

# Storm Water Pollution Prevention Plan Requirements

Owners and operators of construction activity disturbing one acre or more of land need to obtain an NPDES/SDS permit and develop a SWPPP. The SWPPP is the plan to control sediment laden runoff and erosion prevention from the beginning of the project to the end and may include post-construction measures.

A copy of the NPDES Construction Storm Water permit and application can be obtained from the MPCA's web site: [www.pca.state.mn.us/water/stormwater/stormwater-c.html](http://www.pca.state.mn.us/water/stormwater/stormwater-c.html)

Sites covering more than 50 acres and discharging to special waters or impaired waters must submit their SWPPP and application at least 30 days prior to commencing construction. Please review the permit itself for more detailed information.

## Project Documentation Files

- Pre-construction grades.
- Direction of water flow within the project limits.
- Soil types.
- Identify a responsible party to oversee implementing and maintaining the Best Management Practices during the project. Contact names for design questions.
- Retain a copy of all permits, SWPPP, permanent storm water operation and maintenance agreements, and all design calculations for temporary and permanent storm water management systems for **3 years** after construction submits the Notice of Termination.
- Document if discharge is to a Carcarius fen & has a Dept. of Natural Resources)DNR approval. Known Carcarius Fen list: <http://www.pca.state.mn.us/water/stormwater/stormwater-c.html>
- Identify trained design personnel and training documents.
- Identify responsible party for long-term operation and maintenance of the permanent storm water management system.

## Plan Sheets

- Location and type of all temporary and permanent erosion and sediment control devices (See check sheet for listing of various devices).
- Final grades.
- Direction of water flow within the project limits.
- Identify all surface waters and wetlands within a one-mile of the project limits that will receive storm water runoff from the project.
- Include storm water mitigation measures required by environmental, EAW, EIS, archeological, or other required reviews for the project.
- Locations not to disturb, also tree protection.
- Areas to phase construction to minimize exposed soil areas, such as retaining a vegetative buffer for as long as possible.
- Provide locations to wash out concrete trucks that prevent leakage into the soil and drainageways..
- Temporary sediment basin when 10 acres or more of disturbed area will drain to a common point. (See permit pages 9 and 10 for design requirements) Note: Temporary sediment basins can be transformed to a permanent storm water basin by cleaning out and shaping to permanent contours towards the end of the project.

## Plan Sheet (con't)

- Permanent storm water management when the project creates one or more cumulative acres of impervious surface. Must treat the first ½ inch of runoff from the newly created impervious areas. See permit pages 10 – 13 for design requirements. Options include:
  - Wet sedimentation basin
  - Infiltration/Filtration
  - Regional ponds
  - Combination of practices
  - Alternative method: Requires additional 90 day MPCA review and approval
- Legend on every sheet
- Appropriate Standard Plan sheets
- Right-of-way, easements, and construction limits
- Topographic features (e.g. Ravines, steep slopes, tree lines, drainage ways)
- Silt Fence Maintenance: Use pay item for backhoe hours, assume 1 hour per 300 LF and one cleanout per season.
- List all pay items of Erosion & Sediment (E&S) control items in Plan's estimated quantities.
- Note timing of BMP practices; bypasses need staged E & S control.
- See Temporary E&S at end of document
- Final, permanent turf stabilization.

## Special Provisions

- Narrative on timing of pond construction, staging to limiting exposed soil, timing of BMP installation.
- Identify pollution prevention practices. Types include:
  - Proper storage & disposal of all oil, paints, gas, hazardous chemicals.
  - No on-site degreasing
  - Secondary containment systems for hazardous oils, gas...
  - Spill kits on hand.

## Standard Specifications

- Describes timing and proper installation of E&S BMPs.
- Requires horizontal slope grading and minimization of erosion.
- Erosion Control Supervisor: Provides person knowledgeable in erosion and sediment control; oversees implementation of SWPPP; provides inspections and insures maintenance of BMPs; adds additional BMPs as necessary; provides chain of responsibility.
- Certified foremen and installers: Oversees proper installation of erosion and sediment control practices.

## Dewatering Issues

When a project will require dewatering, the sediment-laden water cannot be directly discharged to surface waters. Options for reducing the turbidity of the water include:

- Provide temporary sediment trap locations for turbid water discharge.
- Discharge into a large vegetative area.
- For larger land dewatering areas, the use of sand point wells will discharge relatively clean water.
- Natural based flocculant technology such as Chitosan. Cannot be directly applied to surface waters; apply in sediment trap or series of ditch checks to contain sediment.
- Manufactured BMP's to pond and filter water are also available
- Dewatering and rerouting stream water by pumping around, or lined creek bed.

