

Storm Water Discharge Permit
2003 Annual Report

University of Wisconsin-Madison

WPDES Permit Number WI-S058416-1

March 24, 2004

The University of Wisconsin-Madison respectfully submits this 2003 Annual Report, as required by Part III. K. (2) of WPDES Permit Number WI-S058416-1, the City of Madison/University of Wisconsin-Madison Storm Water Discharge Permit.

For reference, this report includes a reprint of the permit requirements in each section. This report is being distributed to the University Chemical Safety Committee, University Arboretum Committee, University Campus Natural Areas Committee, as well as other parties who have expressed interest. Questions regarding information contained in this submission may be directed to Sally Rowe at 30 N. Murray Street, Madison, Wisconsin 53715. Ms. Rowe may also be contacted at 608/262-0979 or srowe@fpm.wisc.edu.

New Development

Part III. C. (1) New Development. *Coordinate with the City to assess compliance with local storm sewer ordinances for properties owned by the UW within the City of Madison. The UW is expected to comply with those actions which the City requires and deems necessary to manage and prevent pollutants in storm water runoff. The UW shall document in Annual Reports the post-construction storm water best management practices (such as filter strips or structural controls) it used on university property in areas of new development within the City of Madison.*

The Department of Administration has responsibility for managing all major construction projects for the State of Wisconsin. This responsibility includes project management, writing project specifications, writing and awarding contracts, etc. Best management practices for erosion control are written into all building project specifications that disturb 5 acres or more and contractors are required to follow these practices. Erosion control measures will also be taken at sites less than 5 acres. The following are the major University construction projects begun on campus in 2003:

- Lakeshore Improvements – Hoofers Shoreline Area
- Lake Mendota Shoreline Restoration/Development – phase I
- Camp Randall Expansion/Renovation – phase I
- Crew House – new building (replacement)
- Health Sciences Learning Center - new building
- Weeks Hall Addition/Remodel
- Botany Gardens

A representative of the UW Safety department met with members of the Joint Public Works committee on March 13, 2003. This committee meets quarterly and is comprised of representatives

of the University community and the city of Madison. The committee was given a status report regarding the upcoming dredging and repair of the Marian Dunn Pond in the UW Arboretum. Please see Appendix A for a copy of the meeting's agenda.

The major projects completed in 2003:

- Botany Gardens
- SERF (South East Recreational Facility) Addition

The following states the post construction storm water best management practices that were implemented at the above sites:

BOTANY GARDENS

- New drain inlet structures and storm water lines were put into place.
- The drain inlet on Lathrop Drive was rebuilt and a new storm water line was installed to replace the existing plugged line.
- Sidewalks were installed so water would naturally flow to the appropriate drain inlets.
- Turf was installed using a combination of sod and seeding/mulching/erosion control blankets.

SERF ADDITION

- The roof on the addition has an internal drainage system that directs water to the existing storm sewer system. The addition replaced a majority of the remaining impervious surface. Surrounding sidewalks drain to storm inlets at the curb line and any remaining lawn area drains to a catch basin.

Snow and Salt Management

Part III. C. (2)(a) Snow Management. *Continue implementation of the UW's "Salt Reduction Policy" described in Attachment C of the UW's Storm Water Management Program. Discuss how recommendations of the Salt Reduction Task Force may reduce or prevent pollutants in storm water and note any revisions in the UW's salt reduction program in the Annual Reports.*

The Salt Reduction Task Force met on September 28, 1998 to update, expand and elaborate on the 1994 Salt Reduction Policy so that it now includes all campus salt users and details best management practices. This meeting concluded with a multitude of ideas and opinions on how best to manage salt use. These ideas were compiled into a draft Best Management Practices for Salt Use on the University of Wisconsin-Madison campus (Salt BMP). The final version was completed in 1999 and was then sent to various individuals and groups on and off campus in early 2000. The BMP is also posted on our web site, www.fpm.wisc.edu/safety.

Part III. C. (2)(b) Snow Management. *Follow up on future plans identified in the “Salt Reduction Status Report” submitted as part of the UW’s Storm Water Management Program. Recommendations on the following shall be submitted to the Department with the Annual Report due by March 31, 1997.*

The following information is an addendum to that which was provided in the 1997 Annual Report.

