

University of Wisconsin -Green Bay

Stormwater Pollution Prevention Program

WPDES Permit No. WI-S050075-1

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University of Wisconsin – Green Bay

Stormwater Pollution Prevention Program

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1.0 FACILITY DESCRIPTION

This stormwater pollution prevention program covers the operations at University of Wisconsin – Green Bay (UW-Green Bay). It has been developed as required under Section 2.6 of Wisconsin Pollutant Discharge Elimination System (WPDES) permit no. WI-S050075-1.

1.1 General facility information

Name of facility: University of Wisconsin – Green Bay
Facility address: 2240 Nicolet Drive, Green Bay, WI 54311
Facility contact: Paul Pinkston, Interim Director of Facilities
Phone number: (920) 465-2373
Emergency contact: Mike Mentzel, Risk Management Officer
Phone number: (920) 465-2273

1.2 Facility description

The 680-acre UW-Green Bay campus is located in the northeast corner of the City of Green Bay. It is bounded by Nicolet Drive and the Bay of Green Bay on the west, Highway 54/57 on the south, Bay Settlement Road on the east, and Scottwood Drive/C.T.H. I on the north. The area has a typical midwestern climate, with warm summers and cold, snowy winters with multiple freeze-thaw cycles. Glacial topography dominates the landscape and soils consist generally of glacial till of a variable character that requires soil to be evaluated on a site-by-site basis for construction feasibility and infiltration capacity. Included in the campus are: a 68 acre, 9-hole golf course; campus grounds and classroom buildings; residence buildings; parking lots and athletic fields. The entire campus is surrounded by Cofrin Arboretum which forms a natural boundary of 270 acres encircling the university.



Figure 1: UW-Green Bay campus

2.0 STRUCTURAL STORMWATER MANAGEMENT FACILITIES

UW-Green Bay has several types of stormwater management facilities. These consist of a grassed swale drainage system, catch basins in curbed roads and parking lots, storm sewers and outfalls, and wet detention ponds.

2.1 Grass swales

Grass swales on the UWGB campus are inspected on a regular basis. Swales are visually inspected during routine mowing to ensure normal functioning of swale (i.e. no pooling, or blockage), locate presence of trash/debris, and to identify any areas of erosion and any areas of sediment accumulation. These inspections are not recorded during each mowing, but are recorded once per year in the fall. Routine maintenance is performed on a regular basis as needed based on the visual inspections. The inspection form for grass swales is included in Appendix A.

2.2 Catch basins

See section 3.2 below. The inspection form for catch basins is included in Appendix A.

2.3 Outfalls and storm sewers

There is currently no inspection program or routine scheduled maintenance for storm sewers on the UW-Green Bay campus. Outfalls are inspected once per year at the same time as the on-going dry weather illicit discharge inspections. Observations to be noted in the inspections include: structural condition of the outfall; flow obstructions; and whether or not repairs are needed. Repairs are performed as needed. Outfalls are also checked and cleared of any blockage in the fall before snowfall and in the early spring after snowmelt. The inspection form for outfalls is included in Appendix A.

2.4 Wet detention basins

UW-Green Bay has one constructed wet detention basin and three ponds that effectively function as wet detention basins. Ponds are inspected on a routine basis in the spring immediately after snow melt and immediately after rainfalls of half an inch or more. Observations to be noted in the inspections include: presence of litter and debris; obstructions of the inlet or outlet; condition of inflow/outflow pipes or weirs; scouring around the inflow and outflow; presence of woody vegetation on embankments; excessive erosion or sedimentation around the basin; cracking or settling (stability) of the sideslopes/embankments; and the presence of algae or excess vegetation in pond. The pond depth will be measured once every five years. These inspections are part of the routine maintenance program for the ponds, which also includes vegetation management and debris control. Non-routine maintenance includes bank stabilization, sediment removal and structure repair or replacement. These are performed on an as-needed basis. The inspection form for wet detention basins is included in Appendix A.

