As required by Ecology’s Municipal Stormwater Permit, the City of Edgewood must evaluate proposals to install or replace hard surfaces following our adopted Site Development Regulations, which have been developed to reasonably protect adjacent and downstream property owners and the local environment from any development activity. While paving an existing gravel driveway, adding a patio, or installing a sport court may seem harmless, these simple acts can alter how storm water runoff behaves in your neighborhood, which is why these activities may be regulated.

Our Site Development Regulations have adopted the December 2015 Pierce County Stormwater Management and Site Development Manual (PCM) with local amendments, per Edgewood Municipal Code (EMC) Title 13.05. This is the City’s storm water design guidance for all development activity, on public and private property. **All regulated projects are required to demonstrate Surface Water Compliance following EMC 13.05.**

To clarify requirements and simplify the permitting process for paving projects, the City has developed this handout. The following pages contain a step-by-step checklist to determine permit and application requirements for paving-only projects. **Please note that this is handout is for use on project sites that simply propose conventional paving** – For projects that propose additional site development activity, such as new building construction, remodeling, porous and pervious pavements, or other clearing and grading activity, applicants are encouraged to contact the City of Edgewood for additional information at (253) 952-3299.
STEP-BY-STEP CHECKLIST FOR PAVING PROJECTS

Step 1 – Are you proposing to overlay an existing paved area, with no expansion or increase in paved area?
☐ Yes – Stop here; this is considered a maintenance activity and no permit is required.
☐ No – Proceed to Step 2.

Step 2 – Are you proposing to pave a total area of less than 500 square feet?
☐ Yes – Stop here; while no permit is required, be sure to comply with Minimum Requirements 2, 4, and 5. Refer to the remainder of this handout for more information, and please contact the City with any questions.
☐ No – Proceed to Step 3.

Step 3 – Are you proposing to remove existing asphalt and/or concrete pavement down to the base rock, to be replaced with asphalt and/or concrete over the same area?
☐ No – Proceed to Step 4.
☐ Yes – These areas are defined as replaced hard surfaces. Are you only proposing to replace existing asphalt and/or concrete (no increase in hard surface area)?
☐ Yes – Stop here; a Simple Paving Permit is required. See Page 3.
☐ No – Proceed to Step 4.

Step 4 – Are you paving any areas that are currently unpaved (i.e., grass, landscape, dirt or gravel)?
☐ Yes – These areas are defined as new hard surfaces. Proceed to Step 5.
☐ No – Proceed to Step 5.

Step 5 – Add up the proposed new (Step 4) and replaced (Step 3) hard surface areas. Are you proposing less than 2,000 square feet of total (new plus replaced) hard surface area?
☐ Yes – Stop here; a Simple Paving Permit is required. See Page 3.
☐ No – Proceed to Step 6.

Step 6 – Does the proposed paving area slope / drain toward an existing surface water system that was previously approved to accept runoff from this hard surface area?
☐ Yes – Stop here; a Simple Paving Permit is required. See Page 3.
☐ No – A Surface Water Compliance Application is required. Proceed to Step 7.

Step 7 – Are you proposing less than 5,000 square feet of new and replaced hard surface area?
☐ Yes – Stop here; you must submit a Surface Water Compliance application, but this is considered a Small Project. You may use the “Storm Drainage Minimum Design Requirements for Small Projects” handout to assist in preparing your design.
☐ No – Stop here; you must have a stormwater design prepared by a practicing Washington State registered engineer.
### SIMPLE PAVING PERMIT APPLICATION

**Public Works**
2224 104th Ave E
Edgewood, WA 98372
253.952.3299
permits@cityofedgewood.org

**FILE NUMBER:** __________

<table>
<thead>
<tr>
<th>SITE ADDRESS</th>
<th>PROJECT VALUATION</th>
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<thead>
<tr>
<th>CONTRACTOR LICENSE #</th>
<th>EXP DATE</th>
</tr>
</thead>
</table>

### PROJECT DESCRIPTION / SUMMARY

**Proposed Hard Surface Area (square feet):**

<table>
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<tr>
<th>New:</th>
<th>Replaced:</th>
<th>Total Work Area:</th>
</tr>
</thead>
<tbody>
<tr>
<td>sf</td>
<td>sf</td>
<td>sf</td>
</tr>
</tbody>
</table>

**Material Type (circle one):** HMA / Asphalt | Portland Cement

**Wetlands and/or Critical Areas:** ☐

NOTE: An application for a permit for any proposed work shall be deemed to have been abandoned 180 day after date of filing, unless such application has been pursued in good faith or a permit has been issued.

