Campus Stormwater Management Plan

DSF Project No. 03K2D

University of Wisconsin-La Crosse

May 2008

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EXECUTIVE SUMMARY

This stormwater management plan was developed for the University of Wisconsin-La Crosse (UW-L) as a guide to managing stormwater runoff on campus. The UW-L campus was developed before current stormwater regulations and practices were in place, resulting in several areas with stormwater issues relating to both quantity and quality. Additional development in the area may exacerbate existing problems.

This plan (Section 2) describes the State and Federal stormwater regulations and local ordinances that may apply to the UW-L campus, and provides recommendations (Section 6) to assist UW-L in complying with the applicable regulations. This plan also summarizes existing practices and problems (Section 3 and 4) on UW-L's campus associated with stormwater quality and quantity issues, and suggests ways to mitigate existing problems and reduce the stormwater impacts from future development (Section 6). The February 2005 draft plan was presented at a public meeting on October 11, 2006. The presentation slides and attendance list are included in Appendix R.

This plan has the following goals:

1. Development of an orderly plan for managing stormwater runoff from areas subject to new development and redevelopment.

2. Suggest methods to address existing stormwater problems on campus, such as flooding and soil erosion.

3. Development of a uniform policy for addressing and documenting future stormwater issues.

4. Identify actions needed to be consistent with local municipality stormwater issues.

5. Identify actions needed to be consistent with Phase II EPA National Pollutant Discharge Elimination System (NPDES) Stormwater Permit requirements for the UW-L campus.

6. Identify actions needed to be consistent with NR 120, NR 151, and NR 216 Performance Standards.

Throughout this stormwater management plan recommendations are provided which will help UW-L comply with local and state performance standards. The full implementation plan summarizing recommendations in Sections 6.02 through 6.09 is included as Table 6.10-1. While working toward full implementation, we offer the following specific recommendations as listed in Section 7.02.

In part, we recommend that UW-L:

- Investigate and document all existing Wisconsin Pollutant Discharge Elimination System (WPDES)-permitted discharges on campus to comply with storm sewer mapping requirements as described in Section 2.06.

- Adopt the proposed stormwater guidelines described in Appendix A to meet NR 151 performance standards and local requirements for erosion control and stormwater

management as described in Section 2.07. It should be noted that as of May 2008, NR 151 is open for revision. It is expected that in 2009 the changes to NR 151 will be implemented. The guidelines herein should be updated at that time to be consistent with the revised NR 151.

- Investigate all campus-owned stormwater inlets to verify the existence of a sump and establish a routine maintenance program as described in Section 4.02.

- Have the appropriate UW-L official sign and date the Certification and Commitment of Resources sections of the Spill Prevention Control and Countermeasure (SPCC) Plan, March 2004, as described in Section 4.06.

- Update the campus storm sewer system map to resolve deficiencies in mapping or consider a full storm sewer remapping effort as described in Section 6.02 H. However, the existing mapping and mapping herein would generally be considered acceptable for permit compliance.

- Collaborate with the City of La Crosse on citywide hydrologic/hydraulic and water quality modeling studies of the storm sewer system to obtain recommendations for improvements necessary to alleviate the flooding, and to meet the requirements of the Phase II permit as described in Section 6.02.

- Coordinate with the City of La Crosse, La Crosse County, UW-Extension, and local organizations in implementation of the Public Information and Education program as described in Section 4.04 and Section 6.02.

- Track annual use of pesticides, fertilizers, salt, and other chemicals and nutrients on campus as well as street sweeping miles, pounds of recycled oil, and sediment cleared out of sumps to comply with NR 151 Pollution Prevention requirements as described in Section 6.02 F.

- Budget for and implement best management practices (BMPs) at new building projects as described in Section 6.04 and a more frequent street sweeping program to meet total suspended solids requirements as described in Section 6.02 G.

- Budget for and implement soil compaction improvements on campus by installing porous pavement on soil compacted areas and plantings to deter pedestrian traffic at the locations identified in Section 6.08 A.

- Consider applying for a Wisconsin Department of Natural Resources (DNR) Urban Nonpoint Source and Stormwater Grants for completion of some of the work required by the Phase II Permit including the stormwater quality modeling study and storm sewer system mapping upgrades.

- Adopt the policies and practices identified in Section 6.09 and the Drainage Evaluation Form in Appendix I.

- Implement Phase 2 permit activities necessary to maintain permit compliance according to the schedule shown in Table 6.10-1.

The scope of this stormwater management plan did not include stormwater quality or quantity modeling; therefore, the recommended BMPs for the UW-L campus building projects have not been analyzed for effectiveness, and should be modeled prior to implementation to ensure that the applicable standards are being met.

Changes in the UW-L Campus Physical Development Plan (2005-2011), March 2004, between the date of issuance of the draft Campus Stormwater Management Plan, February 2005, and the final Campus Stormwater Management Plan, May 2008, have been identified in Section 5.04 Campus Construction Projects (2008 Update). The additional or revised projects described in Section 5.04 would need to be analyzed in the future in a similar manner to Section 6.04 to determine stormwater management needs and costs. The analysis would be done as part of a future update to this stormwater management plan as agreed upon with WI DOA/DSF staff.

SECTION 1
INTRODUCTION

1.01 INTRODUCTION

This report summarizes methodology and results of a stormwater management plan conducted by Strand Associates, Inc. for the University of Wisconsin–La Crosse (UW-L) campus.

Much of the development in this watershed occurred prior to the advent and implementation of strong guidelines on stormwater management, resulting in several areas with stormwater issues. These issues are related to both stormwater quantity and stormwater quality. Additional development associated with the implementation of the *UW-La Crosse Campus Physical Development Plan (2005-2011), March 2004*, may exacerbate existing problems. This stormwater management plan will address ways to mitigate the existing problems and suggest ways to decrease the impacts of future development. The plan has the following goals:

1. Development of an orderly plan for managing stormwater runoff from areas subject to new development and redevelopment.

2. Suggest methods to address existing stormwater problems on campus, such as flooding and soil erosion.

3. Development of a uniform policy for addressing and documenting future stormwater issues.

4. Identify actions needed to be consistent with local municipality stormwater issues.

5. Identify actions needed to be consistent with Phase II United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Stormwater Permit requirements for the UW-L campus.

6. Identify actions needed to be consistent with NR 120, NR 151, and NR 216 Performance Standards.

At the onset of this project, we interacted with the Wisconsin Department of Administration (DOA)/Department of State Facilities (DSF), and UW-L at the following meetings to discuss the expectation of the campus.

Date	In Attendance	Purpose
May 20, 2004	▪ WI/DOS/DSF (Erik Sande and Thomas Bittner) ▪ UW-L (Matthew Lewis and Peter Bemis) ▪ Strand (Dave Wolmutt and Jon Lindert)	Data gathering to obtain background information.
November 22, 2004	▪ UW-L (Matthew Lewis and Peter Bemis) ▪ Strand (Jon Lindert)	Meeting to discuss regulatory framework, UW-L 2004 Campus Physical Development Plan, City of La Crosse Master Plan, County of La Crosse Land and Water Resource Management Plan, DNR-Bad Axe/La Crosse River State of Basin Report, Existing Campus Stormwater BMPs, As-Built Drawings for Campus Buildings, and Soil Boring/Geotechnical Data.

1.02 SCOPE OF STUDY

This study includes the following key elements.

A. Stormwater System Mapping

Compilation of existing data from a variety of sources resulted in the creation of a master stormwater map as shown in Figure 3.03-1. Field survey was not in the scope of this project and no new data was created within our scope.

B. Proposed/Anticipated Campus Development

Through review of the 6-Year Campus Physical Development Plan, we described the developments and indicated what regulations must be complied with and what storm sewer system improvements are needed. Recommendations were made for each planned development. In addition, proposed utility improvements, land use changes, storm sewer system improvements, off-site storm sewer system improvements, and proposed property acquisitions were documented.

C. Existing Stormwater Management Practices

We assessed and documented the existing stormwater management practices being implemented on each campus. This included assessment of existing permits, tier status, Notices of Intent (NOIs), floodplains and local zoning, management of batch discharges (pool water/cooling tower water), SWPP plans, detention/retention facilities, oil and grease control, yard waste management, pesticide and fertilizer management, and deicing and snow removal practices.

D. Problem Area Identification

We assessed and documented existing water quality and quantity problem areas as identified by campus staff as well as areas identified in the field by our personnel during campus site visits.

E. Regulatory Environment Research and Proposed Performance Standards

We reviewed pertinent existing codes (NR 120, NR 151, NR 216, local City/County ordinances) for requirements. A written description of each code review is provided. Proposed performance standards for the campus were generated and are included in a table comparing the proposed performance standards to these regulatory requirements. Applicable dates from existing codes were identified.

F. Anticipated Stormwater Management Efforts/Recommendations

This stormwater management plan includes the following:

- Actions needed to comply with regulatory requirements.
- Actions needed to alleviate existing water quality and quantity problem areas.

- Permits required for a typical building project.
- Water quantity modeling needs assessment–evaluation of the need to perform water quantity modeling for areas that appear vulnerable to flooding during extreme storm events.
- Water quality modeling needs assessment–evaluation of the need to perform water quality modeling for areas that appear vulnerable to degraded water quality.
- A matrix of best management practices (BMPs) indicating the appropriate use, cost range, and effectiveness of standard BMPs. The matrix can be used when selecting BMPs for future campus building projects.
- Any necessary modifications to spill prevention control and countermeasure (SPCC) and SWPP plans.
- Conceptual design/layout of recommended stormwater management projects.
- Planning level budgetary costs of recommended stormwater management projects.
- Additional data needs assessment.

D. Infiltration Assessment

Figure 3.05-1 and Section 3.05 includes our assessment of infiltration potential on the UW-L Campus. Data from the La Crosse County Soils Survey was used to identify potential locations for stormwater infiltration.

E. Information and Education Discussion/Outline

Potential elements and framework for an information and education program regarding stormwater issues was developed.

G. Policies and Practices

A set of policies and guidance for responding to and documenting existing drainage issues was developed and included in Section 7.05 along with a Drainage Evaluation Form in Appendix I.

H. Implementation Plan

The implementation plan includes the development of a schedule for completion of recommended improvements and a discussion of financing options/funding opportunities for the recommended stormwater improvements. The implementation plan also coordinates which improvements will be made with each upcoming UW-L building project.

I. Preparation of Project Report

This project report includes recommendations, project components, and opinions of probable cost for addressing the project components. All costs are presented in 2nd quarter 2005 dollars. Future construction costs should be adjusted for inflation when final project schedules are determined.

1.03 LOCATION OF STUDY AREA

The UW-L campus is located in western Wisconsin in La Crosse County. The City of La Crosse is located at the confluence of the Mississippi, Black, and La Crosse Rivers. The 119-acre campus is situated in a residential neighborhood to the east of historic downtown La Crosse. The La Crosse area has a regional population of approximately 52,000 people, including surrounding communities. Figure 1.03-1 shows the location of UW-L within the region.

This study focuses on stormwater issues located on University-owned properties.

1.04 OTHER SIMILAR STUDIES

Similar recent studies that have been conducted are listed below:

- *La Crosse County Land and Water Resource Management Plan*, La Crosse County Department of Land Conservation, revised March 1999.
- *State of the Bad Axe-La Crosse River Basin*, March 2002, publ. WT 557 2002.
- *Confluence: The La Crosse Comprehensive Plan,* City of La Crosse, December 2002.
- *Report on the Feasibility of a Storm Water Utility for the City of La Crosse,* City of La Crosse, July 2004.

1.05 STORMWATER REGULATIONS

The UW-L campus is subject to, or could be subject to, the following stormwater regulations:

- Phase II NPDES Permit (NR 216)
- Chapter NR 151, Wis. Adm. Code–Urban Performance Standards
- Chapter NR 120 (Priority Watersheds and Lakes)–There are currently no priority lakes in La Crosse County. The Lower Black River, located just north of the Bad Axe-La Crosse River Basin, was a priority watershed, but it is completed according to the Wisconsin Department of Natural Resources (DNR).
- Note: As a state institution, UW-L is not subject to La Crosse County or City of La Crosse stormwater ordinances. However, these will be considered in the recommendations for the campus to uphold local water quality protection.

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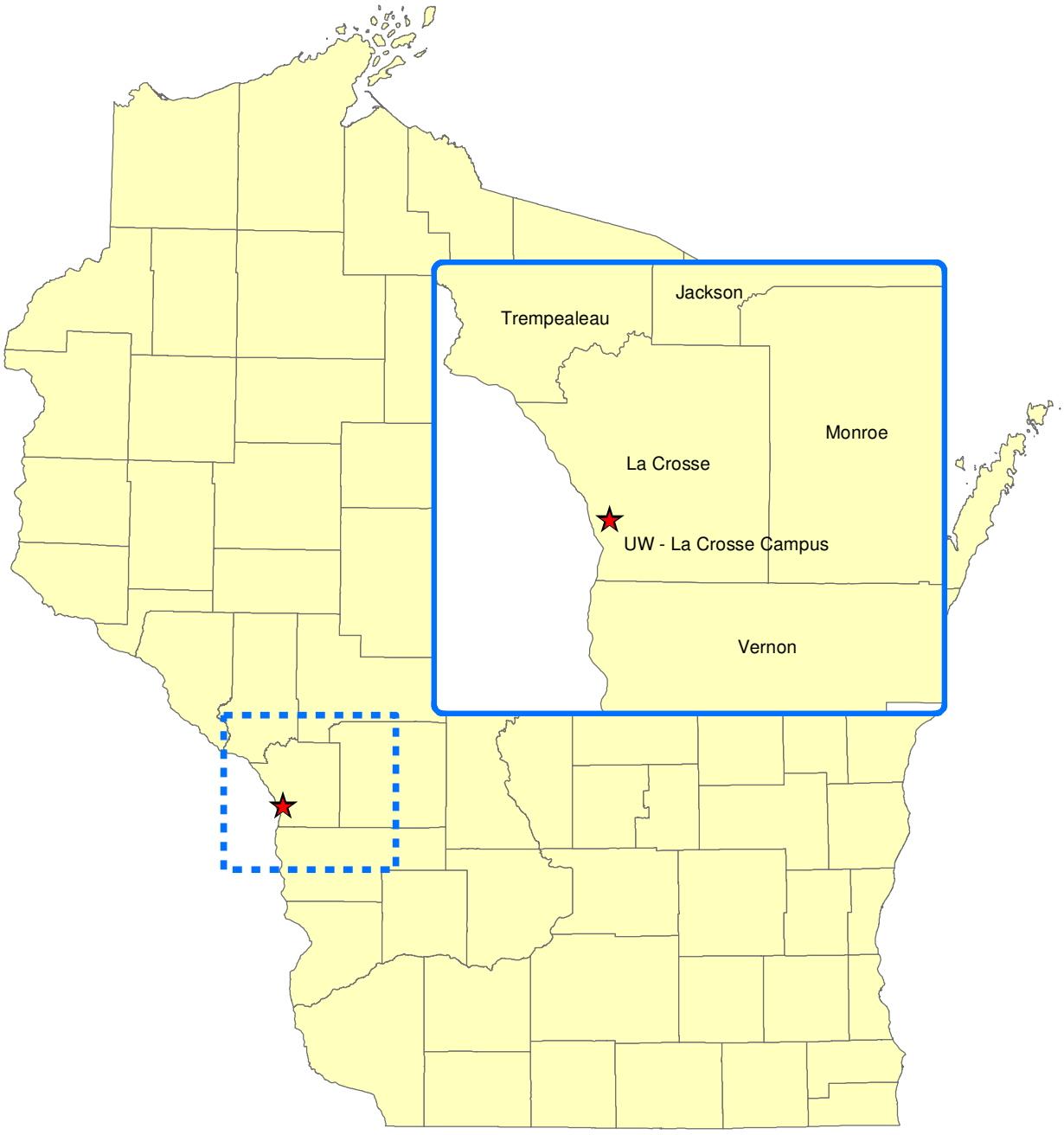

UW-LA CROSSE CAMPUS LOCATION WITHIN WISCONSIN

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND ASSOCIATES, INC.

FIGURE 1.03-1
1-104.013

1.06 DEFINITIONS AND ABBREVIATIONS

The following definitions and abbreviations are presented as an aid to the reader.

A. Definitions

Average sediment depth–The average depth of deposited sediment measured over the entire pond area.

Average current normal pool depth–The average depth of water measured over the entire pond area. This is the difference between the water surface and the top of sediment.

Average current total pond depth–The average depth of the pond if all deposited sediment were removed. This is the difference between the water surface and the existing bottom of the pond.

Best management practices–Also known as BMPs, structural or nonstructural measures, practices, techniques, or devices that are employed to avoid or minimize soil, sediment or pollutants carried in runoff to waters of the state.

Catch basins–An inlet to a storm sewer equipped with a sediment sump, and sometimes a hood on its outlet pipe to the downstream storm sewer.

Control structure–The manmade structure that controls the water released from a stormwater facility to the outfall.

Curve number–The Soil Conservation Service has devised a method of computing the runoff from an area based on a system of curve numbers. The curve number for an area of land is obtained by examining the land use and soil type of the land area.

Design storm–A hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency, and total depth of rainfall.

Detention basin–A stormwater management structure that temporarily detains runoff and discharges it through a hydraulic structure to a stream or receiving waterway.

Drainage basin–A geographical area that contributes surface water runoff to a particular point.

Erosion–The process by which soil, rocks, and other land forms are worn away by repetitive wind, water, or ice activity.

Final stabilization–When all land disturbing construction activities at the construction site have been completed and a uniform perennial vegetative cover has been established with a density of at least 70 percent of the cover for the unpaved areas and areas not covered by permanent structures or that employ equivalent permanent stabilization measures.

Flume–The structure or channel upstream of the stormwater facility used to convey stormwater to the facility.

Forebay–The area of the pond near the inlet where heavy sediments are encouraged to settle out of the stormwater that enters a facility.

Illicit discharge–Any discharge to a municipal separate storm sewer system that is not composed entirely of runoff, except discharges authorized by a WPDES permit or any other discharge not requiring a WPDES permit such as water line flushing, landscape irrigation, individual residential car washing, fire fighting, and similar discharges.

Impervious surface–A ground cover such as concrete, rooftops, asphalt, gravel or other surface which inhibits precipitation or runoff from infiltrating or penetrating the surface. A surface which releases as runoff all or most of the precipitation that falls on it.

In-fill development–Development that occurs in an undeveloped area which is located within or is surrounded by a developed area.

Infiltration–The entry of precipitation or runoff into or through the soil.

Inlet–An entryway to the storm sewer system usually located at street corners and low points.

Karst feature–An area or surficial geological feature subject to bedrock dissolution so that it is likely to provide a conduit to groundwater, and may include caves, enlarged fractures, mine features, exposed bedrock surfaces, sinkholes, springs, seeps, or swallets.

Maximum extent practicable–Abbreviated as MEP, a level of implementing BMPs to achieve a performance standard which takes into account the best available technology, cost-effectiveness, and other competing issues such as human safety and welfare, endangered and threatened resources, historic properties, and geographic features.

New development–Development resulting from the conversion of previously undeveloped land or agricultural land uses.

Outfall–The piping, channel, or other equipment downstream of the control structure used to transfer water out of the control structure to the surrounding environment.

Performance standard–A narrative or measurable number specifying the minimum acceptable outcome for a facility or practice.

Recurrence interval–The probability that a given rainfall event will occur in a given year. For example, a 100-year rainfall event has a 1 percent chance of occurring in a given year (1/100 = 0.01 = 1 percent), a 5-year rainfall event has a 20 percent chance of occurring in a given year (1/5 = 0.20 = 20 percent).

Redevelopment–Areas where development is replacing older development.

Retention basin–A stormwater management structure that captures stormwater runoff and does not discharge to a surface water body. The water is discharged by infiltration or evaporation.

Separate storm sewer–A conveyance or system of conveyances including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains, which meets all of the following criteria:

a. Is designed or used for collecting water or conveying runoff.
b. Is not part of a combined sewer system.
c. Is not draining to a stormwater treatment device or system.
d. Discharges directly or indirectly to waters of the state.

Sheet flow runoff–Water, usually storm runoff, flowing in a thin layer over the ground; also called overland flow.

Subbasin–The parts of a drainage basin that, when combined, create the entire drainage basin for a facility.

Time of concentration (T_c)–"… the time for runoff to travel from the hydraulically most distant point of the watershed to a point of interest within the watershed," SCS, 1986.

Time distribution of rainfall–The amount of rainfall that has fallen during a storm event versus the amount of time that has elapsed during a storm event.

Weir–A wall spanning the control structure. When the water level of the pond reaches the top of the weir, water flows over the weir and out of the pond.

B. Abbreviations

ac	acres
ac-ft	acre feet
BMP	best management practice
cfs	cubic feet per second
CSREES	USDA Cooperative State Research, Education, and Extension Service
Comm -	Wisconsin Department of Commerce
DNR	Wisconsin Department of Natural Resources
DOA	Wisconsin Department of Administration
DSF	Division of State Facilities
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
ft	feet
GIS	geographic information system
HSG	Hydrologic Soil Group
MEP	maximum extent practicable
MS4	municipal separate storm sewer system
NIWQP	National Integrated Water Quality Program

NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
RUSLE	Revised Universal Soil Loss Equation
SCS	Soil Conservation Service
SLAMM	Source Loading and Management Modeling
SPCC	Spill Prevention Control and Countermeasure
sq mi	square miles
SWPP	Stormwater Pollution Prevention
TSS	total suspended solids
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UWEX	University of Wisconsin-Extension
UW-L	University of Wisconsin-La Crosse
WisDOT	Wisconsin Department of Transportation
WPDES	Wisconsin Pollutant Discharge Elimination System

SECTION 2
PERTINENT CODE

The following sections describe the stormwater regulations that may apply to the UW-L.

2.01 NPDES/WPDES PHASE II PERMITS

The EPA's NPDES Stormwater Program is a two-phased national program that requires implementation of controls designed to prevent harmful pollutants from being washed by stormwater into local water bodies. The NPDES permitting mechanism is administered in Wisconsin as the Wisconsin Pollutant Discharge Elimination System (WPDES). Phase I of the NPDES Stormwater Program began in 1990 and required all operators of medium and large municipal separate stormwater systems (MS4s) to obtain stormwater discharge permits and develop stormwater management and pollution control programs. The stormwater rules also detailed practices that must be followed to prevent soil erosion during construction, as well as promote infiltration of rain and snowmelt on the site once construction is completed. Phase I required all large and medium MS4s, which incorporated service areas with populations of 100,000 or more, to obtain permits. In Wisconsin, this applied to the cities of Madison and Milwaukee. Phase I rules also regulated construction sites by requiring those projects that disturbed more than 5 acres of land to obtain a WPDES stormwater discharge permit.

The Phase II Stormwater Rule, which took effect in March 2003, extended the stormwater regulations by requiring smaller municipalities and smaller construction sites to obtain NPDES permit coverage. In Wisconsin, the Phase II rules were adopted into Chapter NR 216 as an amendment that took effect on August 1, 2004.

A. Municipal Stormwater Discharge Permits

Under Phase II, small MS4s are required to apply for WPDES permit coverage and develop, implement, and enforce a stormwater management program, as well as fulfill all other requirements of the stormwater rules that Phase I MS4s were previously required to complete.

1. Small MS4s

Small MS4s are defined as being any MS4 that was not included in the Phase I large and medium sized MS4 designations. Any MS4 located within an "urbanized area," as defined by the United States Census Bureau as a populated area with 50,000 residents or more and an overall population density of at least 1,000 residents per square mile, is automatically regulated under Phase II. In addition, any MS4 located outside a designated urbanized area and serving a population greater than 10,000 people and a population density of at least 500 people per square mile, may also be designated by the DNR as requiring permit coverage under Phase II.

The City of La Crosse is located in a designated urbanized area under the new MS4 definitions. Therefore, this stormwater management plan will recommend necessary changes to campus stormwater management practices that will help prepare UW-L for the implementation of Phase II requirements.

2. MS4 General Discharge Permit

There are two types of WPDES permits under NR 216: individual and general permits. Individual permits can be tailored to include site-specific requirements. General permits are written to cover a broad class of discharges where environmental protection can be achieved through a set of general provisions that apply to all dischargers in a particular category. Individual permits can take several years to develop, while general permits, once written, can be issued within months. In addition, general permits create consistency, allowing multiple MS4s covered under the same general permit to work together to reach objectives. In the case where a general permit does not provide adequate water quality protection, an individual permit can be issued in its place.

On November 1, 2006, the DNR drafted a memo (Appendix S) that states that the UW-L campus will be required to obtain a general permit for their small MS4s. The DNR has issued a general permit (WPDES S050075-1) to cover those remaining small MS4s that were brought in under Phase II of the stormwater rules and do not already have individual permits. The final MS4 permit became effective on January 19, 2006. The City of La Crosse and UW-L are covered under this general MS4 permit. A copy of the MS4 permit is included in Appendix D. The permit has critical requirements and dates that UW-L will need to meet.

It is our understanding that UW-L submitted an NOI to the DNR on January 26, 2007. The NOI provides documentation of authorization of stormwater discharge from the MS4 under the general permit.

3. Permit Requirements

The following components are required under the Phase II MS4 general discharge WPDES permit and are further discussed in Appendix B:

a. *Public Education and Outreach*–Requires a public education and outreach program to promote basic stormwater BMPs and environmentally sensitive land development.

b. *Public Involvement and Participation*–Requires a program to notify the public of required stormwater activities and encourage involvement.

c. *Illicit Discharge Detection and Elimination*–Requires a program to detect and remove illicit discharges and improper disposal of wastes into the storm sewer system.

d. *Construction Site Pollutant Control*–Requires a program to regulate BMPs at construction sites with land disturbance of at least 1 acre, smaller sites that are part of a larger plan, and adjacent developing areas that are planned to have a minimum density of 500 people per square mile that discharge into an MS4.

e. *Postconstruction Site Stormwater Management*–Requires controls on discharges from new development and redevelopment projects that disturb 1 acre or more of land, smaller sites that are part of a larger plan, and adjacent developing areas that are planned to have a minimum density of 500 people per square mile that discharge into an MS4.

f. *Pollution Prevention*–Requires an operation and maintenance program including street sweeping, yard waste collection, and other BMPs that prevent and control polluted runoff.

g. *Storm Sewer System Map*–Requires the creation of a detailed map of the storm sewer system depicting all significant features including discharges to the storm sewer and all control measures in the system.

h. *Annual Report and Compliance Schedule*–Requires the permittee to submit an annual report and provide a schedule of compliance for the implementation of all requirements during the first five years after coverage is granted.

