

**Village of Shorewood Hills, WI**  
**Erosion Control and Stormwater Management Handbook**

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# Village of Shorewood Hills, WI

## Stormwater Management and Erosion Control Handbook

### Introduction

In May of 2008, The Village of Shorewood Hills adopted an erosion control and post-construction stormwater management ordinance. Prior to the adoption of this ordinance, the Village did not regulate land disturbing activities or stormwater runoff from new and redevelopment sites; such activities were regulated only by the state (Department of Natural Resources (DNR) and Department of Commerce (COMM) and the County.

### ***Why did the Village adopt its own ordinance?***

Although county and state erosion control and stormwater management standards do apply within Village limits, they not regulate the types of small-scale land disturbing activities and redevelopment sites that commonly occur in the Village. Specifically, state and county rules don't apply to sites with less than 4,000 square feet of land disturbing activity and/or less than 20,000 square feet of new impervious area. Since the Village is fully built-out and surrounded on all sides by the City of Madison, the University of Wisconsin, and Lake Mendota, the type of large-scale development projects that would trigger erosion and storm regulations typically don't occur in the Village.

However, citizen representatives on the Village's Stormwater Committee and in the Stormwater Stakeholder Group, repeatedly expressed concerns about the effects of the smaller-scale redevelopment projects that frequently occur in the Village on the water quality of Lake Mendota. Both of these groups recommended that the Village adopt and administer its own erosion and stormwater regulations, and that the regulations be tailored to apply to the types of land disturbing and development activities that more commonly occur in the Village.

### ***What are the ordinance applicability criteria?***

Under the new Village ordinance, regulations for major land disturbing activities and for large new and re-development projects, are identical to county regulations. Additionally, less stringent standards apply to land-disturbing activities covering between 500 and 4,000 square feet, and/or to the development activity that results in the creation of between 250 and 20,000 square feet of new impervious area. These applicability triggers are summarized below. **However, please refer to the attached flow charts to make a conclusive determination of whether or not your site is regulated and which standards apply.**

Once you have fit your project into the appropriate class (major or minor; land disturbing activity and/or new impervious area), then go to the appropriate section of this handbook to confirm your determination, and follow the specific listed application steps.

#### Erosion Control Applicability Criteria

- Sites with >4,000 square feet of land disturbing activity and/or that are located less than 50 feet upslope of the lake
  - Erosion control permit required
  - Major land disturbing activity standards apply (identical to Dane County standards)
- Sites with >500 square feet and <4000 square feet of land disturbing activity
  - Erosion control permit required
  - Minor land disturbing activity standards apply

#### Stormwater Management Applicability Criteria

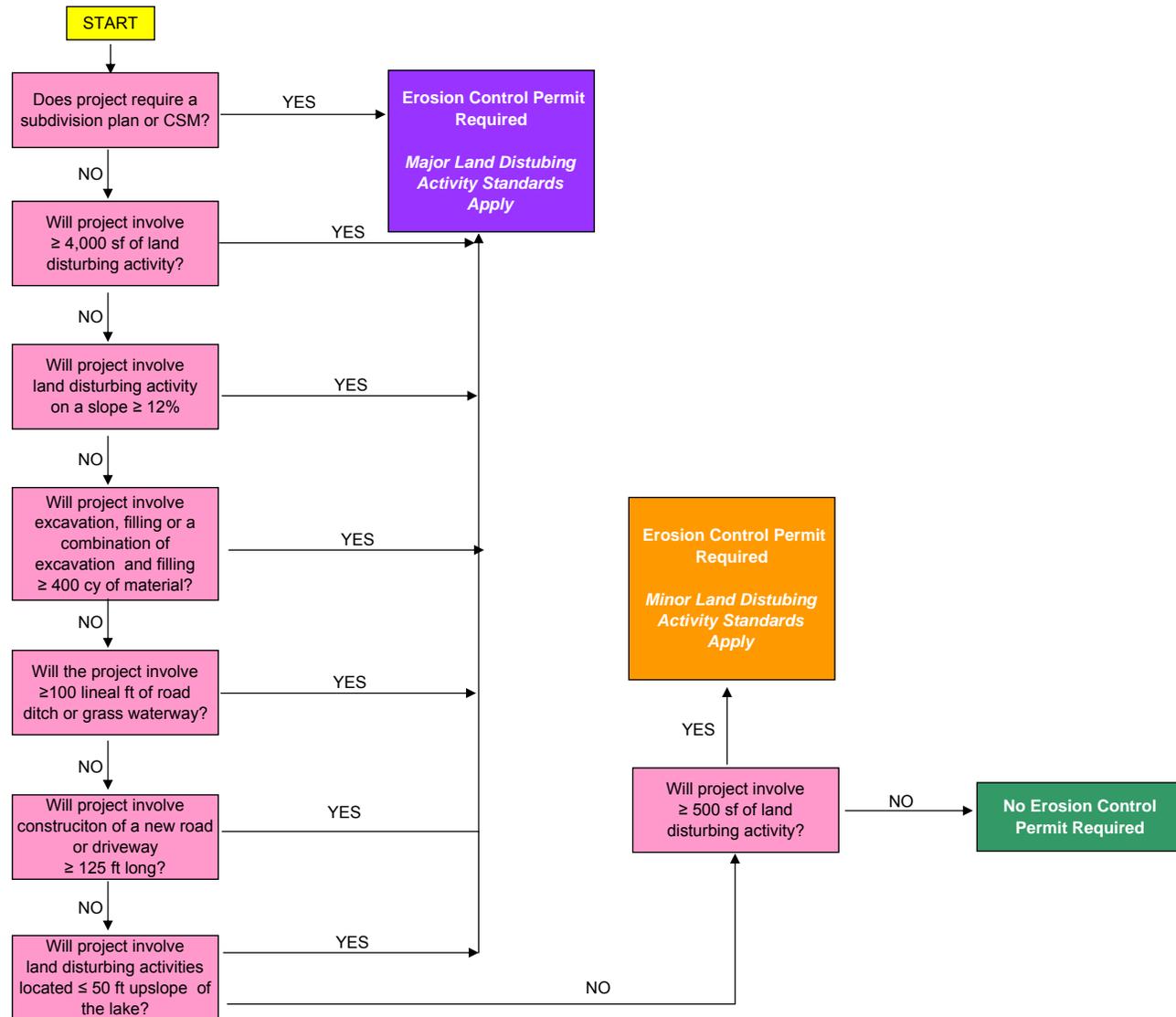
- Sites with  $\geq 20,000$  square feet of new impervious area
  - Stormwater management permit required
  - New and/or re-development standards apply (identical to Dane County standards)
- Redevelopment sites with  $\geq 4000$  square feet of land disturbing activity
  - Stormwater management permit required
  - Re-development standards apply (identical to Dane County standards)
- Sites with  $\geq 250$  of square feet of new impervious area
  - Stormwater management permit required
  - Minor new impervious area standards apply

#### ***What are the new performance standards?***

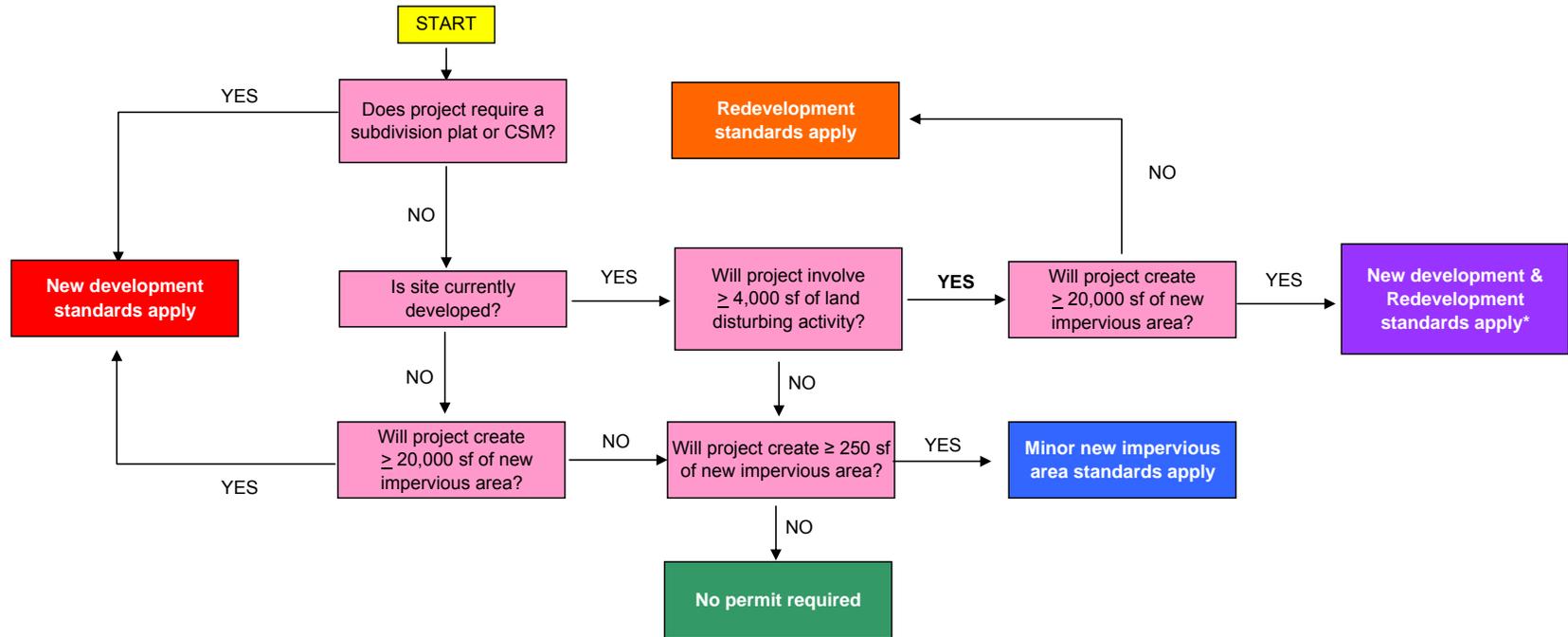
As indicated above, under the new Village ordinance, performance standards identical to the Dane County standards apply to sites that meet the county applicability criteria (4,000 or more square feet of land disturbance or 20,000 square feet of new impervious area). Less stringent erosion control standards, (e.g. “minor land disturbing activity standards”) and less stringent stormwater management standards (e.g. “minor new impervious area” standards) apply to smaller sites with 500 or more square feet of land disturbing activity, and/or 250 or more square feet of new impervious area, respectively. Additionally, county standards apply to all land disturbing activities taking place less than 50 feet directly upslope of the lake.

Minor land disturbing activity performance standards require the development and implementation of a simplified erosion control plan. Minor new impervious area standards require 20% total suspended solids attenuation in runoff from parking lots and traffic areas (does not include residential driveways), and infiltration of 90% of rooftop runoff, to the maximum extent feasible. Please refer to the attached performance standards summary table for more information.

**Figure 1. Erosion Control Permit Applicability Flow Chart**



**Figure 2. Stormwater Permit Applicability Flow Chart**



*\*New development standards apply to all new impervious areas; re-development standards apply to existing/recreated/replaced impervious areas.*

**Table 1. Stormwater Management Performance Standards**

	New Development	Re-Development	Impervious Area
<b>Sediment Control</b>			
- 80% TSS Reduction	X		
- 40% TSS Reduction		X	
- 20% TSS Reduction			+
<b>Oil &amp; Grease Control (Commercial &amp; Industrial)</b>	X	X	
<b>Runoff Rate Control</b>	X		
<b>Stable Outlet</b>	X	X	
<b>Infiltration</b>			
- 90% Pre-development Infiltration Volume (Residential Land Use)	X		
- 60% Pre-development Infiltration Volume (Non-Residential Land Uses)	X		
- 90% Average Annual Rooftop Runoff		+	+

**X** Standard consistent with Dane County Ordinance

**+** Standard specific to the Village of Shorewood Hills

## **SECTION II**

# Village of Shorewood Hills, WI

## Minor Land Disturbing Activity Permit Application Instructions

**The minor land disturbing activity simplified plan checklist permit application form may be used for projects meeting all the criteria listed under item I or II below:**

- I. Land disturbing activities regulated by the Village of Shorewood Hills' erosion control ordinance whenever **all three** of the following conditions exist:
  - i. The land disturbance is not more than 4,000 square feet in area; AND
  - ii. The land disturbance is not adjacent to and/or directly upslope of the lake, AND
  - iii. The slope throughout the land disturbance is not more than 6% (6ft. vertical rise to 100ft. horizontal run)
- II. Land disturbing activities regulated by the Village of Shorewood Hills' erosion control ordinance, not meeting all of the criteria of #1 above, but where the Village Engineer has waived the requirement to complete a regular checklist erosion control plan.

**\*\*A full erosion control plan is required if the above conditions are not met\*\***

### APPLICATION INSTRUCTIONS

#### 1. Site/Application Information

- a. Enter landowner name and contact information for the site
- b. Enter permit applicant name and contact information, if the applicant is someone other than the landowner
- c. Landowner and applicant sign and date application
- d. Enter the project location—street address or legal description
- e. Enter the name and phone number of the contractor, and the names of the person(s) responsible for permanent seeding on the site and installation and maintenance of erosion control practices (if other than the contractor)

#### 2. Site Plan

- a. Sketch your site and the practices you will use to control erosion from your site in the available space, or attach a separate site plan. Indicate erosion practices using the plan legend symbols below the sketch space.
- b. Be sure to draw the site diagram to a measurable scale.
- c. Be sure to include all of the information requested in the site characteristics and erosion control practices checklists.
- d. When developing your plan, give consideration to minimizing the disturbed area, prompt seeding, and proper planning of water runoff patterns throughout all stages of development.