I hereby certify that I have read and examined this application and know the same to be true and correct, and I am authorized to apply for this permit. All provisions of law and ordinances governing this type of work will be complied with whether specified herein or not.

Print Name: __________________________ [ ] Owner [ ] Agent/Other

Signature: ___________________________ Date: ___________________
**APPROVAL PROCESS**

Applicants must submit two copies of a site plan of sufficient detail to facilitate review of the proposed paving area and storm water drainage system by the City Engineer. At a minimum, a 1”=40’ scale development site plan with contours and each element of the proposed system will be required, including adjacent properties, structures, streets, drainage and septic facilities. *See the Site Plan Requirements Checklist for more information (separate handout)*. If you are unable to provide a scalable site plan, the City can provide a base plan for your site upon request. Also, if the property is served by an onsite septic system, a copy of said design and / or as-built record must be submitted.

To meet the Minimum Requirements of EMC 13.05, applicants must control runoff from new paved areas on the property to the maximum extent feasible, while maintaining natural and/or existing drainage patterns and systems. All projects with new (not replaced) paving areas must demonstrate how the following BMPs are to be implemented on the site plan:

1. Soil preservation and amendment (*BMP T5.13, see Pages 22 through 25*)
2. Concentrated or sheet flow dispersion (*BMP T5.11 & T5.12, see Pages 26 through 29*)

Finally, in order to prevent storm water pollution while performing the work, applicants must address the following 13 Elements on the site plan:

<table>
<thead>
<tr>
<th>No.</th>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ 1</td>
<td>Mark clearing limits (orange construction fence, staking with ribbon)</td>
</tr>
<tr>
<td>☐ 2</td>
<td>Establish construction access (rock entrance)</td>
</tr>
<tr>
<td>☐ 3</td>
<td>Control flow rates (using drainage swales, berms)</td>
</tr>
<tr>
<td>☐ 4</td>
<td>Install sediment controls (silt fence, wattles)</td>
</tr>
<tr>
<td>☐ 5</td>
<td>Stabilize soils (mulch, hydroseed, straw)</td>
</tr>
<tr>
<td>☐ 6</td>
<td>Protect slopes (divert water from top of slopes, cover with plastic)</td>
</tr>
<tr>
<td>☐ 7</td>
<td>Protect drain inlets (catch basin inserts)</td>
</tr>
<tr>
<td>☐ 8</td>
<td>Stabilize channels and outlets (cover with grass, riprap)</td>
</tr>
<tr>
<td>☐ 9</td>
<td>Control pollutants (maintain equipment to prevent leaks)</td>
</tr>
<tr>
<td>☐ 10</td>
<td>Control dewatering</td>
</tr>
<tr>
<td>☒ 11</td>
<td>Maintain BMP (weekly maintenance/replacement, preparation for the storm events)</td>
</tr>
<tr>
<td>☒ 12</td>
<td>Manage the project (<em>contractor / owner responsible, see application form</em>)</td>
</tr>
<tr>
<td>☐ 13</td>
<td>Protect Low Impact Development BMPs (e.g. rain gardens, pervious pavement, etc.)</td>
</tr>
</tbody>
</table>

Several common erosion control techniques are explained and described on the following pages, including standard details for installation of these methods. **The applicant does not need to reproduce these drawings**, but must indicate where each BMP / detail will be used on their site plan. Only those erosion and sediment control techniques most pertinent to small projects are included herein. More detailed information on these BMPs is located in the PCM.
CONSTRUCTION STORMWAER POLLUTION PREVENTION DETAILS

1. Mark Clearing Limits
All projects must clearly mark any clearing limits, sensitive areas and their buffers, and any trees that will be preserved prior to land disturbing activities. If new pavement is proposed, clearly mark clearing limits both in the field and on the plans.

Applicable BMPs include:
- BMP C101: Preserving natural vegetation
- BMP C102: Buffer zones
- BMP C103: High visibility fence

2. Establish Construction Access
All projects subject to vehicular traffic shall provide a means of preventing vehicle “tracking” of soil from the site onto City streets. If any equipment being used has this potential, there shall be a rock pad construction entrance at the site access point. The entrance(s) shall be inspected weekly and if excessive sediment is found, more rock shall be added to ensure proper functioning.

If sediment is tracked off site, it shall be swept or shoveled from the paved surface on a daily basis. Washing of the streets to remove the sediment is not permitted because wash water can transport sediments to streams and other water bodies via the City storm drainage system.

If used, the entrance must be identified on the site plan and must conform to Figure 1.

