

VILLAGE OF FONTANA-ON-GENEVA LAKE
Walworth County, Wisconsin

Ordinance 020722-01

Chapter 16
Storm Water Management and Erosion Control Ordinance
December 1, 2021 - DRAFT

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Chapter 16 Storm Water Management and Erosion Control Ordinance

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Sec. 16-01. Title.

This chapter shall be known as, referred to, and may be cited as the “Storm Water Management and Erosion Control Ordinance.”

Sec. 16-02. Authority.

- (a) This chapter is adopted under the authority granted by Wis. Stat. §§ 61.35 and 61.354.
- (b) The provisions of this ordinance are deemed not to limit any other lawful regulatory powers of the same governing body.
- (c) The requirements of this ordinance do not pre-empt more stringent storm water management and erosion and sediment control requirements that may be imposed by other governing bodies.

Sec. 16-03. Findings and Declaration of Policy.

(a) *Findings.* The Village Board for the Village of Fontana-on-Geneva Lake finds that construction site erosion and uncontrolled storm water runoff from land development activities adversely affect the water resources and the health, safety, property, and general welfare of the community, and diminish the public enjoyment and use of natural resources. Soil erosion and storm water runoff specifically can:

- (1) Carry sediment, nutrients, bacteria, pathogens, organic matter, toxins, heavy metals and other pollutants to regional lakes, streams, creeks, and wetlands.
- (2) Degrade stream habitat by increasing stream bank erosion and stream bed scour reducing groundwater recharge and stream base flows and increasing stream temperatures.
- (3) Diminish the capacity of lakes and streams to support fish, aquatic life and recreational uses.
- (4) Reduce the quality of groundwater and contaminate drinking water supplies.
- (5) Alter wetland communities by changing wetland hydrology and increasing pollutant loads.
- (6) Threaten public health, safety, property, and general welfare by increasing runoff volumes and peak flood flows and overburdening storm sewers, drainage ways and other storm drainage systems.
- (7) Undermine floodplain management efforts by increasing the incidence and levels of flooding and sedimentation.

(b) *Declaration of policy.* The Village Board finds and declares that effective sediment and storm water management depends on proper planning and design, and the timely installation of conservation and management practices and their continuing maintenance.

Sec. 16-04. Purpose and Intent.

(a) *Purpose.* It is the purpose of this chapter is to diminish threats to public health and safety, public and private property, and the natural resources of the Village by prescribing minimum requirements for construction site erosion control and storm water management.

(b) *Intent.* This chapter is intended to regulate construction site erosion and storm water runoff and to accomplish the following objectives:

- (1) Promote storm water management;
- (2) Minimize the effects of sedimentation, water pollution from nutrients, heavy metals, chemical and petroleum products and other contaminants;
- (3) Promote Infiltration and groundwater recharge;
- (4) Protect functional values of natural water courses and wetlands;
- (5) Restore and protect natural functions of soils and vegetation;
- (6) Disconnect effective impervious areas and diffuse runoff to either vegetated areas or green infrastructure installation practices;
- (7) Reduce impervious surfaces and maximize vegetation/landscaped areas that promote infiltration, evaporation and evapotranspiration of rainwater;
- (8) Ensure no increase in the rate of surface water drainage from sites during or after construction;
- (9) Protect public and private property from damage resulting from runoff or erosion;(10) Reduce flood damage to property; and

(10) Encourage the use of green infrastructure and/or conservation development to protect open space, protect water resources and environmentally sensitive areas, recharge groundwater through infiltration measures and minimize surface runoff.

Sec. 16-05. Jurisdiction, Applicability and Exemptions.

(a) *Jurisdiction.* This chapter applies to all land disturbing construction activities on lands within the corporate limits of the Village.

(b) *Applicability*

(1) *Erosion Control.* Unless otherwise exempted under subsection (C), this article shall apply to the following activities:

a. Any construction, including but not limited to buildings, public buildings and buildings that are places of employment, communication towers, carports, ponds and pools, as well as erection or construction of any other structures.

b. Those involving grading, removal of protective ground cover or vegetation, excavations, land filling, demolition, or other land disturbing construction activities affecting a surface area of 4,000 square feet.

c. Those involving excavation or filling or a combination of excavation and filling affecting 400 cubic yards or more of soil, sand or other excavation or fill material, including, but not limited to non-metallic mining sites or spoil spreading sites.

d. Those involving public or private streets, highways, airstrips, driveways, roads, bridge construction, including but not limited to original construction, enlargement, relocation or reconstruction.

e. Those involving the laying, repairing, replacing or enlarging of an underground pipe, utilities or facilities, or the disturbance of a road ditch, grass channel or other open channel for a distance of 300 linear feet or more of the total plan of construction.

f. Those involving grading, removal of ground cover or vegetation, excavation, land filling or land disturbing activities within 1,000 feet of a lake or within 300 feet from any navigable waterway.

g. Notwithstanding the applicability requirements in this subsection, the construction site erosion and sediment control performance standards applies to land disturbing activities or construction sites of any size that, in the opinion of the Village Staff, are likely to result in runoff that exceeds the safe capacity of the existing drainage facilities or receiving body of water, that causes undue channel erosion, that increases water pollution by scouring or the transportation of particulate matter or endangers property or public safety.

(2) *Storm Water Management.* Unless otherwise exempted under subsection (C) this article applies after site stabilization to the following land disturbing construction and development activities:

a. A subdivision plat.

b. A certified survey map, planned development or any other land development activity that may result in the addition of 0.5 acres of impervious surfaces, including smaller individual sites that are part of a common plan of development that are

constructed at different times.

- c. Construction of a new public or private road serving 5 or more lots.
- d. A post-construction site that had one or more acres of land disturbing construction activity.
- e. A land development activity, regardless of size, that in the opinion of the Village Staff determines is likely to cause one or more of the following:
 - 1. An adverse impact to the environment.
 - 2. Results in runoff that exceeds the safe capacity of the existing drainage facility or receiving water.
 - 3. Results in chronic wetness on other property, due to reoccurring discharges of storm water.
 - 4. Causes undue channel erosion.
 - 5. Increases pollution by scouring or the transportation of particulate matter.
 - 6. Violates any other storm water management standard in this article.
- f. Buildings designed for human occupation, including single family homes, shall comply with subsections 16-11(c)(6)(e) and 16-11(c)(6)(h) of this article.

(c) *Exemptions*

(1) *Erosion Control*

- a. Land disturbing construction activity that includes the construction of a building and is otherwise regulated by the Wisconsin Department of Commerce under s. Comm 21.125 or 50.115, Wis. Adm. Code.
- b. A construction project that is exempted by federal statutes or regulations from the requirement to have a national pollutant discharge elimination system permit issued under chapter 40, Code of Federal Regulations, part 122, for land disturbing construction activity.
- c. Activities conducted by a state agency, as defined under s. 227.01 (1), Wis. Stats., but also including the office of district attorney, which is subject to the state plan promulgated or a memorandum of understanding entered into under s. 281.33 (2), Wis. Stats. The Village may require documentation of the person(s) and regulatory agency charged with enforcing construction site erosion control.
- d. Nonpoint discharges from agricultural facilities and practices.
- e. Nonpoint discharges from silviculture activities.
- f. Trenchless construction activities or work within the public road right-of-way or Village easements, with Village Public Works Director approval.

(2) *Storm Water Management*

- a. A project deemed to have no significant detrimental impact to the environment or

downstream conveyance system at the discretion of the Village Staff.

- b. A redevelopment post-construction site with no increase in exposed parking lots or roads.
- c. A post-construction site with less than ten percent connected imperviousness based on complete development of the post-construction site, provided the cumulative areas of all parking lots and rooftops is less than one acre.
- d. Nonpoint discharges from agricultural facilities and practices.
- e. Nonpoint discharges from silviculture activities.
- f. Underground utility construction such as water, sewer, and fiber optic lines. This exemption does not apply to the construction of any above ground structure associated with utility construction.
- g. Any land disturbing activity conducted by or contracted by or contracted for any state agency, as defined under § 227.01 (1), Wis. Stats., including but not limited to road construction projects administered by the state department of transportation, when within the designated project area or construction project right-of-way area. Borrow areas or spoil spreading sites used for state-sponsored project, not within the project area or construction right-of-way must meet the requirements of this article. The Village building inspection department may require documentation of the person(s) or agency charged with enforcing the storm water management for the project.
- h. Land disturbance activities directly involved with the installation and maintenance of private on-site waste disposal systems as regulated by the Village Code of Ordinances.
- i. A land disturbing activity conducted on sites, which were included as part of a previously completed storm water management plan that was approved under this article shall be exempt from obtaining a permit provided:
 - 1. New activities do not render the existing storm water best management practices less effective; or
 - 2. New site development exceeds the assumptions made in the calculations used in the development of the previously approved storm water management plan.

