

# CHEBOYGAN COUNTY SOIL EROSION SEDIMENTATION AND STORMWATER RUNOFF CONTROL ORDINANCE

## GUIDELINES

### PREAMBLE:

These guidelines were developed to be used in conjunction with the Cheboygan Soil Erosion, Sedimentation and Stormwater Runoff Control Ordinance, hereafter referred to as the "ordinance". These guidelines may be updated from time to time to reflect new technology available to deal with soil erosion, sedimentation and stormwater runoff on sites within Cheboygan County.

### A. Soil Erosion & Sedimentation Control - Temporary & Permanent

1. All earth changes shall be designed, constructed and maintained in such a manner as to minimize the extent and duration of earth disruption.
2. Sediment control facilities shall be designed to remove sediment from stormwater before the stormwater leaves the site of the earth change activity.
3. Vegetative stabilization or other soil erosion control measures shall be installed and maintained throughout the development process.
4. Earth changes associated with large developments shall be staged to keep the exposed areas of soil as small as practical. Areas exposed during construction shall be protected with temporary vegetation, mulching or other methods of stabilization. Adjacent undisturbed areas will be protected from sedimentation by the use of filter fences, basins, berm or other approved measures.
5. Removal of natural vegetation and tree roots within fifty (50) feet of the ordinary high water mark of any lake or stream shall be discouraged. A lake or stream buffer area greater than fifty (50) feet may be required by the Soil Erosion Control Officer, if necessary, for soil erosion control purposes.
6. Removal of natural surface vegetation and tree roots within twenty—five (25) feet of the edge of any protected wetland shall be discouraged. A buffer area greater than twenty— five (25) feet may be required by the Soil Erosion Control Officer, if necessary, for soil erosion & sedimentation control purposes near a protected wetland.
7. Stormwater runoff control and soil erosion & sediment control measures shall be installed before grading, filling or removal of vegetative cover is initiated.
8. Sediment basins, desilting basins or silt traps are required as needed for all earth changes. Basins and traps shall be sized to entirely contain sediment-laden water.
9. Sediment basins shall be designed with an overflow spillway or other design features to minimize the potential for breaching during a 100 year, 24 hour frequency storm event.
10. All public utilities shall be installed in such a fashion that soil erosion and sedimentation is minimized. Most will require a permit.
11. Filter fences and other sedimentation control facilities installed at the perimeter of a development site shall be installed at least five (5) feet from the property boundary to allow for on-site maintenance.

12. If lakes, ponds, streams or wetlands are located on or near the site, both temporary and permanent erosion and sedimentation control measures must be provided which intercept runoff and trap sediment before runoff reaches any water body.
13. Fill slope grades on the perimeter of the graded area adjacent to lakes, streams, wetlands, stormwater ponds or adjoining properties shall not have a slope steeper than 33 percent rise (3' horizontal to 1' vertical) unless approved by the Soil Erosion Control Officer.
14. When it is not possible to permanently stabilize a disturbed area after an earth change has been completed or when significant earth change activity ceases, temporary soil erosion control measures shall be immediately installed and maintained. All temporary soil erosion control measures shall be maintained until permanent soil erosion control measures are established.
15. Permanent erosion control measures for all slopes, channels, ditches or any disturbed land area shall be completed within fifteen (15) calendar days after final grading.
16. Soil erosion and sediment control measures shall be maintained throughout the duration of the earth change, including the later stages of development. Maintenance activities include, but are not limited to: removal of accumulated sediment, structural repairs, reseeding or replacement of vegetative cover, and removal of lawn clippings.
17. Grading of land or other earth changes shall not be permitted in any floodplain unless approved by the Department of Environmental Quality, as well as the Soil Erosion Control Officer.