Applicable BMPs include:
- BMP C105: Stabilized construction entrance/exit

3. Control flow rates
As an alternative to or in conjunction with barriers (see #4, below), drainage swales may be used to control runoff and trap sediment before leaving the work area. Drainage swales are temporary ditches (minimum slope of 0.5% and a maximum of 10%) used to convey concentrated stormwater flows away from construction activities into a dispersion area on small project sites. Swales should be stabilized with erosion protection (see #5, below).

If used, drainage swale(s) must be identified on the site plan and must conform to Figure 2. Swales must be stabilized before directing concentrated flows or they themselves will erode.

Applicable BMP include:
- BMP C201: Grass-lined channels
- BMP C202: Channel lining
- BMP C207: Check dams

4. Install Sediment Controls
Sediment barriers should be used downslope of any disturbed areas, to create a barrier slowing the “sheet” flow of stormwater and allow the sediment to settle out behind the barrier. Do not use barriers in streams, channels, ditches or around inlets/outlets of culverts. Sediment barriers selected shall be identified on the site plan and must conform to those shown in Figure 3 through Figure 7.
Silt Fence
A silt fence is a temporary sediment barrier consisting of filter fabric attached to supporting posts and entrenched into the soil (see Figure 3).

Berm Barriers
A continuous berm is a temporary diversion dike or sediment barrier. It may be constructed with:
- Soil, sand or aggregate encased with a geosynthetic fabric (see Figure 4 and Figure 5)
- Straw wattles (see Figure 6)
- Sand bags (see Figure 7)

Applicable BMPs include:
- BPM C233: Silt fence
- BPM C234: Vegetated strip
- BPM C235: Wattles

5. Stabilize Soils (Erosion Protection) / 8. Stabilize Channels and Outlets
Soil erosion protection is applied over the soil surface to reduce erosion from rainfall and wind. It can also be used to aid the establishment of vegetation. Unless they are being actively worked, between October 1st and April 30th no soils shall remain exposed for more than 2 days, and no more than 7 days from April 1st to September 30th. (See Table 2, Table 3 and Figures 8 through 10.)

Mulches/Seeding/Hydroseeding (Table 2 and Table 3)
Mulching is the application of a protective layer of straw or other suitable material to the soil surface. Mulch can be applied to any site where soil has been disturbed and the protective vegetation has been removed. Materials that may be used for mulching include: straw or hay, compost material, wood or bark chips, hydroseed, and bonded fiber matrix.

Applicable BMP include:
- BMP C120: Temporary and permanent seeding
- BMP C121: Mulching
- BMP C124: Sodding
- BMP C125: Topsoiling/Compost
- BMP C126: Polyacrylamide (PAM) for soil erosion protection

Erosion Control Blankets/Mats (Figure 8)
Erosion control blankets are suitable for steep slopes, stream banks and areas where vegetation will be slow to establish. These blankets are typically made from straw, coconut fiber, excelsior, or synthetic material that is enveloped in plastic, biodegradable netting, jute, polypropylene or nylon.

Applicable BMP include:
- BMP C122: Nets and blankets

Gravel/Riprap (Figure 9)
Gravel and riprap are used to protect hillsides, drainage channels, stream banks and pipe outlets from erosion due to surface water flow.
Plastic Sheeting (Figure 10)
Plastic sheeting is a temporary method of erosion control. Plastic covering provides immediate, short-term erosion protection to slopes, soil stockpiles and other disturbed areas, and shall be removed prior to applying permanent erosion protection.

Applicable BMP include:
- BMP C123: Plastic covering

6. Protect Slopes
Protect slopes by diverting water at the top of the slope. Reduce slope velocities by minimizing the continuous length of slope. Seeding and establishing vegetation on slopes will help protect slopes.

Applicable BMPs include:
- BMP C120: Temporary and permanent seeding
- BMP C200: Interceptor dike and swale

7. Protect Drain Inlets
To prevent sediment from entering drainage systems prior to site stabilization, install catch basin protection in any onsite and nearby downstream catch basins. While Figures 11 and 12 are acceptable methods of catch basin protection, only Figure 11 is approved for use in City right-of-way.

Applicable BMPs include:
- BMP C220: Storm drain inlet protection

9. Control Pollutants (Other Than Sediment)
All pollutants must be disposed of in a manner that does not cause contamination of surface waters. Do not maintain or repair any heavy equipment of vehicles onsite. Clean any spills immediately. Handle concrete and concrete waste appropriately.