Sec. 16-06. Effect and Interpretation.

(a) *Effect.* This chapter is not intended to repeal, abrogate, annul, impair, or interfere with any existing easements, covenants, deed restrictions, agreements, rules, regulations, or permits previously adopted or issued under Village ordinances or state law. However, wherever this chapter imposes greater restrictions, the provisions of this chapter shall govern.

(b) *Interpretation.* In their interpretation and application, the provisions of this chapter shall be held to be the minimum requirements, shall be liberally construed in favor of the Village, and shall not be deemed a limitation on or repeal of any other regulation or power.

Sec. 16-07. Adoption of State Law.

(a) The following Wisconsin Administrative Codes are hereby adopted and by reference made

a part of this article::

- (1) NR 151, Subchapter III, Non-Agricultural Performance Standards.
- (2) Chapter Comm 61, Administration and Enforcement.
- (3) Chapter Comm 60, and Appendix A Erosion Control and Sediment Control and Storm Water Management.

(b) Any future amendments and revisions to the Wisconsin Administrative Codes listed in this paragraph are hereby adopted and by reference, made apart of this article. A Copy of the Wisconsin Administrative Codes listed in this paragraph shall be kept on file in the Village Hall.

Sec. 16-08. Definitions and phrases.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Agricultural land use: Beekeeping; commercial feedlots; dairying; egg production; floriculture; fish or fur farming; forest and game management; grazing; livestock raising; orchards; plant greenhouses and nurseries; poultry raising; raising of grain, grass, mint and seed crops; raising of fruits, nuts and berries; sod farming; placing land in federal programs in return for payments in kind; owning land, at least 35 acres of which is enrolled in the conservation reserve program under 16 USC 3831 to 3836 or lands that are part of other state and federal conservation programs; participating in the milk production termination program under 7 USC 1446 (d); and vegetable raising. (Wis. Stats. §§ 91.01, 92.10)

Applicant: The landowner or one of the landowners and/or land users of a site subject to this article.

Aquic condition: A soil moisture regime nearly free of dissolved oxygen due to saturation by groundwater or its capillary fringe.

Atlas 14: The National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Precipitation-Frequency Atlas of the United States, Volume 8 (Midwestern States).

Average annual rainfall: A calendar year of precipitation, excluding snow, which is considered typical, and as determined by the Wisconsin Department of Natural Resources for users of models such as WinSLAMM, P8, TR-55 or equivalent models and methodology.

Best management practice or BMP: Structural or non-structural measures, practices, techniques, or devices, employed to reduce runoff volumes or peak flows or determined to be effective means of preventing or reducing pollutants in surface water generated from construction sites and under post-construction conditions.

Bioretention area or rain garden: A bioretention garden or rain garden is an excavated area that is backfilled with a prepared or amended soil mixture, covered with a mulch layer and planted with a diversity of woody or herbaceous vegetation to which storm water is directed to promote infiltration and evapotranspiration.

Cistern: A roof runoff collection system that detains water in above-ground or underground storage tanks with a capacity of at least 100 gallons.

Clean fill: Uncontaminated soil, brick, building stone, concrete, reinforced concrete, broken pavement and unpainted or untreated wood.

Clearing: Any activity that removes vegetative cover.

Common plan of development: All lands included within the boundary of a certified survey map or subdivision plat created for the purpose of development or sale of property where integrated, multiple, separate, and distinct land developing activities may take place at different times by future owners. *Connected imperviousness:* An impervious surface that flows over relatively little or no pervious area before flowing into a separate storm sewer or water of the state via an impervious flow path. Note: Generally, an area of residential rooftop is considered connected imperviousness unless the discharge from the rooftop downspout flows at least 20 feet across a vegetated surface.

Construction site: An area upon which one or more land disturbing construction activities occur, including areas that are part of a larger common plan of development or sale where multiple separate and distinct land disturbing activities may be taking place at different times on different schedules but under one plan.

Design storm: A hypothetical discrete rainstorm characterized by a specified duration, temporal distribution, rainfall intensity, return frequency and total depth of rainfall.

Dewatering: The removal of trapped water, usually by pumping, from a construction site to allow land development or utility installation activities to occur.

Disturbed area: A site which, due to land developing or disturbing activities, has or will experience disturbance or destruction of the existing land surface and/or vegetative cover.

Downspout disconnection: Downspout disconnection means the rerouting of rooftop drainage pipes that are connected to storm sewer or that drain to impervious areas in order to drain rainwater to rain barrels, cisterns or permeable areas.

Erosion: The process by which the land's surface is worn away by the action of wind, water, ice or gravity.

Erosion and sediment control plan: A comprehensive plan developed to address pollution caused by erosion and sedimentation of soil particles or rock fragments during construction.

Exceptional resource waters: Waters listed in § NR 102.11, Wis. Adm. Code.

Financial guarantee: A performance bond, maintenance bond, surety bond, irrevocable letter of credit or similar guarantees submitted to the Village building inspection department by the responsible party to assure that the requirements of the ordinance are carried out in compliance with the Village-approved construction site erosion control plan or post-construction storm water management plan.

Green infrastructure: Green infrastructure refers to those methods of storm water treatment and control that use the natural capacities of the soil and vegetation to prevent or reduce storm water runoff and associated nonpoint source pollution. Green infrastructure methods often are combined with conventional or structural storm water treatment systems, to create storm water "treatment trains" that enhance storm water treatment and water quality.

Green roof: An engineered roofing system that includes vegetation planted in a growing medium above an underlying waterproof membrane material designed to reduce the volume of storm water runoff from building roofs.

Hydric soil: A soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

Impervious surface: Has the meaning given in the Village Zoning ordinance, chapter 18 of the Village Code of Ordinances.

Infill area: An undeveloped area located within existing urban sewer areas surrounded by already existing development or existing development and natural or man-made features where development cannot occur.

Infiltration: The entry of precipitation or runoff into or through the soil.

Infiltration system: A device or best management practice such as basin, trench, rain garden or swale designed specifically to encourage infiltration, but does not include natural infiltration in pervious surfaces such as lawns, redirecting rooftop downspouts onto lawns or minimal infiltration from practices, such as swales or road side channels designed for conveyance and pollutant removal only.

Land developing activity: The construction or erection of buildings, roads, parking lots, paved storage areas and other structures that may ultimately result in the addition of impervious surfaces.

Land disturbing construction activity: Any manmade alteration resulting in a change of topography or vegetative cover or non-vegetative cover, that may result in runoff and lead to an increase in soil erosion and movement of sediment. Land disturbance activities include clearing and grubbing, excavating, filling, adding or disposing of spoil or contaminated soil, grading, building construction or demolition, and pit trench dewatering.

Land user: Any person operating upon, leasing or renting land, or having made any other arrangements with the landowner by which the land user engages in uses of land which are sites subject to this article. The term "land user" shall include temporary users of property such as contractors and sub-contractors.

Landowner: Any person holding fee title, an easement to or having an interest in a parcel of land that allows the person to undertake land disturbing activities which are subject to this article.

Maintenance agreement: A legal document that provides for long-term maintenance of post-construction storm water management practices.

MEP or maximum extent possible: A level of implementing best management practices in order to achieve a performance standard specified in this ordinance which takes into account the best available technology, cost effectiveness, and other competing issues such as human safety and welfare, endangered and threatened resources, historic properties and geographic features. MEP allows for flexibility in the way to meet the performance standards and may vary based on the performance standard and site conditions.

Navigable water: Has the meaning given in the Village Zoning ordinance, chapter 18 of the Village Code of Ordinances.

NRCS MSE3 distribution: A specific precipitation distribution developed by the United States Department of Agriculture, Natural Resources Conservation Service, using precipitation data from Atlas 14.

Off-site: Located outside the property boundary described in the permit application for land development activity.

Ordinary high-water mark: has the meaning given in § NR 115.03(6), Wis. Adm. Code.

Outstanding resource waters: means waters listed in § NR 102.10, Wis. Adm. Code.

Performance standard: Has the meaning given in the Village Zoning ordinance, chapter 18 of the Village Code of Ordinances.

Permeable surface: A material or materials and accompanying subsurface treatments designed and installed specifically to allow storm water to penetrate it, reducing the volume of storm water runoff from the surfaced area. Permeable surfacing may include paver blocks, grassy pavers or similar structure support materials and permeable concrete and asphalt.

Permit: A written authorization made by the Village building inspection department to the applicant to conduct land disturbing activities or to discharge post-construction runoff.

Plat: Has the meaning given in the Village Zoning ordinance, chapter 18 of the Village Code of Ordinances..

Post-construction: The stage of a construction site following the completion of land disturbing activities and site stabilization.

Post-construction storm water runoff: Any storm water discharged from site following completion of land disturbing activities and site stabilization.

