
	<b>Glasgow, Kentucky Stormwater Best Management Practices (BMPs) Site Planning and Design Practices (SPDs)</b>	SPD-02.2																				
	<b>Activity: Street Design – Private Drives and Roads</b>																					
<p>PLANNING CONSIDERATIONS:</p> <p>Design Life: Permanent</p> <p>Acreage Needed: As required by ordinances</p> <p>Estimated Unit Cost: Low</p> <p>Monthly Maintenance: N/A</p>		<table border="1"> <thead> <tr> <th colspan="5">Target Pollutants</th> </tr> <tr> <th>Significant ♦</th> <th>Partial ♦</th> <th colspan="3">Low or Unknown ◇</th> </tr> </thead> <tbody> <tr> <td>Sediment ♦</td> <td>Heavy Metals ◇</td> <td>Nutrients ◇</td> <td>Oxygen Demanding Substances ◇</td> <td>Toxic Materials ◇</td> </tr> <tr> <td>Oil &amp; Grease ◇</td> <td>Bacteria &amp; Viruses ◇</td> <td>Floatable Materials ◇</td> <td>Construction Waste ◇</td> <td></td> </tr> </tbody> </table>	Target Pollutants					Significant ♦	Partial ♦	Low or Unknown ◇			Sediment ♦	Heavy Metals ◇	Nutrients ◇	Oxygen Demanding Substances ◇	Toxic Materials ◇	Oil & Grease ◇	Bacteria & Viruses ◇	Floatable Materials ◇	Construction Waste ◇	
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<p><b>Description</b></p> <p><b>Suitable Applications</b></p> <p><b>Approach</b></p>	<p>The design of a street will determine the effects of stormwater runoff. This gives a developer numerous opportunities to reduce impervious areas and aid in the reduction of runoff and management requirements associated with runoff. Natural drainage patterns should be preserved whenever possible during street design planning. This ensures that maximum stormwater filtration and infiltration can take place.</p> <ul style="list-style-type: none"> <li>➤ Siting of streets.</li> <li>➤ Design width.</li> <li>➤ Street drainage.</li> </ul> <ul style="list-style-type: none"> <li>➤ <i>Siting of Streets</i> Siting the street is an important consideration when planning the layout of a new street network or the siting of a road. To maximize stormwater filtration and infiltration, municipalities should aim to preserve natural drainage patterns whenever possible and avoid locating streets (and other impervious surfaces) in low areas or on highly permeable soils.</li> <li>➤ <i>Design Width</i> Streets should be designed with the minimum pavement width that will support the area's traffic volume; on street parking needs; and emergency, maintenance and service vehicles.</li> <li>➤ <i>Street Drainage</i> Curbless road design, such as the so-called "rural residential section" encourages infiltration via roadside swales. On low-traffic streets without curbs, grass shoulders can serve as an occasional parking lane, allowing a narrower paved area.</li> </ul>																					

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| <b>Advantages</b>                | <ul style="list-style-type: none"><li>➤ Thoughtful siting and design of streets improves stormwater control “at the source”, which means less runoff requiring management, reduced stormwater infrastructure, and a smaller impact on downstream water bodies.</li><li>➤ Reducing paving lowers development and maintenance costs.</li><li>➤ Forgoing curb-and-gutter in favor of a rural residential section is a cost savings.</li><li>➤ Rural-section streets can incorporate attractive “rain garden” plantings in low areas adjacent to the roadway, when soil permits.</li><li>➤ Narrower streets tend to slow traffic and create a more pedestrian-friendly environment.</li><li>➤ Reducing pavement lessens the urban heat island effect - the increase in air temperature that occurs when highly developed areas are exposed to the sun.</li></ul> |
| <b>Limitations</b>               | <ul style="list-style-type: none"><li>➤ Local ordinances may preclude narrowed or curbless street design.</li><li>➤ The city’s desire to design roads to accommodate future growth may impede innovations.</li><li>➤ Roadside swales are difficult to accommodate in single family residential developments with net densities above 8 units per acre.</li><li>➤ Good drainage for road subgrade must be provided when using roadside infiltration methods.</li><li>➤ Soil and topography may limit street siting opportunities.</li></ul>   |
| <b>Construction Requirements</b> | <ul style="list-style-type: none"><li>➤ Take care not to compact adjacent, permeable soils during road construction.</li><li>➤ Protect swales and other infiltrations areas from sediment influx during construction, or remove sediment after construction is complete.</li></ul>   |
| <b>Maintenance</b>               | <ul style="list-style-type: none"><li>➤ Swales planted with perennials grasses and wildflowers rather than turf grass must be weeded at least monthly during the first two to three years. After that, weeding once or twice a growing season may suffice.</li><li>➤ Swales will need periodic sediment removal to maintain volume and filtering ability.</li></ul>  |