

Module 6: Pollution Prevention Plans and SWPPP Overview

Module 6 Objectives

After completing this module, you should be able to:

- Explain the minimum requirements of a SWPPP
- Recognize and identify basic Pollution Prevention (P2) for construction sites

Module 6 Content

6a. Introduction

6b. Overview of the Stormwater Pollution Prevention Plan (SWPPP)

6c. Discharges Covered under the Construction GP

6d. The Pollution Prevention Plan (P2)

6e. Avoiding P2 Problems at Plan Review

6a. Introduction

Approval of the Pollution Prevention (P2) plan by a DEQ certified plan reviewer is not required by state regulation or statute.

Remember!

Some VSMP authorities may adopt more stringent VSMP programs and require SWPPP or P2 plans to be submitted for review and approval.

In most cases, the SWPPP will be reviewed by the VSMP authority inspector during a construction inspection at the start of and during the permitted LDA. There may, however, be circumstances which will require a plan reviewer to be familiar with all components of the SWPPP:

- The VSMP Authority may adopt a more stringent program that requires SWPPP submittal and review
- A plan reviewer may be tasked to assist other VSMP authority staff with review of compliance with the SWPPP and P2 requirements
- The VSMP authority, DEQ, U.S. EPA, and any affected MS4 program can request a copy of the SWPPP and review it at any time during the LDA

This module is a review of the basic requirements of a SWPPP, including the Pollution Prevention (P2) requirements. These requirements are included in both the VSMP regulation (9VAC25-870) and the Construction GP regulation (9VAC25-880). The Construction GP language begins at 9VAC25-880-70. Please take the time to familiarize yourself with these regulations.

6b. Overview of the Stormwater Pollution Prevention Plan (SWPPP)

Part II A of the VSMP Regulations ([9VAC25-870-54](#)) provides the four primary components of a **Stormwater Pollution Prevention Plan (SWPPP)**:

1. **Approved erosion and sediment control (ESC) plan** consistent with the requirements of the Virginia Erosion and Sediment Control Law and Regulations
2. **Approved stormwater management (SWM) plan** consistent with the requirements of the Virginia Stormwater Management Act and regulations
3. **Pollution prevention (P2) plan** that identifies potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site and describe control measures that will be used to minimize pollutants in stormwater discharges from the construction site
4. **Additional control measures** must be identified and implemented so that discharges are consistent with the assumptions and requirements of a specific WLA for a pollutant as established in an approved TMDL and assigned to stormwater discharges from a construction activity

Other SWPPP Requirements

The Construction GP specifies additional requirements of a SWPPP (9VAC25-880-70 Part II):

- SWPPP shall be developed prior to submission of a registration statement for coverage under the Construction GP
- SWPPP must be implemented for the construction activity, including any support activity covered by the Construction GP
- SWPPP requirements may be fulfilled by reference to other plans, such as a spill prevention control and countermeasure (SPCC) plan
- Plans incorporated by reference become enforceable under the Construction GP

Grandfathering

There is no grandfathering of projects for the SWPPP or P2 requirements. All existing projects must update SWPPPs to address requirements of the Construction GP. Projects with continuing permit coverage have 60 days from the date of coverage under the 2014 permit to update their SWPPP and P2 plan.

See [9VAC25-880-50 A.2.a\(2\)](#) and [9VAC25-880-70 Part II](#)

The Erosion and Sediment Control Plan

The **ESC plan** must be approved by the **Virginia Erosion and Sediment Control Program (VESCP) Authority**, while the **SWM plan** must be approved by the **Virginia Stormwater Management Program (VSMP) Authority**. Both the **ESC** and **SWM plans must be approved by the appropriate program authority prior to land disturbance**. The SWM plan is presented in detail elsewhere in this participant guide.