## Impaired and Special Waters

Impaired Water is where the identified pollutant(s) or stressor(s) are phosphorus, turbidity, dissolved oxygen or biotic impairment listed under section 303(d) of the federal Clean Water Act. Impaired or Special Waters located within 1 mile of the construction site and the stormwater flows to it extra BMP's. To identify an Impaired or a Special Waters search on <http://www.pca.state.mn.us/water/stormwater/stormwater-c-steps.html#step5>

- The additional BMP's needed are located in Appendix A of the permit( Part I.B.&, Part III.A.9)
- For general information of Impaired Waters and the total maximum daily load (TMDL) list of Impaired Water: [www.pca.state.mn.us/water/tmdl.html](http://www.pca.state.mn.us/water/tmdl.html)

## Karst Areas & Drinking Water Supply Management Areas

Karst areas are usually formed in limestone areas and are characterized by caves, sinkholes, and a lack of surface drainage. Karst areas are of concern because as the limestone dissolves, it can provide a direct conduit for pollution to enter ground water or surface waters. Karst areas in Minnesota are located in Districts 6, 7A and portions of the Metro. See MPCA's web site for more information and a map of Karst areas: <http://www.pca.state.mn.us/water/groundwater/karst.html>. Drinking water supply management area (DWSMA) is the Minnesota Department of Health (MDH) approved surface and subsurface area surrounding a public water supply well that completely contains the scientifically calculated wellhead protection area and is managed by the entity identified in a wellhead protection plan. The boundaries of the drinking water supply management area are delineated by identifiable physical features, landmarks or political and administrative boundaries. A map of highly vulnerable areas can be found from Dept. of Health: <http://www.health.state.mn.us/divs/eh/water/swp/maps/gis/dwsvul.pdf>. Consult the Dept. of Health; (651)201-4700.

Pollution prevention measures include:

- Proper storage locations and secondary containment of hazardous materials such as oil, gasoline, paint, etc.
- Lining of ponds to prevent or minimize infiltration.
- No infiltration devices as infiltration ponds, infiltration swales...

## Temporary and Permanent Erosion and Sediment Control Check Sheet

It is suggested that the Temporary erosion and sediment control devices be placed on the Drainage Sheets, where the flow arrows, ditches and culverts already exist or within the construction staging plan sheets. Permanent erosion and sediment control can be placed on their own plan sheets such as the Turf Establishment sheets. Consider relevance for the following items:

### Temporary Erosion Control

- Temporary Mulch Quantities (Type 1 or Type 4)
  - Consider extras areas such as temporary bypasses, stockpiles
- Temporary Blanket Quantity (Last 100 feet of majority of ditch bottoms entering a surface water)
- Hydraulic Soil Stabilizer (For steep slopes or difficult access areas)
- Riprap, blanket/seed or sod for pipe ends
- Temporary Seed
  - Consider temporary bypasses, stockpiles, slopes sitting idle for consolidation
- Temporary down drains (steep or long slopes with concentrated water)
- Diversion berm (sandbags, earth berm)
- Location of areas not to disturbed, and tree protection locations.

### Temporary Sediment Control

- Downgradient perimeter sediment control
  - Silt fence, biologs/haybales stomped into wetland edges
- Sandbags
- Temporary sediment ponds or traps
- Ditch checks
  - Machine sliced silt fence
  - Biorolls or Bioroll-blanket systems
  - Geotextile triangular dike
  - Rock check
- Inlet protection
- Flotation silt curtain
- Vehicle entrance stabilization and street sweeping
- Locate concrete washout areas, or note area must be designated to contain it.
- Public Waters BMP's:  
[http://files.dnr.state.mn.us/waters/watermgmt\\_section/pwpermits/DNR\\_GP\\_Guidance\\_Manual.pdf](http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/DNR_GP_Guidance_Manual.pdf)

### Permanent Erosion Control

- See District Seeding Recommendations for detailed information.
  - [www.dot.state.mn.us/environment](http://www.dot.state.mn.us/environment)
- Topsoil
- Seed mixture or sod
- Fertilizer
- Mulch
- Erosion Control Blanket
- Compost
- Erosion Stabilization Mat
- Adequate stabilization at pipe outlets
- Bioengineering systems
- Infiltration measures