
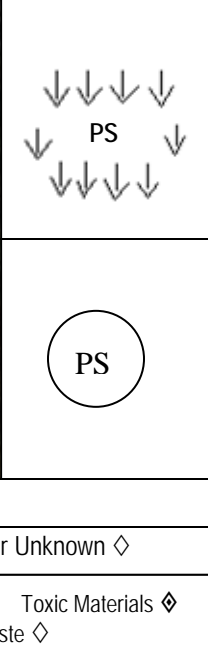
	<b>Bowling Green, Kentucky Stormwater Best Management Practices (BMPs) Erosion Prevention Practices (EPPs)</b>	EPP-06
	<b>Activity: Permanent Seeding (PS)</b>	
<b>PLANNING CONSIDERATIONS:</b>  <b>Design Life:</b> Permanent  <b>Acreage Needed:</b> As Needed  <b>Estimated Unit Cost:</b> Low  <b>Annual Maintenance:</b> 20% of Capital Costs		
<b>Target Pollutants</b>		
<div style="display: flex; justify-content: space-around;"> <span>Significant ♦</span> <span>Partial ♦</span> <span>Low or Unknown ♦</span> </div>		
<div style="display: flex; justify-content: space-between;"> <span>Sediment ♦</span> <span>Heavy Metals ♦</span> <span>Nutrients ♦</span> <span>Oxygen Demanding Substances ♦</span> <span>Toxic Materials ♦</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Oil &amp; Grease ♦</span> <span>Bacteria &amp; Viruses ♦</span> <span>Floatable Materials ♦</span> <span>Construction Waste ♦</span> </div>		
<b>Description</b>	Permanent seeding establishes a permanent ground cover over disturbed areas. This practice can greatly reduce erosion from a disturbed area.	
<b>Suitable Applications</b>	<ul style="list-style-type: none"> <li>➤ Permanent seeding can be used to reduce sediment runoff from disturbed areas during construction.</li> <li>➤ Permanent seeding can reduce air born pollutants arising from construction disturbances.</li> </ul>	
<b>Approach</b>	<ul style="list-style-type: none"> <li>➤ <b><u>Conventional Seeding</u></b> Common methods of application include: disc, cultivator, broadcasting, and no-till drilling.</li> <li>➤ <b><u>Hydroseeding</u></b> Hydroseeding uses a mixture of mulch, seed, and tactifier which is sprayed over a disturbed area for coverage.</li> <li>➤ Permanent seeding shall be applied to disturbed areas within 14 days of final grading unless Temporary Seeding - <a href="#">EPP-05</a>, is to be used in the interim.</li> <li>➤ This practice can be used in conjunction with other BMPs to reduce erosion during and after construction.</li> </ul>	

**Installation Procedures****Conventional Method**

- Soil material should be capable of supporting permanent vegetation and have at least 25 % silt and clay to sufficiently hold moisture during establishment.
- In compacted areas, soil should be loosened to a depth of 6-8 inches.
- The area shall be protected from excess runoff as necessary with diversions or berms.
- Plant species shall be selected on the basis of quick germination, growth, and time of year to be seeded.
- Fertilizer, lime, seedbed preparation, seed coverage, mulch, and irrigation shall be used as necessary to promote early establishment.
- Weather conditions should be taken into account when seeding areas. Seeding should not take place during or under pending adverse weather conditions.

*Seeding*

- Soil should be analyzed for fertilizer and lime requirements.
- Prepare seedbed with agricultural ground limestone, at a rate of 1 ton per acre, or as determined by soil testing.
- Use a 10-10-10 fertilizer shall be applied at a rate of 800 lbs per acre, or as determined by soil testing.
- Work lime and fertilizer into the soil with disk harrow, springtooth harrow or like equipment to a depth of 4 inches.
- Protect areas against seed wash-out using surface roughening diversions or terraces.
- See [Table EPP-06-01](#), Suggested Seeding Rates, on the following page.
- Apply mulch as specified in [EPP-10](#).