Identify other salt reduction areas

We began Winter closure of selected stairwells, pathways and sidewalks in 1996 and, to date, we continue this practice. University staff are encouraged to contact the Physical Plant should they wish to nominate an area for winter closure.

Consider the results of the monitoring study of chlorides in storm water runoff

Based on the results of chloride monitoring conducted for the past several snow seasons, it appears that the snow pile runoff does not have a detrimental impact on the 1918 Marsh or Lake Mendota. Chloride monitoring was discontinued following the 1998-99 snow season.

Part III. C. (2)(c) Snow Management. *Document for the previous fiscal year sand and salt usage, efforts to evaluate alternatives to salt usage.*

Refer to Assessment of Controls Part III. F. (2) for salt/sand totals used for the season.

Part III. C. (2)(d) Snow Management. *Describe annual snow management training.*

Please refer to Assessment of Controls, Part III. F. (1) and (2) for hours of snow management training.

Part III. C. (2)(e) Snow Management. *Review current locations for snow storage areas, evaluate potential impacts to adjacent water bodies, and make recommendations for alternate locations if needed to improve water quality. Submit results of evaluation, recommended proposals for improvements to snow management practices, and a schedule for implementing improvements to the Department for concurrence by March 31, 1997. Implement the recommendations according to the proposed implementation schedule after concurrence with the Department.*

At this time, we have found no other appropriate campus location for storing large quantities of snow, although we are continuing to explore other potential locations. Based on chloride monitoring conducted in previous snow seasons, the snow pile’s impact to the 1918 Marsh and Lake Mendota is negligible. Currently, the University’s goal is to break the hydrogeologic link between the Marsh and the snow pile. This has been accomplished by completing the following tasks:

- Build up the walking path that surrounds the Marsh (completed in the fall of 1996).
- Construct an earthen berm to run along the Marsh walkway within the snow pile storage area (completed in the fall of 1997).
- A snow fence is installed every fall, 15-20 feet from the inside edge of the berm to not only clearly define the boundary of the snow storage area but to also create a “snow free” area where meltwater can pool.

Leaf Collection

Part III. C. (3)(a) Leaf Collection. Discuss any changes in leaf handling practices in Annual Reports.

There were no changes in leaf handling practices in 2003.

Part III. C. (3)(c) Leaf Collection. If available, include leaf pick-up costs in fiscal analysis in Annual Reports.

Please refer to *Part III. F. (1) Assessment of Controls* for costs of leaf pick-up during 2003.

Street/Parking Lot Sweeping

Part III. C. (4)(a) Street/Parking Lot Sweeping. Document the frequency of sweeping UW parking lots in Annual Reports.

After the spring thaw, each of the University's parking lots is swept once to pick up debris that has accumulated over the winter. Multiple passes are taken to remove accumulated sand and sediment. In 2003, thirty cubic yards of wastes were collected from sweeping the lots; labor hours/costs for lot sweeping totaled 280 hours/\$6,552. Parking lots receive additional cleaning on an as-needed basis. Three cubic yards of additional lot wastes were collected at a cost of \$1,064 for 32 hours of labor. Parking lot wastes were disposed in Mad Prairie landfill at a cost of \$1,188.

The University also spent 176 hours sweeping campus streets, at a labor cost of \$4,118. A total of 57 cubic yards of waste materials were collected. During the months of September through November, street waste consists primarily of leaves. These wastes are sent to the University's composting pile rather than the local landfill. Twelve cubic yards of street wastes were disposed in Mad Prairie landfill at a cost of \$1620 and 45 cubic yards were disposed in the compost pile.

Catch basin Cleaning

Part III. C. (5)(b) Catch basin Cleaning. Inspect and clean catch basins according to the criteria established under Special Condition 5(a) of this section. In the Annual Report, affirm that catch basins have been satisfactorily inspected and cleaned, and note any problems.

Catch basins have been satisfactorily cleaned and inspected. Environmental Services annually cleans out all campus catch basins (total number of catch basins is unknown). Routine cleaning involves shoveling out collected sand and other debris. The Plumbing Shop is called in for those units that need more than a routine cleaning, i.e., units that require a roto rootering. Approximately 12 basins were cleaned by roto rooter in 2003.