In addition, NR 151 Developed Urban Area Performance Standards require that an MS4 regulated under an NR 216 MS4 WPDES permit must achieve a 20 percent reduction of total suspended solids in runoff to waters of the state as compared to no controls by March 10, 2008, and a 40 percent reduction by March 10, 2013. See Section 2.02 for more requirements of NR 151 Runoff Management performance standards.

B. Construction Site Stormwater Discharge Permits

In addition to the regulation of MS4s, Phase II rules also require small construction sites that disturb 1 acre or more of land to obtain a WPDES permit for stormwater discharge under Subchapter III of NR 216. For projects that are separated by at least one-quarter mile but are part of the same plan, the projects are considered to be independent and require separate permits as long as the area between the projects is not being disturbed.

1. Commercial Buildings

Stormwater discharges from construction sites for public buildings and buildings that are places of employment are regulated by the Department of Commerce (Comm). In the case of UW-L, that would consist of the majority (if not all) of the construction projects on campus. For a description of applicable Comm regulations, see Section 2.05 of this report.

2. Notices of Intent and Termination

An NOI form must be submitted to the regulating authority (in most cases, D-Comm) and received at least 14 days before land-disturbing activities are scheduled to begin. The landowner is authorized under a general construction site discharge permit to discharge stormwater from the construction site 14 days after the NOI is received by the department, unless otherwise notified. Upon construction completion and final stabilization, a notice of termination must be submitted by the landowner to the regulating authority to end coverage of the permit.

3. Soil Erosion Control and Stormwater Management Plans

A site-specific soil erosion control plan and stormwater management plan must be submitted prior to the NOI, documenting all BMPs that will be implemented throughout the duration of construction activities at the site. The plans must follow all performance standards required in NR 151 for construction sites and must be updated as required during the construction period. Submittal of materials must follow the plan submittal requirements of NR 152 (State Model Stormwater and Erosion Control Ordinances).

2.02 DNR RUNOFF MANAGEMENT–NR 151

Wisconsin's newly adopted Polluted Runoff Management Rules are a set of nine administrative rules that include enforceable standards to regulate polluted runoff from agriculture, construction sites, and developed urban areas. The performance standards, which are outlined in NR 151 of the Wisconsin Administrative Code, are intended to be minimum standards of performance necessary to achieve water quality standards by limiting nonpoint runoff pollution. In addition to the standards, the rules contain BMPs as suggestions on ways to meet the standards and qualify for grant programs to help fund implementation. The Polluted Runoff Management Rules were put into effect in October 2002. The performance standards outlined in NR 151 are implemented and enforced through WPDES permits under NR 216 by the DNR or by the Department of Commerce for construction projects permitted under their authority.

UW-L is primarily an urban campus. Therefore, Subchapter III of NR 151, Nonagricultural Performance Standards, applies to the University. Subchapters II and IV, Agricultural Facilities and Transportation Facilities Performance Standards, do not apply to the campus. A copy of the NR 151 code is included in Appendix C.

A. Urban (Nonagricultural) Performance Standards

The urban, or nonagricultural, performance standards are outlined in Subchapter III of NR 151 and include standards for construction erosion and sediment control, design standards for postconstruction performance, and performance standards for developed urban areas. The design guidance and process for developing technical standards are set forth in Subchapter V of NR 151. For a detailed table of regulations that apply to UW-L see Appendix A.

1. Construction Site Erosion Control

The performance standard for construction sites applies to all land-disturbing activity greater than 1 acre in area and requires implementation of an erosion and sediment control plan using BMPs, which by design, reduce to the maximum extent practicable (MEP) 80 percent of the sediment load on an average annual basis. The erosion and sediment control plan must also address minimization of tracking, sewer inlet protection, minimizing sediment discharge from dewatering, and proper use and storage of chemicals, cement, and other compounds.

2. Postconstruction Sites

The performance standards for postconstruction sites set a minimum level of control of runoff pollution from construction sites after construction is complete and final stabilization has occurred. They apply to sites subject to the construction site erosion control standard (i.e., construction projects causing land disturbances of more than 1 acre) with some specific exceptions. Construction project sites are divided into three categories: new development, redevelopment, and in-fill development. The three construction site categories are defined in NR 151 as follows:

a. *New Development*–Development resulting from the conversion of previously undeveloped land or agricultural land uses.

b. *Redevelopment*–Development that is replacing older development.

c. *In-fill Development*–Development in an undeveloped area of land located within existing urban sewer service areas, surrounded by already existing development or existing development and natural or man-made features where development cannot occur.

Postconstruction performance standards under NR 151 do not apply to redevelopment sites that have no increase in exposed parking lots or roads, or sites that once developed, have less than 10 percent connected imperviousness and the cumulative area of all parking lots and rooftops is less than one acre.

For all postconstruction sites to which the performance standards apply, a written stormwater management plan must be developed and implemented and must incorporate the following performance standards:

a. *Total Suspended Solids Control*–Requires BMPs to control, to the MEP, 80 percent of the total suspended solids that would normally run off the site for new development sites. A goal of 40 percent reduction is required for redevelopment and in-fill development sites under 5 acres that are constructed before October 1, 2012. For in-fill development built after October 1, 2012, an 80 percent TSS reduction is required.

b. *Peak Discharge Rate*–Requires that BMPs, to the MEP, maintain or reduce the peak predevelopment runoff discharge rate for the 2-year 24-hour design storm. This standard does not apply to redevelopment or in-fill development sites under 5 acres.

c. *Infiltration*–Requires that BMPs, to the MEP, result in a portion of the runoff volume from the site to be infiltrated. Required infiltration volumes differ for residential and nonresidential land use. Also, runoff from parking lots or new road construction in nonresidential areas shall be pretreated prior to infiltration to protect groundwater and prevent clogging of the infiltration system. Exemptions are granted for poor-infiltrating soils as well as redevelopment sites, in-fill development less than 5 acres, and parking areas and access roads less than 5,000 square feet for commercial and industrial development. Exclusions are provided where infiltration could potentially contaminate drinking water sources.

d. *Protective Areas*–Requires a permanent vegetative buffer area to be created and maintained, to the MEP, around lakes, streams, and wetlands to filter pollutants and protect against erosion.

e. *Fueling and Maintenance Areas*–Requires BMPs, to the MEP, to prevent petroleum contaminated runoff from entering waters of the state.

f. *Location and Timing*–Requires BMPs to be installed before a construction site has undergone final stabilization, and allows BMPs to be located on-site or off-site as part of a regional stormwater device, practice, or system.

3. Developed Urban Areas

This performance standard requires urban areas to achieve runoff quantity and quality goals through the use of public involvement and policy development. The specific methods by which municipalities are to meet these goals are not stated, thereby granting flexibility to each MS4 to develop the most appropriate and effective measures for their population and physical location. There are two parts to this standard: the first requires an information and education program for any community that has 500 residents per square mile or greater, and the second requires a reduction in total suspended solids in runoff to the state's waters for any MS4 that is regulated under an NR 216 MS4 WPDES permit.

a. *Information and Education*–Requires municipalities in developed urban areas, or areas with a population density greater than 500 residents per square mile, and all contiguous commercial and industrial areas, to implement a public information and education program about responsible use and disposal of yard waste, fertilizers, animal waste, and other chemicals; a municipal program for the collection of yard waste; a system to detect and eliminate illicit discharges to storm sewers; and a nutrient application

schedule for lawn and garden fertilizers on municipally-owned lands with over 5 acres of pervious surface.

b. *Permitted Municipalities*–Requires all MS4s covered by Phase II of NR 216 to develop and implement a stormwater management program and, to the MEP, achieve a 20 percent reduction in total suspended solids in runoff that enters waters of the state as compared with no controls. These Stage 1 standards must be met by March 10, 2008. Stage 2 requires a 40 percent reduction of total suspended solids in runoff to be achieved by March 10, 2013.

4. Nonmunicipal Property Fertilizers

This performance standard applies to nonmunicipal-owned land that applies fertilizer to at least 5 acres of land and has runoff that enters waters of the state. It requires the landowner to apply fertilizers according to a nutrient management schedule by March 10, 2008.

2.03 PRIORITY WATERSHEDS AND LAKES–NR 120

Wisconsin's Priority Watershed and Priority Lake Program (Chapter NR 120 of Wis. Admin. Code) provides financial assistance to local units of government in selected watersheds to address land management activities that contribute to urban and rural runoff. The DNR issues grants through a cost-share approach that are used to reimburse costs to landowners for the implementation of watershed and lake projects, such as installing voluntary BMPs. Funding for the program is being phased out and will be available to ongoing projects in priority watersheds and lakes until 2009. The program is no longer open to new applicants.

The UW-L campus drains to the La Crosse River, a subwatershed of the Bad Axe-La Crosse River watershed, or the Mississippi River. The Lower Black River watershed, located north of La Crosse, is a priority watershed project in Wisconsin; however, the project has been completed according to the DNR. There are no priority lakes in La Crosse County.

2.04 LOCAL ORDINANCES

As a state institution, UW-L is not normally regulated under La Crosse County or City ordinances. State facilities are not subject to local ordinances, except land use provisions of local zoning regulations. However, the DOA DSF has determined that the applicable stormwater regulations for each UW System campus shall include the most stringent of state and local ordinances to foster a good neighbor relationship with the local municipalities and counties where the campuses are located and to prevent degradation of the state's water resources. The extent of collaboration and cooperation with local jurisdictions must be determined by the campus. Therefore, descriptions of potentially-applicable local ordinances are described in this section. Appendix A contains an ordinance matrix that compares local and state regulations. The proposed stormwater guidelines for UW-L campus are shown in Section 2.07 and Appendix A.

Ordinance updates by the following entities between the draft of this report in 2005 and finalization of this report in 2008 have not been researched. This effort should be completed with the future update to this plan.

A. City of La Crosse

1. Construction Site Erosion Control Ordinance–Chapter 14

The City of La Crosse has a comprehensive erosion control ordinance that was adopted in 1995. The ordinance requires erosion control to be implemented on new construction projects and subdivisions. An Erosion and Sedimentation Control Plan must be submitted to the city with preliminary and final plats. The ordinance also regulates stormwater peak flow rates to predevelopment levels.

NR 151 applies to all new and redevelopment construction sites with land-disturbing activities greater than 1 acre. The city ordinance applies to all subdivision development and individual construction sites where more than 4,000 square feet of land-disturbing activities take place or more than 2,000 square feet on land with a slope of 20 percent or greater, a project that impacts at least 400 cubic yards of excavation or fill, any alteration of a watercourse, or more than 300 linear feet of trenching.

The above construction projects must comply with the following requirements:

a. Do not begin large scale excavation that removes vegetation after November 15th of each year, with the exception of water and sewer lines. Disturbed areas not seeded by September 15th of each year shall be sodded or controlled with erosion matting. Restoration of topsoil and revegetation must be completed by September 15th.

b. Protect critical areas using temporary vegetation, mulching, or other land cover, and install permanent vegetation as soon as practical. Lay sod in a manner to prevent erosion. Retain natural plant covering to the extent practicable.

c. Install sediment basins to trap and remove sediment and debris on-site.

d. Equip roads, access drives and parking areas with BMPs to minimize sediment tracked onto roadways, and restrict traffic to and from the site to designated maintained driveways.

e. Protect storm drain inlets on-site using straw bales, filter fabric, or equivalent barriers until the site has been stabilized.

f. Provide site erosion control measures such as retaining existing vegetation, diverting runoff around disturbed areas, minimizing amount of exposed area at one time, minimizing steep slopes, designing proper channels to control

runoff from the site to prevent erosion, containing sediment on-site, and protecting earth storage piles from erosion using silt fences, grass buffers, straw bale barriers, or other BMPs. Keep earth storage piles more than 25 feet from drainage channels or roadways and 100 feet from perennial waters or wetlands.

g. Provide temporary vegetation for disturbed sites that are not brought to final grade within 14 days of initial disturbance, and seed within 24 hours of final grading.

h. Do not engage in land-disturbing activities within 10 feet of "Restricted Development Areas," areas with steep slopes (30 percent or greater).

A copy of the City's Erosion Control Ordinance is located in Appendix E.

2. Sanitary and Storm Sewers Ordinance–Chapter 6

The City of La Crosse has an ordinance that regulates the discharges to sanitary and stormwater sewers. Restrictions relevant to this study are listed here.

a. Discharges to a storm sewer or a surface that drains to storm sewer shall not contain: water containing soap or detergents; oil, grease, food materials, human or animal bodily wastes, paint or water containing these substances; combustible liquids; grass, leaves, or other organic materials; any other contaminant that is harmful to the storm sewer system or persons working on or in the storm sewer system or the natural aquatic environment.

b. All storm sewer mains shall be constructed and maintained by the City.

c. The Board of Public Works shall determine if private drains or sewers are required from private lots and shall ensure that the private sewer laterals are connected properly to the public sewers.

3. Stormwater Utility

It is our understanding that the concept of a stormwater utility was presented to the city council in 2006, and that it is yet to be implemented. However, due to WPDES permit requirements that will require $15 million in stormwater improvements by the City by 2013, the City is now considering moving to full implementation of a stormwater utility.

B. La Crosse County

La Crosse County has several ordinances that apply to stormwater management and erosion control. Chapter 21 of the La Crosse County General Code of Ordinances is the Erosion Control and Land Disturbance ordinance, which mandates erosion control measures on new construction projects of a certain size. Chapter 18 regulates the development of subdivisions and includes

stormwater and erosion control requirements for new subdivisions. Chapter 20 regulates shoreline zoning to protect the water quality of lakes and rivers in the county.

1. Erosion Control and Land Disturbance–Chapter 21

The La Crosse County Department of Land Conservation administers erosion control and land disturbance permits. An erosion control permit is required from the county for the construction of new single- and two-family dwellings, projects that disturb more than 4,000 square feet of land on less than 20 percent slopes, projects that disturb 2,000 or more square feet of land on 20 percent slopes or greater or within a "Shoreland Zone," projects that involve 400 cubic yards or more of excavated or filled soil, projects that disturb 100 lineal feet or more of channelized flow, or projects that disturb any land on a 30 percent slope or steeper.

The ordinance requires affected sites to comply with the following requirements:

a. Treat water pumped from the site, and discharge it in such a manner as to avoid sediment runoff from the site.

b. Equip roads, access drives, and parking areas with BMPs to minimize sediment tracked onto roadways, and restrict traffic to and from the site to designated maintained driveways.

c. Protect storm drain inlets on-site using straw bales, filter fabric, or equivalent barriers until the site has been stabilized.

d. Provide site erosion control measures such as retaining existing vegetation, diverting runoff around disturbed areas, minimizing amount of exposed area at one time, minimizing steep slopes, designing proper channels to control runoff from the site to prevent erosion, containing sediment on-site, and protecting earth storage piles from erosion using silt fences, grass buffers, straw bale barriers, or other BMPs.

e. Clean up off-site sediment deposition as result of a storm event within 24 hours of the storm, and clean up off-site sedimentation as a result of construction activities by the end of the same workday.

f. Temporarily stabilize areas receiving sheet flow runoff using seeding or mulching.

g. Provide final stabilization of sites receiving sheet flow runoff using vegetation or retaining walls.

A copy of the La Crosse County Erosion Control and Land Disturbance Ordinance is located in Appendix F.

2. Subdivision and Platting–Chapter 18

Chapter 18 regulates the development of subdivisions in La Crosse County and is administered jointly by the La Crosse County Planning Administrator, the Department of Zoning, Planning and Land Information, and the Department of Land Conservation. The ordinance requires the subdivider to provide to the county a soil erosion plan pursuant to Chapter 21 and a stormwater management plan. The stormwater management plan must adequately meet the appropriate postconstruction water quality requirements of NR 151 of the Wisconsin Administrative Code as well as the following water quantity requirements:

a. Maintain predevelopment peak runoff rates for the 2-year 24-hour design storm event and the 10-year 24-hour design storm event.

b. Safely pass the 25-year 24-hour design storm event.

A copy of the La Crosse County Subdivision and Platting Ordinance is located in Appendix G.

3. Shoreline Zoning–Chapter 20

The County's Shoreline Zoning Ordinance restricts the construction of structures near shorelines of lakes, rivers, and streams and requires a permit for filling, grading, or dredging near a waterway. UW-L owns property that is adjacent to a navigable waterway (North Campus), so it is possible that the provisions of this chapter would apply to the University.

A copy of the Shoreline Zoning Ordinance is located in Appendix H.

2.05 DEPARTMENT OF COMMERCE REGULATIONS

The Comm is in the process of developing regulations in chapter Comm 60 that are similar to NR 151 for the management of stormwater and soil erosion on commercial building construction projects and postconstruction sites. It is not clear at this time when the rules will become available. Currently, the DNR recognizes commercial building construction falling under D-Comm rules as complying with the WPDES permitting under NR 216.42(3). Chapter Comm 61.115 contains language regulating construction site soil erosion control, which references NR 216 permit requirements. Presumably, when the Comm 60 rules are finalized, commercial building construction projects would be able to apply for WPDES stormwater discharge permit coverage through D-Comm rather than the DNR, and Comm 61.115 language would be revised to reflect the change.

Commercial buildings are defined as any public buildings or buildings that are places of employment.

2.06 OTHER WPDES GENERAL DISCHARGE PERMITS

In addition to the NR 216 Phase II WPDES permit discussed above in Section 2.02, there are currently 17 active WPDES General Discharge Permits that are designed to cover groups of facilities or industries with similar types of wastewater discharges to surface waters and/or groundwater. UW-L currently is covered under the Noncontact Cooling Water, Condensate and Boiler Blowdown Permit (WI-0044938-5) for discharge of noncontact cooling water to stormwater facilities. It is recommended that UW-L further investigate and document all existing WPDES permits on campus.

2.07 PROPOSED STORMWATER GUIDELINES FOR UW-L CAMPUS

Following is a summary of proposed stormwater guidelines for the UW-L campus. These guidelines were developed by researching existing or proposed local ordinances as well as state and federal performance standards. A table of the different requirements of each ordinance is included in Appendix A. The table in Appendix A does not include standards and requirements that would apply to UW-L under NR 216 Phase II rules. These are provided in Appendix B. The proposed UW-L stormwater guidelines meet NR 151 urban area performance standards, but some exceed the NR 151 standards because of a local ordinance that is more stringent. The proposed UW-L guidelines that exceed NR 151 are listed below.

1. *Construction site applicability*–Performance standards apply to sites disturbing more than 4,000 square feet of surface area, an excavation or fill volume of more than 400 cubic yards, 2,000 square feet on slopes 20 percent or greater (or within Shoreland Zone), at least 300 feet of trenching, any amount on slopes of 30 percent or more, or projects impacting 100 ft or more of channelized flow.

2. *Construction site erosion and sediment performance standards*–Reduce to the MEP 80 percent of sediment in runoff on all new development and redevelopment sites as compared with no controls. No large scale excavation where vegetative cover is removed after November 15 of each year (except for water and sewer lines) unless proper erosion control is incorporated into the project drawings and specifications. All topsoil restoration and revegetation must be completed by September 15 of each year. When conditions allow, restoration and seeding of disturbed areas may occur until November 1, provided that erosion control mat and mulch are appropriately placed according to specification of the vendor or project. Restoration and seeding after these dates and prior to April 1 shall be the contractor's responsibility and may require reseeding. Restoration must optimize terrain, slopes, exposed area, and vegetation to prevent sediment runoff; divert runoff around disturbed areas; contain sediment on-site through BMPs; protect earth storage piles with silt fence, 25 feet of grass, straw barriers, or other BMPS.

3. *Postconstruction sediment controls*–Provide final stabilization of steep slopes, channels, and areas receiving sheet flow runoff using vegetation, retaining walls, or other approved materials. Make provisions for disposal of water and protection of soil surfaces during and after construction to prevent soil erosion, siltation, sedimentation, and washing.

4. *Postconstruction peak discharge*–For a new development site, maintain predevelopment peak runoff rates for the 2-yr 24-hour, and the 10-yr 24-hour design storm events. Safely pass the 100-yr 24-hour design storm event.

5. *Protective Areas*–In addition to NR 151 protective areas, areas with steep slopes (30 percent or more) are Restricted Development Areas and may not have any land disturbance within 10 feet.

We recommend that the UW-L campus adopt the proposed stormwater guidelines described in Appendix A to meet and/or exceed NR 151 requirements for erosion control and stormwater management.

The NR 216 Phase II requirements that would affect UW-L are outlined in Appendix B. These requirements are in addition to the existing performance standards and guidelines already discussed.

2.08 POLLUTION DISCHARGE ELIMINATION STATE STATUTES CHAPTER 283

In an effort to more closely control discharges to waters of the State, the State of Wisconsin adopted Chapter 283. Appendix D provides a link to the Chapter 283 Web site address.

2.09 LOCAL ZONING

The City of La Crosse zoning information can be seen on the City's interactive Web site located at the following Web site address:

https://www.cityoflacrosse.org/index.asp?nid=296

SECTION 3
EXISTING CAMPUS FEATURES

3.01 CAMPUS DESCRIPTION

UW-L is located in western Wisconsin in La Crosse County in the City of La Crosse. The City of La Crosse is located at the confluence of the Mississippi, Black, and La Crosse Rivers, approximately 140 miles northwest of Madison, 200 miles northwest of Milwaukee, 150 miles southeast of Minneapolis/St. Paul, and 130 miles north of Dubuque, Iowa. The La Crosse metropolitan area is home to approximately 52,000 people. The 119-acre UW-L campus is situated in a residential neighborhood east of historic downtown La Crosse. Figure 3.01-1 shows an aerial photo of the UW-L campus and immediate surrounding area.

Figure 3.01-1 Aerial Photo of UW-L Campus

In the fall semester of 2003, UW-L had an approximate enrollment of 8,750 students, 3,000 of whom lived on campus. According to the University, approximately 93 percent of students are undergraduates, 90 percent are full-time students, and 83 percent are Wisconsin residents. The University employs approximately 490 full and part-time faculty.

The campus consists of 34 major buildings, 11 of which are residence halls that are spread out around campus. The northwest corner of the campus contains 5 residence halls and the main dining hall, Whitney Hall; the northeast corner holds 4 more residence halls; and two more are located in the center of the campus. Most parking lots are located on the campus periphery, with the most number of spaces near Veterans Memorial Stadium and Cowley Hall. The main campus is primarily bordered by Campbell Road and State Street to the south, La Crosse Street to the north, and various streets to the east and west. The University also owns property north of the main campus along the La Crosse River that is used for athletic fields and several maintenance buildings. The area along the river is very marshy as can be seen in Figure 3.01-2.

Figure 3.01-2 Marsh on La Crosse River (source: UW-L Web site)

The UW-L campus was carved out of a residential neighborhood, so many of the existing streets, alleys, and pedestrian walkways on campus were at one time part of the City street grid. Over time, many of the streets have been closed and/or vacated at the request of the University. Most of the streets on campus and surrounding the campus are still owned by the City of La Crosse. There are some streets on campus that are closed to all traffic except campus and delivery vehicles. The right-of-ways on these closed streets are owned, operated, and maintained by the City, including the utilities such as storm sewers. There is a third type of street on campus known as vacated streets. Vacated streets are owned by the campus, including the former right-of-ways. The utilities within the former right-of-ways on the vacant streets, however, are owned, operated, and maintained by the City. Figure 3.01-3 shows a map of the campus showing closed and vacated streets. Figure 3.01-4 shows the City-owned properties on campus, as well as private properties within the campus-approved boundary that are planned for acquisition by the University as they become available.

The University owns the catch basins, laterals, and storm sewers on campus that are located outside of the City street right-of-ways and vacated streets.

Most of the stormwater from campus drains north to the La Crosse River with some of the campus also draining west to the Mississippi River. Figure 3.01-5 shows the approximate boundaries of the Bad Axe-La Crosse River watershed.