The SWPPP must address the requirements specified in the *Effluent Limitations Reflecting the Best Practicable Technology Currently Available (BPT)* from 40 CFR 450.21 (9VAC25-870-54 F), to the extent otherwise required by state law or regulations and applicable state permits. These requirements are also contained in the Construction GP, 9VAC25-880-70 Part II A 2 c (1) to (9):

1. Control stormwater volume and velocity within the site to minimize soil erosion;
2. Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;
3. Minimize the amount of soil exposed during construction activity;
4. Minimize the disturbance of steep slopes;
5. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as:
 - Amount, frequency, intensity and duration of precipitation,
 - Nature of resulting stormwater runoff, and
 - soil characteristics, including the range of soil particle sizes;
6. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible;
7. Minimize soil compaction and, unless infeasible, preserve topsoil;
8. Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed within a period of time determined by the VSMP authority. In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the VSMP authority; and
9. Utilize outlet structures that withdraw water from the surface, unless infeasible, when discharging from basins and impoundments.

These nine requirements are addressed by implementation of the Minimum Standards of the *Virginia Erosion and Sediment Control Regulations (9VAC25-840-40)* in the ESC Plan; by the design, construction, and maintenance of Erosion and Sediment Controls in accordance with Standards and Specifications of the *Virginia Erosion and Sediment Control Handbook* (1993 edition); and application of the Eight Environmental Site Design (ESD) principles. Table 6-1 provides a cross-reference to existing ESC Regulations and Handbook requirements that address the nine requirements.

Cross-Reference: Standards, Specifications, Design Principles

Table 6-1

Requirement	Existing Standards, Specifications, Design Principles*
1. Control stormwater volume and velocity within the site	<ul style="list-style-type: none"> • Minimum Standards 11 and 19 • Std. & Spec. 3.18 through 3.21 • Environmental Site Design Principles 6 and 7
2. Control stormwater discharges at outlets	<ul style="list-style-type: none"> • Minimum Standards 11 and 19 • Std. & Spec. 3.18 through 3.21 • Environmental Site Design Principle 6
3. Minimize the amount of soil exposed during construction	<ul style="list-style-type: none"> • Minimum Standards 1, 3, and 4 • Environmental Site Design Principles 3, 4, and 5
4. Minimize the disturbance of steep slopes	<ul style="list-style-type: none"> • Minimum Standards 7, 8, and 9 • Environmental Site Design Principles 3 and 5
5. Minimize sediment discharges	<ul style="list-style-type: none"> • Minimum Standards 4 and 19 • Standards & Specifications of the VESCH Chapter 3
6. Provide and maintain natural buffers around surface waters where feasible	<ul style="list-style-type: none"> • Environmental Site Design Principle No. 4, 5, and 8 • Std. & Spec. 3.38
7. Minimize soil compaction and preserve topsoil	<ul style="list-style-type: none"> • Minimum Standard 2 • Standards & Specifications 3.30 • Environmental Site Design Principles 4 and 8
8. Stabilization of disturbed areas	<ul style="list-style-type: none"> • Minimum Standards 1, 3, and 18 • Standards & Specifications 3.29 to 3.38
9. Utilize outlet structures that withdraw water from the surface	<ul style="list-style-type: none"> • Standards & Specifications 3.13 and 3.14

*Minimum Standards of the *Virginia Erosion and Sediment Control Regulations (9VAC25-840-40)*
 Minimum Standards & Specifications from Chapter 3 of the *Virginia Erosion and Sediment Control Handbook* (1993 edition)
 Eight Environmental Site Design (ESD) Principles presented in the Virginia Stormwater Management Basic Course Module 6

SWPPP Contents

The Construction GP (9VAC25-880-70 Part II A) further defines the contents of the SWPPP, as summarized in Table 6.2:

