TABLE C-5

SIXMILE CREEK WATERSHED - URBAN SERVICE AREA PORTION*

LAND USE CATEGORY	AREA (Acres)	PERCENT OF TOTAL	ROOFTOP AREA x 0.3 (Acres)	DIRECTLY CONNECTED PAVED AREA (Acres)	DIRECTLY CONNECTED IMPERVIOUS (Acres)	DIRECTLY CONNECTED IMPERVIOUS (Percent)
Single Family	584.99	23.78	13.28	85.02	98.30	
Multi-Family	12.39	0.50	1.16	3.88	5.04	
Commercial/ Institutional	144.62	5.88	11.30	36.26	47.56	
Manufacturing	50.25	2.04	3.67	9.97	13.64	
Park/Open Space	321.84	13.09	0.00	16.01	16.01	
Vacant/Developing	208.64	8.48	0.38	15.49	15.87	
Agriculture	1,055.40	42.91	0.00	17.23	17.23	
Wetland	81.24	3.30	0.00	0.00	0.00	
TOTAL	2,459.37	100.00	29.79	183.86	213.65	8.69

*Includes Waunakee urban service area and Mary of the Lake portion of the Central urban service area in the Town of Westport.

APPENDIX D

ENVIRONMENTAL CORRIDORS - A COMPONENT OF THE URBAN NONPOINT SOURCE PROGRAM

General Approach and Concept

Environmental corridors represent linear systems of open space which include environmentally sensitive lands and natural resources requiring protection from disturbance and development as well as lands needed for open space and recreational use.

Environmental corridors represent a fundamental planning concept in the regional and local land use and comprehensive planning in Dane County. Environmental corridors (referred to as open space corridors) were included in the initial Dane County Land Use Plan which was adopted by the Regional Planning Commission and Dane County Board in 1973. Environmental corridors are elements of several key policies related to environmental protection and enhancement, recreation and open space in the Dane County Land Use Plan, as follows:

- To guide the location and design of urban development in order to minimize potential adverse impacts in the quality of ground and surface waters.

- To encourage land use patterns and practices which preserve the integrity of the natural hydrologic system, including the balance between ground and surface waters.

- To incorporate in the design of urban development utilization of natural drainage patterns and measures to minimize or entrap pollutants before they enter surface waters.

- To preserve the role of wetlands and woodlands as essential components of the hydrologic system as well as valuable wildlife habitat; and to restore degraded wetland resources where possible.

- To protect shoreland and floodplain areas throughout the county, in both incorporated and unincorporated areas; and to emphasize their value to the community as potential focal points of natural beauty and recreation.

- To guide the location of urban development to areas where soil characteristics are compatible with such development.

- To recognize the interrelationship of adjacent landscape types; and to avoid breaking valuable ecological linkages.

- To acquire or preserve lands along rivers, streams, lakes and in wetlands as well as areas of significant topography and woodlands.

While the environmental corridors support and enhance a number of other policies in the Dane County Land Use Plan, the plan policies cited above represent the key concepts and justification for the delineation and protection of environmental corridors.

The protection and preservation of environmental corridors has a direct relationship to environmental protection in general, as well as specifically to water quality enhancement through reduction of nonpoint source pollution and protection of natural drainage systems. As urban areas are developed, the amount of impervious land surface increases as the land is covered with parking lots, streets and rooftops. This increasing imperviousness results in dramatic increases in the total volume of storm runoff, and in the frequency and intensity of peak flows and flooding resulting from storms. Except in extremely high density downtown areas, it is usually advantageous to retain the natural drainage system in urban areas rather than to enclose the entire storm drainage network in an artificial network of pipes. Where development densities and land use patterns permit, the protection and preservation of natural drainage systems can result in lower costs than conventional storm sewer systems; can provide open space and recreation opportunities as well as scenic beauty associated with the streams and greenways incorporated in the environmental corridors; can provide for buffering and reduction of nonpoint source pollution by provision of vegetated areas which filter surface runoff; can reduce streambank and streambed erosion by vegetative stabilization and streambank protection; can provide opportunities to offset increased stormwater runoff volumes by providing for increased infiltration of storm runoff; and can offset the effect of increased peak runoff and increased flooding by providing opportunities for incorporating temporary storage and detention of runoff and flood waters. The environmental corridors also provide for the protection and preservation of sensitive environmental areas including wetlands, floodplains, woodlands, steep slopes and other areas which would result in impairment of surface or groundwater quality if disturbed or developed.

Criteria for Environmental Corridor Delineation in the Sixmile Creek/Pheasant Branch Watershed

The environmental corridor concept, as set forth and delineated in the Dane County Land Use Plan, is utilized in both rural and urban areas. The Sixmile Creek/Pheasant Branch Watershed includes substantial urban and rural areas. Environmental corridors have been delineated to identify the key natural resource features to be protected throughout the watershed. In the rural areas, this delineation has focused primarily on stream and lake-related floodplains and shorelands, as well as wetlands mapped by the Wisconsin Department of Natural Resources. These natural resource features in the rural areas have been incorporated into town land use plans prepared as a detailing of the Dane County Land Use Plan. The following discussion on environmental corridor delineation and criteria relates primarily to the Urban Service Area in the Sixmile Creek/Pheasant Branch Watershed.

The criteria used in the development of environmental corridors tend to provide for a unified and continuous system of natural resource areas, park and open space lands, and drainage-related lands which need to be protected and preserved. Initially, a number of areas are delineated for use in identifying a potential environmental corridor, including: 1) perennial and intermittent streams; 2) their associated floodplains; 3) lakes; 4) wetlands; 5) woodlands; 6) areas of steep slope, and 7) areas of soils with severe limitations for development. The initial delineation of a potential environmental corridor may also include existing cultural features such as parks, greenways or drainage easements adjacent to a stream or tributary.

The final environmental corridor delineation also reflects several other factors in addition to those previously mentioned. If an area which would normally be included in an environmental corridor is already committed to intensive land uses or has structures, it would ordinarily be excluded from the corridor. All officially mapped proposed parkways and greenways have generally been included in the final delineation. Additions are also made by including areas within easements, areas covered by conservancy zoning, and areas which have been dedicated for public open space.

In undeveloped portions of the watershed, and where the exact purpose and potential multiple use of the corridor has not been firmly established, the corridor delineation is based on a minimum 200-ft. wide buffer strip centered on the drainageway or intermittent stream. It is anticipated that this buffer strip should be preserved for preliminary planning, although it may be reduced during detailed final planning for the corridor at the time that zoning is accomplished or acquisition or dedication is being pursued. The 200-ft. wide strip is based on the need for adequate buffer areas to protect the drainageways as well as providing for the potential for a multi-purpose recreational use of the corridors for trail development and wildlife habitat.

In general, the environmental corridors represent linear environmental systems which function as ecological units. The presence of a single resource element (such as wetlands or steep slopes), generally does not identify an environmental corridor. Several resource factors generally coincide and the intent is to place highest priority on those portions of the environmental corridors which represent a number of resource factors requiring protection and preservation.

Environmental Corridors in the Sixmile Creek/Pheasant Branch Watershed

The following discussion is intended to provide a brief description of each of the major environmental corridors which have been delineated in the urban portion of the Sixmile Creek/Pheasant Branch Watershed. As mentioned previously, environmental corridors have also been generally delineated in the rural portions of the watershed, however, the discussion herein is devoted to specific delineations within the urban portions of the watershed.

West Towne/Spring Harbor Environmental Corridor

The West Towne/Spring Harbor Environmental Corridor originates at the Far West detention basin and continues in a northeasterly direction, ending at Spring Harbor on Lake Mendota. The principle components of this environmental corridor focus on resource protection and recreation, and include greenways, parks and corridor linkages.

The major park areas included in this corridor are Mineral Point Park, Owen Park, Bordner Park, Garner Park, Glen Oak Hills Park, Kettle Pond Park and Woodside Heights Park. The corridor ends at Spring Harbor Park on Lake Mendota.

