

CHAPTER 8 SOIL EROSION AND SEDIMENT CONTROL

The District has adopted the following Northeastern Illinois Planning Commission (NIPC) model ordinance regarding soil erosion and sediment control but will defer jurisdiction to the appropriate municipality or county if their ordinances are the same or more stringent.

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8.01 FINDINGS AND PURPOSE

A. Findings: The Board of Trustees find that:

1. Excessive quantities of soil may erode from areas undergoing development for certain non-agricultural uses including, but not limited to, the construction of dwelling units, commercial buildings and industrial plants, the building of roads and highways, the modification of stream channels and drainage ways, and the creation of recreational facilities;
2. The washing, blowing and falling of eroded soil across and upon roadways endangers the health and safety of users thereof, by decreasing vision and reducing traction of road vehicles;
3. Soil erosion necessitates the costly repairing of gullies, washed-out fills and embankments;
4. Sediment from soil erosion tends to clog sewers and ditches and to pollute and silt rivers, streams, lakes, wetlands and reservoirs;
5. Sediment limits the use of water and waterways for most beneficial

purposes, promotes the growth of undesirable aquatic weeds, destroys fish and other desirable aquatic life, and is costly and difficult to remove; and

8. Sediment reduces the channel capacity of waterways and the storage capacity of floodplains and natural depressions, resulting in increased chances of flooding at risk to public health and safety.

B. Purpose: The Board of Trustees declares that the purpose of this Chapter 8 is to safeguard persons, protect property, prevent damage to the environment and promote the public welfare by guiding, regulating and controlling the design, construction, use and maintenance of any development or other activity which disturbs or breaks the topsoil or otherwise results in the movement of earth on land situated within the District. It is the intention of this chapter that the delivery of sediment from sites affected by land disturbing activities be limited, as closely as practicable, to that which would have occurred if the land had been left in its natural undisturbed state.

8.02 DEFINITIONS

In addition to those terms defined in Appendix A of this Code, certain terms used in this Chapter 8 are defined as follows:

Certify or Certification: Formally attesting that the specific inspections and tests where required have been performed, and that such tests comply with the applicable requirements of this Chapter 8.

Clearing: Any activity which removes vegetative ground cover.

Cubic Yards: The amount of material in excavation and/or fill measured by the method of “average end areas.”

Excavation: Any act by which organic matter, earth, sand, gravel, rock or any other similar material is cut into, dug, quarried, uncovered, removed, displaced, relocated or bulldozed and shall include the conditions resulting therefrom.

Existing Grade: The vertical location of the existing ground surface prior to excavation or filling.

Fill: Any act by which earth, sand, gravel, rock or any other material is deposited, placed, replaced, pushed, dumped, pulled, transported or moved by man to a new location and shall include the conditions resulting therefrom.

Final Grade: The vertical location of the ground or pavement surface after the grading work is completed in accordance with the site development plan.

Grading: Excavation or fill or any combination thereof and shall include the conditions resulting from any excavation or fill.

Natural Drainage: Channels formed in the existing surface topography of the earth prior to changes made by unnatural causes.

Parcel: All contiguous land in one ownership.

Permit: A permit issued by the District for the construction of sewerage and appurtenances, or for discharge sewage.

Permittee: Any person to whom a site development permit is issued.

Person: Any individual, firm or corporation, public or private, the State of Illinois and its agencies or political subdivisions, and the United States of America, its agencies and instrumentalities, and any agent, servant, officer or employee of any of the foregoing.

Removal: Cutting vegetation to the ground or stumps, complete extraction or killing by spraying.

Site: A lot or parcel of land, or a contiguous combination thereof, where grading work is performed as a single unified operation.

Site Development: Altering terrain and/or vegetation and constructing improvements.

Stream: Any river, creek, brook, branch, flowage, ravine or natural or man-made drainage way which has a definite bed and banks or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.

Stripping: Any activity which removes the vegetative surface cover including tree removal, clearing and storage or removal of top soil.

Vacant: Land on which there are no structures or only structures which are secondary to the use or maintenance of the land itself.

Wetlands: Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

8.03 GENERAL PRINCIPLES

It is the objective of this Section 8.03 to control soil erosion and sedimentation caused by development activities, including clearing, grading, stripping, excavating and filling of land in the District. Measures taken to control soil erosion and offsite sediment runoff should be

adequate to assure that sediment is not transported from the site by a storm event of 10-year frequency or less. The following principles shall apply to all development activities within the District and to the preparation of the submissions required under this Section 8.03.

