

POLLUTION PREVENTION PLAN

GOAL

Reduce pollution and associated effects from construction activities.

REQUIREMENTS

Create and implement a comprehensive Stormwater Pollution Prevention Plan (SWPPP) or Temporary Erosion and Sedimentation Control (TESC) plan that conforms to the requirements of the current Environmental Protection Agency (EPA) Construction General Permit OR the local or state Construction General Permit in areas that manage their own permitting plan, whichever is more stringent. The SWPPP/TESC must address water quality control and dust control activities used during construction of the roadway project.

Details

Note: A SWPPP for construction activities is also sometimes called a Temporary Erosion and Sedimentation Control (TESC) Plan or Pollution Prevention Plan (PPP) depending on local jurisdictions.

This requirement applies to ALL Greenroads projects, regardless of size.

DOCUMENTATION

- Copy of the Stormwater Pollution Prevention Plan (SWPPP) or Temporary Erosion and Sedimentation Control Plan (TESC) signed by the certified Erosion and Sediment Control inspector or authorized specialist for the project upon completion of construction.



PR-7

REQUIRED

RELATED CREDITS

- ✓ PR-4 Quality Control Plan
- ✓ PR-6 Waste Management Plan
- ✓ PR-8 Low Impact Development
- ✓ EW-1 Environmental Management System
- ✓ EW-2 Runoff Flow Control
- ✓ EW-3 Runoff Quality
- ✓ CA-1 Quality Management System
- ✓ CA-2 Environmental Training

SUSTAINABILITY COMPONENTS

- ✓ Ecology
- ✓ Expectations

BENEFITS

- ✓ Reduces Air Emissions
- ✓ Reduces Water Pollution
- ✓ Reduces Solid Waste

APPROACHES & STRATEGIES

- Evaluate federal, state and local requirements for most stringent pollution prevention standards
- Identify any high risk pollution-related elements of the project early in design.
- Use design and construction staff properly trained in pollution prevention.
- Consider site topography carefully during planning for construction staging areas and storage areas for aggregates, wastes and other materials.
- Create the pollution prevention plan during project development. (USGBC, 2009)
- Use more than one strategy to prevent pollution on your project such as (Sustainable Sites Initiative, 2009; USGBC, 2009):
 - Temporary and permanent seeding
 - Mulching
 - Earth dikes
 - Sediment traps
 - Sediment basins
 - Filter socks
 - Compost berms and blankets
 - Secondary containment
 - Spill control equipment
 - Hazardous waste manifests, and
 - Overfill alarms.
 - Silt fencing
- Seal pavement only when weather is not rainy. (Sustainable Sites Initiative, 2009).
- Do not conduct mass grading operations before large storms are forecast (Sustainable Sites Initiative, 2009).
- Coordinate staging activities with a contractor during design where possible.
- Use care when sequencing construction activities, especially for installation of low-impact development (LID) infiltration systems (Sustainable Sites Initiative, 2009).
- Have an environmental monitor on site to make sure that the requirements of the SWPPP are being followed.

Example: EPA SWPPP Templates and Guidance

The EPA provides a significant amount of guidance to aid in developing stormwater pollution prevention plan for construction activities. A number of tools are available, such as:

- SWPPP Template for states authorized to implement NPDES:
http://www.epa.gov/npdes/pubs/sw_swppp_template_authstates.doc
- SWPPP Template for jurisdictions not authorized to implement NPDES (Alaska, Massachusetts, Idaho, New Mexico, New Hampshire, the District of Columbia, U.S. Territories, and Indian land):
http://www.epa.gov/npdes/pubs/sw_swppp_template_unauthstates.doc
- Helpful guidance on developing SWPPPs for your construction site, *Developing Your Stormwater Pollution Prevention Plan: a Guide for Construction Sites*: http://www.epa.gov/npdes/pubs/sw_swppp_guide.pdf.

More tools, sample plans, inspection templates and other helpful information are available at <http://cfpub.epa.gov/npdes/Stormwater/swppp.cfm>. (EPA, 2008)

POTENTIAL ISSUES

1. The EPA only requires Construction General Permits for land disturbing activities greater than one acre in size. However, every Greenroads project must have a plan for controlling construction stormwater runoff, regardless of size, because size does not dictate good practice or insignificance of pollution generated by these construction activities. The precedence for this requirement has been established by other sustainability rating

systems, such as the 2009 Sustainable Sites Initiative (see “Prerequisite 7.1 Control and retain construction pollutants”) and the LEED™ 2009 Green Building Rating System (see “Prerequisite 1 Construction Activity Pollution Prevention” in the “Sustainable Sites” credit category).