Measurable goals:

1. *Continue routine inspections as per operation & maintenance plans*
 - a. *Enter inspections into the UW-Green Bay maintenance management system (TMA Systems) as routine work orders*

3.0 STREET SWEEPING AND CATCH BASIN CLEANING

3.1 Street sweeping

All curbed parking lots and streets on the UW-Green Bay campus are swept once per year in May. This is performed by a contractor (Wisconsin Property Management, Inc.) using a Johnston model 605 conventional mechanical street vacuum truck. Conventional street sweepers use water tanks and sprayers to loosen particulate matter and reduce dust, while spinning brushes scrub the dirt free from the streets and gutters. Dirt and debris are collected and transferred to a storage container on the truck until it is emptied. Non-curbed streets are not swept.

3.2 Catch basin cleaning

There are a total of 166 catch basins on the UW-Green Bay campus. Catch basins are structures that have grates to let flow in and have sumps in which the invert of the outlet pipe is generally several inches above the bottom of the structure to allow for settling of particulates. Catch basins are cleaned once per year in July. Cleaning is performed by an independent contractor (Wisconsin Property Management, Inc.) using a truck-mounted vacuum on a Johnston model 605 conventional mechanical street sweeper. Catch basins, inlet grates and surrounding concrete are visually inspected at this time for structural integrity, presence of debris and erosion around inlet.

3.3 Disposal of street sweeping and catch basin waste

The accumulated sediment from street sweeping and catch basin cleaning is temporarily stockpiled on campus at a location near the old language house and away from waterways and storm drain inlets to de-water before being hauled to a solid waste disposal facility in August.

The campus appears to have generally good practices with regard to street sweeping and catch basin cleaning.

Recommendations:

- *Consider conducting street sweeping earlier – move from May to right after snow melt*

Measurable goals:

1. *Continue routine catch basin inspections as per operation & maintenance plans*
 - a. *Enter inspections into the UW-Green Bay maintenance management system (TMA Systems) as routine work orders*
2. *Assign each catch basin an ID number and place those on storm sewer map*

4.0 ROAD SALT APPLICATION AND SNOW REMOVAL

Snow and ice removal is necessary for safety on the UW-Green Bay campus. However, salt is detrimental to our environment. Applying salt for de-icing and snow removal on sidewalks, parking lots and roads can contribute to polluted runoff because salt dissolved in snowmelt can drain into ditches and storm drains. This drains into Mahon Creek and the bay of Green Bay, and is measured as the chemical pollutant chloride, which is toxic to fish and other aquatic life. Winter salt use is the major source of chloride in Wisconsin's surface waters. Because chloride is water soluble and does not degrade in the environment, it can accumulate in aquatic ecosystems.

The overall campus goal for snow removal is to maximize safety while using a minimal amount of salt.

4.1 Roadway de-icing

UW-Green Bay currently uses a variety of equipment for snow-plowing and de-icing (road salt) application. The grounds crew uses truck-mounted plows to remove snow from roads and parking lots. On sidewalks, the crew uses small pick-up trucks with plows and small tractors with brooms. For snowfalls under three inches, the broom is used. For snowfalls over three inches, the plow is used. To widen walkways to prepare for additional snowfall, snow blowers attached to tractors blow snow to widen the walkways. On walkways where there is not enough width to remove snow to the sides or to plow, the crew pushes snow with a 14 foot snow pusher attached to a front end loader.

Regular road salt (NaCl) is used for de-icing roads and parking lots. In order to maintain safety, roads are salted each time it snows. During a snowfall, only hills and stop signs are salted until the snowfall ends. Salt is spread on roads using a truck-mounted spreader that is metered with gauges that set the feed and how far the spinner projects the material so that the material is not over-spread. Ice melt (CaCl) is used on sidewalks and is applied on an as-needed basis. Safe Step (MgCl) is used at the Kress Center (athletics facility).

UW-Green Bay grounds crew are familiar with and follow guidelines in chapter 35 of the Wisconsin Department of Transportation (DOT) State Highway Maintenance Manual. The crew attends DOT classes on winter road maintenance.

Road salt is stored in bulk in a bulk storage shed. The shed is roofed and walled and has a cement floor with a blacktop berm to prevent runoff in the case that precipitation enters the building. The DOT – Bureau of Highway Operations inspects the salt storage shed once per year. The Ice Melt and Safe Step are stored in bags on pallets in covered sheds and are not exposed to precipitation.

