CHAPTER SEVEN
Project Tracking

Introduction

Project evaluation has three components: evaluation of project administration, evaluation of reduction in pollutant loading and evaluation of changes in surface waters. This chapter briefly summarizes how progress will be measured in carrying out the required administrative activities, and in reducing nonpoint source pollutant loads to surface waters. The surface water evaluation monitoring planned for the project area are explained in Chapter 8.

This chapter is divided into four sections:

1. Rural administrative review
2. Rural pollutant load reduction review
3. Urban administrative review
4. Urban pollutant load reduction review

Rural Administrative Review

Evaluating progress in project administration and in reducing pollutant loads will be the responsibility of the Ozaukee and Washington County Land Conservation Departments (LCDs). Progress reports will be submitted on a regular basis to DNR and DATCP.

The administrative review will focus on indicators of accomplishment, financial expenditures made through the project, and staff time spent on project activities.

Accomplishment Reporting

The Computer Assisted Management and Planning System (CAMPS) will be used by county LCD staff to meet reporting requirements.

Each county will provide the following data quarterly to DNR and DATCP:

1. Status of landowner contacts

2. Completed information and education activities
3. Number of farm conservation plans prepared for the project
4. Number of cost-share agreements signed
5. Number of farm conservation plan and cost-share agreement status reviews completed
6. Number of farms and acres of cropland checked for proper maintenance of best management practices

In addition, county representatives will meet with DNR and DATCP staff annually to review progress and identify workplan objectives for the following year.

Financial Expenditures

Each county will provide the following data quarterly to DNR and DATCP:

1. Money encumbered in cost-share agreements
2. Number of landowner reimbursement payments made for installation of best management practices (BMPs) and amount of money paid
3. Staff travel expenditures
4. Information and education expenditures
5. Expenditures for equipment, materials and supplies
6. Expenditures for professional services and staff support costs
7. Total project expenditures for LCD staff

Each county will provide the following information annually:

1. Staff training expenditures
2. Interest money earned and expended
3. Total county LCD budget and expenditures on the project

Time Spent on Project Activities

Each county will provide time summaries quarterly to DNR and DATCP for the following activities:

1. Project and fiscal management
2. Clerical assistance
3. Pre-design and conservation planning activities
4. Technical assistance (practice design, installation, cost-share agreement status review and compliance monitoring)
5. Educational activities
6. Training activities
7. Leave time

Rural Pollution Load Reduction

The purpose of the second evaluation component, pollution load reduction, is to calculate reductions in the amount of key pollutants as a result of installing best management practices. Four sources have been identified for estimating changes in pollution loads reaching surface waters: streambank erosion; upland sediment; runoff from barnyards; and fields spread with manure.

Streambanks

Each county will calculate changes in streambank sediment in terms of tons of sediment and length of eroding or trampled sites. A tally will be kept of landowners contacted, the amount of streambank sediment being generated at the time of contact, and changes in erosion levels estimated after installing best management practices. This information will be summarized and submitted to the DNR annually.

Upland Sediment Sources

Each county will estimate reductions in sediment delivery due to changes in cropping practices, and submit a summary annually to the DNR. Periodically, the DNR will calculate changes using the WIN model.

Barnyard Runoff

Each county will use the "Barny Model" to estimate phosphorus reductions due to installation of barnyard control practices. This information will be summarized annually to DNR through CAMPS.

Manure Spreading

The county will update the inventory to identify the actual number of critical acres that each livestock operator spreads annually. The county will identify the number of critical acres where winterspreading will no longer occur as a result of implementing management practices. This information will be submitted to the DNR annually.

Urban Administrative Review

Accomplishment Reporting

The DNR and local units of government will jointly conduct an evaluation of the urban program components. Local units of government will report annually to the DNR on progress for "core" program activities. Reports will cover:

1. Scheduled information and education activities
2. Completion of construction site erosion control ordinance modification or adoption
3. Acres of construction activity with adequate erosion control plans
4. Acres of construction activity monitored for compliance with provisions of ordinance and erosion control plans
5. Identification of needed changes in housekeeping
6. Implementation of housekeeping program changes

Local units of government will report annually on progress for "segmented" program activities. Reports will cover:

1. 1985 urban acres, by land use, covered by engineering feasibility studies
2. Acres of post 1985 urban development, by land use, covered by plans for controlling urban pollutant loads and stormwater flows
3. Acres of post 1985 urban development, by land use, not covered by plans for controlling urban pollutant loads and stormwater flows
4. Stormwater ordinance adoption or modification

In addition, representatives of governments addressing urban pollution issues will meet with DNR staff annually to review progress and identify workplan objectives for the coming year.

Financial Expenditures, Time Spent On Project Activities

Reporting on these items will parallel reporting specified in this plan for the rural areas.

Urban Pollutant Load Changes

Local units of government will provide the following information annually to the DNR so that the DNR staff can evaluate changes in urban pollutant loading:

This plan endorses continuing investigation into source control alternatives as well as development of alternatives for internalizing local pollution control costs. Alternatives such as the creation of local utility districts to finance the local share of these estimated costs

should be investigated by respective municipalities. The DNR will help finance studies through the priority watershed program.

- 1985 urban acres, by land use, which urban stormwater practices serve, and information requested by the DNR concerning practice characteristics
- Acres of post-1985 urban development, by land use, served by stormwater practices, and information requested by the DNR concerning practice characteristics
- Acres of post-1985 urban development, by land use, not served by stormwater practices
- Acres of construction site activity served by adequate erosion control practices
- Acres of construction site activity not served by adequate erosion control practices
- Changes in streambank erosion, in tons and feet of erosion, due to installation of erosion control and flow reduction practices

CHAPTER EIGHT
Water Quality Evaluation Monitoring

Introduction

Within the Milwaukee River Basin there are five watersheds that have been extensively inventoried by the Water Resource Management staff. This inventory, or "appraisal," process determines the biological potential of lakes and streams when controllable sources of nonpoint pollution are eliminated or controlled.

An important component of the Integrated Resource Management and the Nonpoint Source Program is an evaluation of the techniques, or Best Management Practices (BMPs) implemented to control the nonpoint sources of pollution. This evaluation process will help determine whether the lakes and streams are responding as anticipated to reduced nonpoint source loadings.

Summary of Watershed Monitoring

Evaluation Monitoring plans have been developed and area being implemented by the Water Resource Management staff at specific sites in the Milwaukee River Basin to assess how well the surface waters are responding. In addition there are other basins in southeastern Wisconsin that are also being studied and evaluated.

Because of the basinwide approach to evaluation monitoring, there will not be site-specific evaluations conducted in the Cedar Creek Watershed. Information obtained from the other watersheds will be used to determine the effectiveness of BMP implementation in Cedar Creek.

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Appendix A
Land Development Categories and Descriptions for Urban Areas

Land use	Code	Description
RESIDENTIAL:		
High Density with Alleys	HRWA	Urban single and two-family housing at a density of greater than 6 units per acre, including the house, driveway, yard, alley, and streets.
High Density with No Alleys	HRNA	Urban single and two-family housing at a density of greater than 6 units per acre, including the house, driveway, yard, and streets.
Medium Density with Alleys	MRWA	Urban single and two-family housing at a density between two and six units per acres, including the house, driveway, yard, alley, and streets.
Medium Density with No Alleys	MRNA	Urban single and two-family housing at a density between two and 6.5 units per acres, including the house, driveway, yard, and streets.
Low Density	LR	Urban single and two-family housing at a density of between 0.7 and two units per acre, including the house, driveway, yard alley and streets.
Multiple Family	MF	Housing for three or more family units from one to three stories in height. Units may be adjoined up and down, side by side, or front and rear. Includes building, yard, parking lot, and driveway.
High Rise Apartments	HIR	Housing four or more stories in height. Units may be adjoined up and down, side by side, or front and rear. Includes building, yard, parking lot, and driveways.

High Rise Apartments	HIR	Housing four or more stories in height. Units may be adjoined up and down, side by side, or front and rear. Includes building, yard, parking lot, and driveways.
Trailer Parks	MOBR	For a mobile home or trailer park, includes all vehicle homes, the yard, driveway, and office area.
Suburban	SUBR	Urban single family housing at a density of between 0.2 and 0.6 units per acre, including the house driveway, yard, alley and streets.

COMMERCIAL:

Strip Commercial	CST	Commercial areas for which the primary function involves the sale of goods and/or services. This land includes the buildings, parking lots, and streets. This category does not include buildings used for the manufacture of goods or warehouses; nor does it include nurseries, tree farms, or lumber yards.
Shopping Centers	SC	Commercial areas the related parking lot is at least 2.5 times the size of the building's roof area. The buildings in this land use are usually surrounded by the parking lot, and the streets.
Office Park	OP	Land use where non-retail business takes place. The buildings are usually multi-storied surrounded by larger areas of lawn and landscaping. This land use includes the buildings, lawn, and road areas.
Downtown Commercial	CDT	Highly impervious downtown areas of commercial land uses.

INDUSTRIAL:

Manufacturing	MI	Those buildings and premises which are devoted to the manufacture of products. This category also includes utility power plants.

Non-Manufacturing	LI	Those buildings which are used for the storage and/or distribution of goods awaiting further processing or sale to retailers. This category includes warehouses and wholesalers. This category also includes businesses such as lumber yards, auto salvage yards, junk yards, oil tank farms, coal and salt storage areas, grain elevators, agricultural coops, and areas for bulk storage of fertilizers and pesticides.
INSTITUTIONAL:		
Hospitals	HOSP	Medical facilities that provide inpatient overnight care. Includes nursing homes, state, county, or private facilities. Includes the buildings, grounds, parking lots, and drives.
Education	SCH	Includes any public or private primary, secondary, or college educational institutional grounds. Includes buildings, playgrounds, athletic fields, roads, parking lots, and lawn care.
Miscellaneous/Institutional	MISC	Churches and large areas of institutional property. This includes government buildings, parking lots, lawns, and road areas.
OPEN SPACES:		
Cemeteries	CEM	Includes cemetery grounds, roads, and buildings located on the grounds.
Parks	PARK	Outdoor recreational areas including municipal playgrounds, botanical gardens, arboretums, golf courses, and natural areas.
Undeveloped	OSUD	Lands that are private and publicly owned with no structures and have a complete vegetative cover. This includes vacant lots.