Pre-development condition: The extent and distribution of land cover types present before the initiation of land disturbing construction activities, assuming that all land uses prior to development activity are managed in an environmentally sound manner.

Preliminary plat: Has the meaning given in the Village subdivision ordinance, Chapter 17 of the Village Code of Ordinances.

Protective area: An area of land that commences at the top of the channel of lakes, streams and rivers, or at the delineated boundary of wetlands, as measured horizontally from the top of the channel or delineated wetland boundary to the closest impervious surface. The width of the protective areas is based on type, value, and condition of the waterway or wetland. The protective area does not include any area of land adjacent to any stream enclosed within a pipe or culvert, such as runoff cannot enter the enclosure at this location.

Rain barrels: Rain barrels are structures for the collection of roof runoff in containers, typically ranging from 50 to 100 gallons, with subsequent release to landscaped areas.

Rainfall depths: The Village of Fontana-on-Geneva Lake rainfall depths for design storms are derived from NRCS publications and are based on the MSE3 distribution data from Volume 8 of Atlas 14, published by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration as follows:

Design Storm	100% annual chance (1-year) 24-hour	50% annual chance (2-year) 24-hour	10% annual chance (10-year) 24-hour	1% annual chance (100-year) 24-hour
Rainfall depth	2.46 inches	2.8 inches	3.9 inches	6.22 inches

Redevelopment: Land development that replaces previous land development of similar impervious conditions.

Responsible party: Any entity holding fee title to the property or other person contracted or obligated by other agreements to implement the construction site erosion control plan or post-construction storm water management plan.

Retaining wall: A structure constructed of manmade or natural materials for the purpose of retaining soil, controlling erosion and preventing the down-slope movement of soil.

Road: As used in this ordinance, means any access drive that serves more than two (2) residences or businesses.

Runoff: Storm water or precipitation, including rain, snow or ice melt, irrigation water or similar water that moves on the land surface via sheet or channelized flow.

Sheet flow runoff: Water, usually storm runoff, flowing in a thin layer over the ground surface; also called overland flow.

Shoreland: Has the meaning given in the Village shoreland zoning ordinance, chapter 18 of the Village Code of Ordinances.

Shoreland setback: Has the meaning given in the Village Zoning ordinance, chapter 18 of the Village Code of Ordinances.

Site: That parcel or other division of land set forth in the legal description contained in the application on which the land disturbing or land development activity is proposed to take place.

Stabilized: All land disturbing activities are completed and that a uniform, perennial vegetative cover has been established on at least 70 percent of the soil surface or other surfacing material is in place and the risk of further soil erosion is minimal, as determined by the Village building inspection department.

Storm water: Precipitation runoff, snow melt runoff, surface runoff and drainage.

Storm water best management practice: Structural and nonstructural practices, devices and methods that are designed, constructed and maintained to control the volume, quantity and quality of storm water to avoid or minimize sediment or pollutants carried in runoff to waters of the state. Storm water management practices selected are based on the physical suitability of a site, the overall site management objectives and the performance criteria specified in this chapter. Some examples include, but are not limited to, infiltration trench or basin, wet detention basin, rain garden, filter strip, artificial wetland, green roof, or swale.

Storm water management plan: A comprehensive plan designed to reduce the discharge of pollutants from storm water after the site has undergone final stabilizations following completion of the land disturbing activities.

Storm water trees: Storm water trees are trees selected and installed (either with or without an engineered box or structure) as integral components of a storm water management plan, at points or sites where the tree(s) will have the effect of increasing the coverage of tree canopies to provide storm water interception and evapotranspiration, storm water uptake and increased infiltration.

Stop-Work Order: An order issued by the Village building inspection department which requires that all construction activities on the site be stopped due to a violation of the Village Code of Ordinances.

Storm water permit: A written authorization made by the Village building inspection department to the applicant to conduct land disturbing activities or to discharge post-construction runoff to waters

of the state.

TR-55: The United States Department of Agriculture, Natural Resources Conservation Service, (previously Soil Conservation Service), Urban hydrology for Small Watersheds, Second Edition, Technical Release 55, June 1986.

Technical standard: A document that specifies the planning and selection criteria, design, predicted performance and operation and maintenance specification for a material, device or method.

Trenchless construction: Type of subsurface construction work that requires minimal or no continuous trenches. Trenchless construction includes such construction methods as tunneling, horizontal directional drilling, pipe jacking, boring, plowing and other methods for the installation of pipelines and cables below the ground with minimal excavation.

Type II distribution: A rainfall type curve as established in the "United States Department of Agriculture, Soil Conservation Service, Technical Paper 149, published 1973." The Type II curve is applicable to all Wisconsin and represents the most intense storm pattern.

Vegetation removal: The removal, pruning, trimming, burning of trees, shrubs, forbs or other herbaceous ground cover.

Vegetated swales: Vegetated swales are storm water conveyance systems routing storm water flows through vegetated areas in a natural elongated depression or a constructed channel. A vegetated infiltration swale differs from a conventional drainage channel or ditch because it is construed specifically to promote infiltration.

Village Board: The Village office responsible for enforcing and administering the ordinances of the Village.

Village building inspection department: The Village office responsible for enforcing and administering this article or designated representative of the Village Board, pursuant to chapter 92.06(2) of the Wisconsin State Statutes.

Village building inspection department staff: An employee or employees of the Village whose responsibilities include enforcement of the terms and conditions of this article.

Village conservation standards: Those applicable design criteria, standards and specifications for conservation practices used by Village building inspection department. Conservation practice standards establish the minimum level of acceptable quality for planning and site assessment, performance expectations, design and installation parameters, and the operation and maintenance needs of conservation practices. Conservation practice standards include those contained in:

- (1) Subchapter V of ch. NR 151, Wis. Adm. Code.
- (2) Section IV of the Field Office Technical Guide, Technical Notes and Field Office Manuals published by the USDA Natural Resource Conservation Service.
- (3) Other technical standards and specifications adopted by the State Standards Oversight Council, other state or local agencies or organizations, the Wisconsin Department of Transportation, the University of Wisconsin Cooperative Extension Service, the Southeastern Wisconsin Regional Planning Commission or the Center for Watershed Protection and approved by the Village building inspection department.

Village Staff: Has the meaning given in the Village Zoning ordinance, chapter 18 of the Village Code of Ordinances.

Waters of the state: Has the meaning given in § 281.01(18). Wis. Stats.

WDNR: The Wisconsin Department of Natural Resources.

Wetlands: An area where water is at or near the surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions.

Sec. 16-09. Modeling, conservation standards, technical standards, construction specifications, and soil evaluations.

(a) *Hydrologic and hydraulic modeling and computations and soil evaluations*. The following standards and specifications, models and site evaluations shall be used in evaluating, modeling, planning, selecting, designing, constructing and maintaining best management practices needed comply with this article.

(1) *Hydrological and hydraulic computations*.

a. *Models*. All computations of runoff volumes and peak flow rates used in the development of storm water plans in accordance with this ordinance shall be based on the methodology in Technical Release 55, (TR-55) published by United States Department of Agriculture - Natural Resources Conservation Service (NRCS, June 1986, revision). Models such as SLAMM, P8 or other Village-approved models may be used to evaluate the efficiency of the design in reducing total suspended solids. Other models may be approved and used to evaluate the efficiency of the design in meeting the requirements of this ordinance.

b. *Rainfall depths*. To determine compliance with this article, the following design storm rainfall depths shall be used, which are derived from NRCS publications and are based on the MSE3 distribution precipitation data from Volume 8 of Atlas 14, published by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration.:

Design Storm	100% annual chance (1-year) 24-hour	50% annual chance (2-year) 24-hour	10% annual chance (10-year) 24-hour	1% annual chance (100-year) 24-hour
Rainfall depth	2.46 inches	2.8 inches	3.9 inches	6.22 inches

c. *Runoff curve numbers*. All computations of pre-development conditions as specified in this ordinance shall use those NRCS runoff curve numbers assigned for a "good" hydrologic condition for each land cover type. For the following land cover types, the runoff curve numbers shown below shall be used to represent the actual pre-development conditions:

Maximum Pre-Development Runoff Curve Numbers				
Runoff Curve Number	Hydrologic Soil Group			
	A	B	C	D
Woodland	30	55	70	77

Grassland	39	61	71	78
Cropland	55	69	78	83

Note: Where the pre-development condition is a combination of woodland, grassland, or cropland, the runoff curve number should be pro-rated by area.