#### 3. Plan Checklist

1. Site Characteristics. Check that you have included and labeled all of the listed items on your site plan. Check the box next to items you have included, and write NA in the box next to items that do not apply to your site. All boxes should be filled in when the form is submitted.
2. Erosion Control Practices. Check that you have included and labeled all of the listed items on your site plan. Check the box next to items you have included, and write NA in the box next to items that do not apply to your site. All boxes should be filled in when the form is submitted.

**Please note the following information regarding the checklist items.**

- i. A stone tracking pad or access drive is required on sites where sediment may be transported from the site by vehicle tires. This occurs when vehicles and equipment entering and exiting the site drive over disturbed areas.
  - o Stone tracking pads remove sediment from the tires of vehicles by allowing the tires to sink in to the stone base slightly. Stone tracking pads are generally used on construction sites at any point of entry and exit and must be installed as soon as the drive area has been graded. They must have 3 inch or larger clear stone and be laid at least 14 feet wide by 12 inches deep.
  - o Access drives are temporary driveways for accessing the site of land disturbance. Access drives must extend from the roadway 50 feet or to the building, (whichever is less)
- ii. Practices to control sediment from site-dewatering effluent are required where sediment-laden water must be removed for construction. Sediment laden discharge should be temporarily ponded behind a sediment barrier until most of the sediment settles out.
- iii. Stormwater inlet protection devices prevent sediment-laden runoff from entering the storm drainage system, and are required on sites where runoff from disturbed areas may flow into a storm inlet. These devices vary according to the characteristics of the site, but generally include: block and gravel sediment filters, excavated drop inlet sediment traps, and manufactured inlet protection.
- iv. Perimeter sediment control must be installed along the downslope side of the disturbed areas and around soil storage piles. Silt fence is the most commonly used perimeter sediment control practice.
- v. Temporary diversions must be installed on sites where an upstream area greater than 10,000 square feet (approximately the size of a small, single-family residential parcel), will drain to and/or through a disturbed area. A temporary diversion is a channel constructed across a slope that intercepts and collect stormwater and routes it around disturbed areas. Diversions must be seeded and mulched within 24 hours of diversion completion.
- vi. Sediment controls, such as straw bale checks, stone checks or a sediment trap must be installed at the outlet (downstream) ends of drainageways.
- vii. Areas not actively being graded or worked on for more than 30 days and less than 1 year, must be stabilized with temporary seeding, heavy mulching and/or covered by a tarp. Temporary seeding is only appropriate between April 1<sup>st</sup> and October 15<sup>th</sup>. Outside of this time period, other practices must be used.
- viii. Include a brief summary of your procedures for disposing of building material waste such that there is minimal risk of pollutants being washed or blown offsite.

**4. Seeding Specifications**

Indicate the type (mix name and brand) and application rate of the seeding to be used on the site. If more than one type of seeding will be used, please indicate on the site plan the location of each seeding type.

**5. Plan Implementation Schedule**

Indicate the planned completion date of each of the activities listed in the table. Note that erosion control practices must be installed prior to the beginning of disturbing soil.

**For more information on any of these topics, please refer to the following sources of information:**

- The *Dane County Erosion Control and Stormwater Management Manual* available through the Dane County Land Conservation Division at (608) 224-3730 or at <http://danewaters.com/resource/stormwater.aspx>.
- "Erosion Control For Home Builders" (GWQ001), which can be ordered through Cooperative Extension Publications, (608) 262-3346.
- WDNR Construction Site Erosion and Sediment Control technical standards, available online at <http://dnr.wi.gov/runoff/stormwater/techstds.htm>.

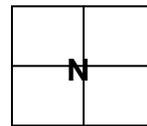
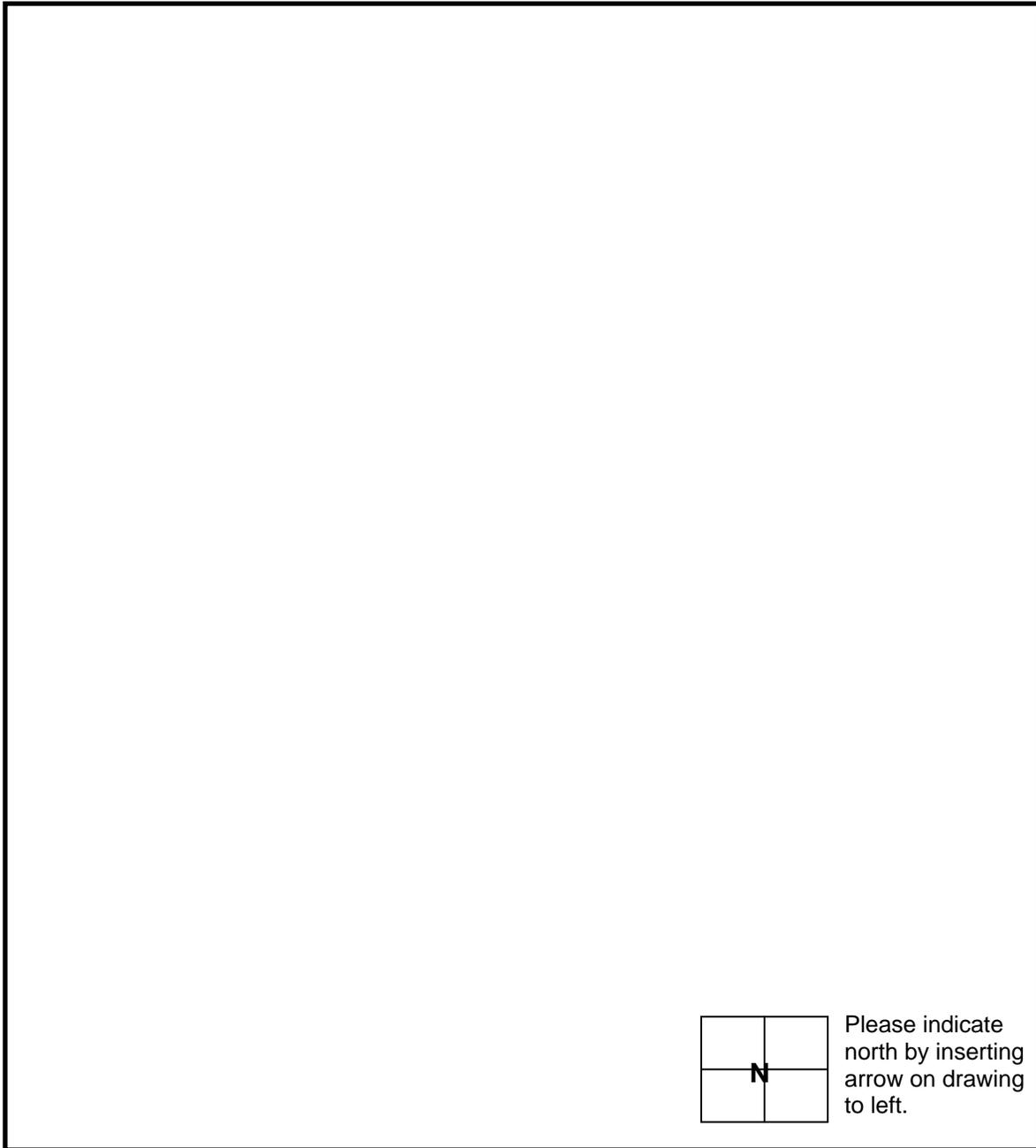
**Village of Shorewood Hills, WI**  
Minor Land Disturbing Activity Permit **Application**

**1. Site/Applicant Information**

	<b>Landowner Information</b>	<b>Applicant Information (if different)</b>
Name	_____	_____
Address	_____	_____
	_____	_____
Phone	_____	_____
Email	_____	_____
<i>Signature</i>	_____	_____
<i>Date</i>	_____	_____

Project Location	_____	
Contractor:	_____	
	Name	Phone
Permanent Seeding Responsibility of:	_____	
	Name	Phone
Installation and Maintenance of Erosion Practices Responsibility of:	_____	
	Name	Phone

## 2. Site Plan



Please indicate north by inserting arrow on drawing to left.

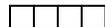
### Plan Legend (use these symbols)

TTT Limits of Grading

--- Property Line

--- Existing Drainage

— Finished Drainage



Temp. Diversion

Vegetation

Straw bales

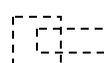
Silt Fence



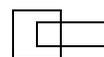
Stockpiled Soil



Stone Access Pad



Existing Storm Sewer and Inlet (or culvert)



Planned Storm Sewer and Inlet (or culvert)

### 3. Plan Checklist

#### a. Site Characteristics

- i. North Arrow
- ii. Site Boundary
- iii. Names of adjacent streets and roadways
- iv. Location of existing drainage ways
- v. Location of existing and planned storm sewer inlets
- vi. Location of existing and planned culvert crossings
- vii. Location of existing and proposed buildings and paved areas
- viii. Limits of proposed disturbed area
- ix. Gradient and direction of existing and planned slopes
- x. Gradient and direction of existing and planned drainage ways

#### b. Erosion Control Practices

- i. Practices to prevent tracking of sediment from the disturbed area onto roads
- ii. Practices to control sediment from site de-watering effluent (i.e. trench or pit pump)
- iii. Practices to protect storm drain inlets from receiving sediment
- iv. Perimeter sediment controls down-slope of disturbed areas
- v. Practices to divert concentrated and overland runoff from areas greater than 10,000 square feet, around disturbed areas, where practical
- vi. Practices to control sediment at the outlet ends of drainage ways
- vii. Practices to cover disturbed areas with straw or grassy hay immediately after seeding
- viii. Practices to stabilize disturbed areas left inactive for more than 30 days
- ix. Practices to stabilize temporary soil stockpiles left inactive for more than 7 days
- x. Procedures to properly dispose of building material waster so that pollutants and debris are not carried off-site by wind or water

Permanent Seeding Type	Rate of Application

***Erosion Control Practice Schedule***

Activity	Date to be Completed
Install Erosion Control Practices	
Start Grading	
Apply Temporary Stabilization	
Apply Permanent Stabilization	

***\*\*All erosion control practices must be maintained until disturbed areas are permanently stabilized and established.\*\****

## **SECTION III**

# Village of Shorewood Hills, WI

## Minor New Impervious Area Permit

### Application Instructions (Residential)

#### Applicability

The minor new impervious area simplified plan checklist permit application form may be used for new and/or redevelopment activities regulated by the Village of Shorewood Hills' erosion control stormwater management ordinance whenever **both** of the following conditions exist:

1. The net increase in site impervious is less 20,000 square feet
2. If it is a redevelopment project, the project involves less than 4,000 square feet of land-disturbing activity

<sup>5</sup> *\*\*A full stormwater management plan is required if the above conditions are not met\*\**

#### Performance Standards

New and/or redevelopment activities regulated by the Village of Shorewood Hills under a "minor new impervious area" permit, must meet the following requirements:

1. For sites resulting in exposed surface parking lots and exposed traffic areas, design practices to retain soil particles, greater than 40 microns (20% reduction) resulting from a one-year 24- hour storm event (this does not apply to residential sites).
2. Infiltrate at least 90% of the average annual volume of rooftop runoff, or an equivalent volume of runoff from other areas of the site.

## APPLICATION INSTRUCTIONS

### 1. Site/Application Information

- a. Enter landowner name and contact information for the site
- b. Enter permit applicant name and contact information, if the applicant is someone other than the landlord
- c. Landowner and applicant sign and date application
- d. Enter the project location—street address or legal description
- e. Enter the name and phone number of the contractor, and the names of the person(s) responsible for landscaping on the site and installation and maintenance of stormwater management practices (if other than the contractor)

### 2. Site Plan

- a. Sketch your site and the practices you will use to meet the infiltration and TSS removal requirements on your site in the available space, or attach a separate site plan. Indicate infiltration and TSS removal practices using the plan legend symbols below the sketch space. *See the example site plan on page III-3 of these instructions.*
- b. Be sure to include all of the information requested by the site characteristics checklist and attach all information listed on the attachments checklist.

### 3. Management Practices

- a. TSS Removal Requirement. Generally residential parcels typically do not include parking lots and/or exposed traffic areas. Therefore, residential sites are exempt from the requirement to remove 20% of TSS in runoff.
- b. Rooftop Runoff Infiltration Requirement. The rooftop runoff infiltration requirement may be met using rain gardens, rain barrels, and/or a combination of these two practices. Specifically, **for each downspout**:
  - i. Design and install rain garden(s) sized to infiltrate 90% of the rooftop runoff volume, for the drainage area of the downspouts tributary to the rain garden(s). Note that a single rain garden may be used to infiltration runoff from more than one downspout, where site topography allows.