The corridor linkages enhance the natural surface drainage network and provide continuity for trail development as well as wildlife habitat for the entire distance from the West Towne shopping center to Spring Harbor. The major linkages involved in the corridor include: 1) the Madison Memorial High School walking trail (to be established); 2) the Faircrest-Parkwood Hills greenway walking trail; and 3) bike and walking paths on lightly travelled streets including Gettle to Craig Avenue and Dale Avenue.

The railroad corridor between Craig Avenue and the Camelot Park greenway could be considered as a potential link connecting Camelot Park, Kettle Pond Park and Spring Harbor Park at the downstream end of the environmental corridor. An extension of the linkage to the northwest could incorporate the Tiedeman's Pond area into the corridor. This linkage would include that area dedicated as a drainage easement along with a walking path along Clovernook Road and through the proposed school property adjacent to Tiedeman's Pond conservancy area.

Pheasant Branch Environmental Corridor

The Pheasant Branch environmental corridor includes substantial portions of the south fork of Pheasant Branch in the southwestern portion of the City of Madison and follows Pheasant Branch up through the City of Middleton to the outlet of Pheasant Branch at Lake Mendota downstream from the Pheasant Branch Marsh.

Much of this environmental corridor runs through lands which are currently vacant and undeveloped, but which are anticipated to undergo development within the near term future. Thus, the corridor focuses heavily on protection of potential greenways and natural drainage systems identified with drainageways and intermittent streams. Associated resource elements including wetlands, floodplains, woodlots, and areas of soils with severe limitations for development have also been included, in addition to the basic 200-ft. wide corridor.

Major parks included in this corridor include Fireman's Park and Parisi's Park in the City of Middleton. In addition, the Pheasant Branch Nature Preserve, which is an extremely large public land holding based on the Pheasant Branch Marsh, is included near the Lake Mendota outlet of Pheasant Branch.

Esser Pond and Graber Pond represent independent free-standing elements of the environmental and open space system in this area. While they are not included in the continuous environmental corridors, these sensitive natural areas provide substantial water quality benefits and are worth preserving for their considerable hydrologic, wildlife and recrational value. Thus, these areas have been mapped although they are not connected to the continuous environmental corridors.

The Sixmile Creek/Environmental Corridor - Village of Waunakee

The Sixmile Creek Environmental Corridor is generally based on the Sixmile Creek floodplain within the Waunakee urban service area. The principle elements of the corridor are the stream channel, the adjacent floodplain of Sixmile Creek, as well as adjacent wetlands. This corridor remains as open space due to the unsuitability of its resources for development. Therefore, the corridor helps satisfy the open space and recreational needs of village residents. For instance, a large area of the corridor near Pleasant Drive and Division Street is parkland, named Village Park. The balance of the corridor is open space and undeveloped, or has a drainage easement.

Implementation

The general approach to protecting and preserving lands within environmental corridors is based on a combination of protection and preservation through zoning and easements on private land, and public acquisition of other lands. In general, public acquisition through dedication or purchase will be necessary for lands where needed for public recreational access, for structures such as detention basins, and where access is needed for public maintenance of stream channels and structures. In addition, public acquisition through dedication or purchase may be required to protect major natural resource lands which are vulnerable to development and not adequately protected through zoning or other regulatory means.

Regulatory protection, through floodplain or shoreland zoning, conservancy zoning, or protection under the forthcoming DNR wetland protection rules is most appropriate for lands within the environmental corridor intended to stay in private ownership. This will be the preferred mechanism of protection where public access is not needed.

As mentioned earlier, it is proposed that environmental corridors throughout the urban and rural portions of the Sixmile Creek/Pheasant Branch Watershed be protected through a combination of the mechanisms discussed above. In the rural portions of the watershed, heavy reliance will be placed on floodplain and shoreland zoning, as well as wetland protection through the forthcoming DNR administrative rules on wetland protection. In addition, conservancy zoning of environmental corridor lands not adequately protected under the other regulatory devices should be sought. Environmental corridor lands have been identified in town plans for the rural portions of the watershed.

Specific recommendations for protection and preservation of environmental corridor lands in the urban portions of the watershed are outlined in the recommendations section of this watershed plan. In the urban area, somewhat greater reliance will be placed on public acquisition of environmental corridor lands through dedication or purchase, and conservation easements may be utilized to a greater extent. The primary reason for greater reliance on acquisition of easements or fee simple title is that there will be substantially greater need for public access to environmental corridor lands in the urban area. This will generally result from the need to provide substantial public construction and maintenance of detention basins and other structures in the environmental corridors, the need to provide public maintenance of stream channels and other drainage features in the environmental corridors, as well as greater emphasis on the use of environmental corridors for public recreation and trail development in the urban areas.

It is suggested, in the urban areas, that local plans for the Cities of Madison, Middleton and the Village of Waunakee reflect the full extent of the environmental corridors proposed within the watersheds; that these units of government officially map as parkway those environmental corridor reaches not already mapped; that public acquisition through dedication, purchase or conservation easements be used to secure lands where public access is required; and that conservancy zoning or floodplain zoning and wetland protection rules be used to protect lands where public access is not needed.

APPENDIX E

A SUGGESTED ORDINANCE TO REGULATE

EROSION AND STORMWATER RUNOFF

Prepared as a Component of the Section 208
Water Quality Planning Process

Dane County Regional Planning Commission
Environmental Resources Planning Division
Room 114, City-County Building
Madison, Wisconsin 53709

This project has been financed in part with a Section 208 Areawide Waste Treatment Management Planning Grant from the United States Environmental Protection Agency.

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ABBREVIATIONS USED IN THIS MODEL

I. GENERAL

[ ] Material enclosed in brackets means optional material - a choice must be made between alternate clauses/phrases but if a second alternative is not included then a decision of whether to retain or delete the material must be made.

( ) Parenthesis connected with underlining means that a particular value, citation or thing must be supplied. In several cases, sample or tentative values have been suggested but clearly these may be replaced with different terms.

COMMENT: Explanatory material which is not intended for adoption within the ordinance.

II. SPECIFIC

(administrative authority)

Means that an administrative authority must be selected and specifically named in the ordinance, i.e., city engineer, county public works director. It is not necessary that the same administrative authority be selected to administer all portions of this ordinance. That is, the functions and duties may be shared or split. However, if more than one authority is going to be used, caution is urged in completing this ordinance to assure that the chosen authority is assigned the desired functions and duties throughout the entire ordinance.

(unit of government)
or
(governmental unit)

Means the unit of government which will be adopting the ordinance.

(governing body)

Means the body of elected officials which governs the unit of government. The body will adopt the ordinance.

GENERAL APPROACH USED IN THIS ORDINANCE

This model ordinance seeks to regulate erosion/sedimentation from general land disturbing uses (nonagricultural) and to control runoff on lands larger than a given minimum area, with this minimum to be chosen by the adopting unit of government. Both the regulation of land disturbing activities (resulting in erosion or sedimentation) and the control of runoff are guaranteed through the use of a single permit. The permitting process typically requires the submission of a control plan, a permit application and the appropriate fee as set out in a fee schedule adopted by the governing body either in the ordinance or in a contemporaneous resolution. However, this model optionally provides that the adopting UNIT OF GOVERNMENT (upon receipt of a request by the applicant and receipt of an additional fee) may prepare plans in lieu of plan preparation by the applicant.

With one exception, this model ordinance simply establishes performance standards for erosion/sedimentation and runoff, and the land user/applicant is given almost unbridled discretion in developing a control plan to meet these standards. An exception was thought to be warranted for land disturbing activities occurring on less than a certain acreage, i.e., one or three are suggested with the adopting governmental unit to make the final selection. Thus, on these smaller land areas, the model does prescribe certain practices which are to be used to control both erosion/sedimentation and runoff. However, the applicant may opt to follow the typical plan development approach and develop his own control plan in lieu of instituting these specified control practices.

