# POLICY

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| **Number:** | DECM.10.POL.801 | | |
| **Title:** | Alternative Paving Surfaces | **Approved:** | Resource Stewardship Director |
| **Related:** | None | **Approved:** | Drainage Manual Administrator |
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## DECM.10.POL.801 ALTERNATIVE PAVING SURFACES

***This policy applies to new development and redevelopment projects in Thurston County subject to the 2009 Drainage Design and Erosion Control Manual and proposing the use of alternative paving surfaces.***

Purpose:

The purpose of this policy is to clarify how alternative paving surfaces when designed in accordance with the requirements of BMP LID.09 of the 2009 Thurston County Drainage Design and Erosion Control Manual (DDECM) shall be treated in establishing submittal requirements, applicable minimum requirements, and effective impervious surface area for design of flow control and runoff treatment facilities.

The 2009 DDECM does not stipulate how alternative paving surfaces (porous pavement) shall be considered in calculating impervious surface area totals for projects. Since impervious surface is an important factor in determining which minimum requirements apply to a project and which submittal requirements apply to a project, a policy to clarify how alternative paving surfaces shall be treated is necessary. Therefore, this policy defines how and when alternative paving surfaces shall be treated as impervious surface or "non-effective" impervious surface for the purposes of applying the requirements of the 2009 DDECM.

Policy:

1. **The provisions of this policy apply to alternative paving surfaces only when those surfaces are designed, constructed, and maintained in accordance Volume V, BMP LID.09 and supported by applicable soil investigations required by Volume III of the 2009 DDECM.**

   Design of alternative pavement surfaces not in accordance with the requirements of BMP LID.09 shall be required to obtain specific administrator acceptance to be considered for applicability under this policy.

2. **Alternative paving surfaces shall be considered "impervious surface" for establishing which of the 12 minimum requirements apply to a new development project.**

   The area of alternative paving shall be included in the calculation of total impervious surface on a project to determine which of the 12 minimum requirements apply to the

project. For projects that have greater than 5,000 square feet of new plus replaced impervious surface all 12 minimum requirements apply.

3. **Alternative paving surfaces shall be considered "impervious surface" for establishing which type of submittal is appropriate for the project.**

   In some cases the amount of impervious surface associated with a project determines whether an abbreviated drainage plan, engineered abbreviated drainage plan, or full drainage and erosion control plan is required. In determining these thresholds, alternative paving surfaces shall be considered as impervious surface.

4. **Alternative paving surfaces shall be considered "non-effective" impervious surface for purposes of thresholds associated with Minimum Requirement #7, *Flow Control.* However, the alternative paving surface shall be included in the hydrologic model for the project site in determining whether the post-development flow increases by more than the 0.1 CFS requiring flow control facilities. Additionally, if the alternative paving surface is not designed to infiltrate 100% of the flow control storm volume, the overflow shall be directed to other flow control BMPs and included in calculations for required flow control facility sizing.**

   Minimum requirement #7, *Flow Control,* does not require flow control facilities if the effective impervious surface within a threshold discharge area is less than 10,000 square feet and the post-development discharge does not exceed the pre-development site discharge by more than 0.1 CFS for the 100-year recurrence interval flow frequency as estimated by an approved continuous simulation model (WWHM3). The applicant shall include the alternative paving surface in the hydrologic model in demonstrating that the threshold discharge area does not exceed the 0.1 CFS requirement. In some cases, alternative paving surfaces may not be designed to handle 100% of the required flow control volume. In these cases, any overflow shall be collected and managed by the site stormwater system to meet the flow control standard.

5. **Alternative paving surfaces designed to infiltrate at least the water quality volume (91%) shall be considered "non-effective" pollution generating impervious surface for purposes of thresholds associated with Minimum Requirement #6, *Runoff Treatment.***

   Minimum requirement #6, *Runoff Treatment* does not require water quality treatment facilities if the "effective" pollution generating impervious surface is less than 5,000 square feet. For alternative paving surfaces designed to infiltrate at least 91% of the estimated runoff volume in the time series of an approved continuous runoff model, as required to meet the runoff treatment standard the area can be considered non-effective pollution generating impervious surface. However, the applicant shall demonstrate that the base soil conditions provide adequate treatment in accordance with Volume III requirements for infiltration treatment.

6. **If the project is only the resurfacing, repair or replacement of an existing roadway or parking lot with no increase in impervious surface area and the existing surface of dirt, gravel, bituminous surface treatment ("chip seal"), asphalt, or concrete is being replaced by an alternative paving surface per BMP LID.09 then the new surface will not be considered new impervious surface for purposes of establishing applicable minimum requirements for redevelopment, but will be considered "land disturbing activity." Only Minimum Requirements #1 through #5 apply if the land disturbing area is greater than 7,000 square feet.**

Resurfacing by upgrading from dirt to gravel, asphalt, or concrete; upgrading from gravel to asphalt, or concrete; or upgrading from bituminous surface treatment ("chip seal") to asphalt or concrete is considered "redevelopment" and the area of the upgrade would normally be considered new impervious surface subject to all minimum requirement thresholds. However, by upgrading to an alternative paving surface the project provides a net benefit and therefore a less restrictive standard is appropriate.