Reference the rain garden sizing criteria on pages 6-10 of the UW-Extension Publication "Rain Gardens: A how-to manual for homeowners" (2003) available free online at: [clean-water.uwex.edu/pubs/pdf/home\\_rgmanual.pdf](http://clean-water.uwex.edu/pubs/pdf/home_rgmanual.pdf)

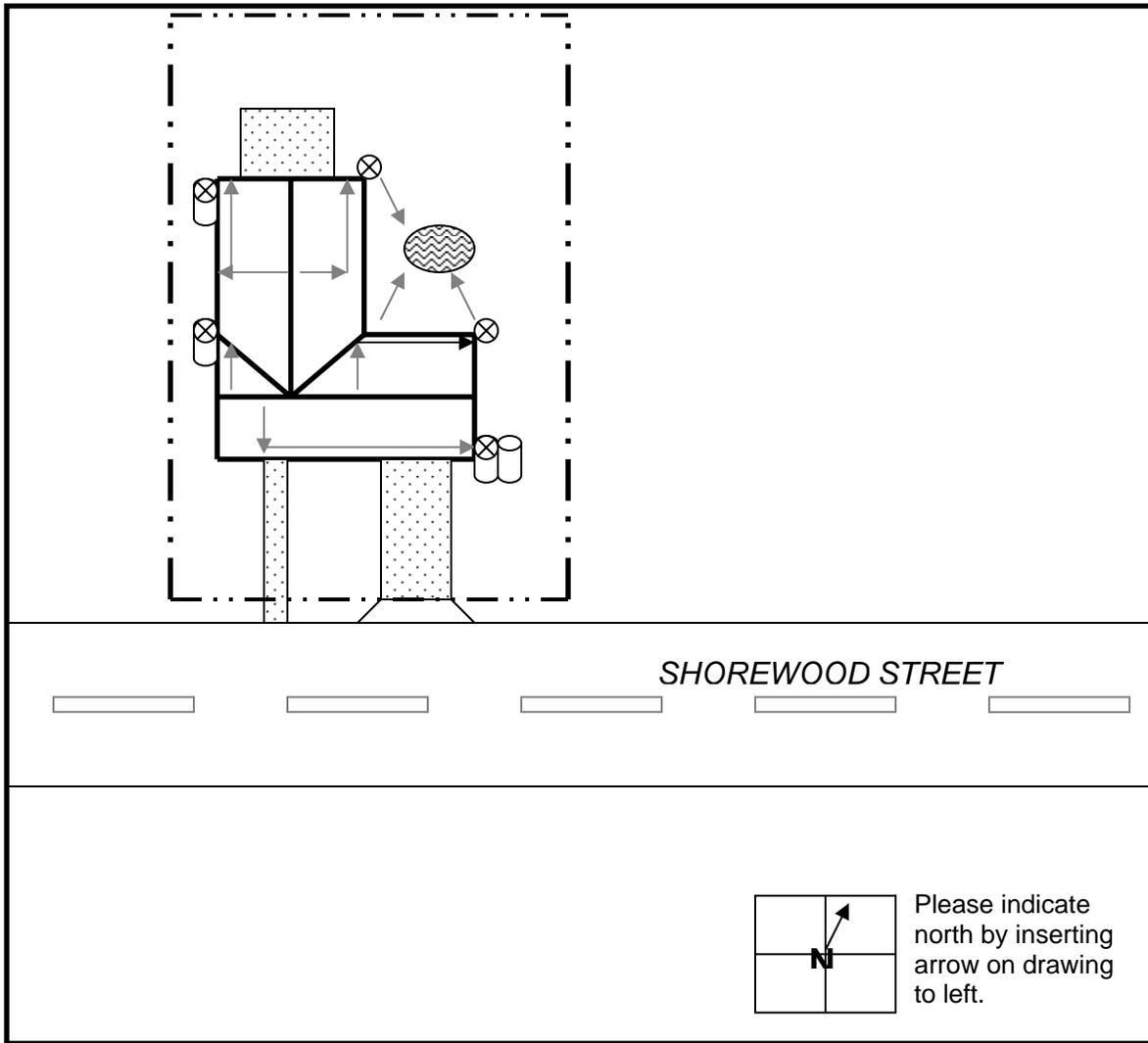
**OR**

- ii. For rooftop drainage areas of 500 square feet or less, connect one 55- to 60-gallon rain barrel for each 200-250 square feet of rooftop draining to the downspout. Where multiple rain barrels serve a single downspout, they may be installed in series. Instructions for locating, installing and maintaining rain barrels, as well as information on where you can buy them, is available free online at [www.rainfordane.org](http://www.rainfordane.org).

*AND/OR*

- iii. For downspouts where the above practices are not feasible, route runoff to large, pervious areas with shallow-slopes. Also infiltrate runoff from other impervious areas where possible.

### Example Site Plan for Residential Rooftop Runoff Infiltration



#### Plan Legend (use these symbols)

- Property Line
- Rain Barrel
- Rain Garden
- Non-Rooftop Site Impervious Area
- Downspout draining to rain barrel
- Rooftop Area
- ⊗ Down Spout
- 
-

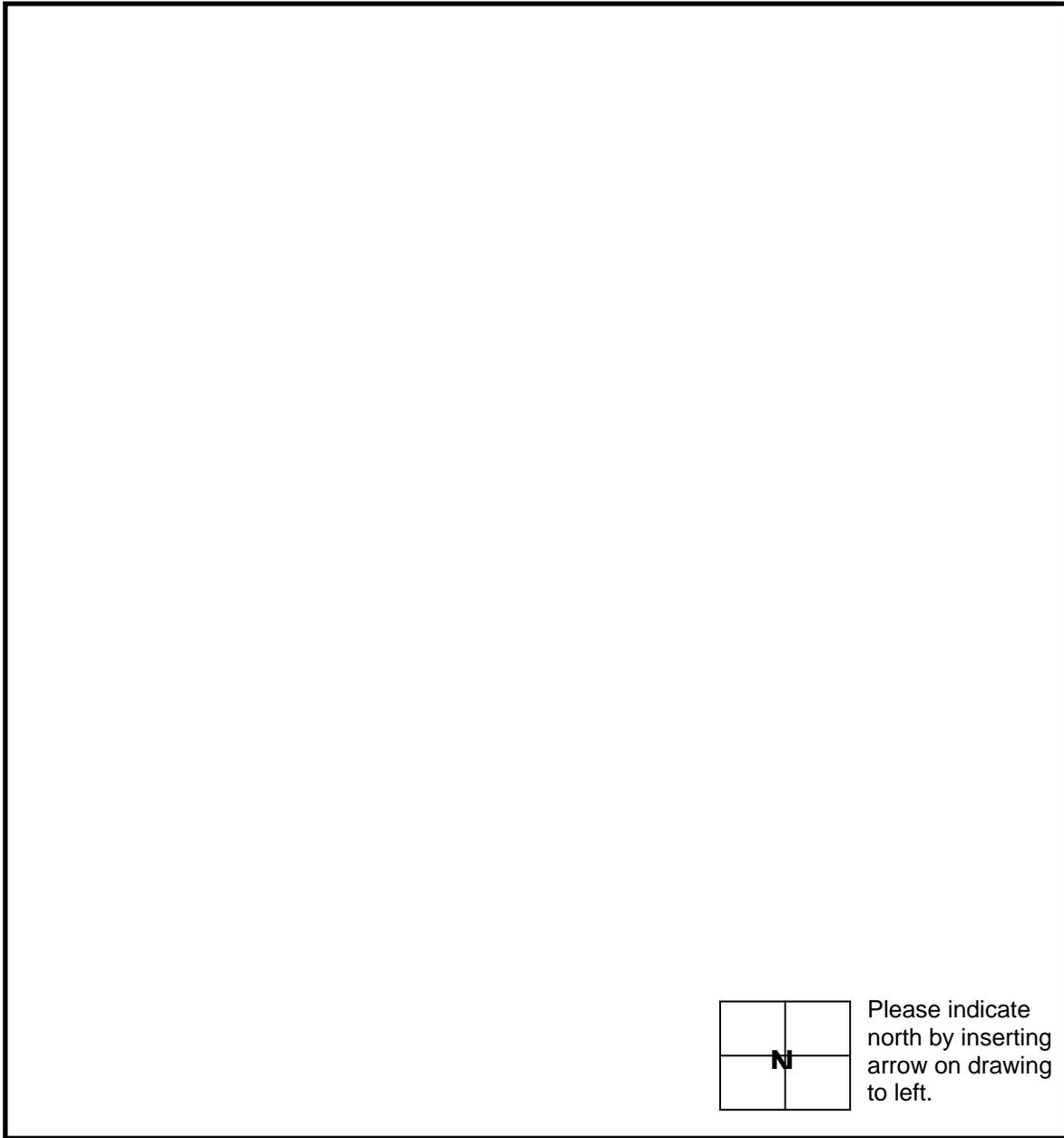
**Village of Shorewood Hills, WI**  
 Minor New Impervious Area Permit **Application (Residential)**

**1. Site/Applicant Information**

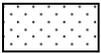
	Landowner Information	Applicant Information (if different)
Name	_____	_____
Address	_____	_____
	_____	_____
Phone	_____	_____
Email	_____	_____
<i>Signature</i>	_____	_____
<i>Date</i>	_____	_____

Project Location	_____	
Contractor:	_____	
	Name	Phone
Landscaping Responsibility of:	_____	
	Name	Phone
Installation and Maintenance of Management Practices Responsibility of:	_____	
	Name	Phone

## 2. Site Plan



### Plan Legend (use these symbols)

TTT	Limits of Grading		Rain Barrel		Rain Garden
- - -	Property Line		Rooftop Area		Downspout draining to rain barrel
→	Drainage Direction		Other Impervious Area		
	Down Spout				

### 3. Plan Checklist

#### a. Site Plan

- i. North Arrow
- ii. Site Boundary
- iii. Names of adjacent streets and roadways
- iv. Location of downspouts
- v. Location and configuration of building rooftop
- vi. Flow direction of rooftop and gutter slopes
- vii. Location of non-rooftop impervious areas and pervious areas
- viii. Flow direction of non-rooftop pervious and impervious areas
- ix. Location and dimensions of proposed rain gardens
- x. Location and number of proposed rain barrels

#### b. Attachments

- i. Size (in square feet) of each section of building rooftop
- ii. Sizing calculations for each rain garden
- iii. Sketch of proposed rain garden(s), showing the length, width, depth of each rain garden
- iv. Landscaping and maintenance plan for each proposed rain garden, including seed mixture name, brand and application rate, if applicable

# Village of Shorewood Hills, WI

## Minor New Impervious Area Permit – NONRESIDENTIAL APPLICATION INSTRUCTIONS

### **Applicability**

This minor new impervious area simplified plan checklist permit application form may be used for new and/or redevelopment activities regulated by the Village of Shorewood Hills' erosion control stormwater management ordinance whenever **both** of the following conditions exist:

1. The net increase in site impervious is less 20,000 square feet
2. If it is a redevelopment project, the project involves less than 4,000 square feet of land-disturbing activity

<sup>5</sup> *\*\*A full stormwater management plan is required if the above conditions are not met\*\**

### **Performance Standards**

New and/or redevelopment activities regulated by the Village of Shorewood Hills under a "minor new impervious area" permit, must meet the following requirements:

0. For sites resulting in exposed surface parking lots and exposed traffic areas, design practices to retain soil particles, greater than 40 microns (20% reduction) resulting from a one-year 24- hour storm event.
1. Infiltrate at least 90% of the average annual volume of rooftop runoff.

## **APPLICATION INSTRUCTIONS**

### **1. Site/Application Information**

- a. Enter landowner name and contact information for the site
- b. Enter permit applicant name and contact information, if the applicant is someone other than the landlord
- c. Landowner and applicant sign and date application
- d. Enter the project location—street address or legal description
- e. Enter the name and phone number of the contractor, and the names and phone numbers of the person(s) responsible for landscaping on the site and installation and maintenance of stormwater management practices (if other than the contractor)

### **2. Plan Checklist**

- a. Site Characteristics. Check that you have included and labeled all of the listed items on your site plan. Check the box next to items you have included, and write NA in the box next to items that do not apply to your site. All boxes should be filled in when the form is submitted.
- b. Attachments. Check that you have included and labeled all of the listed items on the attachments checklist. Check the box next to items you have included, and write NA in the box next to items that do not apply to your site. All boxes should be filled in when the form is submitted.
- c. Project Schedule. Indicate the planned completion date of each of the activities listed in the table.

### 3. Site Plan

- c. Sketch your site and the practices you will use to meet the infiltration and TSS removal requirements on your site in the available space, or attach a separate site plan. Indicate the location and type of infiltration and TSS removal practices using the plan legend symbols below the sketch space. *See the example site plan on page III-9 of these instructions.*
- d. Be sure to include all of the information requested by the site characteristics checklist and attach all information listed on the attachments checklist.

### 4. Management Practices

- a. TSS Removal Requirement. This requirement may be met by installing inlet or manhole filtration or separation devices, or through the construction biofiltration devices or water quality ponds. Contact the Village Engineer for a list of pre-fabricated inlet and filtration devices approved for use in the Village. Refer to the following sources for information on how to design and construct infiltration practices sufficient for meeting this requirement:
  - The *Dane County Erosion Control and Stormwater Management Manual* available through the Dane County Land Conservation Division at (608) 224-3730 or at <http://danewaters.com/resource/stormwater.aspx>.
  - WDNR Construction Site Erosion and Sediment Control technical standards, available online at <http://dnr.wi.gov/runoff/stormwater/techstds.htm>.
- d. Rooftop Runoff Infiltration Requirement. The rooftop runoff infiltration requirement may be met using rain gardens, constructed infiltration devices and/or a combination of these two practices. Specifically:
  - iv. Design and install rain garden(s) sized to infiltrate 90% of the rooftop runoff volume, for the rooftop areas tributary to the downspout draining to the rain garden(s). Note that a single rain garden may be using to infiltrate runoff from more than one downspout, where site topography allows.