2. For small projects that do not normally need to complete a SWPPP, a SWPPP will need to be generated. This could require additional man hours for the project, especially if the SWPPP development process is unfamiliar.
3. Some jurisdictions may have stormwater requirements in place that are similar but not identical to the NPDES requirements. In such cases, additional supporting documentation may be requested to demonstrate that the project SWPPP in place is equal to or more stringent the requirements for the EPA Construction General Permit. However, this requirement does not intend to generate extra paperwork, so where possible, links to current agency policies may be provided in support of this Project Requirement.

RESEARCH

Providing an erosion and sediment control plan during the construction of infrastructure holds both contractors and owners accountable to protect the surrounding environment from negative effects of excess sediment and pollution in stormwater.

Providing erosion and sedimentation control during construction of roadway infrastructure prevents:

- Degradation of aquatic habitats of fish and insects (EPA, 1999) as well as other wildlife communities.
- Increased sediment loading in nearby streams and outfalls (EPA, 1999).

The increase in sediment found in runoff on construction sites can be attributed to land that has been cleared of vegetation leaving exposed soil. Increased sediment loading in rivers and streams is the most common problem for water quality (EPA, 2009b). If rain events occur, this can cause erosion, and if erosion is not contained using the stormwater best management practices outlined in the NPDES, sediment can then be mixed with stormwater. At construction sites, these have often been found to contain metals and organic material, which can cause damage to wetland habitats (EPA, 1999). Furthermore, excessive sedimentation degrades habitats and cause significant decreases to the fish and insect populations of a watershed.

The United States EPA recommends keeping current water habitats to the same quality as they were before construction takes place. The intent of this is to ensure the water quality preconstruction is the same as the water quality post construction, meaning it is important to ensure the same volumes of water are being discharged naturally before and after development (EPA, 1999). In the EPA’s report to congress in 1999 the agency shows a clear message that the intent of these permits is to prevent any and all negative impacts to streams:

“In many cases, consideration of the increased flow rate, velocity and energy of storm water discharges following development unavoidably must be taken into consideration in order to reduce the discharge of pollutants, to meet water quality standards and to prevent degradation of receiving streams.” (EPA, 1999)

The NPDES construction general permit is the governing permit set forth by the United States EPA for the discharge of construction stormwater. This permit regulates the effluent limits for both sediment and pollution and is available at http://www.epa.gov/npdes/pubs/cgp2008_finalpermit.pdf. However, local or state regulations may include more stringent requirements. Most states are authorized by the EPA to manage their own stormwater pollution control activities (all but five and the District of Columbia: Massachusetts, New Hampshire, New Mexico, Alaska and Idaho). The EPA also governs these activities in territories and Indian Country (EPA, 2009a).

The United States EPA outlines the provisions necessary to comply with Phase I and Phase II of the National Pollutant Discharge Elimination System (NPDES) program. The major difference between the two phases is in the size of the footprint. The Phase II permit applies to all sites in which between one and five acres of land disturbing activity occur (Illinois EPA). While Phase I encompasses all construction sites disturbing five acres or more (Illinois

EPA). Information on the EPA's NPDES program is available at <http://cfpub2.epa.gov/npdes/index.cfm> (EPA, 2009b).

GLOSSARY

Effluent	Outflowing water
EPA	Environmental Protection Agency
Erosion	A physical process that removes solid materials from their source and transports them to another location
NPDES	National Pollution Discharge Elimination System
Sedimentation	The accumulation of soil particles in water bodies
Stormwater	Water from rainfall events
SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sedimentation Control Plan

REFERENCES

Illinois Environmental Protection Agency, (2002). *What is Phase II of the NPDES storm water management program?* Springfield, IL. Available at <http://www.epa.state.il.us/small-business/phase-two/>

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United States Green Building Council (USGBC). (2009) *LEED 2009 for New Construction and Major Renovations Rating System*. Available at <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220>