

Checklist #2

Erosion Control Plan Requirements (> 1 Acre)

Under county ordinance, significant grading activity may trigger the need for a stormwater permit for construction site erosion control. An erosion control plan is designed to protect downstream water resources and property owners from water pollution and other damage caused by sediment runoff from construction sites. Erosion control plans designed to meet the requirements of the county ordinance shall, to the maximum extent practicable, adhere to the following guiding principles:

- 1) Propose grading that best fits the terrain of the site, avoiding steep slopes, wetlands, floodplains environmental corridors and any applicable regulatory setbacks from these areas;
- 2) Minimize, through project phasing and construction sequencing, the time the disturbed soil surface is exposed to erosive forces;
- 3) Minimize soil compaction, the loss of trees and other natural vegetation and the size of the disturbed area at any one time;
- 4) Locate erosion control BMPs upstream from where runoff leaves the site or enters waters of the state and outside of wetlands, floodplains, primary or secondary environmental corridors or isolated natural areas;
- 5) Emphasize the use of BMPs that prevent soil detachment and transport over those aimed to reduce soil deposition (sedimentation) or repair erosion damage.

Preliminary Erosion Control Plans must include (for Preliminary Review Letter):

- ___ 1. A **site map** in accordance with Checklist #1. Digital submittal required.
- ___ 2. A **brief narrative** describing the proposed land disturbing activity, **construction timeline** and sequencing, and a general review of the **major erosion and sediment control BMPs** proposed to be used to minimize off-site impacts during the construction phase and to stabilize the site following construction.
- ___ 3. Delineation of the following on the site map under #1 above: a) the area and size (in acres) of the proposed land disturbance; b) the woodland and wetland areas, and the size (in acres) of each that is proposed to be lost during construction and a general description of the current vegetation types and tree sizes; c) the general **location of major BMPs**.

Final Erosion Control Plans must include (for Permit):

- ___ 1. A **site map** in accordance with Checklist #1. Digital submittal required. All other map elements listed below shall be delineated and labeled at a scale of 1 inch equals no more than 100 feet, unless otherwise noted.
- ___ 2. North arrow, graphic scale, draft date, name and **contact information** for project engineer or planner and designation of source documents for all map features;
- ___ 3. Proposed site topography at contour intervals not to exceed two feet, proposed percent slope for all open channels and side slopes and all runoff **discharge points** from the site;
- ___ 4. Proposed building envelopes and other **land area to be disturbed** and size in acres;
- ___ 5. All **woodland areas**, those proposed to be lost or transplanted during construction and acres or numbers of each. For woodlands proposed to be lost, show individual trees larger than eight (8) inches in diameter that are located within twenty (20) feet of proposed grading boundaries;
- ___ 6. Temporary **access drive** and specified surface material (3 to 6 inch clear or washed stone), minimum depth (minimum 12 inches) and minimum 50 feet long;
- ___ 7. Temporary **flow diversion** devices for upslope or roof runoff until site is stabilized;
- ___ 8. Temporary **sediment trapping devices** for site perimeter and inlets to culverts and storm drains;
- ___ 9. Temporary settling basin or other BMP to be used for **site dewatering** during utility or other subsurface work;
- ___ 10. Temporary **soil stockpile sites** indicating setbacks (minimum 25 feet) from channelized flow, nearby water resources or environmental corridors and the proposed erosion protection methods;
- ___ 11. **Detailed drawings** and **cross sections** for any sediment traps, basins or other major cut or fill areas showing side slopes and elevations;

- ___ 12. Final **stabilization measures** for open channels and erosion protection for pipe and channel inlets, outlets and emergency spillways;
- ___ 13. Location of **proposed utilities**, including standard cross-section for buried utilities, associated easements, labeling the type of utility and notes on erosion control and restoration plans;
- ___ 14. Final **site stabilization** instructions for all other disturbed areas, showing areas to be stabilized in acres, depth of applied topsoil (minimum 4 inches), seed types, rates and methodology, fertilizer, sod or erosion matting specifications, maintenance requirements until plants are well established, and other BMPs used to stabilize the site;
- ___ 15. Detailed **construction notes** clearly explaining all necessary procedures to be followed to properly implement the plan including estimated starting date of grading, timing and sequence of construction or demolition, any construction stages or phases, utility installation, dewatering plans, refuse disposal, inspection requirements, and the installation, use and maintenance of BMPs in the plan;
- ___ 16. Location of soil borings and **soil profile evaluations** with surface elevations and unique references to supplemental soil evaluations report forms. Also show estimated highest groundwater table depths, which may be shown on a separate map, with sufficient references to the proposed site plan;
- ___ 17. Spill prevention and response procedures;
- ___ 18. Other items specified by the Land Resources Division as necessary to ensure compliance with the ordinance.