It is intended that any governmental body which adopts this model will also make contemporaneous amendments to both their building code and subdivision control ordinances prohibiting the issuance of a building permit and withholding plat approval until a permit (if required) is obtained under the provisions of this model. Clearly, it is intended that the typical subdivision of land and building of residences would require two permits under this ordinance (unless the subdivider is also the builder). First, a permit would be required for the land disturbing activity,(the subdivision of the land)and second, the building of the homes would generally also come under the permitting process (unless involving land of less than the minimum area as specified in the ordinance).

Section 1.0 INTRODUCTION

1.01 Authority

This ordinance is adopted under the authority granted by (for counties, section 92.09, for cities, section 62.11(5), and for villages, section 61.34(1)) Wis. Stats.

1.02 Title

This ordinance shall be known as, referred to, and may be cited as the ["EROSION AND STORMWATER RUNOFF CONTROL ORDINANCE FOR (GOVERNMENTAL UNIT)"] and hereinafter referred to as the ordinance.

1.03 Findings and Declaration of Policy

The (governing body) finds that urbanizing land uses have accelerated the process of soil erosion, runoff and sediment deposition in the waters of the (governmental unit). It is therefore, declared to be the policy of this ordinance to control and if possible, prevent soil erosion and minimize stormwater runoff increases and thereby to preserve the natural resources, control floods and prevent impairment of dams and reservoirs, protect the quality of public waters, preserve wildlife, protect the tax base, and protect and promote the health, safety and general welfare of the people of this (governmental unit).

1.04 Purpose and Intent

The purpose of this ordinance is to promote the public health, safety, prosperity, and general welfare of the citizens of this (governmental unit), and to conserve the soil, water and related resources and control erosion, runoff and sedimentation.

1.05 Applicability

[This ordinance applies to the use of land outside of incorporated cities and villages. It shall be effective in those towns where a majority of electors residing in the area affected and who vote in a referendum have approved this ordinance pursuant to Section 92.09, Wis. Stats..]

[This ordinance applies to the use of lands within the incorporated boundaries of (governmental unit) and the use of lands subject to extraterritorial review as provided by (citation for municipal ordinance governing extraterritorial review).]

1.06 Abrogation and Greater Restrictions

It is not intended by this ordinance 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 ordinance imposes greater restrictions, the provisions of this ordinance shall govern.

1.07 Interpretation

In their interpretation and application, the provisions of this ordinance shall be held to be the minimum requirements and shall be liberally construed in favor of the (governmental unit) and shall not be deemed a limitation or repeal of any other power granted by the Wisconsin Statutes.

1.08 Severability of Ordinance Provisions

If any section, provision or portion of this ordinance is adjudged unconstitutional or invalid by a court, the remainder of this ordinance shall not be affected thereby.

1.09 Effective Date

This ordinance shall become effective after adoption by the (governing body).

Section 2.0 DEFINITIONS

2.01 "Administrative Authority" means the governmental employee designated by the governing body to administer this ordinance, and includes any other governmental employees who are supervised by the administrator.

2.02 "Agricultural Lands" are the land used for the production of food and fiber, including but not limited to, general farming, livestock and poultry enterprises, grazing, nurseries, horticulture, viticulture, truck farming, forestry, sod production, cranberry production and wild crop harvesting and includes lands used for onsite structures necessary to carry out such activities.

[2.03 "Board of Adjustment" is the body created and appointed pursuant to Section 59.99, Wis. Stats. (for counties).]

[2.03 "Board of Appeals" is the body created and appointed pursuant to Section 62.23(7)(e), Wis. Stats. (for cities and villages).]

2.04 "Control Plan" (Erosion and Sediment Control Plan and/or Runoff Control Plan) is a written description approved by the (administrative authority), of methods for controlling sediment pollution from accelerated erosion on a development area and/or from erosion caused by accelerated runoff from a development area and controlling runoff.

2.05 "Cubic Yards" means the amount of material in excavation and/or fill measured by the method of "average end areas."

2.06 "Detention Storage" is the temporary detaining or storage of stormwater in reservoirs, on rooftops, in streets, parking lots or other areas under predetermined and controlled conditions, with the rate of discharge therefrom regulated by appropriately installed devices.

[2.07 "District" is the Dane County Soil and Water Conservation District.]

2.08 "Erosion" (Soil Erosion) is the detachment and movement of soil or rock fragments by water, wind, ice, or gravity.

2.09 "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 conditions resulting therefrom.

2.10 "Existing Grade" means the vertical location of the existing ground surface prior to excavation or filling.

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

2.12 "Grading" is 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.

2.13 "Governing Body" means the body of elected officials which governs the unit of government. This body will adopt the ordinance.

2.14 "Land Disturbing Activities or Uses" are any land changes which may result in soil erosion, sedimentation and/or the increase in runoff, including but not limited to tilling, removal of ground cover, grading, excavating, and filling of land, except that the term shall not include such minor land-disturbing activities as home gardens and repair and maintenance of private roads. Additionally, this term does not include agricultural land uses.

2.15 "Land Treatment Measures" are structural or vegetative practices, or combinations of both, used to control erosion and sediment production, including areas to be protected by fencing.

2.16 "Land Occupier or Occupier of Land" means any person, partnership, firm or corporation that has a fee simple interest in the land either as sole owner, as a tenant in common or a joint tenant or holds as a trustee, assignee, or holds as a land contract rendee.

2.17 "Land Users" are those who use land, individually or collectively as owners, operators, lessors, renters, occupiers who are providing a service that requires access or alterations of the land in order to perform the services, or by other arrangement which gives them the responsibility of private or public land use.

2.18 "One Hundred-Year Storms" are those rainstorms of varying durations and intensities expected to recur on the average of once every one hundred years.

2.19 "One Hundred-Year Storm Runoffs" are the stormwater runoffs from the one hundred-year storms.

2.20 "Parcel" is all contiguous lands under the ownership or control of a land occupier or land user.

2.21 "Peak Flow" is the maximum rate of flow of water at a given point in a channel, watercourse, or conduit resulting from a predetermined storm or flood.

2.22 "Permit" is the signed, written statement issued under this ordinance authorizing the applicant to engage in general land disturbing uses specified and for a specified period of time.

2.23 "Permittee" means any person to whom a permit is issued under this ordinance.

2.24 "Person" is any individual, corporation, partnership, joint venture, agency, unincorporated association, municipal corporation, county, or state agency within Wisconsin, the federal government, or any combination thereof.

2.25 "Public Lands" means all lands which are subject to regulation by the (governing body which adopts this ordinance); including, but not limited to: (1) all lands owned or controlled by the (adopting governmental unit), which are owned by another unit of government if that unit of government is acting in a proprietary rather than governmental function.

2.26 "Removal" means cutting vegetation to the ground or stumps, complete extraction, or killing by spraying.

2.27 "Runoff" is the portion of rainfall, melted snow or irrigation water that flows across the ground surface and eventually is returned to lakes or streams, creeks or other water courses.

2.28 "Sediment" is solid 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.

2.29 "Sedimentation" is the transportation and deposition of sediment that may ultimately degrade water quality by the presence of suspended solid particles, derived from soils by erosion or discharged into surface waters from other sources; or the deposition of water-borne sediments in stream channels, lakes, reservoirs, or on floodplains, usually because of a decrease in the velocity of the water.

2.30 "Soil Loss" is soil moved from a given site because of land disturbing activities or by the forces of erosion and redeposited at another site on land or in a body of water.

2.31 "Stop-Work Order" is a means of giving notice to the permittee that the (administrative authority) believes that the permittee has violated one or more provisions of this ordinance. Notice is given both by posting upon the lands where the disturbing activity occurs one or more copies of a poster so stating the violation and by mailing a copy of this poster by certified mail to the permittee at the address shown on the permit.

2.32 "Storm Frequency" is the average period of time during which a storm of a given duration and intensity can be expected to be equaled or exceeded.

2.33 "Storm Sewer" is a closed conduit for conducting collected stormwater.

2.34 "Stormwater Drainage Facility" is any element in a stormwater drainage system which is made or improved by man.

