

## Title 15 ► Chapter 2

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# Construction Site Erosion Control

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### **Sec. 15-2-1 Intent; Authority.**

- (a) **Intent.** The intent of this Chapter is to require erosion control practices that will reduce the amount of sediment and other pollutants leaving construction sites during land development or land disturbance activities.
- (b) **Authority.** This Chapter is adopted under the authority granted by Sec. 61.354, Wis. Stats.

### **Sec. 15-2-2 Findings and Purpose.**

- (a) The Village Board finds runoff from large construction sites carries a significant amount of sediment and other pollutants to the waters of the state and this Village.
- (b) It is the purpose of this Chapter to preserve the natural resources; to protect the quality of the waters of the state and the Village; and to protect and promote the health, safety, and welfare of the people to the extent practicable by minimizing the amount of sediment and other pollutants carried by runoff or discharged from construction sites to streams and wetlands.

### **Sec. 15-2-3 Applicability of Chapter.**

This Chapter applies to land disturbing and land developing activities on lands of five (5) acres or more, and of street excavation projects of one hundred (100) feet or more, in the Village of

Merrillan; and optionally, similar projects subject to the extraterritorial authority of the Village under Chapter 236, Wis. Stats. All state funded or conducted construction is exempt from this Chapter.

## **Sec. 15-2-4 Definitions.**

The following definitions are applicable in this Chapter:

- (a) **Agricultural Land Use.** Use of land for planting, growing, cultivating and harvesting of crops for human or livestock consumption and pasturing or yarding of livestock.
- (b) **Commercial Land Use.** Use of land for the retail or wholesale sale of goods or services.
- (c) **Construction Site Control Measure.** A control measure used to meet the requirement of Section 15-2-7(b).
- (d) **Control Measure.** A practice or combination of practices to control erosion and attendant pollution.
- (e) **Control Plan.** A written description of the number, locations, sizes, and other pertinent information of control measures designed to meet the requirements of this Chapter submitted by the applicant for review and approval by the Village of Merrillan.
- (f) **Erosion.** The detachment and movement of soil, sediment or rock fragments by water, wind, ice or gravity.
- (g) **Land Developing Activity.** The construction of buildings, roads, parking lots, paved storage areas and similar facilities.
- (h) **Land Disturbing Construction Activity.** Any man-made change of the land surface including removing vegetative cover, excavating, filling and grading but not including agricultural land uses such as planting, growing, cultivating and harvesting of crops; growing and tending of gardens; harvesting of trees; and landscaping modifications.
- (i) **Landowner.** Any person holding title to or having an interest in land.
- (j) **Land User.** Any person operating, leasing, renting, or having made other arrangements with the landowner by which the landowner authorizes use of his or her land.
- (k) **Runoff.** The rainfall, snowmelt, or irrigation water flowing over the ground surface.
- (l) **Set of One (1) Year Design Storms.** The following rain intensities and rain volumes or corresponding values specific to the community for the storm durations of one-half (0.5), one (1), two (2), three (3), six (6), twelve (12) and twenty-four (24) hours that occur approximately once per year. (Note: the following are typical characteristics of these one (1) year storms for most of Wisconsin:

Storm Duration (hours)	Average Rain Intensity (inches/hour)	Total Rain (inches)
0.5	1.8	0.9
1	1.1	1.1
2	0.7	1.3
3	0.5	1.5
6	0.3	1.7
12	0.2	2.0
24	0.1	2.3

- (m) **Site.** The entire area of five (5) acres or more, or a street surface of one hundred (100) lineal feet or more, included in the legal description of the land on which land disturbing or land development activity is proposed in the permit application.

### **Sec. 15-2-5 Design Criteria, Standards and Specifications for Control Measures.**

All control measures required to comply with this Chapter shall meet the design criteria, standards and specifications identified by the Village of Merrilan.

### **Sec. 15-2-6 Maintenance of Control Measures.**

All sedimentation basins and other control measures necessary to meet the requirements of this Chapter shall be maintained by the applicant or subsequent landowner during the period of land disturbance and land development of the site in a satisfactory manner to ensure adequate performance and to prevent nuisance conditions.

### **Sec. 15-2-7 Control of Erosion and Pollutants During Land Disturbance and Development.**

- (a) **Applicability.** This Section applies to the following sites of land development or land disturbing activities.
- (1) Those lands over five (5) acres in area requiring a subdivision plat approval; commercial, industrial or institutional buildings on lots of five (5) acres or more; or

- (2) Those projects of one hundred (100) lineal feet or more involving street, highway, road, or bridge construction, enlargement, relocation, or reconstruction; or
  - (3) Those projects involving the laying, repairing, replacing, or enlarging of an underground pipe or facility for a distance of one hundred (100) feet or more.
- (b) **Erosion and Other Pollutant Control Requirements.** The following requirements shall be met on all sites described in Subsection (a):

(1) ***Site Dewatering.***

- a. Water pumped from the site shall be treated by temporary sedimentation basins, grit chambers, sand filters, upflow chambers, hydro-cyclones, swirl concentrators, or other appropriate controls designed and used to remove particles of one hundred (100) microns or greater for the highest dewatering pumping rate. If the water is demonstrated to have no particles greater than one hundred (100) microns during dewatering operations, then no control is needed before discharge, except as determined by the Village of Merrillan. Water may not be discharged in a manner that causes erosion of the site or receiving channels.

