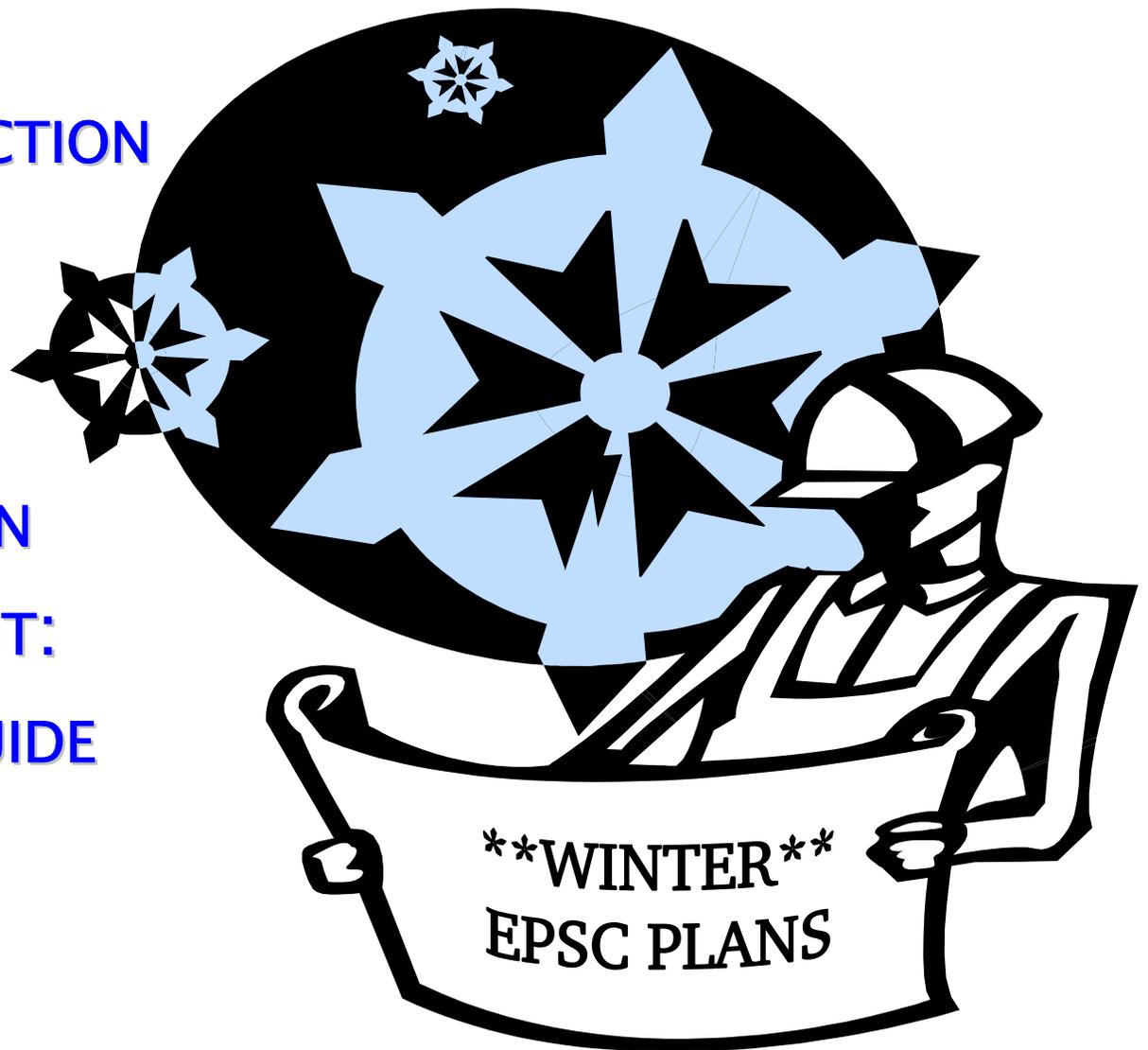


**WINTER CONSTRUCTION
AND
THE
VERMONT
CONSTRUCTION
GENERAL PERMIT:
A PLANNER'S GUIDE**



WINTER CONSTRUCTION AND THE VERMONT CONSTRUCTION GENERAL PERMIT: OVERVIEW

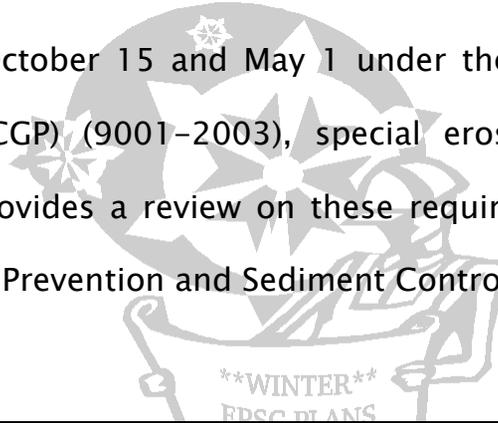
Managing construction sites to minimize erosion and prevent sediment loading of waters and wetlands is a year-round challenge. In Vermont, this challenge becomes even greater during the late fall, winter, and spring

WINTER CONSTRUCTION

in Vermont is between
October 15 and May 1

months. In order to have coverage for construction activities between October 15 and May 1 under the Vermont Construction General Permit (CGP) (9001-2003), special erosion prevention and sediment control

measures required. This pamphlet provides a review on these requirements as well as guidance on how to develop an appropriate winter Erosion Prevention and Sediment Control (EPSC) plan.