2.35 "Stormwater Drainage System" is all facilities used for conducting stormwater to, through or from a drainage area to the point of final outlet including, but not limited to, any of the following: conduits and appurtenant features, canals, channels, ditches, streams, culverts, streets and pumping stations.

2.36 "Stormwater Runoff" are the waters derived from rains falling within a tributary drainage basin, flowing over the surface of the ground or collected in channels, watercourses or conduits.

2.37 "Structural Measures" are works of improvement for land stabilization to prevent erosion, sediment or runoff which include, but are not limited to, gully control structures, grass waterways, riprap, detention basins, sediment basins, flood retention dams, diversions, lining channels with rock, concrete or other materials.

Section 3.0 LAND DISTURBING ACTIVITIES SUBJECT TO EROSION, SEDIMENT, ONSITE DETENTION AND RUNOFF CONTROL

3.01 General Requirement

Any landowner, land occupier or land user who undertakes, begins, commences or performs land disturbing activities; or who permits another person to do the same, on land subject to this section, shall be subject to the provisions of this ordinance.

3.02 Land Disturbing Activities Subject to Erosion and Sediment Control

Land disturbing activities on public lands as defined in Section 2.24, and on all private lands shall be subject to the erosion and sediment control provisions of this ordinance, if:

(1) An area of (4,000) square feet or greater will be disturbed by excavation, grading, filling, or other earth-moving activities, resulting in the loss or removal of protective ground cover or, vegetation or

(2) Excavation, fill, or any combination thereof, will exceed four hundred (400) cubic yards, or

(3) An area of (4,000) square feet or greater will be disturbed by removal or destruction of protective ground cover, vegetation, or

COMMENT: The governmental body adopting this ordinance is urged to make this ordinance applicable to all but the smallest land disturbing activities by selecting a small area figure. Four thousand square feet (4,000 ft.^{2}) is strongly suggested because it will more than likely include almost all single family residential construction while still exempting modifications and additions to homes as well as home gardening from coverage by this ordinance. There is little justification for adopting an ordinance which would attempt to regulate some single family residential construction while totally exempting other (smaller) construction. For this reason the 4,000 ft.^{2} figure is urged.

(4) Any public (federal, state or local) street, road or highway is to be constructed, enlarged, relocated or substantially reconstructed, or

(5) Any water course is to be changed, enlarged, or materials are removed from stream or lake beds, or

(6) Any proposed land use by a unit of government or by public or private utilities in which underground conduits, cables, piping, wiring, waterlines, sanitary sewers, storm sewers, etc., will be laid, repaired, replaced or enlarged, if such use involves more than (300) linear feet of trenching or earth disturbance, or

(7) Any subdivision of land as defined by (subdivision ordinance of the governmental unit adopting the ordinance) which requires plat approval or any certified survey.

3.03 Land Disturbing Activities Subject to Onsite Detention and Runoff Control

Land disturbing activities on public lands as defined in Section 2.24, and on all private lands shall be subject to the onsite detention and runoff control provisions of this ordinance, if:

(1) The land disturbing activity will be a residential development having a gross aggregated area of five (5) acres or more, or

(2) The land disturbing activity will be a residential development on less than five acres having fifty percent (50%) or more of the area as impervious surfaces including roads, buildings, parking facilities and other improvements, or

(3) The land disturbing activity will be a development, other than residential, having a gross aggregated area of three (3) acres or more, or

(4) In the opinion of the (administrative authority), the runoff from the land disturbing activity will create a hazard by exceeding the safe capacity of the receiving water body in the area; or will cause undue channel erosion or an undue increase in water pollution by increased scour and transport of particles; or will otherwise endanger the downstream property owners or their property. Safe capacity is defined as the rate of flow that can be handled without flooding.

3.04 Compliance With This Section

The owner, land occupier or land user shall be in compliance with this section if he follows the procedure of section 6.0 and receives from the (administrative authority) an approved control plan and a permit before commencement of any land disturbing activities on lands subject to control under this section.

Section 4.0 EROSION AND SEDIMENTATION CONTROL REGULATIONS FOR LANDS NOT OTHERWISE SUBJECT TO THIS ORDINANCE

Any landowner, land occupier or land user who permits excessive erosion to adjacent land, public streets or bodies of water from land not otherwise subject to this ordinance shall be deemed in violation of this ordinance and subject to the penalties provided in Section 9.0. Erosion is held to be excessive if, in the opinion of the (administrative authority), an unsafe condition results in the streets, if undue sedimentation of lakes and streams occurs or if the public health, safety or general welfare of the citizens of the (governmental unit) is harmed.

Section 5.0 STANDARDS AND CRITERIA

5.01 Effect of Compliance

Compliance with the standards and criteria of this section shall not bar a nuisance action or other civil action brought by any injured public or private party for damage to property upon which the erosion directly occurred or to property or other rights which were damaged by erosion, sedimentation or runoff.

COMMENT: This subsection seeks to point out that compliance with this ordinance does not act as a bar to legal action by a property owner whose property is damaged or by an individual whose rights are harmed by runoff, erosion or sediment resulting from a land disturbing activity. This subsection attempts to make it clear that even a property owner whose land was eroded as a result of the land occupier/user should not be barred from bringing an action against the land occupier.

Of course there would have to be an independent legal basis, i.e., nuisance, for the subsequent action because this subsection, itself, does not provide any such basis. Further, this subsection does not attempt to reverse or modify the holding of the Wisconsin Supreme Court in State v. Deetz, 66 Wis. 2d 1, which placed Wisconsin treatment of surface water (runoff) under the "reasonable use" rule.

5.02 Standard for Erosion and Sediment Control for Land Disturbing Activities

The (administrative authority) shall not approve plans nor issue permits required by this ordinance for land disturbing uses unless erosion and sedimentation during and after the land disturbance [will not exceed a predicted average annual soil loss accumulated (weekly), from the developing area which exceeds fifteen (15) tons per acre the first year commencing from the time of initial disturbance and five (5) tons per acre for any subsequent year that the disturbance continues and after the disturbance will not exceed one (1) ton per acre.] [will not exceed that which would have been eroded if the land had been left in its undisturbed state.] [are controlled in accordance with established specifications, including, but not limited to, Minimizing Erosion in Urbanizing Areas or other technical guidelines as developed by the Dane County Soil and Water Conservation District in cooperation with the U.S. Department of Agriculture, Soil Conservation Service.]

COMMENT: It is felt to be necessary that the adopting governmental unit include in the ordinance a specific standard instead of simply leaving the adequacy of the control of erosion and sedimentation exclusively within the discretion of the authority charged with evaluating the control plans. The governmental body must choose a standard for those land disturbing activities (non-agricultural and non-forestry) which require plan approval and a permit under this ordinance. Four alternative standards are suggested and each is discussed below.

First, the use of a given number of tons per acre as a standard is seen to be a very rational, equitable standard and one which should be rather easy to administer. Upon receipt of the proposed control plan, the authority charged with evaluating it would use the Universal Soil Loss Equation to determine what the soil loss would be if the proposed control plan were implemented to control erosion and sedimentation resulting from the land disturbing activity. He would then simply have to compare the soil loss with the tons/acre standard and approve or disapprove the plan. The Universal Soil Loss Equation has been successfully adapted and used for urbanizing land disturbing activities.

The second and third standards suggested are very similar and differ only by the amount of increase in erosion/sedimentation which they would permit. The former standard would allow no increase in the erosion/sedimentation over that of the pre-existing values, while the later standard would permit an increase up to a certain percentage of the pre-existing situation. Adoption of either of these standards is not encouraged since administratively they require the authority who evaluates the plans to perform two calculations of soil loss: (1) what was the pre-existing loss, and (2) what will be the loss if the proposed control plan is used to control soil loss resulting from the land disturbing activity. Since the administrative burden of these standards is sufficient to discourage their use, it is not necessary to even attempt to determine whether limiting soil loss to pre-existing conditions is technologically feasible.