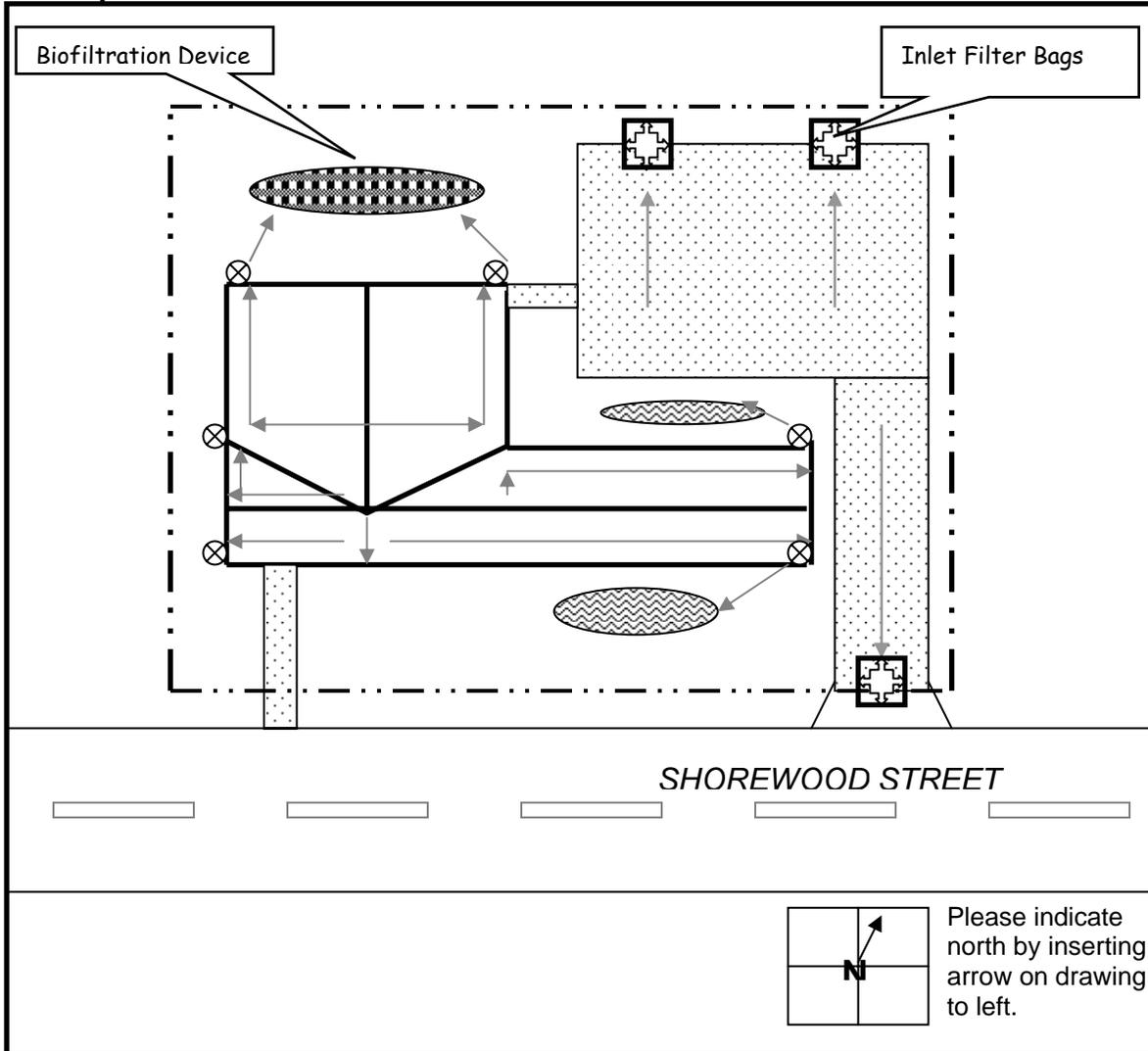
Reference the rain garden sizing criteria on pages 6-10 of the UW-Extension Publication "Rain Gardens: A how-to manual for homeowners" (2003) for information on how to size your rain garden to infiltration 90% of a rooftop runoff. This publication is available free online at: [cleanwater.uwex.edu/pubs/pdf/home.rgmanual.pdf](http://cleanwater.uwex.edu/pubs/pdf/home.rgmanual.pdf)

AND/OR

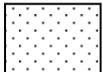
- v. Design and construct biofiltration devices, infiltration basins, infiltration trenches, and/or infiltration swales, green rooftops, and/or other practices approved by the Village Engineer. Refer to the following sources for information on how to design and construct infiltration practices sufficient for meeting this requirement:

- The *Dane County Erosion Control and Stormwater Management Manual* available through the Dane County Land Conservation Division at (608) 224-3730 or at <http://danewaters.com/resource/stormwater.aspx>.
- WDNR Construction Site Erosion and Sediment Control technical standards, available online at <http://dnr.wi.gov/runoff/stormwater/techstds.htm>.

### Example Site Plan



### Plan Legend (use these symbols)

--- Property Line		Rooftop Area		Rain Garden
→ Drainage Direction		Non-Rooftop Site Impervious Area		Constructed Infiltration or TSS removal Device (specify type)
⊗ Down Spout		Inlet Filtration Device		Inlet

# Village of Shorewood Hills, WI

## Minor New Impervious Area Permit **Application (Nonresidential)**

### 1. Site/Applicant Information

	Landowner Information	Applicant Information (if different)
Name	_____	_____
Address	_____	_____
	_____	_____
Phone	_____	_____
Email	_____	_____
<i>Signature</i>	_____	_____
<i>Date</i>	_____	_____

Project Location	_____	
Contractor:	_____	
	Name	Phone
Landscaping Responsibility of:	_____	
	Name	Phone
Installation and Maintenance of Management Practices Responsibility of:	_____	
	Name	Phone

## 2. Site Plan

Please indicate north by inserting arrow on drawing to left.

### Plan Legend (use these symbols)

- |                    |                                  |   |
|--------------------|----------------------------------|---|
| Property Line      | Rooftop Area                     | Rain Garden   |
| Drainage Direction | Non-Rooftop Site Impervious Area | Constructed Infiltration or TSS removal Device (specify type) |
| Down Spout         | Inlet                            | Inlet Filtration Device                                       |

### 3. Plan Checklist

#### c. Site Plan

- xi. North Arrow
- xii. Site Boundary
- xiii. Names of adjacent streets and roadways
- xiv. Location of downspouts
- xv. Location and configuration of building rooftop
- xvi. Flow direction of rooftop and gutter slopes
- xvii. Location of non-rooftop impervious areas
- xviii. Flow direction of non-rooftop pervious and impervious areas
- xix. Location and dimensions of proposed infiltration practices
- xx. Location and type of proposed inlet or manhole filtration devices, or constructed TSS removal practices

#### d. Attachments

- v. Size (in square feet) of each section of building rooftop
- vi. Sizing calculations for each infiltration practice and/or constructed TSS removal practice
- vii. Plans for each proposed infiltration practice and/or constructed TSS removal practice showing the length, width, depth
- viii. Landscaping, and maintenance plan, including seeding information, for each proposed infiltration practice and/or constructed TSS removal practice
- ix. Information from vendor on pre-fabricated inlet or manhole filtration or separation devices

## **SECTION IV**

**Village of Shorewood Hills, WI**  
**Major Land Disturbing Activity Permit Application**  
**Full New and Redevelopment Stormwater Permit Application**

**1. Site/Applicant Information**

	Landowner Information	Applicant Information (if different)
Name	_____	_____
Address	_____	_____
	_____	_____
Phone	_____	_____
Email	_____	_____
<b>Signature</b>	_____	_____
<b>Date</b>	_____	_____

Project Location	_____	
Contractor:	_____	
	Name	Phone
Landscaping/ Seeding Responsibility of:	_____	
	Name	Phone
Installation and Maintenance of Management Practices Responsibility of:	_____	
	Name	Phone

# Erosion Control Application Checklist

Project Name \_\_\_\_\_

Applicant				Village	
Plan Requirement	I	NA	Location in Plan (page #s)	I	NA
<b>Detailed written description of how the site will be developed</b> (narrative including scope of land disturbing activities and sequence of construction events)					
<b>Direction of runoff flow</b> (contours lines or runoff arrows)					
<b>Watershed size for each drainage area</b> (include all off site run-on and area within the project boundaries)					
<b>Provisions to prevent mud-tracking onto public thoroughfares during construction</b> (i.e. tracking pad or existing gravel drive)					
<b>Provisions to prevent the delivery of sediment to stormwater conveyance system</b> (i.e. inlet protection or stone weeper)					
<b>Prevent gully and bank erosion and apply minimum standards for sheet and rill erosion: 7.5 tons/ acres/year</b> (Universal Soil Loss Equation – USLE worksheets must be completed and attached)					
<b>Provisions for sequential steps mitigating the erosive effect of land disturbing activities</b> (list of erosion control practices)					
<b>Fertilizer and seeding rates</b> (seed, mulch, polymer, fertilizer, etc.)					
<b>Schedule for installation and completion of all elements of the erosion control plan</b> (date(s) must be consistent with USLE and appropriate for each practice)					
<b>Itemized estimated cost of all elements of the erosion control plan including installation and labor</b> (a letter of credit [LOC] is required if estimate greater than \$5000)					
<b>Design discharge for ditches and structural measures</b> (flow calculations)					
<b>Cross sections and profiles of road ditches and channels</b> (existing and proposed)					
<b>Runoff velocities in channels</b>					
<b>Culvert sizes</b> (existing and proposed)					
<b>Proof of stable outlet, capable of carrying the design flow at a non-erosive velocity</b> (having no ditches, swales, culverts, downspouts, or other features that concentrate runoff present and having <i>all runoff leave the site as sheet flow</i> , may satisfy this requirement)					
<b>Copy of Preliminary Review Letter, permits or approvals by other agencies</b> (e.g. WDNR, Army Corps of Engineers, driveway permit, etc)					
<b>Other information necessary to determine the location, nature and condition of site physical or and environmental features of the site</b>					

# Stormwater Management Application Checklist

Project Name \_\_\_\_\_

Applicant				Village	
Plan Requirement	I	NA	Location in Plan (page #s)	I	NA
<b>Narrative describing the proposed project</b> (written summary, as it relates to implementation of practices)					
<b>Proposed schedule for completion and installation of all elements of the stormwater management plan</b>					
<b>Map of drainage areas for each watershed</b> (showing assumed time of concentration flow path)					
<b>Maintain peak discharge rates for the 2 and 10-year 24-hour storm events and safely pass the 100-year 24-hour storm event.</b> (Include a summary table showing the results of the analysis) *					
<b>Complete site plan and specifications *</b>					
<b>Engineered designs for all structural management practices</b> (reference relevant technical standard if appropriate)					
<b>Proof of stable outlet, capable of carrying the design flow at a non-erosive velocity</b>					
<b>For new development, trap 5-micron soil particle (80% reduction in TSS), for redevelopment, trap 20-micron particle (40% reduction in TSS), for the 1-year 24-hour storm event.</b>					
<b>Treat first ½ inch of runoff for oil and grease</b>					
<b>For residential development, infiltrate 90% of the predevelopment infiltration volume and for non-residential development, infiltrate 60% of the predevelopment infiltration volume</b>					
<b>Identification of the entity responsible for long-term maintenance of all stormwater management facilities and practices</b>					
<b>Maintenance plan and schedule for all permanent stormwater management practices</b>					
<b>Copy of recorded affidavit required by s.14.49(3)(d) for privately owned stormwater practices</b>					
<b>Copy of Preliminary Review Letter</b> (if applicable)					
<b>Itemized estimated cost of all elements of the stormwater management plan, including installation and labor</b>					
<b>Evidence of financial responsibility to complete work proposed in plan</b> (a letter of credit [LOC] is required if the estimated cost of the erosion control <i>and</i> stormwater management plan is > \$5000)					

\* See notes on next page

- Any proposed changes to the stormwater management plan must be submitted and approved prior to implementation.
- As-built plans, stamped by a licensed, professional engineer will be required by s.14.49(5)(e) after site becomes established and before the permit is closed-out.

## Stormwater Management Plan Notes

1. The summary table in plan requirement 4 must include the following
  - a. pre-existing peak flow rates
  - b. post construction peak flow rates with no detention
  - c. post construction peak flow rates with detention
  - d. assumed runoff curve numbers
  - e. time of concentration used in calculations
  
2. Complete site plan and specifications in plan requirement 5 must include the following
  - a. property lines and lot dimensions
  - b. all buildings and outdoor uses, existing and proposed, including all dimensions and setbacks
  - c. all public and private roads, interior roads, driveways and parking lots, showing traffic patterns and type of paving and surfacing material
  - d. all natural and artificial water features
  - e. depth to bedrock
  - f. depth to seasonal high water table
  - g. the extent and location of all soil types as described in the Dane County Soil Survey, slopes exceeding 12%, and areas of natural woodland or prairie
  - h. existing and proposed elevations
  - i. elevations, sections, profiles, and details as needed to describe all natural and artificial features of the project
  - j. soil erosion control and overland runoff control measures, including runoff calculations as appropriate
  - k. detailed construction schedule
  - l. copies of permits or permit applications required by any other governmental entities or agencies
  - m. any other information necessary to reasonably determine the location, nature and condition of any physical or environmental features
  - n. all existing and proposed drainage features
  - o. the location and area of all proposed impervious surfaces
  - p. the size (ft<sup>2</sup>) and extent (limits) of the disturbed area

## **SECTION V**

**VILLAGE OF SHOREWOOD HILLS  
DANE COUNTY, WISCONSIN**

**ORDINANCE NO. L-2008-1**

The Board of Trustees of the Village of Shorewood Hills, Dane County, Wisconsin does hereby ordain as follows:

**Chapter 25**

**EROSION, SEDIMENT AND WATER RUNOFF CONTROL**

- § 25.01. General provisions.**
- § 25.02. Definitions.**
- § 25.03. Scope of geographic coverage; exclusions.**
- § 25.04. Technical standards and specifications.**
- § 25.05. Applicability of requirement for Minor Land Disturbing Activity Erosion Control Permit.**
- § 25.06. Applicability of requirement for Major Land Disturbing Activity erosion control permits.**
- § 25.07. Applicability of requirement for Minor New Impervious Area Stormwater Control Permit.**
- § 25.08. Applicability of requirement for New and Redevelopment Stormwater Control Permit.**
- § 25.09. Exemptions and Clarifications.**
- § 25.10. Preliminary Review Letter.**
- § 25.11. Erosion control and stormwater control permits and administration.**
- § 25.12. Erosion Control Plan Requirements.**
- § 25.13. Stormwater Management Plan requirements.**
- § 25.14. Off-site stormwater management.**
- § 25.15. Appeals and variances.**
- § 25.16. Violations and Enforcement.**
- § 25.17. Penalties.**