Stormwater Pollution Prevention Plan (SWPPP) Table 6-2
<p>SWPPP Contents: Part II A</p> <ul style="list-style-type: none"><input type="checkbox"/> Signed copy of the registration statement, copy of notice of coverage letter, copy of permit: Part II A 1.a-c<input type="checkbox"/> Narrative description of the nature of the construction activity, including the function of the project (e.g., low density residential, shopping mall, highway, etc.): Part II A 1.d<input type="checkbox"/> Legible site plan: Part II A 1.e<input type="checkbox"/> Approved ESC plan, "agreement in lieu of a plan", or ESC plan prepared in accordance with department approved annual standards and specifications: Part II A 2<input type="checkbox"/> New construction: Approved SWM plan, or SWM plan prepared in accordance with department approved annual standards and specifications - compliant with 9VAC25-870-62 through 9VAC25-870-92 (Part II B technical criteria)<input type="checkbox"/> Existing construction: Approved SWM plan compliant with 9VAC25-870-93 through 9VAC25-870-99 (Part II C technical criteria): Part II A 3<input type="checkbox"/> Pollution prevention plan: Part II A 4 [See Table 6-5 below for more detailed information]<input type="checkbox"/> Requirements for discharges to impaired waters, surface waters with an applicable TMDL waste load allocation established and approved prior to term of permit, and exceptional waters: Part II A 5<input type="checkbox"/> Contact information for qualified personnel conducting inspections: Part II A 6<input type="checkbox"/> Name, phone number, and qualifications of the qualified personnel conducting inspections: Part II A 7<input type="checkbox"/> Signature and date: Part II A 8

Stormwater Pollution Prevention Plan (SWPPP)

Table 6-2 (continued)

SWPPP Amendments, Modifications, and Updates: Part II B

- The **operator must amend the SWPPP** whenever there is a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to surface waters and that has not been previously addressed in the SWPPP: Part II B 1
- The **SWPPP must be amended if self-inspections or regulatory compliance inspections determine that existing control measures are ineffective** in minimizing pollutant discharges from the construction activity: Part II B 2
- The SWPPP must **clearly identify the contractor(s)** that will implement and maintain each control measure identified in the SWPPP: Part II B 3
- The SWPPP must be updated no later than **seven days** following any modification to its implementation. All modifications or updates to the SWPPP must be noted and shall include the following items: Part II B 4
 - Record of dates when:
 - Major grading activities occur
 - Construction activities temporarily or permanently cease on a portion of the "site; and
 - Stabilization measures are initiated
 - Documentation of replaced or modified controls where periodic inspections or other information have indicated that the controls have been used inappropriately or incorrectly and where modified as soon as possible
 - Areas that have reached final stabilization and where no further SWPPP or inspection requirements apply
 - All properties that are no longer under the legal control of the operator and the dates on which the operator no longer had legal control over each property
 - The date of any prohibited discharges, the discharge volume released, and what actions were taken to minimize the impact of the release
 - Measures taken to prevent the reoccurrence of any prohibited discharge
 - Measures taken to address any evidence identified as a result of a self-inspection required under Part II F
- Amendments, modifications, or updates must signed in accordance with Part III K: Part II B 5

Public Notification: Part II C

At the start of construction, the operator must post the following near the main entrance until termination of permit coverage:

- Copy of notice of coverage letter: Part II C
 - Information for public access to the electronic format or hard copy of SWPPP: Part II D 3
- *Linear projects - operator must post notice of coverage letter at a publicly accessible location near an active part of the construction project (e.g., where a pipeline project crosses a public road): Part 11 C

SWPPP Availability: Part II D

A copy of the complete SWPPP must be available onsite for operators with day-to-day operational control over SWPPP implementation, must be made available upon request to the department, VSMP authority, EPA, VESCP authority, local government officials, or the operator of a MS4. SWPPP must be available for public review in an electronic format or hard copy.

Stormwater Pollution Prevention Plan (SWPPP)

Table 6-2 (continued)

SWPPP Inspections: Part II F

The operator is responsible for insuring that the qualified personnel conduct inspections: Part II F 1

Inspections carried out at required frequency: Part II F 2

**Remember, ESC and SWM plans must address phasing of construction projects, and must include the timing of installation for all erosion and sediment control measures and permanent stormwater management facilities.*

- At least once every five business days; or
- At least once every 10 business days and no later than 48 hours following a measurable storm event (rainfall event producing 0.25 inches of rain or greater over 24 hours). If event occurs when there are more than 48 hours between business days, inspection must be conducted no later than next business day
- Once every month where areas have been temporarily stabilized or LDA is suspended due to continuous frozen ground conditions - provided stormwater discharges are unlikely (if weather conditions make discharges likely, regular inspection schedule resumes)