Please refer to Assessment of Controls Part III. F. (1) for costs of repair and cleaning and numbers of basins cleaned and repaired.

Pesticide, Herbicide and Fertilizer Usage

Part III. C. (6)(b) Pesticide, Herbicide and Fertilizer Usage. Develop best management practices for reducing phosphorus loadings from UW properties to Madison lakes. Evaluate the findings of the City/USGS/DNR phosphorus study to determine the practices that can be adopted to minimize UW phosphorus loadings (e.g., fertilizer application rates). Include an implementation schedule for these management practices and if available, provide the associated costs in fiscal analysis. This information shall be submitted with the Annual Report due March 31, 1997. Implement the best management practices after concurrence with the Department according to the submitted schedule.

A turf herbicide and fertilizer pilot project was tried on the UW-Madison campus in the spring of 2000. An outside company was hired to apply fertilizer to the athletic and recreational sports playing fields; Environmental Services applied fertilizer, where needed, to the remaining campus grounds. The fertilizer used contained no phosphorus.

The phosphorus free fertilizer did not prove successful when applied to the Athletic and Recreational Sports playing fields and in some additional locations on campus. However, it did prove successful on healthy established turf (non Athletic and Rec Sports). The study showed that phosphorus containing fertilizer is necessary to promote early root formation and growth in new seeding areas. The fertilizer also promotes a heartier root system that is also more resistant to drought conditions. Phosphorus containing fertilizer also promotes a heartier turf that is better able to withstand heavy foot traffic in high use areas.

The University only uses phosphorus containing fertilizer when absolutely necessary.

The University's Pesticide Policy for Campus requires the Safety Department to collect data on annual pesticide usage. Examples for 2002 include:

- The use of Methoxychlor for treating Dutch Elm Blight was discontinued in 1999. As an alternative, Arbotect 20-S (a systemic fungicide) was injected into the root flares of 30 American Elm trees on campus (primarily Bascom Hill). Under optimal conditions, a single treatment should provide 3 years of protection.
- Beginning in late April areas within the Campus Natural Areas were treated with Round-Up (Glyphosate) herbicide in our continuing efforts to eradicate an extensive infestation of garlic mustard. No applications were applied along the lakeshore path.

The UW Environmental Services staff apply pesticides as needed, such as in the treatment of known infestations and for spot treatment of at risk plants. University Pest Control also uses a variety of pesticides as needed to eradicate (for example), colonies of ants and earwigs around building foundations and hornet's nests in building entrances. In all situations, applications were consistent with and many times less than the specified application rate.

Pesticide	Total Used in 2003
Applied By Recreational Sports	
Fertilizer (nitrogen 16%, phosphorous 8%, potassium 8%)	2,500 pounds
Broadleaf weed herbicide	13 gallons
Applied By Physical Plant Environmental Services	
Round-Up Pro	26.5 gallons
Garlon 4	2 gallons
Snapshot	85 pounds
Casoran	75 pounds
Merit WSP	15.6 pounds
Arbotect	11.5 gallons
Surflan	2 gallons
Tordon	.5 gallons
Insecticidal Soap	.5 gallons
Roundup	1.9 gallons
Treflan	80 pounds
Merit 76 WSP	3.8 pounds
Horticultural Oil	12.5 gallons
Chelated Liquid Fertilizer (nitrogen 12%, phosphorus 0%, potassium 0%)	10 gallons
Sulfur Fertilizer	75 pounds
Scotts Proturf Fertilizer (nitrogen 21%, phosphorus 0%, potassium 20%)	2,900 pounds
Reinders Professional Fertilizer (nitrogen 18%, phosphorus 0%, potassium 18%)	2,000 pounds
Osmocate (nitrogen 19%, phosphorus 9%, potassium 12%)	75 pounds
Fertilizer (nitrogen 6%, phosphorus 24%, potassium 24%)	500 pounds
Applied by Campus Natural Areas Staff, Volunteers and Contractor	
Plateau – 2.5%	4 gallons
Round-up Ultra Max	7.5 gallons
Round-Up – 3%	482 gallons