(b) *Village conservation and technical standards, construction specifications and soil evaluations.* The selection, design, construction and maintenance of all structural and nonstructural storm water best management practices, needed to comply with the performance standards contained in this article shall meet the minimum level of acceptable quality for planning, designing, installing, operating, and maintaining and shall be based on the following:

- (1) Applicable design criteria, standards and specifications identified, developed or disseminated by the state department of natural resources under subchapter V of ch. NR 151, Wis. Adm. Code.
- (2) The Field Office Technical Guide, Technical Notes, and Field Manuals published by the USDA Natural Resource Conservation Service.
- (3) Other technical standards and specifications adopted by the State Standards Oversight Council other state or local agencies or organizations, the Wisconsin Department of Transportation, the University of Wisconsin Cooperative Extension Service, the Wisconsin Department of Natural Resources, the Southeastern Wisconsin Regional Planning Commission or the Center for Watershed Protection and approved by the Village building inspection department.

(c) *Construction and material specifications.* The use, construction or installation of all materials and components shall comply with all applicable manufacturer's and industry standards and specifications, including but not limited those published by ASTM, the USDA Natural Resource Conservation Service, (NRCS) Wisconsin Department of Natural Resources, or the State of Wisconsin Department of Transportation.

(d) *Soil evaluations.* All soil profile evaluations and documentation shall be completed in accordance with Chapter COM 85, Wis. Admin. Code and any applicable standard under sub (b) above. Where there are no specific standards for the number, location, or depth of soil profile evaluations for a proposed BMP, the Village building inspection department shall determine the minimum requirements based on the design of the BMP and variability of the on-site soils.

Sec. 16-10. Guiding Principals

(a) *Guiding principles for construction site erosion and sediment control.* To satisfy the requirements of this article, a construction site erosion and sediment control plan 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, and environmental corridors.
- (2) Minimize, through project phasing and construction sequencing, the time and the area of land disturbed and exposed to the wind, runoff and snow melt.
- (3) Minimize soil compaction, the loss of trees, and other natural vegetation.
- (4) Stabilize land disturbed with vegetation, mulch or other erosion resistant covering.
- (5) Locate erosion and sediment control best management practices upstream from where runoff leaves the site or enter waters of the state and outside of wetland, floodplains, primary

and secondary environmental corridors and isolated natural areas.

(6) Emphasize the use of best management practices that prevent the soil detachment and transport, over those aimed to reduce or intercept sediment or repair of erosion damage.

(b) *Guiding principles for storm water management.* To satisfy the requirements of this article, a storm water management plan shall, to the maximum extent practicable, adhere to the following guiding principles:

(1) A storm water management plan shall maintain as nearly as possible, the natural drainage patterns and watershed boundaries.

(2) Current topography and land cover features such as drainage swales, depressions, kettles, soil infiltration capacity, and groundwater recharge areas shall be preserved and used, to the extent possible to meet the requirements of this article.

(3) A storm water management plan shall reduce or maintain as nearly as possible, the calculated pre-development peak flows of the site.

(4) Reserve adequately sized areas for storm water infiltration, detention and treatment early in the site planning process.

(5) Locate storm water BMPs prior to runoff leaving the site or entering waters of the state, and outside of wetlands, floodplains, primary or secondary environmental corridors or isolated natural areas.

(6) Minimize soil compaction and maintain pre-development groundwater recharge areas.

(7) Minimize impervious surfaces and have them drain to vegetated areas for pollutant filtering and infiltration.

(8) Emphasize vegetated swales, warm season and wetland plantings, and low flow velocities for storm water conveyance, treatment and infiltration, especially for transportation related projects.

(9) Allow for different storm water management strategies for cleaner and less runoff.

(10) Provide for emergency overflow in all storm water BMP designs.

(11) Distribute storm water bio-retention and infiltration BMPs throughout the site plan for large land developments.

(12) Changes to the function and value of wetlands shall be minimized to the maximum extent practicable. Where such changes are proposed, the impact of the proposal on wetland functional values shall be assessed using standard methods appropriated to the affected wetland that are acceptable to the WDNR, as defined by NR 103, Wis. Adm. Code.

Sec. 16-11. Construction site erosion and sediment control, site drainage, and storm water management performance standards.

(a) *Construction site erosion and sediment control and other pollutant control.*

(1) *General.*

a. Where land disturbing construction activities are to occur, the landowner or responsible party shall implement a Village-approved erosion and sediment control plan developed in

accordance with section 16-14 of this article and incorporates the requirements of the guiding principles, performance standards and plan requirements of this article.

b. Land disturbing construction activities, except those activities necessary to implement erosion or sediment control practices, may not begin until the erosion and sediment control practices are in place for each area to be disturbed, in accordance with the approved erosion and sediment control plan.

c. Erosion and sediment control practices shall be maintained until the disturbed areas are stabilized. A disturbed area shall be considered stabilized by vegetation when a perennial cover has been established with a density of at least 70 percent of cover for the unpaved areas and areas not covered by a permanent structure or that employ equivalent permanent stabilization measures.

d. Erosion and sediment control best management practices used to meet the standards of this article shall be planned, designed, installed and maintained according to Village conservation standards, or standards approved by the department of commerce, or the state department of natural resources, in accordance with the process under § NR 151.32(2).

(2) *Erosion and sediment control mandated practices and erosion and sediment control performance standards.* The plan required under section 16-14 of this article shall include the following:

a. *Mandated practices.* Specific best management practices, complying with Village conservation standards, shall be employed and maintained to do all of the following at each site where land disturbing construction activities are to occur shall:

1. Prevent soil from being tracked onto streets by vehicles.
2. Prevent the discharge of sediment from disturbed areas into on-site storm water inlets.
3. Prevent the discharge of sediment from disturbed areas abutting waters of the state.
4. Prevent the discharge of sediment into drainage ways that flow off the site.
5. Prevent the discharge of sediment during dewatering activities.
6. Prevent the discharge of sediment from stockpiles existing for more than 7 days.
7. Manage building waste, chemicals, materials and other compounds used on the construction site to prevent their transport by runoff to waters of the state and adjacent properties.
8. Prevent land disturbance activities outside of the area designated on the approved erosion and sediment control plan or within the shoreyard setback areas, as determined by the Village Staff.

b. *Erosion and sediment control standards.* Including the mandated practices under subsection (1) additional erosion and sediment control best management practices, complying with Village conservation standards, shall be employed and maintained to accomplish one of the following erosion and sediment control standards:

1. A potential annual cumulative soil loss rate of not more than one of the following:

- a. Five tons per acre per year where sand, loamy sand, sandy loam, loam, sandy clay loam, clay loam, sandy clay, silty clay or clay textures are exposed.
- b. Seven and half tons per acre per year, where silt, silty clay loam or silt loam textures are exposed.

2. A reduction of at least 80 percent of the potential sediment load in storm water runoff from the site on an average annual basis as compared with no sediment or erosion controls for the site when the land disturbing construction activity involves more than one or more acre.

3. A reduction of at least 40 percent of the potential sediment load in storm water runoff from the site on an average annual basis as compared with no sediment or erosion controls for the site where less than one acre of the land disturbing construction activity is to occur.

4. Potential soil loss or the reduction in potential sediment load shall be determined using an engineer analytical modeling acceptable to the department of commerce, the state department of natural resources, or the Village building inspection department.

(3) *Other pollutant control requirements.* The use, storage and disposal of chemicals, cement and other compounds and materials used on the construction site shall be managed during the construction period, to prevent their entrance into waters of the state and wetlands. However projects that require the placement of these materials in waters of the state, such as constructing bridge footings, or BMP installations, are not prohibited by this article.

(4) *Location of best management practices.* The BMPs used to comply with this article shall be located prior to runoff entering waters of the state.

(5) *Alternative requirements.* The Village Staff may establish construction site erosion and sediment control requirements more stringent than those set forth in this section, if it is determined that an added level of protection is needed to protect:

- a. A cold water stream, outstanding water resource, exceptional water resource, critical aquatic habitat areas or other environmentally sensitive area.
- b. A downstream property.
- c. Public health and safety.

(6) *Monitoring.*

a. The owner or owner's agent shall inspect the erosion and sediment control practices for maintenance needs at all of the following intervals until final site stabilization:

1. At least once weekly.
2. At all intervals cited in the erosion and sediment control plan.

b. The owner or owner's agent shall maintain a monitoring record when the land disturbing activities construction activity involves one or more acres. The monitoring record shall contain at least the following information:

1. The condition of the erosion and sediment control practices at the intervals specified under subsection (6)(a) and the need for any cleaning, repairing, modification or replacement.

2. A description and the date of the maintenance conducted to clean, repair, replace or modify erosion and sediment control practices.

(7) *Maintenance*. The responsible party shall maintain all erosion and sediment control practices necessary to meet the requirements of this ordinance until the project site has undergone final site stabilization.

a. When the failure of erosion or sediment control practices results in an immediate threat of sediment entering public sewers or the waters of the state, procedures shall be implemented immediately to repair or replace the practices.

b. Sediment deposition onto any roadways or neighboring properties, resulting from the failure of an erosion or sediment control practice, shall be cleaned up by the end of the workday.

c. The owner or the owner's agent shall clean, repair or replace any erosion and sediment control practice noted during the monitoring interval specified in subsection (6)(b) within 24 hours of noting the maintenance needs.

d. The Village building inspection department and the state department of natural resources will be contacted before attempting to clean up any sediment deposited or discharged into any waters of the state or wetlands.