## **B. Stormwater Runoff Control Facilities**

1. On-site stormwater runoff control facilities which protect water quality and prevent flooding shall be required for all sites, except single family sites, unless a proposal for off-site stormwater runoff control has been approved. Stormwater runoff control facilities may include, but are not limited to: retention basins, retention ponds, wet basins, porous pavement with sediment diversion berms, grassed swales with sediment diversion berms, grassed swales with check dams, filter strips and other facilities.
2. Stormwater control facilities shall be planned and designed to reproduce the pre-development hydrology of the site to the maximum extent possible.
3. Infiltration trenches, perforated pipe, and infiltration basins shall be encouraged provided that (a) sediment is removed from stormwater runoff before runoff reaches the infiltration facility, and (b) adequate provisions for facility maintenance have been made.
4. Infiltration basins and infiltration trenches shall be lined with a vegetative cover designed to slow the flow of runoff and to trap pollutants. Sediment traps or sediment basins shall be provided for the purpose of collecting sediment before stormwater reaches the infiltration basin or trench. Infiltration facilities shall be designed to distribute stormwater runoff volume evenly over the floor of the basin or trench and to prevent ponding or standing water.
5. Drainage wells, commonly known as dry wells, shall be discouraged as a stormwater control method. If the use of stormwater retention or detention basins, either on—site or off—site is not feasible, the installation of drainage wells may be allowed. All drainage wells must provide the following: (1) catch basins, sediment basins, silt traps, or vegetative filter strips to remove sediment from stormwater flowing to the drainage well; (2) an approved overflow system which will not discharge to watercourses, lakes streams, ditches, drainage swales or wetlands on or near the site; and (3) adequate provisions for maintenance.

6. Detention basins shall be designed as extended detention basins to detain runoff on the site for 24 hours or more, dependent upon soil type, to allow for maximum settling and removal of suspended solids and other pollutants. Vegetation shall be installed and maintained in the basin to help absorb pollutants.
7. At a minimum, detention, retention and infiltration basins shall have the storage capacity to hold the increase in runoff volume generated by the earth change. The required volume shall be calculated by comparing the undeveloped conditions from a 2 year, 24 hour frequency storm event to the developed condition for a 25 year, 24 hour frequency storm event. The rational method or the U.S.D.A. Natural Resources Conservation Service method shall be used to determine runoff volume.
8. The peak discharge from the site shall not exceed either of the following standards: (a) 0.2 cfs per acre; or (b) the calculated discharge rate  $f$  or a 25 year, 24 hour frequency storm event, based on a grassed, undeveloped condition. The peak discharge shall be calculated for both of these standards and the most restrictive discharge rate shall be used as the design standard for the site.
9. Stormwater runoff control basins designed for retention, detention, or infiltration shall be isolated from septic systems and water wells by fifty (50) feet or more. Variations in this required setback may be granted by the District Health Department #4.
10. A two-stage design for detention and retention basins shall be used on sites where parking lots and other impervious surfaces exceed five (5) acres in size, as well as for other sites identified by the Soil Erosion Control Officer. In such cases, the upper (first—stage) detention area shall be designed as a shallow pool, wetland or other biofiltration area with an impervious bottom. The lower (second-stage) detention shall be designed as an infiltration basin or wet basin to optimize pollutant treatment capabilities.
11. Whenever possible, a created wetland or other biofiltration area shall be incorporated into stormwater control facilities to help remove soluble pollutants that cannot be removed by conventional settling. Sediment carried off by runoff shall be allowed to settle out before runoff flows into the created wetland or other biofiltration area.
12. Retention and detention basins shall have an emergency overflow system. The overflow system shall be designed to accommodate flow from the 100 year storm event, or as otherwise required by the appropriate State of Michigan Agency.
13. Side slopes of any stormwater retention or detention basin shall be no greater than 3:1 (horizontal to vertical) so as to prevent soil erosion and allow for basin maintenance.
14. Stormwater basins with pools of water shall have one or more of the following safety features: (a) safety ledges at the basin perimeter which are at least ten feet wide; (b) aquatic vegetation surrounding the basin which discourages wading; or (c) fencing to prevent unauthorized access to the basin.
15. If the stormwater control facilities cannot discharge to a stream, lake or wetland without causing scouring, flooding or pollution on-site or downstream, then the basin shall be designed to hold or infiltrate stormwater runoff from two (2) back-to-back 100 year, 24 hour frequency storm events.
16. Stormwater detention basins shall not be located in wetlands unless approved by the Department of Environmental Quality.
17. A 25 foot undeveloped buffer area shall be provided around the perimeter of all detention, retention and infiltration basins which are 1/2 acre or more in size.

18. Stormwater detention basins which impound 5 acres or more and have a head of six (6) feet or more shall meet dam construction permit requirements in Part 315 of Act 451 of 1994 as administered by the Michigan Department of Environmental Quality.
19. Stormwater retention, detention and infiltration basins shall be maintained by the property owner unless assurance of proper maintenance can be provided through a government agency program. A maintenance plan shall be submitted for approval that as a minimum include, but not be limited to: removal of accumulated sediment, periodic structural repairs, reseeding or replacement of vegetative cover and regular clipping.