Applicable BMPs include:
- BMP C150: Materials on hand
- BMP C151: Concrete handling
- BMP C152: Sawcutting and surfacing pollution prevention
- BMP C153: Materials delivery, storage and containment
- BMP C154: Concrete washout area

Table 2. Temporary Erosion Control Seed Mix

<table>
<thead>
<tr>
<th>Seed Mix</th>
<th>% Weight</th>
<th>% Purity</th>
<th>% Germination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chewings or annual bluegrass</td>
<td>40</td>
<td>98</td>
<td>90</td>
</tr>
<tr>
<td><em>Festuca rubra var. commutate</em> or <em>Poa anna</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennial rye</td>
<td>50</td>
<td>98</td>
<td>90</td>
</tr>
<tr>
<td><em>Lolium perenne</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Redtop or colonial bentgrass</td>
<td>5</td>
<td>92</td>
<td>85</td>
</tr>
<tr>
<td><em>Agrostis alba</em> or <em>Agrostis tenuis</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White Dutch clover</td>
<td>5</td>
<td>98</td>
<td>90</td>
</tr>
<tr>
<td><em>Trifolium repens</em></td>
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<td></td>
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<tr>
<td>Mulch Material</td>
<td>Quality Standards</td>
<td>Application Rates</td>
<td>Remarks</td>
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<tr>
<td>-------------------------</td>
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<td>--------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Straw</td>
<td>Air-dried; free from undesirable seed and coarse material</td>
<td>3” thick; 5 blades per 1,000 square feet or 2 to 3 tons per acre</td>
<td>Cost-effective protection when applied with adequate thickness. Hand-application generally requires greater thickness than blown straw. The thickness of straw may be reduced by half when used in conjunction with seeding. In windy areas, straw must be held in place by crimping, using a tackifier, or covering with netting. Blown straw always has to be held in place with a tackifier, as even light winds will blow it away. Straw should be used only if mulches with long-term benefits are unavailable locally. It should also not be used within the ordinary high-water elevation of surface waters (due to flotation).</td>
</tr>
<tr>
<td>Hydro-mulch</td>
<td>No growth inhibiting factors.</td>
<td>Approximately 25-30 pounds per 1,000 square feet or 1,500 to 2,000 pounds per acre</td>
<td>Shall be applied with hydromulcher. Shall not be used without seed and tackifier unless the application rate is at least doubled. Fibers longer than about 3/4 to 1 inch.</td>
</tr>
<tr>
<td>Composted mulch and compost</td>
<td>No visible water or dust during handling. Must be purchased from supplier with a Solid Waste Handling permit (unless exempt)</td>
<td>3” thick, minimum; approximately 100 tons per acre (approximately 800 pounds per yard)</td>
<td>More effective control can be obtained by increasing thickness to 3 inches. Excellent mulch for protecting final grades until landscaping because it can be directly seeded or tilled into soil as an amendment. Composted mulch has a coarser size gradation than compost. It is more stable and practical to use in wet areas and during rainy weather conditions.</td>
</tr>
<tr>
<td>Chipped site vegetation</td>
<td>Average size shall be several inches. Gradations from fine to 6” in length for texture, variation and interlocking properties</td>
<td>3” minimum thickness</td>
<td>This is a cost-effective way to dispose of debris from clearing and grubbing, and it eliminates the problems associated with burning. Generally, it should not be used on slopes above 10% because of its tendency to be transported by runoff. It is not recommended within 200 feet of surface waters. If seeding is expected shortly after mulch, the decomposition of the chipped vegetation may tie up nutrients important to grass establishment.</td>
</tr>
</tbody>
</table>

**10. Control Dewatering**

Any dewatering water must be discharged through a stabilized channel to a sediment pond and will require BMP be followed when discharging. Discharge is not permitted to creeks or wetland areas and shall instead be placed in baker tanks and disposed of at approved locations.
11. Maintain BMP
Maintain and repair temporary erosion and sediment control BMP as needed. Inspect all BMP at least weekly and after every storm event. Remove all temporary erosion and sediment control BMP within 30 days after final site stabilization.

12. Manage the Project
Inspect, maintain, and repair all BMPs as needed to ensure continued performance of their intended function. Site inspections must be conducted by a person knowledgeable in the principles and practices of erosion and sediment control. Please see the application form for contact information.

13. Protect Low Impact Development (LID) BMPs
While there may be no new LID facilities proposed, you must protect any existing nearby or downslope Bioretention and Rain Garden BMPs from sedimentation through installation and maintenance of BMPs. Restore the BMPs to their fully functioning condition if they accumulate sediment during construction. Restoring the BMP must include removal of sediment and any sediment-laden Bioretention/Rain Garden soils, and replacing the removed soils with soils meeting the design specification.

Prevent compacting Bioretention and Rain Garden BMPs by excluding construction equipment and foot traffic. Protect completed lawn and landscaped areas from compaction due to construction equipment.