Grounds crew follows certain practices in order to reduce salt and de-icer use on campus. Most outdoor stairways and lesser-used walkways are closed during the

winter months to increase campus safety and reduce salt and de-icer use. Crew places chains across the stairs with “closed for winter” signs on them. In addition, when classes are not in session (weekends, winter break), walkways and parking lots are not plowed or de-iced. Storm drains are marked with posts before snowfall so that the drains can be kept free of debris such as leaves, snow and ice. This prevents ice buildup by keeping runoff from pooling. These practices reduce the amount of salt and de-icer that is used on campus.

4.2 Snow removal

Snow is stockpiled on a level, graveled soccer field parking lot, which is unused during the winter months. The stockpiled snow is located fairly close to a roadway ditch that drains to one of the arboretum ponds that serves as a wet detention basin (Upahki Pond). In spring, immediately after snowmelt, the grounds crew rakes up litter and debris that remains after the snow melts. Litter is disposed of in dumpsters. The accumulated sediment is temporarily stockpiled along with the sediment from street sweeping and catch basin cleaning on campus at a location near the old language house and away from waterways and storm drain inlets to de-water before being hauled to a solid waste disposal facility.

Recommendations:

- *Possibly review alternative snow removal/de-icing products that maintain safety, reduce salt usage and are cost-effective.*

Measurable goals:

1. *Continue inspection of salt storage shed as per WDOT requirements*

5.0 MANAGEMENT OF LEAVES AND GRASS CLIPPINGS

There are two major turf areas on the UW-green Bay campus: campus grounds and the Shorewood golf course. Campus grounds consists of all areas outside of the Shorewood golf course and includes the campus athletic fields and turf/impervious areas around campus buildings, residence halls and parking lots.

5.1 Campus grounds

Each spring, campus grounds are power raked. Grass clippings are collected and taken to a City of Green Bay yard waste recycling center. At all other times, cuttings are returned to the grass. Any clippings that land on paved or hard surface areas such as in parking lots or on sidewalks are blown or swept back into the grass. Leaves are collected September through November and are taken to a City of Green Bay yard waste recycling center.

5.2 Shorewood golf course

During mowing at Shorewood golf course, grass clippings are collected only on greens and tees. These are broadcast into the rough. In all other mowed areas, grass clippings are returned to the turf. Leaves are either collected and taken to a City of Green Bay yard waste recycling or blown into the woods.

Measurable goals:

1. *Develop a method to document amount of leaves and grass clippings collected for annual report*

6.0 POLLUTION PREVENTION PLANNING FOR GARAGES AND STORAGE AREAS

Pollution prevention practices are practices designed to prevent stormwater from becoming contaminated. UW-Green Bay has many practices in place to prevent or reduce stormwater pollution to surface water. This section deals specifically with pollution prevention planning for garages and storage areas on campus. The goals of this section are to:

1. Identify potential sources of stormwater pollution to the stormwater drainage system;
2. Identify current 'best management practices (BMPs)'; and
3. Identify or recommend any necessary changes or additions to the current BMPs

UW-Green Bay handles a variety of hazardous materials, substances and wastes. The majority of these materials are handled in interior laboratories, classrooms and other indoor areas where any (indoor) spill would most likely be contained indoors with no impact on stormwater. All interior floor drains are connected to the sanitary sewer system; any spill entering an interior drain would be directed to the sanitary sewer system.

Spills and leaks in exterior areas on campus have the potential to be a source of stormwater pollution. UW-Green Bay has a Spill Prevention Control and Countermeasures (SPCC) plan that was originally prepared in 2001 and updated in September 2008 by BT² Inc. of Madison, Wisconsin to comply with SPCC regulations as outlined in 40 CFR 112 that went into effect in February 2007. The goal of these regulations is to prevent the discharge of oils and significant materials into navigable waterways by implementing release prevention measures and to formulate action plans for spills. Facilities are subject to SPCC regulation if their above ground oil storage capacity exceeds 1320 gallons in all containers with volumes of 55 gallons or greater. UW-Green Bay has about 37,700 gallons of above ground oil storage in these types of containers. The SPCC plan specifies material handling procedures and storage requirements for significant materials as well as equipment and procedures necessary for cleaning up spills and preventing the spilled materials from being discharged into the environment. Appropriate campus staff are trained on and follow the spill control and countermeasures recommendations in the SPCC plan.