## 25.01 General provisions

- (1) **AUTHORITY.** This chapter is adopted under the authority granted by ss. 61.34(1), 61.35, 61.354, 62.23 and 236.45, Wisconsin Statutes.
- (2) **LEGISLATIVE FINDINGS**
  - (a) The Board of Trustees of the Village of Shorewood Hills finds that construction site erosion and uncontrolled stormwater runoff from land disturbing and land development activities have significant adverse impacts upon regional water resources and the health, safety, property and general welfare of the community, and diminish the public enjoyment and use of natural resources. Specifically, soil erosion and stormwater runoff can:
    - i. Carry sediment, nutrients, pathogens, organic matter, heavy metals, toxins and other pollutants to regional lakes, streams and wetlands;
    - ii. Diminish the capacity of water resources to support recreational and water supply uses and a natural diversity of plant and animal life;
    - iii. Clog existing drainage systems, increasing maintenance problems and costs;
    - iv. Cause bank and channel erosion;
    - v. Increase downstream flooding;
    - vi. Reduce groundwater recharge, which may diminish stream base flows and lower water levels in regional lakes, ponds and wetlands;
    - vii. Contaminate drinking water supplies;
    - viii. Increase risk of property damage and personal injury, and;
    - ix. Cause damage to agricultural fields and crops.
  - (b) The Board of Trustees of the Village of Shorewood Hills also finds that effective sediment and stormwater management depends on proper planning, design, and timely installation of conservation and management practices and their continuing maintenance.
- (3) **PURPOSE AND INTENT**
  - (a) The purpose of this chapter is to set forth the minimum requirements for construction site erosion control and stormwater management that will diminish threats to public health, safety, public and private property and natural resources of Village of Shorewood Hills.
  - (b) This chapter is intended to regulate construction site erosion and stormwater runoff, to accomplish the following objectives:
    - i. Promote regional stormwater management by watershed;
    - ii. Minimize sedimentation, water pollution from nutrients, heavy metals, chemical and petroleum products and other contaminants, flooding and thermal impacts to the water resources of Shorewood Hills;
    - iii. Promote infiltration and groundwater recharge;
    - iv. Protect functional values of natural water courses and wetlands;
    - v. Provide a single set of performance standards that apply to all developments in the Village of Shorewood Hills and are consistent with the standards set forth by Dane County and the Wisconsin Department of Natural Resources' runoff management standards contained in NR 151;
    - vi. Achieve an 80% reduction in sediment load rates to waters of the state as compared to no controls for all new development, a 40% reduction in sediment load rates compared to no controls for all redevelopment and street reconstruction, and a 20% reduction in sediment load rates compared to no controls for existing developments;

- vii. Ensure no increase in the flow rate of surface water drainage from sites during or after construction; and
  - viii. Protect public and private property *as well as first nation cultural assets and artifacts* from damage resulting from runoff or erosion. [italics indicates words added during first reading of ordinance]
- (4) ABROGATION AND GREATER RESTRICTIONS. It is not intended by this chapter to repeal, abrogate, annul, impair or interfere with any existing easements, covenants, deed restrictions, agreements, rules, regulations, ordinances or permits previously adopted or issued pursuant to law. However, wherever this chapter imposes greater restrictions, the provisions of this chapter shall govern.
- (5) INTERPRETATION. In their interpretation and application, the provisions of this chapter shall be held to be the minimum requirements and shall not be deemed a limitation or repeal of any other power granted by the Wisconsin Statutes. Where any terms or requirements of this chapter may be inconsistent or conflicting, the more restrictive requirement or interpretation shall control.
- (6) EFFECTIVE DATE. This chapter shall become effective immediately upon publication and posting. After that date, all land disturbing activities shall be in compliance with all provisions of this chapter.

**25.02 Definitions.**

The following terms, wherever they appear in this chapter, are defined as follows:

- (1) AFFECTED means that a regulated activity has significantly:
  - (a) caused negative impacts on water quality or the use or maintenance of one's property or business; or
  - (b) endangered one's health, safety, or general welfare.
- (2) APPLICANT means any person or representative thereof who submits to the Village for review any materials required by this ordinance for the purpose of obtaining approval to engage in land development activity.
- (3) AVERAGE ANNUAL RAINFALL means a calendar year of precipitation, excluding snow, considered to be representative for the area. For the purposes of the ordinance, the record of hourly rainfall measured between March 12 and December 2, 1981 in Madison, Wisconsin is the average annual rainfall.
- (4) BANK EROSION means the removal of soil or rock fragments along the banks or bed of a stream channel resulting from high flow after rain events.
- (5) BEST MANAGEMENT PRACTICE means a practice, technique, or measure that is an effective, practical means of preventing or reducing soil erosion or water pollution, or both, from runoff both during and after land development activities. These can include structural, vegetative or operational practices.
- (6) CONNECTED IMPERVIOUSNESS means an impervious surface that is directly connected to a separate storm sewer or water of the state via an impervious flow path.
- (7) CONSTRUCTION SITE EROSION CONTROL means preventing or reducing soil erosion and sedimentation from land disturbing activity.

- (8) CONTROL PLAN means an erosion control plan required by § 25.05 or § 25.06 or a stormwater management plan required by § 25.07 or § 25.08.
- (9) EFFECTIVE INFILTRATION AREA means the area of the infiltration system that is used to infiltrate runoff and does not include the area used for site access, berms or pretreatment.
- (10) EROSION (soil erosion) means the detachment and movement of soil or rock fragments by water, wind, ice or gravity.
- (11) EXCAVATION means any act by which organic matter, earth, sand, gravel, rock or any other similar material is cut into, dug, quarried, uncovered, removed, displaced, relocated or bulldozed and shall include the resulting conditions.
- (12) EXISTING DEVELOPMENT means buildings and other structures and impervious area existing prior to August 22, 2001.
- (13) FILL means any act by which earth, sand, gravel, rock or any other material is deposited, placed, replaced, pushed, dumped, pulled, transported, or moved to a new location and shall include the resulting conditions.
- (14) GRADING means altering the elevation of the land surface by stripping, excavating, filling, stockpiling of soil materials or any combination thereof and shall include the land from which the material was taken or upon which it was placed.
- (15) GULLY EROSION means a severe loss of soil caused by or resulting in concentrated flow of sufficient velocity to create a defined flow channel.
- (16) HEAVILY DISTURBED SITE means a site where an area of land is subjected to significant compaction due to the removal of vegetative cover or earthmoving activities, including filling.
- (17) HYDROLOGIC SOIL GROUP (HSG) has the meaning used in the runoff calculation methodology promulgated by the United States Natural Resources Conservation Service Engineering Field Manual for Conservation Practices.
- (18) IMPERVIOUS SURFACE means any land cover that prevents rain or melting snow from soaking into the ground, such as roofs (including overhangs), roads, sidewalks, patios, driveways and parking lots. For purposes of this chapter, all road, driveway or parking surfaces including gravel surfaces, shall be considered impervious, unless specifically designed to encourage infiltration and approved by the local approval authority.
- (19) INFILTRATION for the purposes of this ordinance, refers to any precipitation that does not leave the site as surface runoff.
- (20) INFILTRATION SYSTEM means a device or practice such as a basin, trench, rain garden or swale designed specifically to encourage infiltration, but does not include natural infiltration in pervious surfaces such as lawns, redirecting of rooftop downspouts onto lawns or minimal infiltration from practices such as swales or road side channels designed for conveyance and pollutant removal only.

- (21) **KARST FEATURE** means an area or surficial geologic feature subject to bedrock dissolution so that it is likely to provide a conduit to groundwater, and may include caves, enlarged fractures, mine features, exposed bedrock surfaces, sinkholes, springs, seeps or swallets.
- (22) **LAND DISTURBING ACTIVITIES** means any land alterations or disturbances that may result in soil erosion, sedimentation, or change in runoff including but not limited to removal of ground cover, grading, excavating, and filling of land.
- (23) **LANDOWNER** means any person holding title to or having an ownership interest in land.
- (24) **LIGHTLY DISTURBED SITE** means a site where an area of land is subjected to minor compaction due to the limited removal of vegetative cover or earthmoving activities.
- (25) **MAXIMUM EXTENT PRACTICABLE (MEP)** means a level of implementing best management practices in order to achieve a performance standard specified in this chapter 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 flexibility in the way to meet performance standards and may vary based on the performance standard and site conditions.
- (26) **NEW DEVELOPMENT** means any of the following activities:
- (a) Structural development, including construction of a new building or other structures;
  - (b) Expansion or alteration of an existing structure that results in an increase in the surface dimensions of the building or structure;
  - (c) Land-disturbing activities; or
  - (d) Creation or expansion of impervious surface
- (27) **NON-EROSIVE VELOCITY** means a rate of flow of stormwater runoff, usually measured in feet per second, that does not erode soils. Non-erosive velocities vary for individual sites, taking into account topography, soil type, and runoff rates.
- (28) **PEAK FLOW** means the maximum rate of flow of water at a given point in a channel, watercourse, or conduit resulting from the predetermined storm or flood.
- (29) **PERSON** means any individual, corporation, partnership, joint venture, agency, unincorporated association, municipal corporation, county, or state agency within Wisconsin, the federal government, or any combination thereof.
- (30) **PERVIOUS SURFACE** means any land cover that permits rain or melting snow to soak into the ground.
- (31) **POST-DEVELOPMENT** refers to the extent and distribution of land cover types anticipated to occur under conditions of full development of the submitted plan. This term is used to match pre- and post-development stormwater peak flows as required by the ordinance.
- (32) **PRE-DEVELOPMENT** refers to the extent and distribution of land cover types present before the initiation the proposed of land development activity, assuming that all land

uses prior to land disturbing activity are in “good” condition as described in the Natural Resources Conservation Service Technical Release 55, “Urban Hydrology for Small Watersheds” (commonly known as TR-55). This term is used to match pre- and post-development stormwater peak flows as required by the ordinance. In a situation where the cumulative impervious surface created after the August 21, 2001 exceeds the 20,000 sq. ft threshold, the pre-development conditions shall be the conditions that existed on August 21, 2000.

- (33) PROTECTIVE AREA means an area of land that commences at the top of the channel of lakes, streams and rivers, or at the delineated boundary of wetlands, and extends horizontally for the width specified in § 25.13(3)(g) from the top of the channel or delineated wetland boundary to the closest impervious surface. In this ordinance, “protective area” does not include any area of land adjacent to any stream enclosed within a pipe or culvert, such that runoff cannot enter the enclosure at this location
- (34) REDEVELOPMENT means any construction, alteration or improvement performed on sites where the existing site is predominantly developed as commercial, industrial, institutional or residential uses.
- (35) RUNOFF CURVE NUMBER (RCN) has the meaning used in the runoff calculation methodology promulgated by the United States Natural Resources Conservation Service Engineering Field Manual for Conservation Practices.
- (36) SEDIMENT means solid earth material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity or ice, and has come to rest on the earth’s surface at a different site.
- (37) SEDIMENTATION means the deposition of eroded soils at a site different from the one where the erosion occurred.
- (38) SHEET AND RILL EROSION means a loss of soil caused by sheet flow or shallow concentrated flow, and characterized by an absence of channeling or a relatively uniform loss across the exposed upper layer of the soil or shallow irregular scouring of the soil surface.
- (39) SITE means the bounded area described in an erosion control plan or stormwater management plan.
- (40) SLOPE means the net vertical rise over horizontal run, expressed as a percentage, which represents a relatively homogeneous surface incline or decline over the area disturbed.
- (41) SOIL LOSS RATE means the rate, usually measured in tons per acre per year, at which soil is transported beyond the perimeter of a given control site and which occurs as a result of sheet and rill erosion. This term does not apply to soil movement resulting from concentrated flow such as gully or bank erosion.
- (42) STORM EVENTS mean the precipitation amounts that occur over a 24-hour period that have a specified recurrence interval for Dane County, Wisconsin. For example, one-year, two-year, 10-year and 100-year storm events mean the precipitation amounts that occur over a 24-hour period that have a recurrence interval of one, two, 10 and 100 years, respectively.

- (43) STORMWATER means the flow of water that results from, and which occurs during and immediately following, a rainfall, snow- or ice- melt event.
- (44) STORMWATER MANAGEMENT means any measures taken to permanently reduce or minimize the negative impacts of stormwater runoff quantity and quality after land development activities.
- (45) STORMWATER RUNOFF means the waters derived from rains falling or snowmelt or icemelt occurring within a drainage area, flowing over the surface of the ground and/or collected in channels, watercourses or conduits.
- (46) STREET RECONSTRUCTION means removal and replacement of the road subgrade, where existing stormwater conveyance systems are modified.
- (47) STRUCTURE means any human-made object with form, shape and utility, either permanently or temporarily attached to, placed upon, or set into the ground, stream bed or lake bed.
- (48) UNNECESSARY HARDSHIP means that circumstance where special conditions, which were not self-created, affect a particular property and make strict conformity with regulations unnecessarily burdensome or unreasonable in light of the purposes of this ordinance.
- (49) VILLAGE means the Village of Shorewood Hills.
- (50) VILLAGE AGENT means the Village Administrator, Crew Chief, Engineer, Forester, Building Inspector or any other Village employee or official assigned or charged with the responsibility of administering and enforcing the requirements of this Chapter or any independent contractor retained by the Village for such purpose.
- (51) VILLAGE ENGINEER means the individual, or the individual's designee, or the firm, or a representative of the firm, appointed or retained by the Board of Trustees to routinely provide engineering services for the village.

