



## **SUPPORTING DOCUMENT** **STORMWATER WORKSHEET**

This submittal worksheet will help determine what onsite stormwater management and erosion control measures are required for your project. After a technical review of your application and this worksheet, additional information may be required in order to finish processing your permit.

**All information in this worksheet is required for your permit application to be accepted.**

### **→ STEP 1 – TOTAL DISTURBED AREA**

On your site plan, show the edge of all ground and vegetation that will be disturbed by the project. Include ground and vegetation disturbed for (*check all that apply*):

- ☐ Wells
- ☐ Septic drainfields and tanks
- ☐ Structures, including areas disturbed by excavation stockpiling, and equipment compaction
- ☐ Onsite driveways and roads
- ☐ Offsite access roads, easement roads, or other hard surfaces created outside the building parcel as a result of this project
- ☐ Pasture
- ☐ Lawn, garden, and landscaped areas
- ☐ Construction parking, staging, storage, and stockpile areas
- ☐ Other cleared or graded areas of any kind

1. **Total Disturbed Area:** 733,550 square feet

### **→ STEP 2 – TOTAL HARD SURFACE AREA (new and replaced)**

#### **Onsite hard surfaces:**

- 2. Footprint of all structures to be constructed or replaced: 202,118 square feet
- 3. Driveways and parking areas (gravel, paved, or permeable pavement): 172,933 square feet
- 4. Sidewalks, patios, storage areas, walkways and other hard surfaces (gravel, paved, or permeable pavement): X square feet
- 5. Total of lines 2, 3, and 4: 375,051 square feet

#### **Offsite hard surfaces:**

- 6. Access roads, easement roads, driveway aprons, and other hard surfaces (gravel, paved, or permeable pavement) created outside the building parcel as a result of this project: 500 square feet

#### **Total Hard Surface Area:**

- 7. Total of lines 5 and 6: 375,551 square feet

### → STEP 3a – URBAN AREAS

Determine if your parcel is inside a Census Defined Urban Area or Urban Growth Area. Maps are available from a Community Development Permit Technician or at Kitsap County Parcel Search <https://psearch.kitsapgov.com/webappa/> (click on "Layers", then in the "Manage Layers" box choose the "Critical Drainage Areas" theme. You may turn layers on and off by clicking the check boxes.)

Check one of the following:

- ☒ 8. The parcel **is inside** a Census Urban Area or Urban Growth Area (yellow or orange on the map)
- ☐ 9. The parcel **is not inside** a Census Urban Area or Urban Growth Area

### → STEP 3b – CRITICAL DRAINAGE AREAS

Determine if your parcel is inside a mapped Critical Drainage Area. Maps are available from a Community Development Permit Technician or at Kitsap County Parcel Search <https://psearch.kitsapgov.com/webappa/> (click on "Layers", then in the "Manage Layers" box choose the "Critical Drainage Areas" theme. You may turn layers on and off by clicking the check boxes.)

Check one of the following:

- ☐ 10. The parcel **is inside** a mapped Critical Drainage Area (light green on the map)
- ☒ 11. The parcel **is not inside** a mapped Critical Drainage Area

### → STEP 3c – PROJECT TYPE

First, check one of the following:

- ☒ 12. The project is inside an urban area (from line 8)  
**AND** the Total Hard Surface Area (from line 7) is 5,000 square feet or more.
- ☐ 13. The project is inside an urban area (from line 8)  
**AND** the project will convert 2.5 acres (108,900 square feet) or more of native vegetation to pasture.
- ☒ 14. The project is inside an urban area (from line 8)  
**AND** the project will convert 3/4 acre (32,670 square feet) or more to lawn, garden, or other landscaping.
- ☐ 15. The project **is not** inside an urban area (from line 9)  
**AND** the parcel size is under 4.6 acres (200,000 sf)  
**AND** the Total Hard Surface Area (from line 7) is 10,000 square feet or more.
- ☐ 16. The project **is not** inside an urban area (from line 9)  
**AND** the parcel size is 4.6 acres or more (200,000 square feet)  
**AND** the Total Hard Surface Area (from line 7) is over 5% of the parcel area.
- ☒ 17. The project will result in the grading or movement of 5,000 cubic yards (135,000 cubic feet) or more of earth.
- ☐ 18. None of the above apply.

Next, check one of the following:

- ☒ 19. Check here if you checked any of lines 12 – 17 above. Your project is classed as a **Large Project**.
- ☐ 20. Check here if you checked line 18 above. Your project is classed as a **Small Project**.



## → STEP 3d – CRITICAL AREAS

**Determine if your parcel is inside a mapped Critical Area.** Maps are available from a Community Development Permit Technician or at Kitsap County Parcel Search <https://psearch.kitsapgov.com/webappa/> (click on "Layers", then in the "Manage Layers" box choose the "Critical Areas" theme. You may turn layers on and off by clicking the check boxes.)

**Check one of the following:**

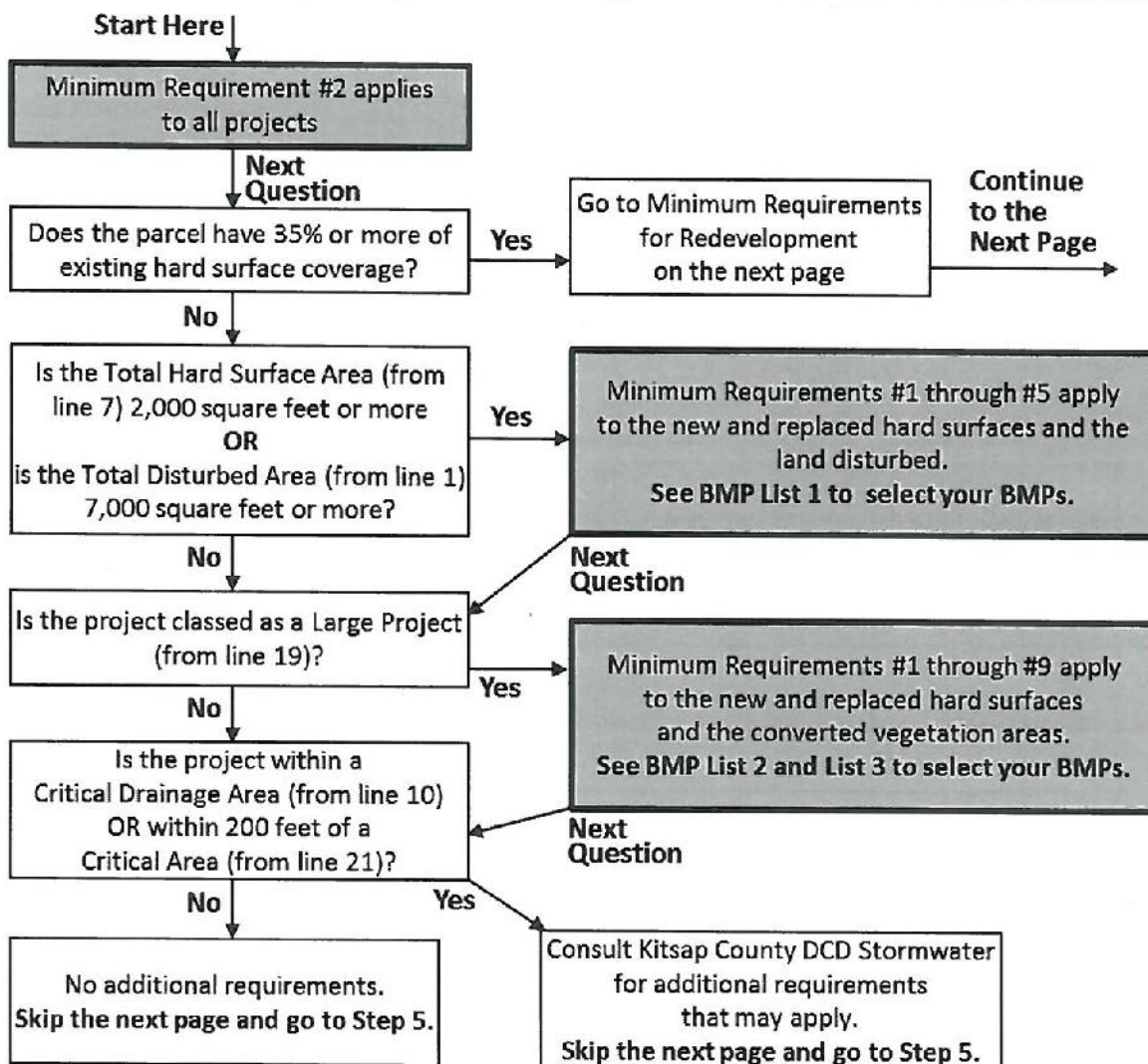
- ☐ 21. Any portion of the parcel **is within 200 feet** of a mapped Critical Area such as a waterbody, shoreline, wetland, hydric soils, FEMA flood hazard area, bald eagle buffer, or geological hazard (pink, green, blue, or patterned on the map).
- ☒ 22. Any portion of the parcel **is not within 200 feet** a mapped Critical Area such as a waterbody, shoreline, wetland, hydric soils, FEMA flood hazard area, bald eagle buffer, or geological hazard.

