working for clean rivers

The Bureau of Environmental Services manages Portland's wastewater and stormwater infrastructure to protect public health and the environment.

Guidance on CC2035 Ecoroof Requirements and the SWMM

Appropriate and effective stormwater management is critical to maintaining and enhancing the City's livability and improving watershed health. Stormwater management standards and requirements are found in the Stormwater Management Manual at www.portlandoregon.gov/bes/SWMM. These requirements allow the City of Portland to protect both watershed resources and infrastructure investments with every development or improvement.

Background:

- By approving the Central City 2035 Plan (CC2035) in May 2018, Portland City Council enacted a new ecoroof requirement in Portland's Zoning Code that applies to most buildings in the Central City Plan District (see Portland City Code 33.510.243) effective July 9, 2018.
- Ecoroofs are an approved stormwater management facility in the City's Stormwater Management Manual (SWMM) for water quality and flow control. They are considered an 'impervious area reduction technique' which allows projects to bypass the SWMM's prioritization of onsite infiltration.
- Given these two overlapping ecoroof regulations, there is a need to clarify how the SWMM and CC2035 relate to each other.
- While the adoption of the CC2035 Plan and its ecoroof requirement are the drivers for this clarification, this policy will apply City-wide.

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ENVIRONMENTAL SERVICES
CITY OF PORTLAND
working for clean rivers

Nick Fish, Commissioner
Michael Jordan, Director

Guidance on CC2035 Ecoroof Requirements and the Stormwater Management Manual

Direction to Designers:

CLARIFICATION OF INFILTRATION REQUIREMENTS

- With the advent of the new zoning requirement, BES is clarifying our approach to ecoroofs and the impervious area reduction technique, and how it affects the requirement to infiltrate onsite: building projects that satisfy the minimum coverage of 60% ecoroof to meet the zoning requirement will not be required to evaluate onsite infiltration for the building area, regardless of whether the building runoff discharges to a stormwater (SWMM Infiltration & Discharge Hierarchy Category 3) or combined (Category 4) system.
- Ground-level impervious areas that can be considered incidental and associated with an adjacent building meeting the 60% ecoroof standard (e.g. areas within a property setback or building articulation) are not expected to meet a different design approach, and therefore can also be waived from infiltration requirements.
- Ground-level impervious areas that allow sufficient space to install an infiltration facility, such as surface parking lots, will need to investigate infiltration for those impervious areas.

STORMWATER POLLUTION REDUCTION REQUIREMENTS

- **MS4 areas (Category 3):** All non-ecoroof impervious areas must be treated for water quality.
- **Combined areas (Category 4):** Per the 2016 SWMM, pollution reduction is not required for discharge to the combined sewer system.

STORMWATER FLOW CONTROL REQUIREMENTS

- Sites are required to meet all flow control requirements for the relevant MS4 system (Category 3) or the combined system (Category 4), per the 2016 SWMM Section 1.3.
- **Partial Ecoroofs:** Partial ecoroofs will contribute to meeting flow control requirements for the site, and in some cases a partial ecoroof may be all that is required. To address this, the project stormwater report must include calculations using the following engineering assumptions:
  - **Calculation Method:** Santa Barbara Urban Hydrograph method
  - **Time of Concentration:** 5 minutes
  - **Ecoroof Curve Number:** 61 (per Table A-4 in the 2016 SWMM)
  - A weighted curve number must be calculated for the entire roof area:

$$\frac{\left(\begin{matrix}conventional\\roof\ area\end{matrix} * 98\right) + \left(\begin{matrix}ecoroof\\roof\ area\end{matrix} * 61\right)}{\left(\begin{matrix}conventional\\roof\ area\end{matrix}\right) + \left(\begin{matrix}ecoroof\\roof\ area\end{matrix}\right)}$$

Questions? Contact the BES planner assigned to your project, or Stephen Himes at 503-823-7875 or stephen.himes@portlandoregon.gov.

The Stormwater Management Manual is available at www.portlandoregon.gov/bes/SWMM.

The Bureau of Environmental Services is committed to providing meaningful access. For accommodations, modifications, translation, interpretation or other services, please contact Stephen Himes at 503-823-7875 or Oregon Relay Service 711.

Traducción o interpretación	Chuyển Ngữ hoặc Phiên Dịch	翻译或传译	Письменный или устный перевод
Traducere sau Interpretare	Письмовий або усний переклад	翻訳または通訳	Turjumida ama Fasiraadda
الترجمة التحريرية أو الشفهية	ภาษาแปลภาสา หี ภาษอะทิบาย	**Stephen Himes, 503-823-7875**	

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