The fourth suggestion is an illusory standard and is only included because of its widespread use by other jurisdictions. The publication cited appears to contain only technical standards and design criteria as they pertain to specific control measures and practices. These should not be confused with the overall performance standards similar to the previous standards. The unit of government should not adopt technical standards in lieu of a performance standard. A control plan may consist of several specific control measures which should of course follow good design criteria (comply with technical standards) but the control plan should have an expressly stated goal or standard (performance) upon which the applicant should base the design of the overall control plan.

In conclusion the staggered tons per acre performance standard is strongly recommended to any unit of government which is considering the adoption of this ordinance.

5.03 Standards for Onsite Detention and Runoff Control for Land Disturbing Activities

Land disturbing activities subject to onsite detention and runoff control regulation under this ordinance shall not exceed the more stringent of the two following standards:

(1) The peak rate of runoff after the proposed activities should not be greater than the peak rate which would have resulted from the same storm event occurring over the site of the proposed activity with the land in its natural undeveloped state, or

COMMENT: This standard as worded could be somewhat inequitable to an owner of already developed land who wanted to redevelop or change the land use. In such instances he would be required to limit peak runoff from new land use to that of the land in its undeveloped state; while if he did not change the use at all the runoff rate would be unregulated. This result is not seen as performing injustice to any great degree, instead runoff rate control is simply the price everyone must pay if he desires to undertake a regulated land disturbing activity.

(2) The peak runoff rate shall be limited to a rate prorated on the basis of the safe capacity of the existing or proposed stormwater drainage facilities.

Further, land disturbing activities subject to onsite detention and runoff control regulation by this ordinance shall provide for detention of the increased stormwater runoff which would result from the proposed land disturbing activity. Storage shall be sufficient to store this increased runoff for a hundred year rainfall of any duration. Stormwater detention may be provided by the landowner/land user onsite or adjacent to the site or may be provided by the (governmental unit) with the landowner/user paying an amount of money sufficient to cover the prorated costs for the offsite storage of this increased runoff. The amount is to be determined by the (administrative authority).

5.04 Standard for Tracking

The (administrative authority) shall not approve any plan nor issue a permit for any land disturbing activity under this ordinance unless he is satisfied that there will be adequate provisions to prevent the tracking or dropping of dirt or other materials from the site onto any public or private street.

5.05 Design Criteria, Engineering Standards and General Principles

The ordinance does not require the use of any particular type of structural or nonstructural measures to meet the standards of Sections 5.02 and 5.03. The applicant for a permit may employ any structural or nonstructural measures which he believes to be necessary to achieve all applicable standards set out in this ordinance. However, the (administrative authority) is required to evaluate these measures to determine that they follow currently accepted design criteria and engineering standards.

The following general principles shall be used by the (administrative authority) when evaluating control plans and granting permits under this ordinance:

(1) The smallest practical area of land shall be exposed at any given time during development.

(2) Such minimum area exposure shall be kept to as short a duration of time as is practicable.

(3) If at all practicable, temporary vegetation, mulching or other cover shall be used to protect areas exposed during development.

(4) Provision shall be made to effectively accommodate the increased runoff caused by changed soil and surface conditions during and after development according to the standards contained in this ordinance.

(5) Permanent, final plant covering or structures shall be installed as soon as possible.

(6) The plan of development shall relate to the topography and soils of the site so that the lowest potential for erosion is created.

(7) Natural plant covering shall be retained and protected and shall be deemed a dominating factor in developing the site.

COMMENT: It is believed that better control of runoff, erosion and sediment will be obtained if the person proposing the land disturbing activity is not required to use specific control measures and practices. Thus unless the governmental unit is absolutely sure that under no circumstances will they approve, for example slopes in excess of one foot of elevation to two lateral feet, should specific design criteria be included.

Section 6.0 APPLICATION AND ISSUANCE OF PERMITS

6.01 Permit Required; Procedure and Fee

(a) Unless specifically excluded by this ordinance, no land occupier or land user may undertake a land disturbing activity subject to this ordinance without receiving a permit from the (administrative authority) prior to commencing the proposed activity. Each land occupier or land user desiring to undertake a regulated activity subject to this ordinance shall submit to the (administrative authority) an application for a permit together with the appropriate fee required by the fee schedule as adopted by the (governing body).

(Note: the fee schedule can be incorporated by reference or included here directly in the ordinance.)

(b) Exceptions to this requirement are as follows:

(1) The owner and occupier of public lands are exempt from payment of any permit fees;

(2) For its convenience, the (administrative authority) may enter into an agreement with public or private utilities and governmental units to waive the need for a permit for each individual land disturbing activity, if the utility or governmental unit will agree to adopt and follow a procedure for each land disturbing activity which meets all applicable standards contained in this ordinance. Further, the agreement shall provide that in the event that a utility or governmental unit activity fails to meet the standard, the agreement shall terminate and the utility or governmental unit shall be subject to the penalties of this ordinance.

OPTIONAL (3) [The permit fee required by this ordinance is waived if the applicant applies for a building permit under Section (_____) of the (building code ordinance) and submits the appropriate fee for the building permit.]

(Note: the governing body may wish to extend this fee waiver to include other situations such as subdivisions where the land occupier/user/owner has to pay a fee for plat review.)

OPTIONAL (4) [Land disturbing activities consisting of the construction of individual single-family residences on less than (_____) acres are exempted from the permit requirement as specified in this section.]

COMMENT: Recall that Section 3.0 already exempts all land disturbing activities occurring on less than (4,000) ft.² from this ordinance. It is felt to be unwise to specially exempt single family home construction from the permit required by this ordinance. There is little justification for viewing homes on certain size lots as a separate class of land disturbing activity, since erosion, sedimentation and runoff are equally a problem here as during other activities. In addition, there is even less justification for exempting them from the provisions of this ordinance despite arguments to the contrary which cite high costs to that homeowner and lack of adequately demonstrated control practices and measures as reasons for exemption. However, to avoid political pressure against the adoption of this ordinance there might be those who would urge this exemption. There is no basis for it because it is felt that there are adequate low cost, technical control practices and measures. Additionally, if it is felt to be too burdensome to require a single family home builder to develop a control plan which meets the standards set out in Section 5.0, then the governing body should adopt Section 6.04 and make this planning service available to the homeowner/builder at a nominal cost.

ALTERNATE OPTION (4) [Land disturbing activities consisting of the construction of an individual single-family residence on less than (1 acre) are not exempt from the permit as specified in this section; however, the cost of any control measures or practices required as a condition for this permit may not exceed ($1,000 of the proposed cost of the construction of the residence exclusive of any sodding which would have reasonably been assumed to be installed anyway); ((five) % of the construction costs of the residence); or ((five) % of the construction cost if the slope at the construction site is less than 6% and (ten) % if the slope is greater than 6%)].

COMMENT: Arguments similar to those set out in the preceding comment are equally applicable here. Again, it is felt to be unwise to provide this form of a cost ceiling special exception for what is certainly not a sufficiently unique activity to be called a separate class of land disturbing activities (single-family residential home building). That is erosion, sedimentation and runoff resulting from construction of a structure which is to ultimately be used as a single-family home is not significantly different from that resulting from construction of a similar (in area, construction technique, etc.) structure which is ultimately to be used as a something other than a residence. It would appear that any such attempt to create an arbitrary class distinction might be subject to an equal protection or other (due process-arbitrary) constitutionally based attack. Such an attack would quite possibly be successful.

However, if it becomes politically expedient to include some form of single-family residential exemption, this cost ceiling exemption is favored over a total outright exemption of all such residential activity. The exemption sets maximum limits upon the costs of control techniques and practices to which the homeowner/builder will be subjected. These limits could be set as follows: (1) The cost of controls may not exceed a fixed dollar amount, i.e., $1,000 exclusive of any sodding or landscaping which would have been reasonable assumed to have been installed anyway; (2) The costs may not exceed a set percentage of the construction costs of the residence (documented perhaps by the building permit application); (3) costs may not exceed a sliding percentage of the construction costs of the residence which is tied to an erosion and runoff hazard parameter such as slope.