Land under development	CNST	Lands not yet fully developed at the time of the survey and bare soil is present.
FREEWAY:		
Freeways	FREE	Limited access highways and the interchange areas.

Appendix B
Preliminary Site Characteristics Associated with Low Groundwater Contamination Potential from Concentrated Animal Waste

Preliminary site characteristics used to indicate low groundwater contamination potential from concentrated animal waste sources[1].

Characteristic	Animal Lot	Temp. Manure Stack	Solid Manure Storage Structure	Runoff from lot, Stack, or Structure
Feet to groundwater or bedrock	?3	?5	?3-5	>2[2]
% Soil passing #200 sieve	>50% for at least 1 foot, or >25% for at least 3 feet	>50% for at least 3 feet, or >25% for at least 5 feet	>3 feet having >50%, or >5 feet having >25%	>50% for at least 1 foot, or >25% for at least 2 feet[3]
Animal Herd Size	Animal herd size should be considered as a factor, although criteria need to be developed.			
Management	The frequency of lot scraping should also be considered as it will affect the availability of total nitrogen and the form of nitrogen found under the barnyard.			
Location	Sources located in groundwater discharge areas are generally less of a concern for water supply wells than sources located in groundwater discharge areas.			

[1]The separation distance and soil mechanical analysis criteria were considered together in determining site vulnerability.

[2]As determined in the first 100 feet of vegetated buffer for overland flow or 300 feet of vegetated buffer for channel flow.

[3]If runoff ponds for extended periods in an unvegetated area, a groundwater hazard may exist even if the separation distances and soil characteristics are met.

Appendix C
Guidelines for Calculating Shoreline Buffer Widths

Vegetative Filter Strip

Description: This practice is based on the guide standards for cropland filter strips contained on pages 74-83 of the publication Effects of Conservation Practices on Water Quantity and Quality (USDA-Soil Conservation Service, October 1, 1988; 98 pages).

This practice is meant to refine SCS Standard 393 (Filter Strip). In turn this refined standard will be considered as an additional practice component under the Critical Area Stabilization and the Shoreline Protection Best Management Practices contained in Chapter Nr 120, /w Administrative Code.

Purpose: Vegetated buffers have been identified as a Best Management Practice for stabilizing streambanks; enhancing fish and wildlife habitat; and removing critical croplands from production. They may also provide "filtering" of sediment, nutrients, pesticides and other pollutants from upslope croplands.

Cost-Share Conditions: Cost sharing may be provided for the following:

1. See NR 120

Planning Considerations: Filter strip effectiveness is dependent upon overland flow. Once soil particles are in transport it becomes increasingly difficult and expensive to achieve adequate control, particularly where flow becomes channelized prior to entering the designed filter strip area.

For this reason the use of vegetative filter strips as a primary control practice for controlling sediment delivery from larger tributary areas should only be considered after all options for on-site erosion control have been exhausted.

SCS provides the following items to consider when designing or using vegetated buffer strips:

1. Vegetated buffer strips are effective for removing sediment and other suspended solids if flow is shallow and uniform.

Total phosphorus is not as effectively removed as sediment.

2. Buffers with concentrated or deeper channel-type flow are much less effective than buffers with shallow uniform flow.

3. Research in Virginia indicates vegetated buffers on cropland are only moderately effective for sediment and nutrient removal since the majority of the flow entering the buffer was judged to be concentrated. This problem is greater in hilly areas.

4. Effective cropland buffers have a limited expected life due to sediment buildup. For areas with significant soil loss, the expected life may be three to five years. Leveling and revegetating may be necessary to reestablish the buffer.

5. Vegetation must be vigorous, dense sod forming, stiff upright type, capable of remaining upright in heavy flows and during dormancy. The vegetation should be tolerant of wet and dry conditions and capable of recovering from inundation with water and sediment.

The Milwaukee River Wildlife Management staff specialist should be contacted to discuss wildlife aspects of proposed filter strips. However, vegetative requirements must be based primarily on filtering effectiveness, and secondarily on value as wildlife habitat.

Design Criteria: The following tables identify the filtering of overland flow by vegetated buffers. These tables are derived from a procedure contained in an SCS recommended article, "Predicting Runoff Pollutant Reduction in Buffer Zones Adjacent to Land Treatment Sites" by Overcash, Bingman and Westerman (Transactions of the ASAE - 1981). Minimum filter strip widths shall not fall below minimums specified in SCS Standard 393.

Table C-1. Buffer Area to Source Area Ratio

Soil Type	% Reduction	Ratio
loam	100%	0.7
silt loam	75%	0.2
sandy clay loam	50%	0.1
silty clay loam	20%	>1.0
	10%	0.4

Table C-2. Flow Length of Buffer to Source Area

Overland Flow Length			
Ratio	Original Field	Reduced Field	Buffer
0.1	400 feet	365 feet	35 feet (2 rods)
	300	275	25
	200	180	20
	100	90	10
0.2	400 feet	335 feet	65 feet (4 rods)
	300	250	50 (3 rods)
	200	165	35 (2 rods)
	100	85	15 (1 rod)
0.4	400 feet	290 feet	110 feet
	300	215	85
	200	145	55
	100	70	30 (2 rods)
0.7	400 feet	240 feet	160 feet
	300	180	120
	200	120	80
	100	60	40

Assumptions: rainfall intensity of 0.5 inches/hour; very good vegetated cover.

Appendix D
Nonpoint Source Pollution Control Guidelines for Infiltration Devices in Urban Areas

	Residential[4]	Institutional[5]		
Infiltration Device Type		Rooftop	Parking Lot 0 - 5,000 sq. ft.	Parking Lot 5,000 - 500,000 sq. ft.
Infiltration Basin[1]	Pretreatment with grit chamber.[3] Depth to GW > 3 ft.	No Pretreatment. Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.
Infiltration Trench[1]	Pretreatment with grit chamber.[3] Depth to GW > 3 ft.	No Pretreatment. Depth to GW > 3 ft.	Pretreatment with grit chamber. Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.
Grassed Swale[2]	Pretreatment with grit chamber.[3] Depth to GW > 3 ft.	No Pretreatment. Depth to GW > 3 ft.	Pretreatment with grit chamber. Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.
Other Infiltration Practices	Redirect downspouts and slope driveways to lawn, for infiltration. No pretreatment.	Redirect downspouts to lawn for infiltration. No pretreatment.	Slope lots to grass buffer strip.	

1 Infiltration should take place through a surface layer of soil where feasible, to minimize risk of groundwater contamination.
2 Special construction techniques are required to maintain original soil permeability.
3 Pretreatment is considered for infiltration devices to minimize maintenance. There may be incidental protection to groundwater from pretreatment devices. All pretreatment devices should be equipped with oil and grease traps.
4 Multi- and single-family dwellings.
5 Churches, schools, and hospitals.

NONPOINT SOURCE POLLUTION CONTROL GUIDELINES FOR INFILTRATION DEVICES

Commercial[4]

Infiltration Device Type[3]	Rooftop Runoff 0-10,000 sq. ft.	Rooftop Runoff > 10,000 sq. ft.	Parking Lot Runoff 0-5,000 sq. ft.	Parking Lot Runoff 5,000-500,000 sq. ft.	Parking Lot Runoff >500,000 sq. ft.	Storage and Loading Acres Runoff[5]
Infiltration Basin[1]	No pretreatment. Depth to GW > 3 ft.	No pretreatment. Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment with wet sedimentation basin.[3] Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.
Infiltration Trench[1]	No pretreatment. Depth to GW > 3 ft.	No pretreatment. Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment with wet sedimentation basin.[3] Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.
Grassed Swale[2]	No pretreatment. Depth to GW > 3 ft.	No pretreatment. Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment with wet sedimentation basin.[3] Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.
Other Control Practices	Redirect downspouts to lawn for infiltration. No pretreatment.		Slope lots to grass buffer strip.			

1 Infiltration should take place through a surface layer of soil where feasible, to minimize risk of groundwater contamination.
2 Special construction techniques are required to maintain original soil permeability.
3 Pretreatment is considered for infiltration devices to minimize maintenance. There may be incidental protection to groundwater from pretreatment devices. Grit chambers remove particles down to 100 u and wet sedimentation removes particles down to 40-100 u. All pretreatment devices should be equipped with oil and grease traps.
4 Retail and service operations.
5 The use of infiltration practices in storage areas must be reviewed on a case-by-case basis.

NON-POINT SOURCE POLLUTION CONTROL GUIDELINES FOR INFILTRATION DEVICES

Industrial (Non-Manufacturing)[4]

Infiltration Device Type[3]	Rooftop Runoff 0-10,000 sq. ft.	Rooftop Runoff > 10,000 sq. ft.	Separate Employee & Visitor Parking Lot Runoff 5,000-500,000 sq. ft.	Separate Employee & Visitor Parking Lot Runoff > 500,000 sq. ft.	Storage and Loading Area Runoff[5]
Infiltration Basin[1]	No pretreatment. Depth to GW > 3 ft.	No pretreatment. Depth to GW > 3 ft.	Pretreatment with grit chamber.[3] Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment with wet sedimentation basin.[3] Depth to GW > 3 ft. GW monitoring recommended.	Infiltration prohibited.
Infiltration Trench[1]	No pretreatment. Depth to GW > 3 ft.	No pretreatment. Depth to GW > 3 ft.	Pretreatment with grit chamber[3] Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment with wet sedimentation basin.[3] Depth to GW > 3 ft. GW monitoring recommended.	Infiltration prohibited.
Grassed Swale[2]	No pretreatment. Depth to GW > 3 ft.	No pretreatment. Depth to GW > 3 ft.	Pretreatment with grit chamber.3 Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment with wet sedimentation basin.[3] Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment required.[3] Depth to GW > 3 ft. GW monitoring recommended.
Other Control Practices	Redirect downspouts and driveways to lawn for infiltration. No pretreatment.				