Control erosion and avoid introducing sediment from surrounding land uses onto permeable pavements. Do not allow muddy construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements, including permeable pavement subgrade, reservoir course, or wearing course. Pavements fouled with sediments or no longer passing an initial infiltration test must be cleaned using procedures shown in Volume III of the PCM or the manufacturer’s procedures.

Applicable BMPs include:
- BMP C102: Buffer Zone
- BMP C103: High Visibility Fence
- BMP C200: Interceptor Dike and Swale
- BMP C201: Grass-Lined Channels
- BMP C207: Check Dams
- BMP C208: Triangular Silt Dike (TSD) (Geotextile-Encased Check Dam)
- BMP C231: Brush Barrier
- BMP C233: Silt Fence
- BMP C234: Vegetated Strip
IT IS RECOMMENDED THAT THE ENTRANCE BE CROWNED SO THAT RUNOFF DRAINS OFF THE PAD

EXISTING ROAD

R = 25' MIN.

INSTALL DRIVEWAY CULVERT IF THERE IS A ROADSIDE DITCH PRESENT, AS PER CITY OF TACOMA STANDARDS

4"-8" QUARRY SPALLS

GEOTEXTILE

12" MIN. THICKNESS

PROVIDE FULL WIDTH OF INGRESS/EGRESS AREA

Figure 1. Construction Entrance Rock Pad
Figure 2. Water Runoff Containment/Control – Drainage Swale Cross-Section
Figure 3. Sediment Barrier – Silt Fence
Figure 4. Sediment Barrier - Triangular Sediment Filter Dikes
Figure 5. Sediment Barrier - Geosynthetic Dike
Figure 6. Sediment (Berm) Barrier - Straw Wattle Rolls

1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3”–5” (75–125mm) DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
1) When sandbag is filled with coarse grade sand material, the open end should be stapled or tied with nylon or poly cord. The weight shall be 90 – 125 lbs.

2) Sandbags should be stacked in at least three vertical rows abutting each other, and in staggered arrangement. (Refer to front view).

3) The base of the berm should be at least 3 sandbags deep and can be reduced to 2 and 1 bag in the second and third rows respectively. (Refer to cross section).

**Figure 7. Sediment (Berm) Barrier - Sandbag Berm**
MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.

MIN. 4" (100mm) OVERLAP

12" (300mm)

1 1/2" (40mm)

12" (300mm)

ISOMETRIC VIEW

STAPLES

NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

Figure 8. Soil Erosion Protection – Erosion Blankets and Turf Reinforcement Mats
Figure 9. Soil Erosion Protection – Rip Rap Protection

NOTE:
'T' = THICKNESS: THICKNESS SHALL BE DETERMINED BY THE ENGINEER.

MINIMUM THICKNESS SHALL BE 1.5x THE MAXIMUM STONE DIAMETER, NEVER LESS THAN 6" (150mm).
NOTE: USE OLD TIRES OR SAND BAGS TO ANCHOR PLASTIC COVERING.

**Figure 10. Soil Erosion Protection – Tarp Covering**
INLET PROTECTION NOTES:

1. FILTERS SHALL BE INSPECTED AFTER EACH STORM EVENT AND CLEANED OR REPLACED WHEN 1/3 FULL.

Figure 11. Catch Basin Protection - Bag Filter
Figure 12. Catch Basin Protection – Inlet Gravel and Filter Fabric
BMP T5.13 – Soil Preservation and Amendment

Natural undisturbed soil, organisms, and vegetation provide important stormwater management functions: 1) Water infiltration, 2) Nutrient, sediment, and pollutant adsorption, 3) Sediment and pollutant biofiltration, 4) Water interflow storage and transmission, and 5) Pollutant decomposition. These functions are largely lost when development strips away native soil and vegetation, replacing it with hard surfaces, minimal soil and sod. Such landscapes can become pollution-generating surfaces due to compaction, pesticides, fertilizers, other landscaping chemicals, pet wastes, and pollutants that accompany roadside litter.

Soil preservation and amendment helps to regain stormwater functions, provide treatment of pollutants and sediments, and minimize the need for landscaping chemicals. Most sites in Edgewood are underlain by cemented till, or “hardpan”, which require the limited depth of upper soils to process stormwater. Developments must ensure that the existing upper soil depth is retained (removed and replaced as discussed below) during the grading process. **Portions of the site with slopes greater than 33 percent do not need to implement this BMP.**

Typical cross-sections of compost-amended soil are shown in Figure 3.1:

![Figure 3.1. Cross-section of Soil Amendment.](source: City of Seattle (reproduced with permission))

Soil Preservation and Amendment Plan

This handout and associated site plan serves as your Soil Preservation and Amendment Plan. Show all areas adjacent to the proposed work area to be either undisturbed or amended, as discussed further herein. If there will be more than 1,000 square feet of land disturbed outside any proposed hard surface areas, include calculations of the amounts of compost, compost amended topsoil, and mulch will be used on the site. General guidance on these procedures can be found in the Building Soil manual (Stenn et al. 2012), available at [www.buildingsoil.org](http://www.buildingsoil.org).