1. Development should be related to the topography and soils of the site so as to create the least potential for erosion. Areas of steep slopes where high cuts and fills may be required should be avoided wherever possible, and natural contours should be followed as closely as possible.
2. Natural vegetation should be retained and protected wherever possible. Areas immediately adjacent to natural watercourses, lakes, ponds and wetlands should be left undisturbed wherever possible. Temporary crossings of watercourses, when permitted, must include appropriate stabilization measures.
3. Special precautions should be taken to prevent damages resultant from any necessary development activity within or adjacent to any stream, lake, pond or wetland. Preventative measures should reflect the sensitivity of these areas to erosion and sedimentation.
4. The smallest practical area of land should be exposed for the shortest practical time during development.
5. Sediment basins or traps, filter barriers, diversions and any other appropriate sediment or runoff control measures should be installed prior to site clearing and grading and maintained to remove sediment from run-off waters from land undergoing development.
8. The selection of erosion and sedimentation control measures should be based on assessment of the probable frequency of climatic and other events likely to contribute to erosion, and on evaluation of the risks, costs and benefits involved.
7. In the design of erosion control facilities and practices, aesthetics and the requirements of continuing maintenance should be considered.
8. Provision should be made to accommodate the increased run-off caused by changed soil and surface conditions during and after development. Drainage ways should be designed so that their final gradients and the resultant velocities and rates of discharge will not create additional erosion onsite or downstream.
9. Permanent vegetation and structures should be installed and functional as soon as practical during development.
10. Those areas being converted from agricultural purposes to other land uses should be vegetated with an appropriate protective cover prior to development.
11. All waste generated as a result of site development activity should be properly disposed

of and should be prevented from being carried off the site by either wind or water.

12. All construction sites should provide measures to prevent sediment from being tracked onto public or private roadways.

8.04 SUBMISSIONS

An erosion and sedimentation control plan will be required by the District if not required by the appropriate municipality or county.

These submissions shall be prepared in accordance with the requirements of this section and the standards and requirements contained in *Standards and Specifications for Soil Erosion and Sediment Control* (the Yellow Book) published by the IEPA and the *Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control* (the Green Book) prepared by the Northeastern Illinois Soil Erosion and Sedimentation Control Steering Committee and adopted by the McHenry County Soil and Water Conservation District, which standards and requirements are hereby incorporated into this section by reference.

The Manager may waive specific requirements for the content of submissions upon finding that the information submitted is sufficient to show that the work will comply with the objectives and principles of this Section 8.04.

8.05 BONDS

The applicant is required to file with the District a faithful performance bond or bonds, letter of credit or other improvement security satisfactory to the District Attorney in an amount deemed sufficient by the District Engineer to cover all costs of improvements, landscaping, maintenance of improvements and landscaping and soil erosion and sediment control measures for such period as specified by the District, and engineering and inspection costs to cover the cost of failure or repair of improvements installed on the site.

8.06 APPLICATION REVIEW AND APPROVAL

Each application shall be reviewed and acted upon according to the following procedures:

1. The District Engineer will review each application to determine its conformance with the provisions of this chapter. The District Engineer may also refer any application to the McHenry County Soil and Water Conservation District and/or any other local government or public agency within whose jurisdiction the site is located for review and comment. Within 30 days after receiving an application, the District Engineer shall, in writing:
 - A. Approve the application if it is found to be in conformance with the provisions of this Section 8.06;

- B. Approve the application subject to such reasonable conditions as may be necessary to secure substantially the objectives of this Section 8.06; or
 - C. Disapprove the application indicating the deficiencies and the procedure for submitting a revised application and/or submission.
2. No approval shall be issued for an intended development site unless:
- A. All relevant federal and state permits (i.e., for floodplains and wetlands) have been received for the portion of the site subject to soil disturbance.
 - B. Failure of the Manager to act on an original or revised application within 30 days of receipt shall authorize the applicant to proceed in accordance with the plans as filed unless such time is extended by agreement between the Manager and the applicant. Pending preparation and approval of a revised plan, development activities shall be allowed to proceed in accordance with conditions established by the Manager.

