1.0 Requirements

The goal of this Stormwater Management Manual (SWMM) is to protect water quality, reduce stormwater volumes to below a threshold that negatively impact streams, and provide other standards that meet the intent of requirements from the Oregon Department of Environmental Quality (DEQ) and relevant City policies and goals.

Any activity within the City of Gresham that disturbs 1,000 square feet or more of land is required to control erosion and install structures to manage stormwater quality and quantity unless specifically exempted under section 1.2.1.

The requirements in this SWMM are designed to meet requirements set by DEQ, which require:

1) Prioritizing the use of green development practices;
2) Retaining/infiltrating stormwater onsite whenever feasible;
3) When retaining all water onsite is not feasible, treat the water quality design storm and provide flow control to prevent hydromodification of streams and minimize offsite discharge of pollutants.

The purpose of this manual is to provide the development community, Gresham residents, and City staff with clear direction on stormwater management requirements within the City, how to select appropriate practices for different development scenarios, how to design them, and how they should be maintained to operate effectively.

The SWMM provides stormwater management requirements for both public and private projects, including what must be done to meet requirements on private lots, within the public right-of-way for public projects, as well as privately financed public improvements. The manual seeks to be comprehensive without being duplicative of additional requirements for public improvements that are in the *Public Works Standards* (PWS) and private requirements that are in the Oregon Plumbing Specialty Code (OPSC). The SWMM tries to call out when the PWS and/or OPSC should be consulted for additional requirements. In an attempt to keep the SWMM and PWS from being duplicative, any current requirements in the SWMM related to public projects may be moved to the PWS in the future.

There may be additional requirements for some development projects that are not specified in this SWMM. While the manual aims to be comprehensive, there may be additional requirements not noted that apply to specific areas of the city (e.g. areas north of the Union Pacific Railroad require Urban Flood Safety & Water Quality District review).

1.1 Erosion Control

The City of Gresham requires erosion prevention and sediment control (EPSC) on all land-disturbing activities, regardless of whether that property is involved in a construction or development activity. The standard for all land in Gresham is that sediment must not leave a site, even projects that do not otherwise require a city permit. Larger development sites that need to discharge sediment-free stormwater must not exceed the flow control thresholds in **section 1.2.5**.

Construction activities disturbing 1,000 square feet or more will be subject to EPSC inspection procedures. At the City's discretion, permitted development less than 1,000 square feet may also be inspected.

Unless a site is topographically constrained from runoff connecting to a surface waterway, construction sites disturbing more than one acre, or are part of a common plan of development that will ultimately disturb one or more acres, are required to obtain a DEQ 1200-C Construction Stormwater Permit, in addition to a City EPSC permit. If City staff become aware of a project subject to DEQ 1200-C requirements, staff will inform the project owner of the requirement and will refer the project to DEQ within 7 days of making such a determination or applicable timeframe as required by the City's Stormwater Permit from DEQ.

See **Appendix C** for erosion prevention and sediment control (EPSC) requirements and Best Management Practice (BMP) descriptions.

1.2 Stormwater Management

Projects that develop or redevelop 1,000 square feet or more of impervious surface are required to comply with stormwater management requirements for the added or replaced impervious area at the site, unless specifically exempt under **section 1.2.1**. Stormwater management requirements apply to projects on both private and public property or right-of-way with existing or new impervious area, including, but not limited to, all roofs, patios, walkways, parking lots, streets, alleys, driveways, and sidewalks. Stormwater management requirements include managing stormwater quality (**section 1.2.4**), quantity/volume (**section 1.2.5**), and conveyance (**section 1.2.6**).

Redevelopment projects on sites that met previous stormwater management requirements must upgrade or demonstrate that existing controls meet the requirements in this manual.

Unless a pre-planned downstream facility has been approved by the City, stormwater generated from impervious area on a property shall be managed on the same property in facilities maintained by the property owner. Stormwater that is generated within the public right-of-way must be managed in publicly maintained facilities. Stormwater facilities required as a condition of development or redevelopment in the right-of-way must be sized to manage stormwater from the contributing impervious area within the right-of-way, including sidewalks and driveway aprons. Stormwater facilities in the right-of-way shall be sized to treat stormwater from private driveways, unless they can be graded to a private treatment facility.

