SUPPORTING DOCUMENT
POST-CONSTRUCTION SOIL QUALITY AND DEPTH WORKSHEET

For Department of Ecology Stormwater BMP T5.13

This submittal worksheet will help determine what soil amendments are needed to meet the requirements for post-construction soil quality and depth. The Kitsap County Stormwater Design Manual requires soil amendment where native soils or vegetation are disturbed by construction or development activity.

This requirement applies to all projects that create 2,000 square feet or more of hard surface area OR disturb over 7,000 square feet.

It applies to all disturbed areas on a project site except:

- The building footprint
- Hard surface areas such as driveways, parking areas, sidewalks, patios, storage areas, or walkways (gravel or paved)
- Areas within the drip line of existing trees where tilling may damage roots
- Slopes greater than 33 percent (3.3 feet of rise over 10 feet of length)
- Wetland soils high in organic matter (non-mineral)

Disturbed areas include (but are not limited to) those areas where:

- Any activity results in movement of earth, a change in the existing soil cover (both vegetative and non-vegetative), or a change in the existing soil topography
- Vegetation has been cleared, destroyed, or removed by manual, mechanical, or chemical methods
- Woody vegetation (including shrubs and understory) or stumps have been removed
- Grading, filling, trenching or excavation has occurred
- Ground-breaking activity has occurred
- Soils have been moved or stockpiled
- Soils have been compacted by vehicles or equipment (wheeled or tracked)

→ STEP 1 – TOTAL DISTURBED AREA

On your site plan, show the edge of all ground and vegetation that will be disturbed by the project.

1. **Total Disturbed Area** (should match line 1 on the Stormwater Worksheet): 17,322 square feet
2. **Onsite hard surfaces** (should match line 5 on the Stormwater Worksheet): 4322 square feet
3. **Area of lawn or turf**: 13,000 square feet
4. **Area of landscaping and planting beds**: 0 square feet
5. **Areas exempted from soil amendment requirements** due to existing tree roots, steep slopes, or wetland soils: 0 square feet

☑ 6. **CHECK:** The total of lines 2 through 5 should equal line 1.

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→ STEP 2 – TREATMENT OF DISTURBED AREAS

You may use the pre-approved soil amendment method OR a custom soil amendment. Check one.

☐ CUSTOM SOIL AMENDMENT

Custom soil amendment must meet the requirements of the Kitsap County Stormwater Design Manual (Volume 2, Section 5.4.1, page 5-22) and the Stormwater Management Manual for Western Washington (Volume 5, BMP T5.13, page 5-8).

Show, on your site plans, how the proposed custom soil amendments meet the content, depth, and installation standards of BMP T5.13.

☑ PRE-APPROVED SOIL AMENDMENT

Pre-approved Amendment Materials

You may:

- **Purchase compost from off-site sources and till it into existing soil.** Compost used for soil amendment must not exceed contaminant limits identified in Table 220-B, Testing Parameters, in WAC 173.350.220. The compost must have an organic matter content of 40-65% and a carbon to nitrogen ratio under 35 to 1.

OR

- **Stockpile, protect, and reuse existing soil and forest duff and till it into existing soil.** Stockpiled soil and duff should be covered with woven weed barrier and protected during construction. Stockpiled topsoil may need to be amended with compost to meet the organic matter and volume requirements for the pre-approved rates.

OR

- **Chip and stockpile wood waste from site clearing and till it into existing soil.** Branches and other woody material may be chipped and stockpiled along with stockpiled soil and duff. Invasive plant species such as Scotch broom, Himalayan blackberry, English ivy, and holly may not be used.

OR

- **Import topsoil of sufficient organic content and depth to meet the requirements below.**
  - Imported soils shall not contain excessive clay or silt fines (more than 5% passing a No. 200 sieve) because that could restrict stormwater infiltration.
  - For planting beds: use a mix by volume of 35% compost with 65% mineral soil to achieve the requirement of a minimum 8% (target 10%) organic matter by loss-on-ignition test.
  - For turf areas: use a mix by volume of 20% compost with 80% mineral soil to achieve the requirement of a minimum 4% (target 5%) organic matter by loss-on-ignition test.
  - Scarify subsoil and mulch planting beds as described below.