## → STEP 4 - MINIMUM REQUIREMENTS FOR NEW DEVELOPMENT

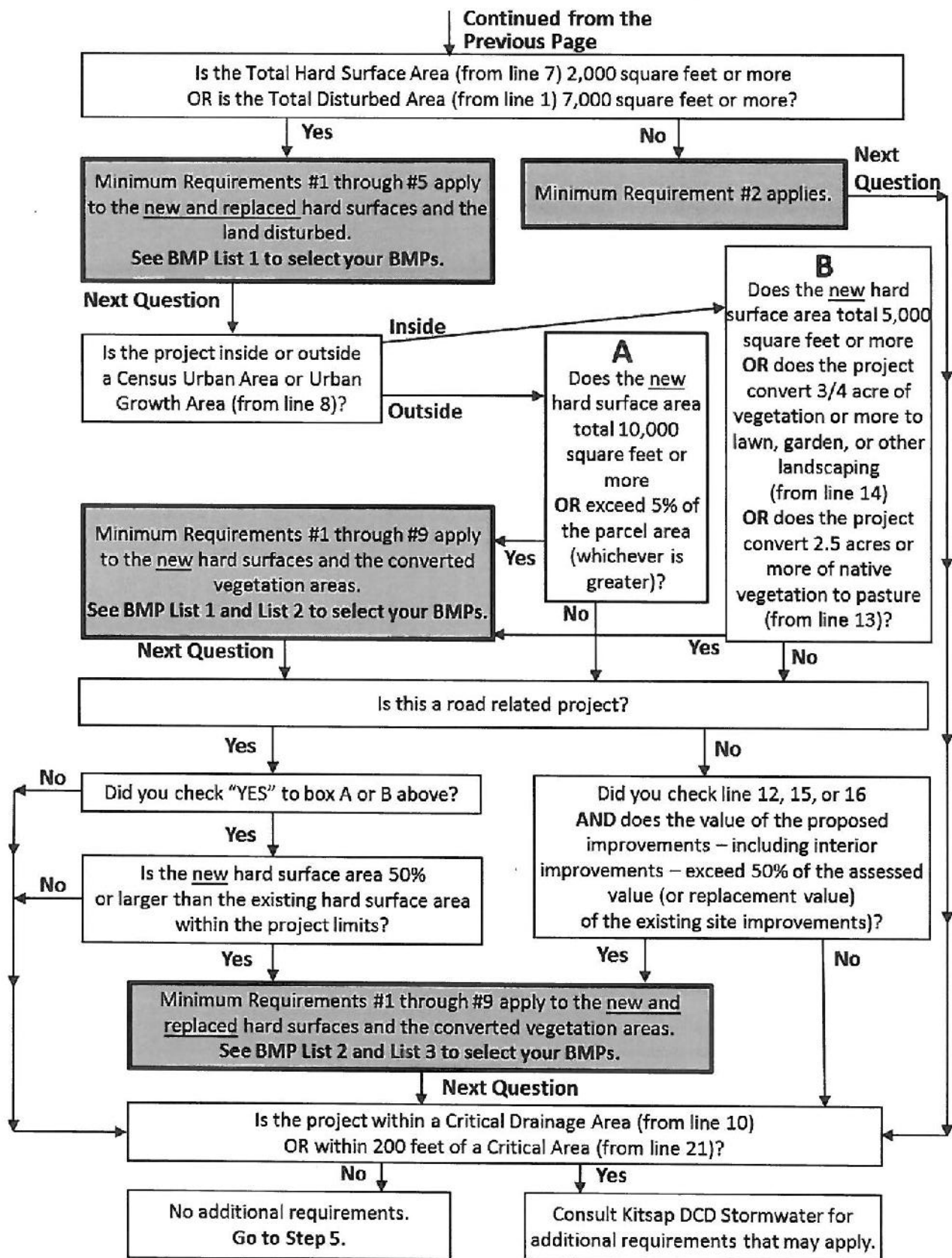
**Indicate (highlight) on the flowchart below, the path that will determine the minimum stormwater requirements for your project.**

*(This flowchart is a simplified version of Tables 4.1 and 4.2 of the Kitsap County Stormwater Design Manual. It does not replace the requirements of Kitsap County Code 12.20.*

*Applicants may, at their discretion, choose to use the BMP Performance Standard consistent with Table 4.2 on page 4-16 in Volume I of the Kitsap County Stormwater Design Manual in lieu of the BMP lists identified below.)*

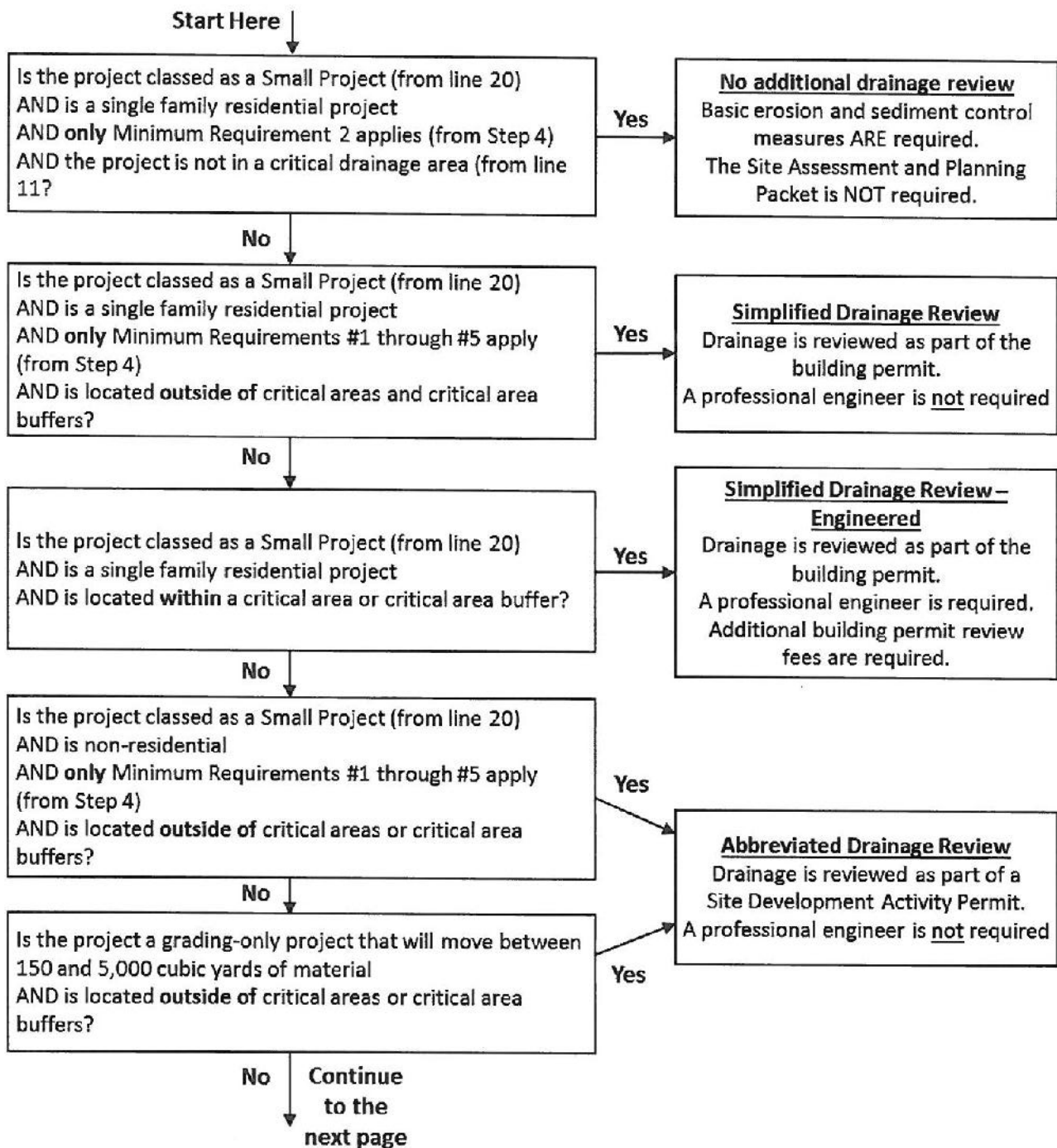


## MINIMUM REQUIREMENTS FOR REDEVELOPMENT





→ STEP 5 – IDENTIFY THE DRAINAGE REVIEW REQUIRED



Continued  
from the  
previous  
page

Is the project a grading-only project that will move between 150 and 5,000 cubic yards of material  
AND only Minimum Requirements #1 through #5 apply (from Step 4) AND:

- Connects to a drainage system in the right-of-way OR
- Constructs improvements in the right-of-way OR
- Constructs in a critical area or critical area buffer?