The soil quality design requirements can be met by using one of the four options listed below:

1. **Retain and Protect Undisturbed Soil:** Leave undisturbed vegetation and soil, and protect from compaction by fencing and keeping materials storage and equipment off these areas during construction. **For all areas where soil or vegetation are disturbed, use option 2, 3, or 4.**
2. **Amend Soil:** Amendments shall be applied to all areas disturbed due to clearing and/or intrusion of invasive species, to enhance / accelerate rehabilitation of the soil structure. The application will be non-destructive to existing vegetation by tapering amendment depths near surface roots. Amend existing site topsoil or subsoil either at default “pre-approved” rates, or at custom rates meeting the soil quality guidelines based on engineering tests and amendment (refer to the web site www.buildingsoil.org for custom methods).

3. **Stockpile Soil (p.25):** Stockpile existing topsoil during grading and replace it prior to planting. Amend stockpiled topsoil (if needed to meet the organic matter or depth requirements) either at the default “pre-approved” rate or at a custom rate (refer to the web site www.buildingsoil.org for custom methods). Scarify subsoil as described under the Soil Amendment heading below.

4. **Import Soil (p.25):** Must be a topsoil mix of sufficient organic content and depth to meet the requirements, and should not contain excessive clay or silt fines (>5% passing the US #200 sieve). Use imported topsoil that meets default “pre-approved” rates. Scarify subsoil and mulch planting beds, as described under the Soil Amendment heading below.

**Soil Amendment**

If retention and protection of existing soil is not feasible, disturbed soils must be amended. Soil organic matter shall be replenished by amending with compost. It is important that the materials used to meet this BMP are appropriate and beneficial to the proposed plant cover. Likewise, it is important that imported topsoils improve soil conditions and do not have an excessive percent of clay or silt fines.

Amend existing site soils either at default “pre-approved” soil amendment rates or custom calculated rates (both described in detail below) to meet the soil quality guidelines. All areas subject to clearing and grading that are not covered by impervious surface, incorporated into a drainage facility, or engineered as a structural fill / slope must demonstrate the following at project completion:

- A topsoil layer meeting these requirements:
  - **Turf areas:** Place 1.75 inches of compost and till in to an 8 inch depth. Achieve an organic matter content of 4% to 5%.
  - **Planting beds:** Place 3 inches of compost and till in to an 8 inch depth. Achieve an organic matter content of 8% to 10%.
  - A pH from 6.0 to 8.0 (or matching the pH of the original undisturbed soil).

- Root zones (where existing tree roots limit incorporation of amendments) are exempt from this requirement. Fence and protect these root zones from stripping, grading, or compaction.

- Scarify (loosen) subsoils, at least 4 inches below the topsoil layer, for a finished minimum uncompacted soil depth of 12 inches. Incorporate some of the upper soils to avoid stratified layers, where feasible.

- **For turf areas:** Water or roll to compact to 85 percent of maximum dry density, rake to level, and remove surface debris larger than 1 inch diameter (www.buildingsoil.org).

- **After planting:** Mulch planting beds with 2 to 4 inches of organic material, such as wood chips, bark, shredded leaves, compost, etc. **Do not use fine bark - it can seal the soil surface.**

- Use compost and other materials that meet the following organic content requirements:
  - The “pre-approved” amendment organic content can only be met using compost that meets the following compost specification:
- Must meet the definition of “composted material” in WAC 173-350-100 and comply with testing parameters and standards in WAC 173-350-220.

- Must be produced at a composting facility permitted by a jurisdictional health authority. See [www.ecy.wa.gov/programs/swfa/organics/soil.html](http://www.ecy.wa.gov/programs/swfa/organics/soil.html) for a list. Said facilities must test the material using the U.S. Composting Council “Test Method for the Examination of Compost and Composting” (TMECC), as established in the “Seal of Testing Assurance” (STA) program.

- Must have at least 65 percent by volume recycled plant waste comprised of “yard debris,” “crop residues,” and “bulking agents” (WAC 173-350-100). Up to 35 percent by volume of “postconsumer food waste” (WAC 173-350-100), biosolids and/or manure, may be substituted for recycled plant waste.

- Moisture content must be such that there is no visible free water or dust produced when handling the material.