1 Infiltration should take place through a surface layer of soil where feasible, to minimize risk of groundwater contamination.
2 Special construction techniques are required to maintain original soil permeability.
3 Pretreatment is considered for infiltration devices to minimize maintenance. There may be incidental protection to groundwater from pretreatment devices. All pretreatment devices should be equipped with oil and grease traps.
4 Good materials management practices should be practiced to prevent the risk of generating contaminated runoff in the first place.

NON-POINT SOURCE POLLUTION CONTROL GUIDELINES FOR INFILTRATION DEVICES

	Industrial (Manufacturing)[4]			
Infiltration Device Type[3]	Rooftop Runoff 0-10,000 sq. ft.	> 10,000 sq. ft.	Separate Employee & Visitor Parking Lot Runoff	Storage and Loading Area Runoff5
Infiltration Basin[1]	Infiltration prohibited.	Infiltration prohibited.	Infiltration prohibited.	Infiltration prohibited.
Infiltration Basin[1]	Infiltration prohibited.	Infiltration prohibited.	Infiltration prohibited.	Infiltration prohibited.
Grassed Swale[2]	Pretreatment[3]. Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment[3]. Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment[3]. Depth to GW > 3 ft. GW monitoring recommended.	Pretreatment[3]. Depth to GW > 3 ft. GW monitoring recommended.
Other Control Practices				

1 Infiltration should take place through a surface layer of soil where feasible, to minimize risk of groundwater contamination.
2 Special construction techniques are required to maintain original soil permeability.
3 Pretreatment is considered for infiltration devices to minimize maintenance. There may be incidental protection to groundwater from pretreatment devices. All pretreatment devices should be equipped with oil and grease traps.
4 For the purpose of this table, industrial (manufacturing) consists of production industries. An example would be an industry with smokestacks that have the potential for emitting particulates that will settle on building rooftops and parking lots.
5 Good materials management practices should be practiced to prevent the risk of generating contaminated runoff in the first place.

Appendix E
Selected Preliminary Design Criteria for Infiltration Devices and Wet Detention Basins

PRACTICE		DESIGN CRITERIA
Wet Detention	1.	Percent of drainage required as pond surface for 90% control of solids
		Freeways 2.8% Industrial 2.0% Commercial 1.7% Institutional 1.7% Residential 0.8% Open Space 0.6%
	2.	Permanent pond minimum 5 ft. deep when constructed.
	3.	Minimum 10 ft. shelf around pond perimeter.
	4.	Minimum 5:1 side slope to edge of pond.
	5.	Pond shape must be minimum 3:1 length to width ratio.
	6.	Maintain minimum pond depth of 3 ft.
	7.	Minimum 215 ft. vegetated buffer strip.
	8.	Protect outlet channel from erosion.
	9.	Minimum depth to groundwater 3 ft.*
Infiltration Devices		
Grass Swales	1.	Minimum grade of 0.5% and maximum of 5%.
	2.	Maximum side slopes of 3:1.
	3.	Minimum depth to groundwater 3 ft.*
	4.	Maximum flow velocity 6 fps.
	5.	Check infiltration rates annually.
	6.	Prevent compaction during construction.
	7.	Sweep streets to prevent clogging.

PRACTICE		DESIGN CRITERIA
Infiltration Trenches	1.	Minimum depth to groundwater 3 ft.*
	2.	Pretreatment necessary (e.g., grass filter strip, wet detention basin, trap etc.).
	3.	Trench must be wider than it is deep.
	4.	Observation well must be installed.
	5.	Check infiltration rates annually.
	6.	Do not put near water supply wells.
Infiltration Basins	1.	Minimum depth to groundwater 3 ft.*
	2.	Test soil infiltration rates at least 5 ft. below the surface.
	3.	Do not put near water supply wells.
	4.	Pretreatment necessary (e.g., wet detention basin).
	5.	Prevent compaction of soil.
*** As measured from bottom of practice to seasonally high groundwater.**		

Appendix F
Guidelines for Enhancing the Effectiveness of Street Sweeping Programs and Alternative Practice Specifications and Cost-sharing Policies for Accelerated Street Sweeping

Program Component	Guideline
Frequency of Sweeping	· As soon as snow and weather conditions permit in spring, conduct an intensive sweeping program to sweep residential streets at least three times and commercial and industrial streets six to nine times to reduce high spring street surface loadings · Conduct an intensive street sweeping program in fall to collect leaves and other vegetative debris · Increase the frequency of sweeping those streets which have high pollutant loadings - primarily industrial areas - and which now are not swept often because litter problems are not severe
Sweeping Equipment	· Use crimped wire or natural fiber brooms instead of plastic brooms,and maximize the broom pattern (The pattern is a measure of the pressure applied between the main pickup broom and the street surface. It is measured as the tangential length of main pickup broom in contact with the street surface.) · When new street sweepers are purchased, consider vacuum sweepers because some studies have indicated that vacuum sweepers can provide additional related uses such as leaf collection and catch basin cleaning. However, the replacement of still-effective mechanical sweepers with vacuum sweepers does not appear justified
Street Pollutant Loading Control	· Eliminate the temporary storage of leaves in the street. Store leaves on the grasses right-of-way or in bags · Establish a program for promptly sweeping special problem areas such as construction sites, special event areas, and high litter areas · Maintain streets and provide smooth surfaces wherever possible · Eliminate, or minimize, the duration of temporary storage of sweeper collected material on streets
Regulations and Education	· Develop, implement, and enforce regulations such as parking ordinances, litter control and trash and refuse storage ordinances, and construction erosion control ordinances · Educate and inform sweeper operators on methods to optimize pollutant removals. Emphasize those factors (sweeper speed, brush adjustment and rotation rate, sweeping pattern, maneuvering around parked vehicles, and interim storage and disposal methods) which have been shown to affect pollutant removal · Educate citizens and public officials on the multiple benefits of street sweeping, including aesthetics, water quality improvement, and air quality improvement by reducing fugitive dust emissions

Source: SEWRPC.

Alternative Practice Specifications and Cost-sharing Policies for Accelerated Street Sweeping

Practice Description

Use of brush or vacuum style sweepers to remove leaf litter and accumulated dirt from street surfaces on an accelerated schedule designed for improving quality of surface waters.

Purpose

In the Cedar Creek Watershed, extensive use of wet detention and infiltration practices is needed to meet the pollutant load reductions called for in this plan. However, accelerated sweeping can be useful on an interim basis to provide some level of reduction as wet detention and infiltration practices are being phased in. Once established, urban structural practices will provide the level of pollutant load reduction required. As the structural practices are installed, accelerated sweeping can be discontinued as a water quality measure in the areas served by these practices.

The purpose of accelerated sweeping in this watershed is to provide interim protection in areas that will ultimately be served by urban structural practices.

Conditions

Cost sharing is authorized for the support of a portion of an accelerated street sweeping program for existing critical land uses.

Accelerated sweeping is defines as that meeting the schedule set forth in Tables F1 and F2. It consists of two parts: 1) the "base level" and 2) the "additional level". The "base level" portion of the accelerated program is not eligible for support. The "additional level" portion of the accelerated program is eligible for support.

Existing urban areas are those in existence as of the date the Department of Natural Resources approves this watershed plan.

Critical land uses are those defined elsewhere in this watershed plan.

Cost sharing will be effective for a 5-year period for each municipality, beginning when the community first accepts cost-share funds for sweeping. Eligible cost components include:

- direct and indirect staff costs to operate the sweeper including wages, salaries, benefits, and overhead (Only cost of "additional staff" as defined in NR 120.02, is eligible),
- fuel, equipment maintenance, and equipment depreciation,
- litter disposal.

Eligible staff related costs will be supported 100 percent through the Local Assistance Grant Agreement. Other costs will be supported at a cost-share rate of 50 percent. The community may negotiate with the Department of Natural Resources a flat fee cost-share amount per curb mile. Cost sharing will be on a reimbursement basis.

Following the 5-year period of cost-share eligibility, the community must maintain at its own expense an accelerated street sweeping schedule in these areas for which it received cost

sharing. This 10-year period will be waived at such time the area is retro-fitted with urban structural practices consistent with the intent of this watershed plan.

Table F-1. Components of accelerated street sweeping schedules for critical urban land uses, curb & gutter drainage

Season[1]	Program Description	Freeway	Commercial, Industrial	High Density Residential
Spring	Accelerated Program[2]	-Once/week: vacuum	-Once/week: alternate brush and vacuum	-Once/week: alternate brush & vacuum
	Base component[3]	-Once/week: brush	-Once/week: brush	-Twice/month: brush
	Additional component[4]	-Convert to vacuum	-Convert to vacuum on alternate passes	-Two added passes with vacuum
Summer	Accelerated Program	-Once/week: vacuum	-Once/week: alternate brush & vacuum	-Twice/month: alternate brush & vacuum
	Base component	-Once/week: brush	-Once/week: brush	-Twice/month: brush
	Additional component	-Convert to vacuum	-Convert to vacuum on alternate passes	-Convert to vacuum on alternate passes
Fall	Accelerated Program	-Once/week: vacuum	-Once/week: alternate brush & vacuum	-Twice/month: alternate brush & vacuum
	Base component	-Once/week: brush	-Once/week: brush	-Twice/month: brush
	Additional component	-Convert to vacuum	-Convert to vacuum on alternate passes	-Convert to vacuum on alternate passes

[1]Spring is considered to be one month (March). Summer is considered to be 6 months (April-September). Fall is considered to be 2 months (October - November).

[2]The Accelerated Program is made up of the base component and the additional component.

[3]This component is not eligible for cost-share assistance.

[4]This component is eligible for cost share assistance.

Table F-2. Components of accelerated street sweeping schedules for critical urban land uses, grassed swale drainage.