The arguments favoring such a ceiling type exception are the same as set out in the previous option exception: (1) The costs are prohibitively expensive; (2) The area is often inadequate to permit use of typical control devices, i.e., detention ponds. This alternative option solves the first objection by imposing a cost ceiling. The second objection about control devices/techniques on limited area is a false issue since adequate devices and controls do exist for small areas. Additionally, the governing body may want to only make this cost ceiling available to homes on less than (_____) ft.^{2} the reasoning being that larger areas might permit the use of less costly controls.

6.02 Control Plan Required

(a) Unless specifically exempted by this ordinance, every applicant for a permit under Section 6.01 of this ordinance shall develop or have developed for him and shall submit a plan to control erosion, sedimentation and runoff which would result from the proposed activity.

[(b) Permit applicants are exempted from the requirement of the development and submission of a control plan if:

(1) The permit applicant elects to have the (administrative authority) prepare the control plan under the procedure of Section 6.04; or

(2) The permit applicant proposes a land disturbing activity regulated by this ordinance on less than (three) acres of land, and he agrees to install all the control devices and to implement all the control techniques which are set out as follows:

(to be developed)

If the applicant elects to follow either of these two exceptions, the plan as specified in these exceptions shall be deemed to be the control plan and further this control plan shall be deemed to adequately meet all applicable standards in Section 5.0; and the (administrative authority) shall issue the permit according to the procedure of Section 6.05.]

COMMENT: These exceptions are strictly optional and each unit of government considering the adoption of this ordinance must determine whether it wants to provide an alternative(s) to the requirement that each permit applicant must develop (or have developed for him) and submit a plan to control soil erosion, sedimentation and runoff.

The first exception is adequately explained by the COMMENT following Section 6.04. Suffice it to say that if at all possible, governmental units should seriously consider supplying adequate number of staff to permit them to prepare control plans for those applicants who desire such a service. Offering this service is a big step in ameliorating any actual hardship which some applicants (typically homeowners/builders) might have in developing their own control plans.

The second exception requires more explanation. It seeks to aid applicants who desire to undertake regulated activities upon small land areas. The adopting unit of government might select one to three acres as the upper limit of the exception. The reasoning behind this exception assumes that there are a limited number of control devices and techniques which could be used on small land areas. Thus, for land disturbing activities occurring on land areas ranging from the minimum land area covered by this ordinance to the chosen maximum (i.e., 1 or 3 acres), applicants could be exempted from the requirement of developing a control plan. Instead they would simply agree to install all appropriate control devices and follow all appropriate control techniques. Appropriate devices and techniques would have to be developed and preferably included in the ordinance when adopted by the individual governmental unit. While appropriate devices and techniques are known to exist, there has not been sufficient time available to include a written description of them and their proper application here in this model ordinance. As an alternative, these control devices and techniques would not have to be directly included in the ordinance. Instead they could be incorporated into the ordinance by reference to a document or another action by the governing body, i.e., adoption of a resolution which listed the appropriate devices and techniques.

In conclusion, it must be reiterated that the governing body adopting this ordinance must decide whether it wants to provide any exceptions to development of a control plan.

6.03 Contents of the Control Plan

The control plan required by Section 6.02 shall contain any such information which the (administrative authority) may need to determine soil erosion, sedimentation and runoff control. The (administrative authority) may require the following, as well as any other information which, in (his) judgment, is needed to evaluate the control plan:

(1) A map of the site location at a scale of one (1) inch equals _____ feet showing the location of the predominant soil types and the existing vegetative cover.

(2) A topographic map of the site location, including enough of the contiguous properties to show existing drainage patterns and water courses that may affect or be affected by the proposed development of the site, and also show the site boundaries. Scale of one (1) inch equals _____ feet is to be used.

(3) A plan of the site at a scale of one (1) inch equals _____ feet showing:

(Note: Map scales for Sections 6.03(1), (2) and (3) are to be determined by the unit of government adopting this ordinance.)

(a) Name, address and telephone number of the land occupier, along with the name and telephone number of the party responsible for maintaining erosion control structures.

(b) Limits of natural floodplain(s), based on a 100-year flood, if any.

(c) A timing schedule indicating the anticipated starting and completion dates of the development sequence and the time of exposure of each area of soil disturbing activity prior to the completion of effective measures for erosion and sediment control.

(d) Proposed topography of the site location with a maximum of (5) foot contour intervals showing:

(aa) Location of proposed land disturbing activity, proposed disturbance of protective cover, any proposed additional structure on the site, areas to be seeded or mulched, areas to be vegetatively stabilized and areas to be left undisturbed.

(bb) Elevations, dimensions, locations of all proposed soil disturbing activities including where topsoil will be stockpiled, so it will not contribute to erosion and sedimentation.

(cc) The finished grade, stated in feet horizontal to feet vertical, of cut and fill slopes.

(dd) Kinds of utilities and proposed areas of installation.

(ee) Proposed paved and covered areas in square feet or to scale on a plan map.

(ff) Makeup of proposed surface soil (upper six inches) on areas not covered by buildings, structures, or pavement. Description shall be in such terms as: original surface soil, subsoil, sandy, heavy clay, stony, etc.

(gg) Proposed kind of cover on areas not covered by buildings, structures, or pavement. Description shall be in such terms as: lawn, turfgrass, shrubbery, trees, forest cover, riprap, mulch, etc.

COMMENT: This lists a wider array of information than will be required in the typical case.

(e) Plans and hydraulic computations for all temporary or permanent structural or nonstructural measures or other protective devices to be constructed in connection with, or as a part of, the proposed work showing:

(aa) Estimated surface runoff of the area based upon[two (2), five (5), ten (10), 25, 50 and 100]year frequency storm events. Peak flows based upon synthetic storm frequency events shall be required in the event that storm runoff or stream flow data is not available in the area.

(bb) Estimated rate of discharge in cubic feet per second at the point of discharge from the site location based upon two[(2), five (5), ten (10), 25, 50 and 100 year]frequency storm events.

(cc) The storm event frequency discharge rate in cubic feet per second upon which the design of plans for the site location is based.

(dd) Proposed provisions to carry runoff to the nearest adequate outlet, such as a curbed street, storm drain or natural drainage way.

(ee) Design computations and applicable assumptions for all structural measures for erosion and sediment pollution control and water management. Volume and velocity of flow must be given for all surface water conveyance measures and pipe outfalls.

(ff) Estimate of cost of erosion and sediment control and water management structures and features.

(gg) Provisions for maintenance of control facilities including easements to insure short as well as long-term erosion and sediment pollution control and stormwater management.

(hh) Seeding mixtures and rates, lime and fertilizer application rates, and kind and quantity of mulching for both temporary and permanent vegetative control measures.

(ii) Methods to prevent tracking of soil off the site of the land disturbing activity.

6.04 Plans Prepared by the (administrative authority)

As an alternative to submitting the control plan as specified in subsection 6.02, the (administrative authority), may, if time permits, prepare a soil erosion, sedimentation and runoff control plan for the applicant's proposed land disturbing activity, adequate to meet the appropriate standards of Section 5.0. The (administrative authority) may require the applicant to submit any data or information which is necessary to prepare such a plan. Also, the applicant must submit the permit application and appropriate application fee as specified in subsection 6.01.

In addition to the permit application fee, the applicant must pay the plan preparation fee as specified in the schedule as adopted by the (governing body).

(Note: This fee schedule may be included here in this subsection or may be incorporated by reference by the governing body.)

COMMENT: This plan preparation function is optional and the decision to offer this service will depend upon the availability of staff time. Any hardship that such a requirement of developing and submitting a control plan might impose could be ameliorated by setting a small fee for the preparation of erosion, sediment and runoff control plans. For example, planning fees for single-family residences on less than (4,000 ft.^{2}) could be set at a nominal ($10), while activities on larger and nonresidential land disturbing activities could be set as a function of area, cost of proposed construction (similar to some building permit fees) and hazard parameters such as soil type, slope, etc.