(**Note:** There are many ways to meet this particle size performance objective, depending on the pumping rate. As an example, if the pumping rate is very low [one (1) gal/min], then an inclined or vertical enlarged pipe [about eight (8) inches in diameter for one (1) gal/min] several feet long would be an adequate control device to restrict the discharge of one hundred (100) micron, and larger, particles. As the pumping rate increases, then the "device" must be enlarged. At a moderate [one hundred (100) gal/min] pumping rate, a vertical section of corrugated steel pipe, or concrete pipe section, or other small "tank" [about four and one-half (4-1/2) feet across for a one hundred (100) gal/min pumping rate] several feet tall would be adequate. With these pipe sections or small tanks, inlet baffles would be needed to minimize turbulence. With very large pumping rates [ten thousand (10,000) gal/min], sediment basins [about thirty-five (35) feet in diameter for a pumping rate of ten thousand (10,000) gal/min] at least three (3) feet in depth with a simple (but adequately sized) pipe outlet would be needed. More sophisticated control devices (such as swirl concentrators or hydro-cyclones) could be specially fabricated that would generally be smaller than the simple sedimentation devices described above, but they would not be required.

- b. The performance standard of one hundred (100) micron maximum particles in the dewatering water at the maximum pumping rate significantly reduces the liability of the contractor when compared to a standard of "no visible particulate matter". If a properly sized device is correctly used, based on the one hundred (100) micron particle size performance standard, then discharges of visible particulate matter would not constitute a violation. It is not possible to design a control device that would insure "no visible particulate matter" discharges. This one

hundred (100) micron standard is intended to significantly reduce sedimentation problems in downstream drainage systems and in the receiving waters that are caused by large particles. "Visible particulate matter" will probably still occur in water meeting this standard, as most turbidity effects are caused by very small particles that usually do not cause as severe of a sedimentation problem as larger particles. This one hundred (1000 micron particle size performance standard was therefore selected to be easily met and enforced, and to reduce sedimentation problems. A "no visible particulate matter" standard in contrast could not be met easily or cheaply, violations would frequently occur, and inspectors would have to make frequent site visits and require frequent control device changes. In addition, particle size measurements would not be required to prove compliance with the one hundred (100) micron performance standard. Only the proper use of a device designed to meet this particle size criteria is needed. However, if a contractor or site engineer feels that the dewatering water does not contain any particles larger than one hundred (100) microns, no control device would be needed if optional frequent particle size analyses confirm that fact. In most cases, the use of the simple control devices described previously would be less expensive and less bothersome than performing frequent particle size analyses.)

- (2) **Waste and Material Disposal.** All waste and unused building materials (including garbage, debris, cleaning wastes, wastewater, toxic materials, or hazardous materials) shall be properly disposed and not allowed to be carried by runoff into a receiving channel or storm sewer system.
- (3) **Tracking.** Each site shall have graveled roads, access drives and parking areas of sufficient width and length to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by street cleaning (not flushing) before the end of each workday.
- (4) **Drain Inlet Protection.** All storm drain inlets shall be protected with a straw bale, filter fabric, or equivalent barrier meeting accepted design criteria, standards and specifications.
- (5) **Site Erosion Control.** The following criteria (a. through d.) apply only to land development or land disturbing activities that result in runoff leaving the site.
  - a. Channelized runoff from adjacent areas passing through the site shall be diverted around disturbed areas, if practical. Otherwise, the channel shall be protected as described below in Subsection (b)(5)c. Sheetflow runoff from adjacent areas greater than ten thousand (10,000) square feet in area shall also be diverted around disturbed areas, unless shown to have resultant runoff velocities of less than one-half (0.5) ft/sec across the disturbed area for the set of one (1) year design storms. Diverted runoff shall be conveyed in a manner that will not erode the conveyance and receiving channels.

(Note: Soil Conservation Service guidelines for allowable velocities in different types of channels should be followed.)

- b. All activities on the site shall be conducted in a logical sequence to minimize the area of bare soil exposed at any one (1) time.
- c. Runoff from the entire disturbed area on the site shall be controlled by meeting the following criteria:
  1. For sites of less than ten (10) acres disturbed at one time, filter fences, straw bales, or equivalent control measures shall be placed along all side slope and down slope sides of the site. If a channel or area of concentrated runoff passes through the site, filter fences shall be placed along the channel edges to reduce sediment reaching the channel.
  2. For sites with more than ten (10) acres disturbed at one time, or if a channel originates in the disturbed area, one (1) or more sedimentation basins shall be constructed. Each sedimentation basin shall have a surface area of at least one percent (1%) of the area draining to the basin and at least three (3) feet of depth, and constructed in accordance with accepted design specifications. Sediment shall be removed to maintain a depth of three (3) feet. The basin shall be designed to trap sediment greater than fifteen (15) microns in size, based on the set of one (1) year design storms having durations from one-half (0.5) to twenty-four (24) hours. The basin discharge rate shall also be sufficiently low as to not cause erosion along the discharge channel or the receiving water.
- d. Any soil or dirt storage piles containing more than ten (10) cubic yards of material should not be located with a down slope drainage length of less than fifteen (15) feet to a roadway or drainage channel.
- e. In-street utility repair or construction soil or dirt storage, for applicable project sites, must be protected with straw bale or other appropriate filtering barriers to prevent down-site erosion.

