



SUSTAINABLE SITES - GREEN BUILDING TECHNOLOGY TRAINING PROGRAM

FOR GREEN BUILDING AND SUSTAINABILITY SPECIALISTS

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GREEN BUILDING SPECIALIST CURRICULUM**





**CONSTRUCTION ACTIVITY POLLUTION PREVENTION
PREREQUISITE
FOR GREEN BUILDING AND SUSTAINABILITY SPECIALIST
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LEARNING OBJECTIVES



Intent of Construction Activity
Pollution Prevention - Prerequisite

Behind the intent

Step by Step Guidance

Requirements

Required Documentation

Connection to Ongoing Performance

Terms and Definitions



SS- PR- CONSTRUCTION

INTENT

To reduce pollution from construction activities by controlling soil erosion, waterway sedimentation, and airborne dust that disproportionately impact frontline communities.

POTENTIAL TECHNOLOGIES & STRATEGIES

- ☒ Create an Erosion and Sedimentation Control Plan during the design phase of the project.
- ☒ Consider employing strategies such as:
Stabilization: temporary and permanent seeding, mulching .
- ☒ **Structural:** earth dikes, silt fencing, sediment traps and sediment basins.

CONSTRUCTION ACTIVITY POLLUTION PREVENTION

REQUIREMENTS

Create and implement an erosion and sedimentation control plan for all construction activities associated with the project. The plan must conform to the erosion and sedimentation requirements of the 2017 U.S. Environmental Protection Agency (EPA) Construction General Permit (CGP) or local equivalent, whichever is more stringent. Projects must apply the CGP regardless of size. The plan must describe the measures implemented.

IMPLEMENTATION

REQUIRED DOCUMENTATION

Documentation	Projects Using 2012 EPA CGP	Projects Using Local Standards and Codes
Description of compliance with EPA CGP	X	
For zero lot line projects and projects with minimal or no exterior work: Description of special conditions and compliance with any applicable ESC measures	X	X
Comparison of local standards and codes with EPA CGP		X
Description of how project complies with local standards and codes		X

Drawings depicting erosion and sedimentation control measures implemented		X
Written declaration from general contractor or builder who implemented plan OR Date-stamped photos OR A description of plan implementation.		X

BEHIND THE INTENT



This prerequisite promotes environmental protection measures that reduce construction project disturbances to neighboring properties, rainwater systems, and the site itself. Throughout most of the United States and elsewhere, local codes often regulate construction activity pollution; however, some project sites may not be subject to such codes. To ensure that all projects implement erosion and sedimentation control (ESC) measures during construction, LEED applies a U.S.-based national standard, the U.S. Environmental Protection Agency (EPA) construction general permit (CGP).

Local jurisdictions typically look to this standard when writing their own code requirements and adopt ESC measures that are applicable to local soils, weather, natural waterways, and municipal rainwater systems. Therefore, projects that follow local codes derived from the CGP can often demonstrate compliance with the prerequisite. Project teams outside the U.S. can use a local equivalent (see *Further Explanation, International Tips*). ➡



STEP-BY-STEP GUIDANCE



STEP 1. DESIGNATE RESPONSIBLE PARTY

The civil engineer is typically responsible for developing an erosion and sedimentation control (ESC) plan, but in some cases, the landscape architect, project hydrologist, geologist, earthworks contractor, or general contractor will undertake the plan's development.

STEP 2. REVIEW LOCAL CODE AGAINST EPA CGP

Projects within the U.S. should determine whether the local jurisdiction requires an official construction general permit (CGP) based on the National Pollutant Discharge Elimination System (NPDES) program criteria.

- If a permit is required, develop the CGP according to typical regional practices. Projects already using the CGP thus have a streamlined path to compliance.
- If local codes do not reference the CGP, determine whether local code requirements meet or exceed the CGP (see *Further Explanation, About NPDES and the CGP*). ➡

For all projects, conformance to local standards or code is required in lieu of the CGP when the code is equally or more stringent.

- To determine equivalence, compare elements of the local code that cover the requirements in the CGP, Section 2, and ensure that all relevant categories listed are covered by local code. If local codes are less stringent, address gaps by following the CGP.