(8) *Dismantling of temporary erosion and sediment control practices.* Except for permanent erosion control systems, the owner shall be responsible for dismantling and removing temporary erosion control practices once the soil on the site is stabilized. A disturbed site is considered stabilized by vegetation when a perennial cover has been established with a density of at least 70 percent.

(b) *Site drainage.*

(1) Measures shall be implemented to ensure proper site drainage, prevent property damage and protect health and safety. Site grading shall ensure positive flows away from buildings and septic systems and minimize adverse impacts to any adjacent environmental resources or properties.

(2) The Village building inspector may require a site drainage plan performed by a professional engineer licensed in the state when the following site limitations or alterations have been noted:

- a. Aquic conditions or saturation of a horizon of the soil.
- b. Proposed plan indicates drainage conditions will be altered.
- c. Historic drainage problems have been formally noted by the local municipality

(c) *Storm water management*

The storm water management plan and planned best management practices shall meet the following requirements to maximum extent practicable. Hydrological and hydraulic computations and modeling, technical standards and specifications, and soil evaluations shall comply with those listed in 26.8 of this article.

(1) *Total suspended solids.* Best management practices shall be designed, installed and maintained to control total suspended solids carried in runoff from the post-construction site as follows:

- a. For new development, by design, reduce to the maximum extent practicable, the total suspended solids load by 80 percent, as compared to no runoff management controls. No person shall be required to exceed an 80 percent total suspended solids reduction to meet the requirements of this subdivision.
- b. For redevelopment, by design, reduce to the maximum extent practicable, the total suspended solids load by 40 percent, based on the average annual rainfall, as compared to no runoff management controls. No person shall be required to exceed a 40 percent total suspended solids reduction to meet the requirements of this subdivision.
- c. For in-fill developments, under 5 acres, that occur before 2012, by design, reduce to the maximum extent practicable, the total suspended solids load by 40 percent, based on the average annual rainfall, as compared to no runoff management controls. No person shall be required to exceed a 40 percent total suspended solids reduction to meet the requirements of this subdivision.

d. For in-fill developments, that occur after 2012, by design, reduce to the maximum extent practicable, the total suspended solids load by 80 percent, based on the average annual rainfall, as compared to no runoff management controls. No person shall be required to exceed an 80 percent total suspended solids reduction to meet the requirements of this subdivision.

e. Notwithstanding subdivision (1) to (4), if the design cannot achieve the applicable total suspended solids reduction specified, the storm water management plan shall include a written and site-specific explanation why that level of reduction is not attained and the total suspended solids load shall be reduced to the maximum extent practicable.

(2) *Peak discharge.* Best management practices shall be designed, constructed and maintained to minimize downstream bank erosion and the failure of downstream conveyance systems, the calculated post-development peak storm water discharge rate shall not exceed the calculated pre-development discharge rates for the two-year, ten-year, and 100-year, 24-hour design storms. Pre-development conditions shall assume "good" hydrological conditions for appropriate land covers as identified in TR-55 or an equivalent methodology. The meaning of "hydrological soil group" and "runoff curve number" are as determined in TR-55. When a pre-development condition is woodland, grassland or cropland, rather than using TR-55 values for those land uses, the runoff curve numbers listed in section 16-09 of this article shall be used. Modeling requirements for this provision are further described in section 16-09(a) of this article.

(3) *Infiltration.* Best management practices shall be installed and maintained to infiltrate runoff to the maximum extent practical in accordance with the following, except as provided in section 16-11(3)e.

a. Residential developments. For residential developments one of the following shall be met:

1. Infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 90 percent of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than one percent of the project site is required as an effective infiltration area.

2. Infiltrate 25 percent of the post-development runoff volume from the two-year, 24-hour design storm with a type II distribution. Separate runoff curve numbers for pervious and impervious surfaces shall be used to calculate runoff volumes, not composite curve numbers. However, when designing appropriate infiltration systems to meet this requirement, no more than one percent of the project site is required as an effective infiltration area.

b. Nonresidential developments. For nonresidential development, including commercial, industrial and institutional development, one of the following shall be met:

1. Infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 60 percent of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than two percent of the project site is required as an effective infiltration area.

2. Infiltrate ten percent of the post-development runoff volume from the two-

year, 24-hour design storm. Separate curve numbers for pervious and impervious surfaces shall be used to calculate runoff volumes, not composite curve numbers, as defined in TR-55. However, when designing appropriate infiltration systems to meet this requirement, no more than two percent of the project site is required as an effective infiltration area.

c. Modeling. Refer to section 16-09(a) for details on calculating runoff volumes and pre-development conditions.

d. Pretreatment. Pretreatment shall be required before infiltrating parking lot and road runoff from commercial, industrial and institutional areas. The pretreatment shall be designed to protect the infiltration system from clogging prior to scheduled maintenance and to protect groundwater quality in accordance with subsection (8) below. Pretreatment options may include, but are not limited to, oil/grease separators, sedimentation or bio-retention basins, filtration swales or filter strips. All designs shall comply with the technical standards in section 16-09.

e. Infiltration exclusions. Infiltration of runoff shall not be credited toward meeting the requirements of this subsection for the following:

1. Runoff from outdoor material storage and loading docks for tier 1 and tier 2 industrial facilities, as identified in NR 216(2) Wis. Admin. Code.
2. Runoff from fueling and vehicle maintenance areas, not including rooftops and canopies.
3. Infiltration of runoff within 1,000 feet up gradient or within 100 feet down gradient of karst features.
4. Infiltration of runoff from any area except rooftops with less than three feet separation distance from the top of the filtering layer to the elevation of seasonal high groundwater or the top of bedrock.
5. Infiltration of runoff from industrial, commercial and institutional parking lots and roads and residential arterial roads with less than 5 feet separation distance from top of the filtering layer to the elevation of seasonal high groundwater or the top of bedrock.
6. Areas within 400 feet of a community water system well as specified in § NR 811.16(4), Wis. Adm. Code, or within 100 feet of a private well as specified in § NR 812.08(4), Wis. Adm. Code, for runoff infiltrated from commercial, industrial and institutional land uses or regional devices for residential development, not including rooftop runoff.
7. Areas where contaminants of concern, as defined in § NR 720.03(2), Wis. Adm. Code are present in the soil through which infiltration will occur.

Note: The areas listed in subsection e. above are excluded due to the potential for groundwater contamination.

f. Infiltration exemptions. The infiltration requirements of this subsection do not apply to frozen soil conditions and may be exempted if soils have a measured infiltration rate of less than 0.6 inches per hour and the Village building inspection department determines it would be impracticable to modify existing soil conditions.

g. Alternate runoff uses. Where storage and reuse of runoff are employed, such as to support green roofs, landscape watering, toilet flushing, laundry or irrigation, such alternate uses shall be given equal credit toward the infiltration volume required by this article.

h. Groundwater protection.

1. Infiltration systems designed in accordance with this subsection shall, to the extent technically and economically feasible, minimize the level of pollutants infiltrating to groundwater and shall maintain compliance with the preventive action limit at a point of standards application in accordance with Chapter NR 140 of the Wis. Adm. Code. However, if site-specific information indicates that compliance with a preventive action limit is not achievable, the infiltration BMP may not be installed or shall be modified to prevent infiltration to the maximum extent practicable.

2. The discharge from BMPs shall remain below the enforcement standard at the point of standards application.

3. No storm water BMP shall be installed that meets the definition of an injection well under Chapter NR 812 Wis. Admin. Code.

4. All storm water BMPs shall comply with the provisions of any applicable wellhead protection plan for a community water supply under Chapter NR 811 Wis. Admin. Code.

(4) *Protective areas.* The protective areas is an area of land that commences at the top of the channel of lakes, streams and rivers, or at the delineated boundary of wetlands, as measured horizontally from the top of the channel or delineated wetland boundary to the closest impervious surface. The width of the protective areas is based on the following types, values, and condition of the waterway or wetland. The protective areas do not include any area of land adjacent to any stream enclosed within a pipe or culvert, such as runoff cannot enter the enclosure at this location. In addition to the following requirements, protective areas may also fall under the Overlay Zoning District regulations of the Village Zoning Ordinance section 18, article 7.

a. Width of protective areas. The following widths of protective areas must be established and maintained on a development site subject to the post-construction storm water management performance standards and plan requirements.

1. Outstanding resource waters, exceptional resource waters and wetlands in areas of special resource interest. For outstanding resource waters and exceptional resource waters, and for wetlands in areas of special natural resource interest as specified in chapter 103 Wis. Admin. Code, the protective area is 75 feet in width.