Season[1]	Program Description	Commercial, Industrial	High Density Residential
Spring	Accelerated Program[2]	-Once/week: alternate brush & vacuum	-Once/month: vacuum
	Base component[3]	-Twice/month: brush	-Once/month: brush
	Additional component[4]	-Two added passes with vacuum	-Convert to vacuum
Summer	Accelerated Program	-Once/week: alternate brush & vacuum	-Once/month: vacuum
	Base component4	-Twice/month: brush	-Once/month: brush
	Additional component4	-Two added passes with vacuum	-Convert to vacuum
Fall	Accelerated Program	-Once/week: alternate brush & vacuum	-Once/month: vacuum
	Base component3	-Twice/month: brush	-Once/month: brush
	Additional component4	-Two added passes with vacuum	-Convert to vacuum

[1]Spring is considered to be one month (March). Summer is considered to be 6 months (April-September). Fall is considered to be 2 months (October-November).

[2]The Accelerated Program is made up of the base component and the additional component.

[3]This component is not eligible for cost share assistance.

[4]This component is eligible for cost share assistance.

Appendix G
Milwaukee River Program Basinwide Educational Goals

Basinwide goal pertaining to education

Educate key audiences regarding nonpoint source pollution and related resource management problems and solutions, thereby helping to facilitate public involvement, informed decision making and plan implementation.

Information and Education Subcommittee-adopted goals

The best available techniques, including research and survey results, will be utilized in educational strategy development, implementation and evaluation. The Milwaukee River Priority Watersheds Information and Education Program will strive to:

- Improve the awareness/understanding of the watershed as a system, water quality problems and the benefits available through integrated resource management, including particularly nonpoint source pollution control.
- Inform people about the potentials of, and instill a sense of responsibility or ethic for, the natural resources within the Milwaukee River Basin.
- Achieve widespread participation in, and support for, the Priority Watershed and Integrated Resource Management Programs through the involvement of broadly-based and diverse groups.
- Develop and maintain a clear understanding of the steps the Program will be taking among rural and urban landowners and users, watershed committees, community leaders and other groups.
- Optimize both the use of rural and urban nonpoint source pollution control measures through voluntary cooperation, and the integrated use of complementary resource management techniques.
- Coordinate and cooperate with other federal, state and local programs and promote all appropriate implementation strategies (including mandatory controls, where warranted) as mechanisms to achieve water quality improvements.

Appendix H
Description of Watershed-Specific Information and Education Materials and Events

This appendix to the I&E strategy primarily addresses watershed-specific activities for the Cedar Creek Watershed. However, some basinwide and statewide activities are included due to their importance for project success. Descriptions of other basinwide and statewide activities are included in the Urban Water Quality Information and Education Strategy for the Milwaukee River Program.

Newsletters

Newsletters will be used to convey information to targeted groups such as local government officials, rural landowners, civic and environmental groups, fishing and boating groups, business and industry associations, interested citizens and other likely participants in the Milwaukee River Program. The objectives of newsletters will be to:

- Supply basic information on the Program
- Provide updates on important elements of the Program including upcoming events
- Improve understanding of nonpoint source pollution problems and causes
- Increase appreciation of lakes, streams and related natural resources in the watershed
- Introduce landowners to recommended management practices
- Provide information on available assistance including cost sharing
- Build a sense of momentum by providing information on participation and implemented practices
- Recognize those who have contributed to good or improved water quality

Newsletters will be distributed to key audiences within the watershed and used as handouts at public meetings, tours and exhibits.

Many issues in the Milwaukee River Program transcend watershed boundaries, and interest groups often have regional membership. Therefore, newsletters may be most efficiently written and distributed at the basinwide, rather than watershed level.

The lead responsible party for watershed newsletters will be the Area UW-Extension Water Quality staff with state specialist assistance. Other UW-Extension, DNR and LCD staff will also be involved in newsletter preparation and distribution.

Watershed Folders and Fact Sheets

Watershed folders will be used to communicate basic information about the watershed project and serve as "cover pieces" for educational packets assembled to meet the needs of rural landowners, operators and local government officials. Folders will contain different sets of information and education materials, including fact sheets, depending upon the audience groups to which they will be given.

Folders will bear a Milwaukee River Program rather than a watershed-specific identity. Most of the fact sheets will have basinwide or statewide applicability and be produced at those levels. An exception may be demonstration project fact sheets and write-ups describing good management practices for sites viewed as "informal demonstrations". These could be localized to this watershed project.

County LCD staff will assemble the rural watershed folder contents and, in conjunction with County or Area UW-Extension staff draft fact sheets on demonstrations. DNR staff, with County or Area UW-Extension staff assistance, will assemble the local government folder contents. Area UW-Extension staff will have the lead responsibility for publishing demonstration project fact sheets and Milwaukee River Program fact sheets. State UW-Extension Specialists, DNR and DATCP staff will develop or assist with the development of fact sheets on rural and urban best management practices having statewide applicability.

Watershed Slide Program(s)

County LCD and UW-Extension staff will help provide slides and information for watershed-specific portions of slide programs. They will give slide presentations at public meetings, community group programs and volunteer training sessions. Any slides of graphic summaries of landowner surveys, inventory data and plan recommendations, will be prepared by DNR or State/Area UW-Extension staff. Area Extension Water Quality staff will be responsible for coordinating the production of any formal or automated programs serving as longstanding resource materials.

Local Exhibits

Exhibits on the Milwaukee River Program, on urban and rural nonpoint source pollution, on specific watershed plans and on best management practices will be used at county fairs, festivals, shows and other special events in the watershed. Also, displays may be used over larger periods in city, village or town halls, and banks, libraries or other public buildings. Sometimes they may appear on a bulletin board, portable display board or even a display case. The purpose or focus of all these exhibits will change as the program progresses. Thus interchangeable groups of exhibit components will be developed to cover a variety of themes.

Arrangements for use of exhibits in local areas will be the responsibility of County UW-Extension and LCD staff with assistance from Area UW-Extension and District DNR staff.

Most materials for the exhibits will be developed by Area UW-Extension and possibly District DNR staff. Exhibits will be staffed by watershed advisory committee members and other volunteers whenever appropriate to augment staff resources.

Media Contacts

An active program to involve the media in covering watershed events begins with conferences with the major newspapers and television stations in the watershed to further acquaint editors and reporters with the Milwaukee River Program. The lead responsible person for this activity is the Public Information Officer for the DNR Southeast District. The Milwaukee River Program Coordinator and UW-Extension staff will also be involved.

News releases will be distributed to local newspapers, television and radio stations to announce watershed events such as tours, public information meetings, plan completion/amendment, demonstration project installations and grant awards. The lead responsible agency for the news releases will vary depending on which agency or private group is responsible for a particular event.

Newspaper feature articles and appearances on radio talk shows and television interview programs will be sought to provide more in-depth coverage of the Program. Special feature articles or interview shows may involve direct participation by State or District DNR or UW-Extension staff.

County UW-Extension staff will be responsible for covering water quality issues in their regular radio talk shows and newspaper columns. Background material for radio programs and newspaper columns will often be prepared at the basinwide or statewide level, although county staff may prepare materials related to their field of expertise.

Series of Newspaper Columns and Radio Public Service Announcements

A coordinated series of newspaper columns and radio public service announcements will periodically be used to inform people about nonpoint source pollution and best management practices. The focus of the series will be homeowner practices such as yard care, household hazardous waste, stream corridor and lakeshore management, automobile maintenance and pet waste disposal. General information on the Milwaukee River Program, nonpoint source pollution and best management practices will also be included.

Development of the series of newspaper columns and radio public service announcements will be coordinated at the basinwide level, but publication or distribution will be made part of the watershed implementation program. County UW-Extension agents will adapt newspaper columns and radio public service announcements for local use and will arrange for distribution to local newspapers and radio stations. Newspaper columns will also be distributed for publication in local civic and environmental group newsletters. County UW-Extension agents may be involved in the development of newspaper columns or public service announcements related to their areas of expertise. Supportive educational materials such as fact sheets will be available, upon request, through County UW-Extension and Land Conservation Department offices. Such fact sheets and other written materials will generally be prepared at the basinwide or statewide level.

Demonstration Site and Key Practices Tours

Meetings and tours will be conducted for existing demonstration sites--and for future demonstrations. Priority landowners needing specific information and first-hand exposure to the demonstrated practices will be invited to the event(s). Transportation to and from the sites and organization around a social event such as a meal will be utilized as advisable and approved.

In addition, tours related to best management practices will be pursued as appropriate for specific audiences, making use of both formal and informal demonstrations. Tours of stormwater management facilities in urban areas, for example, will be as important as traditional rural practices tours. County LCD and UW-Extension staff are identified as having the major responsibility for these tours with Area and State UW-Extension staff providing organizational and/or subject matter specialty assistance.

Implementation Meeting/Tour

During the implementation phase in the watershed, a meeting or tour will be scheduled. The purposes of the meeting/tour will be to update local officials on program progress, to encourage more participation and to inform the media and public about implemented practices and water quality improvements. Rural and urban demonstration projects and other implemented practices will be featured in the meeting/tour. The meeting/tour should be scheduled before the end of the sign-up period for state cost sharing. Implementation meetings and tours may be combined for adjacent watersheds where sign-up periods overlap.

The lead responsible party for arranging implementation meetings/tours will be the Milwaukee River Program Coordinator. Assistance will also be provided by other DNR staff, county and area UW-Extension and LCD staff.

Demonstration Projects

The need for demonstrations of nonpoint source pollution control practices is being evaluated in the watershed on an ongoing basis. Where appropriate, demonstrations will be designed to enhance related natural resources such as fish and wildlife habitat as well as to improve water quality. Watershed demonstrations are evaluated according to the following five criteria:

1. Does the practice address an identified, major source of water pollution in the Milwaukee River Basin?

2. Is the practice needed in a variety of areas in the watershed (or other parts of the Milwaukee River Basin) to achieve water quality goals?

3. Is the practice unfamiliar and/or untested in the vicinity or in southeastern Wisconsin?

4. Does the practice require further research and refinement before widespread application? Would a demonstration aid this process?