Figure 3.01-5 Bad Axe-La Crosse River Basin

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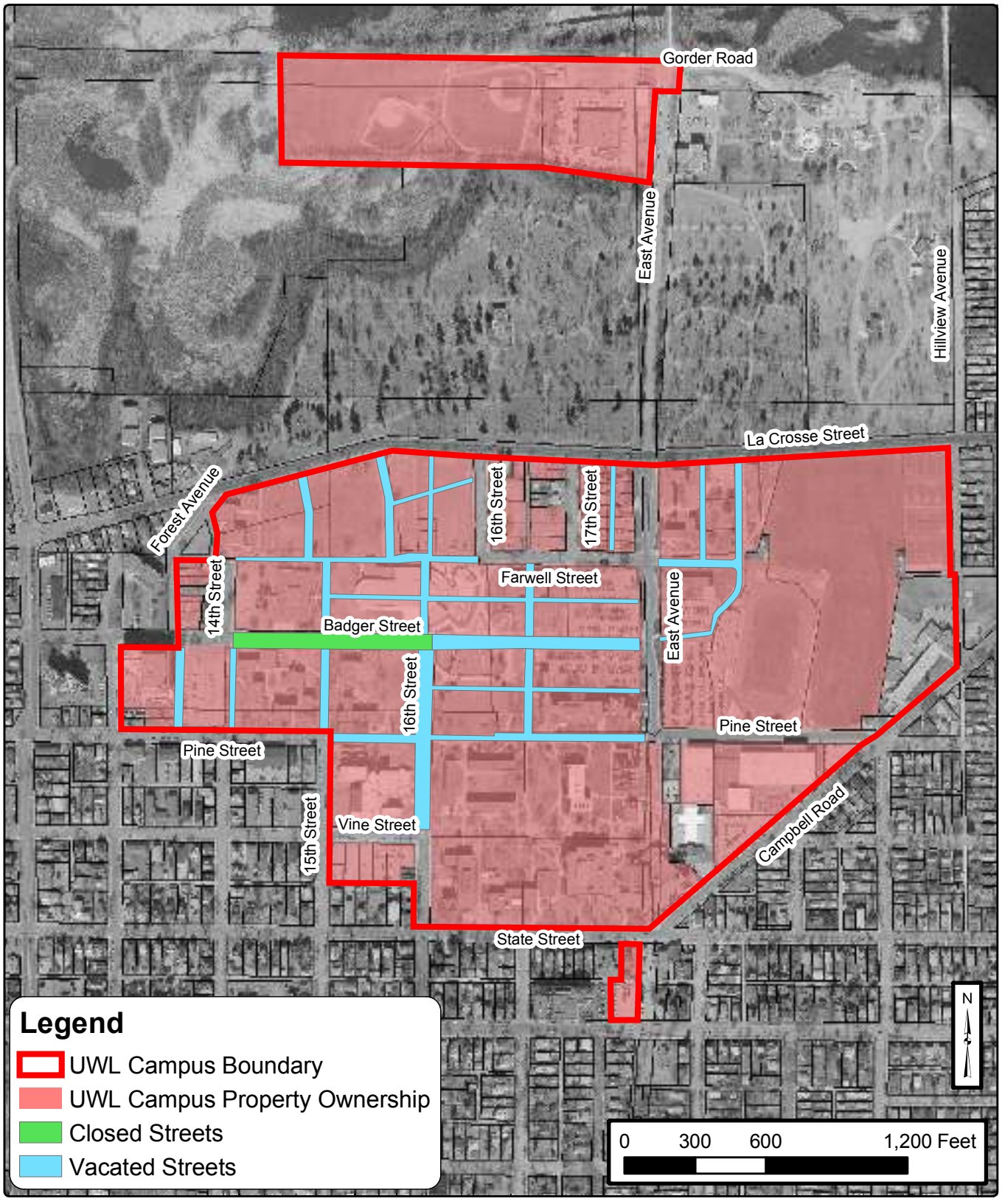


Legend

- UWL Campus Boundary
- UWL Campus Property Ownership
- Closed Streets
- Vacated Streets

CLOSED AND VACATED STREETS ON UW-LA CROSSE CAMPUS

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND

FIGURE 3.01-3
1-104.013

S:\@Sal\101-150\104\013\GIS\UWLacrosse\Figures\City-Owned Streets on UWL Campus.mxd

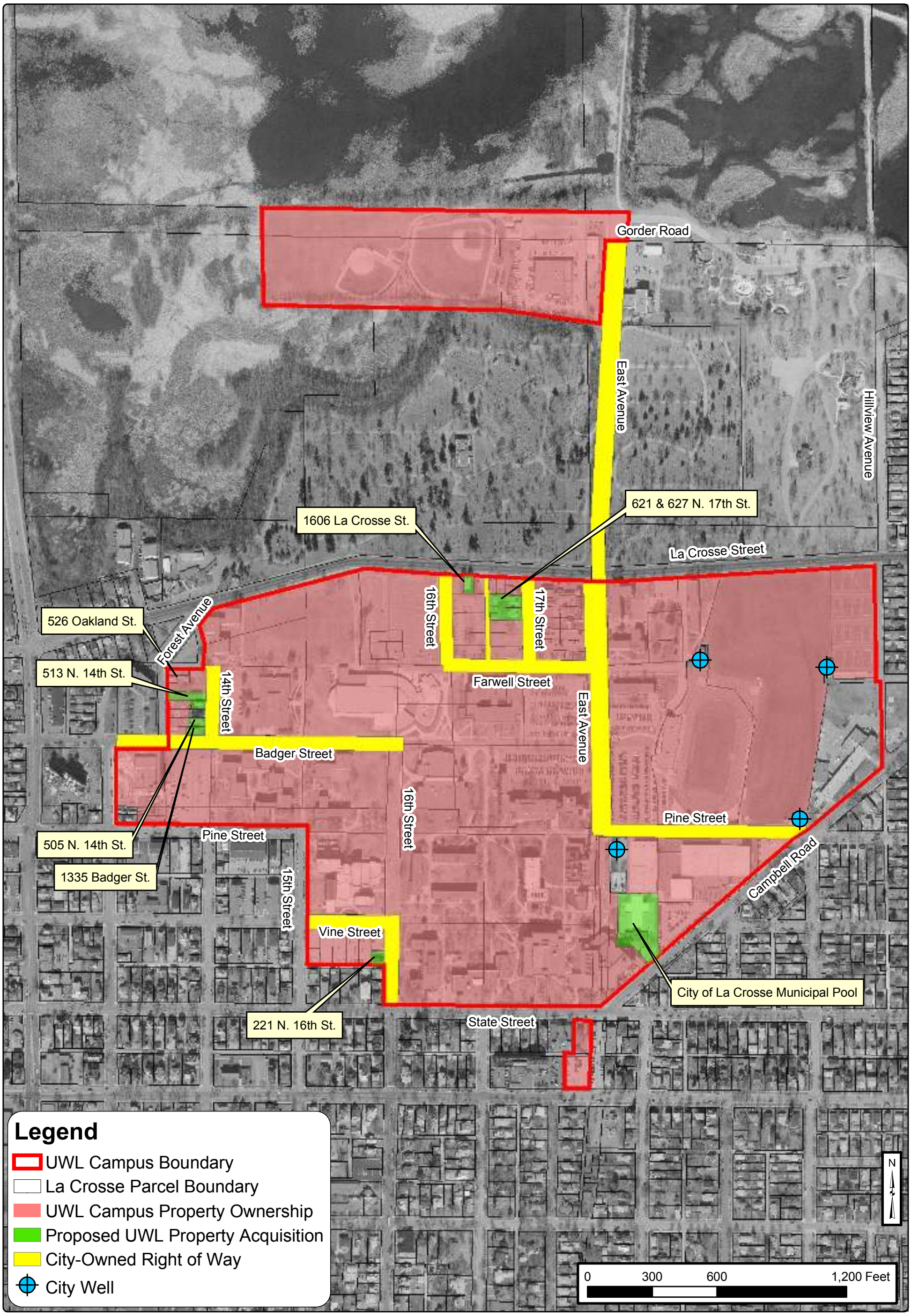


FIGURE 3.01-4
1-104.013

STRAND ASSOCIATES, INC.

UNIVERSITY AND CITY OWNERSHIP ON UW-LA CROSSE CAMPUS

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

3.02 STORMWATER DRAINAGE BASINS

Figure 3.02-1 shows a map of the storm sewer system on campus, the storm sewer outfalls, and the stormwater drainage basins. The map also shows several locations where it is believed that the storm sewer cross-connects thus allowing surcharged pipes to flow multiple directions.

3.03 STORM SEWER OUTFALLS ON CAMPUS

Storm sewer outfalls are shown on the storm sewer map in Figure 3.02-1, and Table 3.03-1 lists the two that are in proximity to UW-L-owned land. Both are near the north campus and discharge into the La Crosse River marsh area. Both are owned by the City of La Crosse.

Outfall	Location	Size	Type	Ownership
1	North of Gorder Road/East Avenue intersection	40 inches W x 43 inches H	CMP	City of La Crosse
2	North of Physical Plant	24 inches	CMP	City of La Crosse

Table 3.03-1 Storm Sewer Outfalls Near Campus

3.04 SOILS ON CAMPUS

The amount of stormwater runoff produced by a storm event is impacted by the types of soil underlying the watershed. Soils having a high percentage of sand and gravel will infiltrate a higher percentage of stormwater runoff than will soils having high clay content, meaning that sandy soil generally produces less runoff than clayey soil. Soil types around the UW-L campus are identified and illustrated in Figure 3.04-1. The soils figure shown in Figure 3.04-1 was obtained from the United States Department of Agriculture's (USDA's) Natural Resource Conservation Service on-line soils data server (http://soildatamart.nrcs.usda.gov/). The map shows that the entire UW-L campus is "urban."

According to the *La Crosse County Soil Survey (1960)*, the soils in the UW-L campus area are sandy soils of the Mississippi River Valley consisting of mostly Plainfield and Sparta soils. The residential area where the campus is located was not included in the county soil survey as it was already urbanized when the survey was conducted. Therefore the area is classified as urban by default. See Section 3.05 for discussion on the infiltration potential of these soils.

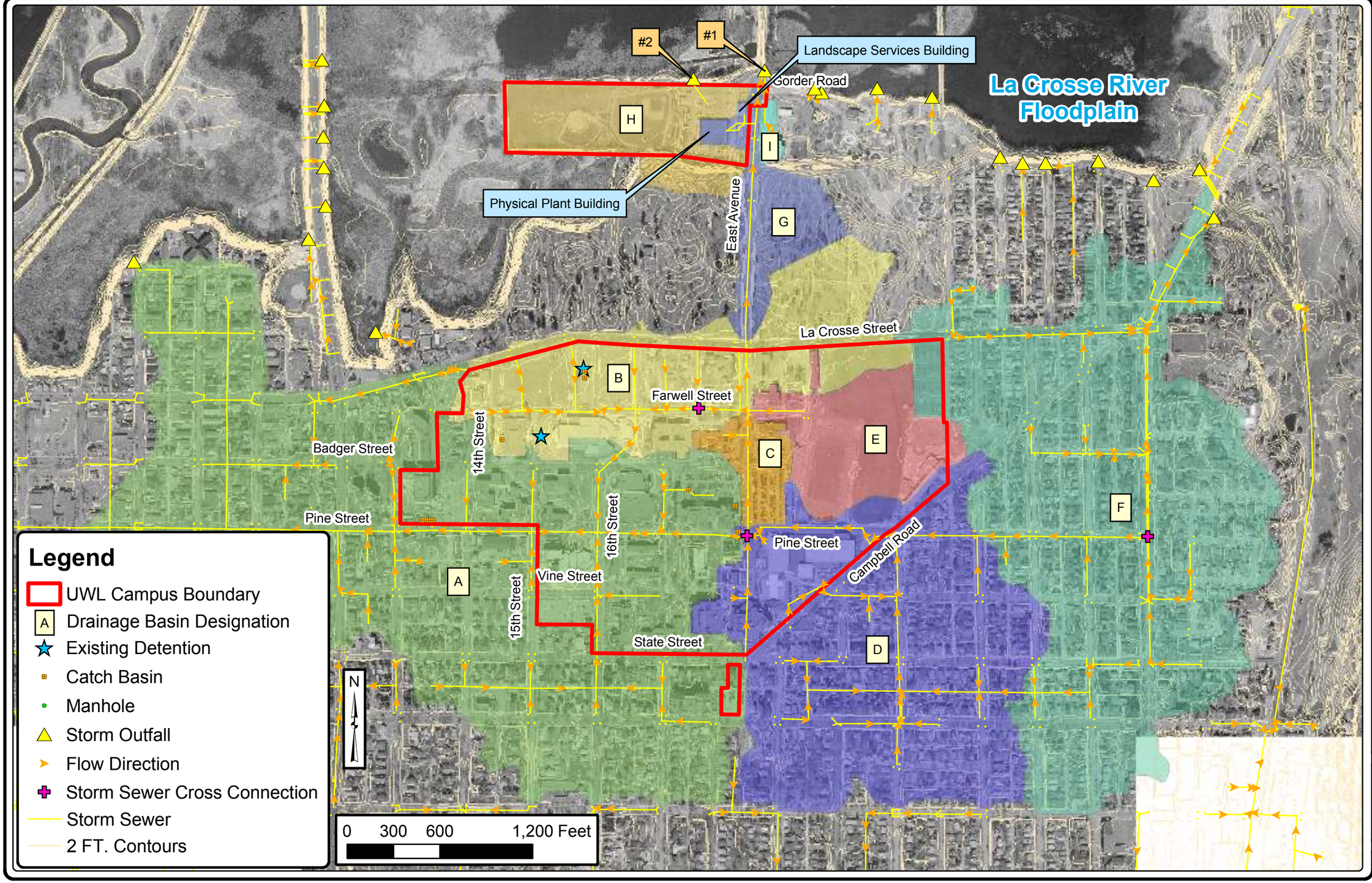
Geotechnical exploration conducted for the construction of City drinking water wells on campus in the 1950s and 1960s indicates that the soil is primarily fine to medium sand to depths of more than 30 feet. Test borings conducted in 2003 for the construction of the proposed residence hall verified this finding.

3.05 INFILTRATION POTENTIAL

Many of the soils on campus are likely to have high infiltration rates because of their sandy nature. NR 151 requires infiltration of runoff for new development projects. Figure 3.05-1 shows the infiltration rates for the soil layer approximately 3 feet below the ground surface. However, the infiltration rates shown in Figure 3.05-1 may be artificially low due to the lack of adequate soil data in the urban area.

UW-LA CROSSE CAMPUS DRAINAGE BASINS

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN-LA CROSSE
LA CROSSE, WISCONSIN



STRAND

FIGURE 3.02-1
1-104.013

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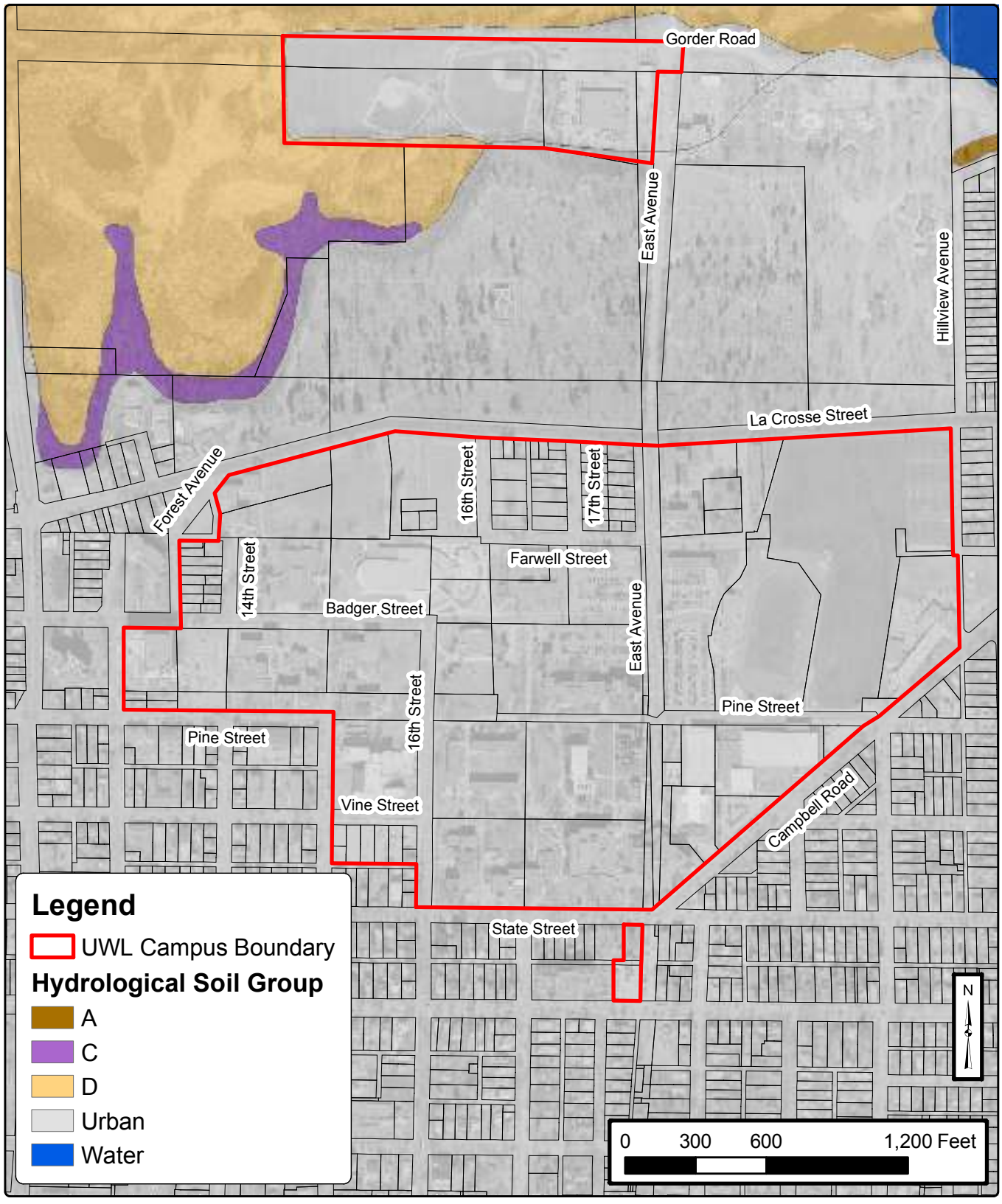
S:\@Sal\101-150\104013\GIS\UWLacrosse\Figures\LaCrosse Hydrologic Soils.mxd



SOILS ON UW-LA CROSSE CAMPUS

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

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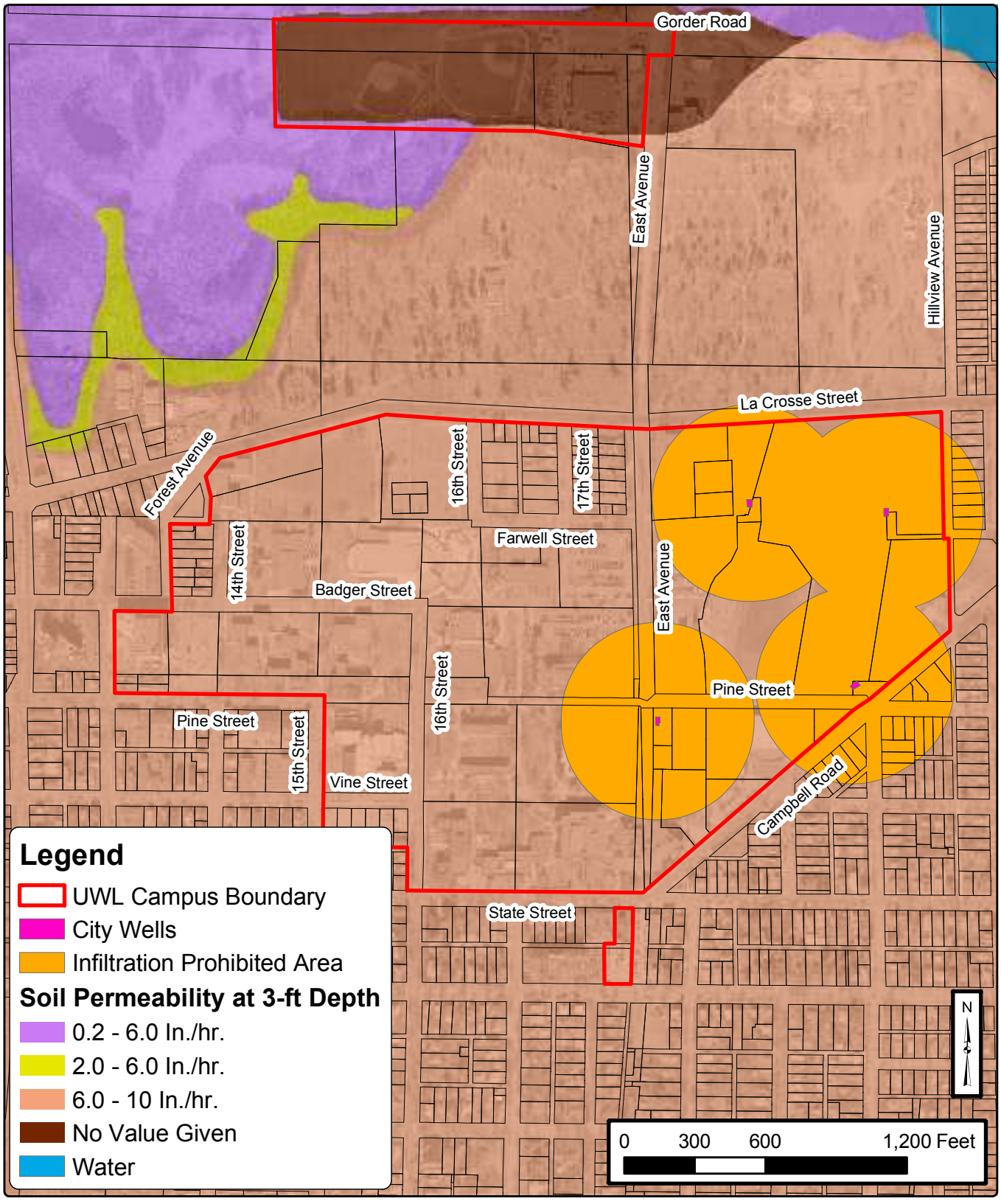
FIGURE 3.04-1
1-104.013

S:\@Sal\101-150\104013\GIS\UWLacrosse\Figures\UWL Campus Infiltration Map.mxd



INFILTRATION POTENTIAL MAP

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND ENGINEERING

FIGURE 3.05-1
1-104.013

Plainfield soils are generally very sandy, light-colored fine sands and loamy fine sands. Sparta soils are generally loamy fine sand or sand overlying loose sand. The La Crosse County Soil Survey does not give permeability values for soils classified as Urban. However, a check of the Trempealeau County Soils Survey gives a value of greater than 20 inches per hour permeability at a 0- to 5-foot depth for Sparta soils. Finally, the Juneau County Soils Survey gives a value of 6.0 to 20 inches per hour permeability for Plainfield Soils. This indicates that the soils on the UW-L campus are likely to have a minimum permeability of approximately 6 to 10 inches per hour. This is shown in Figure 3.05-1.

There are four City drinking water wells on campus, which are shown on Figure 3.05-1. It is prohibited to infiltrate stormwater within 400 feet of a municipal well. Therefore, the University must consider the proximity to wells when planning infiltration devices.

In addition, La Crosse is located in a karst area, which is an area where the bedrock is easily disintegrated by water and the groundwater is highly susceptible to contamination by bacteria, nitrates, and other chemicals or pollutants. It is recommended that the UW-L campus consider possible Karst formations when planning for any proposed infiltration devices and evaluate the potential for groundwater contamination. The University of Wisconsin Extension (UWEX) has produced an informational brochure on karst features, which is included in Appendix K.

3.06 CAMPUS LAND USE

Land use is another factor that affects the amount of stormwater runoff that will be produced by a rainstorm. Urbanization and development reduce the ability of the ground to infiltrate stormwater, typically causing peak discharges and runoff volumes to increase. The time from the beginning of the storm event to the occurrence of the peak runoff may also be significantly shortened.

Future land use around UW-L's campus is shown in Figures 3.06-1. Future land use is based on information provided by the City of La Crosse.

3.07 EXPECTED PRECIPITATION DEPTHS

The depth and duration of rainfall in a watershed for a given storm event has a major impact on the amount of stormwater runoff produced. Historically, flooding on the UW-L campus has occurred as a result of stormwater runoff from short-duration, intense storm events. These events most commonly occur in the spring or summer months.

Frequency	Annual Exceedance Probability	Rainfall Depths
1-year	100%	2.2
2-year	50%	2.9
5-year	20%	3.7
10-year	10%	4.3
25-year	4%	4.9
50-year	2%	5.4
100-year	1%	6.2

Table 3.07-1 Expected Rainfall Depths for 24-Hour Storm Events

Expected rainfall depths for the campus area for 24-hour storm events of various frequencies are summarized in Table 3.07-1. These rainfall totals were obtained from Technical Paper 40, published by the National Weather Service. These rainfall totals are used in conjunction with the Soil Conservation Service (SCS) Type II rainfall distribution to estimate peak storm discharges.

S:\@SA\101-150\104\013\GIS\UWLacrosse\Figures\UWL Campus Future Land Use.mxd

0 400 800 1,600 Feet

East Avenue
La Crosse Street
Farwell Street
Badger Street
16th Street
Pine Street
Pine Street
Campbell Road
Vine Street
15th Street
State Street

N

Legend

UWL Campus Boundary

Future Land Use

- Single Family
- Residential-Low Density
- Residential-Med Density
- Residential-High Density
- Commercial
- Office Space
- Light Industrial
- Heavy Industrial
- Education
- Hospital/Medical Services
- Public
- Park/Open Space/Green Space
- Wooded & Steep Slope
- Vacant
- Other/Quasi-Public
- High Intensity Retail, Office, or Housing
- Business Park
- Downtown
- Traditional Neighborhood Developement
- Wetland

FIGURE 3.06-1
1-104.013

STRAND ASSOCIATES, INC.

UW-LA CROSSE FUTURE LAND USE

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

3.08 PROBLEM AREAS ON CAMPUS

Problem areas on the UW-L campus include flooding locations and areas of compacted soil because of high pedestrian traffic. Problem areas that have been identified by our staff during a campus site visit are mapped in Figure 3.08-1, an aerial map of the campus.

A. Flooding Locations on Campus

Flooding on the UW-L campus occurs most commonly after short, intense thunderstorm events in the spring and summer months. In general, flooding is caused by either lack of adequate drainage or insufficient inlet capacity. The flat surface topography in certain areas prevents surface drainage of stormwater. As a result, stormwater accumulates, causing flooding of adjacent land. Drainage from streets and other surface areas may be restricted by the limited capacity of street inlets at several locations in the watershed including some parking facilities.

Historically, flooding has not caused extensive structural or property damage on campus. However, nuisance flooding, involving water accumulation in parking lots, grassed areas, and streets, is common.

The following flooding locations have been identified by UW-L staff as frequent problem areas.

1. Baseball Fields

The baseball fields on the north campus near the river floods approximately once every 15 years according to UW-L staff. The fields correspond to location 1 on Figure 3.08-1. The most recent flooding was in the year 2000. Figure 3.08-2 shows an aerial photo of the campus during a period when the La Crosse River was flooding. This photo was taken after the water had receded somewhat.

Figure 3.08-2 La Crosse River Flooding

S:\@Sai\101-150\104\013\GIS\UWLacrosse\Figures\UWL Campus Problem Areas.mxd

Gorder Road
East Avenue
Hillview Avenue
La Crosse Street
16th Street
17th Street
Farwell Street
14th Street
Badger Street
Pine Street
15th Street
Vine Street
Campbell Road
State Street

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

N

0 200 400 800 Feet

Legend

UWL Campus Boundary

UWL Problem Areas

Erosion\Compaction

Flooding

FIGURE 3.08-1
1-104.013

STRAND ASSOCIATES, INC.

UW-LA CROSSE CAMPUS PROBLEM AREAS

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

ID	Location	Apparent Causes (See Legend)	Type of Damage
1	Baseball fields on north campus	d	1
2	Forest Avenue/La Crosse Street intersection	c	1
3	Parking lot entrance/La Crosse Street intersection	c	1
4	16th Street/La Crosse Street intersection	c	1
5	Alley between La Crosse Street and Farwell St	a	1, 2
6	17th Street/ La Crosse Street intersection	c	1
7	East Avenue/La Crosse Street intersection	c	1
8	Hillview Avenue/La Crosse Street intersection	c	1
9	Hoeschler Clock Tower	a, c	1
10	State Street/17th Street intersection	c	1
11	Badger St between north of Hutchison Hall	c	1

Legend:

Apparent Causes of Flooding
a. Lack of positive drainage route
b. Insufficient storage capacity
c. Insufficient outlet capacity
d. High stream/river levels
e. Sediment in pipes

Type of Damage
1. Street/yard/green space flooding
2. Property/structural damage
3. Erosion
4. Safety issue

Table 3.08-1 Flooding Locations on Campus

2. La Crosse Street Intersections

There are six intersections along La Crosse Street on the north end of campus that flood frequently, according to UW-L staff. The intersections of La Crosse Street (from west to east) with Forest Avenue, a parking lot access road, 16th Street, 17th Street, East Avenue, and Hillview Avenue are all common locations of flooding during storms.