### **25.03 Scope of geographic coverage**

Unless specifically excluded herein, this chapter applies to all land disturbing and land developing activities occurring within the corporate limits of the village.

### **25.04 Technical standards and specifications**

The design of all best management practices designed to meet the requirements of this chapter shall comply with the following technical standards:

- (1) Technical standards identified, developed or disseminated by the Wisconsin Department of Natural Resources under subchapter V of chapter NR 151, Wis. Adm. Code

- (2) Where technical standards have not been identified or developed by the Wisconsin Department of Natural Resources, other technical standards may be used provided that the methods have been approved by the Village Engineer.

#### **25.05 Applicability of requirement for minor land disturbing activity erosion control permit**

Unless expressly exempted by § 25.09, a minor land disturbing activity permit under § 25.11 shall be required and all minor land disturbing activity construction site erosion control provisions of this chapter shall apply, to any land disturbing activity in excess of 500 square feet in Village of Shorewood Hills, that does not require an Major Land disturbing Activity Erosion Control Permit under § 25.06

#### **25.06 Applicability of requirement for major land disturbing activity erosion control permits**

Unless expressly exempted by § 25.09, an erosion control permit under § 25.11 shall be required and all major land disturbing activity construction site erosion control provisions of this chapter shall apply, to any of the following activities in Village of Shorewood Hills:

- (1) Land disturbing activity in excess of 4,000 square feet;
- (2) Land disturbing activity on a slope of greater than 12%;
- (3) Land disturbing activity that involves the excavation or filling, or a combination of excavation and filling, in excess of 400 cubic yards of material;
- (4) Land disturbing activity that disturbs more than 100 lineal feet of road ditch, grass waterway or other land area where surface drainage flows in a defined open channel; including the placement, repair or removal of any underground pipe, utility or other facility within the cross-section of the channel;
- (5) Any new public or private roads or access drives longer than 125 feet;
- (6) Development that requires a subdivision plat, as defined in the Chapter 23 of the Village Code of Ordinances, Land Division/Consolidation by Certified Survey Map;
- (7) Land disturbing activity that disturbs less than 4,000 square feet of land, including the installation of access drives, that the Village Engineer determines to have a high risk of soil erosion or water pollution, or that may significantly impact a lake, stream, or wetland area. Examples of activities with a high risk of soil erosion or water pollution may include, but are not limited to, land disturbance on erodible soil or disturbance adjacent to lakes, rivers, streams or wetlands. All such determinations made by the Village Engineer shall be in writing, unless waived by applicant.

#### **25.07 Applicability of requirement for minor new impervious area stormwater control permit**

Unless otherwise exempted by § 25.09, a minor new impervious area stormwater control permit under §25.11 shall be required and stormwater management provisions of this chapter apply to

any development in the Village of Shorewood Hills that results in the addition of 250 or more square feet of new impervious surface to a site, and that does not require a new or re-development stormwater control permit.

### **25.08 Applicability of requirement for new and re - development stormwater control permit**

- (1) New Development. Unless otherwise exempted by §25.09, a stormwater control permit under §25.11 shall be required and all new development stormwater management provisions of this chapter shall apply to any of the following activities within the Village of Shorewood Hills:
  - (a) Any development(s) that result(s) in the cumulative addition of 20,000 square feet of impervious surface to a site after August 22, 2001;
  - (b) Any development that requires a subdivision plat, as defined in Village Ordinance Ch. 23;
  - (c) Any development that requires a certified survey map, as defined in Village Ordinance Ch. 23; for property intended for commercial or industrial use;
  - (d) Other land development activities, including but not limited to redevelopment or alteration of existing buildings and other structures, that the Village Engineer determines may significantly increase downstream runoff volumes, flooding, soil erosion, water pollution or property damage, or significantly impact a lake, stream, or wetland area. All such determinations shall be made in writing unless waived by the applicant
- (2) Redevelopment. Unless otherwise exempted by §25.09, a stormwater control permit under §25.11 shall be required and all redevelopment stormwater management provisions of this chapter shall apply to any redevelopment activity as defined in §25.02(34) involving four thousand (4,000) square feet or more of land disturbing activity.

### **25.09 Exemptions and Clarifications**

- (1) The following activities are exempt from the construction site erosion control provisions of § 25.05 and § 25.06:
  - (a) Projects specifically exempted from local erosion control ordinances under state or federal statute. It is the responsibility of the landowner to demonstrate such exemption with documentation acceptable to the local approval authority.
  - (b) Municipal road or county highway project not exempted under sub. (a) are exempt from § 25.13(3)(c) and (d) where all of the following conditions are met:
    - i. The purpose of the project is only to meet current state or federal design or safety guidelines;
    - ii. All activity takes place within existing public right-of-way;
    - iii. All other requirements of § 25.13 are met; and
    - iv. The project does not include the addition of new driving lanes.

- (2) The following activities are exempt from the infiltration standards described in § 25.13(3)(f)
  - (a) New development sites with less than 10% connected imperviousness based on complete development of the post construction site, provided the cumulative area of all impervious surface is less than one acre.
  - (b) Areas where the infiltration rate of the soil is less than 0.6 inches/hour measured at the bottom of the proposed infiltration system where the soil layer is not easily removed or manipulated.
  - (c) Parking areas and access roads less than 5,000 square feet for commercial and industrial development.
  - (d) Roads in commercial, industrial and institutional land uses, and arterial roads.
- (3) Projects may include a mix of redevelopment and new impervious surfaces. New impervious surfaces added as a result of redevelopment are subject to § 25.08(1)(a). On sites where both new and redevelopment standards apply, all new impervious areas shall be regulated according to new development standards, and all existing, replaced or recreated impervious areas shall be regulated according to redevelopment standards.
- (4) The following activities are exempt from the protective area requirements described in 25.13(3)(g)
  - (a) Redevelopment and minor new impervious area post-construction sites.
  - (b) In-fill development areas less than 5 acres.
  - (c) Structures that cross or access surface waters such as boat landings, bridges and culverts.
  - (d) Structures constructed in accordance with s. 59.692(1v), Wis. Stats.
  - (e) Post-construction sites from which runoff does not enter the surface water, except to the extent that vegetative ground cover is necessary to maintain bank stability.

## 25.10 Preliminary Review Letter

- (1) A preliminary review letter provides a potential permit applicant with an initial simple evaluation of whether erosion and stormwater control standards can be met for a proposed site, lot layout, construction design. This review is intended to assist applicants in preparing general site plans and other submittals necessary to obtain an erosion control and stormwater permit. A preliminary review letter does not guarantee that an erosion or stormwater control plan will be approved or that a permit will be issued. Erosion and stormwater control plans and permit applications must meet all applicable standards and criteria for approval.
- (2) APPLICATION REQUIREMENTS
  - (a) A preliminary review letter may be submitted to the Village Engineer before an erosion control or stormwater management permit application is submitted.
  - (b) The following materials must be included in the preliminary review letter:
    - i. a narrative describing the proposed project;
    - ii. a map showing the following information:
      - a. location of the proposed project;
      - b. limits of disturbed area;

- c. limits of impervious area;
- d. drainage area for each watershed area; and
- e. location and description of proposed stormwater facilities;
- iii. preliminary runoff calculations which clearly demonstrate the adequacy of the proposed facilities and land that will be dedicated to stormwater management for meeting the standards of this ordinance.

**(3) Review & Approval process**

- (a) The Village Engineer shall review the letter and determine whether erosion and stormwater control standards can be met for a proposed site, lot layout, and/or construction design.
- (b) Within 45 days of receiving the preliminary review letter, the Village Engineer shall either approve the preliminary plan or notify the applicant of any deficiencies.
- (c) The Village Engineer shall notify the applicant in writing of any deficiency in the preliminary plan and the applicant shall be given an opportunity to correct any deficiency.
- (d) Approval of a preliminary review letter does not guarantee that an erosion or stormwater control plan will be approved or that a permit will be issued. Erosion and stormwater control plans and permit applications must meet all applicable standards and criteria for approval.

**25.11 Erosion control and stormwater control permits and administration**

- (1) No activity meeting the criteria described in §25.05, 25.06, 25.07 or 25.08 shall occur and no zoning permit may be issued, until an erosion control and/or stormwater control permit is issued by the Village.
- (2) The applicant must provide the following when requesting a permit:
  - (a) Completed application form;
    - i. The application must be signed by the landowner or include a notarized statement signed by the landowner authorizing the applicant to act as the landowner's agent and bind the landowner to the terms of this ordinance.
    - ii. If a landowner appoints an agent to submit an application pursuant to sub. (2)(a)(i), the landowner shall be bound by all of the requirements of this ordinance and the terms of any permit issued to the agent.
  - (b) Fees as required by § 25.15;
  - (c) Copy of preliminary review letter, as described in § 25.10, if applicable;
  - (d) If required by §25.05 or § 25.06, an erosion control plan meeting all the standards of §25.12;
  - (e) If required by §25.07 or § 25.08, a stormwater management plan meeting all of the standards of § 25.13 and a draft maintenance agreement as described in § 25.13(1)(h);
  - (f) Copies of permits or permit applications or approvals required by any other governmental entity;
  - (g) A proposed timetable and schedule for completion and installation of all elements of approved erosion control and stormwater management plans and a detailed schedule for completion of construction.
  - (h) An estimate of the cost of completion and installation of all elements of the approved erosion control and stormwater management plans.

- (i) Evidence of financial responsibility to complete the work proposed in the plan. For major land-disturbing activities, and new and re-development stormwater control permits, the applicant shall provide, prior to issuance of the permit, an irrevocable letter of credit, certificate of deposit or certified check to the village in an amount equal to 125% of the estimated cost of all required control measures as determined by the Village Engineer. The security deposited shall guarantee that all required control measures will be taken or installed according to the approved plan. The security shall remain in full force until released by the Board of Trustees, and only after an inspection by the Village Agent assures that all required control measures have been fully and satisfactorily completed. The village shall have the right to draw upon the security for purposes of obtaining compliance with the approved control plan as it deems necessary

**(3) APPROVAL PROCESS**

- (a) Major land disturbing activities, and new and re-development stormwater control permits.
  - i. The Village Engineer shall verify that the permit application is complete under § 25.11(2) and review the plan(s) for compliance with the standards identified in § 25.12 and § 25.13.
  - ii. The Village Engineer shall either approve the submitted plan or notify the applicant in writing of any deficiencies, within 30 days of receipt of the control plan.
- (b) Minor land disturbing activities, and minor new impervious area permits.
  - i. The Village Agent shall verify the permit application is complete under § 25.11(2) and review the plan for compliance with this chapter in accordance with the simplified checklist established by the Village Engineer and approved by the Board of Trustees.
  - ii. The Village Agent shall approve, reject or conditionally approve the plan within the same number of working days as required for issuance of a building permit, but in no event more than three working days after receipt of the completed control plan statement. If the control plan statement is rejected or conditionally approved, the applicant shall be informed, in writing, of the reasons for rejection or conditions of approval. Staff engaged in this review and approval process shall be certified where appropriate by the Wisconsin Department of Commerce for this purpose.
- (c) Where installed stormwater practices will be privately-owned, an affidavit which describes the property by legal description, notifying future prospective purchasers of the existence of a stormwater permit (on file at Village Hall) issued under this ordinance and applicable plan, timetables and potential liability imposed by § 25.17(3) for failure to bring the property into compliance with this ordinance after notification, shall be recorded with the Dane County Register of Deeds prior to issuance of an erosion and stormwater control permit. The foregoing information shall also be noted on every plat and certified survey map.
- (d) Upon approval of the Village Engineer the erosion control or stormwater management permit shall be issued by the Village after the applicant has met all other requirements of this ordinance.

**(4) PERMIT CONDITIONS.**

- (a) The plan shall be implemented prior to the start of any land disturbing activity and shall be maintained over the duration of the project. Stormwater components of the plan shall be maintained in perpetuity.

- (b) The permittee is responsible for successful completion of the erosion control plan and the stormwater management plan. The permittee shall be liable for all costs incurred, including environmental restoration costs, resulting from noncompliance with an approved plan.
- (c) Application for a permit shall constitute express permission by the permittee and landowner for the Village Agent to enter the property for purposes of inspection under sub. 5 or curative action under § 25.17(3).
- (d) All incidental mud-tracking off-site onto adjacent public thoroughfares shall be cleaned up and removed by the end of each working day using proper disposal methods.
- (e) A copy of the approved permit and erosion control plan shall be kept on the project site, in a place readily accessible to contractors, engineers, local approval authority inspection staff and other authorized personnel.

**(5) INSPECTIONS**

- (a) Application for a permit under this ordinance shall constitute permission by the applicant and landowner for the Village Agent to enter upon the property and inspect during the construction phase prior to the inspections pursuant to paragraphs (d) and (f), as necessary to confirm compliance with the requirements of this ordinance.
- (b) As part of the plan approval process, the Village Agent shall determine the minimum number of inspections required to assure compliance. The site of any regulated land disturbing activity shall be inspected once every 30 days, or more frequently as determined by the Village Engineer during the construction phase with assistance from the Crew Chief, Building Inspector, Village Forester or Village Administrator.
- (c) Within 10 days after installation of all practices in an approved erosion control plan and achievement of soil stabilization, the permittee shall notify the Village Administrator and Village Engineer.
- (d) The Village Agent shall inspect the property to verify compliance with the erosion control plan within 10 days of notification of soil stabilization.
- (e) Within 10 days after installation of all practices in an approved stormwater management plan, the permittee shall notify the Village Administrator and submit drawings documenting construction. The person who designed the stormwater management plan for the permittee shall submit as-built certification to ensure that constructed stormwater management practices and conveyance systems comply with the specifications included in the approved plans. At minimum, as-built certification shall include a set of drawings comparing the approved stormwater management plan with what was constructed. Other information shall be submitted as required by the Village Engineer, Village Administrator, Building Inspector, or Crew Chief.
- (f) The Village Agent shall inspect the property to verify compliance within 10 days of notification.
- (g) Maintenance is the responsibility of the owner, and facilities are subject to inspection and orders for repairs.