5. Is the site proposed for the demonstration highly visible, easily accessible, or located where there would be credibility ascribed to the practice?

Milwaukee River Program staff, with the advice of watershed advisory committees and local governments, will identify and actively pursue needed demonstrations. Implementation of specific demonstrations will be the responsibility of appropriate DNR, LCD, local government and UW-Extension staff. Part of the plan for each demonstration will be an information and education element including--at a minimum--signs, slides, fact sheets and tours.

Area UW-Extension Water Quality staff will be the lead responsible party for reviewing demonstration project plans for information and education elements and printing fact sheets. County LCD staff will be the lead responsible parties for documenting costs and project progress, initial drafts of fact sheets, taking slides and conducting tours.

Signs

Signs with the Milwaukee River Program logo will be used at selected locations to increase public awareness of the Program. Potential sites for signs will be selected and prioritized by the I&E Subcommittee. Signs will be produced via separate outside contracts. Primary responsibility for coordinating this sign project was historically assigned to a staff member at the DNR Southeast District, but will likely require substantial involvement by Area UW-Extension.

Signs identifying demonstration projects and other Milwaukee River Program cooperators will also be used. Wherever possible, more detailed signs explaining the watershed project and associated practices will be put up in prominent public locations such as parks, waysides, boat and fishing access sites and river walkways.

City, Village and Town Meetings

Meetings will be scheduled with each city, village and town in the watershed. Purposes of the meetings scheduled during the first year of the project are to:

- Present inventory results, survey results and plan recommendations for each community
- Develop appropriate local assistance and cost-sharing agreements for implementation of the plan in each community
- Initiate and obtain assistance for respective community I&E strategies

Milwaukee River Program staff will present information to local government staff, and if necessary or advisable, meet with elected officials. Separate meetings may also be scheduled with committees, commissions or boards of the local government upon request.

The lead responsible party for scheduling meetings with local government and elected officials will be the Milwaukee River Program Coordinator. Other DNR and County or Area UW-Extension staff responsible for that watershed will provide assistance at these meetings as needed.

Construction Erosion Control and Stormwater Management Workshops

One specific type of technical education and training assistance offered to local governments will be construction erosion control and stormwater management workshops. The workshops will be designed to provide technical information on these practices to local government staff, developers, builders, contractors and consultants. The most effective time to schedule them will be winter or early spring, before the busiest construction season.

The Area UW-Extension Urban Water Quality Educator will be responsible for organizing these workshops. Material for use in the workshops will be developed on a basinwide or statewide level. The Wisconsin Construction Site Best Management Practice Handbook will be the basic text for the workshop. DNR will provide copies of the handbook, but fees will cover remaining out-of-pocket expenses. DNR and LCD staff will assist with the workshops by speaking, developing handouts, evaluating results and providing publicity. County UW-Extension offices will assist with publicity and registration.

Individual City and Village Educational Programs

Each city and village will have an information and education element included in any local assistance or cost-sharing agreement. At a minimum, this will include:

- Publicity for new leaf collection & street sweeping programs
- Publicity for pet waste cleanup ordinances
- Publicity for local waste oil recycling and hazardous waste collection programs
- Information for the construction industry about new or changed local construction erosion control and stormwater management ordinances
- Training of local government staff for construction erosion control, stormwater management and streambank stabilization
- Information for residents and businesses about stormwater management plans, designs and installation
- Information and educational materials for homeowners describing appropriate "housekeeping" practices for water quality

City and village staff will be responsible for implementing their community's information and education program. Appropriate county or Area UW-Extension and DNR staff will assist local governments in carrying out information and education programs for their residents, businesses and industries. DNR and Extension staff will also provide information on urban best management practices to city and village officials through telephone contacts, attending local government meetings, providing workshops or other educational means. Area and County UW-Extension staff will assist with the development of printed materials and with arranging workshops on urban best management practices.

Urban Housekeeping Publications

The watershed project educational program for municipalities in general will require a series of fact sheets or brochures on urban "housekeeping" practices for water quality protection on at least the following subjects:

- Reduction in pet waste runoff
- Improved efficiency of leaf collection and street sweeping
- Proper uses and disposal of car care products and lawn-garden chemicals
- Encouragement of precipitation infiltration and detention rather than runoff

Many of these printed materials have been initiated through the "Yard Care and the Environment" fact sheet series under the leadership of Area UW-Extension staff. Most are generic enough for widespread use, however some may be formatted to allow adaptation and reprinting by city and village staff.

Programs for Local Groups

Ongoing requests for presentations or program updates is an important I&E need. Often this need is met through local arrangements with County LCD or UW-Extension staff.

To provide an organized approach for soliciting and meeting program requests from local groups, the Milwaukee River Program has developed a speakers bureau. Members of the speakers bureau include state and local government staff and members of the advisory committees. Videotapes, slide programs and supportive educational materials for use by the speakers bureau will be developed on a statewide or basinwide level by State or Area staff or through contracts with private or public agencies.

The primary responsibility for maintaining the speakers bureau database belongs to the Southeast District DNR. Area UW-Extension staff play a role in developing or coordinating the development of needed materials. Area and County UW-Extension, LCD, DNR and DATCP staff can publicize and participate in the speakers bureau and in the development of information and education materials according to their areas of interest and available time.

Yard Care Programs

Yard care information and education activities will be provided for urban residents as well as lake property owners. These activities may include a training program for volunteer leaders, a slide program on alternative year care practices, printed materials, InfoSource taped messages, model yard contests or demonstrations and a State Fair exhibit.

Master gardeners and other volunteer leaders may be trained by County UW-Extension Agents to provide programs for community groups on alternative yard care practices that reduce or prevent nonpoint source pollution. These programs could include topics such as reduced fertilizer use, alternative pest management techniques, yard waste reduction and

reuse, selecting plants appropriate to the site, vegetative buffers for lakeshores and streambanks and infiltration of stormwater.

County UW-Extension Agents coordinate model yard contests/demonstrations. Materials for the yard care program, including the "Yard Care and the Environment" fact sheets series, will be developed by County and Area UW-Extension staff with state specialist assistance.

School Curriculum and Teacher Workshops

Given the lack of knowledge evidenced by surveys of residents in the Milwaukee River Basin, nonpoint source pollution--causes, impacts and corrective actions--is a subject targeted for the curriculum development process. Part of the curriculum development for schools in the Basin should be materials on the Milwaukee River including: geology, history of use, fish and aquatic organisms, pollution problems and clean-up programs.

The lead responsible parties for curriculum development and associated teachers workshops and in-services will be private and public nature and environmental centers, and DNR and UW-Extension staff who work with school groups. These organizations will submit special grant proposals to private foundations and public agencies for curriculum development, teacher training and other youth activities related to nonpoint source pollution.

School Programs

A consortium of nature/environmental education centers in the Milwaukee River Basin and including DNR and UW-Extension staff have evaluated water quality education opportunities for teachers and students and instituted a program known as "Testing the Waters". The group found that a variety of environmental awareness programs that include water quality are available for elementary and middle school teachers and students. However, programs for high school teachers and students were lacking. Therefore, "Testing the Waters" is a high school water quality monitoring program that is modeled after the highly successful Rouge River Project in Michigan. Ultimate plans involve 32 of 48 high schools from throughout the Milwaukee River Basin, including several from this watershed.

The lead responsible parties for this project are the private and public nature/environmental education centers, and DNR and UW-Extension staff who work with school groups. These organizations will continue to submit special grant proposals to private foundations and public agencies for "Testing the Waters" and implement the program. Additional school programs may be developed by this group or individual nature/environmental education centers in future years.

Youth Group Programs

School water quality programs will be supplemented by youth group programs including educational events and community service projects. One proposal possibly submitted to youth groups will be a storm sewer stencilling project similar to one developed in Seattle. The objectives of this project are to teach youth and adults that storm sewers carry materials directly to local lakes and streams and to discourage dumping of pollutants such as waste oil, antifreeze and paint into them.

The lead responsible party for this project will be County UW-Extension and/or nature center staff who work with youth groups. Area UW-Extension and DNR staff will provide assistance in procuring materials and developing associated educational programs. Information on hazardous waste reduction, recycling and proper disposal would also be provided through this program.

Annual Educational Strategy Update

The Cedar Creek Watershed educational strategy will be reviewed and updated annually. Annual updates will further define educational materials and events, costs and timing, and include estimates for the fourth through eighth years of the project. Such updates will not routinely take the form of a republished I&E strategy, but rather be reflected in annual work plans, meeting minutes, memoranda, etc.

Area UW-Extension staff will provide the leadership role in this annual plan updating process, and will be assisted by County UW-Extension and LCD staff. DNR and DATCP staff will also play an important role in the needs identification process.

Oak Lodge Demonstration on Big Cedar Lake

Background

To educate lakeshore property owners on alternative methods for managing their land to improve water quality, the Washington County Land Conservation Department and UW-Extension Offices proposed a demonstration project for the Maclay property on Big Cedar Lake. The site chosen to be used to show how the adverse impacts of residential developments on lake water quality could be minimized through a combination of natural landscaping, yard care and roof runoff management. This appendix summarizes the information and education components of the project proposal.

Information and Education Program

The Resource Agent from the Washington County UW-Extension office will be the lead person for implementation of the I&E program, with support from the LCD, DNR and others. Details are given below.

Objectives:

- Increase shoreline property owners' knowledge of incorporating buffer strips along the waterline to reduce nonpoint source pollution and improve water quality.
- Improve homeowners' understanding of four alternative methods for handling rooftop runoff water carried through downspouts to reduce erosion/nonpoint source pollution and increase infiltration.
- Increase homeowners' knowledge of using brick paving materials to reduce runoff from nonporous hardscape surfaces and improve infiltration.

- Increase homeowners' use of native plant material and planting beds to stabilize soil, slow runoff, improve infiltration and retain moisture.

I&E Activities/Products:

- Write, obtain artwork for and print a one- to two-page demonstration site fact sheet describing practices for use with on-site audiences.