Inspection requirements being fulfilled: Part II F 3.a

- Record time and date of inspection and date and rainfall amount of last measurable storm event
- Record information and description of any discharges occurring at time of inspection
- Record any land disturbing activities that occurred outside approved ESC plan
- Inspect erosion and sediment controls installation in accordance with approved ESC plan, identify any maintenance needs and evaluate effectiveness in minimizing sediment discharge, including whether the control has been inappropriately or incorrectly used (see Part II F 3.a.4(a)-(h))
- Inspection of areas that have reached final grade or that will remain dormant for more than 14 days for initiation of stabilization activities and completion of stabilization activities within seven days of reaching grade or stopping work
- Inspection for evidence that ESC plan or "agreement in lieu of a plan" has not been properly implemented (see Part II F 3.7.(a)-(h))
- Inspect pollutant generating activities identified in the pollution prevention plan for the proper implementation, maintenance and effectiveness of the procedures and practices
- Identify any pollutant generating activities not identified in the pollution prevention plan
- Identify and document the presence of any evidence of the discharge of pollutants prohibited by this permit

Inspection report contains necessary information: Part II F 4

- Date and time of the inspection and date and rainfall amount of the last measurable storm event
- Summarized findings of the inspection
- Location(s) of prohibited discharge
- Location(s) of control measures that require maintenance
- Location(s) of control measures that failed to operate as designed or proved inadequate or inappropriate for a particular location
- Location(s) where any evidence identified under Part II F 3 a (7) exists
- Location(s) where any additional control measure is needed that did not exist at the time of inspection
- List of corrective actions required (including any changes to the SWPPP that are necessary) as a result of the inspection to maintain permit compliance
- Documentation of any corrective actions required from a previous inspection that has not been implemented
- Date and signature of the qualified personnel and the operator or their duly authorized representative

The U.S. EPA maintains a website with guidance on developing and maintaining an effective

SWPPP: <http://cfpub.epa.gov/npdes/stormwater/swppp.cfm>

6c. Discharges Covered under the Construction GP

Authorization to Discharge

The Construction GP authorizes the permittee to discharge stormwater associated with construction activities from permitted land disturbing activities in accordance with the limitations and special conditions of the GP (9VAC25-880-70 Part I A). The Construction GP also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) located on-site or off-site provided the support activity is exclusively for the main construction activity and does not serve multiple construction activities (see 9VAC25-880-30 C and 9VAC25-880-70 Part I A for more information).

Limitations on Coverage

Limitations on coverage under the permit for certain discharges (9VAC25-880-70 Part I B):

- **Post-construction discharges (9VAC25-880-70 Part I B 1):** The general permit does not authorize stormwater discharges that originate from the site after construction activities have been completed
- **Discharges mixed with nonstormwater (9VAC25-880-70 Part I B 2):** The general permit does not authorize discharges mixed with sources of nonstormwater, except as identified in 9VAC25-880-70 Part I E
- **Discharges covered by another state permit (9VAC25-880-70 Part I B 3):** Discharges authorized by the general permit may be comingled with other discharges authorized by a separate state or VPDES permit as long as all discharges comply with all applicable state and VPDES permit requirements. Discharges are not authorized under the general permit if the board provides notification that an individual permit is required in accordance with 9VAC25-870-410 B
- **Impaired waters and TMDL limitation (9VAC25-880-70 Part I B 4):** Discharges of stormwater from construction activities to surface waters identified as impaired in the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report or for which a TMDL wasteload allocation (WLA) has been established and approved prior to the term of this general permit for (i) sediment or a sediment-related parameter (i.e., total suspended solids or turbidity) or (ii) nutrients (i.e., nitrogen or phosphorus) are not

eligible for coverage under this general permit **unless the operator develops, implements, and maintains a SWPPP that minimizes the pollutants of concern and, when applicable, is consistent with the assumptions and requirements of the approved TMDL wasteload allocations.**

Nonstormwater Discharges

The Construction GP authorizes discharges that are composed entirely of stormwater associated with construction activities and in compliance with the requirements of the permit. The Construction GP prohibits nonstormwater discharges except for those specifically authorized in 9VAC25-880-70 Part I E or as provided in 9VAC25-880-70 Part I A 2 and Part I C of the permit (see Table 6-3).