STEP 3. EVALUATE SITE FOR ESC PLAN NEEDS

Each project site is unique, and not all ESC measures identified in the CGP may be applicable or necessary. Assess which ESC measures are needed based on a simple site evaluation that identifies the following:

- The slope of the project site and where water will drain
- The total area and duration of ground disturbance to identify air quality and rainwater runoff effects on neighboring properties
- The location of existing rainwater management systems that must be protected
- Planned construction sequencing that may require additional ESC measures over time
- Weather and soil conditions that could cause rainwater runoff or generate dust
- Construction entrances and their erosion and sedimentation effects on local roads servicing the project site

STEP 4. CREATE ESC PLAN

During the project's construction documentation phase, develop the plan based on the ESC requirements of the CGP or local equivalent and the unique needs of the project site. This prerequisite applies to all sites, even those smaller than 1 acre (0.4 hectare) (see *Further Explanation, About NPDES and the CGP, and CGP Requirements*). ➡



STEP-BY-STEP GUIDANCE



The ESC plan is generally prepared as part of the project plans, specifications, or a combination of both. The plan includes erosion and sedimentation control measures and activities to be implemented and phased throughout construction.

- All projects must have an ESC plan that meets the prerequisite requirements even if a plan is not required by local code. Teams for such projects must describe the specific situation and how the plan applies.
- Zero lot line projects and projects that cause no exterior site disturbance can instead develop a narrative that describes why no ESC plan is necessary for the site.
- If the team registers for LEED after the project has started, see *Further Explanation, Compliance in Late Design or Early Construction*. ➡

STEP 5. IMPLEMENT ESC PLAN

Establish control measures before construction begins. Implement additional measures as needed based on site conditions and as construction progresses. The establishment and maintenance of ESC measures are generally the responsibility of the general contractor or builder.

- Monitor control measures periodically through site inspections and record maintenance activities taken during construction.
- Inspections must be recorded regularly via date-stamped photographs, inspection reports, or other recording processes.

The following actions are also recommended:

- Any problems identified in site inspections should be resolved in a timely manner.
- Inspections should follow the requirements the CGP, Section 4.1.
- All subcontractors should promptly notify the responsible party if they see damage to an ESC measure.
- Generate and save documentation as the plan is implemented for eventual use in the certification submission (see *Further Explanation, Erosion and Sedimentation Control Plan Narrative*). ➡



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CONNECTION TO ONGOING PERFORMANCE



LEED O+M SS credit Rainwater Management:

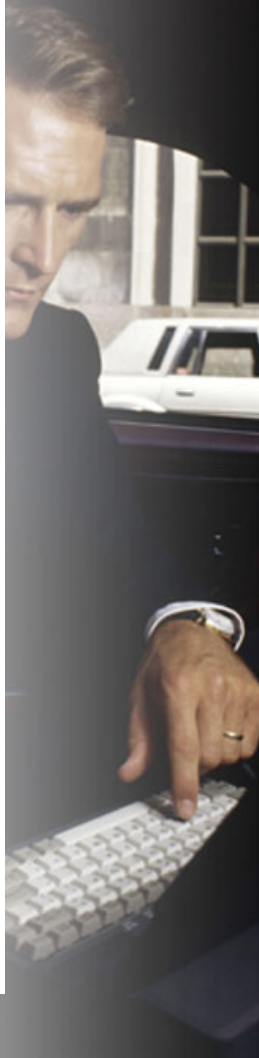
Implementing an ESC plan that minimizes soil compaction where vegetation will be planted or where infiltration measures will be installed will support reducing runoff volumes, in accordance with the related credit's requirements.



REQUIRED DOCUMENTATION



Documentation	Projects Using 2012 EPA CGP	Projects Using Local Standards and Codes
Description of compliance with EPA CGP	X	
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Comparison of local standards and codes with EPA CGP		X
Description of how project complies with local standards and codes		X
Drawings depicting erosion and sedimentation control measures implemented		X
Written declaration from general contractor or builder who implemented plan OR Date-stamped photos OR A description of plan implementation.		X



REFERENCED STANDARDS



- ✓ **Environmental Protection Agency (EPA) Construction General Permit (CGP):** cfpub.epa.gov/npdes/stormwater/cgp.cfm
- ✓ **U.S. EPA, National Pollutant Discharge Elimination System (NPDES), Stormwater Discharges from Construction Activities, 2017:** <https://www.epa.gov/npdes/stormwater-discharges-construction-activities>



TERMS AND DEFINITIONS



Greenfield area that has not been graded, compacted, cleared, or disturbed and that supports (or could support) open space, habitat, or natural hydrology.

Previously disturbed areas that have been graded, compacted, cleared, previously developed, or disturbed in any way. These are areas that do not qualify as 'Greenfield.'





BEYOND
SMART CITIES



THANK YOU

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MARKETPLACE**