Applied by the Athletic Department	
Tru-Green Fertilizer (nitrogen 17%, phosphorus 0%, potassium 5%)	3,475 pounds
Howard Johnson Fertilizer (nitrogen 15%, phosphorus 0%, potassium 15%) + .02% Merit	600 pounds
Scotts Fertilizer (nitrogen 30%, phosphorus 3%, potassium 9%)	750 pounds
Anderson Fertilizer (nitrogen 31%, phosphorus 3%, Potassium 10%)	2,000 pounds
Sulfate of Potash (nitrogen 0%, phosphorus 0%, potassium 51%)	4,000 pounds
Milorganite (nitrogen 6%, phosphorus 2%, potassium 0%)	400 pounds
TruPower Selective Herbicide	16 gallons
Applied by Pesticide Control	
Sevin – 5%	6 ounces
Suspend SC (deltamethrin) - .05%	4.5 gallons
Whitmire Waspfreeze (d-trans Allethrin) - .129%	1.6 gallons

Part III. C. (6)(c) Pesticide, Herbicide and Fertilizer Usage. List training provided to University employees on the safe use, storage, and disposal of pesticides, herbicides and fertilizers and in each Annual Report fiscal analysis. Include costs for these activities in the Annual Report if this information is readily available.

Supervisors of University employees who apply pesticides are certified as Pesticide Applicators by the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) requirements. Supervisors attend a pesticide management course before gaining certification.

Most employees and students who apply pesticides are trained on-the-job, during orientation or in group meetings. Past experience with formal, structured courses indicates that on-the-job training, keyed to the unique situation at the University, are the most effective tools in fertilizer, herbicide and pesticide training. As a result, training costs are intermittent and not accounted for separately.

Employees and students of academic departments in which pesticides are used abide by Pesticide Applicator certification rules and standards. The Environmental Services Department of Physical Plant holds an informal refresher in the spring. Any changes in rules are introduced, and plans for the season are discussed.

Structural Controls

Part III. C. (8)(a) Structural Controls. Submit an inspection schedule for these structural controls.

An annual inspection schedule has been established. Please refer to Appendix B for copies of the completed inspection forms.

Part III. C. (8)(b) Structural Controls. Develop an inspection and assessment schedule for the sedimentation basin in the Arboretum area on Monroe Street and submit it to the Department by March 31, 1996. The assessment shall include a maintenance schedule. The UW shall inspect and maintain the sedimentation basin according to its inspection and maintenance schedules. If the assessment determines there is an imminent need for dredging of the basin, the recommended dredging shall be completed no later than March 31, 1999.

At a minimum, all detention basins in the Arboretum, including the Monroe Street basin, are inspected and assessed by Arboretum staff annually.

Part III. C. (8)(c) Structural Controls. For those maintenance tasks that are assessed to be needed as a result of structural control inspections described in Special Conditions (8)(a) and (8)(b) of this Section, submit a project request for approval and funding (subject to the legislature's appropriation of adequate funds for this purpose). Indicate progress in completing maintenance tasks in Annual Reports. Include these costs in the fiscal analysis if this information is readily available.

In the summer of 1997, the University submitted a project request to the Wisconsin Department of Administration for an expert assessment of the structural controls located on the west campus and the Arboretum¹. The project has been funded and a consultant was selected in the spring of 1998 (Strand Associates, Inc.). The study includes developing the following tasks/recommendations for each structural control: capacity analysis, design evaluation, dredging determination, bank stabilization, ongoing maintenance, and maintenance cost estimation.

Funding to implement the recommendations for Phase I, the Marian Dunn Pond (includes dredging) and the Secret Pond Channel (also located in the Arboretum) has been awarded. The dredging of Marian Dunn, along with other repairs and improvements to this pond and Secret Pond Channel should be completed in late winter/early spring 2004.

Funding for Phase II has been received (Curtis Pond in the Arboretum and Nielsen Pond on the west campus. Funding is pending for Phase III (Johanssen Pond in the Arboretum and Willow Creek and the 1918 Marsh on the west campus.

¹ The following structural controls are included in the study:

West Campus: a) Nielsen Pond, b) 1918 Marsh, c) Willow Creek.

Arboretum: a) Monroe St. Basin (also known as Marion Dunn Pond),
b) channel leading to Secret Pond pond, c) Johansen pond and flume and
d) Curtis Pond and flume.