Nonstormwater Discharges

Table 6-3

Specifically Prohibited (9VAC25-880-70 Part I D)	Specifically Authorized (when in compliance with the Construction GP) (9VAC25-880-70 Part I E)
<ul style="list-style-type: none"> ✘ Wastewater from washout of concrete ✘ Wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials ✘ Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance ✘ Oils, toxic substances, or hazardous substances from spills or other releases ✘ Soaps, solvents, or detergents used in equipment and vehicle washing 	<ul style="list-style-type: none"> ✓ Discharges from firefighting activities ✓ Fire hydrant flushing ✓ Waters used to wash vehicles or equipment <u>where soaps, solvents or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge</u> ✓ Water used to control dust that has been filtered, settled, or similarly treated prior to discharge ✓ Potable water sources, including <u>uncontaminated waterline flushing</u> ✓ Routine external building wash down <u>where soaps, solvents or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge</u> ✓ Pavement wash waters <u>where spills or leaks of toxic or hazardous materials have not occurred</u> (or where all spilled or leaked material has been removed prior to washing); <u>where soaps, solvents, or detergents have not been used, and where the wash water has been filtered, settled, or similarly treated prior to discharge</u> ✓ Uncontaminated air conditioning or compressor condensate ✓ Uncontaminated ground water or spring water ✓ Foundation or footing drains where flows are not contaminated with process materials such as solvents ✓ Uncontaminated excavation dewatering, including dewatering of trenches and excavations that have been filtered, settled, or similarly treated prior to discharge ✓ Landscape irrigation

6c. The Pollution Prevention (P2) Plan

The VSMP Regulations ([9VAC25-870-56](#)) define a **Pollution Prevention (P2) Plan** as a plan for implementing pollution prevention measures during construction activities which must be developed, implemented, and updated as necessary. The pollution prevention plan must detail the design, installation, implementation, and maintenance of **effective** pollution prevention measures to minimize the discharge of pollutants.

Pollution Prevention Plan

Table 6-4

Minimum Provisions P2 measures must be designed, installed, implemented, maintained to:	Prohibition of Discharges The P2 plan must include effective BMPs to:
<ul style="list-style-type: none"> ❖ Minimize discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge ❖ Minimize exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater ❖ Minimize discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures 	<ul style="list-style-type: none"> ❖ Prohibit discharge of concrete washout wastewater, unless managed by an appropriate control ❖ Prohibit discharge of wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials ❖ Prohibit discharge of fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance ❖ Prohibit discharge of soaps or solvents used in vehicle and equipment washing ❖ Prohibit discharge from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed by appropriate controls

P2 Plan Contents

Part II of the Construction GP provides additional requirements for the Pollution Prevention Plan required in a SWPPP (9VAC25-880-70), as summarized in Table 6-5:

Pollution Prevention (P2) Plan Contents	
Table 6-5	
Part II A	
The pollution prevention plan must address potential pollutant-generating activities that may reasonably be expected to affect the quality of stormwater discharges from the construction activity, including any support activity.	
The pollution prevention plan shall:	
<input type="checkbox"/> Identify the potential pollutant-generating activities and pollutants expected to be exposed to stormwater	
<input type="checkbox"/> Describe the location where the potential pollutant-generating activities will occur , or if identified on the site plan, reference the site plan	
<input type="checkbox"/> Identify all nonstormwater discharges that are or will be commingled with stormwater discharges from the construction activity, including any applicable support activity	
<input type="checkbox"/> Identify the person responsible for implementing the pollution prevention practice or practices for each pollutant-generating activity	
<input type="checkbox"/> Describe the pollution prevention practices and procedures that will be implemented to:	
– Prevent and respond to leaks, spills and other releases including (i) procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases; and (ii) procedures for reporting leaks, spills, and other releases;	
– Prevent the discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities (e.g., providing secondary containment such as spill berms, decks, spill containment pallets, providing cover where appropriate, and having spill kits readily available);	
– Prevent the discharge of soaps, solvents, detergents, and wash water from construction materials , including the clean-up of stucco, paint, form release oils, and curing compounds (e.g., providing (i) cover (e.g., plastic sheeting or temporary roofs) to prevent contact with stormwater; (ii) collection and proper disposal in a manner to prevent contact with stormwater; and (iii) a similarly effective means designed to prevent discharge of these pollutants).	