6.05 Review of Application

The (administrative authority) shall receive and review all permit applications which are accompanied by the control plan, if required by Section 6.02, and the appropriate fee. The (administrative authority) shall determine if measures included in the plan to control erosion, sedimentation and runoff during and after the land disturbing activities are adequate to meet all the applicable standards as set out in Section 5.0. The (administrative authority) shall within [15][30] days from the receipt of the control plan or the completed permit application and the appropriate fee, inform the applicant in writing whether he approves, disapproves or modifies the control plan. If the (administrative authority) approves the control plan he shall issue the permit. If additional information is required he shall so notify the applicant and the (administrative authority) has [15][30] days from the receipt of the additional information in which to approve, disapprove or modify the plan. Failure to render a written decision within [15][30] days shall be deemed to mean approval of the plan, as submitted, and the applicant may proceed as if a permit had been issued.

In the event that the plan is disapproved, the applicant may resubmit a new control plan or may appeal the (administrative authority's) decision as provided in Section 10.0 of this ordinance. If the control plan is modified by the (administrative authority), the applicant [must modify his permit application and control plan accordingly and reapply for the permit; however, no additional permit fee is required.] [will be deemed to have modified his permit application and control plan to conform to the modifications if the applicant commences any portion of the proposed land disturbing activity]; or may appeal the decision as provided in Section 10.0 of this ordinance.

COMMENT: The first of these two options is the more preferred despite the fact that the amount of permit processing would be increased. The reapplication method is much tighter and clearly makes the applicant aware of all modifications to his proposed plan.

6.06 Permit; Conditions

All permits issued under this ordinance shall be issued subject to the following conditions and requirements, and any permittee who begins to perform any land disturbing activity authorized by his permit shall be deemed to have accepted all of these conditions:

(1) That all land disturbances, construction and development will be done pursuant to the control plan as approved by the (administrative authority).

(2) That the permittee shall give (2 working days) notice to the (administrative authority) in advance of the start of any land disturbing activity.

(Note: It is recommended that this notice provision be included in the permitting process even if the administrative authority will not have sufficient staff to inspect all activities);

(3) That the permittee shall file a notice of completion of land disturbing activities and/or the completion of installation of all onsite detention facilities within 10 days after completion;

(4) That approval in writing must be obtained from the (administrative authority) prior to any modifications to the approved control plan;

(5) That the permittee will be responsible for maintaining all roads, road right-of-ways, streets, runoff and drainage facilities and drainage ways as specified in the approved plan until they are accepted and become the responsibility of a governmental entity;

COMMENT: There are several other alternative methods for distributing the responsibility for maintenance of onsite runoff control facilities and drainage facilities.

(6) That the permittee will be responsible for repairing any damage at his expense to all adjoining surfaces and drainageways caused by runoff and/or sedimentation resulting from activities which are not in compliance with the approved plan;

COMMENT: This is a provision similar to the one made in Section 5.0 regarding the effect of compliance with the standards enumerated in that section. The above provision, however deals with the additional possibility - actions which do not meet the standard - and attempts to impose liability directly upon those permittees who fail to meet the standard.

(7) That the permittee must provide and install at his expense all drainage, runoff control and erosion control improvements as required by this ordinance and the approved control plan, and also must bear his proportionate share of the total cost of off-site improvements to drainageways based upon the existing developed drainage area or planned development of the drainage area, as determined by the (administrative authority);

OPTIONAL (8) [That no work will be done on the site during any period of time that the average hourly wind velocity at (location of wind velocity measurements) exceeds twenty (20) miles per hour, unless provision has been made to eliminate dust and blowing dirt.]

COMMENT: Wind erosion is recognized to be a possible source of sediment and this clause is currently included in the Middleton land grading permit ordinance.

OPTIONAL (9) [That no portion of the land which undergoes the land disturbing activity will be allowed to remain uncovered for greater than (two) weeks after notice is given to the (administrative authority) that the land disturbing activity is completed.

COMMENT: Clearly, the control plan itself must contain a schedule for seeding and/or mulching or other covering technique. This requirement would be included in the ordinance simply to show that (two) weeks is the maximum period of time which land may remain uncovered. Middleton has included in its current ordinance an additional factor which should be considered: The maximum time period is deferred until the completion of any construction for which a building permit has been issued.

(10) That the permittee agrees to permit the (administrative authority) to enter onto the land regulated under this ordinance for the purpose of inspecting for compliance with the approved control plan and permit;

(11) That the permittee authorizes the (administrative authority or (his) agent) to perform any work or operations necessary to bring the condition of the lands into conformity with the approved control plan or plan as modified by the (administrative authority) and further consents to the (governing body) placing the total of the costs and expenses of such work and operations upon the tax roll as a special tax against the property.

6.07 Permit Duration

Permits issued under this ordinance shall be valid for a period of (_____) month(s) from the date of issuance by the (administrative authority), and all work must be completed prior to the expiration date of the permit. However, the (administrative authority) is authorized to extend the expiration date of the permit if he finds that such an extension will not cause an increase in erosion, sedimentation or runoff. The (administrative authority) is further authorized to modify the plans if necessary to prevent any increase in sedimentation, erosion or runoff resulting from any extension.

Section 7.0 TIME FOR COMPLIANCE

Land disturbing activities commenced after the effective date of this ordinance shall be in compliance with all provisions of the ordinance.

Section 8.0 ADMINISTRATION

8.01 Delegation of Authority

The (governing body) shall designate the (administrative authority) to administer and enforce the provisions of this ordinance. The (administrative authority) may appoint assistants to aid in the performance of his duties and may seek the technical advice of the (District) as to the adequacy of any proposed plan and permit application submitted to him.

8.02 Administrative Duties

In the administration and enforcement of this ordinance, the (administrative authority) shall perform the following duties:

(1) Keep an accurate record of all plan data received, plans approved, permits issued, inspections made and other official actions.

[(2) Prepare plans for erosion, sediment and runoff control when requested to do so by the permit applicant pursuant to Section 6.03, but only after the appropriate fee is received.]

(3) Review all plans and permit applications received when accompanied with the necessary information and the appropriate fee and issue the permits required by Section 6.01 of this ordinance in accordance with the procedure as set out in this ordinance, but only when the erosion, sedimentation and runoff will be controlled to meet the standards of Section 5.0.

(4) Investigate all complaints made to the application of this ordinance.

(5) Revoke any permit granted under this ordinance if he finds that the holder of the permit has misrepresented any material fact in his permit application or plan; or has failed to comply with the plan as originally approved or as modified in writing subsequently by the (administrative authority); or has violated any of the other conditions of the permit as issued to the applicant.

8.03 Inspection Authority

The (administrative authority) is authorized to enter upon any public or private lands affected by this ordinance to inspect the land prior to permit issuance for the purpose of determining whether to approve the plan and after permit issuance to determine compliance with this ordinance. If permission cannot be received from the land occupier or user, entry by the (administrative authority) shall be according to Sections 66.122 and 66.123 Wis. Stats.

8.04 Enforcement Authority

The (administrative authority) is authorized to post a stop work order upon land which has had a permit revoked or to post a stop work order upon land which is currently undergoing any land disturbing activity in violation of this ordinance. The (administrative

authority) shall supply a copy of each stop work order to the legal counsel for the (unit of government). In lieu of the stop work order, the (administrative authority) may issue a written cease and desist order to any land occupier or land user whose activity is in violation of this ordinance. These orders shall specify that the activity must be ceased or brought into compliance with the ordinance within (____) days. Any revocation, stop work order or cease and desist order shall remain in effect unless retracted by the [board of appeals] [board of adjustment], the (administrative authority) or by a court of general jurisdiction; or until the land disturbing activity is brought into compliance with the ordinance. The (administrative authority) is authorized to refer any violation of this ordinance or of a stop work or cease and desist order issued pursuant to this ordinance to the [city attorney] [village attorney] [district attorney] [corporation counsel] for the commencement of further legal proceedings.