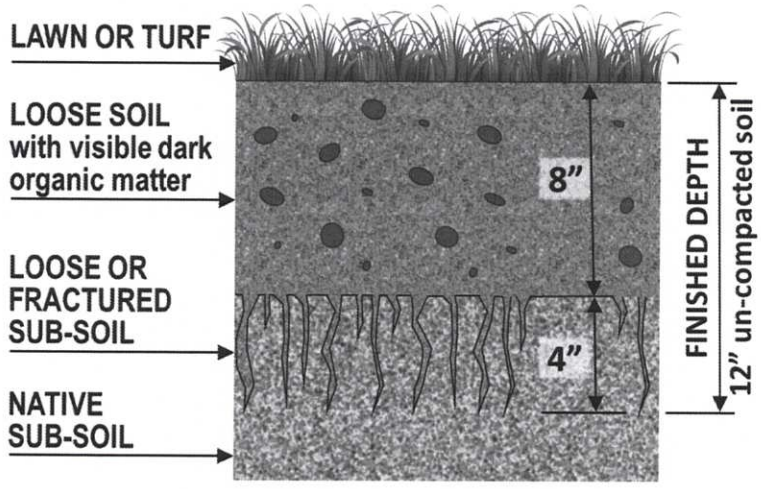
OR

- **Use any combination of the above.**

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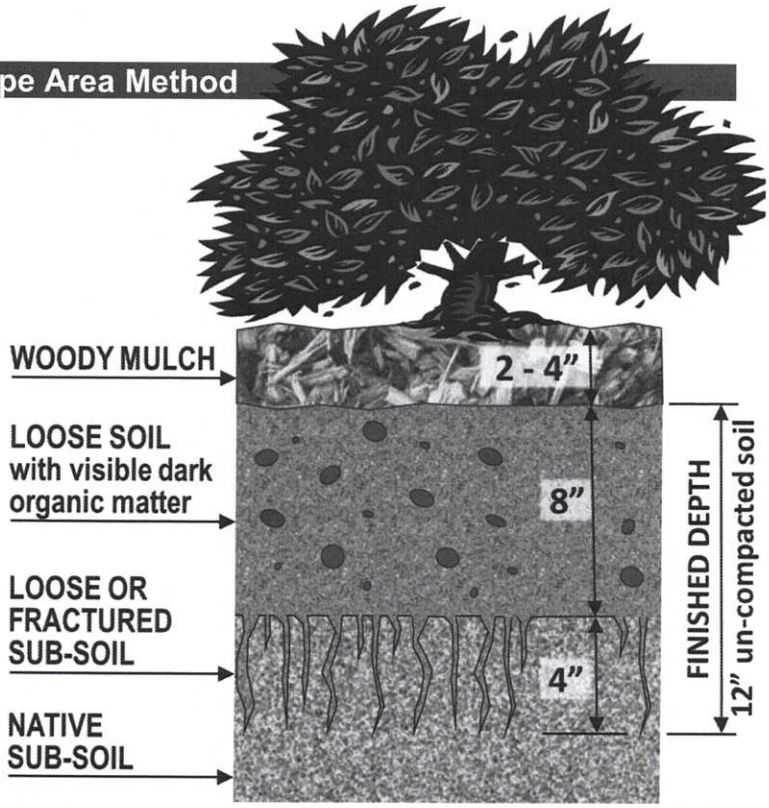
Pre-approved Lawn and Turf Amendment Method

1. Scarify or till existing soils to a depth of 10 inches.
2. Place and rototill 1.75 inches of amendment into the top 6 inches of scarified soil for a finished depth of 12 inches of un-compacted soil.
3. Roll and rake to level.
4. Plant as soon as possible to prevent erosion.
5. The final topsoil layer must:
   - Be at least 8 inches deep.
   - Contain a minimum of 5% organic matter.
   - Have a pH of 6.0-8.0 or match the pH of the original pre-developed soil.



Pre-Approved Planting Bed and Landscape Area Method

1. Scarify or till existing soils to a depth of 9 inches.
2. Place and rototill 3 inches of amendment into the top 5 inches of scarified soil for a finished depth of 12 inches of un-compacted soil.
3. Rake to level.
4. Mulch planting areas with 2-4 inches of woody mulch.
5. The final topsoil layer must:
   - Be at least 8 inches deep.
   - Contain a minimum of 10% organic matter.
   - Have a pH of 6.0-8.0 or match the pH of the original pre-developed soil.



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Calculate the Amendment Amount Needed

7. **Area of lawn or turf** (from line 3 above) ..... 13,000 square feet
   Multiply by conversion factor from 1.75 inches to cubic yards: 0.0054
8. Amendment quantity needed for lawn or turf ..... 70 cubic yards

9. **Area of landscaping and planting beds** (from line 4 above) ..... 0 square feet
   Multiply by conversion factor from 3 inches to cubic yards: 0.0093
10. Amendment quantity needed for landscaping/planting beds ..... 0 cubic yards

11. **TOTAL AMENDMENT QUANTITY NEEDED** (total of lines 8 and 10) 70 cubic yards

SOURCES: Portion of total amendment quantity (from line 11) that is:

12. Purchased from off-site sources ..... 100 %
13. Stockpiled soil and duff from on-site ..... %
14. Chipped and stockpiled woody material from on-site ..... %
15. Imported topsoil ..... %
16. ☑ **CHECK:** The total of lines 12 through 15 should total 100% ..... 100 %

17. **Area of landscaping and planting beds** (from line 4 above) ..... 0 square feet
    Multiply by conversion factor from 3 inches to cubic yards: 0.0093
18. **MULCH QUANTITY NEEDED** ..... 0 cubic yards

SOURCES: Portion of total mulch quantity (from line 18) that is:

19. Purchased from off-site sources ..... 100 %
20. Chipped and stockpiled woody material from on-site ..... %
21. ☑ **CHECK:** The total of lines 19 and 20 should total 100% ..... 100 %

REMEMBER: These quantities are minimums. You may use more amendment if desired for your landscaping needs.

These quantities are above and beyond any soil and amendments needed for rain gardens, filter strips, and other required bioretention.

Prepare for Inspection

Inspection of your Post Construction Soil Quality and Depth will be one of the last inspections of your project.

Plan ahead for that inspection. You should have ready for the inspector:

- ☐ Delivery tickets and receipts for any purchased compost, topsoil, or mulch, showing quantities purchased.
- ☐ Product lab test results for purchased products.
- ☐ If you are using stockpiled material, take photos of the stockpiles so the inspector can see what you used and the quantity of stockpiled material.
- ☐ Be prepared to distinguish, for the inspector, products used for any filter strips, rain gardens, or bioretention from those used for Post-Construction Soil Quality and Depth.

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