Part III. C. (8)(d) Structural Controls. *List location of new structural controls or water quality improvements made to existing structural controls in Annual Reports.*

During calendar year 2003, no new structural controls were built on campus nor were any water quality improvements made to the existing structural controls.

Illicit Discharges

Part III. C. (9) (c) Illicit Discharges. *Develop an updated set of drawings for the UW storm sewer system. Develop sub-basin drainage maps which identify the drainage areas associated with each storm sewer system and outfall. The maps shall be submitted with the Annual Report due by March 31, 1997.*

Storm sewer system maps have been submitted with the multi-municipal permit application (submitted January 2003).

Part III. C. (9)(d) Illicit Discharges. *Document in Annual Reports the implementation of the illicit discharges program developed under Special Condition (9)(a) of this section. Documentation shall include results of field screening, follow-up corrective actions or enforcement actions taken as a result of field screening findings or complaints, status of stenciling program, a description of the education/training pollution prevention program activities accomplished during the reporting year, and where feasible, costs associated with the illicit discharge program.*

Illicit Discharges to City of Madison Storm Sewer System

There was one illicit discharge to the city of Madison storm sewer system in 2003. Please see Appendix C for a copy of the report sent to the City of Madison.

Storm Sewer Inlet Stenciling Program

Storm sewer inlet stenciling has been conducted on campus for the past several years. Stenciling serves as an effective means of educating the community on where the inlets lead to and as a result citizens become aware of the consequences of dumping wastes into the sewer. No stenciling was done in 2003.

Because the painted stencils aren't very durable (there is significant fading within a year of application), the University is also applying a different type of inlet marker. The product is called das curb marker and is manufactured by das Manufacturing, Inc. The University is using the Duracast style curb marker. Each marker has a clear protective urethane "dome" applied to the surface that protects the marker from mechanical and chemical abrasion and also enhances UV resistance. Sally Rowe, of the Safety Department, applied 10 decals during the summer of 2003. Eight decals were applied in the southeast dorm area and two were placed on Murray Street just beyond the underpass.

Results of Field Screening

Each spring a representative of Environmental Health conducts an inspection of all the lakeshore outfalls. Samples are taken if dry weather flows are found. Analysis of samples taken, to date, have

come back “clean”. Dry weather flows are the result of cooling waters from campus air conditioning units.

Improvements Made to Agriculture Campus

A representative of Environmental Health also conducts periodic inspections of the Ag campus. No further improvements were made to the Agriculture campus in 2003. Please see Appendix B for a description of the Ag campus inspections.

Education/Training Pollution Prevention Program Activities

Pollution Prevention education and training activities for 2003 included:

- Campus-wide electronic distribution (via the Facility Managers Bulletin) each spring of the Pollution Prevention Reminders for Construction Activities (formerly the Construction Activity Fact Sheet).
- Inlet decaling. Efforts in 2003 were primarily concentrated in high traffic (pedestrian) areas in the southeast portion of campus. Decaling in this location has the potential of creating a high degree of awareness because of the large numbers of pedestrians (students, visitors, faculty and staff) that pass through the area. See Part III.C.(9)(d) for details on decal locations.
- Continued publicity of the UW Pesticide Policy and campus pesticide use on the Safety Department web page (see www.wisc.edu/safety).

Many courses are offered through the University of Wisconsin Extension Engineering Professional Development program. The courses offered in 2003 include the following:

- Storm Sewer System Design
- Comprehensive Culvert Design
- Open Channel Design
- Culvert Construction and Repair
- Creating and Using Wetlands for Wastewater and Storm water Treatment and Water Quality Improvement
- Storm Water Detention Basin Design
- Managing Snow and Ice Control Operations
- Designing Best Management Practices for Stormwater Quality Improvement
- Using the Source Loading and Management Model (SLAMM) for Stormwater Management
- Financing and Implementing Stormwater Management Programs – Phase II
- Engineering and Planning Approaches/Tools for Low-Impact Development

Costs Associated with the Illicit Discharge Program

Partial costs of the Illicit Discharge Program are given in the Assessment of Controls section. Due to our accounting system, complete expenditures are not available.