2. Navigable waterways. For navigable lakes and streams, the protective area is 50 feet in width.

3. Highly susceptible wetlands. For highly susceptible wetlands, the protective area is 50 feet in width. Highly susceptible wetlands include the following types: fens, sedge meadows, bogs, low prairies, conifer swamps, shrub swamps, other forested wetlands, fresh wet meadows, shallow marshes, deep marshes and flooded basins. Wetland boundaries shall be made in accordance with § NR

103.08(1m). This paragraph does not apply to wetlands that have been completely filled in accordance with all applicable state and federal regulations. The protective areas for wetland that have been partially filled in accordance with all applicable state and federal regulations shall be measured from the wetland boundary delineation after the fill has been placed.

4. Less susceptible wetlands. For less susceptible wetland, the width of the protective area shall be ten percent of the average wetland width, but no less than ten feet or more than 30 feet. Less susceptible wetlands include degraded wetlands dominated by invasive species such as reed canary grass.

5. The determinations of the extent of the protective areas to wetlands shall be made on the basis of sensitivity and runoff susceptibility of the wetland in accordance with the standards and criteria in § NR 103.03, of the Wis. Administrative Code.

6. Concentrated flow channels. For concentrated flow channels with drainage areas greater than 130 acres, the protective area is ten feet in width.

b. Additional requirements. The following requirements shall be met within the protective areas

1. Impervious surfaces shall be kept out of the protective area, to the maximum extent practicable. Only those structures authorized or approved by the Village Board or the WDNR can be located within the protective areas. The storm water management plan shall contain a written site-specific explanation for any parts of the protective area that are disturbed during construction.

2. If authorized or approved by the Village Board or the WDNR, where land disturbing activities occurs within a protective area, where no impervious surface is present, adequate sod or self-sustaining vegetation cover of 70 percent or greater shall be established and maintained. The adequate sod or self-sustaining vegetative cover shall be sufficient to provide for bank stability, maintenance of fish habitat and filtering of pollutants from upslope overland flow under sheet flow conditions. If authorized or permitted, by the Village Board and the WDNR, non-vegetative materials, such as rock riprap, may be employed on the bank as necessary to prevent erosion, on steep slopes, where high velocity flows occur or where ice-damage has been documented.

3. Nonstructural best management practices, such as filter strips, or swales, that are designed to filter pollutants from non-point sources may be located in the protective area, if authorized or approved by the Village Board.

c. Exemptions from protective area requirements. The protective area requirements of this subsection do not apply to following activities:

1. Structures that cross or access surface waters, such as boat landings, bridges, and culverts, if authorized by the WDNR.

2. Structures authorized or approved by the Village Board, under section 18 of the Village Code of Ordinances.

3. A post-construction site from which runoff does not enter the surface water, except to the extent that vegetative ground cover is necessary to maintain bank stability.

(5) *Fueling and vehicle maintenance areas.* Fueling and vehicle maintenance areas shall have best management practices designed, installed and maintained to reduce petroleum within runoff, such as that runoff that enters waters of the state contains no visible petroleum.

(6) *Site drainage.* Measures shall be implemented to ensure proper site drainage, prevent property damage and protect public health and safety, and include the following minimum requirements:

a. *Drainage easement.* Perpetual drainage easements or other deed restrictions shall be recorded on the property to preserve major storm water flow paths and permanent storm water BMP locations. Covenants in these areas shall not allow buildings or other structures and shall prevent any grading, filling or other activities that interrupt or obstruct flows in any way. Covenants shall also specify maintenance responsibilities and authorities in accordance with section 16-15.

b. *Site grading.* Site grading shall ensure positive flows away from all buildings, roads, driveways and septic systems, be coordinated with the general storm water drainage patterns for the area, and minimize adverse impacts on adjacent properties.

c. *Street drainage.* All street drainage shall be designed to prevent concentrated flows from crossing the traffic lanes to the maximum extent practicable. Design flow depths at the road centerline for on-street drainage, shall not exceed six inches during the peak flows generated by the 100-year, 24-hour design storm, using planned land use conditions for the entire contributing watershed area.

d. *Bridges and cross-culverts.* All new or modified bridges and cross-culverts shall comply with applicable design standards and regulations, facilitate fish passage and prevent increased flooding or channel erosion upstream or downstream from the structure. Design flow depths at the road centerline for all crossings shall not exceed six inches during the peak flows generated by the 100-year, 24-hour design storm, using planned land use conditions for the entire contributing watershed area. All predevelopment runoff storage areas within the flow path upstream of bridges and cross-culverts shall be preserved and designated as drainage easements, unless compensatory storage is provided and accounted for in modeling. As-built documentation shall be submitted in accordance with section 16-16, for all new or modified structures that are located within a mapped floodplain or that the Village building inspection department determines to be necessary to maintain floodplain modeling for the applicable watershed.

e. *Subsurface drainage requirements.*

1. Basement floor surfaces shall be built one foot above the seasonal high water table elevation, as documented in the submitted soil evaluations, and shall avoid hydric soils as much as possible.

2. A subsurface drainage investigation may be required if the Village building inspection department determines that agricultural subsurface drainage systems may be present on a proposed development site subject to this article. The subsurface drainage investigation requires the following:

A. A subsurface drainage survey to locate existing agricultural tiles by means of slit trenching or other appropriate methods performed by an experienced subsurface drainage consultant.

B. The repair of any agricultural tile damaged during the investigation.

C. A subsurface drainage site map and report shall be prepared and submitted to the Village building inspection department and shall show and describe:

i. The location of each slit trench performed.

ii. The location of each tile discovered and a description of the tile size, material, restrictions, if observed, condition, depth and direction of flow.

iii. Name, address and phone number of the person or firm performing the investigation.

3. Information collected during subsurface drainage investigation will be used to develop the design the storm water management plan or a separate subsurface drainage system plan to properly connect all upstream and downstream properties served by a subsurface drainage system.

4. All existing subsurface drainage tiles not serving a beneficial use or providing drainage relief to adjacent lands should be abandoned by trench removal prior to other development and recorded on as-built plans.

5. The Village building inspection department shall be notified of any drain tiles that are uncovered during construction, which the Village building inspection department may require to be restored or connected to other drainage systems.

6. No discharge of groundwater from tile lines, sump pumps or other means shall be allowed onto another persons land or any public space without the written approval of the owner or unit of government.

f. Open channels. All open channel drainage systems shall at a minimum be designed to carry the peak flows from a ten-year, 24-hour design storm using planned land use for the entire contributing watershed area. Side slopes shall be no steeper than 3h:1v unless otherwise approved by the Village building inspection department for unique site conditions. Open channels that carry runoff from more than 130 acres shall at a minimum be designed to carry the peak flows from a 25-year, 24-hour design storm.

g. Storm sewers. All storm sewers shall be designed to convey the runoff from a 10-year, 24-hour design storm within the pipe. Storm sewers may be required to be upsized if an adequate overland flow route for the 100-year, 24-hour design storm is not possible.

h. Structure protection and safety. Flows generated by the 100-year, 24-hour design

storm under planned land use conditions may exceed the design capacity of conveyance systems, but shall not come in contact with any buildings. For buildings designed for human occupation on a regular basis, the following additional requirements shall apply:

1. The lowest elevation of the structure that is exposed to the ground surface shall be a minimum of two feet above the maximum water elevation produced by the 100-year, 24 hour design storm, including flows through any storm water BMP that may temporarily or permanently store water at a depth of greater than one foot. For structures within a closed drainage basin comply with section 16-11(c)(7).
2. The structure shall be setback at least 50 feet from any storm water BMP that may temporarily or permanently store water at a depth of greater than one foot. Setback distance shall be measured from the closest edge of water at the elevation produced by the 100-year, 24-hour design storm.
3. Additional setback requirements may also fall under the regulations of the Village Zoning Ordinance section 18.

(7) *Volume control.* For development within a closed drainage basin, which have no outlets during normal rainfall, storm water management practices must be designed to contain the volume of storm water resulting from a 100-year, 24-hour design storm assuming frozen ground conditions (runoff curve number of 98).

(8) *Additional requirements.* The Village building inspection department may establish additional requirements that the minimum performance standards set forth in this section to provide additional protection to prevent thermal impacts, chronic wetness, and significant adverse impacts to critical aquatic habitats, downstream property or public health and safety.

(9) *Location of best management practices.* The structural BMPs used to comply with this article shall not be placed in any navigable body of water, floodplains, or wetlands, structural BMPs used to comply with this article must meet Village zoning setback standards and cannot be placed within the shoreyard setback area, unless authorized by the Village Board. Snow storage shall be designed to minimize impact to structural BMPs.

Sec. 16-12. General administration.

The Village Board designates the Village building inspection department to administer and enforce the provisions of this article.

Sec. 16-13. Erosion and storm water control permits and administration.