- Write, obtain artwork for, print and distribute "Handling Rooftop Runoff" (tentative title) as a fact sheet under the "Yard Care and the Environment" series.

- Develop a slide program for use at presentations.

- Give presentations on the project to the Big Cedar Lake Property Owners Association, Rehabilitation and Protection District and Sanitary District. If possible, hold 1992-93 annual meetings on site with part of the meetings devoted to demonstration.

- Give presentations on the project at 1992-93 Southeast Wisconsin Lakes Conference. Schedule an optional field trip to the site.

- Conduct two "field days" in 1992 and 1993 for lake associations, lake districts, sanitary districts, fishing clubs, watershed advisory committees, environmental groups, builders, general public, media, etc. This may be in conjunction with other tour sites.

- Conduct small group tours of the site as requested by citizens, organizations or agencies.

- Evaluate presentations and field days to determine knowledge gained and practices planned to be used, with possible follow-up in future on written results.

Information and Education Budget

Demonstration site fact sheet and slides	$200.00
Handling Rooftop Runoff bulletin	$1,000.00
Materials and mailings for field days	$500.00
Materials and mailings for evaluations	$300.00
TOTAL	$2,000.00

Conclusion

This project contains numerous interrelated activities. As well, most such activities are strongly complementary to others in the Cedar Creek Watershed Plan's I&E Strategy (Table 6-15). To the extent practical, the benefits of conducting the Big Cedar Lake shoreline demonstration will be generalized and made transferable to other locations and circumstances. Integration with areawide tours and production of a Yard Care and the Environment fact sheet are two pertinent examples.

Appendix J
Glossary

ACUTE TOXICITY:
Any poisonous effect produced by a single short-term exposure to a chemical that results in a rapid onset of severe symptoms.

ADVANCED WASTEWATER TREATMENT:
The highest level of wastewater treatment for municipal treatment systems. It requires removal of all but 10 parts per million of suspended solids and biological oxygen and/or 50 percent of the total nitrogen. Advanced wastewater treatment is also known as "tertiary treatment."

AGRICULTURAL CONSERVATION PROGRAM (ACP):
A federal cost-sharing program to help landowners install measures to conserve soil and water resources. ACP is administered by the USDA ASCS through county ACP committees.

ALGAE:
A group of microscopic, photosynthetic water plants. Algae give off oxygen during the day as a product of photosynthesis and consume oxygen during the night as a result of respiration. Therefore, algae effect the oxygen content of water. Nutrient-enriched water increases algae growth.

AMMONIA:
A form of nitrogen (NH_3) found in human and animal wastes. Ammonia can be toxic to aquatic life.

ANAEROBIC:
Without oxygen.

AREA OF CONCERN:
Areas of the Great Lakes identified by the International Joint Commission (IJC) as having serious water pollution problems.

AREAWIDE WATER QUALITY MANAGEMENT PLANS (208 PLANS):
A plan to document water quality conditions in a drainage basin and make recommendations to protect and improve basin water quality. Each basin in Wisconsin must have a plan prepared for it, according to section 208 of the Clean Water Act.

ANTIDEGRADATION:
A policy stating that water quality will not be lowered below background levels unless justified by economic and social development considerations. Wisconsin's antidegradation policy is currently being revised to make it more specific and meet U.S. Environmental Protection Agency (EPA) guidelines.

AVAILABILITY:
The degree to which toxic substances or other pollutants are present in sediments or elsewhere in the ecosystem and are available to affect or be taken up by organisms. Some

pollutants may be "bound up" or unavailable because they are attached to clay particles or are buried by sediment. Oxygen content, pH, temperature and other conditions in the water can affect availability.

BACTERIA:
Single-cell, microscopic organisms. Some can cause disease, but others are important in organic waste stabilization.

BASIN PLAN:
See "Areawide Water Quality Management Plan".

BENTHIC ORGANISMS (BENTHOS):
Organisms living in or on the bottom of a lake or stream.

BEST MANAGEMENT PRACTICE (BMP):
The most effective, practical measures to control nonpoint sources of pollutants that runoff from land surfaces.

BIOACCUMULATION:
The uptake and retention of substances by an organism from its surrounding medium and food. As chemicals move through the food chain, they tend to increase in concentration in organisms at the upper end of the food chain such as predator fish, or in people or birds that eat these fish.

BIOASSAY STUDY:
A test for pollutant toxicity. Tanks of fish or other organisms are exposed to varying doses of treatment plant effluent. Lethal doses of pollutants in the effluent are then determined.

BIOCHEMICAL OXYGEN DEMAND (BOD):
A measure of the amount of oxygen consumed in the biological processes that break down organic matter in water. BOD5 is the biochemical oxygen demand measured in a five-day test. The greater the degree of pollution, the higher the BOD5.

BIODEGRADABLE:
Waste that can be broken down by bacteria into basic elements. Most organic wastes such as food remains and paper are biodegradable.

BIOTA:
All living organisms that exist in an area.

BUFFER STRIPS:
Strips of grass or other erosion-resisting vegetation between disturbed areas and a stream or lake.

BULKHEAD LINES:
Legally established lines that indicate how far into a stream or lake an adjacent property owner has the right to fill. Many of these lines were established many years ago and allow substantial filling of the bed of the river and bay. Other environmental laws may limit filling to some degree.

CARCINOGENIC:
A chemical capable of causing cancer.

CATEGORICAL LIMITS:
All point source discharges are required to provide a basic level of treatment. For municipal wastewater treatment plants this is secondary treatment (30 mg/1 effluent limits for SS and BOD). For industry the level depends on the type of industry and the level of production. More stringent effluent limits are required, if necessary, to meet water quality standards.

CHLORINATION:
The application of chlorine to wastewater to disinfect it and kill bacteria and other organisms.

CHLORORGANIC COMPOUNDS (CHLORORGANICS):
A class of chemicals that contain chlorine, carbon and hydrocarbon. This generally refers to pesticides and herbicides that can be toxic. Examples include PCBs and pesticides such as DDT and dieldrin.

CHRONIC TOXICITY:
The effects of long-term exposure of organisms to concentrations of a toxic chemical that are not lethal, but is injurious or debilitating in one or more ways. An example of the effect of chronic toxicity is reduced reproductive success.

CLEAN WATER ACT:
See "Public Law 92-500."

COMBINED SEWERS:
A wastewater collection system that carries both sanitary sewage and stormwater runoff. During dry weather, combined sewers carry only wastewater to the treatment plant. During heavy rainfall, the sewer becomes swollen with stormwater. Because the treatment plant cannot process the excess flow, untreated sewage is discharged to the plant's receiving waters, i.e., combined sewer outflow.

CONFINED DISPOSAL FACILITY (CDF):
A structure built to contain and dispose of dredged material.

CONGENERS:
Chemical compounds that have the same molecular composition, but have different molecular structures and formula. For example, the congeners of PCB have chlorine located at different spots on the molecule. These differences can cause differences in the properties and toxicity of the congeners.

CONSERVATION TILLAGE:
Planting row crops while only slightly disturbing the soil. In this way a protective layer of plant residue stays on the surface. Erosion rates decrease.

CONSUMPTION ADVISORY:
A health warning issued by WDNR and WDHSS that recommends people limit the fish they eat from some rivers and lakes based on the levels of toxic contaminants found in the fish.

CONTAMINANT:
Some material that has been added to water that is not normally present. This is different from a pollutant, which suggests there is too much of the material present.

CONVENTIONAL POLLUTANT:
Refers to suspended solids, fecal coliforms, biochemical oxygen demand, and pH, as opposed to toxic pollutants

COST-EFFECTIVE:
A level of treatment or management with the greatest incremental benefit for the money spent.

CRITERIA:
See water quality standard criteria.

DDT:
A chlorinated hydrocarbon insecticide that was banned because of its persistence in the environment.

DIOXIN (2,3,7,8-tetrachlorodibenzo-p-dioxin):
A chlorinated organic chemical which is highly toxic.

DISINFECTION:
A chemical or physical process that kills organism that cause disease. Chlorine is often used to disinfect wastewater.

DISSOLVED OXYGEN (DO):
Oxygen dissolved in water. Low levels of dissolved oxygen cause bad smelling water and threaten fish survival. Low levels of dissolved oxygen often result from inadequate wastewater treatment. The Department of Natural Resources considers 5 ppm DO necessary for fish and aquatic life.

DREDGING:
Removal of sediment from the bottom of water bodies.

ECOSYSTEM:
The interacting system of biological community and its nonliving surrounding.

EFFLUENT:
Solid, liquid or gas wastes (byproducts) that are disposed on land, in water or in air. As used in the RAP, effluent generally means wastewater discharges.

EFFLUENT LIMITS:
The Department of Natural Resources issues WPDES permits establishing the maximum amount of pollutant to be discharged to a receiving stream. Limits depend on the pollutant and the water quality standards that apply for the receiving waters.

EMISSION:
A direct (smokestack particles) or indirect (busy shopping center parking lot) release of any contaminant into the air.

ENVIRONMENTAL PROTECTION AGENCY (EPA):
The federal agency responsible for enforcing federal environmental regulations. The Environmental Protection Agency delegates some of its responsibilities for water, air and solid waste pollution control to state agencies.

ENVIRONMENTAL REPAIR FUND:
A fund established by the Wisconsin Legislature to deal with abandoned landfills.

EPIDEMIOLOGY:
The study of diseases as they affect populations rather than individuals, including the distribution and incidence of a disease mortality and morbidity rated, and the relationship of climate, age, sex, race and other factors. EPA uses such data to establish national air quality standards.

EROSION:
The wearing away of the land surface by wind or water.

EUTROPHIC:
Refers to a nutrient-rich lake. Large amounts of algae and weeds characterize a eutrophic lake (see also "Oligotrophic" and "Mesotrophic").

EUTROPHICATION:
The process of nutrient enrichment of a lake loading to increased production of aquatic organisms. Eutrophication can be accelerated by human activity such as agriculture and improper waste disposal.

FACILITY PLAN:
A preliminary planning and engineering document that identifies alternative solutions to a community's wastewater treatment problems.