The intersection of La Crosse Street and Forest Ave is shown in Figure 3.08-3 and corresponds with location 2 on Figure 3.08-1. This intersection is outside of campus boundaries, but it is near Coate Hall, a residence hall on campus.

Figure 3.08-3 Flooding Location at Forest Avenue/ La Crosse Street Intersection

The parking lot just east of 16th Street has a driveway entrance onto La Crosse Street that also floods frequently (not pictured). This location corresponds to location 3 on Figure 3.08-1.

The intersection of La Crosse Street and 16th Street is shown in Figure 3.08-4 and corresponds to location 4 on Figure 3.08-1. There are storm sewer catch basins on the southwest and southeast corners of the intersection, which connect to the sewer running south along 16th Street to the Farwell Street sewer. The picture in Figure 3.08-4 was taken from the southeast corner of the intersection looking northwest.

Figure 3.08-4 Flooding Location at 16th Street/ La Crosse Street Intersection

The intersection of La Crosse Street and 17th Street also floods frequently (not pictured). It corresponds to location 6 on Figure 3.08-1.

The intersection of La Crosse Street and East Avenue is shown in Figure 3.08-5 and corresponds to location 7 on Figure 3.08-1. Figure 3.08-5 (a) looks east and (b) looks south toward campus. This intersection floods very frequently.

(a)

(b)

Figure 3.08-5 Flooding Location at East Avenue/La Crosse Street Intersection

The intersection of La Crosse Street and Hillview Avenue, which also floods frequently, is shown in Figure 3.08-6, looking southeast. This corresponds to location 8 on Figure 3.08-1.

Figure 3.08-6 Flooding Location at Hillview Avenue/ La Crosse Street Intersection

3. Alley between La Crosse and Farwell Streets

An unpaved alley connects La Crosse and Farwell Streets between 16th and 17th Streets. The alley is surrounded by campus parking lots and several nonuniversity-owned residential properties that have garages along the alley. There is a low point in the middle of the alley that collects standing water after storms, and the garages nearby also flood. The garage flooding was approximately 2 to 3 inches deep during several big storms in 2004. A storm sewer manhole located toward the north end of the alley backs up and surcharges during large rain events. The alley is pictured in Figure 3.08-7 (taken from north end of alley looking south toward Wimberley Hall) and corresponds to location 5 on Figure 3.08-1.

Figure 3.08-7 Flooding Location at Alley Between Farwell Street and La Crosse Street

4. Hoeschler Clock Tower

The Hoeschler Clock Tower, located in the center of campus along a concrete pedestrian walkway stretching west from the end of Pine Street, is also a location of frequent flooding. The campus staff report 1.5 feet of flooding in July 2004, which reached up to the sitting area where the benches are shown in Figure 3.08-8. Figure 3.08-8 (a) is looking south toward the clock tower from the north and (b) is looking east toward the clock tower. This location corresponds with location 9 on Figure 3.08-1.

(a) (b)

Figure 3.08-8 Flooding Location at Hoeschler Clock Tower

5. Intersection of State Street and 17th Street

The intersection of State Street and 17th Street, located on the south edge of campus, is another location that floods very frequently. The intersection is shown in Figure 3.08-9 and corresponds with location 10 on Figure 3.08-1. Photo (a) is looking south at the intersection from campus, and photo (b) is looking west.

The UW-L staff reports this intersection has flooded 200 feet from the center in all directions, including north onto a campus grassy area. It floods very frequently, and in 2004 cars parked near the intersection were flooded out on two occasions. There are two storm sewer catch basins on the north side of the intersection, which connects to a sewer that runs south along 17th Street.

(a) (b)

Figure 3.08-9 Flooding Location at State Street/17th Street Intersection

6. Badger Street between Hutchison Hall and Whitney Center

The circular pedestrian walkway on Badger Street on the west side of the campus is another location where flooding has been a problem according to UW-L staff. The location is pictured in Figure 3.08-10 and corresponds to location 11 on Figure 3.08-1. Photo (a) looks east, and Drake Hall can be seen on the right. Photo (b) is from the UW-L Web site and looks northeast toward the Recreational Eagle Center. Flooding at this spot has extended 50 feet in each direction from the circular pedestrian walkway.

(a) (b)

Figure 3.08-10 Flooding Location on Badger Street North of Hutchison Hall

B. Compaction Locations on Campus

Pedestrian traffic on campuses often is not contained to paved areas, creating worn and compacted soil areas in high traffic “cut-across” locations. These compacted areas usually can not grow vegetation, and infiltration is extremely reduced, producing runoff much like paved surfaces. Although this occurs on a small scale all over campus, there are several areas on campus where highly compacted soil is very noticeable and is of higher concern. These locations are identified on Figure 3.08-1 as locations 12 through 16 and are listed below in Table 3.08-2.

Location	ID on Map
Southeast corner of Whitney Center	12
West side of Whitney Center	13
Path on north side of Angell Hall	14
Path near Recreational Eagles Center	15
Path on west side of Coate Hall	16

Table 3.08-2 High Compaction Locations on Campus

1. Whitney Center

The Whitney Center serves as the main dining facility on campus, so it has very high pedestrian traffic, especially between it and the four residence halls to the south. The compacted area on the southeast corner of the center is shown in Figure 3.08-11, which can be easily recognized because of the vegetation loss.

Another compacted soil location on the west side of the Whitney Center along Badger Street is shown in Figure 3.08-12 and corresponds to location 13 on Figure 3.08-1.

Figure 3.08-11 Whitney Center Compacted Area Southeast Side

Figure 3.08-12 Whitney Center Compacted Area West Side

A worn footpath between the Whitney Center and the Recreational Eagles Center is shown in Figure 3.08-13 below. This corresponds to location 15 on Figure 3.08-1.

Figure 3.08-13 Recreational Eagles Center Compacted Path

Figure 3.08-14 Angell Hall Compacted Area Northwest Side

2. Angell Hall

Figure 3.08-14 shows a photo of a compacted soil area north of Angell Hall. The path has been created by pedestrians cutting across the lawn from Badger Street to the west entrance of the residence hall. This location corresponds to location 14 on Figure 3.08-1.

3. Coate Hall

On the northwest corner of campus is a triangular grassy area that is bordered by Forest Avenue, Farwell Street, and Coate Hall. A path has been made by pedestrians cutting across the lawn in a northwest diagonal. The path is pictured (looking northwest) in Figure 3.08-15 and corresponds with location 16 on Figure 3.08-1.

Figure 3.08-15 Coate Hall Compacted Area Northwest Side Path

C. Erosion Locations on Campus

There are no noticeable erosion problems on the main campus; however, there are some on the north campus near the marsh along the river. Figures 3.08-16 show pictures of the area just northeast of the Gorder Road/East Avenue intersection. Photo (a) is looking south toward the outfall, and (b) is looking north toward the marsh. This area corresponds to location 17 on Figure 3.08-1.

(a) (b)

Figure 3.08-16 Outfall and Stream Erosion

3.09 LA CROSSE RIVER FLOODPLAIN STUDY

A review of the DNR–Floodplain Management Program–Floodplain Analysis Database (http://maps.dnr.state.wi.us/fad) shows that the Federal Emergency Management Agency (FEMA) Map Panel Index number is 5555620005 dated May 15, 1985. See Appendix Q for the map of the La Crosse River Floodplain as shown on the DNR Surface Water Data Viewer.

3.10 MISSISSIPPI RIVER FLOODPLAIN STUDY

A review of the DNR–Floodplain Management Program–Floodplain Analysis Database (http://maps.dnr.state.wi.us/fad) shows that the FEMA Map Panel Index number is 5555620008B dated

May 15, 1985. See Appendix Q for a map of the Mississippi River Floodplain as shown on the DNR Surface Water Data Viewer.

3.11 WATER QUANTITY MODELING NEEDS ASSESSMENT

Because of the existing flooding locations within the campus boundaries, it is recommended that the University collaborate with a city-wide hydrologic/hydraulic study of the storm sewer system to fully understand the dynamics of the City sewer system prior to making recommendations on the measures needed to alleviate the identified flooding.

3.12 WATER QUALITY MODELING NEEDS ASSESSMENT

UW-L is required to do water quality modeling for Phase II permitting. It is recommended that the University collaborate with the City of La Crosse to complete this task.

3.13 WETLAND MAPS

Figure 3.13-1 shows the wetlands in the vicinity of the UW-L campus as shown on the Wisconsin Wetlands Inventory Map for the area.

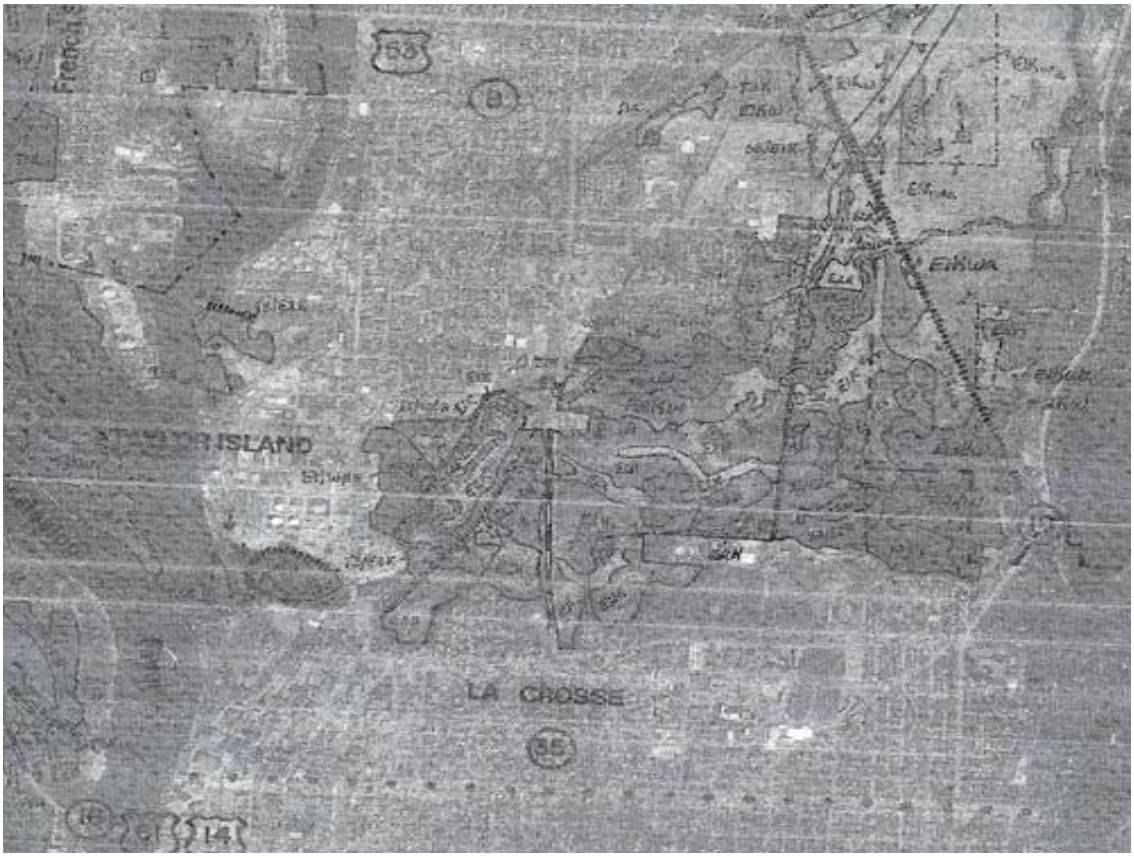


Figure 3.13-1 Wetlands–Wisconsin Wetland Inventory

3.14 WATERBODY DESIGNATIONS

Table 3.14-1 shows the various DNR waterbody designations as found on the DNR Surface Water Data Viewer.

Water Body	Major Watershed	Attainable Use	Supporting Attainable Use	NPS Rank	303d Listed/ Category/ Impairment/ Pollutant/ Sources	In Priority Watershed	303d Priority	Outstanding Resource Water (ORW) /Exceptional Resource Water (ERW)
La Crosse River	Rubicon River	Unknown Community	Not Assessed	Not ranked	NA	No	NA	No
Mississippi River	Mississippi River	Warm Water Sport Fishery (WWSF)	Not Supporting	Not ranked	Yes Category 5A Contaminated Fish Tissue Mercury, PCBs All sources: atmospheric deposition-toxics, contaminated sediments, source unknown	No	Low	No

Table 3.14-1 Various DNR Waterbody Designations

SECTION 4
EXISTING STORMWATER MANAGEMENT PRACTICES

4.01 GENERAL

Currently, UW-L does not have documented guidelines governing the management of stormwater. The campus performs some basic pollution prevention management techniques, but there are no over-riding policies or goals established to provide enforcement of these actions. Campus construction projects are approved through DSF, and stormwater and erosion maintenance requirements for all construction and postconstruction sites are reviewed through D-Comm.

Most of the streets on the campus and surrounding the campus are owned by the City of La Crosse. Figure 3.01-4 shows a map of the campus showing city-owned streets. The University only owns the catch basins, laterals, and storm sewers on campus that are not located in City street right-of-ways or vacated streets. The City of La Crosse was required to submit an NOI as part of the Phase II Stormwater Permitting under NR 216. The City's NOI was submitted in March 2003, and a copy is included in Appendix O. The campus NOI was submitted on January 26, 2007, and is included in Appendix T.

4.02 POLLUTION PREVENTION

The following sections describe the current practices on the UW-L campus with regard to stormwater pollution prevention.

A. Street Sweeping and Deicer Management

The City of La Crosse sweeps the City-owned streets on campus. According to the City's NOI, the streets in the central business district are swept twice weekly when temperatures are above freezing, and most other streets with curb and gutter are swept approximately every ten working days except during the winter. Street sweeping is started as soon as possible in the spring to prevent residual sand and salt from being swept into the river from spring rains. The campus must request the City to sweep campus-owned streets.

UW-L Landscape Services staff applies "Professional Ice Melter" from Spring Valley (www.springvalleyusa.com) in response to ice on sidewalks, but not on parking lots.

The Wisconsin Department of Transportation (WisDOT)-Bureau of Highway Operations has, in the past, inspected the sand/salt mixture stored in the UW-L stadium. However, it is no longer inspected because of the small volume of mixture stored on campus. The last WisDOT inspection was in 2001.

Parking lots on campus are salted and sanded using a 10 percent salt/ 90 percent sand mixture. The campus parking utility contracts out for this service. Sand and salt are stored inside Veteran's Memorial Stadium. Sidewalks are plowed immediately after a snowfall, and a deicing agent is applied.

B. Yard Waste, Fertilizer, and Pesticide Management

Leaves and grass clippings are collected and composted at the campus physical plant. The compost is used by the campus for the annual flower beds and plantings.

Fertilizer is used only on athletic fields, and soil tests are done on the fields every two years. The fertilizer used on campus grounds does not contain phosphorus.

Pesticide management on athletic fields is based on the recommendations of the UWEX *Integrated Pest Management Manual*. Several members of the UW-L Landscape Services crew hold Commercial Applicator of Pesticides licenses as tested and approved by Wisconsin Department of Agriculture, Trade, and Consumer Protection. The University applies broad leaf control on the entire campus once per year as needed.

UW-L Landscape Services develops a Turfgrass Management Plan for each year. The plan describes the month-to-month steps of fertilizing, seeding, aerating, and applying pesticides to athletic fields on campus. The 2005 Turfgrass Management Plan is included in Appendix N.

C. Municipal Garage and Storage Area Management

Figure 4.02-1 shows photos of the physical plant and landscape services building located on the north campus. All four pictures are taken from the same location, just southwest of the physical plant building. Photo (a) is looking southwest at the dumpsters and cemetery hill, photo (b) is looking northwest at the cylindrical flammable substance tank, photo (c) is looking northeast at the south face of the physical plant building and driveway, and photo (d) is looking southeast at the rear parking lot and scrap piles toward the entrance to East Avenue.

(a) (b)

(c) (d)

Figure 4.02-1 Physical Plant and Vehicle Maintenance Areas

Vehicle washing is performed inside the physical plant and landscaping building. The wash water drains to the sanitary sewer, not the storm sewer. UW-L recycles used oil, oil filters, and antifreeze. In 2003, 2,960 pounds of waste oil was recycled. The cost to recycle these products each year is $235 (220 gallons), $121 (one drum), and $172 (55 gallons), respectively.

D. Existing Structural BMPs

The parking lot north of the Recreational Eagle Center has the ability to act as a detention facility because of a restriction on the outlet. The lot can hold about 6 inches of water under a certain rainstorm. Also near the Recreational Eagle Center is a depressed area on the west side that collects roof drainage from the building and acts as a limited detention pond (see Figure 3.02-1 and 4.02-2).

Figure 4.02-2 Depressional Area West of Recreational Eagle Center

Conversations with the City indicate there are sumps in all of the stormwater inlets on campus. It is recommended that the University investigate each inlet to verify the existence of sumps. This information can then be used to assess potential pollutant capture during water quality modeling.

According to the City's originally submitted NOI for Phase II permitting (March 2003), the City has a catch basin cleaning program, although the cleaning frequency is not adequate to keep sediment levels below the elevation of the discharge pipe.

E. Batch Discharges/Coal Storage and Handling/Hazardous Material Storage and Loadings

1. Batch Discharges

UW-L discharges to surface waters under WPDES permit WI-0044938-5. The campus permit has seven outfalls. All outfalls, with the exception of an exterior artifact wash station on the west side of the Mississippi Valley Archaeological Center, are non-contact cooling water. Other outfalls are as follows: air compressors in heating plant, chiller in Alumni Center, refrigerant compressors in North Hall, Whitney Center, Cartwright and Wittich Halls. All cooling towers discharge to the sanitary sewer system.

2. Coal Storage and Handling

UW-L receives shipments of coal two or three times per week during peak season. The coal is trucked to campus from a barge drop off site on French Island, and is deposited into the interior coal bunker at the heating plant. All coal storage facilities on campus are enclosed.

3. Hazardous Materials Storage and Loading

UW-L manages a wide array and volume of hazardous materials, substances, and wastes. The majority of hazardous materials, substances, and wastes are handled in interior laboratories, classrooms, and general occupancy locations. Any indoor spill release would likely be contained in the space with no impact to stormwater. Interior floor drains are connected to the sanitary drain system; any spill release entering an interior floor drain could be discharged to the La Crosse Publicly Owned Treatment Works (POTW).

UW-L could release hazardous materials, substances, or wastes to exterior locations that could impact stormwater quality. Release could occur during transportation between facilities, product use or storage. UW-L has an emergency plan to manage hazardous materials, substance, or waste spills. UW-L also has a Spill Prevention Control and Countermeasures (SPCC) plan as described in Section 4.06 that addresses releases from above-ground storage tanks and oil storage locations. UW-L also submits annual Tier Two reports to local and state emergency management authorities as required by the Emergency Planning and Community Right-to-Know Act (EPCRA).

Any exterior release of a hazardous material, substance, or waste would be managed by UW-L employees or contractors pursuant with a state issued contract which provides emergency response services. The City of La Crosse Fire Department has a hazardous materials response team that provides emergency services to contain and prevent threats to public health, safety, welfare and the environment.

4.03 BMPS FOR NEW CONSTRUCTION

The review process for construction site and postconstruction site pollution control on UW-L campus consists of the following steps: (1) plans and specifications are typically designed by a consultant, (2) plans and specifications are reviewed by DSF at the 10 percent completion mark, the 35 percent completion mark, and final completion, and (3) after final review, the plans and specifications are sent to D-Comm for review of DNR stormwater regulations.

State statutes mandate that the campus meets City zoning only, but there is currently no review process in place to check if the projects on campus are meeting City zoning requirements. When a conditional use permit is required (for surface parking lots) the campus must meet City requirements and enter the City review process.

4.04 PUBLIC OUTREACH AND EDUCATION

UW-L currently does not have any public outreach and education policies or programs or any official public involvement and participation program. The University should coordinate with the City of La Crosse to develop public awareness programs in order to meet Phase II NR 216 requirements and as further described in Section 6.02.

4.05 ILLICIT DISCHARGE DETECTION AND ELIMINATION

UW-L currently does not have any policy in place for the detection and elimination of illicit discharges. Most of the storm sewers on campus are owned and operated by the City, except for laterals, and the University does not perform any maintenance or monitoring of the storm sewers. The campus has no major outfalls.

The City of La Crosse does not appear to have an Illicit Discharge Detection and Elimination Ordinance.

4.06 SPILL PREVENTION CONTROL

UW-L has a Spill Prevention Control and Countermeasure (SPCC) Plan which was prepared in March 2004 to comply with revised SPCC regulations outlined in 40 CFR 112 that prevent the discharge of oil into navigable waterways. Facilities are subject to SPCC regulations if its total aboveground oil storage capacity exceeds 1,320 gallons in containers with volumes of 55 gallons or greater and if it is likely to discharge oil into navigable waterways because of its location. UW-L has approximately 16,700 gallons of aboveground oil storage capacity in containers of 55 gallons or greater. In addition, the campus has a 200-gallon underground storage tank and a 300-gallon underground oil/water separator.

The SPCC Plan describes the potential for releases from each of the storage areas, the potential receptors, spill controls in place, and countermeasures to be used to react to releases. The plan also documents procedures for reporting spills. Campus staff is trained in spill control.

As part of this report, Strand Associates reviewed the SPCC Plan, and the SPCC requirements of Chapter 40 CFR 112 appear to have been met by the document. The copy of the SPCC Plan reviewed was signed and stamped by a professional engineer. However the Certification and Commitment of Resources sections, requiring the signature of a UW-L representative, were not signed. It is recommended that the University resolve this matter to be in compliance with the stated requirements.

The review of the SPCC Plan did not include a site visit or discussion with the UW-L personnel to verify the accuracy of the plans with regard to the number, type, size, contents of oil containers, site drainage, existing containment, receptors, engineering controls, or other SPCC-specific items. The review also did not evaluate the adequacy of each SPCC-recommended training, record keeping, equipment inspection, spill control and countermeasures, or spill reporting procedures for the UW-L campus.

SECTION 5
ANTICIPATED/PROPOSED CAMPUS DEVELOPMENT

5.01 INTRODUCTION

UW-L is currently in its fifth year of a five-year enrollment management plan that has resulted in a recent decrease in the number of students being admitted to the University. However, the overall enrollment at UW-L has risen over 20 percent since 1970. The number of full-time equivalent students in the fall 2003 semester was 8,138, with a total enrollment of 8,746 undergraduate and graduate students. According to the *UW-L 2004 Campus Physical Development Plan* (March 2004), much of the existing campus space is not efficient for current purposes, and a general lack of quality space exists for housing, classrooms, labs, offices, and recreational spaces. The quality of students as well as the quality of academic programs at the University has increased beyond the quality of the campus facilities, requiring the need for expanded and updated facilities, especially in certain academic fields. Most of the construction on campus was done prior to 1975, so many of the buildings on campus are outdated and need maintenance as well as modernization. The oldest building on campus, Graff Main Hall (1909) is listed in the National Register of Historic Places, as well as two other buildings, Wittich Hall (1916) and Morris Hall (1939).

The campus consists of 34 major buildings, with an approximate total area of 2,338,000 gross square feet. Most parking lots are located on the campus periphery, with the most number of spaces near Veterans Memorial Stadium and Cowley Hall. The campus currently has approximately 2,410 off-street parking spaces. The main campus is primarily bordered by Campbell Road and State Street to the south, La Crosse Street to the North, and various streets to the east and west. The University also owns property north of main campus along the La Crosse River that is used for athletic fields and Physical Plant maintenance buildings.

Figure 5.01-1 shows the existing buildings and parking lots on UW-L campus.

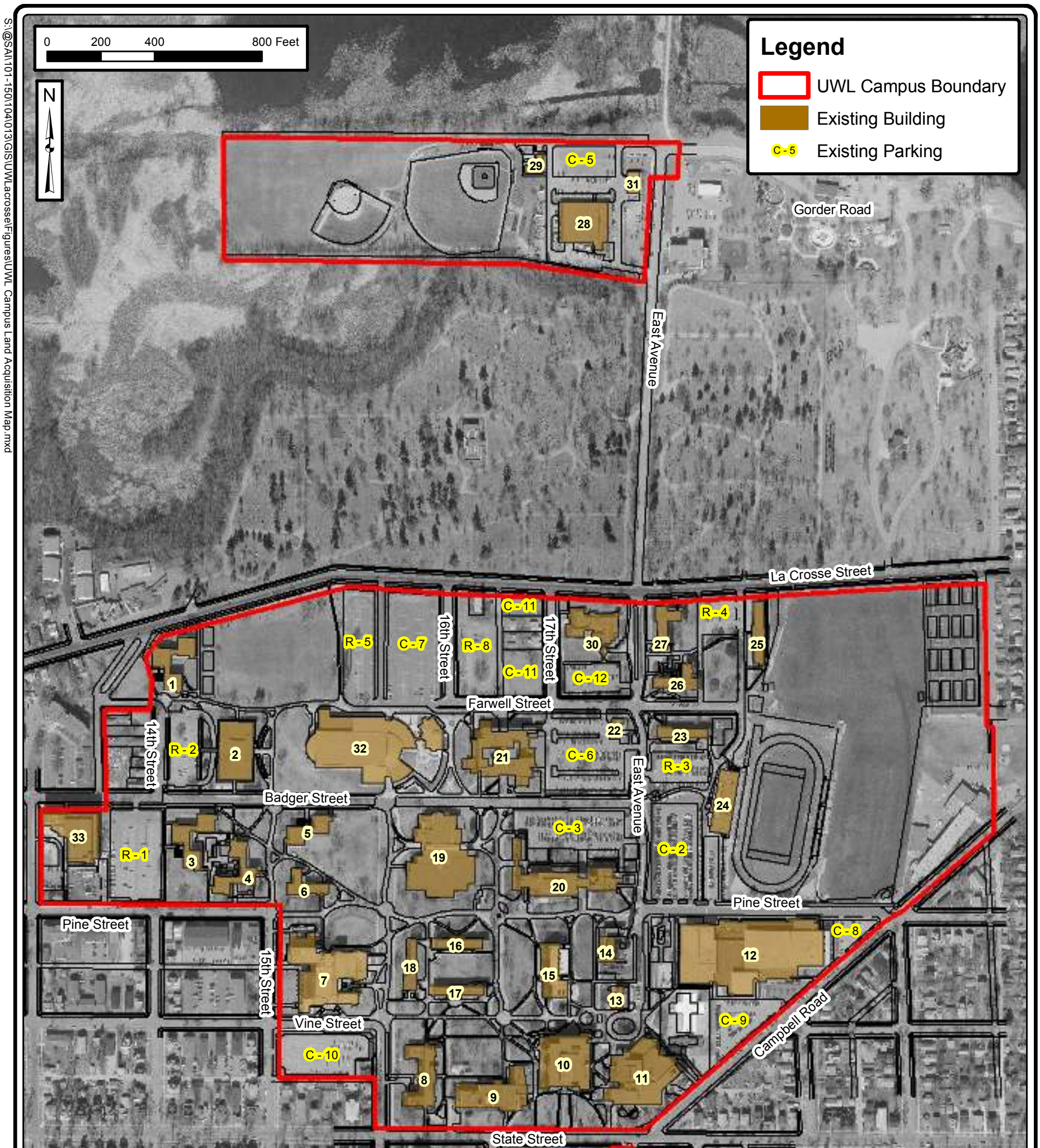
5.02 CAMPUS BOUNDARIES AND LAND ACQUISITION

In 1979 a Campus Development Plan for UW-L was approved by the Board of Regents, the State Building Commission, and the La Crosse City Council. This plan laid out the campus boundaries and has been the master plan for facility development, property exchanges, and street vacations and reconstruction since. In addition, the current campus boundary includes a property on the western portion of campus that was requested by the University and approved in 1994 by the La Crosse City Council. The University does not have plans at this time to expand its approved boundaries, but it does plan to acquire private properties within the campus borders to fulfill the current campus boundary plan. There are currently eight privately owned parcels of land within the approved campus boundary, and UW-L intends to acquire them as they become available.