Stormwater must be managed in a way that does not alter existing natural drainage or would cause damage or flooding to other properties. A conveyance system meeting the requirements in **section 1.2.6** must be provided to ensure any property not able to fully infiltrate the 100-year storm event does not cause issues to adjacent properties.

1.2.1 Sites Exempt from Stormwater Requirements

Certain development or project conditions are exempt from meeting stormwater management requirements. **Note: no project is exempt from erosion control requirements.** All exemptions are subject to City review and must still identify a discharge location. Exemptions are not allowed in circumstances where regulatory permits or other municipal regulations may be violated if the exemption is allowed.

The following circumstances are exempt from meeting stormwater management requirements:

- Structures being re-built following fire damage, flooding, earthquake, or other natural disaster, as long as the structure is re-built at the same scale, for the same use, and discharging to the same disposal point. **Expansions to the original impervious area of the structure trigger stormwater management requirements for the new impervious area.**
- Remodeling projects or constructing vertical additions within the existing building footprint, tenant improvements, or re-roofing.
- Pavement repair and maintenance activities that do not alter the subgrade or add additional impervious area, including:
    - Pothole and square cut patching
    - Crack sealing
    - Resurfacing with in-kind material without expanding the area of coverage
    - Overlaying existing asphalt or concrete pavement with bituminous surface treatment, chip seal, asphalt, or concrete without expanding the area of coverage
- Standalone projects that consist solely of safety improvements to stairs, ramps, curbs, corners, and medians that install accessibility and pedestrian safety features. Examples include rapid flash beacons or concrete curb extensions for pedestrian safety.
- Standalone projects that consist solely of utility trenching in paved areas in public rights-of-way or on private property.
- Replacing catch basins or inlets that discharge to the same storm or drainage system. These are not considered a new connection or a new offsite discharge, as long as the cumulative impact to the receiving system remains the same following project completion.
- New street constructed of 800 lineal feet or less, when funded by the City, where the requisite stormwater treatment will be required with development of the adjacent frontage.

1.2.2 Sites Where Infiltration is Prohibited

In order to comply with requirements from DEQ, stormwater facilities should be designed to infiltrate stormwater to the maximum extent feasible. There are situations where no amount of stormwater should be infiltrated on a site. When one or more of the following conditions are present, a filtration (lined facility) shall be used on the applicable portion of the site:

1. Sites on slopes greater than 20%, on sites with slope stability concerns as identified by a geotechnical engineer or sites within the Hillside & Geologic Risk Overlay;
2. Sites where the seasonally high groundwater level is within 3 feet of the proposed bottom elevation of stormwater infiltration facilities;
3. Sites with documented contaminated soils;
4. Areas which require source controls and are categorized as high-risk sites (e.g. hazardous material loading/unloading area at a Groundwater Protection regulated businesses);
5. Areas within setbacks listed in **Table 3-2**.

1.2.3 Stormwater Management Options

Except for sites listed in **sections 1.2.1** and **1.2.2**, all stormwater facilities should allow infiltration to the maximum extent practicable. In the designated drywell area, all stormwater should be retained on-site. Projects located in areas outside of the designated drywell area shall install an overflow conveyance system to ensure that water will be safely routed away from the site. Porous pavement and ecoroofs receive full credit for water quality and flow control, and also result in a reduction of monthly stormwater utility rate.

The stormwater management proposed for any project shall prioritize the use of green development practices following **section 1.2.3.1** for single lot developments or **section 1.2.3.2** for residential land divisions. All development projects that will create new public streets or infrastructure must follow **section 1.2.3.3**.

1.2.3.1 Single Lot Developments

Commercial, industrial, and residential lots that are not part of a land division shall manage stormwater on the same parcel treating the water quality event (**section 1.2.4**) and meet the flow control requirements in **section 1.2.5**. In areas where the City has planned or constructed a downstream centralized facility, development projects may be able to contribute funds in-lieu of meeting on-site stormwater management requirements.

Vegetated facilities shall be used to the maximum extent practicable for all single lot facilities, as well as any public streets or improvements required as part of the development (see **section 1.2.3.3**). For areas within the City's designated UIC area green practices that infiltrate shall be used to the maximum extent practicable.