8.07 SITE DESIGN REQUIREMENTS

- A. On-site sediment control measures, as specified by the following criteria, shall be constructed and functional prior to initiating clearing, grading, stripping, excavating or fill activities on the site:
 - 1. For disturbed areas draining less than one acre, filter barriers (including filter fences, straw bales or equivalent control measures) shall be constructed to control all offsite runoff as specified in referenced handbooks. Vegetated filter strips, with a minimum width of 25 feet, may be used as an alternative only where runoff in sheet flow is expected.
 - 2. For disturbed areas draining more than one but less than five acres, a sediment trap or equivalent control measure shall be constructed at the down slope point of the disturbed area.
 - 3. For disturbed areas draining more than five acres, a sediment basin or equivalent control measure shall be constructed at the down slope point of the disturbed area.
 - 4. Sediment basins and sediment traps designs shall provide for both detention storage and sediment storage. The detention storage shall be composed of equal volumes of “wet” detention storage and “dry” detention storage and each shall be sized for the two-year, 24-hour runoff from the site under maximum runoff conditions during construction. The re-

lease rate of the basin shall be that rate required to achieve minimum detention times of at least 10 hours. The elevation of the outlet structure shall be placed such that it only drains the dry detention storage.

5. The sediment storage shall be sized to store the estimated sediment load generated from the site over the duration of the construction period with a minimum storage equivalent to the volume of sediment generated in one year. For construction periods exceeding one year, the one-year sediment load and a sediment removal schedule may be substituted.

B. Stormwater conveyance channels, including ditches, swales and diversions, and the outlets of all channels and pipes shall be designed and constructed to withstand the expected flow velocity from the 10-year frequency storm without erosion. All constructed or modified channels shall be stabilized within 48 hours, consistent with the following standards:

1. For grades up to four percent, seeding in combination with mulch, erosion blanket or an equivalent control measure shall be applied. Sod or erosion blanket or mat shall be applied to the bottom of the channel.
2. For grades of four to eight percent, sod or an equivalent control measure shall be applied in the channel.
3. For grades greater than eight percent, rock, riprap or an equivalent control measure shall be applied, or the grade shall be effectively reduced using drop structures.

C. Disturbed areas shall be stabilized with temporary or permanent measures within seven calendar days following the end of active disturbance or redisturbance, consistent with the following criteria:

1. Appropriate temporary or permanent stabilization measures shall include seeding, mulching, sodding and/or non-vegetative measures.
2. Areas having slopes greater than 12 percent shall be stabilized with sod, mat or blanket in combination with seeding or equivalent.

D. Land disturbance activities in stream channels shall be avoided where possible. If disturbance activities are unavoidable, the following requirements shall be met:

1. Construction vehicles shall be kept out of the stream channel to the maximum extent practicable. Where construction crossings are necessary, temporary crossings shall be constructed of non-erosive material, such as riprap or gravel.

2. The time and area of disturbance of stream channels shall be kept to a minimum. The stream channel, including bed and banks shall be restabilized within 48 hours after channel disturbance is completed, interrupted or stopped.
3. Whenever channel relocation is necessary, the new channel shall be constructed in the dry and fully stabilized before flow is diverted.

E. Storm sewer inlets and culverts shall be protected by sediment traps or filter barriers meeting accepted design standards and specifications.

F. Soil storage piles containing more than 10 cubic yards of material shall not be located with a down slope drainage length of less than 25 feet to a roadway or drainage channel. Filter barriers, including straw bales, filter fence or equivalent, shall be installed immediately on the down slope side of the piles.

G. If dewatering devices are used, discharge locations shall be protected from erosion. All pumped discharges shall be routed through appropriately designed sediment traps or basins, or equivalent.

H. Each site shall have graveled (or equivalent) entrance roads, access drives and parking areas of sufficient length and width to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by shoveling or street cleaning (not flushing) before the end of each workday and transported to a controlled sediment disposal area.

I. All temporary and permanent erosion and sediment control practices must be maintained and repaired as needed to assure effective performance of their intended function.

J. All temporary erosion and sediment control measures shall be disposed of within 30 days after final site stabilization is achieved with permanent soil stabilization measures. Trapped sediment and other disturbed soils resulting from the disposition of temporary measures should be permanently stabilized to prevent further erosion and sedimentation.

8.08 HANDBOOKS ADOPTED BY REFERENCE

The standards and specifications contained in *Standards and Specifications for Soil Erosion and Sediment Control* (the Yellow Book) and the *Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control* (the Green Book) cited in Section 8.04 herein, are hereby incorporated into this Section 8.08 and made a part hereof by reference for the purpose of delineating procedures and methods of operation under site development and erosion and sedimentation control plans. In the event of conflict between provisions of said manuals and of this section, the section shall govern.

8.09 MAINTENANCE OF CONTROL MEASURES

All soil erosion and sediment control measures necessary to meet the requirements of this chapter shall be maintained periodically by the applicant or subsequent landowner during the period of land disturbance and development of the site in a satisfactory manner to ensure adequate performance.

