards. Minimum standards that are required for the stormwater management facility to produce desired results and maintenance actions when the minimum standards are not met (See **Appendix C**).
  - e. Lifespan. Expected lifespan of the facility components (i.e., when should owners expect to replace growing media, plantings, and control structure elements?).
  - f. Connected Facilities. List of interrelated or connected stormwater management facilities and description of how each facility works with the next one.
3. O&M Plan Responsibility
  - a. Responsible Party. Identify the person(s) or organization(s) responsible for inspections of stormwater management facilities.
  - b. Funding. Identify the funding source for maintenance.
4. Attachments
  - a. Site Plan. Include a site plan to identify the location of the facility/facilities, sources of runoff entering each facility, and ultimate stormwater disposal point.

- b. Facility Details. Include the stormwater management facility detail sheet(s) and O&M Plan and checklist(s) (when applicable use details in **Appendix C** for reference).
- c. Maintenance Agreement or Covenant. Include a copy of the public maintenance agreement and/or private maintenance covenant that will be used to assign maintenance responsibility and/or to allow access for maintenance or inspection of the stormwater management facilities.

### **8.3.3 O&M Plan Review and Approval Process**

The O&M plan and associated agreements, covenants, and easements will be reviewed as part of the City's overall stormwater management plan review and approval process.

## **8.4 Privately-Owned and Maintained Facilities**

Generally, stormwater BMP facilities that benefit single owners shall be privately-owned and maintained. All stormwater management facilities to be maintained privately require an O&M plan that is reviewed and approved as part of the overall stormwater management plan review process.

### **8.4.1 Maintenance Covenant for Private Stormwater Facilities**

Maintenance of all privately-owned stormwater management facilities shall be ensured through the creation of a formal maintenance covenant that must be approved by the City and recorded into the land record prior to final plan and/or plat approval. A Maintenance Covenant Template is provided in **Appendix F**. The O&M plan, including scheduled inspections and regular maintenance activities, shall be referenced in the maintenance covenant.

### **8.4.2 Access Easement**

Prior to the issuance of any permit that includes a stormwater management facility, the applicant or owner of the site must execute a maintenance covenant that includes access rights for the City, or its contractor or agent, to inspect the facility and ensure that it is maintained in proper working condition. This includes the right to enter a property when the City has a reasonable basis to believe that a violation of City standards and/or rules and regulations is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a City violation. The access easement shall be included in the maintenance covenant, as approved by the City and recorded at the Clackamas County Clerk's office.

### **8.4.3 Annual Inspection and Maintenance**

Annual inspections are to be conducted by the Responsible Party identified within the O&M Plan and may be reviewed by the City upon request. All stormwater management facilities must undergo an annual inspection to document maintenance and repair needs and ensure compliance with the requirements of these standards. Maintenance needs may include the following: removal of silt, litter and other debris from all catch basins, inlets and drainage pipes; grass cutting and vegetation removal; and necessary replacement of water quality vegetation. Any maintenance needs identified must be addressed by the Responsible Party in a timely manner. The inspection and maintenance frequency may be increased as deemed necessary to ensure proper functioning of the stormwater management facility.

#### **8.4.4 Records of Maintenance Activity**

Facility owners shall keep records of all maintenance and repairs and shall retain the records for at least 3 years. These records shall be made available to the City during inspection of the facility and at other reasonable times upon request. The owner shall submit a copy of the stormwater management facility maintenance and inspection records to the City annually as required.

#### **8.4.5 City Inspection of Stormwater Management Facilities**

Inspections may be conducted by the City at any time, including but not limited to, routine inspections, random inspections, inspections based on complaints or other notice of possible violations, inspections related to the City's NPDES stormwater permit, and joint inspections with other agencies done under environmental or safety laws. Inspections may include, but are not limited to, review of maintenance and repair records; sampling discharges, surface water, groundwater, or material/water in stormwater management facilities; and facility condition evaluations.

#### **8.4.6 Failure to Comply with the O&M Plan**

In the event that the stormwater management facility becomes a danger to public safety or public health, the City shall notify in writing the party responsible for maintenance of the stormwater management facility. Upon receipt of the written notice, the responsible person shall have 7 days (in accordance with the maintenance covenant) to effect maintenance and repair of the facility in an approved manner. If a responsible party fails or refuses to meet the requirements of the maintenance covenant, the City, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing all necessary work to return the facility to proper working condition. After proper notice, the City shall assess the owner of the facility for the cost of repair work and any penalties.

#### **8.4.7 Modifications to the O&M Plan**

If it is determined that the O&M plan requires modification to maintain the functionality of the facility, then modifications to the O&M plan shall be submitted to the City for review and approval. Written approval from the City is required prior to modifying the O&M plan. The approved modified plan shall be recorded at the Clackamas County Clerk's Office.

### **8.5 Publicly-Owned and Maintained Facilities**

Generally, publicly-owned and maintained stormwater management facilities are facilities that serve multiple property owners or the general public. Publicly-owned stormwater management facilities can serve any type of development (residential, multi-family, commercial, industrial). Publicly-owned facilities may be constructed by the City, or they may be constructed as part of a private development's stormwater management plan, with maintenance responsibilities transferred to the City following the 2-year maintenance warranty period.

#### **8.5.1 O&M Plan**

All stormwater management facilities to be maintained by the City require an O&M plan that is reviewed and approved as part of the overall stormwater management plan review

process. The O&M plan is prepared by the applicant, identifying the City as the responsible party for inspection and maintenance following the 2-year warranty period (see [Chapter 9](#)).

During the 2-year warranty period, the applicant is responsible for all maintenance and documentation requirements outlined within the O&M plan. Prior to the completion of the warranty period, the City will require all maintenance records and documents be reviewed and deficiencies addressed prior to the transfer of maintenance responsibilities.

The applicant shall enter into a maintenance agreement with the City establishing bonding, surety, or payment for maintenance of the facility during the 2-year warranty period.

#### **8.5.2 Modifications to the O&M Plan**

Following the 2-year warranty period, at the City's discretion, the applicant may be required to prepare a modified O&M plan for public stormwater management facilities. If it is determined that the O&M plan requires modification to maintain the functionality of the facility, then modifications to the O&M plan shall be submitted to the City for review and approval prior to the release of the warranty surety.

#### **8.5.3 Maintenance Fees**

The City may establish maintenance fees for publicly-owned stormwater management facilities that serve multiple private owners. When separate maintenance fees are established, they will be distributed proportionally among the owners that utilize the facility for stormwater management.