In addition, the City of La Crosse owns a circa-1930 municipal swimming pool that is located on the southeast corner of the campus between the Cartwright Student Center and Mitchell Hall. According to the 2004 Campus Physical Development Plan, the City has indicated some interest in transferring the pool and its surrounding property to the University.

The privately owned properties within the UW-L campus approved boundary which the campus plans to acquire and the City-owned pool are shown ion Figure 3.01-4.

S:\@SAI\101-150\104\013\GIS\UWLacrosse\Figures\UWL Campus Land Acquisition Map.mxd



Building Directory

Angell Hall	3	Heating Plant	14	Reuter Hall	25
Archaeology Center	13	Hutchison Hall	4	Sanford Hall	26
Baird Hall	18	Information Center	22	Trowbridge Hall	16
Cartwright Center	11	Landscape Services Building	31	Veterans Memorial Stadium	24
Center for the Arts	7	Laux Hall	27	Wentz Hall	6
Cleary Alumni and Friends Center	30	Mitchell Hall	12	White Hall	23
Coate Hall	1	Morris Hall	8	Whitney Center	2
Cowley Hall	20	Murphy Library	19	Wilder Hall	17
Drake Hall	5	North Campus Building	29	Wimberly Hall	21
Graff Main Hall	10	Physical Plant Building	28	Wing Technology Center	9
Health Science Center	33	Recreational Eagles Center	32	Wittich Hall	15

FIGURE 5.01-1
1-104.013

STRAND ASSOCIATES, INC.

UW-LA CROSSE EXISTING DEVELOPMENT

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

5.03 CAMPUS CONSTRUCTION PROJECTS

The *UW-L 2004 Campus Physical Development Plan*, which was completed in March 2004, was developed as a component of the 2005-2007 capital budget request. The document is a plan for the campus for 2005-2011, which will be updated every two years as new problems are identified or as needs are met. In preparation of this plan, UW-L and UW-System planners identified priorities on campus for program development, space use, and physical and monetary resources. Part A of this section describes the major construction projects planned for UW-L during 2005-2011.

In addition to the projects planned for the next six years, the University has identified future projects it would like to address on a longer time frame. These are part of a Campus Master Plan, which is discussed in Part B of this section.

Building projects on UW-L campus include remodeling projects, additions to existing buildings, and new buildings. A summary of the major building projects planned for UW-L is included in Table 5.03-1. The remodeling projects are included in the discussion below, but they are not shown in Table 5.03-1 if they are not anticipated to change the footprint of the building or require any excavation or new impervious surfaces.

A. Campus Physical Development Plan, 2005-2011

The major proposed construction projects at UW-L planned for 2005-2011 are illustrated in Figure 5.03-1 and are described below. The numbers next to each project in Figure 5.03-1 correspond to the University's anticipated chronology or phase.

1. New Residence Hall

To make way for a new academic building in the center of campus, the demolition of two residence halls built in the 1960s will be required. The two halls, Trowbridge Hall and Baird Hall, along with Wilder Hall, an administrative building that was built in 1951 as the first residence hall on campus, are aged and outdated and are located in a prime location for a much needed new academic building. The construction of a new residence hall would be necessary prior to the demolition of the two old halls to provide adequate housing for students desiring to live on campus. The new residence hall is proposed to be located in the northeast corner of campus at the location of the existing Reuter Hall, which is a 200-bed facility.

The new residence hall would provide the type of living accommodations desired by students as well as an initial gain of approximately 180 beds on campus. An additional (Phase II) residence hall upgrade may be required prior to, or concurrent with, the demolition of Baird and Trowbridge Halls to ensure that adequate living space is being provided.

Construction of the new residence hall is scheduled to begin in 2005 and be completed in 2006. The preliminary layout is shown in Figure 5.03-1. The building would have an approximate footprint of 30,400 square feet and would be in the shape of a T.

TABLE 5.03-1

ANTICIPATED CAMPUS DEVELOPMENT

Location	Development Type	Approximate New Building Footprint	Approximate Parking Lot/ Impervious Area Footprint	Approximate Net Increase in Impervious Area	Approximate Total Disturbed Area	Schedule
2005 to 2011						
New Residence Hall	Redevelopment	0.7	0.7	0.5	2.5	2005-2006
New Academic Building	Redevelopment	1.1	1.1	0.4	3.1	2007-2009
Cowley Hall Addition[1]	Redevelopment	0.0	1.3	0.0	2.0	2009-2011
Mitchell Hall Addition	Redevelopment	0.7	2.3	0.0	1.4	> 2011
Center for the Arts Addition	In-fill	0.7	0.8	0.8	1.3	> 2011
Campus Master Plan						
New Student Center	Redevelopment	1.3	1.3	0.0		TBD
New Visitor's Center	Redevelopment	0.4	0.7	0.0		TBD
Recreational Eagle Center Addition	In-fill	0.3	0.3	0.3		TBD
Veterans Memorial Stadium	Redevelopment	1.4	3.5	0.4		TBD
New Residence Hall (West Side)	In-fill	0.3	0.3	0.3		TBD

Notes:

[1] Cowley Hall footprint only considers the reconstruction of the existing parking lot, since that is scheduled to occur during 2005-2011. The Cowley Hall addition will be constructed in the same location after 2011.

TBD To Be Determined

All areas are in acres.

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0 200 400 800 Feet

N

Legend

- UWL Campus Boundary
- Existing Building
- Renovation
- Building to be Demolished
- Proposed Future Building

#1 Construct new residence hall

#2 Demolish Baird, Trowbridge, and Wilder Halls and construct new academic building

#3 Remodel selected areas of Wimberly Hall

#3 Remodel selected areas of CFA

#3 Remodel selected areas of Graff Main Hall

#4 Remodel selected areas of and construct an addition to Cowley Hall

#5 Remodel selected areas of and construct an addition to Mitchell Hall

#6 Construct addition to CFA

#7 Remodel Wittich Hall

La Crosse Street
East Avenue
16th Street
17th Street
14th Street
15th Street
Farwell Street
Badger Street
Pine Street
Pine Street
Vine Street
Campbell Road
State Street

Building Directory

Angell Hall	3	Heating Plant	14	Reuter Hall	25
Archaeology Center	13	Hutchison Hall	4	Sanford Hall	26
Baird Hall	18	Information Center	22	Trowbridge Hall	16
Cartwright Center	11	Landscape Services Building	31	Veterans Memorial Stadium	24
Center for the Arts	7	Laux Hall	27	Wentz Hall	6
Cleary Alumni and Friends Center	30	Mitchell Hall	12	White Hall	23
Coate Hall	1	Morris Hall	8	Whitney Center	2
Cowley Hall	20	Murphy Library	19	Wilder Hall	17
Drake Hall	5	North Campus Building	29	Wimberly Hall	21
Graff Main Hall	10	Physical Plant Building	28	Wing Technology Center	9
Health Science Center	33	Recreational Eagles Center	32	Wittich Hall	15

FIGURE 5.03-1
1-104.013

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ANTICIPATED CAMPUS DEVELOPMENT

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

2. New Academic Building

Once the new residence hall is opened, Trowbridge, Baird, and Wilder Halls can be demolished in mid-2007. After they have been removed, a new academic building would be constructed in their place, in the geographic center of campus, south of Murphy Library and east of the Center for the Arts. The new building would provide the most significant solution to the space management issues that currently exist on UW-L campus by providing much-needed general classroom space as well as a new home for several departments. This would open up space in existing buildings and allow other departments to expand beyond their current areas. The new academic building would be planned and designed in 2005-2007, and construction would occur between 2007 and 2009.

A preliminary layout of the new academic building is shown on Figure 5.03-1. The approximate footprint is 48,000 square feet, for an approximate net increase in impervious area of 20,000 square feet.

3. Wimberly Hall and Graff Main Hall Remodels

Wimberly Hall, constructed in 1974, houses the College of Business Administration, several departments within the College of Liberal Studies, the Women's Resource Center, and the Small Business Development Center. These programs are in need of quality space for classrooms, study areas, group meeting rooms, and computer labs with multimedia accessibility as well as storage space and administrative and academic offices. Wimberly Hall is located on the north side of campus, east of the Eagles Center.

The oldest building on campus, Graff Main Hall, is currently home to the Chancellor's office, an auditorium, various classrooms and departments in the College of Liberal Studies and the International Education and English as a Second Language Institute. Administrative offices for financial aid, admissions, and the cashier's office are also housed in Graff Main Hall. In addition, Interdisciplinary Studies and other miscellaneous academic departments have requested additional space for classrooms and other multiuse facilities. Built in 1909, Graff Main Hall is located on the southeast corner of campus near State Street.

Figure 5.03-2 Graff Main Hall

The Wimberly Hall and Graff Main Hall renovations would be designed and planned between 2007 and 2009, and construction would begin in 2009 and be completed in 2011.

4. Cowley Hall Addition and Remodel

Cowley Hall (Figure 5.03-3) is the primary science building on campus which houses labs, classrooms, a greenhouse, a planetarium, office space, research space, computer labs and more. It was constructed in 1965 and is located near the center of campus, east of Murphy Library. The Physical and Life Sciences programs at UW-L have been increasingly growing in size and sophistication as more and more students become interested in those fields. A severe shortage of space is being experienced by departments within the College of Science and Allied Health, including Biology and Microbiology, Chemistry, Physics, and Geography and Earth Science. Space needs include lecture space, research labs, GIS computer labs, storage areas, and office space.

Figure 5.03-3 Cowley Hall

According to the 2004 Campus Physical Development Plan, an addition to Cowley Hall would be constructed between 2009 and 2011, as shown in Figure 5.03-1. However, discussions with the campus staff indicate that the parking lot to the north of Cowley Hall (where the new addition would be located) is slated for reconstruction in 2005. The parking lot reconstruction would require disturbance of approximately 57,000 square feet of existing parking lot, or 1.3 acres. The new building addition, which is shown on the Campus Master Plan (Figure 5.03-7), would have approximately the same footprint as the existing parking lot. The Master Plan also shows the removal of the west wing of Cowley Hall to make way for a pedestrian walkway. It is not clear if this would be part of the 2009-2011 renovation of Cowley Hall.

5. Mitchell Hall Addition and Remodel

Mitchell Hall (Figure 5.03-4), which is located on the east side of campus along Campbell Road, was constructed in 1965 and added on to in 1971. The building is the home of the College of Health, Physical Education, Recreation and Teacher Education. The facilities include a swimming pool, a gymnasium and field house, strength and conditioning center, human performance and biomechanics labs, sports medicine, classrooms, study areas, locker rooms, and a ticket/concessions office. As the number of students enrolled in the college has expanded and new technologies and instructional needs have been developed, the Mitchell Hall facilities have become inadequate for its demands.

Figure 5.03-4 Mitchell Hall

According to the 2004 Campus Physical Development Plan, there is unencumbered exterior space available to accommodate an addition to Mitchell Hall on the east and south sides of the

building. Under the Plan, the design and planning phase for the Mitchell Hall addition would occur during between 2009 and 2011 and construction would not begin until 2011.

According to the Campus Master Plan, the total footprint of the new additions to Mitchell Hall would be approximately 9,600 square feet. In addition, several parking areas to the south and west of Mitchell Hall would provide a total of 223 stalls in the current location of the City's municipal pool and the Cartwright Center. However, this additional development is not included in the 2004 Development Plan and is a long-term plan since it requires the construction of the New Student Center first (See Part B for a discussion of the Campus Master Plan).

6. Center for the Arts Addition and Remodel

Constructed in 1973, the Center for the Arts (Figure 5.03-5) on the west side of the campus houses the departments of Communication Studies, Art, Music, and Theatre Arts. It includes studio space, gallery space, computer labs, music recital and rehearsal halls, theatre performance space, faculty offices, classrooms, conference spaces, and more. The space demands are currently not being met for any of its purposes, and the academic potential of the departments housed in the center are being limited by the inadequate facilities.

Figure 5.03-5 Center for the Arts

The first phase of the improvements to the Center for the Arts would be to remodel the center to reallocate space after the Department of Communication Studies is relocated to the new academic building. The second phase would be to construct an addition on land adjacent to the building on the north, east, or west side of the center. Renovation of the Center for the Arts would occur between 2009 and 2011, and construction of the addition would not occur until after 2011.

A preliminary layout of the Center for the Arts addition is shown in Figure 5.03-1. The approximate footprint is 39,000 square feet. The Campus Master Plan also shows a small parking lot being added to the southwest side of the Center that would add an additional 24 stalls.

7. Wittich Hall Remodel

Constructed in 1916, Wittich Hall (Figure 5.03-6) was the original physical education building on campus. It contains faculty and staff offices, gymnasiums, a track, multipurpose and meeting rooms, a strength training center, a therapeutic/rehabilitation swimming

Figure 5.03-6 Wittich Hall

pool, the Musculoskeletal Research Center, the Leisure Lifestyle Research and Service Center, and special equipment areas. Wittich Hall underwent extensive renovations in the 1970s for preparation of special physical education teachers and therapeutic recreation specialists. The Department of Recreation Management and Therapeutic Recreation is located in the facility. Wittich Hall also hosts many community service and continuing education programs for youths and special populations within the La Crosse area community. Wittich Hall is located near the center of campus north of Graff Main Hall and south of Cowley Hall.

The 2004 Development Plan calls for Wittich Hall to be remodeled for accessibility and to bring it up to codes as well as provide space for expanded facilities. It is not anticipated at this time that any additional building space will be added, however.

B. Campus Master Plan

Beyond the Campus Physical Development Plan for 2005 to 2011, UW-L has a longer-term vision for the physical look of its campus. The UW-L Campus Master Plan, created by JJR as the campus planning consultant, is shown as a drawing in Figure 5.03-7 and includes development projects that extend beyond those described in the 2004 Plan. The Master Plan for the north campus recreational fields is shown in Figure 5.03-8. Some of the long-term projects shown on the Master Plan are described below.

Because of the preliminary nature of a master plan, the stormwater planning for these proposed facilities is limited to recommendations to follow the proposed guidelines and BMPs.

1. New Student Center

The Campus Master Plan shows a new student center being constructed east of Wimberly Hall and north of Cowley Hall. Currently, the space is used for a large surface parking lot and the Protective Services building. The plan also shows the current student center located in the southeast corner of campus, the Cartwright Center, being replaced by a parking lot. The Cartwright Center was built in 1959 and received additions in 1965 and 1985. It currently houses the campus bookstore, student lounges, a bowling alley, and several eateries.

The preliminary layout of the new student center is shown on Figure 5.03-7. The approximate footprint of the building is 55,000 square feet or 1.3 acres.

Figure 5.03-9 Cleary Alumni and Friends Center

2. New Visitor's Center

The Campus Master Plan shows a new visitor's center adjacent to the south side of the Cleary Alumni and Friends Center (Figure 5.03-9) on the north end of campus. The new center would be located on an existing surface parking lot;

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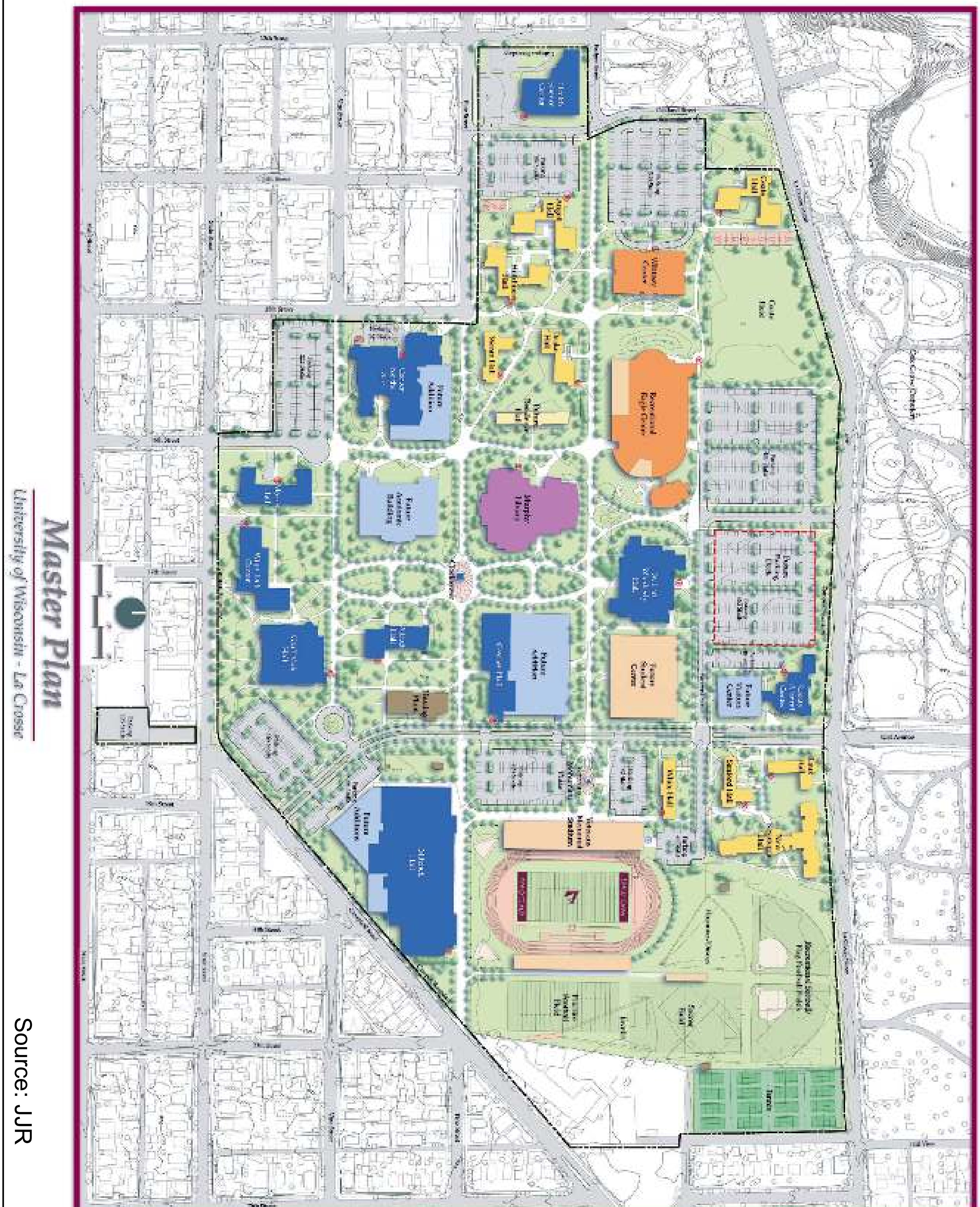

Source: JJR

FIGURE 5.03-7
1-104.013

STRAND

UW-LA CROSSE CAMPUS MASTER PLAN

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN-LA CROSSE
LA CROSSE, WISCONSIN

Recreation Fields

University of Wisconsin - La Crosse

Source: JJR

UW-LA CROSSE NORTH CAMPUS MASTER PLAN

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN-LA CROSSE
LA CROSSE, WISCONSIN

STRAND

FIGURE 5.03-8
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however, according to the Plan, 45 parking stalls would be retained on the west side of the new center and would be accessed from Farwell Street.

One of the newest buildings on campus, the Cleary Alumni and Friends Center was completed in 1995 and was gifted to the University by the UW-L Foundation. The center contains a conference center and banquet hall facilities and is the home for the Alumni and University Relations programs.

The new visitor's center would have an approximate footprint of 18,000 square feet. The preliminary layout is shown on Figure 5.03-7.

3. Recreational Eagle Center Addition

The Campus Master Plan shows two new additions to the Recreational Eagle Center, one on the south side and one on the east side of the building. The additions would not change the footprint of the building substantially but would rather fill in parts of the building that are currently open grassy areas. The approximate additional space would have a footprint of 15,000 square feet.

The Eagles Center is currently 103,776 square feet in size and houses a large field house, a strength conditioning center, a 200-meter elevated track, a child-care center, and various multipurpose activity rooms.

4. Veterans Memorial Stadium

Veterans Memorial Stadium (Figure 5.03-10), located on the east side of campus, was built in 1937 and was remodeled in 1989. The football field is surrounded by a 400-meter track. The grandstand currently seats 2,867, and additional portable bleachers seat another 1,700. Currently there are no stands on the east side of the stadium.

Figure 5.03-10 Veterans Memorial Stadium

The Master Plan shows a major renovation of the Veterans Memorial Stadium, nearly doubling the size of the existing grandstand and adding bleachers on the east side of the field. The plan also shows a new 46-stall parking lot north of the grandstand and an improved layout of Veterans Monument Plaza west of the stadium. The new stadium would have a building footprint of approximately 60,000 square feet.

The Plan also shows new practice football and softball fields and javelin and hammer/discus fields laid out on the recreational fields to the east and north of Veterans Memorial Stadium. A small grandstand along a new soccer field is also shown.

5. New Parking Lots

The UW-L campus currently has a shortage of off-street parking. Although the number of students on campus has decreased over recent years, the number of students who bring cars to campus has increased. Neighborhoods surrounding the campus have experienced spill-over student parking. Some of the commuter lots on campus are oversold by as much as 60 percent. As new buildings such as the new student center and new visitors' center are built on existing parking lots, new parking spaces must be created elsewhere.

The UW-L Master Plan creates several new parking areas and consolidates several existing smaller lots around the periphery of campus. West of the Cleary Alumni and Friends Center and new visitor's center is a new surface parking deck with approximately 462 stalls. The new parking lot would be located in an area where three private properties currently exist among two campus parking lots, R-8 and C-11 (Figure 5.03-11). There is currently an unpaved alley running between the parking lots and three residential private homes with garages. The new large parking lot would combine all of this area once the private properties are acquired and the houses razed.

Figure 5.03-11 Parking Lot C-11

The Master Plan also shows 430 parking stalls in one large lot where the existing smaller parking lots R-5 and C-7 are now located.

On the west side of campus along Oakland Street, the Master Plan shows one large lot with 344 parking stalls just west of the Whitney Center, which is accessed from Oakland Street Currently in that location there are two small parking lots (C-14 and R-2) surrounding several private homes. This parking lot would be constructed once the properties are acquired by the University (as they become available).

Additional parking would also be added where the Cartwright Center currently exists. A lot with 165 stalls would be located of East Avenue near Graff Main Hall, and another 58 stalls would be added east of the street next to the Mitchell Center.

The Master Plan also shows a new parking area near the baseball and softball diamonds on the north campus. The new lot would provide 70 stalls in addition to the approximately 113 stalls currently located north of the Maintenance and Stores Building. The north campus plan is shown in Figure 5.03-8.

5. Streets and Sidewalks

Many of the existing sidewalks and streets on campus follow the original neighborhood street layouts. Over the years, the University has slowly obtained many streets in the interior of campus and vacated them or closed them to traffic and made pedestrian walkways or emergency access roads. The campus Master Plan continues in this direction but transforms the campus walkways and green spaces into a more aesthetically pleasing and simplified plan.

Figure 5.03-12 Pedestrian Sidewalk Near Hoeschler Clock Tower

For example, in the southwest corner of campus, 16th Street currently connects to Vine Street and parking lot C-10 is disconnected from campus by these city streets. The new plan would close Vine Street at 15th Street and expand the parking lot to include more stalls and be more accessible to campus. This plan also includes the acquisition and removal of one private home located in the southeast corner of the lot.

Another example of a major grounds change on the Master Plan is the corridor that connects Wimberly Hall, the Hoeschler Clock Tower, and the Wing Tech Center in the south (Figure 5.03-12). The existing sidewalk layout does not have a unified or planned-out design but rather seems pieced together as new roads were acquired and buildings were constructed. The Master Plan shows an aesthetically pleasing symmetric corridor with slightly curved sidewalks that meet in the center at an oval-shaped plaza around the clock tower. The new corridor defines the center of campus while providing a user-friendly layout and reducing the number of paved walkways in the area.

The Master Plan also shows East Avenue as a straight narrow boulevard connecting the north side of campus with Campbell Road on the south. East Avenue currently does not connect to Campbell Road, and it is curvy in some places. Pine Street on the east side of campus would be closed to traffic under the new plan and would be converted into a pedestrian walkway.

5.04 CAMPUS CONSTRUCTION PROJECTS (2008 UPDATE)

Changes in the UW-L Campus Physical Development Plan, March 2004, between the date of issuance of the draft Campus Stormwater Management Plan, February 2005, and the final Campus Stormwater Management Plan, May 2008, have been identified in Table 5.04-1 and Figure 5.04-1. The additional or revised projects described, herein, would need to be analyzed in the future in a similar manner to Section 6.04 to determine stormwater management needs and costs. The analysis would be done as part of a future update to this stormwater management plan as agreed upon with DOA/DSF staff.

Location	Development Type	Schedule
Stadium House and Track	Redevelopment	2008-2009
New Academic Building	Redevelopment	2007-2009
New Residence Halls	New Development	TBD
New Parking Ramp	New Development	TBD
Cowley Hall Addition[1]	Redevelopment	2009-2011
Mitchell Hall Addition	Redevelopment	> 2011
Center for the Arts Addition	In-fill	> 2011
Wittich Hall Remodel	Redevelopment	TBD

Notes:

[1] Cowley Hall footprint only considers the reconstruction of the existing parking lot, since that is scheduled to occur during 2005-2011. The Cowley Hall addition will be constructed in the same location after 2011.