NOTE: Winter Construction coverage is determined on a case-by-case basis. While most projects that entail limited winter earthworks are granted authorization to continue during the winter months with special EPSC measures, some projects present too high of a risk to water quality to authorize. The CGP states: “The Secretary reserves the right to either require an individual permit for construction extending into this time period or may require suspension of construction activities until the next construction season if winter construction is determined to present a significant risk to water quality.” Therefore it is prudent that applicants limit the risk to the extent possible before submitting this request.

WINTER CONSTRUCTION: THE NEED FOR ADDITIONAL EPSC MEASURES

Winter brings a host of challenges to maintaining an effective EPSC plan on a construction site. Rains in late fall, thaws throughout the winter, and spring melt and rains can produce significant flows over frozen and saturated ground, greatly increasing the potential for erosion. At the same time as the erosion risk increases, the “toolbox” available to the planner and on-site plan coordinator shrinks significantly over this period:

Negative Effect of Winter Conditions on EPSC Measures

EPSC Measure	Effect of Winter Conditions
Vegetative Ground Cover	Cannot be established outside of growing season. Most effective soil protection method is therefore unavailable.
Hydroseeding	Stabilizers are poor in cold conditions, poor/no growth of seed over winter.
Diversion Structures	Difficult or impossible to implement in frozen soils.
Sedimentation Basins	Must be installed pre-ground freezing. Can be overwhelmed by spring runoff.
Silt Fence	Difficult to install in frozen ground. Often fail during spring melt.
Erosion Blankets	Cannot be installed correctly on frozen ground. Improper installations (not keyed in) wash away in melt flows.
Grassed line swales	Installation following ground freezing difficult, leaving unprotected soils in concentrated flows with significant erosion as a result.
Impervious Stabilization	Paving, other measures cannot be completed in winter

REQUIREMENTS OF THE CONSTRUCTION GENERAL PERMIT

In recognition of the special challenges inherent in implementing effective EPSC plans in the winter, the CGP has clear language describing the requirements for winter construction activities (Part III. B. 5 and Part V. G.).

The permit is available at:

http://www.anr.state.vt.us/dec/waterq/stormwater/docs/construction/sw_cgpphase1.pdf

Construction General Permit Requirements for Winter Construction

- ❖ The permittee must notify the Secretary prior to September 15 of site work extending beyond October 15 that exclusively consists of site stabilization and minor activities that do not involve new areas of earth disturbance
- ❖ The permittee must submit to the Secretary prior to September 15 a *special* winter erosion prevention and sediment control plan addressing the specific concerns of winter construction for construction activities involving new areas of earth disturbance.
- ❖ All measures possible must be taken to limit exposure of soils and to not initiate additional earthworks.

TIP: To allow for prompt review of winter EPSC plans by Division of Water Quality staff, it is recommended that applications be submitted in advance of the September 15 deadline if possible.

EFFECTIVE WINTER EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLANNING

The timing of activities as required by the CGP break down construction activities into three basic categories: pre-winter preparations, winter construction, and post-winter stabilization. In general, certain activities that are expected or generally approved in these periods are as follows:

1. Pre-winter preparations (before Oct 15):

- All structural measures that involve earth disturbance are implemented (including silt fence and erosion matting installation, berm, swale, and ditch, and basin construction).
- Winter stabilization in effect: established vegetation, erosion matting installed, or sod in place.
- Winter limits of disturbance in place in field.
- Stone construction pads in place.

2. Winter Construction (Oct 15–May 1)

- Construction of buildings or other structures not involving soil disturbance.
- Logging (not grubbing) activities considered low-risk for erosion if full snow cover
- No 'new' soil disturbance activities.
- Daily stabilization of disturbed areas.
- Daily inspections during soil disturbance activities.

3. Post-Winter Stabilization (beginning May 1)

- As soon as practicable, establish vegetation or implement other permanent stabilization of areas with temporary stabilization over the winter construction period.
- Repair damaged structural EPSC measures.

The following pages outline some specific measures that are part of an effective winter EPSC Plan.

EFFECTIVE WINTER EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLANNING

1. Limiting Disturbance in Time and Space: Phasing and Limits of Disturbance

As with regular construction season EPSC plans, limiting the amount of disturbed soil at any given time is one of the most effective means of preventing erosion. This is of paramount importance in winter, because a site that is extensively ‘opened-up’ may be left unstabilized by the end of the day. If the site freezes and experiences snowfall accumulation, stabilization after the fact becomes difficult or impossible, leading to significant erosion during the next thaw.