The campus has the following garages and storage areas that are potential sources of stormwater pollution: the facilities shop and garage area; the Shorewood Golf Course area; grease storage and transfer at the Union; and miscellaneous campus fuel storage tanks (physical plant, Laboratory Sciences building, campus emergency generators).

6.1 Facilities shop & garage area

The Facilities building area consists of five areas: the main facilities shop building; a heated storage building; a cold (unheated) storage building; a bulk salt storage shed; a boathouse; a stockpile area and a fueling area.

- Main shop building: The main shop building contains the administrative offices for UW-Green Bay's Facilities Planning & Management Department; vehicle and equipment maintenance and washing area; and materials storage areas.
- Heated vehicle/equipment storage building: Items stored in this building include tractors, trucks, small engine equipment, hand tools, bagged fertilizers and oil dry product. Bagged fertilizers and oil dry are stored off the ground on pallets. The building has a trench drain that appears to connect to the nearby storm sewer that leads to Mahon Creek.
- Cold storage building: Items stored in this building include small motorized vehicles; bagged ice-melt, road salt, fertilizer and top-dress; and small engine equipment. All bagged materials are stored off the ground on pallets. The building has no internal drains.
- Bulk salt storage: The salt storage building is used for roadway salt storage only. The building has no internal drains.
- Boathouse: University boats are stored in this building. It has no internal drains.
- Stockpile area: This area consists of stockpiles of sand, gravel etc. which are stored in five blocked containment bins at the western end of the Facilities shop yard. There is also a pile of large rocks and a pile of mulch. There are no storm drains in this area.
- Fueling area: This area contains above ground fuel tanks for diesel and unleaded gasoline. Vehicle and equipment fueling is performed adjacent to these tanks.

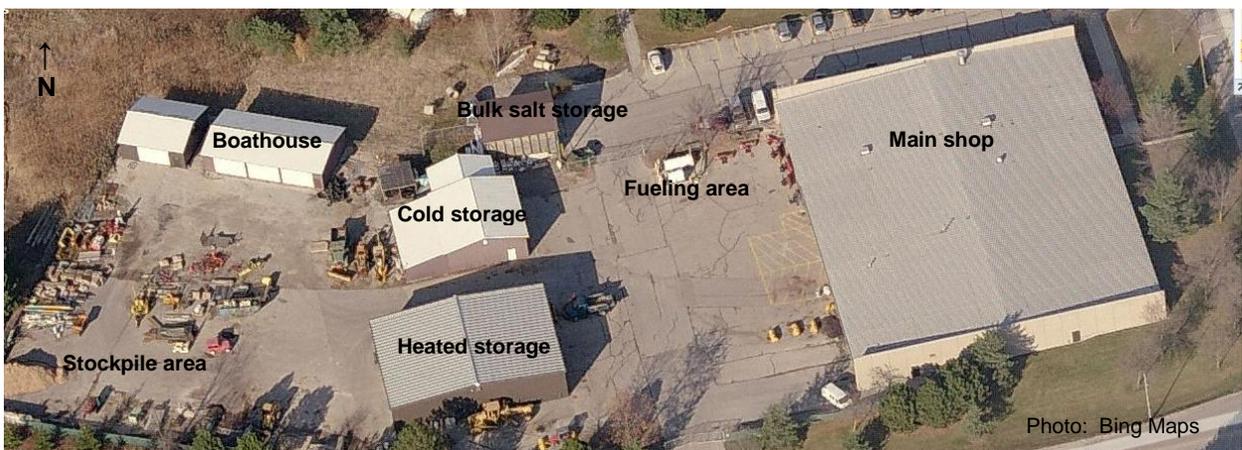


Figure 2: Facilities shop & garage area

Good housekeeping practices are designed to maintain a clean and orderly work environment. This will reduce the possibility that potentially harmful materials might

come in contact with storm water. The following are activities that take place in the Facilities shop & garage area that could be possible sources of stormwater pollution: vehicle and equipment washing; vehicle and equipment fueling; vehicle and equipment maintenance; materials (fuel, oil, lubricant, pesticide, paint etc) handling and storage; bulk salt storage and sand/gravel/mulch stockpiling. Listed below are good housekeeping/pollution prevention practices for these activities:

6.1.1 Vehicle & equipment washing area

All university vehicles and grounds equipment are washed inside the main facilities shop building where wash water and rinsate are directed to a floor drain system which is then directed to a six foot deep sump in which waste water is collected. The particulates settle out, while the liquids exit via an outflow pipe and go to the sanitary sewer system. The catch basin is cleaned out four times per year. Solids are collected and sent to a solid waste disposal facility.