Yes

**Abbreviated Drainage Review –  
Engineered**  
Drainage is reviewed as part of a  
Site Development Activity Permit.  
A professional engineer is required.

No

Is the project classed as a Small Project (from line 20)  
AND is non-residential  
AND:

- Connects to a drainage system in the right-of-way OR
- Constructs improvements in the right-of-way OR
- Constructs in a critical area or critical area buffer?

Yes

**Full Drainage Review**  
Drainage is reviewed as part of a  
Site Development Activity Permit.  
A professional engineer is required.

No

## → STEP 6 – COMPLETE THE SITE ASSESSMENT AND PLANNING PACKET

Not required if “No Additional Drainage Review” is checked in Step 5.

Chipp County Stormwater Design Manual  
Appendix C

### Site Assessment and Planning Packet

**Instructions for completing this packet:**

- 1. This packet is to be completed during preliminary site assessment and planning, and shall be submitted with the preliminary plan application.
- 2. See Appendix A for definitions of terms used in this packet.
- 3. See Volume II, Chapter 1 for submitted requirements.

**The Goals of this packet are to:**

- 1. Provide basic project information.
- 2. Document how the project proposes to minimize:
  - Impervious surfaces
  - Loss of native vegetation
  - Stormwater runoff
- 3. Demonstrate how the project proposes to comply with Minimum Requirement #5 – On-site Stormwater Management.

**1. PROJECT INFORMATION**

Parcel No. (provided by County): \_\_\_\_\_  
 Project Address or Project Boundaries: \_\_\_\_\_  
 Parcel No.: \_\_\_\_\_  
 Project Type: ☐ Residential ☐ Commercial ☐ Industrial ☐ Public  
 Project is: ☐ New or redevelopment ☐ Remodel ☐ Rehab ☐ Combination (describe below)  
 Project Description: \_\_\_\_\_

**2. APPLICANT INFORMATION**

Company/Agency/Owner: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

**3. DETAILED SITE COMPOSITE MAP**

Develop a composite site map as you called it in Section C. See the example below. This map must be submitted as part of the completed packet and will be used as a basis for the site design.

Appendix C – Site Assessment & Planning Packet



# STORMWATER BEST MANAGEMENT PRACTICE (BMP) INFEASIBILITY WORKSHEET FOR ON-SITE STORMWATER MANAGEMENT

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All Best Management Practices (BMPs) are considered feasible until demonstrated otherwise. They must be considered in the order shown on BMP Lists 1, 2, or 3.

Use this worksheet to document the reasons why specific BMPs were not selected for use. A BMP may be considered infeasible based any on the conditions listed below. Cost is not a factor for determining infeasibility.

The infeasibility criteria listed below summarize, for convenience, the detailed criteria in the 2016 Kitsap County Stormwater Design Manual and the 2014 Stormwater Manual for Western Washington. Additional infeasibility criteria in those manuals may apply to your specific situation. References to the detailed criteria in both manuals are shown for each BMP below.

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## SOIL MANAGEMENT PLAN for POST-CONSTRUCTION SOIL QUALITY AND DEPTH

Infeasibility Criteria (Check all that apply)	Backup Information from Applicant
<input type="checkbox"/> This BMP is considered infeasible on portions of the site with till soils and slopes greater than 33%.	
<p><b>References:</b></p> <ul style="list-style-type: none"> <li>See Kitsap County Brochure #57 and Supporting Document - Soil Management Plan for BMP T5.13.</li> <li>Also see 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.1, Page 5-22.</li> <li>Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-8, BMP T5.13.</li> </ul>	

## DOWNSPOUT FULL INFILTRATION

Infeasibility Criteria (Check all that apply)	Backup Information from Applicant
<input checked="" type="checkbox"/> A professional geotechnical evaluation recommends against infiltration due to erosion, slope failure, or flooding concerns.	<p style="font-size: 1.2em; color: blue;">See Storm Report</p>
<input type="checkbox"/> A professional evaluation finds the only area available for infiltration would threaten the safety or reliability of underground utilities, underground storage tanks, structures, road or parking lot surfaces, or subgrades.	
<input type="checkbox"/> A professional evaluation finds the only area available for infiltration does not allow for a safe overflow pathway.	
<input type="checkbox"/> A professional evaluation finds that infiltration would threaten shoreline structures such as bulkheads.	
<input type="checkbox"/> A professional evaluation finds that infiltration would threaten existing below-grade basements.	
<input type="checkbox"/> The site does not have outwash or loam soils.	
<input type="checkbox"/> Horizontal setbacks cannot be met.	
<input type="checkbox"/> There is not at least 1-foot of permeable soil between the bottom of the bioretention area and the seasonal high water table or impermeable layer (for drainage areas <u>less than</u> 5,000 square feet of pollution generating hard surface, and 10,000 square feet of hard surface, and 3/4 acre of pervious surface).	
<input type="checkbox"/> There is not at least 3-feet of permeable soil between the final grade and the seasonal high water table or impermeable layer (for drainage areas <u>over</u> 5,000 square feet of pollution generating hard surface, OR 10,000 square feet of hard surface, OR 3/4 acre of pervious surface).	
<p><b>References:</b></p> <ul style="list-style-type: none"> <li>See Kitsap County Brochure #53.</li> <li>Also see 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.16, Page 5-53.</li> <li>Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.1, Page 3-4, BMP T5.10A.</li> </ul>	



FULL DISPERSION	
Infeasibility Criteria (Check all that apply)	Backup Information from Applicant
<input type="checkbox"/> A professional geotechnical evaluation recommends against dispersion due to erosion, slope failure, or flooding concerns. <input type="checkbox"/> The only available dispersion flow path is within 10 feet uphill of a septic system or drain field. <input type="checkbox"/> The only available dispersion flow path is within an erosion hazard or a landslide hazard area. <input type="checkbox"/> The only available dispersion flow path is in a critical area, steep slope (over 15%), or setback to a steep slope. <input type="checkbox"/> The only available dispersion flow path is within 100 feet uphill of a contaminated site or abandoned landfill. <input checked="" type="checkbox"/> The minimum 100-foot flow path through native vegetation cannot be met. <input type="checkbox"/> A 65 to 10 ratio of native vegetation area to impervious area is un-achievable <b>References:</b> <ul style="list-style-type: none"> <li>• See Kitsap County Brochure #52.</li> <li>• Also see 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.</li> <li>• Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-33, BMP T5.30.</li> </ul>	<p>See Storm Report</p>
BIORETENTION and RAIN GARDENS	
Infeasibility Criteria (Check all that apply)	Backup Information from Applicant
<input checked="" type="checkbox"/> A professional geotechnical evaluation recommends against bioretention due to erosion, slope failure, or flooding concerns. <input type="checkbox"/> A professional evaluation finds the only area available for bioretention would threaten the safety or reliability of underground utilities, underground storage tanks, structures, road or parking lot surfaces, or subgrades. <input type="checkbox"/> A professional evaluation finds the only area available for bioretention does not allow for a safe overflow pathway. <input type="checkbox"/> A professional evaluation finds that bioretention would threaten shoreline structures such as bulkheads. <input type="checkbox"/> A professional evaluation bioretention would threaten existing below-grade basements. <input type="checkbox"/> A professional evaluation indicates that bioretention with an underdrain will likely direct infiltrated water to a nutrient sensitive waterbody. <input type="checkbox"/> Ground water modeling indicates bioretention will likely alter the movement of pollutants in groundwater. <input type="checkbox"/> Horizontal setbacks cannot be met.	<p>See Storm Report</p>

- ☐ There is not at least 1-foot of permeable soil between the bottom of the bioretention area and the seasonal high water table or impermeable layer (for drainage areas less than 5,000 square feet of pollution generating hard surface, and 10,000 square feet of hard surface, and 3/4 acre of pervious surface).
- ☐ There is not at least 3-feet of permeable soil between the final grade and the seasonal high water table or impermeable layer (for drainage areas over 5,000 square feet of pollution generating hard surface, OR 10,000 square feet of hard surface, OR 3/4 acre of pervious surface).
- ☐ Bioretention is not compatible with the surrounding drainage system as determined by Kitsap County DCD (e.g., where the project drains to an existing approved stormwater collection system).
- ☐ The site cannot be reasonably designed to locate bioretention on slopes less than 8%.