FECAL COLIFORM:
A group of bacteria used to indicate the presence of other bacteria that cause disease. The number of coliform is particularly important when water is used for drinking and swimming.

FISHABLE AND SWIMMABLE:
Refers to the water quality goal set for the nation's surface waters by Congress in the Clean Water Act. All waters were to meet this goal by 1984.

FLOURANTHENE:
A polyaromatic hydrocarbon (PHA) with toxic properties.

FLY ASH:
Particulates emitted from coal burning and other combustion, such as wood burning, and vented into the air from stacks, or more likely, collected by electrostatic precipitators.

FOOD CHAIN:
A sequence of organisms where each uses the next as a food source.

FURANS (2,3,7,8-tetra-chloro-dibenzofurans):
A chlorinated organic compound which is highly toxic.

GREEN STRIPS:
See buffer strip.

GROUNDWATER:
Underground water-bearing areas generally within the boundaries of a watershed, which fill internal passageways of porous geologic formations (aquifers) with water that flows in response to gravity and pressure. Often used as the source of water for communities and industries.

HABITAT:
The place or type of site where a plant or animal naturally lives and grows.

HEAVY METALS:
Metals present in municipal and industrial wastes that pose long-tern environmental hazards if not properly disposed. Heavy metals can contaminate ground and surface waters, fish and other food stuffs. The metals of most concern are: arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium and zinc (see also separate listings of these metals for their health effects).

HERBICIDE:
A type of pesticide that is specifically designed to kill plants and can also be toxic to other organisms.

HYDROCARBONS:
Any chemical of a large family of chemicals containing carbon and hydrogen in various combinations.

INCINERATOR:
A furnace designed to burn wastes.

INFLUENT:
Influent for an industry would be the river water that the plant intakes for use in its processing. Influent to a municipal treatment plant is untreated wastewater.

IN-PLACE POLLUTION:
As used in the RAP, refers to pollution from contaminated sediments. These sediments are polluted from post discharges from municipal and industrial sources.

INTERNATIONAL JOINT COMMISSION (IJC):
An agency formed by the United States and Canada to guide management of the Great Lakes and resolve border issues.

ISOPROPYLBIPHENYL:
A chemical compound used as a substitute for PCB.

LANDFILL:
A conventional sanitary landfill is "a land disposal site employing an engineered method of disposing of solid wastes on land in a manner that minimizes environmental hazards by

spreading solid wastes in thin layers, materials at the end of each operating day". Hazardous wastes frequently require various types of pretreatment before they are disposed of, i.e., neutralization chemical fixation encapsulation. Neutralizing and disposing of wastes should be considered a last resort. Repurifying and reusing waste materials or recycling them for another use may be less costly.

LC-1:
The concentration that results in 1% mortality of the test animal populations exposed to the contaminant.

LC50:
Lethal concentration for 50% of the test population exposed to a toxicant substance.

LD50:
Lethal dose for 50 percent of the test population exposed to a toxicant substance.

LEACHATE:
The contaminated liquid which seeps from a pile or cell of solid materials and which contains water, dissolved and decomposing solids. Leachate may enter the groundwater and contaminate drinking water supplies.

LOAD:
The total amount of materials or pollutants reaching a given local.

MACROPHYTE:
A rooted aquatic plant.

MASS:
The amount of material a substance contains causing it to have weight in a gravitational field.

MASS BALANCE:
A study that examines all parts of the ecosystem to determine the amount of toxic or other pollutant present, its sources, and the processes by which the chemical moves through the ecosystem.

MESOTROPHIC:
Refers to a moderately fertile nutrient level of a lake between the oligotrophic and eutrophic levels. (See also "Eutrophic" and "Oligotrophic.")

MILLIGRAMS PER LITER (mg/1):
A measure of the concentration of substance in water. For most pollution measurement this is the equivalent of "parts per million".

MITIGATION:
The effort to lessen the damages caused, by modifying a project, providing alternatives, compensating for losses or replacing lost values.

MIXING ZONE:
The portion of a stream or lake where effluent is allowed to mix with the receiving water. The size of the area depends on the volume and flow of the discharge and receiving

water. For streams the mixing zone it is one-third of the lowest flow that occurs once every 10 years for a seven-day period.

NONPOINT SOURCE POLLUTION (NSP):
Pollution whose sources cannot be traced to a single point such as a municipal or industrial wastewater treatment plant discharge pipe. Nonpoint sources include eroding farmland and construction sites, urban streets, and barnyards. Pollutants from these sources reach water bodies in runoff, which can best be controlled by proper land management.

NPS:
See nonpoint source pollution.

OLIGOTROPHIC:
Refers to an unproductive and nutrient-poor lake. Such lakes typically have very clear water. (See also "Eutrophic" and "Mesotrophic.")

OUTFALL:
The mouth of a sewer, drain, or pipe where effluent from a wastewater treatment plant is discharged.

PATHOGEN:
Any infective agent capable of producing disease. It may be a virus, bacterium, protozoan, etc.

PELAGIC:
Referring to open water portion of a lake.

PESTICIDE:
Any chemical agent used to control specific organisms, such as insecticides, herbicides, fungicides, etc.

PH:
A measure of acidity or alkalinity, measured on a scale of 0 to 14, with 7 being neutral and 0 being most acid, and 14 being most alkaline.

PHENOLS:
Organic compounds that are byproducts of petroleum refining, textile, dye, and resin manufacture. High concentrations can cause taste and odor problems in fish. Higher concentration can be toxic to fish and aquatic life.

PHOSPHORUS:
A nutrient that, when reaching lakes in excess amounts, can lead to overfertile conditions and algae blooms.

PLANKTON:
Tiny plants and animals that live in water.

POINT SOURCES:
Sources of pollution that have discrete discharges, usually from a pipe or outfall.

POLLUTION:
The presence of materials or energy whose nature, location, or quantity produces undesired environmental effects.

POLYCHLORINATED BIPHENYLS(PCBs):
A group of 209 compounds, PCBs have been manufactured since 1929 for such common uses as electrical insulation and heating/cooling equipment, because they resist wear and chemical breakdown. Although banned in 1979 because of their toxicity, they have been detected on air, land and water. Recent surveys found PCBs in every section of the country, even those remote from PCB manufacturers.

POLYCHLORINATED ORGANIC COMPOUNDS:
A group of toxic chemicals which contain several chlorine atoms.

PRETREATMENT:
A partial wastewater treatment required from some industries. Pretreatment removes some types of industrial pollutants before the wastewater is discharged to a municipal wastewater treatment plant.

PRIORITY POLLUTANT:
A list of toxic chemicals identified by the federal government because of their potential impact in the environment and human health. Major dischargers are required to monitor all or some of these chemicals when their WPDES permits are reissued.

PRIORITY WATERSHED:
A drainage area about 100,000 acres in size selected to receive Wisconsin Fund money to help pay the cost of controlling nonpoint source pollution. Because money is limited, only watersheds where problems are critical, control is practical, and cooperation is likely are selected for funding.

PRODUCTIVITY:
A measure of the amount of living matter which is supported by an environment over a specific period of time. Often described in terms of algae production for a lake.

PUBLIC LAW 92-500 (CLEAN WATER ACT):
The federal law that sets national policy for improving and protecting the quality of the nation's waters. The law set a timetable for the cleanup of the nation's waters and stated that they are to be fishable and swimmable. This also required all dischargers of pollutants to obtain a permit and meet the conditions of the permit. To accomplish this pollution cleanup, billions of dollars have been made available to help communities pay the cost of building sewage treatment facilities. Amendments in the Clean Water Act were made in 1977 by passage of Public Law 95-217, and in 1987.

PUBLIC PARTICIPATION:
The active involvement of interested and affected citizens in governmental decision-making.

PUBLICLY OWNED TREATMENT WORKS (POTW):
A wastewater treatment plat owned by a city, village or other unit of government.

RAP:
See Remedial Action Plan.

RECYCLING:
The process that transforms waste materials into new products.

REMEDIAL ACTION PLAN:
A plan designed to restore beneficial uses to a Great Lakes Area of Concern.

REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RF/FS):
An investigation of problems and assessment of management options conducted as part of a superfund project.

RESOURCE CONSERVATION AND RECOVERY ACT OF 1976 (RCRA):
This federal law amends the Solid Waste Disposal Act of 1965 and expands on the Resource Recovery Act of 1970 to provide a program that regulates hazardous wastes, to eliminate open dumping and to promote solid waste management programs.

RETRO-FIT:
The placement of an urban structural practice in an existing urban area, which may involve rerouting existing storm sewers and/or relocating existing buildings or other structures.

RIPARIAN:
Belonging or relating to the bank of a lake, river or stream.

RIPRAP:
Broken rock, cobbles, or boulders placed on the bank of a stream to protect it against erosion.

RULE:
Refers to Wisconsin administrative rules. See Wisconsin Administrative Code.

RUNOFF:
Water from rain, snow melt, or irrigation that flows over the ground surface and returns to streams. Runoff can collect pollutants from air or land and carry them to receiving waters.

SECONDARY IMPACTS:
The indirect effects that an action can have on the health of the ecosystem or the economy.

SECONDARY TREATMENT:
Two-stage wastewater treatment that allows the coarse particles to settle out, as in primary treatment, followed by biological breakdowns of the remaining impurities. Secondary treatment commonly removes 90% of the impurities. Sometimes "secondary treatment" refers simply to the biological part of the treatment process.

SEDIMENT:
Soil particles suspended in and carried by water as a result of erosion.

SEICHES:
Changes in water levels due to the tipping of water in an elongated lake basin whereby water is raised in one end of the basin and lowered in the other.

SEPTIC SYSTEM:
Sewage treatment and disposal for homes not connected to sewer lines. Usually the system includes a tank and drain field. Solids settle to the bottom of the tank. Liquid percolates through the drain field.

SLUDGE:
A byproduct of wastewater treatment; waste solids suspended in water.

SOLID WASTE:
Unwanted or discharged material with insufficient liquid to be free flowing.