6.1.2 Vehicle & equipment fueling areas

The tank area is located outside of and at the northwest corner of the main facilities shop building. It consists of two above ground tanks: a 1000 gal diesel fuel tank and a 2000 gal unleaded gasoline fuel tank. Both tanks are double-walled, welded steel and are located on concrete containment pads with concrete crash posts in a locked, fenced area with a spill response kit located between the two tanks. Potential releases during fueling or filling could flow into storm drains located approximately 45 feet away to the west – southwest. For this reason, the spill kit and storm drain covers are stored close at hand.

Vehicles and equipment are fueled at outdoor fueling area near the above ground fuel tanks. Storm drains (that outlet to Mahon Creek) in the area are fitted with drain covers during all fueling. There is also a fuel spills kit located near the tanks. Both these tanks are inspected monthly by trained campus grounds staff as per the SPCC plan.

6.1.3 Vehicle & equipment maintenance areas

All vehicles and equipment are monitored for leaks and maintained to prevent leaks. All university vehicle and grounds equipment maintenance is performed in the main facilities shop building. As described in section 6.1.1, the floor drain in that building is directed to the sanitary sewer system.

6.1.4 Chemical (materials) handling/storage areas

In addition to the two above ground fuel tanks listed in section 6.1.2, the facilities shop and garage area has three drum storage areas and storage for pesticides, bulk salt and paints.

Drum storage areas include: four to six 55 gallon drums containing engine oil, lubricants and hydraulic fluid stored in room 140; five 55 gallon drums also containing oil, lubricants and hydraulic fluid stored in the caged area of room

130; and four 55 gallon drums containing used oils stored in the vehicle maintenance of room 130. All used oil is recycled by Semfuel. All drums are stored on secondary spill containment pallets which consist of a perforated pad over a collection tray designed to hold one barrel plus 10% (as per legal requirements). Drums are always closed and tops are kept clean. All drums are informally inspected as they are used and are formally inspected monthly by trained grounds staff as specified in the SPCC plan.

Pesticides are stored in the volatile storage room (156) in the Facilities shop building in closed containers on shelves off the floor. This room has venting and a containment area (sump in floor drain) and is locked at all times. All drains in this building drain to the sanitary sewer system.

Paints are stored in the paint storage room in the Facilities shop building in closed containers on shelves off the floor. All drains in this building drain to the sanitary sewer system. Paint containers are wiped off as used and kept clean.

6.1.5 Bulk salt storage

Bulk salt storage is covered in section 4.1 of this report.

6.1.6 Sand/gravel/mulch stockpiles

The five materials stockpiles are in separated containment bins. The finer grained materials are covered with a tarp. The stockpiles are on level ground and there are no storm drains in the area. There appears to be little to no runoff from these piles.

6.2 Shorewood golf course area

The Shorewood golf course area consists of:

- Golf cart and equipment washing area
- Equipment fueling area: This area contains one above ground fuel tank for unleaded gasoline. Vehicle and equipment fueling is performed adjacent to this tank.
- Equipment maintenance building: Vehicle and equipment maintenance takes place in this building. There are no internal drains in this building.
- Equipment/materials storage building: Equipment, golf course vehicles and bagged materials (fertilizers, top dress) are stored in this building. The building has no internal drains.
- Stockpile area: This consists of 5 separated containment bins and a pile of large rocks. A storm drain is located approximately 50 feet north of the stockpiles.

The following are activities that take place in the Shorewood golf course area that could be possible sources of stormwater pollution: cart & equipment washing, equipment fueling, equipment maintenance, materials storage and stockpiling.