Pollution Prevention (P2) Plan Contents

Table 6-5 (continued)

- **Minimize the discharge of pollutants from vehicle and equipment washing, wheel wash water and other types of washing** (e.g., locating activities away from surface waters and stormwater inlets or conveyance and directing wash waters to sediment basins or traps, using filtration devices such as filter bags or sand filters or using similarly effective controls);
 - **Direct concrete wash water into a leak-proof container or leak-proof settling basin.** The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters;
 - **Minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials and wastes** including (i) building products such as asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures; (ii) pesticides, herbicides, insecticides, fertilizers, and landscape materials; and (iii) construction and domestic wastes such as packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, and other trash or building materials;
 - **Prevent the discharge of fuels, oils, and other petroleum products, hazardous or toxic wastes, and sanitary wastes;** and
 - Address any other discharge from the potential pollutant-generating activities not addressed above.
- The pollution prevention plan shall describe procedures for providing **pollution prevention awareness** of all applicable wastes, including any wash water, disposal practices and applicable disposal locations of such wastes, to personnel in order to comply with the conditions of this general permit.

In order to effectively assess the P2 plan, the plan reviewer should be familiar with the basic steps needed to prepare a P2 plan. Preparation of a P2 plan can be very involved and the plan complexity will depend on the nature and duration of construction activities, the size of the project, and other potentially complicating factors. The following outlines a very simplified generic process for P2 plan preparation that can be used as a starting point in considering the required components:

Steps to Prepare a P2 Plan

Step 1 – *Identify and Describe Activities:*

- Potential pollutant generating activities (see Table 6-6 for some examples)
- Locations where activities will occur
- All nonstormwater discharges
- Responsible person(s) for implementing P2 for each activity
- Qualified Personnel for implementation of P2 plan components

Step 2 – *Procedures and Practices:*

- Prevent and respond to leaks and spills
- Eliminate spillage and leaking from vehicle fueling and maintenance
- Prevent discharges of soaps, detergents, and solvents
- Minimize pollutants from washwater
- Appropriately handle concrete washwater
- Minimize pollutants from construction waste
- Prevent discharges of fuels, toxics, and hazardous wastes

Location of Activities

The Construction GP requires that a P2 plan describe the location where pollutant generating activities will occur; or identify locations of pollutant generating activities on a plan (or by reference to a site plan).

What is important about location of activities?

- It is important that they are located on the site
- It is important that restrictions on their locations are noted
- It is important to denote any particular issues or sensitive areas relating to pollutant generating activities

Important!

When P2 plan submittal and approval is required by the VSMP authority:

Locations of pollutant generating activities may not be known prior to contractor selection and mobilization.

Potential Pollutants on Construction Sites

Table 6-6

Fueling and Maintenance

- Static or mobile operations and activities
 - Secondary containment, absorbents, barriers, and spill response kits for fuel and lubricant storage, and equipment and vehicle fueling and maintenance activities
 - Implement preventative maintenance to identify potential leaks and spills and repair equipment and vehicles immediately
 - Properly handle, store, dispose of equipment/vehicle waste lubricants and coolants
-

Soaps, Detergents, and Solvents

- Provide cover to minimize exposure to stormwater
 - Collection and disposal procedures (no discharge)
 - Use other practices effective to prevent discharge (recycle wash systems)
-