Spill Response and Prevention

Part III. C. (10)(a) Spill Response and Prevention. *Continue to implement the Chemical Spill Response Plan described in Attachment F of the UW's Storm Water Management Program. Note revisions to the Plan in Annual Reports.*

The University Chemical Spill Response Plan is implemented when spills occur. The Plan has been updated and has been integrated with other emergency plans into one UW Chemical Emergency Plan.

Part III. C. (10)(b) Spill Response and Prevention. *Document number of spills and cleanups in Annual Reports.*

To the best of our knowledge, in 2003, there were two campus spills that impacted our storm sewer system.

Spill Number One – December 10, 2003, Biotron Cage Washing Renovation Project.

Pellitteri Waste Systems loaned a roll off to the Biotron project to be used for collecting waste construction materials. The roll off contained a small amount of dry wall mud that was left over from another project. Unfortunately, the container had a hole in the bottom, it was raining and the mud mixed with the rusty interior of the container. The mix was pinkish in color and started to leak from the container. Two members of the Safety Department happened by and noticed a pinkish liquid flowing out of the roll off and into the nearby storm sewer. They put a makeshift dike around the inlet to stop the flow. The incident was reported to the DNR's spill reporting section. To the best of our knowledge, the pinkish flow never reached Willow creek. There were no reports of a pink creek. Pellitteri also replaced the container.

Spill Number Two – December 15, 2003, Co-Gen Construction Project (addition to Walnut Street Power Plant).

The co-gen project includes the replacement of the Walnut Street substation. Concrete for the substation was mixed on site. In order to make the mix workable and yet have a durable finished product, the concrete is mixed with water and a product called Eu-Con-37. Eu-Con-37 is like a soap, water soluble, breaks down quickly and is environmentally friendly. Approximately 3 gallons of Eu-Con-37 was released at the mixing site, flowed into a nearby storm sewer and into Willow Creek. Power plant personnel cleaned up the site. Safety department personnel learned of the spill the following day. We walked the full length of the creek; there was no foam or visible sheen on the surface of the water. The incident was reported to the DNR's spill reporting section.

Public Input

Part III. C. (11) Public Input. *The UW shall provide opportunities to receive public input on the UW's Storm Water Management Program, amendments made to the program to comply with permit requirements and revisions made to the program under the provisions of General Condition (10) of Part I, Section C. Efforts to solicit public input shall be documented in Annual Reports.*

The 2003 Storm Water Discharge Permit Annual Report was distributed to the University Chemical Safety Committee, University Arboretum Committee, the Campus Natural Areas Committee and other interested parties.

The Safety Department solicits comments and advice from the public in all its public information and training endeavors (described in Part III. C. (9)(d)). In significant new developments, storm water management is a topic of UW Environmental Impact Statements. The Statements are distributed widely for public comment and are also discussed at public hearings.

The University Chemical Safety Committee reviews the report at its spring meeting. The agenda is sent to the Secretary of the Faculty prior to the meeting that reviews the report. An agenda is posted on the bulletin board outside the Provost's office, which is located on the first floor of Bascom Hall. All members of the public are welcome.

Proposed Monitoring Program

Part III. D(2)(b) Proposed Monitoring Program. *The UW shall submit by November 15, 1996, a proposal for monitoring to be conducted during 1997-99. A detailed description of the monitoring proposal, including the purpose and goals of the monitoring program, project period of each proposal monitoring project, frequency of sampling, the number of samples to be collected, proposed location of collection, and parameters to be evaluated shall be submitted to the Department no later than with the Annual Report due March 31, 1997. The UW shall submit a summary of data collected, along with conclusions and recommendations for additional management practices, with its Annual Report.*

The University revised its field screening plan in the late winter of 2000. In 2001, the University changed the location for monitoring storm events; the analytes tested for remain the same. Monitoring locations have been chosen for their potential to be problem sites. At this time, the University intends to follow the monitoring program, as submitted to the Department for the duration of WPDES Permit Number WI-S058416-1, unless notified otherwise. The field screening program will be continued into the new permit period; the storm event monitoring program will not be.