Table 5.04-1 Campus Construction Projects (2008 Update)

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0 200 400 800 Feet

N

Legend

- Existing Building
- Renovation
- Building to be Demolished
- Proposed Future Building

East Avenue

#4 Construct New Parking Ramp

#3 Construct New Residence Hall

16th Street

17th Street

La Crosse Street

#5 Remodel selected areas of and construct an addition to Cowley Hall

Farwell Street

14th Street

#1 Construct New Stadium House and Track

Badger Street

Pine Street

#7 Construct addition to CFA

15th Street

Vine Street

Campbell Road

#6 Remodel selected areas of and construct an addition to Mitchell Hall

#2 Demolish Baird, Trowbridge, and Wilder Halls and construct new academic building

State Street

#8 Remodel Wittich Hall

Building Directory

Angell Hall	3	Heating Plant	14	Reuter Hall	25
Archaeology Center	13	Hutchison Hall	4	Sanford Hall	26
Baird Hall	18	Information Center	22	Trowbridge Hall	16
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Cowley Hall	20	Murphy Library	19	Wilder Hall	17
Drake Hall	5	North Campus Building	29	Wimberly Hall	21
Graff Main Hall	10	Physical Plant Building	28	Wing Technology Center	9
Health Science Center	33	Recreational Eagles Center	32	Wittich Hall	15

FIGURE 5.04-1
1-104.013

STRAND ASSOCIATES, INC.

ANTICIPATED CAMPUS DEVELOPMENT (2008 UPDATE)

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

SECTION 6
ANTICIPATED STORMWATER MANAGEMENT EFFORTS

6.01 INTRODUCTION

Within the regulatory framework described in previous sections of this report and in response to existing stormwater quality and quantity issues, this section proposes stormwater management efforts anticipated to be necessary to comply with the regulations and alleviate identified problems in addition to achieving the identified stormwater management goals in Section 1.

Each proposed project includes a description of the recommendations and a planning-level conceptual Opinion of Probable Cost for implementation of the recommendations. Costs presented in this section were estimated using historical bid costs, where available, and supplemented by other reference sources. All estimated project costs include an allowance for engineering and contingencies as well as soils investigation where necessary. The goal of this report is to provide state personnel with the information required to initiate the budgeting and planning phase for facilities improvements in terms of stormwater management. All costs are presented in 2nd quarter 2005 dollars. Costs should be adjusted for inflation when final project schedules are determined. These costs should be considered planning level budgetary costs that should be followed up by detailed cost estimates during the design phase.

Recommendations for complying with Phase II Stormwater Rules under NR 216 are discussed in Section 6.02. Stormwater management efforts for compliance with NR 151 performance standards on the main campus are discussed in Section 6.03.

Section 6.04 discusses the stormwater BMPs that are recommended to be included with scheduled future building projects on campus. This section focuses on the projects that are discussed in the Campus Physical Development Plan and which are included on the 2005 to 2011 project schedule. Section 6.05 includes management practices that could be included in future building projects which are not yet designed or scheduled. Section 6.06 describes the permits necessary for a typical building project.

As described in Section 3, UW-L has identified many locations of existing and historic flooding. Recommendations for addressing the flooding locations on campus are discussed in Section 6.07.

Recommendations for alleviating the erosion and compaction problems on campus are discussed in Section 6.08. Some of the solutions presented recommend soils investigation. Soils investigations are recommended during design to estimate the infiltration rate of the soils underlying some of the recommended improvements.

Section 6.09 discusses the recommended policy for addressing drainage issues, which should be reviewed by UW-L and DSF staff.

Finally, Section 6.10 provides a summary of the anticipated stormwater management efforts described in this Section as well as an implementation plan.

6.02 STORMWATER MANAGEMENT TO COMPLY WITH PHASE II PERMIT

The campus will be required to submit a Notice of Intent to Apply for Coverage Under Municipal Storm Water Discharge Permit in late 2005. This will initiate the Phase II Permit process and the requirements defined in Section 2.01 will need to be complied with. The campus should consider writing an Urban

Nonpoint Source Grant for some of this work. The implementation of these permit conditions is based on the Phase II Permit being issued in September 1, 2005.

A. Public Information and Education

We have developed a conceptual Public Information and Education Plan Framework that is included in Appendix L. Implementation and further development of this framework will be the responsibility of the UW-L campus. We have included conceptual costs for the implementation of the program in Table 6.10-1.

B. Public Involvement/Participation

This will be an ongoing effort in conjunction with the Public Information and Education Plan described above. We have included conceptual costs for the implementation of the program in Table 6.10-1.

C. Illicit Discharge Detection Program

The Illicit Discharge Detection Program must consist of a policy to prevent and eliminate illicit discharges and connections to the municipal separate storm sewer system. It must also consist of procedures for responses to known or suspected illicit discharges. There must be an initial field screening at all major outfalls during dry weather periods. As on an ongoing effort, the program must also consist of ongoing field screening. We discuss each of these below and include a potential Framework for this Program in Appendix M.

1. Illicit Discharge Detection and Elimination Ordinance or Regulatory Mechanism

The City of La Crosse will either be drafting an Illicit Discharge Detection and Elimination Ordinance or proving to the DNR that current ordinances are adequate as part of a Stormwater Management Plan that will be completed by a consultant for the City of La Crosse in 2005/2006. Because the campus doesn't have the authority to administer an ordinance, it is our recommendation that the campus review the draft City ordinance or current City ordinances (if deemed adequate by the DNR) with the City for appropriateness on the campus. It is then recommended that the campus adopt the ordinance(s) as guidelines for the campus to follow. Conceptual costs for this process are shown in Table 6.10-1.

2. Response Procedures to Known or Suspected Illicit Discharges

We have included potential response procedures in Appendix M. Conceptual costs are shown in Table 6.10-1.

3. Initial Field Screening and Ongoing Field Screening

We have included field screening locations and procedures in Appendix M with a schedule for ongoing field screening and have provided a sample field screening form. Table 6.10-1 shows the costs.

D. Construction Site Erosion Control

In Section 2.07, construction site erosion control guidelines are proposed that meet or exceed NR 151 standards. It is our understanding that these guidelines will be implemented in 2005 and that administration and enforcement will begin in 2006. We have included conceptual costs for this in Table 6.10-1. It is anticipated that the erosion and sediment control plan requirements in the State Model Ordinance (NR 152) will be followed.

E. Postconstruction Site Stormwater Management

In Section 2.07, postconstruction site stormwater management guidelines are proposed that meet or exceed NR 151 standards. It is our understanding that these guidelines will be implemented in 2005 and that administration and enforcement will begin in 2006. We have included conceptual costs for this in Table 6.10-1. It is anticipated that the stormwater plan requirements in the State Model Ordinance (NR 152) will be followed.

F. Pollution Prevention

Current Stormwater Pollution Prevention (SWPP) practices appear to be in general conformance with NR 151 objectives. Table 6.02-1 looks at the ongoing program and provides comments for possible future improvements. We have included conceptual costs for this ongoing program in Table 6.10-1 for the on-going cost to implement this pollution prevention program.

SWPP Component	Current Program	Comments
Inspection and Maintenance of Existing Stormwater Management Facilities	One dry detention basin and one parking lot detention basin.	Perform maintenance on existing facilities as necessary and track maintenance activities. Future facilities will need to be inspected and maintained to maintain their pollutant removal operating efficiency.
Street Sweeping and Catch Basin Cleaning and Proper Disposal of Generated Waste	See Section 4.02 for Existing Practices	Continue current program and enhance after completion of water quality modeling required by NR 151. Determine what catch basins on campus have stormwater sumps as part of water quality modeling. Develop Targeted Inlet Cleaning Plan. Track miles of street sweeping (tons or CY of debris collected) and CY of sediment cleaned from sumps.
Road Salt and Deicer Application at Minimum Rate to Maintain Public Safety	See Section 4.02 for Existing Practices	Continue current program and assess for future improvements. Track quantities of sand, salt, and deicer each year . Track local weather conditions including daily precipitation/snowfall and daily low/high/average temperatures.
Leaf and Grass Clipping Collection Management	See Section 4.02 for Existing Practices	Continue current program and assess for future improvements.
SWPP for Physical Plant and Landscape Services Building	See Section 4.02 for Existing Practices	Continue current program. Assess need for improvements at storage areas. Track pounds of oil recycled each year.
Lawn and Garden Fertilizer Application	See Section 4.02 for Existing Practices	Continue current program. Track fertilizer use each year.

Table 6.02-1 Pollution Prevention Recommendations

G. Stormwater Quality Management

The Phase II Stormwater Permit requires compliance with the water quality provisions of NR 151 requiring that Phase II permitted municipalities develop and implement a stormwater quality plan that meets Stage 1 (20 percent reduction in total suspended solids (TSS) by March 10, 2008) and Stage 2 (40 percent reduction in TSS by March 10, 2013) requirements. This means that the campus will need to perform water quality modeling [Source Loading and Management Modeling (SLAMM)] to develop a BMP plan to meet these requirements. In addition, an assessment of existing stormwater management facilities designed specifically for flood control must be done to determine the feasibility of retrofitting the facilities to increase the total suspended solids removal from runoff. It doesn't appear feasible to retrofit the detention west of the Recreational Eagle Center into a wet detention basin capable of removing 80 percent total suspended solids unless the campus desires a wet detention basin on campus. It also isn't feasible to retrofit the existing parking lot detention into a wet detention basin because it is used as a parking lot for the campus.

It is our understanding that the City of La Crosse will be hiring a consultant to do its water quality modeling to determine how it will meet the TSS reduction requirements discussed above. It is our recommendation that the UW-L campus investigate buy-in to that effort to obtain recommendations on how to meet the TSS reduction for the campus lands. If the City is unwilling to do this in a group effort, then the campus would need to perform this on its own, which will likely have a higher cost. Table 6.10-1 lists the potential cost if the campus had to do this modeling on its own. The DNR Urban Nonpoint Source and Stormwater Grant Program has money available that could help fund the cost of this study. Details of this program are included in Appendix J.

Figure 6.02-1 includes locations and types of potential BMPs that can be used to help meet the 20 percent and 40 percent reductions. These BMPs should be considered when doing the water quality modeling. These primarily include in-line stormwater treatment devices in parking lots and biofilters at reconstructed or new parking lots. Figure 6.02-1 also includes areas of potential land preservation for future stormwater BMPs. In general, it is far less costly overall, to contain erosion and prevent pollution on a confined site near its origin, than to try and treat, contain, or remove it once it has been dispersed.

In addition, while the need for increased street sweeping on campus lands is to be determined by the water quality modeling discussed above, it is our recommendation that the campus budget for costs to initiate or increase street sweeping on campus-owned streets and parking lots since this alone may help meet the 20 percent TSS reduction by 2008. The cost to the campus to initiate or increase street sweeping (sweeping done by the City) on campus-owned streets and parking lots should be discussed with the City. It is our understanding through discussions with the DNR that the City would be responsible for water quality modeling and Phase 2 permit compliance of City-owned right-of-way within the campus boundary.

H. Storm Sewer System Map

The Phase II permit requires submittal of a storm sewer system map meeting seven requirements. The drainage basin map included as Figure 3.02-1 will meet this permit condition. However, we have identified several areas of deficient mapping of the existing system. It is our recommendation that the UW-L campus complete a comprehensive storm sewer system map upgrade to address these

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Gorder Road
C - 5
Inline Device
East Avenue
Rain Garden
Biofilter
Biofilter
New Residence Hall
Inline Device
Inline Device
Inline Device
La Crosse Street
16th Street
17th Street
R - 5
C - 7
R - 8
C - 11
C - 12
R - 4
Farwell Street
14th Street
R - 2
C - 6
R - 3
Inline Device
Badger Street
Cowley Hall Addition
C - 3
Inline Device
R - 1
C - 2
Pine Street
Pine Street
15th Street
C - 8
Campbell Road
Inline Device
Rain Garden
Vine Street
C - 9
C - 10
Center for the Arts Addition
Mitchell Hall Addition
Inline Device
Rain Garden
State Street
New Academic Building
Inline Device
Rain Garden
C - 1
N
0 200 400 800 Feet

Legend

- UWL Campus Boundary
- Existing Building
- Renovation
- Building to be Demolished
- Future Parking
- Future Building
- Potential Land Preservation for Future Storm Water Facilities
- Potential BMPs
- Storm Sewer
- Catch Basin
- Manhole
- C - 5 Existing Parking Lot

FIGURE 6.02-1
1-104.013

STRAND

POTENTIAL STORMWATER BMPS

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

deficiencies. This would consist of the use of a handheld GPS unit to locate storm sewer manholes, inlets, and other stormwater management features in streets, parking lots, and campus lands including storm sewer laterals to buildings. We have included conceptual costs for this in Table 6.10-1. We recommend that this map upgrade effort be completed in 2006 so that future storm sewer system improvements constructed as part of new developments are the only on-going storm sewer system map maintenance efforts required.

I. Annual Report

The Phase II permit requires submittal of an Annual Report documenting progress and implementation of the above eight permit conditions. We have included conceptual costs in Table 6.10-1 for preparation of the Annual Report and the Annual Permit Fee. It is anticipated that the first Annual Report will be due in 2006. Appendix U shows the UW Annual Report Templated (Phase II).

6.03 STORMWATER MANAGEMENT TO COMPLY WITH NR 151 ON CAMPUS

In addition to Phase II Stormwater Rules, UW-L is required to meet the NR 151 Urban (Nonagricultural) Performance Standards described in Section 2.02 that requires campus building projects to be in compliance with these standards *(Construction Site Erosion Control and Post Construction Site Stormwater Management)*. Section 6.04 discusses specific recommendations to conceptually meet NR 151 for individual campus building projects planned for 2005-2011.

NR 151 requires that Phase II permitted municipalities develop and implement a stormwater quality plan that meets Stage 1 (20 percent reduction in TSS by March 10, 2008) and Stage 2 (40 percent reduction in TSS by March 10, 2013) requirements. This means that the University will need to perform water quality modeling (SLAMM) to develop a BMP plan to meet these requirements. Therefore, although many of the campus building projects will be exempt from postconstruction performance standards under NR 151 because they are redevelopment sites with no increases in impervious area, implementing BMPs with these new construction sites should be considered to meet the TSS reduction goals for the entire campus. Although each project may be relatively small, the cumulative increase in impervious area and the overall impact on the campus stormwater must be taken into consideration for the stormwater quality plan. See Sections 6.02 and 6.04 for further discussion on this item.

In addition, NR 151 requires that *Developed Urban Areas* have an Information and Education program as described in Section 2.02. We have included the framework for an Information and Education Program in Appendix L and also discuss it above in Section 6.02.

The last NR 151 requirement is for fertilizers to be applied according to a nutrient management schedule by March 10, 2008, for nonmunicipal-owned lands that apply fertilizer to at least 5 acres of land. Since the campus only uses fertilizer on athletic fields in amounts determined by soil tests that constitute a nutrient management plan, this requirement appears to be met or nonapplicable.

All costs for compliance with NR 151 on the campus are discussed in Section 6.02 and 6.04.

6.04 STORMWATER MANAGEMENT FOR NEW BUILDING PROJECTS (2005-2011)

UW-L campus construction projects that disturb a surface area of more than 4,000 square feet, an excavation or fill volume of more than 400 cubic yards, 2,000 square feet on slopes 20 percent or greater (or within a Shoreland Zone), at least 300 feet of trenching, any amount on slopes of 30 percent or more, or projects impacting 100 feet or more of channelized flow will be required to install construction site erosion control measures as required by the City of La Crosse and La Crosse County Erosion Control Ordinances. In addition, new and redevelopment sites that are greater than 1 acre in size must comply with NR 151 construction site performance standards. This includes, but is not limited to, an 80 percent reduction in sediment in runoff from the site as compared with no control measures.

As discussed in Section 2.02, postconstruction performance standards under NR 151 do not apply to postconstruction redevelopment sites that have no increase in exposed parking lots or roads, or sites which, once developed, have less than 10 percent connected imperviousness and the cumulative area of all parking lots and rooftops is less than 1 acre. In addition, peak discharge control and infiltration are not required for any redevelopment site or in-fill development site less than 5 acres. A 40 percent reduction in TSS from the site as compared with no controls is required for redevelopment projects that result in an increase in impervious area and in-fill development sites less than 5 acres built before October 1, 2012. In-fill sites greater than 1 acre built after October 1, 2012, will require an 80 percent TSS reduction. Oil and grease control is required for any new vehicle maintenance and fueling areas.

By the definitions in NR 151, it is our opinion that all construction projects on UW-L campus would be considered either redevelopment or in-fill development because the campus is located within an existing municipal storm sewer system and is surrounded by existing development. Campus projects constructed at the location of an existing parking lot or building would be considered redevelopment sites, and projects that develop existing open green space on campus would be considered in-fill development.

The major proposed 2005-2011 campus building projects are shown in Figures 6.04-1 through 6.04-5. Table 5.03-1 lists the planned building projects and their anticipated footprint and associated impervious areas. It also lists the type of development for each project (redevelopment or in-fill development).

Also, changes in the UW-L Campus Physical Development Plan, March 2004, between the date of issuance of the draft Campus Stormwater Management Plan, February 2005, and the final Campus Stormwater Management Plan, April 2008, have been identified in Section 5.04 Campus Construction Projects (2008 Update). The additional or revised projects described in Section 5.04 would need to be analyzed in the future in a similar manner to Section 6.04 to determine stormwater management needs and costs. The analysis would be done as part of a future update to this stormwater management plan as agreed upon with WI DOA/DSF staff.

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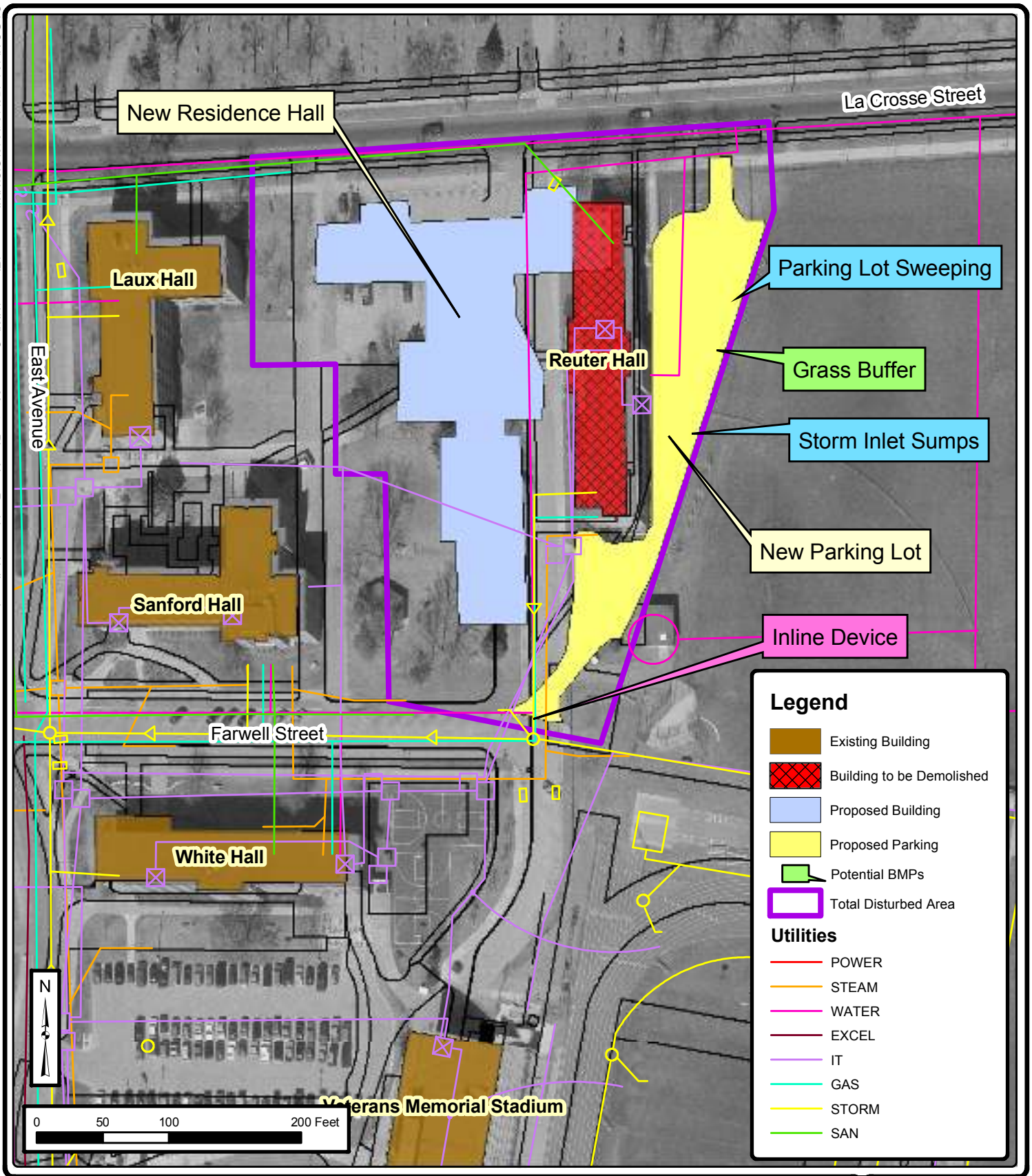

NEW RESIDENCE HALL

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND

FIGURE 6.04-1
1-104.013

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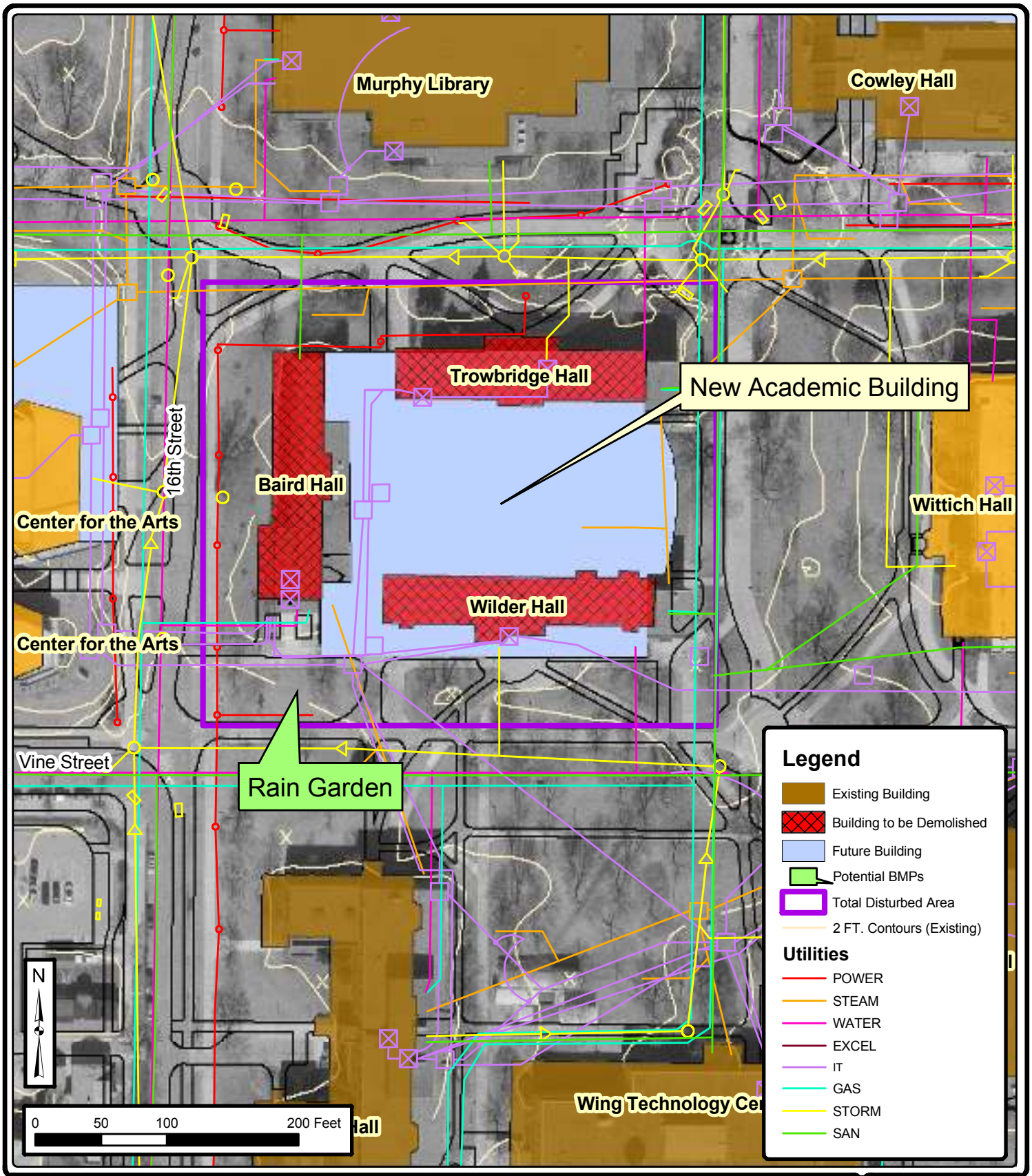