To prevent scenarios like this from occurring, there needs to be a detailed plan for where and when soil disturbance activity will occur over the winter period. This involves explicitly laying out the construction sequence and the extent of disturbance on the ground of each step in that sequence. To communicate this, the plan should clearly outline:

1. The boundary of each phase: limits of disturbance for the phase drawn and the method of demarcation (typically snow fence) labeled.
2. The trigger(s) to proceed to the next phase: For example, “The next phase may only begin once final grade in this phase has been reached, and the disturbed area as shown on the plan has been covered with erosion control matting.”
3. A specified limit (numeric) to the soil area that can be disturbed at a given time.

TIP:

The limits of disturbance should be specific to the planned winter construction activities, with areas not to be worked blocked from access by machinery.

EFFECTIVE WINTER EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLANNING

2. Temporary Stabilization

Temporary stabilization during the winter construction period is of great importance. Mulching alone is not an adequate erosion prevention technique. Large runoff events during thaws or spring melts can readily dispatch standard mulch applications, therefore additional protections are necessary:

TIP:

Directions for stabilization should figure prominently on drawings submitted with the Winter EPSC Plans.

1. Where mulch is used, the mulch should be applied at twice the rate used during the regular construction season to provide additional protection against large runoff events. It should only be used on relatively flat surfaces.
2. Disturbed soils must, at a minimum, be mulched at the end of each workday. This prevents the site from being left exposed to accumulated snowfall that doesn't melt until large spring flows, leaving the soil underneath unprotected.
3. Snow or ice must be removed to at most an inch thickness before applying mulch to disturbed soils to prevent the mulch from washing away during a thaw.
4. Where finished grade has been met, or in advance of forecasted thaw or spring melt events, mulch should be secured with netting, tracking, or some other method in order to prevent washing/blowing away of mulch.
5. Diversions, swales, and ditches without well-established vegetative cover by October 15, must be stabilized with stone or geotextile to prevent erosion in these areas of concentrated flow.

EFFECTIVE WINTER EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLANNING

3. Silt Fences

Silt fences are generally the last line of defense against sediment-laden runoff and the least effective. As in the regular construction season, proper installation and regular maintenance are necessary for adequate operation. In addition, the following provisions should be incorporated into the plan for winter construction:

1. All areas within 100 feet up-gradient of waters of the state (including wetlands) should be protected with two rows of silt fence installed along the contour.
2. In order to ensure that silt fence can be properly installed, all silt fence should be put in place for all phases prior to the ground freezing.
3. Snow should not be piled at silt fences: a 25-foot buffer should be indicated around silt fences to allow for regular inspection and maintenance.

4. Stone Construction Pads

To minimize disturbance in areas planned for the most work, crushed stone should be employed:

1. Building construction should be conducted upon crushed stone pads, generally 10–20 feet around the building depending on contractor needs. Limits of disturbance must be defined by construction fence at the end of the stone pad.
2. Stone pads should be installed as early as practicable to avoid earth disturbance prior to ground freezing and maintained often.

TIP: Avoid confusion and returned submissions! Prepare stand-alone plans that deal only with the winter construction, not simply amended summer construction plans.

EFFECTIVE WINTER EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLANNING

5. On-Site Plan Coordinator Inspections

TIP:

This pamphlet is designed to be a basic guide for planning winter construction activities, and is not comprehensive. Depending upon the local conditions, more or less might be required for a particular project.

While a site is buttoned down for the winter, monthly inspections of erosion and sediment control measures are required. When earth disturbance continues in the winter construction season, however, more frequent inspections are necessary, and this should be specified in the special Winter EPSC Plan.

1. For periods of construction where unstabilized areas exist, inspections by the On-Site Plan Coordinator should occur at the end of each day. Record these inspections.
2. Where all areas have at least temporary stabilization in place but construction is ongoing, inspections should occur weekly.
3. Inspections should be carried out prior to any forecasted rain, thaw, or spring melt to ensure all measures called for in the plans are properly in place to prevent erosion.
4. Detailed inspection sheets from the regular construction season should be modified if new EPSC measures are implemented for the winter, to reflect these changes. Submit these with the special Winter EPSC Plan.

EFFECTIVE WINTER EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLANNING

6. Moving Future Flows: Managing Snow On-site

As snow accumulates through the construction season, there is the opportunity to avoid large flows through areas that have not reached final stabilization. A strategy for handling snow on-site should be included in the special Winter EPSC Plan, addressing the following:

1. The location of snow disposal piles should be specified on the plans, situated down-gradient of areas of exposed soil and not in stormwater basins (which may be in violation of state law).
2. Snow piles should not be placed up gradient of disturbed areas (those that have not reached final stabilization).
3. After each snowfall, snow should be removed from structural EPSC measures to allow for cleaning and inspection.
4. Access points should be widened and stabilized to allow for snow build-up on site.

TIP: Not sure about an aspect of Winter EPSC planning requirements?

Contact Kim Greenwood (241-3779, kim.greenwood@anr.state.vt.us) or Matt DeWolfe (241-1452, matt.dewolfe@anr.state.vt.us) with your questions before submitting a plan.

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