**(6) PERMIT TRANSFERS.**

- (a) When a permittee and landowner act to transfer an interest in property subject to an approved plan prior to completion of the proposed steps to attain soil stabilization, the permittee must secure approval from the local approval authority.
- (b) When a permittee and landowner transfer ownership, possession or control of real estate subject to either or both an uncompleted erosion control stormwater management plan, the successor in interest to any portion of the real estate shall be

responsible to control soil erosion and runoff and shall comply with the minimum standards provided in this ordinance.

- (c) When ownership, possession or control of property subject to an uncompleted erosion control or stormwater management plan, or both, is transferred, the former owner (seller) shall notify the new owner (buyer) as to the current status of compliance with notice to the authority, and provide a copy of the erosion control plan or stormwater management plan, or both.
  - i. Transfers of interest in real estate subject to an approved, uncompleted plan may be conducted consistent with this ordinance under any of the following arrangements: The transferee shall file a new, approved erosion control or stormwater management plan, or both, with the authority;
  - ii. The transferee shall obtain an approved assignment from the authority as sub-permittee to complete that portion of the approved plan regulating soil erosion and runoff on the transferee's property.
  - iii. The permittee shall provide the authority with a duly completed and executed continuing surety bond or certified check in an amount sufficient to complete the work proposed in the approved plan; at the time of transfer the permittee may seek to reduce the surety bond or certified check to the appropriate amount to complete remaining work. If the transferor enters into escrow agreements with transferees to complete an approved plan, these funds shall be available to the authority to attain plan compliance. When an approved erosion control plan and, if required, a stormwater management plan is or are not completed as proposed, the authority may use the surety bond to complete remaining work to achieve plan compliance.

- (7) PLAN OR PERMIT AMENDMENTS. Any proposed modifications to approved plans, construction schedules or alterations to accepted sequencing of land disturbing site activities shall be approved by the Village Engineer in consultation with the Village Administrator, prior to implementation of said changes. One permit revision is allowed at no charge. The second and subsequent revisions, to a maximum of five revisions, cost one hundred and fifty dollars (\$150) each, for major land disturbing activity and/or new or redevelopment stormwater control permits, and \$50 each for minor land disturbing activity and/or minor new impervious area permits.

## **25.12 Erosion Control Plan Requirements.**

- (1) PLAN MATERIALS—MAJOR LAND DISTURBING ACTIVITIES. Erosion control plans required under § 25.05 may include consideration of adjoining landowners' cooperative efforts to control transport of sediment and except as specifically exempted below, shall include at a minimum, the following information:
  - (a) property lines, lot dimensions, and limits of disturbed area;
  - (b) limits of impervious area, including buildings. Include all public and private roads, interior roads, driveways and parking lots, and indicate type of paving and surface material;
  - (c) All natural and artificial water features including, but not limited to, lakes, ponds, streams (including intermittent streams), and ditches; and areas of natural woodland or prairie. The plan must show ordinary high-water marks of all navigable waters, 100-year flood elevation and delineated wetland boundaries. A certified flood zone determination and/or wetland delineation may be required at the applicant's expense;
  - (d) cross sections of and profiles of channels, swales and road ditches;
  - (e) culvert sizes;

- (f) direction of flow of runoff;
  - (g) watershed size for each drainage area;
  - (h) design discharge for ditches and structural measures;
  - (i) runoff velocities;
  - (j) fertilizer and seeding rates and recommendations;
  - (k) time schedules for stabilization of ditches and slopes;
  - (l) description of methods by which sites are to be developed and a detailed land disturbance schedule including time schedules for stabilization of ditches and slopes;
  - (m) provision for sequential steps mitigating erosive effect of land disturbing activities to be followed in appropriate order and in a manner consistent with accepted erosion control methodology suitable to proposed sites and amenable to prompt re-vegetation, including runoff calculations as appropriate;
  - (n) provisions to prevent mud-tracking off-site onto public thoroughfares during the construction period;
  - (o) provisions to disconnect impervious surfaces, where feasible;
  - (p) provisions to prevent sediment delivery to, and accumulation in, any proposed or existing Stormwater conveyance systems;
  - (q) copies of permits or permit applications required by any other unit of government or agency;
  - (r) existing and proposed elevations (referenced to the National Geodetic Vertical Datum of 1929) and existing and proposed contours in the area, where deemed necessary;
  - (s) any other information necessary to reasonably determine the location, nature and condition of any physical or environmental features of the site.
- (2) **PLAN MATERIALS—MINOR LAND DISTURBING ACTIVITIES.** Plans for minor land-disturbing activity permits, required under § 25.06 may be submitted using a simplified checklist of standard erosion control practices, on a standard form established by the Village Engineer and approved by the Board of Trustees and a simple map and site development schedule. Simplified plan checklists shall be reviewed by the Village Agent for completeness and accuracy.
- (3) **EROSION CONTROL PERFORMANCE STANDARDS.**
- (a) Major Land Disturbing Activity—For all major land disturbing activities, erosion control measures for shall be designed, engineered and implemented to achieve the following results:
    - i. Prevent gully and bank erosion;
    - ii. Limit total off-site permissible annual aggregate soil loss for exposed areas resulting from sheet and rill erosion to an annual, cumulative soil loss rate not to exceed 7.5 tons per acre annually; and
    - iii. Discharges from new construction sites must have a stable outlet capable of carrying designed flow as required in § 25.13(3)(d), at a non-erosive velocity. Outlet design must consider flow capacity and flow duration. This requirement applies to both the site outlet and the ultimate outlet to stormwater conveyance or waterbody.
  - (b) Minor Land Disturbing Activity—The erosion control plan for all minor land disturbing activities shall include sediment controls to do all of the following:
    - i. Prevent tracking of sediment from the construction site onto roads and other paved surfaces.
    - ii. Control sediment from site de-watering effluent.

- iii. Protect storm drain inlets from receiving sediment.
  - iv. Install perimeter sediment controls along the downslope sides of disturbed areas
  - v. Divert concentrated flows and overland runoff (sheet flow) from adjacent areas greater than 10,000 sq. ft. around disturbed areas, if practical.
  - vi. Install sediment controls at the outlet ends of drainageways.
  - vii. Stabilize rough-graded disturbed areas planned to be left inactive for more than 30 days and temporary soil stock piles planned to be left inactive for more than 7 days by temporary seeding or by other cover, such as covering with a tarp or heavy mulching
  - viii. Complete permanent seeding by September 15<sup>th</sup>, or place sod by November 15<sup>th</sup>, or temporary seeding by October 15. Temporary seeding areas must be re-seeded with permanent seed the following spring.
  - ix. Cover disturbed areas with straw or grassy hay mulching immediately after seeding.
  - x. Properly dispose of building material waste so that pollutants and debris are not carried off-site by wind or water.
  - xi. Maintain all erosion control practices until disturbed areas are permanently stabilized and established.
- (c) Plan compliance under sub. (a) shall be determined using the U.S. Natural Resources Conservation Service Technical Guide or another commonly accepted soil erosion methodology approved by the Dane County Conservationist, that considers season of year, site characteristics, soil erodibility and slope.
- (d) Erosion control measures for plan approval need not attempt to regulate soil transportation within the boundaries of the applicant's site.

### **25.13 Stormwater Management Plan Requirements**

- (1) PLAN MATERIALS—NEW & RE-DEVELOPMENT PERMITS.** Stormwater management plans shall satisfy all of the requirements in sub. 3, and shall address at a minimum the following information:
- (a) A narrative describing the proposed project, including implementation schedule for planned practices;
  - (b) Identification of the entity responsible for long-term maintenance of the project;
  - (c) A map showing drainage areas for each watershed area;
  - (d) A summary of runoff peak flow rate calculations, by watershed area, including:
    - i. Pre-existing peak flow rates;
    - ii. Post-construction peak flow rates with no detention;
    - iii. Post-construction peak flow rates with detention;
    - iv. Assumed runoff curve numbers (RCNs); and
    - v. Time of concentration (Tc) used in calculations.
  - (e) A complete site plan and specifications, signed by the person who designed the plan. All plans shall be drawn to an easily legible scale, shall be clearly labeled, and shall include, at a minimum, all of the following information:
    - i. Property lines and lot dimensions;
    - ii. All buildings and outdoor uses, existing and proposed, including all dimensions and setbacks;
    - iii. All public and private roads, interior roads, driveways and parking lots. Show traffic patterns and type of paving and surfacing material;

- iv. All natural and artificial water features, including, but not limited to lakes, ponds, streams (including intermittent streams), and ditches. Show ordinary high water marks of all navigable waters, 100-year flood elevations and delineated wetland boundaries, if any. If not available, appropriate flood zone determination or wetland delineation, or both, may be required at the applicant's expense;
  - v. Protective areas as defined in sub. 3(g);
  - vi. Depth to bedrock;
  - vii. Depth to seasonal high water table;
  - viii. The extent and location of all soil types as described in the Dane County Soil Survey, slopes exceeding 12%, and areas of natural woodland or prairie;
  - ix. Existing and proposed elevations (referenced to the North American Vertical Datum of 1988, where available) and existing and proposed contours in the area requiring a grading and filling permit;
  - x. Elevations, sections, profiles, and details as needed to describe all natural and artificial features of the project;
  - xi. Soil erosion control and overland runoff control measures, including runoff calculations as appropriate;
  - xii. Detailed construction schedule;
  - xiii. Copies of permits or permit applications required by any other governmental entities or agencies;
  - xiv. Any other information necessary to reasonably determine the location, nature and condition of any physical or environmental features;
  - xv. Location of all stormwater management practices;
  - xvi. All existing and proposed drainage features;
  - xvii. The location and area of all proposed impervious surfaces; and
  - xviii. The limits and area of the disturbed area.
- (f) Engineered designs for all structural management practices;
  - (g) A description of methods to control oil and grease or written justification for not providing such control;
  - (h) A maintenance plan and schedule for all permanent stormwater management practices as recorded on the affidavit required in § 25.11(3)(c).
- (2) **SIMPLIFIED PLAN CHECKLIST—NEW IMPERVIOUS AREAS PERMIT.** On sites covered by a minor new imperious area stormwater control permit, under § 25.07 applicants may submit stormwater management plans using a plan simplified checklist of standard stormwater control practices, on a standard form established by the Village Engineer and approved by the Board of Trustees, and a simple map and site development schedule. Simplified plan checklists shall be reviewed by the Village Agent for completeness and accuracy.
- (3) **STORMWATER MANAGEMENT PERFORMANCE STANDARDS.** For all land development activity regulated by this ordinance, stormwater management measures for plans shall be designed, engineered and implemented to achieve the following results:
- (a) **Sediment Control.**
    - i. New development. Design practices to retain soil particles greater than 5 microns on the site (80% reduction) resulting from a one-year 24-hour storm event (2.5 inches over 24- hour duration), according to approved procedures, and assuming no sediment resuspension;
    - ii. Redevelopment. Design practices to retain soil particles greater than 20 microns on the entire site (40% reduction) resulting from a one-year 24-hour storm event,

- according to approved procedures, and assuming no sediment resuspension. Under no circumstances shall the site's existing sediment control level or trapping efficiency be reduced as a result of the redevelopment.
- iii. Minor new impervious areas. For sites requiring resulting in exposed surface parking lots and exposed traffic areas, design practices to retain soil particles greater than 40 microns on the site (20% reduction) resulting from a one-year 24-hour storm event, and assuming no sediment re-suspension.
- (b) Oil and grease control. For industrial or commercial sites, and all other site where the potential for pollution by oil or grease, or both, exists and that require a new or redevelopment stormwater permit, the first 0.5 inches of runoff will be treated using the best oil and grease removal technology available. This requirement may be waived by the plan reviewer only when the applicant can demonstrate that installation of such practices is not necessary.
  - (c) Runoff rate control - hydrologic calculations. All runoff calculations shall be according to the methodology described in the Natural Resources Conservation Service's Technical Release 55, "Urban Hydrology for Small Watersheds" (commonly known as TR-55), or other methodology approved by the Dane County Conservationist. For agricultural land subject to this section, the maximum runoff curve number (RCN) used in such calculations shall be 51 for HSG A, 68 for hydrologic soil group B, 79 for HSG C, and 84 for HSG D. The TR-55-specified curve numbers for other land uses shall be used for pre-development conditions. For post-development conditions, heavily disturbed sites will be lowered one permeability class for hydrologic calculations. Lightly disturbed areas require no modification. Where practices have been implemented to restore soil structure to pre-developed conditions, no permeability class modification is required.
  - (d) Runoff rate control - design standards. For new development, all stormwater facilities shall be designed, installed and maintained to effectively accomplish the following:
    - i. Maintain predevelopment peak runoff rates for the 2-year, 24-hour storm event (2.9 inches over 24 hours duration).
    - ii. Maintain predevelopment peak runoff rates for the 10-year, 24-hour storm event (4.2 inches over 24 hours duration).
    - iii. Safely pass the 100-year, 24-hour storm event (6.0 inches over 24-hour duration).
  - (e) Outlets. For new and redevelopment sites, discharges from new construction sites must have a stable outlet capable of carrying designed flow as required in sub. (d), at a non-erosive velocity. Outlet design must consider flow capacity and flow duration. This requirement applies to both the site outlet and the ultimate outlet to stormwater conveyance or waterbody.
  - (f) Infiltration.
    - i. Residential, New Development. For residential developments, design practices to infiltrate sufficient runoff volume so that post-development infiltration volume shall be at least 90% of the pre-development infiltration volume, based upon average annual rainfall. If when designing appropriate infiltration systems, more than one percent (1%) of the site is required to be used as effective infiltration

area, the applicant may alternately design infiltration systems and pervious surfaces to meet or exceed the estimated average annual recharge rate (7.6 inches per year). If this alternative design approach is taken, at least one percent (1%) of the site must be used for infiltration.