8.10 INSPECTION

The District Engineer shall make inspections as hereinafter required and shall either approve that portion of the work completed or shall notify the developer where the work fails to comply with the site development or erosion and sedimentation control plan as approved. Plans for grading, stripping, excavating and filling work approved by of the District Engineer shall be maintained at the site during progress of the work. In order to obtain inspections and to ensure compliance with the approved erosion and sediment control plan, and this Section 8.10, the developer shall notify the District Engineer within two working days of the completion of the construction stages specified below:

1. Upon completion of installation of sediment and runoff control measures (including perimeter controls and diversions), prior to proceeding with any other earth disturbance or grading;
2. After stripping and clearing;
3. After rough grading;
4. After final grading;
5. After seeding and landscaping deadlines; and
8. After final stabilization and landscaping, prior to removal of sediment controls.

If stripping, clearing, grading and/or landscaping are to be done in phases or areas, the developer shall give notice and request inspection at the completion of each of the above work stages in each phase or area. If an inspection is not made and notification of the results given within five working days after notice is received by the District from the developer, the developer may continue work at his/her own risk, without presuming acceptance by the District. Notification of the results of the inspection shall be given in writing at the site.

8.11 SPECIAL PRECAUTIONS

A. If at any stage of the grading of the development site the District Engineer determines by inspection that the nature of the site is such that further work authorized by an existing permit is likely to imperil any property, public way, stream, lake, wetland or drainage

structure, the District Engineer may require, as a condition of allowing the work to be done, that such reasonable special precautions be taken as are considered advisable to avoid the likelihood of such peril. "Special precautions" may include, but shall not be limited to, a more level exposed slope; construction of additional drainage facilities, berms, terracing, compaction or cribbing; installation of plant materials for erosion control; and recommendations of a registered soils engineer and/or engineering geologist which may be made requirements for further work.

B. Where it appears that storm damage may result because the grading on any development site is not complete, work may be stopped and the developer required to install temporary structures or take such other measures as may be required to protect adjoining property or the public safety. On large developments, or where unusual site conditions prevail, the District Engineer may specify the time of starting grading and time of completion or may require that the operations be conducted in specific stages so as to insure completion of protective measures or devices prior to the advent of seasonal rains.

8.12 AMENDMENT OF PLANS

Major amendments of the site development or erosion and sedimentation control plans shall be submitted to the District Engineer and shall be processed and approved or disapproved in the same manner as the original plans. Field modifications of a minor nature may be authorized by the District Engineer by written authorization to the developer.

8.13 ENFORCEMENT

The Board of Trustees may, in accordance with the following procedures, authorize exceptions to any of the requirements and regulations set forth in this Chapter 8:

1. Application for any exception shall be made by a verified petition of the applicant, stating fully the grounds of the petition and the facts relied upon by the applicant. Such petition shall be filed with the application. In order for the petition to be granted it shall be necessary that the Board of Trustees find all of the following facts with respect to the land referred to in the petition:
 - A. That the land is of such shape or size or is affected by such physical conditions or is subject to such title limitations of record that it is impossible or impractical for the applicant to comply with all of the requirements of this Chapter 8;
 - B. That the exception is necessary for the preservation and enjoyment of a substantial property right of the applicant; and
 - C. That the granting of the exception will not be detrimental to the public welfare or injurious to other property in the vicinity of the subject property.
2. Each application for an exception shall be referred to the District Engineer for review.

The District Engineer shall transmit his recommendations to the Board of Trustees, which shall review such recommendations prior to granting or denying the exception.

3. The Board of Trustees shall hold a public hearing on each application for exception, within 30 days after receiving application, in the manner provided with respect to appeals. After the public hearing, the Board of Trustees may approve the application with the exceptions and conditions it deems necessary or it may disapprove such site development application and exception application or it may take such other action as appropriate.

8.14 VIOLATIONS AND PENALTIES

No person shall construct, enlarge, alter, repair or maintain any grading, excavation or fill, or cause the same to be done, contrary to or in violation of any terms of this section. Any person violating any of the provisions of this Chapter 8 shall be deemed guilty of a misdemeanor, and each day during which any violation of any of the provisions of this section is committed, continued or permitted shall constitute a separate offense. Upon conviction of any such violation, such person, partnership or corporation shall be punished by a fine of not more than \$500 for each offense. In addition to any other penalty authorized by this Chapter 8, any person, partnership or corporation convicted of violating any of the provisions of this Chapter 8 shall be required to restore the site to the condition existing prior to commission of the violation, or to bear the expense of such restoration.

8.15 SEPARABILITY

The provisions and sections of this Chapter 8 shall be deemed to be separable, and the invalidity of any portion or section shall not affect the validity of the remainder.