Bioretention shall not be used:

- ☐ Within 100 feet of a drinking water well or spring.
- ☐ Within 30 feet uphill or 10 feet downhill of a residential septic drainfield.
- ☐ Within 10 feet of structures.
- ☐ Within 50 feet from the top of slopes that are greater than 20% and have over 10 feet of vertical relief.
- ☐ Within 10 feet of surface contaminated soils or 100 feet of deep contaminated soils.
- ☐ Within 100 feet of a closed or active landfill.
- ☐ Within 10 feet of an underground storage tank and connecting underground pipes when the size of the tank is under 1,100 gallons.
- ☐ Within 100 feet of an underground storage tank and connecting underground pipes when the tank is over 1,100 gallons.
- ☐ Where field testing indicates potential bioretention/rain garden sites have a measured (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour.

#### References:

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.5, Page 5-31.
- Also see 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.6, Page 5-33.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-12, BMP T5.14A.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-13, BMP T5.14B.



## PERMEABLE PAVEMENT

Infeasibility Criteria (Check all that apply)	Backup Information from Applicant
<input checked="" type="checkbox"/> A professional evaluation finds that infiltration or ponded water below permeable pavement would compromise adjacent impervious pavement. <input type="checkbox"/> A professional geotechnical evaluation recommends against dispersion due to erosion, slope failure, or flooding concerns. <input type="checkbox"/> A professional evaluation finds that infiltration below permeable pavement would threaten existing below-grade basements. <input type="checkbox"/> A professional evaluation finds that infiltration below permeable pavement would threaten existing utilities or road subgrades. <input type="checkbox"/> A professional evaluation finds that permeable pavement would cause fill soils to become unstable when saturated. <input type="checkbox"/> A professional evaluation finds that permeable pavement cannot support heavy loads in areas with industrial activity. <input type="checkbox"/> A professional evaluation finds that infiltration from permeable pavement would threaten shoreline structures such as bulkheads. <input type="checkbox"/> Areas with steep slopes where water within the aggregate base layer or at the subgrade surface cannot be controlled by detention structures and may cause erosion or structural failure. <input type="checkbox"/> Areas with steep slopes where surface runoff velocity may prevent adequate infiltration. <input type="checkbox"/> Pavement is within 100 feet of a drinking water well or spring. <input type="checkbox"/> Pavement is within 30 feet uphill or 10 feet downhill of a residential septic drainfield. <input type="checkbox"/> The seasonal high water table or an impermeable layer would create saturated conditions within 1-foot of the bottom of the lowest gravel base course. <input type="checkbox"/> Subgrade slopes exceed 5%. <input type="checkbox"/> Pavement is within 50 feet of the top of a slope greater than 20%. <input type="checkbox"/> Pavement is within 10 feet of surface contaminated soils or 100 feet of deep contaminated soils. <input type="checkbox"/> Ground water modeling indicates infiltration will likely alter the movement of pollutants in groundwater. <input type="checkbox"/> The pavement is in an area likely to have long term sediment deposition after construction (e.g., construction and landscaping material yards). <input type="checkbox"/> The pavement is downhill of steep, erosion prone slopes that are likely to deposit sediment on the pavement. <input type="checkbox"/> The site cannot be designed for porous asphalt surfaces at less than 5% slope, pervious concrete surfaces at less than 10% slope, or permeable paver surfaces at less than 12% slope. <input type="checkbox"/> A professional evaluation finds that soils below a pollution –	<div style="font-size: 1.5em; font-family: cursive;">                     See Storm Report                 </div>

<p>generating permeable pavement (e.g., road, parking lot) do not meet the soil suitability criteria to provide treatment.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> A professional evaluation finds that underlying soils are unsuitable to support traffic loads when saturated.</li> <li><input type="checkbox"/> The paved surface has an ADT exceeding 400 vehicles per day.</li> <li><input type="checkbox"/> The paved surface exceeds "very low truck traffic" (no through truck traffic, weekly utility truck traffic).</li> <li><input type="checkbox"/> The surface is subject to industrial activity incompatible with permeable surfaces.</li> <li><input type="checkbox"/> The surface is subject to pollutant spills, such as at gas stations, truck stops, and industrial chemical storage sites.</li> <li><input type="checkbox"/> Field testing indicates soils have a measured initial infiltration rate less than 0.3 inches per hour.</li> <li><input type="checkbox"/> The site is contaminated or an abandoned landfill.</li> <li><input type="checkbox"/> The pavement would be within 10 feet of an underground petroleum, chemical, or waste storage tank or underground connecting pipes.</li> </ul> <p><b>References:</b></p> <ul style="list-style-type: none"> <li>• See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.8, Page 5-38.</li> <li>• Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-15, BMP T5.15.</li> </ul>	
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DOWNSPOUT DISPERSION	
Infeasibility Criteria (Check all that apply)	Backup Information from Applicant
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> The flow path cannot be properly vegetated.</li> <li><input type="checkbox"/> A professional geotechnical evaluation recommends against dispersion due to erosion, slope failure, or flooding concerns.</li> <li><input type="checkbox"/> The only available dispersion flow path is within 10 feet uphill of a septic system or drain field.</li> <li><input type="checkbox"/> The only available dispersion flow path is within an erosion hazard or a landslide hazard area.</li> <li><input type="checkbox"/> The only available dispersion flow path is in a critical area, steep slope (over 15%), or setback to a steep slope.</li> <li><input type="checkbox"/> The only available dispersion flow path is within 100 feet uphill of a contaminated site or abandoned landfill.</li> </ul> <p>For dispersion trenches:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The minimum dispersion trench length cannot be met (10 feet of trench for every 700 square feet of drainage area).</li> <li><input type="checkbox"/> The minimum 25-foot flow path for dispersion trenches cannot be met.</li> <li><input type="checkbox"/> A vegetated flow path of 50 feet between the trench and a slope over 15% cannot be met.</li> </ul>	<p>See Storm Report</p>



<p>For splash block dispersion:</p> <p><input type="checkbox"/> The minimum 50-foot flow path for splash blocks cannot be met.</p> <p><input type="checkbox"/> The drainage area to any splash block exceeds 700 square feet.</p> <p><b>References:</b></p> <ul style="list-style-type: none"> <li>• See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.</li> <li>• Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.2, Page 3-11, BMP T5.10B.</li> </ul>	
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<b>CONCENTRATED FLOW DISPERSION</b>	
<b>Infeasibility Criteria</b> (Check all that apply)	<b>Backup Information</b> <b>from Applicant</b>
<p><input type="checkbox"/> A professional geotechnical evaluation recommends against dispersion due to erosion, slope failure, or flooding concerns.</p> <p><input type="checkbox"/> The only available dispersion flow path is within 10 feet uphill of a septic system or drain field.</p> <p><input type="checkbox"/> The only available dispersion flow path is within an erosion hazard or a landslide hazard area.</p> <p><input type="checkbox"/> The only available dispersion flow path is in a critical area, steep slope (over 15%), or setback to a steep slope.</p> <p><input type="checkbox"/> The only available dispersion flow path is within 100 feet uphill of a contaminated site or abandoned landfill.</p> <p><input type="checkbox"/> Horizontal setbacks cannot be met.</p> <p><input checked="" type="checkbox"/> Dispersion and flow path requirements cannot be met:</p> <ul style="list-style-type: none"> <li>• A minimum 10-foot dispersion trench followed by a 25-foot minimum flow path, OR a 3-foot rock pad with a minimum 50-foot minimum flow path.</li> <li>• A maximum of 700 square feet of drainage area to any dispersion device.</li> </ul> <p><b>References:</b></p> <ul style="list-style-type: none"> <li>• See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.</li> <li>• Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-3, BMP T5.11.</li> </ul>	<p>See Storm Report</p>