Storm Event Monitoring

Please refer to Part III F.(2) Assessment of Controls for a chart presenting the monitoring results for 1998 through 2000. Samples from this time period were taken from a manhole located at 1300 University Avenue in front of the Medical Sciences Center. Please see Appendix D for a chart presenting new monitoring locations and analytical results from 2001.

There was no storm event monitoring in 2003.

Storm Water Pollutant Loading Calculations

Part III. E. (2) Storm Water Pollutant Loading Calculations. The UW has an agreement with the City of Madison that the City will perform pollutant loading calculations with Source Loading and Management Model (SLAMM). The UW shall notify the Department if there are any changes in this agreement. The characterization data described on Part I, Section D, shall be used for verifying the SLAMM model. The UW shall submit its pollutant loading data obtained from the City in the Annual Report which is due March 31, 1997.

UW Chemical and Environmental Safety staff have reviewed the draft copy of "Sources of Phosphorus in Storm water from Two Urban Residential Basins in Madison, Wisconsin, 1994-95" (City of Madison Phosphorus Study) conducted by the City of Madison, Wisconsin Department of Natural Resources and the United States Geological Survey.

The study took place in two residential areas within the city of Madison. No monitoring points were used on the University campus; thus, the report's findings were less useful than anticipated. Because University lands are dissimilar from those studied, it may not be appropriate to apply the study's methods, findings and conclusions to the University.

Assessment of Controls

Part III. F. (1) Assessment of Controls. The UW shall perform an assessment of controls according to the requirements of Part I, Section F. If available, costs associated with the activities listed under Special Condition (2) of this section shall be provided in the Annual Report fiscal analysis.

The following table summarizes the fiscal analysis of the University's Storm Water Management Program for 2003.

Action or Control	UW-Madison Work Unit	Action Unit	Actual Cost (if available)
Permit Management			
Permit Management	Safety Dept.	500 hrs of labor	\$11,500
Annual Report Preparation	Safety Dept.	20 hrs of labor	\$ 460
Illicit Discharge Program			
Storm Sewer Stencil Program	UW-Madison staff volunteer	Paint plus volunteer labor	\$ 191
Storm Sewer Decal Program	Safety Dept.	Decals	\$2,737
Illicit Connection Inspection	Environmental Health Program of University Health Services	0 hours of labor/connections inspected	
	Phys. Plant Plumb. Shop	0 hours of labor/connections inspected	
Spill Response and Prevention	Safety Dept.	3 Hours labor	
Field Screening	Environ. Health Program of University Health Services	Labor and analytical costs	No sampling in 2003
	State Lab of Hygiene	Analytical Cost	\$ 0
Other Program Elements			
Snow Management Training	Physical Plant Environmental Services	54 hrs (in-house training & other classes)	
Leaf Pick-up	Physical Plant Environmental Services	670 hrs of labor to collect 86 tons of leaves	\$ 14,479
Street/Parking Lot Sweeping	Physical Plant Environmental Services	488 hrs of labor	\$11,734
Catch basin Cleaning	Phys. Plant Plumb. Shop	? hrs of labor to clean -12	\$ 3,420
	Physical Plant Environmental Services	183 hrs of labor	\$ 4,282
Catch basin Repair	Physical Plant Plumbing Shop	Labor and materials to repair - 5	\$ 14,575
Structural Control Inspection and Assessment	Physical Plant Power Plant; Physical Plant Environmental Services; Environmental Health Program of University Health Services	8.5hrs of labor	

Part III. F.(2) Assessment of Controls. *The UW shall include the following measurements in assessing the effectiveness of the UW's Storm Water Management Program:*

The following is an assessment of our storm water management controls.

Post-Construction storm Water Management Controls

Please see Part III. C. (1).

Snow Removal Training

At the beginning of the snow season new members to the Environmental Services snow removal team receive training in the operation of snow removal equipment and proper application of abrasives and deicing materials. This training is conducted in-house. Existing and new employees will also receive training in any changes, improvements, refinements made to the previous years snow removal techniques.

As in the past, a contractor is responsible for removal of snow from parking lots during heavy snowfalls. The contractor has been instructed to take care in the snow storage area adjacent to the Class of 1918 Marsh to minimize impacts to the marsh during the spring melt.