Figure 3: Shorewood golf course area

Listed below are good housekeeping/pollution prevention practices that are done in conjunction with these activities:

6.2.1 Golf cart/equipment washing area

As of last summer (summer 2008), all golf carts and golf course mowers are washed on turf areas located a minimum of 40 feet from storm drain inlets. A biodegradable, non-phosphate detergent is used when doing all washing. Prior to summer 2008, cart and equipment washing was performed on an impervious paved area adjacent to a storm drain. That situation had the potential to lead to possible contaminated runoff and wash water entering the storm ditch system and running offsite into the nearby bay of Green Bay.

6.2.2 Equipment fueling area

Equipment fueling is performed adjacent to the outdoor above-ground fuel tank located at the northeast corner of the equipment storage shed. No storm drains are located in the area. Unleaded gas is stored in the 300 gallon tank. It is located on a concrete containment pad with concrete crash posts in a locked, fenced enclosure. The tank is inspected monthly by trained campus grounds staff as per the SPCC plan.

6.2.3 Equipment maintenance building

All golf course equipment and vehicles are continuously monitored for leaks and maintained to prevent leaks. There are no drains in the equipment maintenance building, but oil dry is used in case of a spill. When it is necessary to use oil dry for a spill, the used material is swept up and disposed of in the trash. Any major repairs are done at the Facilities shop.

6.2.4 Equipment/materials storage building

All materials are stored either in bags or sealed containers off the ground on pallets in this covered building.

6.2.5 Stockpile area

The five stockpiles are in separated containment bins. The gravel and coarse sand bins are not covered. As of last summer (summer 2008), the other three bins, which contain finer-grained materials, are covered with heavy-duty tarps that are held in place with several tires. Prior to this, all bins were uncovered. During rainfall events, sediment would erode into stormwater runoff and flow into the nearby storm drain and thence into the bay of Green Bay. Providing covers for the finer grained materials appears to have reduced this significantly.

6.3 Grease storage and transfer at the Union

Grease and oil from cooking operations at the University Union are transferred to and stored in a grease collection tank located outside of the loading dock at the University Union. The collection tank sits on asphalt pavement approximately 20 feet from a storm drain. Union staff pour used cooking grease and oil into an opening on the collection tank from a grease bucket. The grease is collected by Sanimax and the used oil is reclaimed and returned to the marketplace as an ingredient for products such as lubricants.

In the past, occasional small spills occurred on the tank and nearby pavement. To remedy this, a "grease spill kit" consisting of absorbent pads, rags and oil dry was made and is stored with the grease transport dolly. Staff are instructed to place the pad on the pavement below the tank before pouring grease into the tank and to wipe up any spills on the lip of the opening. Absorbent is available in case of a spill. Storm drain covers were purchased to be placed over the nearby storm drain during grease transfer. These changes were made as of October 2008.

6.4 Miscellaneous campus fuel storage tanks

Various fuel storage tanks are located around campus. These include two fuel tanks at the heating/chilling plant (one 20,000 gallon fuel oil tank on the east side of the building and one 10,000 gallon fuel oil tank on the south side of the building) and three diesel fuel storage tanks for campus emergency generators (a 400 gallon tank near the Laboratory Sciences loading dock, a 250 gallon tank at Mary Ann Cofrin Hall and a 200 gallon tank at the Kress Events Center). All tanks are double walled, on containment pads and are inspected monthly by qualified staff as per the SPCC plan. All above ground storage tanks and drum storage areas are described in the SPCC plan as are the spill response procedures.

Recommendations:

- *Changes that have been made over the past year in golf cart washing and grease transfer practices have remedied some potential sources of stormwater pollution on the UW-Green Bay campus. There are no further recommendations at this time.*

Measurable goals:

1. *Continue good housekeeping practices as delineated in section 6.0.*

7.0 APPLICATION OF LAWN AND GARDEN FERTILIZERS

The WDNR, in chapter NR151, requires that a municipality that applies lawn and garden fertilizers and pesticides to pervious surfaces over 5 acres do so in accordance with a written site-specific nutrient management plan based upon soil tests. UW-Green Bay has two entities that meet these criteria: the campus grounds and the Shorewood golf course. The purpose of these plans is to minimize entry of sediment and nutrients into water resources while maintaining high quality turf grass

7.1 Campus grounds

The UW-Green Bay grounds department is the caretaker of all campus turf areas outside of the Shorewood golf course, and is responsible for all fertilization that takes place there. The nutrient management plan for the campus grounds was prepared by the head of the campus grounds department in accordance with training provided by the UW-Madison Soil Science turfgrass management program. The nutrient management plan for campus grounds was completed and implemented on March 3, 2008. Soil tests were performed to determine soil type and fertilizer needs for all impervious (turf) areas.