Provide Supporting Information:

- ___ 1. Copies of the **WDNR Soil Loss & Sediment Discharge Calculation Tool** spreadsheet results
- ___ 2. A **narrative summary** of the erosion control plan used in the calculations in #1, above, briefly:
 - a. Explaining the overall plan and, any unique information that led to the selection of BMPs and how the plan meets the guiding principles above;
 - b. Identifying the input variables used in the Soil Loss spreadsheet;
 - c. Mapping the locations where the input variables were measured;
 - d. Identifying all areas evaluated to establish the representative worst case condition.
- ___ 3. **Summary of design data** for any structural BMP such as sediment basins or sediment traps. A professional engineer, licensed in the State of Wisconsin, shall stamp and sign a statement approving all designs and certifying that they have read the requirements of this ordinance and that, to the best of their knowledge, the submitted plans comply with the requirements.
- ___ 4. Open channel design and stabilization data to support the selected BMPs for stabilization.
- ___ 5. **Soil profile evaluation reports** with unique references and elevations that match the map above.
- ___ 6. Estimated time soil stockpiles will exist to support the selected BMPs for erosion control.
- ___ 7. Documentation that proposed utility locations and installation scheduling has been coordinated with the affected utility companies.
- ___ 8. Documentation of any other calculations used to demonstrate compliance with the performance standards in this section.
- ___ 9. Identification of the **primary contacts** for:
 - ___ a. Conducting erosion control **inspections** and how they will make the **inspection logs** available to the Land Resources Division.
 - ___ b. Completing site grading and temporary **erosion control practices**.
 - ___ c. Completing final **site restoration and stabilization**.

Note: The LRD may identify other items necessary to ensure compliance with the ordinance. A similar form may be sent to you by the plan reviewer to indicate missing items.

Summary of Erosion Control Plan Technical Requirements (Ordinance Excerpts)

All erosion control plans shall by design, achieve to the maximum extent practicable, a runoff discharge of no more than 5 tons of sediment per acre per year from sheet and rill erosion during land disturbing activities, as compared with no sediment or erosion controls, until the site is stabilized.

Note: Soil loss prediction tools are available that can estimate the sediment load leaving the construction site under varying land and management conditions and the application of erosion control BMPs. An example of such a tool is the Universal Soil Loss Equation (USLE) published by the USDA-NRCS. The Wisconsin DNR has prepared a model based on the USLE, which may be used to demonstrate compliance with the above noted performance standard.

Listed below are the specific minimum plan requirements that shall be addressed in erosion control plans to the maximum extent practicable.

1. Access Drives and Tracking. Provide access drive(s) for construction vehicles that minimize tracking of soil off site using BMPs such as stone tracking pads, tire washing or grates. Minimize runoff and sediment from adjacent areas from flowing down or eroding access drive.
2. Diversion of Upslope Runoff. Divert excess runoff from upslope land, rooftops or other surfaces, if practicable, using BMPs such as earthen diversion berms, silt fence and downspout extenders. Prevent erosion of the flow path and the outlet.
3. Inlet Protection. Protect inlets to storm drains, culverts and other stormwater conveyance systems from siltation until the site is stabilized.
4. Soil Stockpiles. Locate soil stockpiles away from channelized flow and no closer than 25 feet from roads, ditches, lakes, streams, ponds, wetlands or environmental corridors, unless otherwise approved by the LRD. Control sediment from soil stockpiles. Any soil stockpile that remains for more than 30 days shall be stabilized.
5. Cut and Fill Slopes. Minimize the length and steepness of proposed cut and fill slopes and stabilize them as soon as practicable.
6. Channel Flow. During construction, trap sediment in channelized flow before discharge from the site using BMPS such as sediment traps and sediment basins. Complete final grading and stabilize open channels in accordance with LRD standards as soon as practicable, but in no event later than the first ground freeze or snow cover in the fall.
7. Outlet Protection. Protect outlets from erosion during site dewatering and stormwater conveyance, including velocity dissipation at pipe outfalls or open channels entering or leaving a stormwater management facility.
8. Overland Flow. Trap sediment in overland flow before discharge from the site using BMPs such as silt fence and vegetative filter strips.
9. Site Dewatering. Treat pumped water to remove sediment prior to discharge from the site, using BMPs such as sediment basins and portable sediment tanks.
10. Dust Control. Prevent excessive dust from leaving the construction site through construction phasing and timely stabilization or the use of BMPs such as site watering and mulch – especially with very dry or fine sandy soils.
11. Topsoil Application. Save existing topsoil and reapply a minimum of 4 inches to all disturbed areas for final stabilization, unless otherwise approved by the LRD, such as for temporary seeding or stormwater infiltration BMPs. If adequate topsoil does not exist on the site to meet this requirement, it shall be imported or a topsoil substitute such as compost may be used, upon approval by the LRD.
12. Waste Material. Recycle or properly dispose all waste and unused building materials in a timely manner. Control runoff from waste materials until they are removed or reused.
13. Sediment Cleanup. By the end of each workday, clean up all off-site sediment deposits or tracked soil that originated from the permitted site. Flushing shall not be allowed unless runoff is treated before discharge from the site.
14. Final Site Stabilization. All previous cropland areas where land-disturbing activities will not be occurring under the proposed grading plans, shall be stabilized within 30 days of permit issuance. Stabilize all other disturbed areas within 7 days of final grading and topsoil application. Large sites shall be treated in stages as final grading is completed in each stage. Any soil erosion that occurs after final grading or the application of stabilization measures must be repaired and the stabilization work redone.

15. Temporary Site Stabilization. Any disturbed site that remains inactive for greater than 7 days shall be stabilized with temporary stabilization measures such as soil treatment, temporary seeding or mulching. For purposes of this subsection, "inactive" means that no site grading, landscaping or utility work is occurring on the site and that precipitation events are not limiting these activities. Frozen soils do not exclude the site from this requirement.
16. Removal of Practices. Remove all temporary BMPs such as silt fences, ditch checks and sediment traps as soon as all disturbed areas have been stabilized.
17. Site Drainage. Site drainage plans shall comply with Checklist #3.
18. Stormwater BMP Data. When a Stormwater Permit involves the maintenance of an existing stormwater BMP, including the removal of accumulated sediment, the LRD may require additional support data such as before/after surveys, design and construction details, and oversight by a professional engineer licensed in Wisconsin.