Leelanau County
Soil Erosion, Sedimentation and Stormwater Runoff Control (SESSRC) Ordinance

GUIDELINES

PREAMBLE

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

A. Soil Erosion Control – Temporary and 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. Soil erosion 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 the soil as small as practicable. Critical areas exposed during construction shall be protected with temporary vegetation, mulching, filter fences, or other methods of stabilization against both water runoff and wind erosion.

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 unless approved for recreation uses regulated under Section III (B) of the Ordinance. 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 regulated wetland shall be discouraged unless approved for recreation uses regulated under Section III (B) of the Ordinance. A buffer area greater than twenty-five (25) feet may be required by the Soil Erosion Control Officer if necessary, for soil erosion control purposed near a regulated wetland.

7. Stormwater runoff control and soil erosion control measures shall be installed before grading, filling, or removal of vegetative cover is initiated and maintained throughout the development process.

8. Sediment basins, desilting basins, or silt traps are required as needed for all earth changes. Basins or traps shall be sized to entirely contain sediment-laden runoff.

9. Sediment basins shall be designed with an overflow spillway or other design features to minimize the potential of breaching during the 100 year major storm event.

10. All public utilities shall be installed in such a fashion that soil erosion and sedimentation is minimized.

11. Filter fences and other soil erosion 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 onsite maintenance.

12. If lakes, ponds, streams, or wetlands are located on or near the site, both temporary and permanent erosion 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 a thirty-three percent (33%) rise (1 foot vertical to 3 foot horizontal) 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 activities cease, temporary soil erosion control measures shall be installed and maintained.

15. Permanent erosion control measures for all slope channels, ditches, or any disturbed land area shall be completed within five (5) calendar days after final grading or the final earth change has been completed. All temporary soil erosion control measures shall be maintained until permanent soil erosion control measures are established.

16. Soil erosion 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 the removal of accumulated sediment, structural repairs, reseeding or replacement of vegetative cover, and lawn mowing.

17. Grading of land or other earth changes shall not be permitted in any floodplain unless approved by the Michigan Department of Environment, Great Lakes, and Energy as well as the Soil Erosion Control Officer.

B. Stormwater Runoff Control Facilities

1. Onsite stormwater runoff control facilities which protect water quality and prevent flooding shall be required for all sites unless a proposal for offsite stormwater runoff control has been accepted. Stormwater runoff control facilities may include but are not limited to detention basins, retention ponds, infiltration trenches, infiltration basins, wet basins, porous pavement 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 possible extent.

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 provision 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 and 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 the 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 onsite or offsite, 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 swells, or wetlands on or near the site; and (3) adequate provision for maintenance.

6. Detention basins shall be designed as extended detention basins to detain runoff on the site for twenty-four (24) hours or more 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.

7A. Detention, retention, 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 runoff from the undeveloped condition for a two (2) year twenty-four (24) hour frequency storm event to the developed condition for a twenty-five (25) year twenty-four (24) hour frequency storm event. The Rational Method of the US Department of Agriculture (USDA) Soil Conservation Service shall be used to determine runoff volume.

B. Sites that are less than five (5) acres and are not environmentally sensitive may be calculated using 2.5 inches over the impervious surface.

8. The peak discharge from the site shall not exceed either of the following standards: (a) 0.2 cubic feet per second (cfs) per acre; or (b) the calculated discharge rate for a two (2) year frequency twenty-four (24) hour duration 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. The hydrologic methods recommended by the USDA Soil Conservation Service shall be used to make peak discharge calculations.

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 Benzie-Leelanau County Health Department.

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 or the Michigan Department of Environment, Great Lakes, and Energy as requiring special protection for water quality purposes. 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 area 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 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 one hundred (100) year storm event, or as otherwise required by the Michigan Department of Environment, Great Lakes, and Energy.

13. Side slopes of any stormwater retention or detention basin shall be no greater than 3:1 (3 foot horizontal to 1 foot 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 (10) 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 flooding or pollution onsite or downstream, then at a minimum the system shall contain the runoff from a one hundred (100) year twenty-four (24) hour storm event and demonstrate that the system is designed to prevent the stormwater runoff from a second one hundred (100) twenty-four (24) hour storm event from leaving the site.

16. Stormwater detention basins shall not be located in wetlands unless approved by the Michigan Department of Environment, Great Lakes, and Energy.

17. A twenty-five (25) foot undeveloped buffer area shall be provided around the perimeter of all detention, retention, and infiltration basins which are one-half (1/2) acre or more in size.

18. Stormwater detention basins which impound five (5) acres or more and have a head of six (6) feet or more shall meet dam construction permit requirements of the Michigan Water Resources Commission Act (Act 245 of 1929, as amended), as administered by the Michigan Department of Environment, Great Lakes and Energy.

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. Maintenance activities include but are not limited to the removal of

accumulated sediment, structural repairs, reseeding or replacement of vegetative cover, and lawn mowing.

C. Stormwater Conveyance and Receiving Waters

1. Unless otherwise approved, stormwater runoff shall be conveyed through swales, vegetated buffer strips, or other approved facilities so as to decrease runoff velocity, 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 Michigan Department of Environment, Great Lakes, and Energy 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 wash water containing oil, grease, toxic chemicals, or other hazardous substances may reach groundwater shall be prohibited unless the proposed systems meet the requirements of the Michigan Department of Environment, Great Lakes, and Energy and the Benzie Leelanau Health Department.

D. Engineering Design Guidelines for Facility Construction

1. Engineering design guidelines for soil erosion control and stormwater management facilities shall follow best management practices as identified by the Soil Erosion Control Officer, the Leelanau Conservation District, and/or the Michigan Department of Environment, Great Lakes, and Energy.

2. Current soil conservation district standards and specifications or revisions thereof, as approved by the Soil Erosion Control Officer shall be followed.

3. The Michigan Department of Environment, Great Lakes, and Energy's "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 Could 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 application will normally be made within three (3) to ten (10) working days of the time that a completed application and soil erosion and stormwater runoff control plan have been received. 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 permits make take longer if special engineering reviews are necessary, the development is of a large scale and extra time is necessary, or if there is a backlog in the office because of a large amount of applications submitted at one time that necessitates a longer review period. This possibility will be discussed with the applicant at the time of submittal.

F. Other Permits and 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 runoff control, and other natural resource protection and management topics shall be followed if they are more stringent than the standards of 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, Section III B of Ordinance

Site Plans for Earth Changes and Subdivision Plats

1. Various land uses within Section III B of the Ordinance will need to be prepared by one or more of the following licensed professionals: civil engineer, land surveyor, architect, and/or landscape architect. Typically, a commercial/industrial site will fall into this category.

2. If the site plan is of a 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. The costs incurred will be the responsibility of the applicant.

4. Property owners may submit their own site plan for a development if it is of a minor nature as determined by the Soil Erosion Control Officer and they have gone through appropriate site plan training that may be offered through the Soil Erosion Control Officer's office.

5. 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 taken care of prior to final plat signature by the Soil Erosion Control Officer.

H. Stop Work Orders and Emergency Actions

1. Violations of permit requirements will initially be brought to the attention of the individual in charge of onsite 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.