## PERFORATED STUB-OUT CONNECTION

Infeasibility Criteria (Check all that apply)	Backup Information from Applicant
<p><input checked="" type="checkbox"/> A professional geotechnical evaluation recommends against infiltration due to erosion, slope failure, or flooding concerns.</p> <p><input type="checkbox"/> A professional evaluation finds the only area available for infiltration would threaten the safety or reliability of underground utilities, underground storage tanks, structures, road or parking lot surfaces, or subgrades.</p> <p><input type="checkbox"/> A professional evaluation finds the only area available for infiltration does not allow for a safe overflow pathway.</p> <p><input type="checkbox"/> A professional evaluation finds the infiltration pathway would intersect a septic drainfield or reserve area.</p> <p><input type="checkbox"/> A professional evaluation finds that infiltration would threaten shoreline structures such as bulkheads.</p> <p><input type="checkbox"/> A professional evaluation finds that infiltration would threaten existing below-grade basements.</p> <p><input type="checkbox"/> Horizontal setbacks cannot be met.</p> <p><input type="checkbox"/> There is not a minimum of 1-foot of permeable soil between the bottom of the perforated pipe and the seasonal high water table or impermeable layer.</p> <p><input type="checkbox"/> The only location for the perforated pipe is under impervious or compacted (e.g., driveways, parking areas) surfaces.</p> <p><input type="checkbox"/> A minimum of 10 feet of perforated pipe per 5,000 square foot of contributing roof area is not possible.</p> <p><input type="checkbox"/> The only location for the perforated pipe is on slopes of 20% or greater.</p> <p><b>References:</b></p> <ul style="list-style-type: none"> <li>• See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.7, Page 5-36.</li> <li>• Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.3, Page 3-17, BMP T5.10C.</li> </ul>	<p style="font-size: 1.5em; color: blue;">See Storm Report</p>



## SHEET FLOW DISPERSION

<b>Infeasibility Criteria</b> (Check all that apply)	<b>Backup Information</b> <b>from Applicant</b>
<ul style="list-style-type: none"><li><input type="checkbox"/> A professional geotechnical evaluation recommends against dispersion due to erosion, slope failure, or flooding concerns.</li><li><input type="checkbox"/> The only available dispersion flow path is within 10 feet uphill of a septic system or drain field.</li><li><input type="checkbox"/> For flat to moderately sloped areas, a minimum 10-foot wide vegetated flow path is not possible.</li><li><input checked="" type="checkbox"/> For variably sloped areas, a minimum 25-foot wide vegetated flow path is not possible.</li><li><input type="checkbox"/> The only available dispersion flow path is within an erosion hazard or a landslide hazard area.</li><li><input type="checkbox"/> The only available dispersion flow path is in a critical area, steep slope (over 15%), or setback to a steep slope.</li><li><input type="checkbox"/> The only available dispersion flow path is within 100 feet uphill of a contaminated site or abandoned landfill.</li><li><input type="checkbox"/> Positive drainage is not possible.</li><li><input type="checkbox"/> The drainage area has a slope of 15% or more.</li></ul>	<p><i>See Storm Report</i></p>
<p><b>References:</b></p> <ul style="list-style-type: none"><li>• See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.</li><li>• Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-6, BMP T5.12.</li></ul>	

# STORMWATER BEST MANAGEMENT PRACTICE (BMP) LIST #1

## ON-SITE STORMWATER MANAGEMEN

### For Projects Triggering Minimum Requirements 1 through 5

Applicants may, at their discretion, use the BMP Performance Standard consistent with Table 4.2 on page 4-16 in Volume I of the Kitsap County Stormwater Design Manual in lieu of the BMPs identified below.

#### FOR ALL PROJECTS

A Construction Stormwater Pollution Prevention Plan (SWPPP) is required.  
See Kitsap County Brochure #51 and Supporting Document - Stormwater Pollution Prevention Plan (SWPPP) Narrative.

#### FOR ALL LAWNS, PLANTING BEDS, AND OTHER LANDSCAPED AREAS

Soil amendment is required for Post Construction Soil Quality and Depth.  
See Kitsap County Brochure #57 and Post-Construction Soil Quality and Depth Worksheet.

#### FOR ROOFS

Consider each BMP in the order shown.  
Use the first BMP that is feasible.

**STEP 1. Choose one of the following:**  
Full Dispersion OR  
Downspout Full Infiltration System

ONLY if Step 1 is infeasible,  
proceed to Step 2.

**STEP 2. Choose one of the following:**  
Rain Garden OR  
Bioretention

ONLY if Step 2 is infeasible,  
proceed to Step 3.

**STEP 3. Choose the following:**  
Downspout Dispersion System

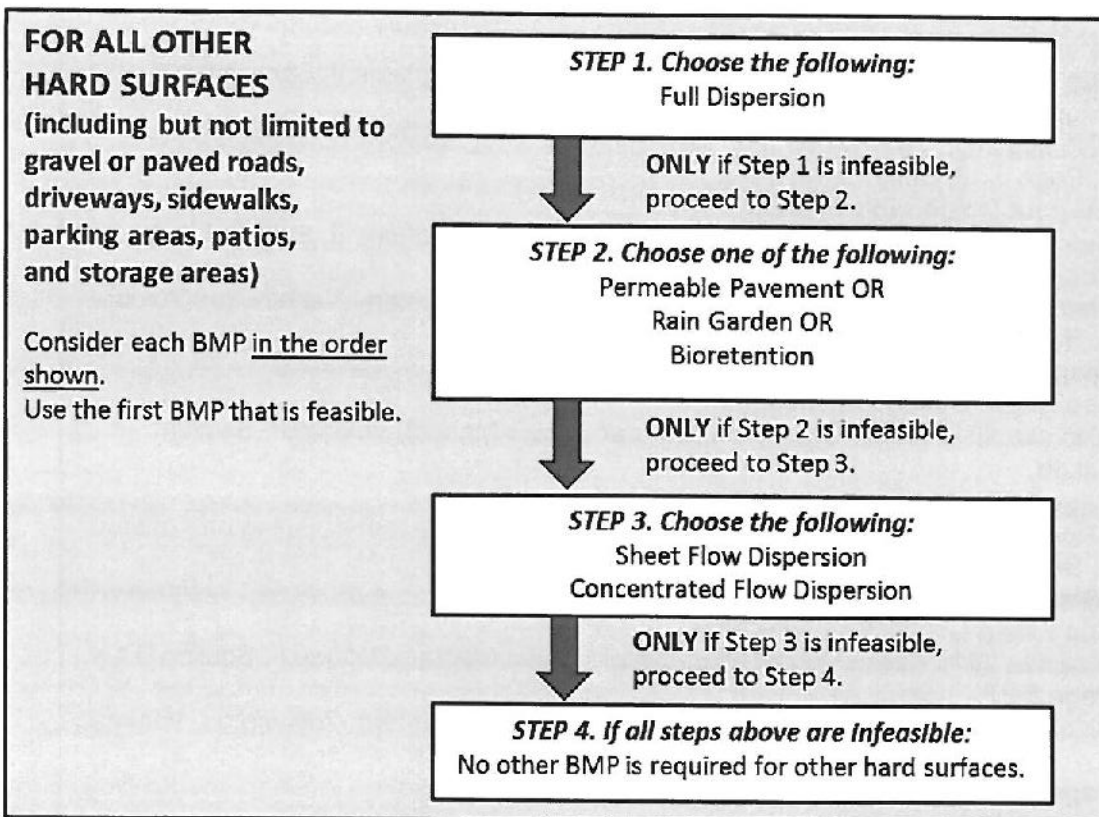
ONLY if Step 3 is infeasible,  
proceed to Step 4.

**STEP 4. Choose the following:**  
Perforated Stub-out Connection

ONLY if Step 4 is infeasible,  
proceed to Step 5.

**STEP 5. If all steps above are infeasible:**  
No other BMP is required for roofs.





#### ***How do I know if a BMP is infeasible?***

All BMPs are initially considered feasible until demonstrated otherwise. They must be considered in the order shown above.

A BMP may be considered infeasible based on site conditions such as steep slopes, shallow water table, high shorelines, or unsuitable soils. A BMP may also be infeasible if parcel size, setbacks, or other site regulations make BMP installation or dispersion areas impossible.

**See the BMP Infeasibility Worksheet**, Appendix H of the Kitsap County Stormwater Design Manual, and the references below for specific information on each BMP.