- Composted material shall meet the size gradations (by dry weight) established in the STA program, as follows:

<table>
<thead>
<tr>
<th>Fine Compost</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent passing 2&quot;</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Percent passing 1&quot;</td>
<td>99</td>
<td>100</td>
</tr>
<tr>
<td>Percent passing 0.625&quot;</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>Percent passing 0.25&quot;</td>
<td>75</td>
<td>100</td>
</tr>
</tbody>
</table>

- pH shall be between 6.0 and 8.5 (TMECC 04.11-A), and “Physical contaminants” (WAC 173-350-100) content must be less than 1% by weight (TMECC 03.08-A) total, not to exceed 0.25% film plastic by dry weight.

- Manufactured inert material (plastic, concrete, ceramics, metal, etc.) must be less than 1.0% by weight, per TMECC 03.08-A "percent dry weight basis.”

- Minimum organic matter content shall be 40% by dry weight basis per TMECC 05.07A, “Loss-On-Ignition Organic Matter Method.”

- Soluble salt contents shall be less than 4.0 mmhos/cm tested in accordance with TMECC 04.10-A, “1:5 Slurry Method, Mass Basis.”

- Maturity indicators from a cucumber bioassay shall be greater than 80 percent, in accordance with TMECC 05.05-A, “Germination and Vigor.”

- Must be stable (low oxygen use and CO₂ generation) and mature (capable of supporting plant growth). Stability shall be 7 or below per TMECC 05.08-B, “Carbon Dioxide Evolution Rate.”

- Carbon to nitrogen ratio must be less than 25:1 as determined using TMECC 04.01 “Total Carbon” and TMECC 04.02D “Total Kjeldhal Nitrogen.” A C:N ratio up to 35:1 may be used for Puget Sound lowland native species planting.

  - Compost not conforming to the above requirements or taken from a source other than those tested and accepted shall be immediately removed from the project and replaced.

  - Calculated amendment rates may be met using composted materials as defined 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.

Finally, assure that the resulting soil is conducive to the type of vegetation to be established.

**Soil Stockpiling**

In any areas requiring grading, remove and stockpile the duff layer and topsoil on site in a controlled area (not adjacent to public resources or critical areas). Reapply to other site area where feasible.

- In areas of the site where grading is required, cuts shall have the upper native topsoil removed and stockpiled for replacement in stormwater and/or vegetation management areas (yards, bioretention, interflow pathways, vegetated channels, or natural resource protection areas).

- The depth of native topsoil to be stockpiled shall be the entire depth of native topsoil horizon, up to a maximum of 3 feet.

- Over-excavation of cut sections may be needed if in a stormwater management area. Cut to a depth that will allow full replacement of native topsoil to full depth, up to a maximum of 3 feet.

- Cut sections where topsoil replacement is required shall require ripping (scarifying) of any cemented till layers to a depth of 6 inches. The replacement soil shall be thoroughly mixed into the ripped till to provide a gradual transition between the cemented till layer and the topsoil.

- Stockpiled topsoil shall be replaced in lifts no greater than 1 foot deep and compacted by rolling to a density that matches existing (native) conditions.

**Importing Soil**

The default pre-approved rates for imported topsoils are:

- **For planting beds**: mix by volume of 35% compost with 65% mineral soil, to achieve a minimum 8% (target 10%) organic matter by loss-on-ignition test.

- **For turf areas**: mix by volume of 20% compost with 80% mineral soil, to achieve a minimum 4% (target 5%) organic matter by loss-on-ignition test.
BMP T5.11 – Concentrated Flow Dispersion

Dispersion of concentrated flows from driveways or other pavement through a vegetated pervious area attenuates peak flows by slowing entry of the runoff into the conveyance system, allows for some infiltration, and provides some water quality benefits. See Figures 3.2 and 3.3 (pages 28 & 29).