Section 9.0 VIOLATIONS

9.01 Penalties

Any person, firm, company, or corporation, either owner or occupant 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 the sum of ($10) nor more than the sum of ($200) and costs of prosecution for each violation. Each day that a violation exists or continues shall constitute a separate offense.

9.02 Enforcement by Injunction

Compliance with the provisions of this ordinance may also be enforced by injunctional order at the suit of the (unit of government). It shall not be necessary to prosecute for forfeiture before resorting to injunctional proceedings.

[9.03 Performance of Work by the (administrative authority)

Where the (administrative authority) determines that the holder of a permit issued pursuant to this ordinance has failed to make any improvements or follow practices as approved in the plan; or has failed to comply with the time schedule as included in the plan, the (administrative authority or a party designated by him) may enter upon the land and perform the work or other operations necessary to bring the condition of said lands into conformity with the requirements of the approved

plan. The (administrative authority) shall keep a detailed accounting of the costs and expenses of performing this work and these costs and expenses shall be entered on the tax roll as a special tax against the property and collected with any other taxes levied thereon for the year in which the work is completed.]

COMMENT: This provision should be found to be valid even though cities and villages lack direct statutory authority to perform this work and add the costs to the tax rolls as a special tax. Clearly, the soil and water conservation districts under Chapter 92, Wis. Stats. have such authority. The cities and villages would find their authority in the fact that the permittee agreed to this remedy as one of the conditions set out on his permit as described in Section 6.06.

[9.03 Performance of Work by the (administrative authority)

(1) Where the (administrative authority) finds that any of the provisions of this ordinance are not being observed on particular lands, and that such non-observance tends to increase erosion, runoff and sedimentation on such lands or is interfering with the prevention or control of erosion, runoff and sedimentation on other lands within the jurisdiction of the (unit of government) the (administrative authority) is hereby authorized to require the land occupier to perform the work or avoidances within a reasonable time and to order that if the land occupier fails so to perform, the (administrative authority or his designated representative) may go on the land, perform the work or other operations or otherwise bring the condition of said lands into conformity with the requirements of this ordinance, and recover the costs and expenses thereof, with interest at the rate authorized by statute from the land occupier.

(2) If the land occupier fails to perform the work, the (administrative authority or his representative) is also hereby authorized to perform the necessary work and shall submit a bill to the land occupier for the amount of the costs and expenses plus interest. In the event that the land occupier fails to pay the amount due, it shall be entered by the clerk upon the tax rolls and collected as a special tax upon the property.

COMMENT: This alternate section is much broader in scope since it seeks to authorize the (administrative authority) to enter onto and perform work on any land in the jurisdiction of the governing body which is causing an increase in erosion, sedimentation or runoff. Thus, this alternative section would extend the authorization from simply those lands which are not in compliance with plans and permits to cover all lands upon which there is an increase in erosion, sedimentation, or runoff. While it might be possible for soil and water conservation districts under Chapter 92, Wis. Stats., to find the requisite authority, it is not known whether cities and villages could so broaden the scope of lands subject to work being performed by their administrative authorities.

Section 10.0 APPEALS

10.01 Authority

The (governmental unit) shall appoint the [board of adjustments] [board of appeals] created pursuant to section (_____) (of the governmental unit's zoning ordinances)pursuant to section [59.99 (for the county)], [162.23(7)(e) (for cities and villages)] Wis. Stats. to:

(1) Hear and decide appeals where it is alleged that there is error in any order, requirement, decision or determination made by the (administrative authority) in administering this ordinance.

(2) Authorize upon appeal in specific cases such variances from the terms of this ordinance as will not be contrary to the public interest, where owing to special conditions a literal enforcement of the provisions of this ordinance will result in unnecessary hardship, so that the spirit of this ordinance shall be observed, public safety and welfare secured, and substantial justice done.

10.02 Procedure

The rules, procedures, duties and powers of the (board of adjustment or board of appeals) shall apply to this ordinance.

10.03 Who May Appeal

Appeals may be taken by any person aggrieved or by any officer, department, board or bureau of the (governing body) affected by the order, requirement, decision or determination made by the (administrative authority). For the purpose of this ordinance, aggrieved person shall include applicants and property owners who own land which is subject to the ordinance.

Appendix F: Water Quality Monitoring

Water quality and flow information has been collected at four stations on Pheasant Branch Creek as well as one station each on Sixmile, Spring Harbor, and Willow Creeks. The physical and chemical data, collected during both runoff events and baseflow periods, since 1975 for some stations, provide a sufficient baseline of water quality conditions, especially sediment and phosphorus loading to Lake Mendota. In addition, biotic and bacteriological data have been collected periodically and Lake Mendota is seasonally sampled for various physical, chemical and biological parameters.

The monitoring activities were primarily funded by county, city, and some federal funds through 1981. However, county funding has been eliminated for 1982 and possibly subsequent years. Also, no state funding is specifically provided for monitoring through the Wisconsin Nonpoint Source Water Pollution Abatement Program.

Monitoring in 1982 will be limited to three stations. One station is on Pheasant Branch and is supported by the City of Middleton in cooperation with USGS. The other two stations are on Willow Creek and Spring Harbor storm sewers. They are supported by the city of Madison in cooperation with USGS. Some limited monitoring of other stations, on Pheasant Branch, is being conducted to complete special studies which are not funded as part of the priority watershed project.

Monitoring covering both the implementation and post-implementation phases of the project would be desirable to document the reduction in sediment reaching Lake Mendota. This monitoring should include continuous measurement of flow and collection of water quality samples during both runoff events and baseflow periods. It is anticipated that if funding for such monitoring becomes available in the future, the number of monitoring stations will have to be reduced from those operated during the last five years.

Two of the four stations on Pheasant Branch Creek provide coverage of most of the subwatershed's land area, including inputs from both the south and north forks. These stations, located on the main stem of Pheasant Branch Creek at Highway 12 and at Century Avenue, differ primarily with respect to the amount of urban area which is monitored. The Century Avenue location also reflectis the erosion of sandy, unstable stream banks which is occurring within the City of Middleton. The Highway 12 station has a slightly longer period of record. Therefore, one of these two locations should be continued to monitor the overall effectiveness of the urban and rural practices for the Pheasant Branch Creek subwatershed. The choice between locations is primarily a matter of local concern. If the parties involved in sponsoring monitoring on Pheasant Branch Creek wish to support activities at a second location, support should be provided for monitoring flow and sediment concentrations at the Highway 14 station on the South Fork. As a supplemental location, this station is most closely aligned with the recommended program of improvements for urban nonpoint source control in the South Fork Pheasant Branch subwatershed.

The Sixmile Creek subwatershed has been monitored at one location approximately one mile south of the Village of Waunakee. Although Waunakee Marsh retains much of the sediment and phosphorus entering the marsh, the drainage area of the Sixmile Creek subwatershed is large and carries a substantial amount of pollutants to Lake Mendota. Therefore, continued monitoring on Sixmile Creek is important as well to document project effectiveness.

The Spring Harbor and Willow Creek subwatersheds are each monitored near their discharge points of their respective storm sewer systems to Lake Mendota. A special daily sediment loading program has been in operation at Willow Creek. For priority watershed monitoring, the Spring Harbor station should receive priority over Willow Creek. The City of Madison has substantial interest in Spring Harbor due to the significant erosion problem in the Owen Park conservancy and the resultant sedimentation in Spring Harbor. The currently recommended practices for the Willow Creek subwatershed would not be expected to have a great impact upon the discharge, although several recommended assessments may result in implementation of some significant practices.

The costs for monitoring, including sample analysis and interpretation are about $16,000 per year per station. The estimated total cost for maintaining two stations for six out of the next ten years is a minimum of $192,000. Similarly, the estimated total cost for maintaining four stations is a minimum of $384,000.

In conclusion, additional funding is needed to continue even a reduced-intensity monitoring strategy. The Department of Natural Resources and the Dane County Regional Planning Commission will seek supplemental funding for carrying out monitoring activities in the Sixmile-Pheasant Branch Watershed.

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