Cost is not a factor for determining infeasibility.

The Kitsap County Stormwater Design Manual and the Stormwater Management Manual for Western Washington both list specific applications, limitations, infeasibility criteria, and design guidelines for each BMP.

### ***Where can I learn about the BMPs?***

#### **Bioretention**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.6, Page 5-33.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-13, BMP T5.14B.

#### **Downspout Dispersion System**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.2, Page 3-11, BMP T5.10B.

#### **Downspout Full Infiltration System**

- See Kitsap County Brochure #53.
- Also see 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.16, Page 5-53.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.1, Page 3-4, BMP T5.10A.

#### **Full Dispersion**

- See Kitsap County Brochure #52.
- Also see 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-33, BMP T5.30.

#### **Perforated Stub-out Connection**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.7, Page 5-36.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.3, Page 3-17, BMP T5.10C.

#### **Permeable Pavement**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.8, Page 5-38.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-15, BMP T5.15.

#### **Rain Garden**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.5, Page 5-31.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-12, BMP T5.14A.

#### **Sheet Flow Dispersion**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5



## STORMWATER BEST MANAGEMENT PRACTICE (BMP) LIST #2 ON-SITE STORMWATER MANAGEMENT

For Projects Triggering Minimum Requirements 1 through 9  
Inside Census-Defined Urban Areas on Parcels Less Than 5 Acres  
OR Inside Urban Growth Areas

Applicants may, at their discretion, use the BMP Performance Standard consistent with Table 4.2 on page 4-16 in Volume I of the Kitsap County Stormwater Design Manual in lieu of the BMPs identified below.

### FOR ALL PROJECTS

A Construction Stormwater Pollution Prevention Plan (SWPPP) is required.  
See Kitsap County Brochure #51 and Supporting Document - Stormwater Pollution Prevention Plan (SWPPP) Narrative.

### FOR ALL LAWNS, PLANTING BEDS, AND OTHER LANDSCAPED AREAS

Soil amendment is required for  
Post Construction Soil Quality and Depth.  
See Kitsap County Brochure #57 and Post-  
Construction Soil Quality and Depth Worksheet.

### FOR ROOFS

Consider each BMP in the order  
shown.  
Use the first BMP that is feasible.

#### **STEP 1. Choose one of the following:**

Full Dispersion OR  
Downspout Full Infiltration System

ONLY if Step 1 is infeasible,  
proceed to Step 2.

#### **STEP 2. Choose the following:**

Bioretention

ONLY if Step 2 is infeasible,  
proceed to Step 3.

#### **STEP 3. Choose the following:**

Downspout Dispersion System

ONLY if Step 3 is infeasible,  
proceed to Step 4.

#### **STEP 4. Choose the following:**

Perforated Stub-out Connection

ONLY if Step 4 is infeasible,  
proceed to Step 5.

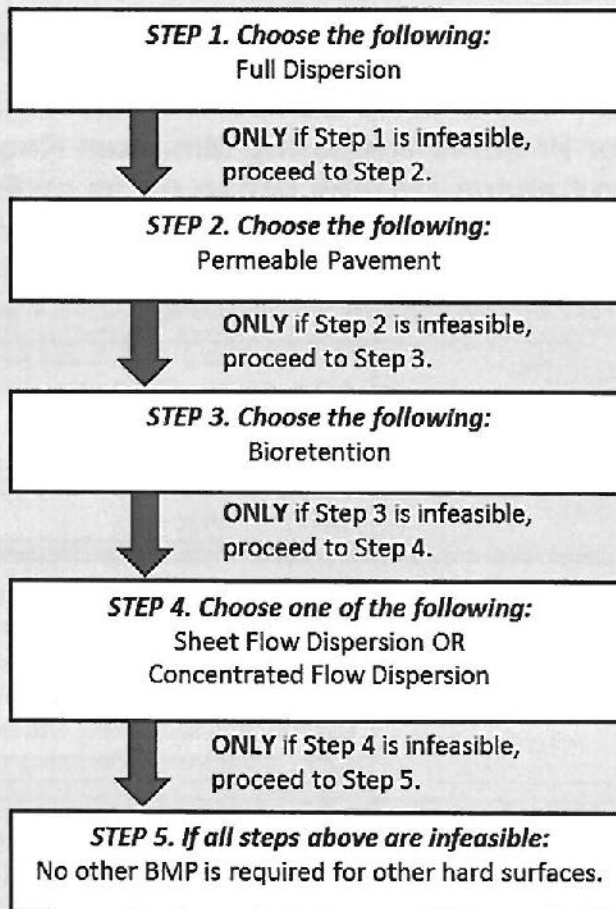
#### **STEP 5. If all steps above are infeasible:**

No other BMP is required for roofs.

**FOR ALL OTHER  
HARD SURFACES**

(including but not limited to gravel or paved roads, driveways, sidewalks, parking areas, patios, and storage areas)

Consider each BMP in the order shown.  
Use the first BMP that is feasible.



***How do I know if a BMP is infeasible?***

All BMPs are initially considered feasible until demonstrated otherwise. They must be considered in the order shown above.

A BMP may be considered infeasible based on site conditions such as steep slopes, shallow water table, high shorelines, or unsuitable soils. A BMP may also be infeasible if parcel size, setbacks, or other site regulations make BMP installation or dispersion areas impossible.

**See the BMP Infeasibility Worksheet**, Appendix H of the Kitsap County Stormwater Design Manual, and the references below for specific information on each BMP.

Cost is not a factor for determining infeasibility.

The Kitsap County Stormwater Design Manual and the Stormwater Management Manual for Western Washington both list specific applications, limitations, infeasibility criteria, and design guidelines for each BMP.



### ***Where can I learn about the BMPs?***

#### **Bioretention**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.6, Page 5-33.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-13, BMP T5.14B.

#### **Concentrated Flow Dispersion**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-3, BMP T5.11.

#### **Downspout Dispersion System**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.2, Page 3-11, BMP T5.10B.

#### **Downspout Full Infiltration System**

- See Kitsap County Brochure #53.
- Also see 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.16, Page 5-53.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.1, Page 3-4, BMP T5.10A.

#### **Full Dispersion**

- See Kitsap County Brochure #52.
- Also see 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-33, BMP T5.30.

#### **Perforated Stub-out Connection**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.7, Page 5-36.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.3, Page 3-17, BMP T5.10C.

#### **Permeable Pavement**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.8, Page 5-38.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-15, BMP T5.15.

#### **Sheet Flow Dispersion**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-6, BMP T5.12.

#### **Soil Amendment**

- See Kitsap County Brochure #57 and Best Construction Soil Quality and Depth

# STORMWATER BEST MANAGEMENT PRACTICE (BMP) LIST #3

## ON-SITE STORMWATER MANAGEMENT

### For Projects Triggering Minimum Requirements 1 through 9 Outside Census-Defined Urban Areas and Outside Urban Growth Areas

Applicants may, at their discretion, use the BMP Performance Standard consistent with Table 4.2 on page 4-16 in Volume I of the Kitsap County Stormwater Design Manual in lieu of the BMPs identified below.

#### FOR ALL PROJECTS

A Construction Stormwater Pollution Prevention Plan (SWPPP) is required.  
See Kitsap County Brochure #51 and Supporting Document - Stormwater Pollution Prevention Plan (SWPPP) Narrative.

#### FOR ALL LAWNS, PLANTING BEDS, AND OTHER LANDSCAPED AREAS

Soil amendment is required for  
Post Construction Soil Quality and Depth.  
See Kitsap County Brochure #57 and Post-  
Construction Soil Quality and Depth Worksheet.

#### FOR ROOFS

Consider each BMP in the order  
shown.  
Use the first BMP that is feasible.

**STEP 1. Choose one of the following:**  
Downspout Full Infiltration System

ONLY if Step 1 is infeasible,  
proceed to Step 2.

**STEP 2. Choose the following:**  
Bioretention

ONLY if Step 2 is infeasible,  
proceed to Step 3.

**STEP 3. Choose the following:**  
Downspout Dispersion System

ONLY if Step 3 is infeasible,  
proceed to Step 4.