Design Criteria

- Provide a crushed rock pad at each discharge point (2 feet wide x 3 feet long x 6 inches deep).
- Each concentrated flow dispersion device can accept up to 700 square feet of impervious area.
- Each dispersion device must have a separate flowpath, situated at least 20 feet apart to prevent flowpath overlap at any point along the minimum required flowpath lengths.
- A slotted drain, diagonal berm, or similar measure must be provided to direct flow to the rock pad or dispersion trench.
- No erosion or flooding of downstream properties may result.
- Maintain a vegetated flowpath of at least 50 feet between the dispersion device and any property line, structure, steep slope (greater than 20 percent), stream, lake, wetland, or other impervious surface. The flowpath length is measured perpendicular to site contours.
- Vegetated flowpaths must be undisturbed native landscape, or well-established lawn, landscape, or groundcover over soil that meets the soil preservation and amendment requirements outlined in BMP T5.13 (page 22). Groundcover must be dense enough to disperse and infiltrate flows and prevent erosion.
- Natural resource protection areas and critical area buffers (excluding steep slopes) may count towards flowpath lengths, if permanently protected through a covenant, easement, or tract.
- For sites with onsite or adjacent septic systems: Dispersion devices must be at least 30 feet upgradient or 10 feet downgradient of the drainfield areas (per WAC 246-272A-0210). This may be modified by the Tacoma-Pierce County Health Department if site topography clearly prohibits surface flows from intersecting the drainfield or where site conditions (soil permeability, distance between systems, etc.) indicate that a shorter setback is feasible.
- If located above slopes steeper than 20 percent and greater than 10 feet high: Dispersion devices must be more than 50 feet from the top of slope, a vegetated flowpath must be maintained between the facility and slope, and a geotechnical assessment and soils report must be prepared addressing potential impacts of the facility on the slope. The assessment may recommend a reduced setback, but in shall be no less than the vertical height of the slope.
- Dispersion flowpaths are not permitted within an erosion or landslide hazard area (EMC Title 14), unless slope stability impacts have been analyzed and mitigated by a geotechnical professional, and appropriate analysis indicates that the impacts are negligible.
- The dispersion flowpath is not permitted over contaminated sites or abandoned landfills.

Construction Criteria

Protect the dispersion flowpath from sedimentation and compaction during construction. If the flowpath area is disturbed, restore the area to meet the soil preservation and amendment requirements in BMP T5.13 (page 22) and establish a dense cover of lawn, landscape, or groundcover.
BMP T5.12 – Sheet Flow Dispersion

Sheet flow dispersion is the simplest method of runoff control. This BMP can be used for any hard surface that is graded so as to avoid concentrating flows, thereby only needing to traverse a narrow band of adjacent vegetation for effective attenuation and treatment. Use this BMP for flat or moderately sloping surfaces (less than 15 percent slope), such as driveways, sport courts, patios, roofs without gutters, lawns, pastures; or any situation where concentration of flows can be avoided.

Design Criteria

- A 2-foot-wide transition zone (to discourage channeling) must be provided between the edge of the contributing hard surface and downslope vegetation. This may consist of crushed rock, modular pavement, drain rock, or other material as approved by the City of Edgewood.

- See Figure 3.2 (page 28) for required setbacks and flowpath lengths. *(Figure 3.2 is also applicable for non-driveway paved surfaces.)*

- Provide a 10-foot wide vegetated buffer for up to 20 feet of width of paved or impervious surface. Provide an additional 10 feet of width for each additional 20 feet of contributing area width or fraction thereof. *(For example, if a driveway is 30 feet wide and 60 feet long, provide a 15-foot wide by 60-foot long vegetated buffer, with a 2-foot by 60-foot transition zone.)*

- Vegetated flowpaths must be undisturbed native landscape, or well-established lawn, landscape, or groundcover over soil that meets the soil preservation and amendment requirements outlined in BMP T5.13 (page 22). Groundcover must be dense enough to disperse and infiltrate flows and prevent erosion.

- Natural resource protection areas and critical area buffers (excluding steep slopes) may count towards flowpath lengths, if permanently protected through a covenant, easement, or tract.

- For sites with onsite or adjacent septic systems: Dispersed surfaces must be at least 30 feet upgradient or 10 feet downgradient of the drainfield areas (per WAC 246-272A-0210). This may be modified by the Tacoma-Pierce County Health Department if site topography clearly prohibits surface flows from intersecting the drainfield or where site conditions (soil permeability, distance between systems, etc.) indicate that a shorter setback is feasible.

- If located above slopes steeper than 20 percent and greater than 10 feet high: Dispersed surfaces must be more than 50 feet from the top of slope, a vegetated flowpath must be maintained between the facility and slope, and a geotechnical assessment and soils report must be prepared addressing potential impacts of the facility on the slope. The assessment may recommend a reduced setback, but in shall be no less than the vertical height of the slope.

- **Dispersion flowpaths are not permitted within an erosion or landslide hazard area** (EMC Title 14), unless slope stability impacts have been analyzed and mitigated by a geotechnical professional, and appropriate analysis indicates that the impacts are negligible.

- **The dispersion flowpath is not permitted over contaminated sites or abandoned landfills.**

Construction Criteria

Protect the dispersion flowpath from sedimentation and compaction during construction. If the flowpath area is disturbed, restore the area to meet the soil preservation and amendment requirements in BMP T5.13 (page 22) and establish a dense cover of lawn, landscape, or groundcover.
Figure 3.2. Sheet Flow Dispersion for Driveways
Figure 3.3. Typical Concentrated Flow Dispersion for Steep Driveways