

Meeting Soil Quality Standards

This memorandum is intended to explain how to preserve and restore soil quality and meet code requirements. The City approves and follows post-construction soil quality requirements in accordance with Duvall Municipal Code (DMC), King County Surface Water Manual (KCSWDM), and Washington State Department of Ecology (Ecology) requirements.

Duvall Municipal Code governs unless a project's approved Technical Information Report (TIR) has specified using KCSWDM standards or Ecology BMP T5.13 to meet Soil Quality Standards.

DMC 14.38.130 Planting Standards:

Soil specifications to enhance the hydrologic benefits of disturbed soils on sites that have been graded and cleared of vegetation shall include:

1. A minimum organic content of ten (10) percent by dry weight for all planting beds and other landscaped areas;
2. Organic matter content in turf areas that requires maintenance or supports foot traffic shall be five percent;
3. Organic matter content pH shall be between 5.5 and 7.0;
4. Planting bed shall be mulched with two to three inches of organic material;
5. The soil shall be scarified or tilled soil to an eight-inch depth (or to a depth needed to achieve a total depth of twelve (12) inches of uncompacted soil after the amendment is added). Soil within the dripline of existing trees to be retained shall not be tilled or scarified within three feet of the dripline. The soil amendment shall be incorporated no deeper than three to four inches to reduce damage to roots.

King County Regulations:

Except for areas that will be covered by impervious surface or have been incorporated into a stormwater facility, areas that have been cleared and graded must have the soil moisture holding capacity restored to that of the original undisturbed soil native to the site to the maximum extent practical. Areas that have been compacted or had the topsoil or duff layer removed will be amended by adding compost, importing topsoil, stockpiling site topsoil, or through other techniques that are capable of mitigating for lost moisture holding capacity.

Soil amendment shall take place between May 1 and October 1. Replaced topsoil shall be a minimum of eight inches thick, unless the applicant demonstrates that a different thickness will provide conditions equivalent to the soil moisture holding capacity native to the site.

Stormwater Management Manual for Western Washington (Ecology):

BMP T5.13: Post-Construction Soil Quality and Depth

This BMP can be considered infeasible on till soil slopes greater than 33 percent.

All areas subject to clearing and grading that have not been covered by impervious surface, incorporated into a drainage facility or engineered as structural fill or slope shall, at project completion, demonstrate the following:

1. A topsoil layer with a minimum organic matter content of 10% dry weight in planting beds, and 5% organic matter content in turf areas, and a pH from 6.0 to 8.0 or matching the pH of the undisturbed soil. The topsoil layer shall have a minimum depth of eight inches except where tree roots limit the depth of incorporation of amendments needed to meet the criteria. Subsoils below the topsoil layer should be at least 4 inches with some incorporation of the upper material to avoid stratified layers, where feasible.
2. Mulch planting beds with 2 inches of organic material.
3. Use compost and other materials that meet the following organic content requirements:
 - a. The organic content for “pre-approved” amendment rates can be met only using compost meeting the compost specification for BMP T7.30: Bioretention, with the exception that the compost may have up to 35% biosolids or manure.

The compost must also have an organic matter content of 40 – 65%, and a carbon to nitrogen ratio below 25:1.

The carbon to nitrogen ratio may be as high as 35:1 for plantings composed entirely of plants native to the Puget Sound Lowlands region.
 - b. Calculated amendment rates may be met through use of composted material meeting (a.) above; or other organic materials amended to meet the carbon to nitrogen ratio requirements, and not exceeding the contaminant limits identified in Table 220-B, Testing Parameters in [WAC 173-350-220](#).

The resulting soil should be conducive to the type of vegetation to be established.

A practical methodology and recommended guideline for implementation of Ecology’s BMP T5.13 is [Building Soil](#).