The university is divided into four types of turf areas: parking lot areas; campus grounds; athletic fields and the main soccer field. The main soccer field is the only area receiving more than one fertilization per year, with all other areas being fertilized once a year at rate of 1 lb N/1000 sq. ft. of slow release nitrogen. There is one site on the property that borders the bay of Green Bay. No fertilization takes place within 20 feet of the high water mark.

There are many storm water drains located on campus. To prevent direct entry of fertilizers into the drainage systems, grounds personnel cover drains before fertilizer application takes place. In addition, fertilizers that are over cast onto impervious surfaces (parking lots, sidewalks, streets) are removed with a tractor-mounted broom by sweeping fertilizers to the curb and collecting them with a high velocity vacuum. The collected fertilizer is then used on other turf areas.

No phosphorus fertilizer is used on campus with the exception of when establishing new turf.

7.2 Shorewood golf course

The UW-Green Bay golf course staff is responsible for the care and maintenance of all Shorewood golf course turf areas, including all fertilization that takes place there. The nutrient management plan for the golf course was prepared by the Shorewood golf course superintendent in accordance with training provided by the UW-Madison Soil Science turfgrass management program. The plan was completed and implemented in March 2008. Soil tests were performed to determine soil type and fertilizer needs for all impervious (turf) areas. All management activities are performed in accordance with the nutrient management plan for the golf course.

The golf course is divided into three turf areas: greens, tees and fairways. The greens receive 3-4 lbs N/1000 sq. ft. of slow-release fertilizer annually in four applications; tees receive 3 lbs N/1000 sq. ft. of slow release fertilizer annually in three applications; and fairways also receive 3 lbs N/1000 sq. ft. of slow release fertilizer annually in three applications.

There are no storm drains near the turf areas that undergo fertilization.

No phosphorus fertilizer is used on the golf course with the exception of when establishing new turf. When new turf is established, mulch is applied to retain moisture and prevent erosion. When seeding takes place on sloped areas, a natural fiber erosion mat is used to prevent erosion.

Application of fertilizers on the UW-Green Bay grounds and Shorewood golf course is carried out in accordance with nutrient management plans established by both entities, and therefore appears to be conducted in accordance with normal best management practices.

Measurable goals:

1. *Continue to apply fertilizers and record applications in accordance with nutrient management plans.*

8.0 EDUCATION OF APPROPRIATE PERSONNEL

UW-Green Bay will provide education and training on stormwater pollution prevention and good housekeeping practices for appropriate staff on an annual basis. Grounds, golf course and maintenance crews will receive training relative to their area of work. New personnel will receive training within 90 days of hire.

Measurable goal:

1. *Continue to provide stormwater education for appropriate staff. Document in annual report.*

9.0 MEASURES TO REDUCE STORMWATER CONTAMINATION WITHIN SOURCE WATER PROTECTION AREAS

UW-Green Bay receives its drinking water supply from the City of Green Bay. A Source Water Assessment for the Green Bay Water Utility was completed by the Wisconsin Department of Natural Resources Bureau of Drinking Water and Groundwater in May 2003. The Green Bay Water Utility draws source water from western Lake Michigan from two surface water intakes. The Utility also maintains nine emergency groundwater wells. Green Bay's delineated surface water source water area is 371 square miles and includes the Kewaunee River, Ahnapee River and Stony Creek Watersheds. Land use in the source water area is predominantly agricultural, particularly dairy.

The report determined that the City of Green Bay's surface source water quality is a function more of Lake Michigan water quality and not specifically impacted by the source

water area. This is, in part, due to the distance of the intakes from the discharge of a major stream and the low concentration of potential contamination sources in the source water area. The report concluded that surface water source water protection should focus on preventing general non-point source pollution from agricultural and urban runoff. UW-Green Bay is not located in the City of Green Bay's surface water source water area, nor does runoff from UW-Green Bay flow toward that area.