(a) *Permit required.* No landowner or responsible party may allow or commence a land disturbing or development activity subject to applicability and exemption provisions of Section 16-05 without receiving an Erosion and Sediment Control and Storm Water Management permit from the Village building inspection department.

(b) *Permit duration.*

(1) Unless the Village building inspection department otherwise stipulates, an approved permit shall be valid for a period of 24 months from the date of issuance and all work must be completed prior to the expiration date of the permit. The Village building inspection department may extend the expiration date of the permit upon finding that such an extension

will not cause an increase in soil erosion, sedimentation, or runoff. The Village building inspection department may further require that a permit holder modify the plan if necessary to prevent any increase in sedimentation, soil erosion, or runoff resulting from any extension.

(2) Permit extension requests for up to 3 months must be made in writing and received by the Village building inspection department at least 7 days prior to the expiration of the permit. A request for a permit extension shall include a statement explaining the need for an extension and specify any necessary changes to the plan.

(c) *Final inspection and certification – storm water management.* Within 10 days after completion of all practices in an approved storm water management plan each applicant who is granted a storm water management permit shall submit to the Village building inspection department a certification that the constructed storm water management practices and conveyance systems comply with the plans and specifications included in the approved storm water management plan. In addition, the as-built certification shall also include a set of record drawings comparing the approved storm water management plan with what was constructed including all changes. Other information shall be submitted as required by the Village building inspection department.

(d) *Permit closure.* The following items are necessary in order for Permittee to achieve permit closure for Storm Water permits. Erosion control permit closure may potentially require some of these items as required by the Village building inspection department.

- (1) Certification and as-built drawings in accordance with section 16-16 of this article.
- (2) Final site Inspection by Village building inspection department.
- (3) Completed punch list items relating to the Storm water Management facilities.
- (4) Evidence of recorded Maintenance Agreement for all Storm water Management facilities.
- (5) Evidence of lien waivers and appropriate affidavits.
- (6) Annual Inspection and Reporting Requirements

a. Any landowner having a best management practice or a maintenance agreement on his or her property shall submit to the Village building inspection department an annual report reviewing the condition of that practice and the maintenance performed during the past calendar year. The annual report shall be submitted and sealed by a professional engineer currently licensed in the State of Wisconsin, or a person or entity deemed acceptable by Village Staff.

b. Where a recorded maintenance agreement exists specifying the annual inspection requirements, the requirements in that agreement shall be the minimum information required. Where a maintenance agreement does not exist, the Village building inspection department shall make available forms for the most common types of best management practices that may be used to provide the required information.

c. Annual storm water management report: Each permit holder who is granted a storm water management permit, and who has signed and recorded the required maintenance agreement, shall submit to the Village building inspection department an annual report on the condition of the site's storm water management devices. This report shall be submitted by December 31 of each year following closure of the storm water management permit pursuant to section 16.13(c). The annual report shall be

completed and sealed by a professional engineer currently licensed in the State of Wisconsin on forms provided by the Village and shall include the following:

1. Documentation of the completion of the required annual maintenance, including copies of receipts from agents hired to perform the work and the date the work was completed.
2. Photos of the storm water management devices after completion of the required maintenance.

(e) *Security for storm water management permits*

(1) *Partial release.* Upon completion and approval of any improvement, the Village may release a portion of any furnished financial security instrument if:

- a. A written application for a partial release is filed with the Village Clerk; and
- b. The remaining security will be sufficient to cover any potential corrective work required during the guaranty as determined by the Village building inspection department. Under no circumstances shall more than 90% of the furnished security be released before the expiration of the guaranty period.

(2) *Guaranty period.* The remaining security shall be retained by the Village for a period of one year following permit closure to guarantee against defects in workmanship and materials. If any defect appears during the guaranty period, the permit holder shall, at its expense, install replacements or perform acceptable repairs. If the permit holder fails to do so, the Village may do so and deduct the cost of such work from the security on deposit. Unless defects have appeared and have not been repaired, the Village shall, upon the written request of the permit holder, release the remaining security to the permit holder upon expiration of the one-year guaranty period.

(g) *Enforcement.*

(1) *Definitions.* For purposes of this section 16.13(g), the following terms are defined as follows:

- a. "Landowner" includes both the current owner of property subject to a permit issued under this section and the current permit holder if the permit was issued to an agent of the property owner, unless the context or subject matter clearly indicates otherwise.
- b. "Contractor" means the person performing the storm water management or erosion control work, or both.

(2) *Stop Work Order.*

a. Whenever the Village building inspection department finds any noncompliance with the provisions of this chapter, the terms of a permit, or the requirements of an approved plan ("noncompliance"), the Village building inspection department shall attempt to communicate with the landowner, the contractor, or both if necessary, to obtain immediate and voluntary compliance if such person is readily available. The Village building inspection department may post in a conspicuous place on the site a stop work order requiring cessation of all work, and all affirmative action necessary to correct the noncompliance immediately, until the noncompliance is corrected, if:

1. The landowner or the contractor are not readily available; or

2. The landowner or contractor does not voluntarily comply immediately; or

3. Even though the landowner and contractor are available and willing to comply, there is an immediate danger to persons or property, including but not limited to off-site run-off which the Village building inspection department concludes requires issuance of a stop work order.

b. The stop work order shall provide the following information: the date of issuance, an adequate identification of the property subject to the stop work order, the reason for the posting, and the signature of the Village building inspection department posting the order.

c. Unauthorized removal of a stop work order from the site shall be a violation of this ordinance.

d. In addition to posting a stop work order, the Village building inspection department shall also provide notification of the stop work order to the permit holder and the contractor by serving the stop work order on either of them by personal service, by certified mail, by email, or by facsimile transmission.

(3) *Corrective Work, When.*

a. If after posting, the Village serves a stop work order on the landowner or the contractor by personal service, facsimile transmission, the party served shall be responsible for correcting the noncompliance within 24 hours after such service. Serving by facsimile or email is complete upon transmission.

b. If after posting the Village serves a stop work order on the landowner or the contractor by certified mail, the party served shall be responsible for correcting the noncompliance within 72 hours after such service. Serving by certified mail is complete upon mailing.

c. If the Village only posts the stop work order in a conspicuous place on the site, both the landowner and contractor shall be responsible for correcting the noncompliance within 72 hours after such posting.

(4) If any noncompliance is not corrected within the appropriate time period specified in section 16-13(g)(3) above, the Village may take any action, perform any work, or commence any operations necessary to bring the property into conformance with the provisions of this chapter, the terms of the outstanding permit, or the requirements of the approved plan, or any combination of them. The permit holder shall reimburse the Village for the total cost of such actions, collectable if necessary as a special assessment or a special charge upon the property for current services rendered as provided by law. Any application for a permit issued under this chapter shall constitute permission by the landowner for the Village to undertake any such actions, consent by the landowner to reimburse the Village for the costs of such actions taken, including the assessment of such costs as a special charge or special assessment, and waiver of the rights to notice and hearing on such assessments or charges.

(5) If the landowner has filed an appeal under section 16-18 prior to the expiration of the time for compliance under section 16-13(g)(3), the Village may take action, perform work or correct conditions only to the extent necessary to protect against or correct an imminent hazard or a condition that will cause or threatens to cause personal injury or damage to off-site property.

Sec. 16-14. Erosion and sediment control, and storm water management plan requirements.

(a) *Erosion and sediment control plan required.* No person shall commence with land disturbing activities and cause soil to be disturbed for construction within the scope of this article without obtaining approval of an erosion and sediment control plan for that activity from the Village building inspection department.

(1) An erosion and sediment control plan shall be prepared and submitted to the Village building inspection department.

(2) The erosion and sediment control plan shall be designed to meet the performance standards in section 16-11 and other requirements of this article.

(3) The erosion and sediment control plan shall address pollution caused by soil erosion and sedimentation during construction and up to final stabilization of the site.