1.2.3.2 Residential Land Divisions

The preferred option for stormwater management on residential land divisions is to create a centralized facility (described in **section 3.2.6**). Residential land divisions of seven acres or less may use a detention pipe (**section 3.4.2**) to meet flow control requirements, but green practices shall be used to the maximum extent practicable for stormwater quality treatment.

Green streets shall be used to the maximum extent practicable for any public streets or improvements within development per **section 1.2.3.3**. When green streets are planned as part of a residential land division, the soil and plants shall not be added until at least 90% of the development has been completed and permanently stabilized. Any material placed prior to that point (e.g. structural soil around stormwater tree wells) must be protected during construction, and the City must inspect and approve the completion of facilities following the home construction phase to determine whether sediment removal, growing media replacement, fracturing and loosening of underlying subgrade, or other improvements are required prior to finalizing the facilities.

Unless approved by the City, centralized facilities shall be located in a separate tract. This tract shall have an easement or dedication to the City for public stormwater management and maintenance per **section 6.1**. No encumbrances, obligations, or uses may be placed on, or proposed for, this tract that might limit, conflict with, or otherwise impede the City's ability to maintain, operate, modify, or reconfigure the facility.

For developments where lot sizes are adequate to allow for on-site management of stormwater, or in places where infiltration rates are suitable, water quality and/or flow control can be met on the individual lot level (following **1.2.3.1**), with approval from the City.

1.2.3.3 Streets and Public Infrastructure

All development projects that will create new public streets or infrastructure shall prioritize green infrastructure (i.e. swales or stormwater tree wells) to the maximum extent practicable (MEP). MEP is assumed to be achieved when stormwater tree wells are sized at 3.5% (for the area of the tree well

containing soil), swales sized at 6% (area to be counted is the area that would be filled if water were at gutter elevation), or stormwater planters sized at 5% of the contributing impervious area. Each proposed facility must be sited to ensure they receive the drainage they are sized to receive. When streets are treated within a residential land division described in **section 1.2.3.2**, any area treated at the MEP level can be assumed to be 50% pervious when sizing downstream centralized facilities. If site specific constraints (e.g. gradient, utility conflicts) make it infeasible to achieve MEP, the assumed 50% pervious assumption shall be proportionally decreased (e.g. swales sized at 3% can assume 25% of treated street surface is pervious, instead of 50%).

1.2.4 Stormwater Quality Treatment

The pollutant reduction requirement for stormwater treatment is 80 percent of the average annual rainfall. The stormwater quality design storm is 1.2 inches during a 24-hour period, which is equivalent to 80% of the average annual rainfall in Gresham.

Stormwater facilities must be capable of reducing total suspended solids (TSS) by 70%, as well as treating any other pollutants of concern identified by DEQ in established Total Maximum Daily Loads (TMDLs) or that are on DEQ's 303(d) list of impaired waters. Installation of the infiltration and green infrastructure facilities described in **section 3.0** are assumed to meet both the TSS and TMDL/303(d) pollutant reduction goals. Any alternative facility being proposed must meet or exceed both of those pollutant reduction requirements.

Facilities following the Simple Method may use the sizing factor on the Simple Sizing Form for Type A soils to meet the on-site water quality treatment requirement. Treating the water quality storm event means that a facility contains the stormwater quality design storm without overflow, and must infiltrate or filter and release the volume from the event within 48 hours.

1.2.5 Flow Control

For facilities located outside of the designated drywell area, or that cannot retain/infiltrate the 100-year storm event on-site, detention and flow control are required along with piped conveyance to an approved point of connection in the public storm system (**section 4.0**). Infiltration facilities such as drywells or soakage trenches shall not be used to meet flow control standards for sites located in type C and D soils. While some infiltration may occur in these areas, it cannot be relied upon for primary disposal of runoff. Sites with underlying hydrologic soil group types A and B where there is not an off-site conveyance system (e.g. designated drywell area) are required to size facilities to infiltrate the 100-year storm event.

Detention facilities must be sized to safely convey the 100-year storm event through the primary flow control structure without engaging the emergency overflow route. Post-development peak flows shall match or be lower than the pre-development targets in **Table 1-1**.