Concrete Washout Facilities

- All concrete washout must be appropriately controlled
 - See EPA Fact Sheet on P2 for Concrete Washout:
<http://www.epa.gov/npdes/pubs/concretewashout.pdf>
-

Dewatering Operations

- Utility trenches, foundations, general excavation, etc.
 - No discharge of contaminated water from dewatering operations
 - Contaminated water should be treated by filtering, settling, or similarly treatment prior to discharge as uncontaminated water
-

Vehicle Washwater

- Avoid use of soaps, detergents, and solvents (no discharge otherwise)
 - Physical separation from surface waters and inlets
 - Use filtration and settling devices to remove sediments
 - Direct washwaters to basins, traps, or other suitable BMPs
-

Construction Material Handling and Storage

- Conventional pollutants common on construction sites: soil, aggregates, drywall, roofing materials, asphalt, bagged cement products, etc.
 - Potentially toxic or hazardous materials: paints, coatings, fertilizers, pesticides, etc.
 - Eliminate exposure to stormwater, both rainfall and runoff, by storing under roof or in sealed, leak-proof containers
 - Provide secondary containment measures if non-exposure is not viable
 - Locate storage outside of stormwater flowpaths and floodplains
-

Construction Waste

- Solid trash and debris common to construction sites
 - Washout for painting or other operations that generate liquid wastes
 - Provide trash receptacles and dumpsters for collection of waste and debris and empty the receptacles to maintain proper storage capacity
 - Designate washout areas located at least 50 yards from storm drains and waterways that are not exposed to rainfall
 - No discharge from designated washout areas; liquid wastes should be hauled off-site for proper treatment and disposal or allowed to evaporate and handled as solid waste
-

Sanitary Waste

- No discharge of sanitary waste from the site
 - Provide sufficient Port-a-Johns or other suitable sanitary facilities for personnel
 - Keep sanitary facilities clean so personnel will use them
-

Pollution Prevention Awareness

The P2 plan must describe and document procedures for providing *pollution prevention awareness* of applicable wastes and applicable disposal procedures to personnel, which may include subcontractors, vendors, material handlers, mobile refuelers and mechanics, and other on-site personnel who deal with potential stormwater pollutants. The operator is required to describe and implement the procedures as follows:

- Document the procedures, as required by the permit
- Document implementation (although not required explicitly, the operator is required to implement these procedures and may be asked to provide evidence that they have been implemented)
- Flexible on means and methods

P2 procedures may vary!

Development and implementation of effective pollution prevention practices is flexible due to the variable nature of the construction industry.

6e: Avoiding P2 Problems at Plan Review

While the *Virginia Stormwater Management Act* and VSMP Regulations do not require that a SWPPP or P2 plan be reviewed by a certified VSMP plan reviewer or approved by a VSMP authority, there are practical things that a plan reviewer can look for during review of site or subdivision plans, including the ESC and SWM plans that must be reviewed and approved prior to construction.

A plan reviewer may also be able to provide technical support to a VSMP inspector for review of a SWPPP or P2 plan after a Construction GP is issued and a regulated construction activity is underway.

The purpose of this section is to introduce a few possible ways that potential SWPPP and P2 problems can be identified during plan review, with the hope of avoiding compliance issues once the permitted construction activity begins. All potential pollutant sources or generating activities and P2 practices may not be feasibly identified in one plan document at the outset of construction, as construction materials, means, and methods are constantly changing. New best management practices, including proprietary devices, are produced and made available every day. Like the overall SWPPP, the P2 plan is a dynamic, “living” document that should be amended, revised, modified, and updated during implementation to prevent pollution of stormwater from construction activities.

A plan reviewer should remember that there may be more than one effective way to address a P2 problem. Much of P2 is common sense, so it is important to keep an open eye and open mind when reviewing a plan for potential SWPPP or P2 issues and solutions.

Ultimately, the effectiveness of a P2 plan will be realized through reduced stormwater pollution and water quality issues on lands and waters downstream of a construction activity.