(4) Erosion control plan requirements. Where appropriate, the construction site erosion and sediment control plan shall use the following best management practices or plan elements to do all of the following to the maximum extent practicable:

a. Prevent tracking of sediment from the construction site onto roads or other paved surfaces. Each site shall have anti-tracking stone pads and access drives, and parking areas conforming to Village technical and conservation standards, so as to prevent sediment from being tracked onto public or private streets, highways or roadways.

b. Divert upslope runoff. Divert excess runoff from upslope land, rooftops or other surfaces, if practicable, using best management practices such as earthen diversion berms or downspout extenders.

c. Prevent the discharge of sediment as part of site de-watering. Water pumped from the site shall be treated or filtered by an appropriate best management practice conforming to Village technical and conservation standards.

d. Protect the separate storm drain inlet structure from receiving sediment. All storm drain inlets shall be protected with an appropriate best management practice conforming to country technical and conservation standards.

e. Contain and stabilize stockpiled soil with vegetation, mulch, tarps, or other method conforming to Village conservation standards. Locate soil stockpiles away from channelized flow and no closer than 25 feet from roads, ditches, channels or wetlands. Stockpiled soil cannot be placed within the shoreyard setback area unless otherwise approved by the Village building inspection department. Any stockpile that remains for more than seven days shall be stabilized by seeding and secured mulching, secured mulching or other erosion resistant cover.

f. Minimize the length and steepness of cut and fill slopes,

g. Intercept sediment in overland flow by using silt fence, vegetative filter strips, or

appropriate best management practices conforming to Village technical and conservation standards.

h. Trap sediment in channelized flow before discharge from the site using, sediment traps, sediment basins or other best management practice, conforming to Village conservation standards.

i. Protect pipe and channel outlets from erosion during de-watering, and storm water conveyance and discharge, by using best management practices to prevent scour.

j. Dust control. Prevent excessive dust from leaving the construction site with by as site watering, mulching or other approved method.

k. 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 of and not be allowed to be carried by runoff into a receiving channel or storm sewer system.

l. Fill. Only clean fill may be used for restoration work conducted on any land disturbance or land developing project. Soils containing petroleum are considered contaminated and may not be land spread as a land disturbing activity for the treatment of soil unless conducted at a Village approved facility. Soils containing soil additives such as fertilizers, herbicides or pesticides may be land spread if applied at legally established concentration rates.

m. Topsoil preservation and application. Save existing topsoil and reapply a minimum of four inches to all disturbed areas for final stabilization, unless otherwise approved by the Village building inspection department. If existing topsoil is insufficient or inadequate, to meet this requirement, topsoil shall be imported or a topsoil substitute may be used, upon approval of the Village building inspection department.

n. Sediment cleanup. By the end of each workday, cleanup all off-site sediment deposits or soil tracked off the project site. Flushing shall not be authorized, unless runoff is treated before discharge from the project site.

o. Final site stabilization. All previously cropped areas where land disturbing activities will not be occurring under the proposed grading plans, will be stabilized by planting an erosion resistant cover, within 30 days of permit issuance, if within acceptable regular or dormant seeding dates, or by May 1, if permit issued after acceptable regular and dormant seeding dates have passed. Disturbed areas will be stabilized with permanent vegetation within seven days of final grading and topsoil application. Large sites shall be staged with final grading and stabilization completed with each stage. Any soil erosion that occurs after final grading or application of stabilization measures must be repaired and the stabilization work redone.

p. Removal of temporary construction site erosion control measures. Remove and restore location of all temporary best management practices, such as silt fences, sediment traps, ditch checks, bale barriers, as soon as all disturbed areas have been stabilized. A disturbed area shall be considered stabilized when a perennial cover has been established with a density of at least 70 percent.

(5) *Erosion and sediment control plan contents.* The following shall be the minimum narrative and computations requirements included in the erosion and sediment control plan:

- a. The name(s) and address(es) of the owner, developer and/or the responsible party of the site, and of any consulting firm retained by the applicant, together with the name of the applicant's principal contact.
 - b. Narrative describing the existing conditions of the site and a description of the nature and purpose of the land describing activity.
 - c. Construction timeline and sequencing, including stripping and clearing, rough grading, construction of utilities, infrastructure and buildings, final grading and landscaping. Sequencing shall identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas, areas of clearing, installation of temporary erosion and sediment control measures and establishment of temporary stabilization and permanent vegetation.
 - d. Estimates of the total area of the site and the total area of the site that is expected to be disturbed by construction activities.
 - e. Estimates including calculations, if any of the runoff coefficient of the site before and after construction activities are completed.
 - f. Calculations to show the expected percent reduction in the average annual sediment load carried in runoff as compared to no sediment or erosion controls.
 - g. Existing data describing the surface soil as well as subsoils.
 - h. Depth to groundwater, as indicated by the natural resources conservation service soil survey report or other available sources
 - i. Name of the immediate named receiving water.
- (6) *Site map*. The erosion and sediment control plan shall include the following features on a site map. The site map shall include the following items and shall be at a scale of not more than 100 feet per inch and a contour interval not to exceed two feet.
- a. North arrow, graphic scale, draft date, name and contact information for project engineer or planner and designation of source documents for all map features.
 - b. Existing and proposed site topography at contour intervals not to exceed two feet, proposed percent slope for all open channels and side slopes and all proposed runoff discharge points from the site.
 - c. Existing topography, vegetative cover, natural and engineered drainage systems, and roads. Lakes, streams, wetlands, channels, ditches and other watercourses on and immediately adjacent to the site shall be shown. Any 100-year floodplains shall also be shown.
 - d. Proposed building envelopes, if proposed and boundary of proposed land disturbance and the boundary of area to be undisturbed.
 - e. Drainage patterns and approximate slopes anticipated after major grading activities.
 - f. Location of existing and proposed utilities and associated easements, if present.
 - g. Temporary access drive, surfacing material.

- h. Temporary flow diversion devices, if needed, for upslope or roof runoff until site is stabilized.
- i. Temporary sediment trapping devices and protection for inlets to culverts and storm drains, if present.
- j. Temporary sediment basin(s) or other BMPs to be used for site dewatering during utility or other subsurface work or other site work.
- l. Temporary soil stockpile storage locations indicating setbacks from nearby water resources or environmental corridors and the proposed erosion protection methods.
- m. Detailed drawings and cross-sections for any sediment traps, sediment basins or other major cut or fill areas requested by the Village building inspection department, showing side slopes and elevations.
- n. Final stabilization measures for open channels and erosion protection for pipe and channel inlets, outlets and emergency spillways.
- o. 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.
- p. Final site stabilization instructions for all disturbed areas, showing areas to be stabilized in acres, or square feet, depth of applied topsoil, seed mixture, rates and seeding methods, fertilizer, sod or erosion matting specifications, maintenance requirements until plants are well established, and other BMPs used to stabilize the site.
- q. 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 best management practices proposed in the plan.
- r. Location of soil evaluations, if conducted, with surface elevations and unique references to supplemental soil evaluations report forms in accordance with this article. Also show estimated seasonal water table depths and soil textures down to planned excavation depths, which may be on a separate map with sufficient references to the proposed site plan.

(b) *Erosion and sediment control plan required.* The following plan elements are the minimum required by the Village building inspection department to review a storm water management plan for compliance with this article:

(1) *Site Map of Existing Conditions and Natural Features and Proposed Development Elements.* A site plan map and supporting data shall be prepared and submitted to the Village building inspection department. Existing site conditions, natural features and proposed development elements will be depicted and delineated on the site map at a scale of 1 inch equals 100 feet and will include the following applicable items:

- a. Development title, graphic scale and north arrow.
- b. Property location description by public land survey system (¼ section, section, township, range, county).

- c. Location map (smaller scale) showing the site location within a public land survey section or subdivision, oriented the same as subsection d. below.
- d. Ownership boundaries, bearings, lengths and other survey references that will accurately identify the site location, in accordance with Wis. Stats. ch. 236 and Village mapping standards for all land divisions.
- e. Lot numbers and dimensions, including outlots for all land divisions.
- f. Name and complete contact information for the responsible party, applicant, developer or landowner, and project engineer.
- g. Surveyor's certificate, signed, dated and sealed for all land divisions.
- h. Sheet numbers and revision dates on every page.
- i. Existing site topography at a contour interval not to exceed two feet, including spot elevations for physical features such as culvert (invert elevations), retaining walls, road and ditch centerlines and topographic high and low points.
- j. Location and name, if applicable, of all lakes, streams, channels, ditches, and other water bodies or areas of channelized flow on, or adjacent to the site.
- k. Wetland boundary line(s), field date and source of the wetland delineation. If applicable a letter of concurrence of the wetland boundary line and delineation report, from the WDNR, ACOE or SEWRPC shall be submitted.
- l. Boundaries of shoreland zones, shoreyard setback lines, and the ordinary high water mark (OHWM) for any navigable water body as defined by the Village shoreland and floodland ordinance.
- m. Boundaries and elevation of the 100-year floodplains, flood fringes and floodways, as defined by the Village shoreland and floodland ordinance.
- n. Boundaries and soil symbol for each soil mapping unit and the identification of all hydric soils as defined by the USDA-Natural Resources Conservation Service.
- o. Locations of all available soil borings or soil profile evaluations with unique references to supplemental data report forms.
- p. Location of primary, secondary environmental corridors, isolated natural areas, woodland areas, natural areas, or critical species habitat sites as defined by the Southeastern Wisconsin Regional Planning Commission. For final land divisions these boundaries shall be field verified.
- q. Location and descriptive notes for existing and proposed structures within 50 feet of the property boundaries and their proposed use, including, but not limited to buildings and foundations, roads, parking areas, fence lines, access lanes, culverts (include size and type), above ground utilities and retaining walls.