## **Sec. 15-2-8 Permit Application, Control Plan and Permit Issuance.**

- (a) **Approval.** No landowner or land user may commence a land disturbance or land development activity subject to this Chapter without receiving prior approval of a control plan for the site and a permit from the Village of Merrilan. The landowner or land user shall submit an application for a permit and a control plan and pay an application fee to the Village. By submitting an application, the applicant authorizes the inspector designed by the Village to enter the site to obtain information required for the review of the control plan.
- (b) **Content of the Control Plan for Land Disturbing Activities Covering Five (5) Acres or More.**
  - (1) **Existing Site Map.** A map of the existing site conditions on a scale of at least one (1) inch equals one hundred (100) feet showing the site and immediately adjacent areas. The site plan to include:

- a. Site boundaries and adjacent lands which accurately identify the site location.
  - b. Site identification information to include all streams, wetlands, channels, ditches and other water courses, flood plain information, information on vegetative cover, locations and dimensions of storm water drainage systems, and natural drainage patterns; locations and dimensions of utilities, structures, roads.
- (2) **Site Construction Plan.** Location, description, and dimensions of all construction site management control measures necessary to meet the requirements of this Chapter. Provisions for maintenance of the construction site control measures during construction.
- (3) **Plan of Final Site Conditions.** A plan of final site conditions on the same scale as the existing site map showing the site changes.
- (c) **Review of Control Plan.** Within ten (10) work days of receipt of the application, control plan, and fee, the inspector designated by the Village will review the application and control plan to determine if the requirements of this Chapter are met. If the requirements of this Chapter are met, the inspector shall approve the plan, and issue the permit. If the requirements of this Chapter are not met, he shall so advise the applicant of the reasons for disapproval of the permit.
- (d) **Permits.**
- (1) **Duration.** Permits shall be valid for a period of one hundred eighty (180) days, or the length of the building permit or other construction authorizations, whichever is longer, from the date of issuance. The Village of Merrilan may extend the period one (1) or more times for up to an additional one hundred eighty (180) days. The Village of Merrilan may require additional control measures as a condition of the extension if they are necessary to meet the requirements of this Chapter.
  - (2) **Surety Bond.** As a condition of approval and issuance of the permit, the Village of Merrilan may require the applicant to deposit a surety bond or irrevocable letter of credit to guarantee a good faith execution of the approved control plan and any permit conditions.
  - (3) **Permit Conditions.** All permits shall require the permittee to:
    - a. Notify the Village of Merrilan within forty-eight (48) hours of commencing any land disturbing activity.
    - b. Notify the Village of Merrilan of completion of any control measures within fourteen (14) days after their installation.
    - c. Obtain permission in writing from the Village of Merrilan prior to modifying the control plan.
    - d. Install all control measures as identified in the approved control plan;
    - e. Maintain all road drainage systems, stormwater drainage systems, control measures and other facilities identified in the control plan.
    - f. Repair any siltation or erosion damage to adjoining surfaces and drainageways resulting from land developing or disturbing activities;

- g. Inspect the construction control measures after each rain of one-half (0.5) inches or more and at least each week and make needed repairs;
- h. Allow the Village of Merrilan to enter the site for the purpose of inspecting compliance with the control plan or for performing any work necessary to bring the site into compliance with the control plan; and
- i. Keep a copy of the control plan on the site.

### **Sec. 15-2-9 Inspection.**

- (a) The Inspector shall inspect construction sites as often as he deems it appropriate to insure compliance with this Chapter.
- (b) If land disturbing or land development activities are being carried out without a permit, the Inspector shall enter the land pursuant to the provisions of Sections 66.122 and 66.123, Wis. Stats.

### **Sec. 15-2-10 Enforcement.**

- (a) The Village of Merrilan may post a stop-work order if:
  - (1) Any land disturbing or land developing activity regulated under this Chapter is being undertaken without a permit;
  - (2) The control plan is not being implemented in a good faith manner; or
  - (3) The conditions of the permit are not being met.
- (b) If the permittee does not cease the activity or comply with the control plan or permit conditions within ten (10) days, the Village of Merrilan may revoke the permit.
- (c) If the landowner or land user where no permit has been issued does not cease the activity within ten (10) days, the Village of Merrilan may request the Village Attorney to obtain a cease and desist order.
- (d) The Village of Merrilan or the Board of Appeals may retract the stop-work order or the revocation.