**STEP 4. Choose the following:**  
Perforated Stub-out Connection

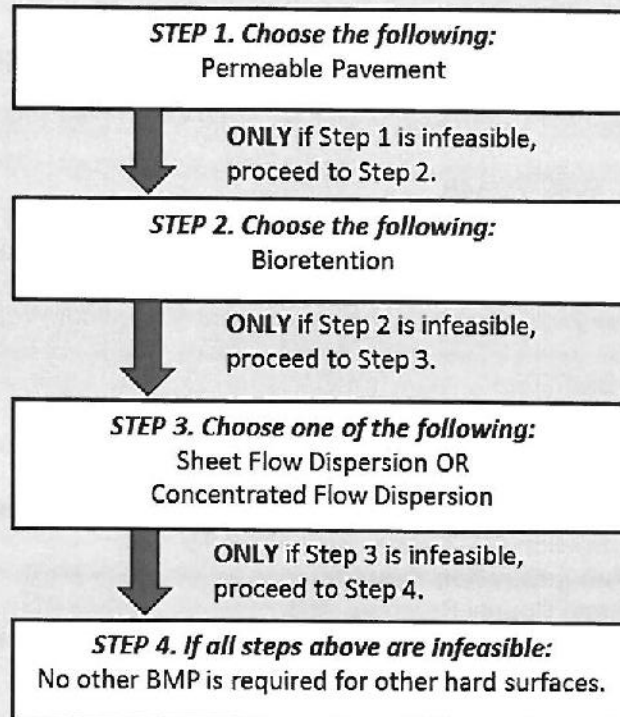
ONLY if Step 4 is infeasible,  
proceed to Step 5.

**STEP 5. If all steps above are Infeasible:**  
No other BMP is required for roofs.



**FOR ALL OTHER  
HARD SURFACES**  
(including but not limited to  
gravel or paved roads,  
driveways, sidewalks,  
parking areas, patios,  
and storage areas)

Consider each BMP in the order  
shown.  
Use the first BMP that is feasible.



***How do I know if a BMP is infeasible?***

All BMPs are initially considered feasible until demonstrated otherwise. They must be considered in the order shown above.

A BMP may be considered infeasible based on site conditions such as steep slopes, shallow water table, high shorelines, or unsuitable soils. A BMP may also be infeasible if parcel size, setbacks, or other site regulations make BMP installation or dispersion areas impossible.

**See the BMP Infeasibility Worksheet**, Appendix H of the Kitsap County Stormwater Design Manual, and the references below for specific information on each BMP.

Cost is not a factor for determining infeasibility.

The Kitsap County Stormwater Design Manual and the Stormwater Management Manual for Western Washington both list specific applications, limitations, infeasibility criteria, and design guidelines for each BMP.

### ***Where can I learn about the BMPs?***

#### **Bioretention**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.6, Page 5-33.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-13, BMP T5.14B.

#### **Concentrated Flow Dispersion**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-3, BMP T5.11.

#### **Downspout Dispersion System**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater management Manual for Western Washington, Volume 3, Section 3.1.2, Page 3-11, BMP T5.10B.

#### **Downspout Full Infiltration System**

- See Kitsap County Brochure #53.
- Also see 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.16, Page 5-53.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.1, Page 3-4, BMP T5.10A.

#### **Perforated Stub-out Connection**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.7, Page 5-36.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 3, Section 3.1.3, Page 3-17, BMP T5.10C.

#### **Permeable Pavement**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.8, Page 5-38.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-15, BMP T5.15.

#### **Sheet Flow Dispersion**

- See 2016 Kitsap County Stormwater Design Manual, Volume II, Section 5.4.4, Page 5-27.
- Also see 2014 Stormwater Management Manual for Western Washington, Volume 5, Page 5-15, BMP T5.15.



# Site Assessment and Planning Packet

## INSTRUCTIONS FOR COMPLETING THIS PACKET:

- ✓ This packet is to be completed during preliminary site assessment and planning, and shall be submitted with the preliminary plan application
- ✓ See Appendix A for definitions of terms used in this packet
- ✓ See Volume II, Chapter 1 for submittal requirements

## THE GOALS OF THIS PACKET ARE TO:

- ✓ Provide basic project information
- ✓ Document how the project proposes to minimize:
  - Impervious surfaces
  - Loss of native vegetation
  - Stormwater runoff
- ✓ Demonstrate how the project proposes to comply with Minimum Requirement #5 – On-site Stormwater Management

### A PROJECT

Permit No. (provided by County) \_\_\_\_\_

Project Address or Project Boundaries: \_\_\_\_\_

Parcel No. 102501-3-033-2009 and 102501-3-046-2004

Project Type: ☒ Residential ☐ Commercial ☐ Industrial ☐ Public

Project is: ☒ New or redevelopment ☐ Remodel ☐ Retrofit ☐ Combination (describe below)

Project Description: 103 New Dwelling Units

### APPLICANT INFORMATION:

Company/Agency/Owner:

Contour Engineering

Contact Person:

Kyle Rose

Address:

PO Box 949

Og Harbor WA

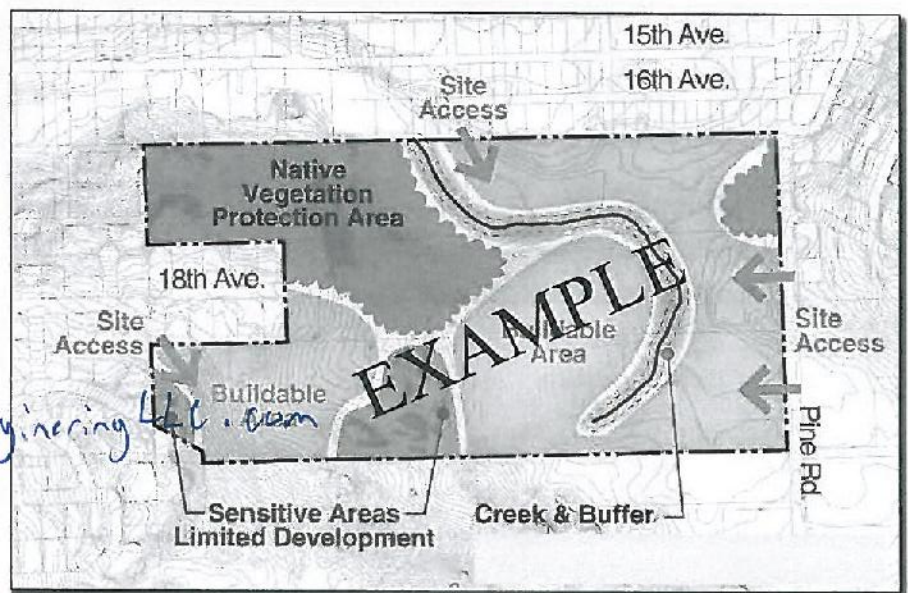
Phone: 253-857-5454

Email: Kyle.Rose@Contour Engineering LLC

Signature: Kyle Rose


Date: 4/5/18

### B CREATESITECOMPOSITE





## EXISTING SITE INVENTORY AND ANALYSIS

 Add items to map

Use this portion of the packet to document the site inventory and analysis. For additional information on each portion of the analysis, refer to Volume I, Chapter 2 in the Kitsap Stormwater Design Manual.

### 1. PROJECT BOUNDARIES AND STRUCTURES


☒ Identify/Delineate on map: 

- ☒ Project site boundaries (limits of disturbance)
- ☒ Existing and proposed buildings
- ☒ Required infiltration setbacks (please describe) N/A
- ☒ Location and extent of proposed foundations and footing drains

### 2. SOILS

- ☒ Characterize existing soil type(s): See Storm Report
- ☐ What is the depth to seasonal high groundwater (feet)? See Storm Report
- ☐ Is bedrock present? ☐ Yes ☒ No If yes, depth (feet): \_\_\_\_\_
- ☐ What is the long-term design native soil infiltration rate (inch/hour): N/A
- ☐ Identify source(s) of information used: See Storm Report

### 3. CRITICAL AREAS

☒ Identify and map any Critical Areas located on the project site and within the project vicinity 


See the County's Critical Areas Ordinance website for more information  
([http://www.kitsapgov.com/dcd/lu\\_env/cao/cao.htm](http://www.kitsapgov.com/dcd/lu_env/cao/cao.htm))

- ☐ Streams: \_\_\_\_\_
- ☐ Wetlands: \_\_\_\_\_
- ☐ Floodplains: \_\_\_\_\_
- ☐ Riparian areas: \_\_\_\_\_
- ☐ Critical aquifer recharge areas: \_\_\_\_\_
- ☐ Geologically hazardous areas: \_\_\_\_\_
- ☐ Other: \_\_\_\_\_

### 4. DEWATERING

☒ Provide estimated groundwater dewatering flow rates during construction: See CSWPPP

