Policy Statement

City of Ann Arbor, Michigan

Public Street Stormwater Management Guidelines

All public street construction and reconstruction projects are required to comply with the stormwater management requirements of the Unified Development Code (UDC) section 5.22.3 to the maximum extent practicable. UDC 5.22.3 utilizes the Rules of the Washtenaw County Water Resources Commissioner (WCWRC). Within these rules, there is guidance for both detention and infiltration facilities.

Public Streets Construction and Reconstruction projects in the City of Ann Arbor will infiltrate stormwater runoff from impervious area for the full right-of-way within the project limits. Project designers shall select infiltration techniques capable of meeting these guidelines in collaboration with Public Works and Systems Planning staff. Infiltration techniques should be similar to those described in the Low Impact Development Manual for Michigan, Sept. 2008. This policy does not apply to preventative maintenance and resurfacing where the subsoil/full road base is not disturbed.

Determining the soil infiltration rate should be a two-step process. Twenty-foot-deep soil borings should be performed throughout the project limits focused in areas with more porous soil types. Based on an analysis of the soil borings, the project manager shall determine the area(s) of the project with the most favorable infiltration potential. Within the potential infiltration area(s), the infiltration rate(s) shall be determined by lab test or field test. The infiltration test location and depth shall be determined by the designers anticipated infiltration technique. The infiltration standard for the project shall be calculated using the following site condition factors:

Site Conditions	Infiltration Standard
• Within the floodplain, or • Surface slopes > than 20%, or • Soil infiltration rate < 0.6 in/hr	First 1 inch
• Not in the floodplain, and • Surface slopes < than 20%, and • Soil infiltration rate between 0.6 in/hr – 2.0 in/hr	50% annual chance - 24 hour event (2.35”)
• Not in the floodplain, and • Surface slopes < than 20%, and • Soil infiltration rate >2.0 in/hr	10% annual chance – 24 hour event (3.26”)

Notes: Soil Infiltrations Rates are based on A and B soil classifications in the Soil Survey of Washtenaw County, Michigan (1977).
Rainfall frequency estimates are derived from NOAA Atlas 14 Volume 8 (2013).

Notes:

- The above infiltration standards are separate from and supplemental to the requirements of UDC 5.22.3. However, the volume of runoff infiltrated would count toward a reduction of the volume required to be detained per UDC 5.22.3 by an equal amount.
- Guidelines for soil borings, infiltration testing, and pretreatment are provided in the Rules of the WCWRC.
- If soil types vary within the project limits multiple infiltration standards may be utilized. The chosen infiltration technique can be placed at any location within the project area, so long as the total volume to be infiltrated is captured and hydraulically connected to the disturbed area.
- Where site conditions allow, infiltration beyond the minimum standard is encouraged, within available project budget.

- Where utility projects disturb significant portions (at least half width) of the subsoil/full road base, application of this policy should be considered as the project is entered into the City's Capital Improvement Plan.
- If the project area contains groundwater within 5 feet of the surface, contaminated soil, or other limiting conditions the infiltration standards will have to be examined on a case-by-case basis to determine what infiltration rate and practices are feasible. In situations where the First 1-inch cannot be infiltrated, a lower infiltration standard may be used if approved by the Public Services Area Administrator (PSAA). For PSAA approval, document the proposed method of stormwater management and reasons for not meeting the full infiltration standard on the plans. The project manager shall coordinate with the Water Quality Manager to establish and document reasoning for the waiver request. Once the waiver request is complete, Systems Planning staff will present it to the PSAA for a decision.
- All infiltration and pretreatment facilities require the development of maintenance plans that are coordinated with the City of Ann Arbor Public Works Staff. The project manager shall develop the maintenance plans with input from Public Works staff, then submit it to the Water Quality Manager for approval.

Infiltration Standard Flowchart

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Stormwater Management Guidelines for Public Street Construction and Reconstruction