**Hydroseeding**

A practice of applying a hydraulic spray that seeds, fertilizes and tacks in a single step.

- Prepare a homogenous mixture in a slurry tank: Seed (inoculated if needed), fertilizer, wood cellulose or wood pulp fiber mulch, and water. (Ordinary mulch is not suitable for hydroseeding).
- Apply within one hour after mixture is prepared. The application rate should be approximately 35 lbs per 1000 sq ft.
- Spray in two, orthogonal directions (i.e. north/south and east/west) for an even distribution of the hydroseed mixture.
- A straw mulch can be applied after hydroseeding at a rate of 100 lbs per 1000 sq. ft.

**Maintenance**

- Water soil until the grass is firmly established, especially if seedlings are made late in the planting season.
- Inspect all seeded areas for failures and make necessary repairs.
- If stand is inadequate (less than 80% coverage) overseed, fertilize, using half of the original rates.
- If stand is more than 60% damaged, reestablish following original seedbed preparation methods, seeding and mulching recommendation and apply lime and fertilizer as needed according to a new soil test.

**Inspection Checklist**

- Area is watered daily until stabilization has taken place.
- Area has been maintained (watered, repaired) since stabilization.
- Heavy equipment has not been used within area.
- Eroded areas have been regarded and re-established.

**Table EPP-06-01  
Suggested Seeding Rates**

<i>Recommended Seed Blend for Kentucky</i>		
<b>Seed Species and Mixtures</b>	<b>Seeding Rate / Acre</b>	<b>Per 1000 sq. ft.</b>
<i>Seed and seed mixtures for relatively flat or slightly sloping areas</i>		
Perennial ryegrass	25 to 35 lbs.	1 lb.
+ tall fescue	15 to 30 lbs.	1 lb.
Tall fescue	40 to 50 lbs.	1.5 lbs.
+ ladino or white clover	1 to 2 lbs.	2 oz.
<i>Steep slopes, banks, cuts, and other low maintenance areas (not mowed)</i>		
Smooth bromegrass	25 to 35 lbs.	1 lb.
+ red clover	10 to 20 lbs.	0.5 lb.
Tall fescue	40 to 50 lbs.	1 lb.
+ white or ladino clover	1 to 2 lbs.	2 oz.
Orchardgrass	20 to 30 lbs.	1 lb.
+ red clover	10 to 20 lbs.	0.5 lb.
+ ladino clover	1 to 2 lbs.	2 oz.
Crownvetch	10 to 12 lbs.	0.25 lb.
+ tall fescue	20 to 30 lbs.	1 lb.
<i>Lawns and other high traffic or high maintenance areas (mowed)</i>		
Bluegrass	105 to 140 lbs.	3 lbs.
Perennial ryegrass (turf)	45 to 60 lbs.	2 lbs.
+ bluegrass	70 to 90 lbs.	2.5 lbs.
Tall fescue (turf type)	130 to 170 lbs.	4 lbs.
+ bluegrass	20 to 30 lbs.	1 lb.
<i>Ditches and other areas of concentrated water flows</i>		
Perennial ryegrass	100 to 150 lbs.	3 lbs.
+ white of ladino clover	1 to 2 lbs.	2 oz.
Kentucky bluegrass	20 lbs.	0.5 lb.
+ smooth bromegrass	10 lbs.	0.25 lb.
+ switchgrass	3 lbs.	2 oz.
+ timothy	4 lbs.	0.25 lb.
+ perennial ryegrass	10 lbs.	0.25 lb.
+ white of ladino clover	1 to 2 lbs.	2 oz.
Tall fescue	100 to 150 lbs.	3 lbs.
+ ladino or white clover	1 to 2 lbs.	2 oz.
Tall fescue	100 to 150 lbs.	3 lbs.
+ perennial ryegrass	15 to 20 lbs.	0.5 lb.
+ Kentucky bluegrass	15 to 20 lbs.	0.5 lb.

Source: Kentucky ESPC Field Guide