STANDARDS:
See water quality standards.

STORM SEWERS:
A system of sewers that collect and transport rain and snow runoff. In areas that have separated sewers, such stormwater is not mixed with sanitary sewage.

SUPERFUND:
A federal program that provides for cleanup of major hazardous landfills and land disposal areas.

SUSPENDED SOLIDS (SS):
Small particles of solid pollutants suspended in water.

SYNERGISM:
The total effect is greater than the sum of the individual effects. For example, the characteristic property of a mixture of toxicants that exhibits a greater-than-additive cumulative toxic effect.

TACs:
Technical advisory committees that assisted in the development of the Remedial Action Plan.

TERTIARY TREATMENT:
See advanced wastewater treatment.

TOP-DOWN MANAGEMENT:
A management theory that uses biomanipulation, specifically the stocking of predator species of fish to improve water quality.

TOTAL MAXIMUM DAILY LOADS:
The maximum amount of a pollutant that can be discharged into a stream without causing a violation of water quality standards.

TOXIC:
An adjective that describes a substance which is poisonous, or can kill or injure a person or plants and animals upon direct contact or long-term exposure. (Also, see toxic substance.)

TOXIC SUBSTANCE:
A chemical or mixture of chemicals which, through sufficient exposure, or ingestion, inhalation of assimilation by an organism, either directly from the environment or indirectly by ingestion through the food chain, will, on the basis of available information cause death, disease, behavioral or immunologic abnormalities, cancer, genetic mutations, or development of physiological malfunctions, including malfunctions in reproduction or physical deformations, in organisms or their offspring.

TOXICANT:
See toxic substance.

TOXICITY:
The degree of danger posed by a toxic substance to animal or plant life. Also see acute toxicity, chronic toxicity and additivity.

TOXICITY REDUCTION EVALUATION:
A requirement for a discharger that the causes of toxicity in an effluent be determined and measures taken to eliminate the toxicity. The measures may be treatment, product substitution, chemical use reduction or other actions that will achieve the desired result.

TREATMENT PLANT:
See wastewater treatment plant.

TROPHIC STATUS:
The level of growth or productivity of a lake as measured by phosphorus content, algae abundance, and depth of light penetration.

TURBIDITY:
Lack of water clarity. Turbidity is usually closely related to the amount of suspended solids in water.

UNIVERSITY OF WISCONSIN-EXTENSION (UWEX):
A special outreach, education branch of the state university system.

VARIANCE:
Government permission for a delay or exception in the application of a given law, ordinance or regulation. Also, see water quality standard variance.

VOLATILE:
Any substance that evaporates at a low temperature.

WASTELOAD ALLOCATION:
Division of the amount of waste a stream can assimilate among the various dischargers to the stream. This limits the amount (in pounds) of chemical or biological constituent discharged from a wastewater treatment plant to a water body.

WASTEWATER:
Water that has become contaminated as a byproduct of some human activity. Wastewater includes sewage, washwater and the water-borne wastes of industrial processes.

WASTE:
Unwanted materials left over from manufacturing processes, refuse from places of human habitation or animal habitation.

WASTEWATER TREATMENT PLANT:
A facility for purifying wastewater. Modern wastewater treatment plants are capable of removing 95% of organic pollutants.

WATER QUALITY AGREEMENT:
The Great Lakes Water Quality agreement was initially signed by Canada and the United States in 1972 and was subsequently revised in 1978 and 1987. It proves guidance for the management of water quality, specifically phosphorus and toxics, in the Great Lakes.

WATER QUALITY LIMITED SEGMENT:
A section of river where water quality standards will not be met if only categorical effluent standards are met.

WATER QUALITY CRITERIA:
A measure of the physical, chemical or biological characteristics of a water body necessary to protect and maintain different water uses (fish and aquatic life, swimming, etc.).

WATER QUALITY STANDARDS:
The legal basis and determination of the use of a water body and the water quality criteria, physical, chemical, or biological characteristics of a water body, that must be met to make it suitable for the specified use.

WATER QUALITY STANDARD VARIANCE:
When natural conditions of a water body preclude meeting all conditions necessary to maintain full fish and aquatic life and swimming, a variance may be granted.

WATERSHED:
The land area that drains into a lake or river.

WETLANDS:
Areas that are inundates or saturated by surface or groundwater at a frequency and duration sufficient to support a variety of vegetative or aquatic life. Wetland vegetation requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs and similar areas.

WISCONSIN ADMINISTRATIVE CODE:
The set of rules written and used by state agencies to implement state statutes. Administrative codes are subject to public hearing and have the force of law.

WISCONSIN FUND:

A state program that helps pay the cost of reducing water pollution. Funding for the program comes from general revenues and bonds and is based on a percentage of the state's taxable property value. The Wisconsin Fund includes these programs:

Point Source Water Pollution Abatement Grant Program - Provides grants for 60% of the cost of constructing wastewater treatment facilities. Most of this program's money goes for treatment plant construction, but three percent of this fund is available for repair or replacement of private, onsite sewer systems.

Nonpoint Source Water Pollution Abatement Grant Program - Funds to share the cost of reducing water pollution. Nonspecified sources are available in selected priority watersheds.

Solid Waste Grant Program - Communities planning for solid waste disposal sites are eligible for grant money. $500,000 will be available each year to help with planning costs.

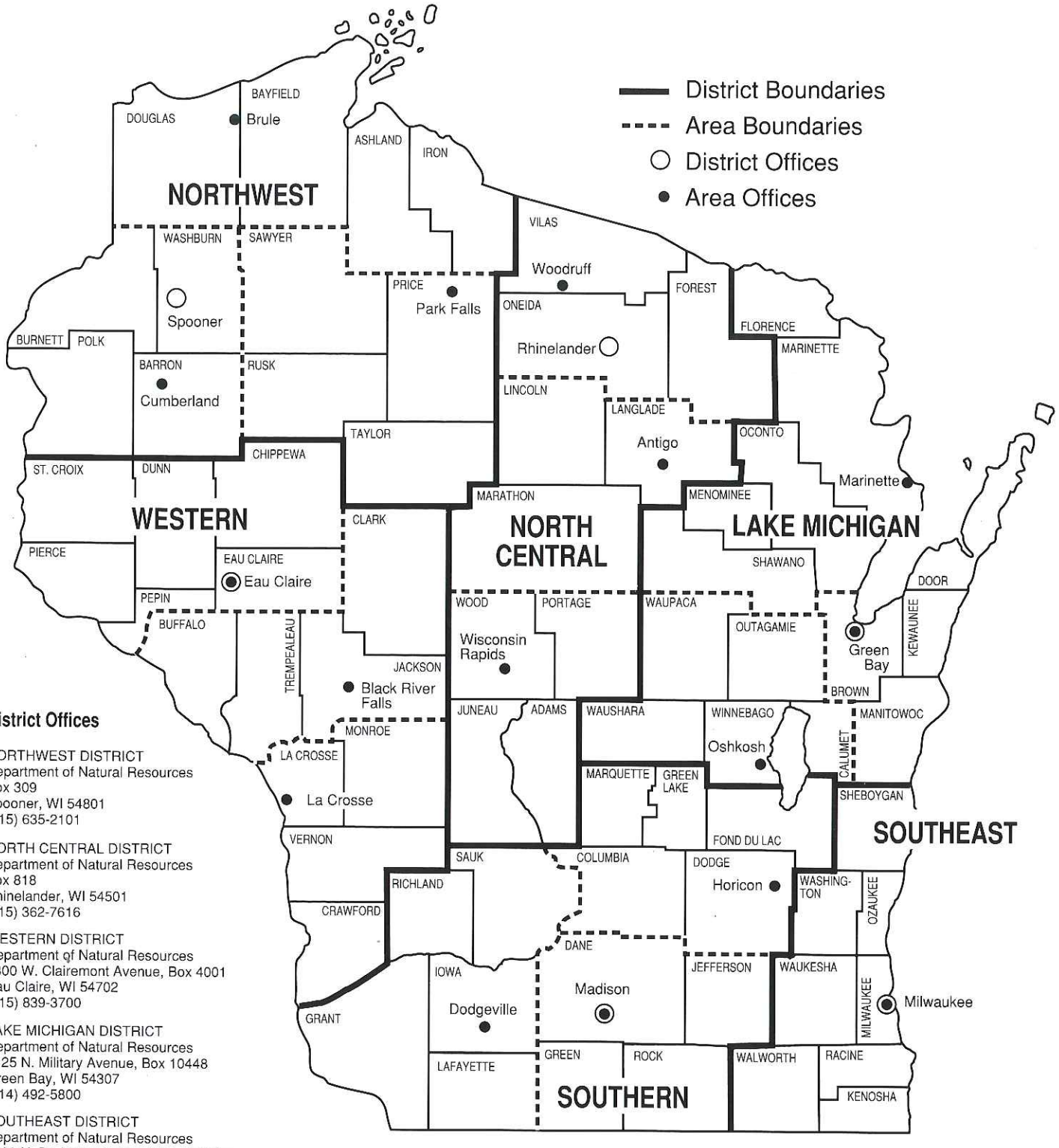
WISCONSIN NONPOINT SOURCE WATER POLLUTION ABATEMENT GRANT PROGRAM:

A state cost-share program established by the State Legislature in 1978 to help pay the costs of controlling nonpoint source pollution. Also known as the nonpoint source element of the Wisconsin Fund or the Priority Watershed Program.

WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM (WPDES):

A permit system to monitor and control the point source dischargers of wastewater in Wisconsin. Dischargers are required to have a discharge permit and meet the conditions it specifies.

DNR Field Districts and Areas



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REV 8/91

Our Mission:

To protect and enhance our Natural Resources—
our air, land and water;
our wildlife, fish and forests.

To provide a clean environment
and a full range of outdoor opportunities.

To insure the right of all Wisconsin citizens
to use and enjoy these resources in
their work and leisure.

And in cooperation with all our citizens
to consider the future
and those who will follow us.

WISCONSIN
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