APPENDIX A.5 STORMWATER RETROFITS

This appendix identifies the regulations in the City's Stormwater Management Manual (SWMM) that apply to stormwater retrofits on private property. A stormwater retrofit is the installation of a new stormwater facility to treat stormwater from existing impervious area, including, but not limited to, roofs, patios, walkways, and driving or parking surfaces.

Stormwater retrofits are installed for a variety of reasons, including:

- Land use, building, zoning, or other development proposals that may trigger compliance with SWMM requirements.

- Property owners motivated to increase their onsite stormwater management to provide multiple watershed health benefits, including reducing stormwater flow to combined sewer systems, reducing basement flooding, and providing groundwater recharge.

- Property owners wanting to install ecologically sensitive landscapes to reduce overall ecological footprint.

- Ratepayers wanting to reduce or eliminate onsite stormwater utility charges.

Each retrofit site is unique and has specific site conditions. These conditions include location of existing structures and other impervious areas, zoning considerations, soils, slopes, current and historic site use and source control concerns, required uses (e.g., number of parking spaces, accessibility), desired uses (e.g., play or other common areas, gardens, visual amenities), and the existing stormwater discharge point (onsite, offsite to public system, or offsite to natural feature or drainageway).

There are two types of stormwater management retrofits:

1. **Mandated retrofits,** which result from a land use or redevelopment requirement. Mandated retrofits help the City control stormwater discharges by requiring the site to comply with the applicable elements of the SWMM as a condition of development.

2. **Voluntary retrofits,** which help the City incrementally provide management of stormwater from existing impervious surfaces.

For information about required City permits for stormwater retrofits, see the Bureau of Development Services (BDS) brochure titled *Stormwater Retrofits, Permits and Inspections.* Permits are determined by site use and stormwater facility characteristics. If a site has multifamily, commercial, industrial or institutional uses, a permit will be needed for stormwater retrofits; a permit *may* be needed for specific stormwater facilities at residential sites.

Stormwater retrofits must meet SWMM requirements as follows:

- Retrofits required as part of land use, zoning, building permits, or other conditions of developments must meet the SWMM requirements in full.

- If new offsite connections are created as a part of a stormwater retrofit, the infiltration, discharge, flow control, and pollution prevention requirements of the SWMM apply in order to meet the requirements of the stormwater hierarchy.

- For installation of new Underground Injection Control (UIC) facilities to treat existing development, all SWMM requirements regarding water quality, source control, and depth to groundwater apply in full. The property owner, applicant, or site manager (as appropriate) is responsible for registering or rule authorizing new UICs with DEQ.

Voluntary retrofits must meet the following SWMM requirements when a City permit is necessary:

- Facility design and landscaping, as described in **Chapter 2**.

- Sizing methodology and permit submittals for appropriately selected stormwater facilities, as described in **Exhibit 2-5** in **Chapter 2**.

- Recorded operations and maintenance plans and activities, as described in **Chapter 3**.

- Source control requirements if the project site has characteristics or activities that would classify it as high risk, as described in **Chapter 4**.

For voluntary stormwater retrofits, there is flexibility in the facility sizing and site discharge location criteria. The City would rather encourage voluntary retrofits where the facilities are some portion of the required SWMM sizing than disallow facilities that do not meet full sizing criteria. These smaller facilities can still collectively add up to significant management of runoff from existing impervious surfaces. The following facility sizing and discharge criteria apply:

- Voluntary retrofits are encouraged to size facilities through the Simplified Approach for project areas of less than 10,000 square feet. If site characteristics make Simplified sizing difficult to achieve, voluntary retrofits are allowed to request the use of smaller facilities. Applicants must use the Presumptive Approach to get approval for smaller facilities. In general, the City will not approve facilities that are not sized to at least manage the water quality design storm. Applicants should clearly note on project submittals and any permit applications that the project is a voluntary retrofit and that water quality storm sizing is being used.

- Voluntary retrofits are encouraged to meet the stormwater hierarchy by fully infiltrating onsite whenever practicable. Infiltration testing (as described in Appendix F.2) is recommended in all situations and will be required for certain sizing approaches or stormwater facility options. If total onsite infiltration is not practicable, voluntary stormwater retrofits are allowed to use existing discharge systems and do not need to meet the stormwater hierarchy for discharge criteria. At sites where the Simplified sizing approach is appropriate and possible and total onsite infiltration is not expected to be practicable, infiltration testing is not required, and the site can use the existing discharge point. Examples of existing discharge points include, but are not limited to, onsite catch basins connected to offsite public systems or existing onsite infiltration facilities. Applicants should clearly note on project submittals and any permit applications that the project is a voluntary retrofit, that the existing discharge point will be used, and how and where the proposed stormwater management facility will connect to the existing discharge point.

Additional Resources

The Bureau of Environmental Services (BES) encourages retrofits by providing technical assistance, competitive funding opportunities, and partnerships. For choosing and designing stormwater facilities to manage runoff from existing impervious area, see BES's *Site Assessment Guide*, which is available on BES's website: http://www.portlandonline.com/bes.

The most common residential stormwater management retrofits are downspout disconnection, rain gardens, and soakage trenches. These can often be used in a comprehensive stormwater management system for a site and can most likely be constructed by property owners. Brochures about these residential retrofit stormwater management systems can be found on the BES website.

Maintenance guidance is available for a variety of stormwater management systems. Most residential stormwater systems include conveyance methods (such as downspouts, curb cuts, and piping), soil, and vegetation. A brochure titled *Maintaining Home Stormwater Systems* and other maintenance guidance is available on the BES website.