- ii. Nonresidential, New Development. For nonresidential developments, including commercial, industrial and institutional development, design practices to infiltrate sufficient runoff volume so that post-development infiltration volume shall be at least 60% of the pre-development infiltration volume, based on average annual rainfall. If when designing appropriate infiltration systems, more than two percent (2%) of the site is required to be used as effective infiltration area, the applicant may alternately design infiltration systems and pervious surfaces to meet or exceed the estimated average annual recharge rate (7.6 inches per year). If this alternative design approach is taken, at least two percent (2%) of the site must be used for infiltration.
- iii. Redevelopment and Minor New Impervious Area. For residential and nonresidential redevelopment sites and/or sites covered by a minor new impervious permit, infiltrate at least 90% of the average annual volume of rooftop runoff.
- iv. Pre-treatment. Before infiltrating runoff, pre-treatment shall be required for parking lot runoff and for runoff from new road construction in commercial, industrial and institutional areas that will enter an infiltration system. The pre-treatment shall be designed to protect the infiltration system from clogging prior to scheduled maintenance and to protect groundwater quality.
- v. Prohibitions. Notwithstanding subparagraphs (i) through (iii) infiltration systems may not be installed in any of the following areas:
  - a. Areas associated with tier 1 industrial facilities identified in s.NR216.21(2)(a), Wis.Admin.Code, including storage, loading, rooftop and parking.
  - b. Storage and loading areas of tier 2 industrial facilities identified in s.NR216.21(2)(b). Wis.Admin.Code.
  - c. Fueling and vehicle maintenance areas.
  - d. Areas within 1,000 feet up gradient or within 100 feet down gradient of karst features.
  - e. Areas with less than three feet separation distance from bottom of the infiltration system to the elevation of seasonal high groundwater or the top of bedrock, except that this provision does not prohibit infiltration of roof runoff.
  - f. Areas with runoff from industrial, commercial and institutional parking lots and roads and residential arterial roads with less than five feet separation distance from the bottom of the infiltration system to the elevation of seasonal high groundwater or the top of bedrock.
  - g. Areas within 400 feet of a community water system well as specified in s. NR811.16(4), Wis.Admin.Code, for runoff infiltrated from commercial, industrial and institutional land uses or regional devices for residential development.
  - h. Areas where contaminants of concern, as defined in s.NR 720.03(2), Wis.Admin.Code are present in the soil through which infiltration will occur.
  - i. Any area where the soil does not exhibit one of the following characteristics between the bottom of the infiltration system and the seasonal high groundwater and top of bedrock: at least a 5 foot soil layer with 10% fines or greater. This provision does not apply where the soil medium within the

- vi. Alternate use of runoff. Where alternate uses of runoff are employed such as for toilet flushing, laundry or irrigation, such alternate use shall be given equal credit toward the infiltration volume required by this section.
- vii. Minimizing groundwater pollution. According to ch. NR 151, Wis.Admin.Code, infiltration system designed in accordance with this section 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 ch.NR 140, Wis.Admin. Code. However, if site-specific information indicates that compliance with the preventive action limit is not achievable, the infiltration system may be not installed or shall be modified to prevent infiltration to the maximum extend practicable.

(g) Protective Areas

- i. All sites, except those exempted under § 25.09(4) shall be designed to maintain a protective area, as defined in § 25.02(33) of the following minimum widths:
  - a. For outstanding resource waters and exceptional resource waters, and for wetlands in areas of special natural resource interest as specified in s. NR 103.04, 75 feet.
  - b. For perennial and intermittent streams identified on a United States geological survey 7.5-minute series topographic map, or a county soil survey map, whichever is more current, 50 feet.
  - c. For lakes, 50 feet.
  - d. For highly susceptible wetlands, 50 feet. 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 seasonally flooded basins. Wetland boundary delineations shall be made in accordance with s. 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 area for wetlands that have been partially filled in accordance with all applicable state and federal regulations shall be measured from the wetland boundary delineation after fill has been placed.
  - e. For less susceptible wetlands, 10 percent of the average wetland width, but no less than 10 feet nor more than 30 feet. Less susceptible wetlands include degraded wetlands dominated by invasive species such as reed canary grass.
  - f. For concentrated flow channels with drainage areas greater than 130 acres, 10 feet.
- ii. The following requirements shall be met in protective areas:
  - a. Impervious surfaces shall be kept out of the protective area to the maximum extent practicable. The storm water management plan shall contain a written site-specific explanation for any parts of the protective area that are disturbed during construction.
  - b. Where land disturbing construction activity occurs within a protective area, and where no impervious surface is present, adequate sod or self-sustaining vegetative cover of 70% 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 areas under sheet flow conditions. Non-vegetative materials, such as rock riprap, may be employed on the bank as necessary to prevent erosion, such as on steep slopes or where high velocity flows occur.

- c. Best management practices such as filter strips, swales, or wet detention basins, that are designed to control pollutants from non-point sources may be located in the protective area.

(4) **STORMWATER MANAGEMENT GOALS.** The following standards shall be met whenever possible, and proposed design, suggested location and implementation of practices to meet these goals shall be included in plans

- (a) For existing development, design practices to retain soil particles greater than 40 microns on the site (20% reduction) resulting from a one-year 24-hour storm event, according to approved procedures, and assuming no sediment resuspension.
- (b) For street reconstruction, design practices to retain soil particles greater than 20 microns on the site (40% reduction) resulting from a one-year, 24 hour storm event, according to approved procedures, and assuming no sediment resuspension.

#### **25.14 Off-site stormwater management**

- (1) When the Board of Trustees determines, based on a drainage study conducted and prepared by a qualified professional engineer, that off-site water runoff control measures best serve the interests of the public and the environment, then the Board may allow or require off-site water runoff control as a condition of approval of a land disturbance permit. When off-site water runoff control is permitted or required, the permit applicant shall obtain written permission from any and all property owners who would experience increases in the amount of water runoff entering their land from a two-, a ten-, or a one-hundred-year, twenty-four-hour design storm or whose property is threatened by virtue of additional soil saturation, prior to plan final approval by the Board. The Board of Trustees will act on behalf of any and all affected public lands, public drainageways, storm sewers or other public waterways.
- (2) Developments served by off-site stormwater management facilities will be charged a fee-in-lieu of detention. Fees-in-lieu will be set by the Village and based on the level of service provided to the applicant by the off-site facility.
- (3) Off-site stormwater management is only allowed when all of the following conditions for the off-site facility are met:
  - (a) The facility is in place;
  - (b) The facility is designed and adequately sized to provide a level of stormwater control that at least meets the ordinance standards
  - (c) The facility has a legally obligated entity responsible for its long-term operation and maintenance.
- (4) Permit applicants may be required to install and maintain temporary facilities designed to meet the standards of this ordinance, if an off-site facility that will serve the proposed development is planned but does not yet meet the conditions of sub. 3. Temporary facilities must be maintained by the applicant until that time that the off-site facility meets the conditions of sub 3. Applicants required to install and maintain temporary facilities will also be charge a fee-in-lieu.

#### **25.15 Permit Fees**

The fees referred to in other sections of this ordinance shall be established by the Board of Trustees and may from time to time be modified by resolution. A schedule of the fees established by the Board of Trustees shall be available for review at Village Hall.

## **25.16 Appeals and variances.**

### **(1) APPEALS**

- (a) Any person aggrieved by any decision of the Village Agent pursuant to this ordinance may appeal to the Zoning Board of Appeals. Such appeal shall be taken within 30 days after the challenged decision. Notice of Appeal setting forth the specific grounds for the appeal shall be filed with the Village Clerk. A fee of an amount set by the Village in the annual fee schedule resolution must accompany any appeal request involving a land disturbing activity. The Village Administrator shall forthwith transmit to the Zoning Board of Appeals the record upon which the action appealed from was taken.
- (b) The Zoning Board of Appeals shall publish a class 2 notice thereof under ch. 985, Wis. Stats., as well as give due notice to the parties in interest. The Board shall hear and decide variance and appeal requests within 30 days of receipt of written request and payment of the appeal fee. Upon the hearing any party may appear in person or by agent or attorney.
- (c) The Zoning Board of Appeals may, in conformity with the provisions of this ordinance, reverse or affirm, wholly or partly, or modify the order, requirement, decision or determination appealed from and may make such order, requirement decision or determination as ought to be made, and shall have all the powers of the officer from whom the appeal is taken.
- (d) The concurring vote of a majority of the Zoning Board of Appeals shall be necessary to reverse the decision of the Village Engineer.

### **(2) VARIANCES.**

- (a) An applicant may include in the application a request for a variance from the requirements of § 25.12 or § 25.13. No variance shall be granted unless applicant demonstrates and the Village Engineer, in consultation with the Village Administrator, finds that all of the following conditions are present:
  - i. Enforcement of the standards set forth in this ordinance will result in unnecessary hardship to the landowner;
  - ii. The hardship is due to exceptional physical conditions unique to the property;
  - iii. Granting the variance will not adversely affect the public health, safety or welfare, nor be contrary to the spirit, purpose and intent of this ordinance;
- (b) If all of the conditions set forth in sub. (a) are met, a variance may only be granted to the minimum extent necessary to afford relief from the unnecessary hardship, with primary consideration to water quality.
- (c) A variance from the provisions of § 12.13(3)(a) and (b) may only be granted if:
  - i. The applicant has met the requirements of sub (a); and
  - ii. The applicant will be denied all reasonable and beneficial use of the property if the variance is denied.
- (d) A person aggrieved by a variance determination by the Village Engineer and/or Village Administrator may appeal the decision to the Zoning Board of Appeals pursuant to sub. (1).

- (e) A person aggrieved by a decision of the Zoning Board of Appeals regarding a variance may appeal that decision to Dane County Circuit Court.

## **25.17 Violations and Enforcement.**

### **(1) STOP WORK ORDER.**

- (a) Whenever the Village Agent finds any noncompliance with the provisions of this ordinance, the Village Agent shall attempt to communicate with the owner or person performing the work to obtain immediate and voluntary compliance if such person is readily available. If the owner or person performing the work is not readily available, that person refuses to voluntarily comply immediately or the noncompliance presents an imminent danger or will cause or threatens to cause bodily injury or damage to off-site property, including, but not limited to off-site run-off, the Village Agent shall post in a conspicuous place on the premises, a stop work order which shall cause all activity not necessary to correct the noncompliance to cease until noncompliance is corrected.
- (b) The stop work order shall provide the following information: date of issuance, an adequate identification of the property subject to the stop work order, reason for posting and the signature of the inspector posting the card.
- (c) It shall be a violation of the ordinance for the unauthorized removal of the stop work order from the premises.

### **(2) In addition to posting a stop work order, the Village Agent shall provide notification to the owner or contractor by personal service, written notice by certified mail, or facsimile transmission.**

- (a) The permittee, landowner and contractor shall have 24 hours from the time and date of notification by the Village Agent to correct any noncompliance with the plan when notification is by either personal communication of noncompliance to owner or contractor or their respective agents or written notice sent by certified mail to owner or contractor.
- (b) If notice is not provided under sub. (1) (a), the permittee and landowner shall have 72 hours to correct any noncompliance with the plan when notification is by posting notice in a conspicuous place on the site or sending notice by facsimile transmission to owner or contractor.

### **(3) If any noncompliance is not corrected within the time periods specified in sub. (2) the permittee and landowner authorize the Village Agent to take any action, to perform any work, or commence any operations necessary to correct conditions upon the subject property where notice of noncompliance has been issued to bring the property into conformance with plan requirements. The permittee and landowner further consent to reimburse the authority for the total costs and expenses of the aforementioned actions, said reimbursement may be collected as a special charge upon the property for current services rendered as provided by law.**

### **(4) If the permittee has filed an appeal under § 25.16(1) prior to the expiration of the time for compliance under sub. (2)(a) or (b), the Village Agent 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.**

**25.18 Penalties.**

- (1) Any person or persons, firm, company or corporation, owner, occupant or other user of the premises who violates, disobeys, omits, neglects or refuses to comply with or resists the enforcement of any of the provisions of this ordinance shall be subject to a forfeiture of not less than \$200 dollars nor more than \$1000 dollars and the costs of prosecution.. Each day that a violation exists shall constitute a separate offense.
- (2) Any person who has the ability to pay any forfeiture entered against him or her under this ordinance, but refuses to do so, may be confined in the county jail until such forfeiture is paid, but in no event to exceed thirty (30) days. In determining whether an individual has the ability to pay a forfeiture, all items of income and all assets may be considered regardless of whether or not such income or assets are subject to garnishment, lien or attachment by creditors.
- (3) As a substitute for or as an addition to forfeiture actions under sub. (1) or corrective action under § 25.17(3) the Village Attorney is authorized to seek enforcement of any part of this ordinance by court action seeking injunctive relief. It shall not be necessary for the Village Attorney to take corrective action or prosecute for forfeiture before resorting to injunctive relief.

Adopted by the Board of Trustees of the Village of Shorewood Hills, Dane County, Wisconsin, this \_\_\_\_\_ day of \_\_\_\_\_, 2007.

APPROVED: \_\_\_\_\_  
Mark Sundquist, Village President

ATTEST: \_\_\_\_\_  
Colleen Albrecht, Village Clerk