Measurable goals:

- 1. Continue general pollution prevention/good housekeeping practices for entire campus as outlined above*

Appendix A: UW-Green Bay Stormwater Management Facility Inspection Forms

University of Wisconsin – Green Bay Grass Swales Maintenance Inspection Form

Inspector Name: _____

Inspection Date: _____

Area inspected: Housing Golf course Roads

Area description: _____

What to look for:

- Vegetation is too short
- Trash/debris present
- Sediment present in swale channel
- Scoured areas around inlets/outlets
- Eroded areas/gullies
- Presence of weeds, woody growth
- Condition of culvert

What to do:

- Maintain at approximately 4 - 6"
- Remove the trash/debris
- Remove sediment and dispose in an area that will not impact streams or BMPs
- Stabilize and re-vegetate, rip-rap if necessary
- Fill, lightly compact and re-vegetate
- Remove as needed
- Repair as needed

Items inspected	Checked		Maintenance needed?		Comments	Maintenance Performed (Date)
	Yes	No	Yes	No		
Evidence of erosion?						
Grass height at 4 - 6"?						
Swales clean of trash/debris?						
Evidence of sediment accumulation?						
Condition of culverts						
Presence of weeds, woody growth						

University of Wisconsin – Green Bay Catch Basin Maintenance Inspection Form

Inspector Name: _____

Inspection Date: _____

Catch basin number: _____

Area description: _____

What to look for:

- Inlet grate is free of trash & debris
- Condition of inlet grate
- Sump free of accumulated sediment & debris
- Scoured areas around inlets
- Condition of inflow/outflow pipes

What to do:

- Remove trash & debris
- Repair as needed
- Remove accumulated sediment & debris from sump by vacuum extraction
- Stabilize and repair as needed
- Repair as needed

Items inspected	Checked		Catch basin (numbers) in need of maintenance	Maintenance Performed (Date)
	Yes	No		
Presence of trash/debris on inlet grate?				
Cracks/corrosion on inlet grate?				
Erosion/slumping around inlet?				
Cracks/broken concrete in surrounding street/pavement?				
Cracks/broken concrete in sump?				
Cracks/corrosion in outlet pipes?				

Note: Attach contractor's report, map of catch basins and contract

University of Wisconsin – Green Bay
Outfall
Maintenance Inspection Form

NOTE: This form is contained on the back of the illicit discharge inspection report form; these inspections will be performed at the same time as the ongoing dry-weather illicit discharge inspections (once/summer in July or August)

Condition of outfall structural component

Outfall description: Circular Elliptical Square Other_____

Outfall material: Concrete Corrugated metal PVC Other_____

Structural condition: Good Corroded Cracked

Flow condition: Open Somewhat obstructed Completely obstructed

Management/repair needed? Yes No

If yes, action taken:

University of Wisconsin – Green Bay Wet Detention Pond Maintenance Inspection Form

Inspector name: _____ **Inspection date:** _____
Pond name: _____ **Pond ID:** _____

What to look for:	What to do:
Litter present anywhere in BMP	Remove trash/debris
Clogged inlet or outlets	Remove sediment and debris
Condition of inlet/outfall	Repair/replace as needed
Scouring around inlets/outfalls	Fill, lightly compact and/or replace riprap rock
Woody vegetation on embankment	Remove (manually if possible)
Erosion/exposed soil	Fill, lightly compact and replant as necessary
Excess algae/vegetation on pond surface	Treat as needed
Permanent pool depth < 3.5 ft	Dredge pond

Items Inspected	Checked		Maintenance Needed		Comments	Maintenance Performed (date)
	Yes	No	Yes	No		
Inlet structure						
Erosion/Scouring						
Flow obstructions						
Condition of pipe						
Outfall structure						
Erosion/Scouring						
Flow obstructions						
Condition of pipe						
Embankment						
Presence of debris						
Woody vegetation						
Evidence of erosion						
Cracking, bulging or sliding of berm						
Emergency overflow weir						
Permanent pool						
Presence of weeds/algae						
Depth (s/b > 3.5 feet) (measure once/5yrs)						