NEW ACADEMIC BUILDING

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND

FIGURE 6.04-2
1-104.013

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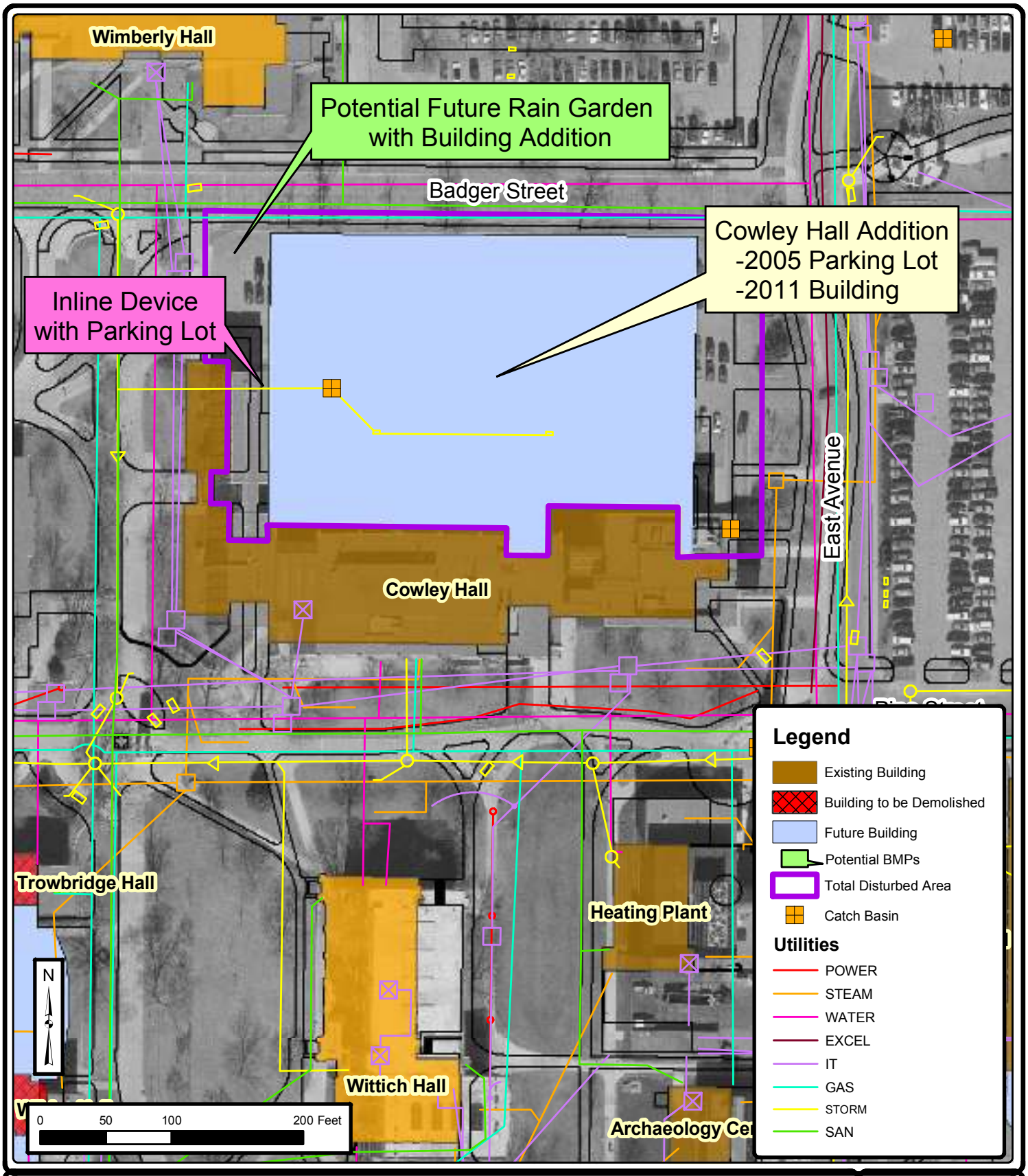


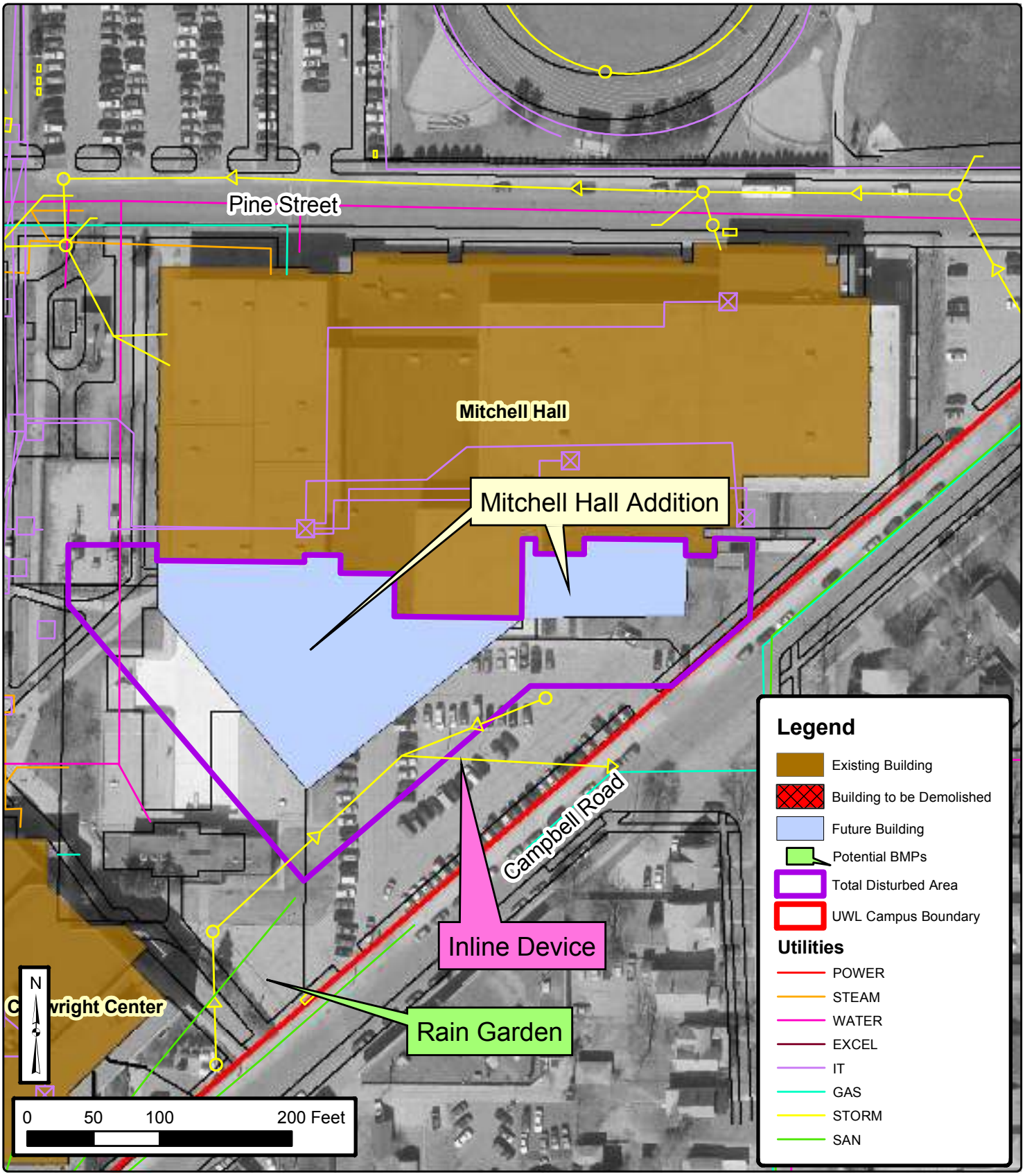
COWLEY HALL ADDITION

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND

FIGURE 6.04-3
1-104.013

S:\@SA\101-150\104013\GIS\UWLacrosse\Figures\UWL Campus Master Plan Mitchell Hall Addition.mxd

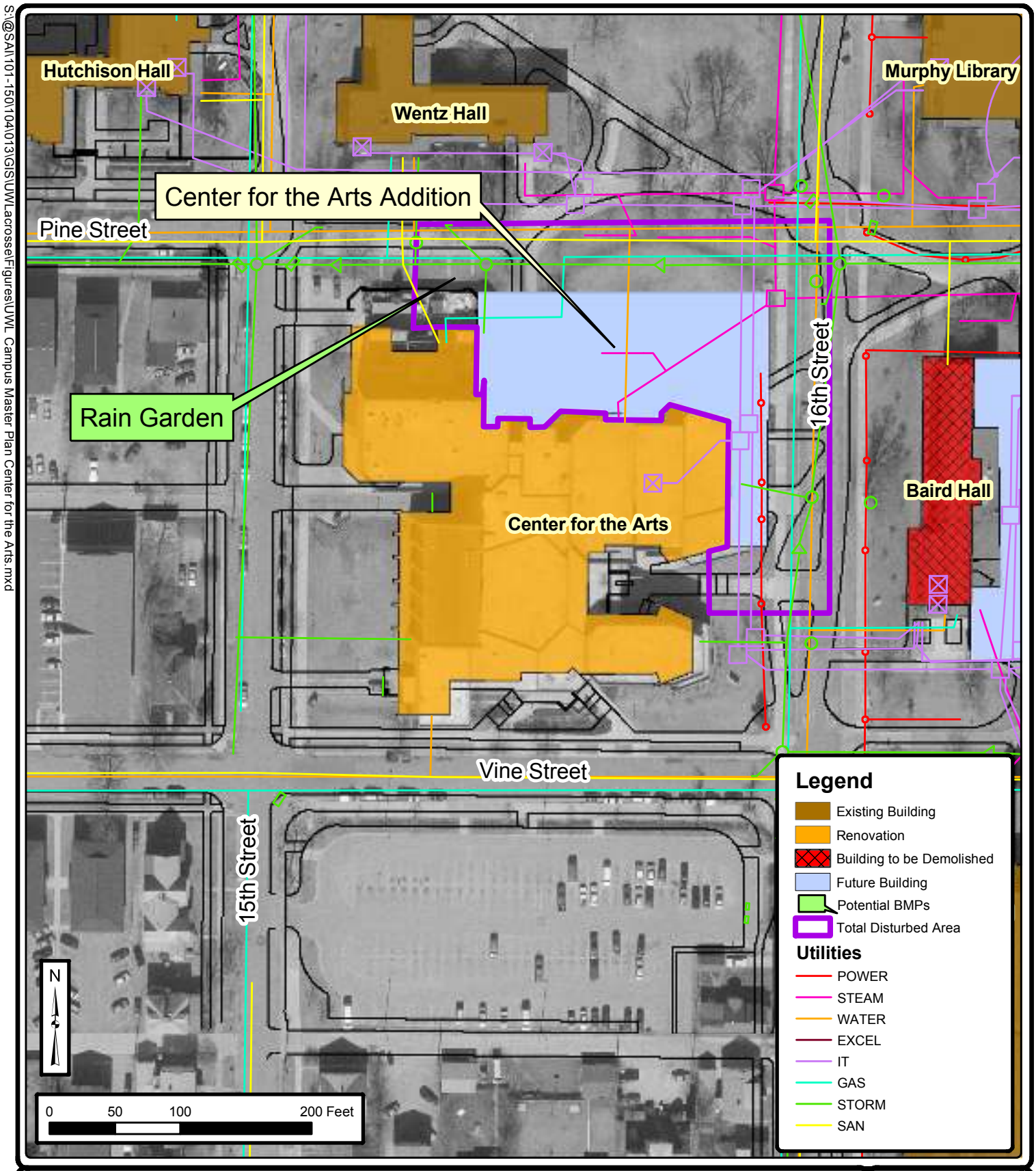


MITCHELL HALL ADDITION

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND ASSOCIATES, INC.

FIGURE 6.04-4
1-104.013



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CENTER FOR THE ARTS ADDITION

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND

FIGURE 6.04-5
1-104.013

A. Redevelopment Projects

1. New Residence Hall (2005-2006)

The new residence hall and adjacent parking lot are proposed to be constructed where Reuter Hall is currently located. The project will disturb roughly 2.5 acres of land. Therefore NR 151 construction site erosion control performance standards will be required to be met during construction, including the use of BMPs to reduce the TSS from the construction site by 80 percent as compared with no controls. The use of a construction entrance truck pad is recommended. Control of sediment discharge during dewatering and erosion control on site and storm drains will be required.

Although this project is a redevelopment site, the amount of impervious area is being increased by approximately 0.5 acres, so it would not be exempt from postconstruction performance standards under NR 151. However, peak discharge control is not required under NR 151 for redevelopment sites, and infiltration would not be allowed at this site since it is located within 400 feet of a municipal water well. It is also not required because it is a redevelopment site. TSS reduction of 40 percent is required for this redevelopment site. In order to meet the 40 percent reduction in TSS, we recommend the use of inline stormwater treatment devices (i.e., Stormceptor, Vortechnics) in conjunction with street sweeping of parking lot areas, storm inlet sumps, and grass buffers for areas not draining through the in-line device.

The opinion of probable cost for the recommended control measures for the New Residence Hall is shown in Table 6.04-1. The recommend improvements are shown in Figure 6.04-1

It should be noted that we sent an e-mail to the campus (Matt Lewis) on November 23, 2004, indicating that the 40 percent reduction in TSS would be required at the Reuter Hall project if there was greater than 1 acre of land-disturbing construction activity. Matt indicated that the Department of Commerce has previously reviewed this development and that the 40 percent reduction in TSS was not in the plans for the project. It is our recommendation that the campus implement TSS reduction in the plans during construction if possible.

Item	Capital Cost
Erosion Control	$10,000
Stormwater Inlet Sumps	$2,000
In-Line Stormwater Treatment Device treating runoff from the Parking Lot	$20,000
Grass Buffer for Areas of Parking Lot not draining through the In-Line Device	$2,000
Subtotal	$34,000
Engineering and Contingencies (35%)	11,900
Total	$45,900

Table 6.04-1 Opinion of Probable Cost
New Residence Hall Stormwater Improvements

2. New Academic Building (2007-2009)

The new academic building will be constructed at the site of three existing buildings, so it would be considered a redevelopment site. The new building is expected to have a footprint of approximately 1.1 acres, and the increase in impervious area is expected to be approximately 0.4 acres. The total disturbed area for the site would be roughly 3.1 acres; therefore construction site erosion controls such as those described for the new residence hall would be required.

Postconstruction performance standards are exempt because this is a redevelopment site with no increase in exposed parking lots or roads (roof, pervious areas, and sidewalk additions only). That means that there is no need to comply with the 40 percent TSS reduction, the peak discharge control requirements, and infiltration requirements. However, because of the existing downstream flooding problems documented in this report, we feel it would be a good idea to install a rain garden in the remaining pervious area as shown in Figure 6.04-2 to help infiltrate and evapotranspirate roof water from the building. The rain garden was sized based on infiltration of 25 percent of total roof runoff.

The opinion of probable cost for the new academic building control measures is shown in Table 6.04-2.

Item	Capital Cost
Erosion Control	$5,000
Rain Garden Construction	$10,000
Subtotal	$15,000
Engineering and Contingencies (35%)	$5,250
Soils Investigation	$1,500
Total	$21,750

Table 6.04-2 Opinion of Probable Cost
New Academic Building Stormwater Improvements

3. Cowley Hall Parking Lot Reconstruction (2005) and Addition (2011)

The first phase of the Cowley Hall update is the reconstruction of the parking lot on the north side of the building in 2005. The approximate area of the lot is 57,000 square feet, or about 1.3 acres. Although the parking lot reconstruction would disturb more than 1 acre of land and construction site erosion control measures are required, the project would most likely be exempt from NR 151 postconstruction performance standards because it is a redevelopment site and it does not increase the amount of exposed parking lots. However, the DNR has indicated that the exemption would not apply if the parking lot was reconfigured during construction in a way that would allow improvements to stormwater to take place.

Construction site erosion control measures would be similar to those described for the new residence hall. Construction drawings for the new parking lot include inlet protection methods for construction as well as sumps in the catch basins.

Although the project appears to be technically exempt from NR 151 postconstruction standards, reducing the TSS from the site by 40 percent would help meet future NR 151 Developed Area Performance Standards. See the TSS reduction methods described for the new residence hall above. We therefore recommend that an in-line stormwater treatment device be installed along with the parking lot reconstruction to help in meeting the TSS reduction of 20 percent required campus-wide by 2008. However, this device would not serve any purpose after the Cowley Hall Addition (2009-2011) is constructed since the parking lot and TSS source would be removed. If the campus chooses not to install the in-line device, we recommend future construction of a rain garden to help with downstream flooding problems at the time the Cowley Building Addition is constructed. The opinion of probable cost for the Cowley Hall parking lot reconstruction is shown in Table 6.04-3.

Item	Capital Cost
Erosion Control	$10,000
In-Line Stormwater Treatment Device	$20,000
Subtotal	$30,000
Engineering and Contingencies (35%)	$10,500
Soils Investigation	$2,000
Total	$42,500

Table 6.04-3 Opinion of Probable Cost
Cowley Hall Stormwater Improvements

4. Mitchell Hall Addition (>2011)

The Campus Master Plan shows two small additions to the south side of Mitchell Hall. The 2004 Physical Development Plan indicates that the additions would be constructed after 2011. The larger addition requires the demolition of the existing City municipal pool, located just to the southwest of Mitchell Hall.

The new additions, as shown in Figure 6.04-4, would have a total footprint of approximately 0.7 acres, and the disturbed area would be roughly 1.4 acres. The site would be considered redevelopment since currently there is a parking lot and pool in that space, and there would not be any increase in impervious area. Therefore, the site would most likely be exempt from postconstruction stormwater performance standards under NR 151, so only construction site erosion controls would be required. However, much like the Cowley Hall addition discussed above, installing BMPs to control TSS from the postconstruction site would aid in meeting the future NR 151 Developed Area Performance Standards. We therefore recommend the construction of an in-line stormwater treatment device in the parking lot for this facility. Also, we recommend a rain garden which would accept roof drainage to help reduce the downstream flooding. The rain garden was sized based on an infiltration volume of 25 percent of the total roof runoff.

The opinion of probable cost for the Mitchell Hall improvements is shown in Table 6.04-4. These improvements are shown in Figure 6.04-4.

Item	Capital Cost
Erosion Control	$10,000
In-Line Stormwater Treatment Device	$20,000
Rain Garden	$6,000
Subtotal	$ 36,000
Engineering and Contingencies (35%)	$12,600
Soils Investigation	$ 1,500
Total	$50,000

Table 6.04-4 Opinion of Probable Cost
Mitchell Hall Addition Stormwater Improvements

B. In-fill Development Projects

1. Center for the Arts Addition (>2011)

The Center for the Arts renovation is a two-phase update. The first phase is a renovation of the interior, and the second phase is an addition. The Campus Master Plan shows an addition to the north of the building with an approximate footprint of 0.7 acres. The total disturbed area would be roughly 1.3 acres, and the increase in impervious area would be approximately 0.8 acres. The project would fill in a space that is currently open green space, so the site may be considered in-fill development rather than redevelopment. This should be verified with the DNR before any assumptions are made regarding the applicability of standards.

As an in-fill site, the postconstruction stormwater performance standards under NR 151 would apply. If the construction occurred before October 1, 2012, the required TSS reduction from the site would be 40 percent as compared with no controls, and if it were built after October 1, 2001, a reduction of 80 percent would be required. Therefore, BMPs will be required at the site to reduce the solids in the runoff.

However, the postconstruction performance standards are exempt because this is a redevelopment site with no increase in exposed parking lots or roads (the project only involves roof and sidewalk additions). That means that there is no need to comply with the TSS reductions described above, the peak discharge control requirements, and infiltration requirements. However, because of the existing downstream flooding problems documented in this report, we feel that it would be a good idea to install a rain garden in the remaining pervious area as shown in Figure 6.04-5 to help infiltrate and evapotranpirate roof water from the building. The rain garden was sized based on infiltration of 25 percent of the new roof area runoff.

Peak discharge control and infiltration would not be required as the site is less than 5 acres. The opinion of probable cost for the Center for the Arts Addition is shown in Table 6.04-5.

Item	Capital Cost
Erosion Control	$5,000
Rain Garden	$6,000
Subtotal	$11,000
Engineering and Contingencies (35%)	$ 3,850
Soils Investigation	$1,500
Total	$16,350

Table 6.04-5 Opinion of Probable Cost
Center for the Arts Addition Stormwater Improvements

6.05 STORMWATER MANAGEMENT FOR FUTURE BUILDING PROJECTS

The following alternatives exist for new construction and retrofits in existing construction. The BMPs listed below are aimed at both water quality and water quantity including evapotranspiration, infiltration, peak flow reduction, sediment reduction, and interception of stormwater. In regard to stormwater quality, it is preferable to deal with water quality at its source which would lend itself to multiple locations of stormwater management. In terms of stormwater quantity control, it may be preferable to construct a “downstream” facility serving multiple developments. During the design phase of all future building projects, a detailed operation and maintenance plan should be developed for required BMPs. No costs are given in this report for these items since each component would be packaged with a particular building project in the future. Potential BMPs are listed below under the NR 151 Performance Standards that they help meet:

1. Peak Discharge Control

    a. Wet Detention Basins
    b. Underground Detention
    c. Pocket Wetlands
    d. Inlet Restrictors/Pavement Storage
    e. Rain Gardens
    f. Green Rooftops

2. Infiltration

    a. Infiltration Trenches
    b. Infiltration Basins
    c. Bioretention for Infiltration
    d. Infiltration Sumps
    e. French Drains and Dry Wells
    f. Pervious pavements for sidewalks
    g. Pervious pavers around catch basins in parking lots
    h. Grass Swales
    i. Rain Gardens

3. Water Quality

    a. Wet Detention Basins
    b. In-Line Stormwater Treatment Devices
    c. Sand filters, bioretention cells, filter strips
    d. Grass swales
    e. Vegetative Buffers
    f. Biofilter

4. Oil and Grease Control

    a. Stone Trench
    b. Inlet Hoods

5. Miscellaneous

    a. Green Rooftops

Figure 6.05-1 shows some examples of infiltration devices (source: DNR Web site): (a) stone infiltration trench for oil and grease control in Cross Plains, Wisconsin, (b) rain garden in Madison, Wisconsin, and (c) infiltration trench in Lake Delton, Wisconsin.

(a) (b) (c)
Source: DNR Web site

Figure 6.05-1 Examples of Infiltration/Filtration Devices

Figure 6.05-2 shows some examples of permeable pavement options: (a) permeable driveway from ConcreteNetwork.com (www.concretenetwork.com), (b) porous pavement parking lot courtesy of Milwaukee Metropolitan Sewerage District website (www.mmsd.com/projects/station2.cfm), and (c) permeable pavers from Perma Pave (www.permapave.com).

(a) (b) (c)

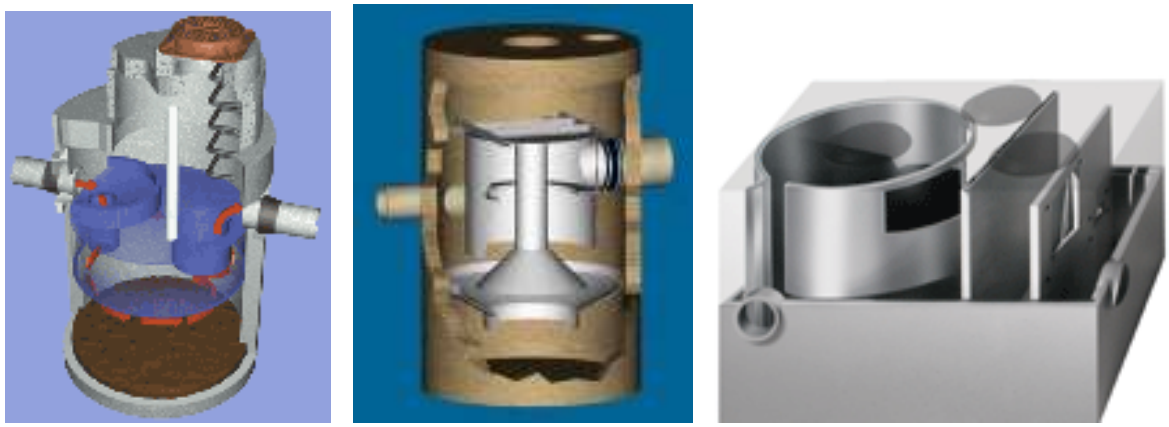
Figure 6.05-2 Examples of Permeable Pavement

In particular, the in-line stormwater treatment devices are effective at reducing total suspended solids in stormwater. Discussions with Roger Bannerman of the DNR on April 19, 2004 regarding in-line stormwater treatment devices indicate the performance and cost range of these devices as shown in Table 6.05-1. For all devices, treating the stormwater closer to the source is more effective and is encouraged.

Type of In-Line Stormwater Treatment Device	Performance	Cost Range	Notes
Multichamber Treatment Device	90% TSS reduction	$40,000 to $50,000 per acre of impervious area treated	
Stormwater filters	90% TSS reduction	$40,000 to $50,000 per acre of impervious area treated	
Single Chamber Treatment Devices	30% to 40% TSS reduction	$15,000 per acre of impervious area treated	Stormceptor, Vortechnics

Table 6.05-1 In-Line Stormwater Devices Information

Figure 6.05-3 shows renderings of proprietary in-line single chamber treatment devices for TSS reduction: (a) Stormceptor® (www.stormceptor.com), (b) Downstream Defender™ from Rocla® Water Quality (http://pipe.rocla.com.au/water_quality/defender), and (c) Vortechs™ by Vortechnics (www.vortechnics.com).



(a) (b) (c)

Figure 6.05-3 Proprietary In-Line Stormwater Treatment Devices

In addition to stormwater BMPs that can be installed in conjunction with new buildings, it is also important to consider the overall footprint of buildings and other impervious surfaces during the design phase. One of the most effective methods of reducing stormwater runoff is by decreasing the impervious area that is added for a new building or parking lot. Buildings should be designed to utilize vertical space whenever possible and multiple-story parking garages should be utilized rather than large surface lots to reduce the footprint. Pervious materials can be used on sidewalks, driveways, roads, and parking lots to decrease the runoff from these surfaces.

New buildings should also be designed to maintain the predevelopment vegetation to the maximum extent possible. Natural buffers between buildings and water bodies should be maintained and natural areas of drainage or infiltration should be preserved whenever possible.

The DOA/DSF requested a brief discussion on the use of perforated storm sewer as a possible best management practice. Potential pipe material possibilities include PVC perforated pipe which may have loading issues under roadways, and concrete storm sewer without the gaskets at the joints. In both cases filter fabric should be wrapped around the storm sewer and also the clear stone bedding to prevent fines from migrating from the road base to the storm sewer. When the storm sewer has reached its capacity it could surcharge into the clear stone bedding and depending on the permeability of the soils either infiltrate into the ground or be stored in the voids of the clear stone until the storm has passed. The storm sewer would then slowly drain the water detained in the clear stone. The infiltration and additional storage added would increase the design capacity of the storm sewer system.

As with any underground treatment device there are some potential problems. If the storm sewer is placed in the roadway and the filter fabric rips or breaks down there is a potential for the road base to migrate into the pipe causing caving under the road surface and potholes. The filter fabric wrapped around the pipe will also be hard to maintain and may become clogged. The perforated pipe could only be used in areas where the ground water table would not rise into the clear stone of pipe section. We recommend checking the DNR definitions of groundwater injections wells to see if a system of this kind would fall under this category. Finally, based on the NR 151 technical standards for infiltration, the stormwater runoff shall be pretreated before being infiltrated.