### 5. TOPOGRAPHY

- ☒ Describe site topography and slopes: 10-35%
- ☒ Identify/Delineate on map: 
- ☒ Areas of flat ( $\leq 5\%$ ), moderate (5%-15%), and steep ( $\geq 15\%$ ) slopes
- ☒ Closed depressions





## 6. HYDROLOGIC PATTERNS & FEATURES

- ☒ Identify/Delineate on map: P
- ☒ Sub-basin(s) \_\_\_\_\_
- ☒ Existing drainage swales and ditches (please describe) N/A
- ☒ Location(s) of any natural seeps or springs (please describe) N/A
- ☒ Existing discharge location(s) from each sub-basin and overall project site: (please describe) N/A
- ☒ Signs of existing erosion (please describe) N/A
- ☒ Other: \_\_\_\_\_

## 7. VEGETATION

- ☐ Native vegetation type(s): Forested
- ☐ Approximate tree canopy coverage (acres)<sup>a</sup>: See Storm Report
- ☐ Number of trees (greater than 4-inch diameter)<sup>b</sup>: See Storm Report
- ☐ Identify source(s) of information used: See Storm Report

Notes:

- a Tree canopy area may be estimated from current aerial photographs and/or documented field observations. Mark on composite map and provide copy of source information
- b Number of trees with diameter equal to or greater than 4 inches may be determined through existing survey or estimated based on documented field observations by a qualified individual.

## 8. LAND USE CONTROLS

- ☐ What is the project site zoning? UL
- ☐ Describe landscaping requirements: None
- ☐ Describe parking requirements: None
- ☐ Describe any applicable comprehensive plan designation, zoning classification, and/or overlay districts that may apply to the site: None
- ☐ Does a Shoreline Master Program apply to the site? ☐ Yes ☒ No
- If yes, describe: \_\_\_\_\_
- ☐ Other: \_\_\_\_\_

## 9. ACCESS

- ☒ Identify/Delineate on map: P
- ☐ Roads, driveways, and other points of ingress and egress within 50 feet of the project site
- ☒ Identify the street classification of the street that will provide access to the site, per the Kitsap County Road Standards: \_\_\_\_\_
- ☒ Identify frontage improvement requirements: \_\_\_\_\_
- ☒ Identify and Describe any other geometric design requirements that could impact the amount of impervious surface coverage on the site and the location of the access road/driveway: \_\_\_\_\_

## 10. UTILITY AVAILABILITY AND CONFLICTS

- ☒ Identify/Delineate on map: P
- ☒ Existing utilities and easements present on and adjacent to the project site, including utility owner. Also note any utility or easement setback requirements that affect site planning: \_\_\_\_\_
- ☒ Existing utilities that may need to be moved and new utilities that may need to be extended to the site: \_\_\_\_\_



## EXISTING AND PROPOSED SITE LAND COVER

Fill in the table below to summarize existing and propose site land cover areas. The completed table will be used to assess the proposed plans for minimizing impervious areas, loss of vegetation, and stormwater runoff.

	Existing Condition	Proposed Condition
<b>Vegetated Areas</b>		
Tree canopy (acres) <sup>a</sup>		
Tree units (#) <sup>a</sup>		
Landscape area (acres)	20.22	11.25
Total project site vegetated area (acres)	20.22	11.25
Total project site vegetated area (%)	100	53
<b>Hard Surface Areas</b>		
Hard surface (acres)	0	390.733
Total project site impervious area (%)	0	53%
<b>Change</b>		
Increase/decrease in vegetated areas (acres)	8.97	
Increase/decrease in vegetated areas (%)	53	
Increase/decrease in hard surface areas (acres)	8.97	
Increase/decrease in hard surface areas (%)	53	

Notes:

a Copy values from Part C7



## POTENTIAL LID BMP

For each LID BMP being evaluated, use the infeasibility criteria in Appendix H to determine whether the LID BMP is infeasible for your project.

Document the result of that evaluation here.

	Feasibility/Infeasibility Evaluation		
	Feasible	Infeasible	Not Applicable
			If infeasible, provide justification
Post-Construction Soil Quality and Depth			See Storm Report
Full Dispersion			
Bioretention			
Downspout Dispersion			
Perforated Stubout Connection			
Retain Existing Trees			
Permeable Pavement			
Sheet Flow Dispersion			
Concentrated Flow Dispersion			
Vegetated Roofs			
Minimal Excavation Foundations			
Rain Water Harvesting			
New Trees			





# **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): 733,550 square feet
2. **Onsite hard surfaces** (should match line 5 on the Stormwater Worksheet): 375,051 square feet
3. **Area of lawn or turf**: 304,920 square feet
4. **Area of landscaping and planting beds**: 304,920 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.

## → 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.

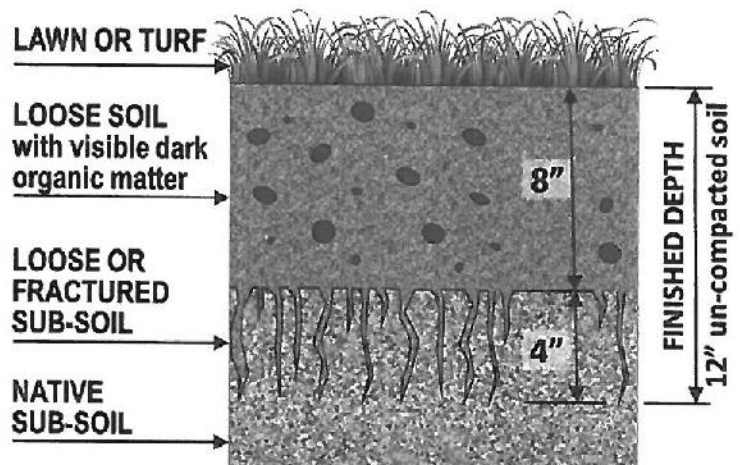
OR

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



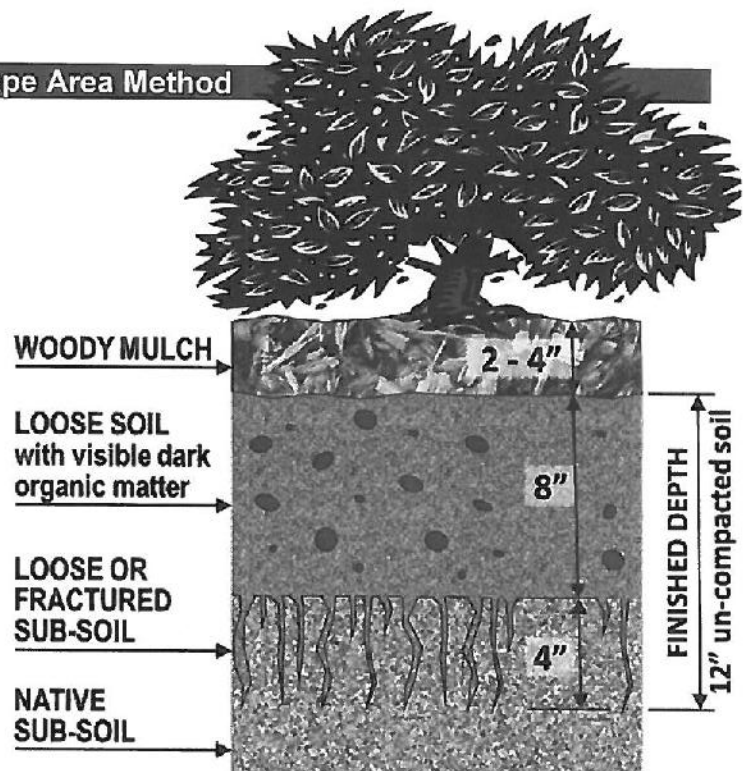
## Pre-approved Lawn and Turf Amendment Method

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.





**Calculate the Amendment Amount Needed**

7. **Area of lawn or turf** (from line 3 above) ..... 304920 square feet  
Multiply by conversion factor from 1.75 inches to cubic yards: ..... 0.0054
8. Amendment quantity needed for lawn or turf ..... 1647 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) 1647 cubic yards

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

12. Purchased from off-site sources ..... %
13. Stockpiled soil and duff from on-site ..... 100 %
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) ..... 304920 square feet  
Multiply by conversion factor from 3 inches to cubic yards: ..... 0.0093
18. **MULCH QUANTITY NEEDED** ..... 2836 cubic yards

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

19. Purchased from off-site sources ..... %
20. Chipped and stockpiled woody material from on-site ..... 100 %
- ☐ 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.