7. **Replacement of existing impervious surface by an alternative paving surface as part of a new development or redevelopment project which adds new impervious surface or converts native vegetation to landscape will be considered "replaced impervious surface" and shall be included in the impervious area threshold calculations for establishing applicable minimum requirements and submittals.**

   Removing existing pavement to base course and replacing it with an alternative paving surface is considered "redevelopment" and applicable thresholds apply. However, the alternative paving surface may be considered "non-effective impervious surface" in applying Minimum Requirements #6 & #7, see No. 4 and 5 above.

8. **In determining whether a redevelopment project is required to retrofit the entire site to current drainage standards, the area of alternative paving surfaces designed to infiltrate 100% of the estimated runoff volume in the time series of an approved continuous runoff model are not "new impervious surface" for purposes of meeting the 5,000 square foot threshold requiring a retrofit of the entire site to current stormwater standards.**

   A retrofit of existing impervious and pollution generating pervious surfaces to current standards is required if the new impervious surface is at least 5,000 square feet and totals 25% or more of the existing impervious surfaces associated with the project/parcel. Allowing a credit for use of alternative paving surfaces designed for 100% infiltration as demonstrated by soil investigations and continuous simulation hydrologic modeling required by Volume III of the 2009 DDECM provides a project benefit and incentive to minimize impacts from redevelopment projects.

9. **The use of alternative paving surfaces designed to infiltrate 100% of the estimated runoff volume in the time series of an approved continuous runoff model will be considered non-effective impervious surface for purposes of meeting the impervious surface limits associated with Full Dispersion (BMP LID.11)**

   BMP LID.11, *Full Dispersion,* provides limits on "effective" impervious surface, landscape area and native vegetation retention. Only surfaces that are fully infiltrated, with no discharge to native vegetation areas can be considered non-effective impervious surface, and not count against the effective impervious surface limits of this BMP.

10. **The use of alternative paving surfaces shall be considered on a case-by-case basis for credit against any impervious surface area limits associated with Thurston County Land Use and Zoning Codes based on an evaluation and finding by the Administrator as to the long term maintainability, underlying soil type, and other factors using Table 1 as a guide.**

    In land use actions, limits may be imposed on impervious surface coverage. Impervious surface definitions of Thurston County code do not specifically address the use of alternative paving surfaces. Allowing credit for use of alternative paving surfaces, on a case-by-case basis and where acceptable to the land use approval authority is appropriate.

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The Administrator will determine the amount of credit based on site specific factors such as long term maintainability, alternative paving system design, ability to infiltrate 100% of precipitation and other factors as to the suitability of alternative paving systems in meeting the intent and purposes of the land use and shoreline code provisions related to impervious surface limits.

Table 1 is provided as a guide to be used by the Drainage Manual Administrator in applying this policy.

**TABLE 1**

| Slope | Soil Type | Design[3,4] | Max Impervious Credit |
|---|---|---|---|
| >10% | Any | Any | 0% |
| Any | D or Saturated | Any | 0% |
| 5-10%[2] | C | No hydrologic modeling[1] | 10% |
| 5-10%[2] | A/B (Outwash) | No hydrologic modeling[1] | 25% |
| 0-5% | C | No hydrologic modeling[1] | 25% |
| 0-5% | A/B (Outwash) | No hydrologic modeling[1] | 50% |
| 5-10%[2] | Any | Hydrologic modeling for 100% infiltration | 50% |
| 5-10%[2] | Any | Hydrologic modeling for 91% infiltration (water quality target) | 40% |
| 0-5% | Any | Hydrologic modeling for 100% infiltration | 75% |
| 0-5% | Any | Hydrologic modeling for 91% infiltration (water quality target) | 60% |
| Project/Facility is included in executed Maintenance Agreement and Maintenance Plan prepared in accordance with DDECM. | | | Multiply credit x1.25 |
| MAXIMUM CREDIT ALLOWED – ALL CASES | | | 75% |

Notes:

1. Where hydrologic modeling is not performed, the minimum depth of aggregate storage volume below the porous pavement surface shall be 12-inches.
2. Alternative pavement surfaces constructed on slopes shall include "dams" or other methods to ensure uniform distribution of infiltrated stormwater at the subgrade.
3. No run on from adjacent pervious or impervious surfaces to the alternative paving surface is allowed.
4. Design shall be in accordance with BMP LID.09 of the DDECM and manufacturer's recommendations.