P2 Questions & Answers

Q: Are there basic, over-arching principles for good P2 planning?
A: <ul style="list-style-type: none">➤ Avoiding generation of pollutants is the best means of P2, but the nature of construction inevitably involves the generation of at least some pollutants➤ Eliminating exposure of stormwater to construction pollutant sources and pollution generating activities is the most effective practice. When it is not possible to avoid exposure, limits and controls should be used to reduce the potential for contamination of both stormwater (rainfall) and runoff➤ Controlling potential pollutants at the source is usually more effective and less costly than trying to remediate soil and water after contamination
Q: Are there specific issues related to certain types of construction activities?
A: If the permitted activity is a linear roadway, a utility, commercial, residential, or mixed use project, then there may be issues unique to that type of activity that should be considered: <ul style="list-style-type: none">➤ Limited area for mobilization or laydown in the road right-of-way➤ Potential dewatering needed for utility trenching or stream crossings➤ An underground utility line project may not require concrete washout
Q: Are there unique features present on the site that could create problems?
A: Existing site conditions could require special attention to controls required: <ul style="list-style-type: none">➤ Soils and drainage patterns could present potential issues necessitating additional controls➤ Wetlands or waters of the U.S. may require additional permit(s) and BMPs➤ Designated floodplains or other areas prone to flooding may not be suitable areas for temporary storage or laydown➤ Adjacent development could create problems for safety and security of controls and BMPs (e.g., locked fuel tanks and hazardous material storage, outside use of on-site dumpsters, illegal dumping of materials and wastes from off-site, etc.)
Q: Could phasing or timing of construction activities help reduce pollutant exposure?
A: Limiting exposure to stormwater, both rainfall and runoff, is a highly effective method of reducing or eliminating potential pollution from construction sites <ul style="list-style-type: none">➤ Limited exposure includes limiting the duration of exposure, even when eliminating exposure to the elements is not feasible➤ Delay the delivery of materials to the site to control the length of time they are stored➤ Avoid working with potential pollutants during runoff producing rain events➤ Ensure that wastes generated from construction activities are properly stored and disposed of in a timely manner to reduce the time of exposure

Q: Can the P2 principles “reduce, reuse, and recycle” be used on a construction project?

A: The phrase “reduce, reuse, and recycle” is commonly used in education, advertising campaigns, and environmental literature to promote the attitude of pollution prevention. The same approach might be useful for P2 on a construction site:

- Reducing the footprint of clearing and grading means less potential for soil loss and could reduce the need to haul soil on-site later in the project, as well as the need to fertilize soils in order to provide permanent stabilization
- Reusing or recycling topsoil, mulch, and other materials generated on-site could require less handling and storage of materials from off-site
- Choosing construction materials and means that are less toxic or that generate fewer pollutants can prevent or reduce the potential for stormwater pollution
- Soil testing and proper nutrient management can better produce permanent stabilization with vegetation thereby reducing the potential for stormwater pollution due to soil erosion or excessive or untimely application of fertilizers or pesticides
- If equipment, vehicles, or material storage containers are leaking, then a valuable material is being lost and an unnecessary waste generated that can cause stormwater pollution – inspect, repair, or replace failing systems immediately to reduce material loss and protect the environment

Q: Are fixed or mobile activities better on a construction site?

A: Equipment or vehicle fueling and maintenance activities are necessary on most construction projects. Equipment, vehicle, and structure washing is also commonly required. In some cases, concrete or paint washout areas are also needed to complete a project. Is it better to provide a fixed location for these activities, or would it be better to use mobile facilities? There is no one best answer and the most effective solution may vary with the project and activity.

- A long, linear road or utility project may require mobile facilities for fueling, maintenance and washing/washout. Providing mobile activities or controls might make it easier for employees and subcontractors to access and use the facilities, as opposed to having to travel a distance from the pollution generating activity.
- Fixed or static operations may be better in other cases, especially if pollutant generating activities can be done under roof to reduce exposure (vehicle maintenance), if storage is provided in a secure location to protect against vandals, or if adequate P2 controls are complex to construct and operate and not easily moved or relocated (recycle washing station for equipment and vehicles).