Annual Sand and Salt Usage

For the 2003 winter season the following amounts of sand and salt were used:

	Sand Used (Tons)	Salt Used (Tons)
Streets	164.7	115.05
Sidewalks	238.5	153.4
Parking Lots	109.9	54.6

The Custodial staff also use salt in areas immediately surrounding the buildings on campus. Salt is taken by the custodians from the campus salt storage shed, put into 5 gallon pails or Brute barrels and then transported to the buildings for which they are responsible. Although it is possible to quantify the amount of salt taken annually from the shed, it is difficult to quantify annual usage due to end-of-season residuals, which are not accounted for. The contents of these barrels/pails may not be depleted by the end of the snow season and will thus be stored in the buildings until the following season.

Annual Leaf Collection

Refer to Part III. F.(1) Assessment of Controls.

Parking Lot Sweeping and Litter Collections

Refer to Part III. C. (3)(a).

Catch Basin Inspection Conformance

Catch basins on the UW campus are inspected during storm events when the Environmental Services Department cannot carry out other work. During a rainstorm, several crews go out and inspect catch basin drainage, removing materials to improve the efficiency of storm water movement.

Please refer to Part III. F. (1) Assessment of controls for costs associated with the cleaning and repair of catch basins.

Pesticide, Herbicide and Fertilizer Training

Costs not available; see Part III. C. (6)(c).

Structural Control Inspection Conformance

Refer to Appendix B.

Illicit Discharge Education and Training

See Part III. C. (9)(d).

Field Screening Results

See Part III. C. (9)(d).

Corrective and Enforcement Action(s)

There were no known events requiring enforcement or corrective action during 2003.

Storm Sewer Inlet Stenciling

Refer to Part III. C. (9)(d).

Spills and Cleanups

Refer to Part III. C. (10)(b).

Water Quality Data

The following chart presents a comparison of data gathered from several storm water sampling events in 1998, 1999 and 2000. It is difficult to draw any conclusions from the data collected thus far and it is unlikely that we'll see any significant trends in the short term.

We had planned on making modifications based on the City's Phosphorus Study, however, as explained in Part III. E. (2), the Study's data was much less useful than anticipated.

Analyte In mg/L unless otherwise noted	1998			1999			2000	
	August	October	Nov	July	Sept	Nov	May	Sept

BOD 5 day	4.4	<0.3	6.4	3.4	6.0	3.2	20.8	4.2
Chloride	16.3	37.9	21.8	24.2	18.5	454	28.5	66.9
Ammonia-N	.097	.145	.175	.332	.138	.235	.697	.348
Nitrate + Nitrite-N	.519	1.14	1.25	0.823	.629	.758	1.88	.972
Tot. Kjeldahl Nitrogen	.52	.93	.9	.29	.47	.76	2.7	.83
Total Phosphorus	.066	.186	.208	.069	.083	.088	.344	.097
Total Solids	212	302	420	230	210	1010	346	246
Suspended Solids	NA	25	48	30	36	30	66	11
Zinc	69µg/L	110µg/L	110µg/L	66µg/L	100µg/L	110µg/L	210µg/L	73µg/L
Cadmium	.22µg/l	.26µg/l	NA	.18µg	.19µg	.19µg/l	.34µg/l	ND
Copper	24µg/L	46µg/L	59µg/L	30µg/L	23µg/L	19µg/L	52µg/L	15µg/L
Lead	7.5µg/l	9µg/L	19µg/L	9µg/L	5µg/L	7µg/L	23µg/L	17µg/L

LIST OF ATTACHMENTS

- A Joint Public Works Committee Meeting Agenda
- B Completed Structural Control Inspection Forms
- C Illicit Discharge Notification Form
- D 2001 Storm Event Monitoring Test Results – Prepared by Environmental Health

Certification

permit contacts and mailing address	
Ron Bresell, Associate Director Chemical & Radiation Program UW-Madison Safety Department 30 N. Murray Street Madison, Wisconsin 53715-2609 608-262-8769	Sally Rowe, Sr. Environ. Health Spec. Chemical & Radiation Program UW-Madison Safety Department 30 N. Murray Street Madison, Wisconsin 53715-2609 608-262-8769
Name Darrell Bazzell	Title Vice Chancellor University Administration University of Wisconsin-Madison
Signature	Date