### **C. Stormwater conveyance facilities and receiving waters**

1. Unless otherwise approved, stormwater runoff shall be safely conveyed through swales, vegetated buffer strips, or other approved conveyances so as to decrease runoff velocity and offsite damage, to remove pollutants, to allow suspended sediments to settle and to encourage infiltration.
2. If storm sewers are determined to be necessary by the Soil Erosion Control Officer, the applicant shall design the drainage system to mitigate any harmful impact on water quality by using structural devices or other methods to prevent accelerated soil erosion and by locating discharges to maximize overland flow through grassed swales.
3. Drain spouts from roofs and sump pumps from basements shall be directed to on—site swales, detention basins or other measures designed to slow the flow of stormwater runoff to non-erosive velocities.
4. No direct or indirect discharge of stormwater to receiving bodies of water, including lakes, streams or wetlands shall be allowed unless sediment is trapped prior to discharge and stormwater flows are limited to non-erosive velocities.
5. Lakes and streams, together with their adjacent banks shall not be dredged, cleared of vegetation, deepened, widened, straightened, stabilized or otherwise altered without state or county permits. Approval from the Department of Environmental Quality is required for proposed alterations of lakes and streams below the ordinary high water mark. Approval from the Soil Erosion Control Officer is required for proposed alterations of lakes and streams above the ordinary high water mark.
6. Construction of floor drains, storm drains, drainage wells, septic systems or other conduits by which stormwater or washwater containing oil, grease, toxic chemicals or other hazardous substances may reach groundwater shall be prohibited unless proposed systems meet the requirements of the appropriate State of Michigan Agency.

### **D. Engineering design guidelines for facility construction**

1. Engineering design guidelines for soil erosion & sediment control and stormwater management facilities shall follow best management practices as identified by the Soil Erosion Control Officer, the Cheboygan Soil & Water Conservation District, and/or the appropriate State of Michigan Agency.
2. Current soil conservation district standards and specifications or revisions thereof, as approved by the Soil Erosion Control Officer in consultation with the Cheboygan Soil & Water Conservation District, shall be followed.
3. The Michigan Department of Natural Resources "Urban Stormwater Best Management Practices Manual" will be used as a reference, as well as, other manuals such as "Controlling Urban Runoff" by the Metropolitan Washington Council of Governments and "Designing Stormwater Quality Management Practices" by the University of Wisconsin, Madison.

### **E. Permit approval or disapproval**

1. A decision on a permit will be made within thirty (30) days. The Soil Erosion Control Officer shall determine whether the application and control plan submitted with the application provide sufficient information for review purposes. Review of permit applications may take longer if special engineering reviews are necessary, or the development is of a large scale and extra time is necessary.

### **F. Other permits & approvals of other government agencies**

1. The Soil Erosion Control Officer may convene a meeting with state agency representatives to assure consistency with state laws and regulatory requirements.
2. Local ordinance provisions for natural rivers protection, wetlands protection, stormwater run-off control and other natural resource protection and management topics may be followed, if they are more stringent than the standards in this Ordinance.
3. The Soil Erosion Control Officer may convene a meeting with local agency representatives to clarify regulatory requirements in relation to particular development sites or to resolve any conflicts between local and county regulatory requirements.

### **G. Other land uses, site plans for earth changes and subdivision plats**

1. Various proposed types of land uses will require plans to be prepared by one or more of the following licensed professionals: Civil Engineer, Land Surveyor, Architect and/or Landscape Architect. For example: A commercial/industrial site will fall into this category.
2. If the site plan is of large or complex nature, the Soil Erosion Control Officer may request that it is prepared by a licensed Civil Engineer.
3. If the site plan is of a large or complex nature, the Soil Erosion Control Officer may request that the submitted site plan be reviewed by an engineer contracted by the Soil Erosion Control Officer. These costs incurred will be the responsibility of the applicant.
4. Property owners may submit their own soil erosion & sedimentation control plan for a development if it is of a minor nature, as determined by the Soil Erosion Control Officer.

### **H. Subdivision plats**

1. Subdivision plats will be submitted for preliminary and final approval. Preliminary plat approval must be applied for prior to the meeting by the County Plat Review Committee. All concerns brought up at preliminary plat review must be resolved prior to final plat signature by the Soil Erosion Control Officer.

### **I. Stop work orders and emergency actions**

1. Violations of permit requirements will initially be brought to the attention of the individual in charge of on-site construction activities. Should efforts towards immediate compliance be unsuccessful, a stop-work order may be issued. Said order shall describe the specific alleged violation and the steps deemed necessary to bring the project back into compliance.