Table 1-1: Flow control targets.

Post-Development Peak Flow Rate	Pre-Development Peak Flow Rate Target
2-year, 24-hour	50% of 2-year, 24-hour
10-year, 24-hour	10-year, 24-hour
25-year, 24-hour	25-year, 24-hour

Pre-development is assumed to be conditions that existed at the site prior to any grading and land clearing activity related to the current development. The most frequently occurring pre-developed conditions are listed in **section 2.3.2.1** (e.g. forest, brush, grass, or paved/impervious surface). A weighted value should be calculated to reflect the portion of the site covered by each pre-existing surface condition. Redevelopment sites that have pre-development impervious surface equal to or greater than the proposed post-development condition do not need to provide flow control, but are required to address stormwater quality treatment per **section 1.2.4** and conveyance per **section 1.2.6.**

All facilities need to fully draw down/infiltrate within 48 hours and ensure there is an emergency overflow route to ensure any excess flow avoids damage to the parcel being developed and adjacent properties.

Sites retaining the 25-year storm event on-site may be eligible for a reduction in the on-site portion of the monthly stormwater fee.

1.2.6 Conveyance

A conveyance system must be designed to route stormwater into and away from any stormwater facility that cannot infiltrate the 100-year storm event. An emergency overflow route that will direct water to a location that will not cause property damage, or adequate on-site storage, must be demonstrated for all sites that cannot retain the 100-year event. Emergency overflow routes do not need to meet the conveyance requirements in **Section 4.0**, unless a piped system is required to ensure water is routed away from adjacent private property. **Section 4.0** has requirements for sizing pipes and open channel conveyance systems for on-site and sub-basin drainage.

1.3 Source Control

All businesses within the City whose activities might result in contributing pollutants to the stormwater system, as defined in GRC 3.23.025, are subject to business inspection per GRC 3.99.020.

Certain business classifications/end uses have additional requirements to meet during site development to ensure that pollutants do not leave the site and enter the stormwater system to protect local waterways. The uses, activities, and materials requiring additional measures to protect stormwater on-site include:

- Fuel Dispensing Facilities and Surrounding Traffic Areas (**Section 5.3**)
- Above-Ground Storage of Liquid Materials (**Section 5.4**)
- Solid Waste Storage Areas, Containers, and Trash Compactors (**Section 5.5**)
- Exterior Storage of Bulk Materials (**Section 5.6**)
- Material Transfer Areas/Loading Docks (**Section 5.7**)
- Equipment and/or Vehicle Washing Facilities (**Section 5.8**)
- Equipment and/or Vehicle Repair Facilities (**Section 5.9**)
- Stormwater and Groundwater Management for Development on Land with Suspected or Known Contamination (**Section 5.10**)
- Covered Vehicle Parking (**Section 5.11**)

1.4 Decommissioning Stormwater Facilities

1.4.1 Private Facilities (Non-UICs)

Development Permits: If a project proposes to redevelop a property that has an existing stormwater facility and the project scope involves removing the facility, then the project must replace the functionality of the removed facility in addition to meeting SWMM requirements related to the project scope.

Enforcement: If a responsible party removes or modifies a stormwater facility without contacting or consulting with the City ahead of time, the City may issue a civil penalty. In the case of unauthorized removal, the responsible party will be required to apply for a permit and install a new stormwater facility that meets the SWMM requirements. In the case of modification, the responsible party will be required to provide documentation of the modifications and demonstrate that the facility still meets SWMM requirements.

1.4.2 Public Facilities (Non-UICs)

Decommissioning or modifying a public stormwater facility must first be approved by the Watershed Division. Review will be based on system need and regulatory compliance. Replacement in-kind or payment of a fee in-lieu may be required.

1.4.3 UICs

Privately-owned UICs: The decommissioning of a private UIC system requires submittal of a completed pre-closure notification application to DEQ prior to closure. A City building or plumbing permit does not authorize the decommissioning of a UIC on private property. DEQ requirements for UIC decommissioning are described on the DEQ website.

City-Owned UICs: For any City-owned UICs, the Watershed Division manages the pre-closure application submittal process. The City will complete the decommissioning process in accordance with the City's UIC Management Plan.