6.06 PERMITS NECESSARY FOR TYPICAL BUILDING PROJECTS

New construction projects on UW-L's campus are reviewed and approved by DSF at the 10 percent completion mark, at the 35 percent completion mark, and at final completion of drawings and specifications. After final DSF review, the drawings and specifications are sent to the Dept. of Commerce for review. Currently there is no formal process to allow the City of La Crosse to review drawings and specifications, although technically the campus must abide by land use provisions of the local zoning regulations. Refer also to Section 2.04 for further discussion. Permits and reviews are needed from the following agencies:

1. Wisconsin Department of Natural Resources (DNR)

    a. Notice of Intent–Storm Water Discharges Associated with Land Disturbing Construction Activities under a General Permit.
    b. State/Federal Application for Water Regulatory Permits and Approvals, "Chapter 30" Permit.
    c. Fee for Decisions on Applications to Alter Lakes, Streams, or Wetlands.
    d. Pit and Trench Dewatering Wastewater Permit.
    e. Short Duration Discharge Permit (General permit).
    f. Submittal of Dredged Materials Disposal Site for Approval by DNR.

2. Army Corp of Engineers (USACE)

    a. 401 Water Quality Determination Necessary from DNR.
    b. U.S. Fish and Wildlife Service Coordination.
    c. Environmental Protection Agency Coordination.

3. Department of Commerce Plan Submittal and Review for Building, HVAC, and Plumbing

4. City of La Crosse Courtesy Review

6.07 STORMWATER MANAGEMENT EFFORTS TO ALLEVIATE EXISTING FLOODING

Because of the extensive flooding within and around the campus, it is recommended that the University collaborate with a city-wide hydrologic/hydraulic study of the storm sewer system to fully understand the dynamics of the City sewer system prior to making recommendations on the measures needed to alleviate the identified flooding.

It is our understanding that the City of La Crosse will be hiring a consultant to do a hydrologic/hydraulic study of priority flooding areas in 2005/2006. It is our recommendation that the UW-L campus investigate buy-in to that effort to obtain recommendations on how to alleviate flooding at existing identified flooding locations on campus. If the City is unwilling to do this in a group effort, then the campus would need to perform this on its own, which will likely have a higher cost. Table 6.10-1 lists the potential cost if the campus had to do this study on its own.

6.08 STORMWATER MANAGEMENT EFFORTS TO ALLEVIATE EXISTING COMPACTION AND EROSION PROBLEMS

A. Campus Soil Compaction

Soil compaction can severely hinder the ability of stormwater to infiltrate a pervious surface. A highly compacted soil surface can produce similar amounts of runoff and behave similarly to a paved surface. It also loses the ability to grow plants and grass and can erode and create a source of sediment in runoff during heavy rains.

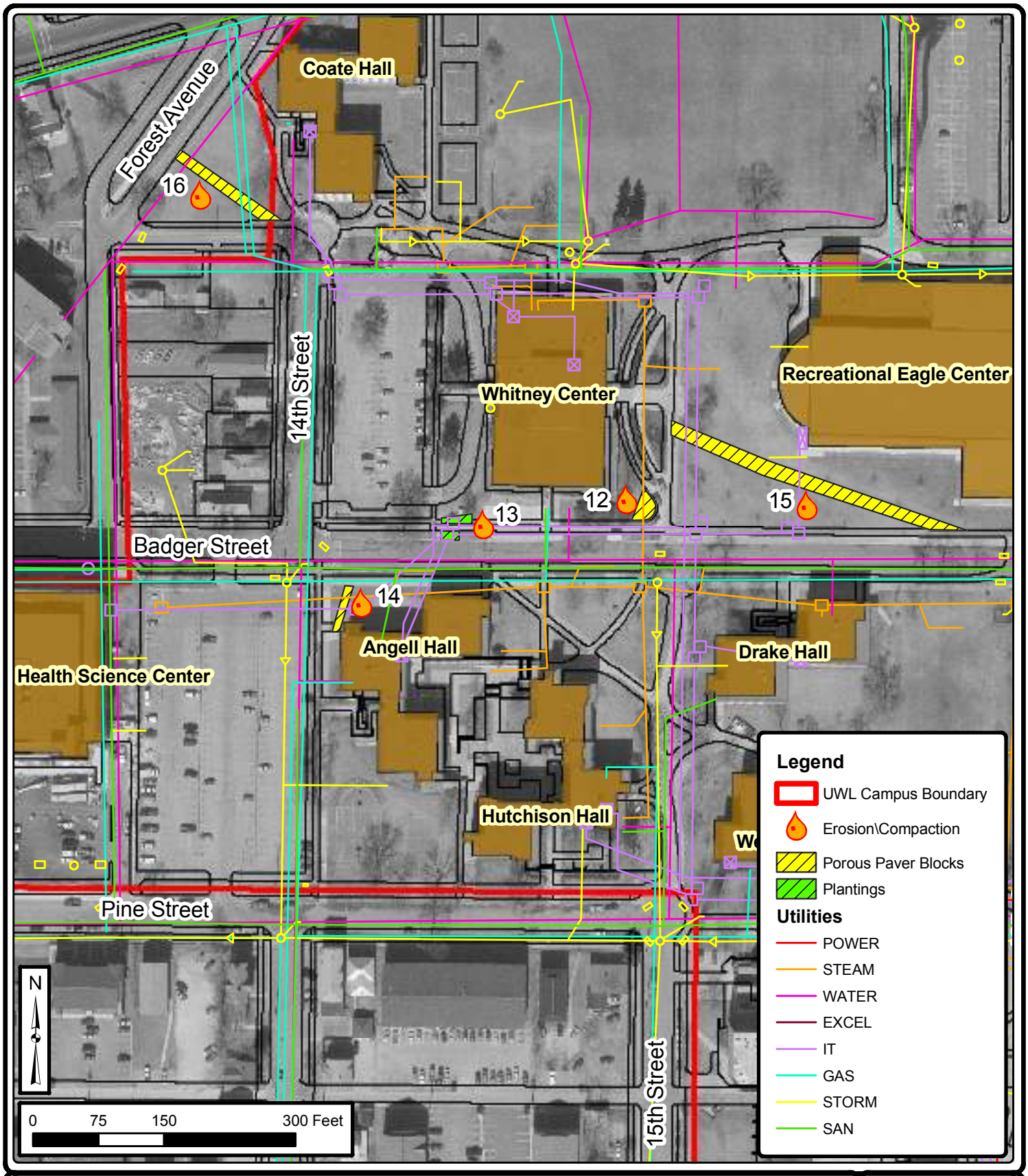
Soil compaction can be caused by heavy machinery used to reshape grades during construction and prior to placing sod. Proper planning during construction can prevent this type of soil compaction.

In addition, high pedestrian traffic on lawns and other green spaces can cause compaction, loss of vegetation, and erosion. UW-L should inventory the sidewalks and “cut-across” paths on campus and determine the areas of highest traffic. Although paved surfaces create more runoff, sometimes it is better to have paved surfaces in high pedestrian areas rather than paths since unvegetated paths can be a source of sediment runoff. The high traffic areas should be addressed by adding sidewalks where they are necessary or widening existing walkways if the volume of traffic causes spill-over onto lawns. At the same time, paved sidewalks or patios that are infrequently used should be made narrower or considered potential locations for additional green spaces. If this is not possible, planters with trees and bushes should be placed on the excessive paved spaces, such as patios.

Alternative methods to remediate soil compaction because of cut-across paths are to build deterrents such as fences and bushes or other plantings or to use alternative surfaces on the paths such as pervious pavement, plastic inter-locking blocks called *GrassPave*, or gravel to encourage infiltration and prevent erosion.

New buildings and additions should be designed with these problems in mind. Sidewalks should be built along the shortest distance between areas of high traffic, and effective deterrents such as hedges and fences should be used wherever feasible to reduce the amount of concentrated pedestrian traffic on green spaces.

Figure 6.08-1 shows the recommended improvements for the compaction problems near the Whitney Center, Recreational Eagle Center, Angell Hall, and Coate Hall. The opinion of probable cost for these improvements is shown in Table 6.08-1. The costs in Table 6.08-1 include the cost of excavation. Compacted paths near the Recreational Eagle Center, the Whitney Center, and Coate Hall should be covered with paver stones or permeable pavement.



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RECOMMENDED IMPROVEMENTS FOR COMPACTION LOCATIONS

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND ENGINEERING

FIGURE 6.08-1
1-104.013

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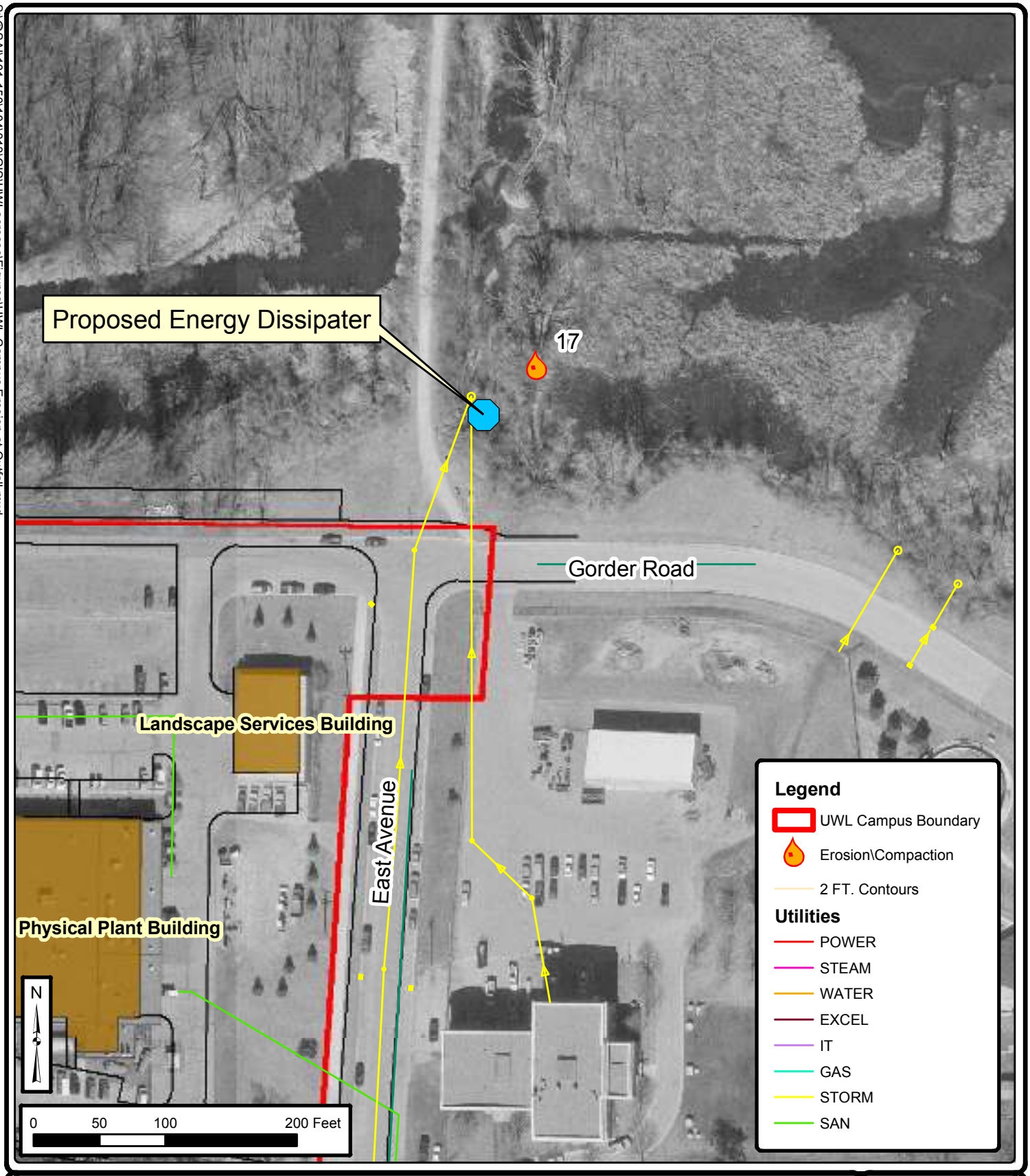

RECOMMENDED IMPROVEMENTS FOR EROSION AT OUTFALL

STORMWATER MANAGEMENT PLAN
UNIVERSITY OF WISCONSIN - LA CROSSE
LA CROSSE, WISCONSIN

STRAND

FIGURE 6.08-2
1-104.013

Item	Capital Cost
Porous Pavers at Recreational Eagle Center	$2,300
Porous Pavers at Whitney Center Southeast	$500
Porous Pavers at Angell Hall	$400
Porous Pavers at Coate Hall	$1,200
Plantings at Whitney Center Southwest	$1,000
Restoration	$3,000
Subtotal	$8,400
Engineering and Contingencies (35%)	$2,900
Total	$11,300

Table 6.08-1 Opinion of Probable Cost
Compaction Area Improvements

B. Campus Erosion

Figure 6.08-2 shows the recommended improvements for the erosion problem at the outfall near the intersection of Gorder Road and East Avenue. An opinion of probable cost for these improvements is shown in Table 6.08-2. Figure 6.08-3 shows examples of a Field Stone Energy Dissipater that is recommended for remediation of the erosion at the outfall. The dissipater footprint would be sized to dissipate flows from a 10-year storm, and the stone used would be sized to withstand the 100-year flow. Since this location is actually on City property, all costs to implement this project would fall on the City. The project is included in this report to provide awareness to the campus regarding erosion at this location. We recommend that the campus be an advocate for working towards getting the City to implement this project not only to clean up the area but also to protect the sensitive downstream environment.

Figure 6.08-3 Field Stone Energy Dissipaters

Item	Capital Cost
Energy Dissipater	75,000
Revegetation of Downstream Channel	$3,000
Erosion Control/Clearing and Grubbing/Restoration	$7,000
Subtotal	$85,000
Engineering and Contingencies (35%)	29,750
Total	$114,750

Note: All costs are City of La Crosse costs.

Table 6.08-2 Opinion of Probable Cost–Energy Dissipater at Outfall

6.09 POLICIES AND PRACTICES

A. General

As in any typical community, localized drainage issues commonly arise that may affect a limited number of areas. These issues may be caused by a deficiency in a drainage facility, a maintenance issue, or alterations of property during maintenance or construction projects. In reviewing items associated with Section 3.08, it is evident there are a number of these issues.

It is recommended that UW-L develop a uniform policy for addressing localized drainage issues and maintain a record of where these issues have occurred. This policy should establish the procedure to be followed in resolving future drainage issues on the UW-L. This will ensure that future issues are addressed in an equitable and timely manner and locations of recurring problem areas can be identified for future planning purposes.

Section 6.09-B includes a recommended policy for addressing drainage issues. This policy should be reviewed by UW-L and DSF staff.

B. Recommended Policy

1. Problem Identification and Drainage Evaluation

   a. After receiving a verbal or written complaint from a member of the university community, the complainant should be provided a Drainage Evaluation Form (Appendix I). The complainant should complete Parts A, B, and C of the form and return it to UW-L.

   b. Within 30 calendar days of receiving the form with completed Parts A, B, and C, a UW-L representative will inspect the location and review the information submitted by the complainant. The UW-L representative will complete Part D of the form based upon this review.

c. The UW-L representative will make a recommendation in Part E of the form regarding action to be taken (if any) to alleviate or mitigate the problem. Decision-making criteria will be clearly stated and in accordance with Section B.2, below.

d. A copy of the completed Drainage Evaluation Form will be returned to the resident. Additional copies will be maintained in the UW-L files.

2. UW-L Authority

UW-L's authority in addressing individual drainage issues should be determined on a case-by-case basis. Prior to UW-L taking corrective action, the ownership of the properties causing the problem and being damaged should be verified. Where UW-L has easement rights or where the issue involves the obstruction of a natural watercourse (under Section 88.90 of the Wisconsin Admin. Code), UW-L can move to correct the problem. If the drainage issue results from an activity that is not located upon a UW-L property or right-of-way, does not violate a city ordinance, or does not involve obstruction of a natural watercourse, the UW-L may be without jurisdiction to act.

3. Determination of UW-L Responsibility

In cases where it is determined that the campus can take corrective action to address the drainage deficiency, the following steps should be taken:

a. Alternative solutions to the identified problem should be developed and incorporated into the UW-L Stormwater Management Plan.

b. Opinions of probable engineering and construction costs of individual projects should be prepared.

c. As part of the annual budget process, projects to be constructed each year should be selected based upon priority ranking and funding availability.

6.10 SUMMARY OF RECOMMENDATIONS AND IMPLEMENTATION PLAN

Table 6.10-1 summarizes the recommended improvements discussed in Sections 6.02 through 6.08. The costs in Table 6.10-1 include an additional 35 percent for engineering and contingency fees as well as costs for soils investigation for certain improvements.

TABLE 6.10-1

PROJECTED STORMWATER MANAGEMENT COSTS AND IMPLEMENTATION PLAN

Activity	Necessary or Discretionary	Permit Deadlines: Planning (1)	Permit Deadlines: Implementation	Current Status: Planning (1)	Current Status: Implementation	Probable Annual Cost: 2005-2007	2008	2009	2010	2011	2012	2013
Public Education/Outreach												
Submit Program	N	15-May-08	15-Nov-08	In Report	Annual		$500					
Implementation of Program	N						$1,500	$1,500	$1,500	$1,500	$1,500	$1,500
Public Involvement/Participation	N	15-May-08	15-Nov-08	Ongoing	Ongoing		$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Illicit Discharge Detection Program												
Ordinance Review and Adopt as Guidelines	N	15-Nov-08	15-May-09	Campus	2008		$2,000					
Response Procedures	N	15-Nov-08	15-May-09	In Report	2008		$500					
Initial Field Screening	N	NA	15-Nov-09		2008		$1,500					
Ongoing Field Screening	N	15-Nov-09	15-Nov-10		Annual		$1,500	$500	$1,500	$500	$1,500	$500
Construction Site Erosion Control												
Ordinance/Guidelines	N	15-May-08	15-Nov-08	In Report	2008		$500					
Inspection/Enforcement	N	15-May-08	15-Nov-08	Campus	Annual		$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Postconstruction Stormwater Mgmt												
Ordinance/Guidelines	N	15-May-08	15-Nov-08	In Report	2008		$500					
Long-Term Maintenance	N	15-May-08	15-Nov-08	Campus	Annual		$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Pollution Prevention Program												
SWPPP Programs	N	15-Nov-08	15-May-09	In Report	2008		$1,000					
O&M for SWPP Programs (Campus Costs)	N			Campus	Annual	$75,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
Stormwater Quality Management												
Eval. of Flood Control Structures	N	15-Nov-08			2008		$1,000					
Water Quality Analysis (Including Targeted Inlet Cleaning Plan)	N	15-Nov-08		City	2008		TBD					
Storm Sewer Map												
Submit Storm Sewer System Map	N	15-Nov-08		In Report	In Report							
Storm System Map Upgrades	N				2008		$15,000					
Storm System Map Maintenance	N			Campus	Annual		$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Annual Report												
Submittal of NOI in 2005	N				2005	$500						
Record Keeping	N			Campus	Annual	$500	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Prepare Annual Report	N	31-Mar-08			Annual	$0	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Permit Fee	N			Campus	Annual	$1,000	$500	$500	$500	$500	$500	$500
Capital Improvements and Planning - Campus												
Stormwater Management at Proposed Buildings:	N											
New Residence Hall	N				2006	$45,900						
Cowley Hall Parking Lot	N				2005	$42,500						
New Academic Building	N				2009			21,750				
Mitchell Hall Addition	N				2011					$50,000		
Center For the Arts Addition	N				2011					$16,250		
Stadium House and Track	N				2008		TBD					
Additional Residence Halls	N				2010				TBD			
New Parking Ramp	N				TBD							
Water Quality Improvements to meet 20% and 40% TSS	N		To Be Determined By Study		>2008		TBD	TBD	TBD	TBD	TBD	TBD
Path Erosion Fixes with Porous Paver Blocks	D			In Report	2010				$11,300			
Water Quantity Modeling and Study for Flooding Locations	N						$35,000					
Improvements for Flooding Locations	D		To Be Determined By Study				TBD	TBD	TBD	TBD	TBD	TBD
					TOTALS	$165,400	$92,000	$55,250	$45,800	$99,750	$34,500	$33,500
						2005-2007	2008	2009	2010	2011	2012	2013

Notes:
1. The Capital Improvements Costs include a 35% Engineering and Contingency Cost.
2. Costs shown above are for conceptual purposes only. Detailed design will determine the final opinion of probable cost.
3. TBD = To be determined in future
4. Permit deadlines based on Phase II permit issuance to La Crosse Area MS4 communities on November 15, 2006.
5. If an activity is not completed in the proposed year, activity shall be moved to appropriate year and cost adjusted for inflation.
6. All costs are Circa 2005. The user of this report shall apply appropriate inflation and overhead factors to bring to present day costs.

SECTION 7
CONCLUSIONS AND RECOMMENDATIONS

7.01 GENERAL

In the introduction to this report, the following stormwater management goals were defined:

1. Development of an orderly plan for managing stormwater runoff from areas subject to new development and redevelopment.

2. Suggest methods to address existing stormwater problems on campus, such as flooding and soil erosion.

3. Development of a uniform policy for addressing and documenting future stormwater issues.

4. Identify actions needed to be consistent with local municipality stormwater issues.

5. Identify actions needed to be consistent with Phase II EPA NPDES Stormwater Permit requirements for the UW-L campus.

6. Identify actions needed to be consistent with NR 120, NR 151, and NR 216 Performance Standards.

In this section, specific recommendations are presented for achieving each of these goals.

7.02 RECOMMENDATIONS FOR ACHIEVING STORMWATER MANAGEMENT GOALS

Table 6.10-1 lists our recommended stormwater plan and implementation plan for achieving the stormwater management goals. While working toward full implementation, we offer the following specific recommendations.

In part, we recommend that UW-L:

- Investigate and document all existing Wisconsin Pollutant Discharge Elimination System (WPDES)-permitted discharges on campus to comply with storm sewer mapping requirements as described in Section 2.06.

- Adopt the proposed stormwater guidelines described in Appendix A to meet NR 151 performance standards and local requirements for erosion control and stormwater management as described in Section 2.07. It should be noted that as of May 2008 NR 151 is open for revision. It is expected that in 2009 the changes to NR 151 will be implemented. The guidelines herein should be updated at that time to be consistent with the revised NR 151.

- Investigate all campus-owned stormwater inlets to verify the existence of a sump and establish a routine maintenance program as described in Section 4.02.

- Have the appropriate UW-L official sign and date the Certification and Commitment of Resources sections of the Spill Prevention Control and Countermeasure (SPCC) Plan, March 2004, as described in Section 4.06.

- Update the campus storm sewer system map to resolve deficiencies in mapping or consider a full storm sewer remapping effort as described in Section 6.02 H. However, the existing mapping and mapping herein would generally be considered acceptable for permit compliance.

- Collaborate with the City of La Crosse on citywide hydrologic/hydraulic and water quality modeling studies of the storm sewer system to obtain recommendations for improvements necessary to alleviate the flooding, and to meet the requirements of the Phase II permit as described in Section 6.02.

- Coordinate with the City of La Crosse, La Crosse County, UW-Extension, and local organizations in implementation of the Public Information and Education program as described in Section 4.04 and Section 6.02.

- Track annual use of pesticides, fertilizers, salt, and other chemicals and nutrients on campus as well as street sweeping miles, pounds of recycled oil, and sediment cleared out of sumps to comply with NR 151 Pollution Prevention requirements as described in Section 6.02 F.

- Budget for and implement best management practices (BMPs) at new building projects as described in Section 6.04 and a more frequent street sweeping program to meet total suspended solids requirements as described in Section 6.02 G.

- Budget for and implement soil compaction improvements on campus by installing porous pavement on soil compacted areas and plantings to deter pedestrian traffic at the locations identified in Section 6.08 A.

- Consider applying for a Wisconsin Department of Natural Resources (DNR) Urban Nonpoint Source and Stormwater Grants for completion of some of the work required by the Phase II Permit including the stormwater quality modeling study and storm sewer system mapping upgrades.

- Adopt the policies and practices identified in Section 6.09 and the Drainage Evaluation Form in Appendix I.

- Implement Phase 2 permit activities necessary to maintain permit compliance according to the schedule shown in Table 6.10-1.

7.03 FUNDING OPPORTUNITIES

Appendix P describes several grant programs which may be applicable to stormwater management projects on UW-L campus. The UW/DSF may want to investigate the programs for possible funding of the recommended stormwater plan components.

7.04 CONCLUSION

The goal of this report has been to provide the UW-L and the Wisconsin Department of Administration-Department of State Facilities with a framework of how stormwater management facilities should be developed to address future campus development, regulatory requirements, and existing stormwater issues. It is not expected that all of the recommended measures will be constructed immediately. Implementation of measures recommended in this report will enable development on campus to proceed without creating new drainage issues or aggravating existing drainage issues.

APPENDIX A
LOCAL ORDINANCE MATRIX AND PROPOSED UW-L GUIDELINES

State of Wisconsin	La Crosse County Ordinances	City of La Crosse	Department of Commerce	Proposed UW-La Crosse Guidelines
I. CONSTRUCTION SITE PERFORMANCE STANDARDS				
Applicability				
All new and redevelopment construction projects disturbing 1 acre or more of land. Exemptions: construction projects exempted by federal code 40 CFR 122, nonpoint discharges from agricultural and silviculture activities, routine maintenance under 5 acres if maintaining original hydraulic properties or purpose of site.	For erosion control permit: land disturbing activities within county lands disturbing a surface area of 4,000 sf or more on slopes less than 20% and 2,000 sf sites on slopes 20% or greater (or within Shoreland Zone). Projects affecting at least 400 cy of soil. Projects on slopes of 30% or more. Alteration of 100 ft or more of channelized flow. New 1- and 2-family dwellings. Other sites as determined by the county.	For land disturbance permit: land disturbing activities within county lands disturbing a surface area of 4,000 sf or more on slopes less than 20% and 2,000 sf sites on slopes 20% or greater, at least 400 cy of soil, or at least 300 ft of trenching. No development on areas with 30% slope or greater unless area is less than 4,000 sf of noncontiguous land. Other sites as determined by the city.		Campus construction projects disturbing a surface area of more than 4,000 sf, an excavation or fill volume of more than 400 cy, 2,000 sf sites on slopes 20% or greater (or within Shoreland Zone), at least 300 ft of trenching, any amount on slopes of 30% or more, or projects impacting 100 ft or more of channelized flow.
Permit Issuance				
For WPDES construction site discharge permits: submit a notice of intent to the DNR to be received at least 14 days in advance of any land disturbing activity. Submit a notice of termination after construction is complete and final stabilization.	Subdivider shall provide a soil erosion plan subject to Ch. 21 of La Crosse County ordinances and a stormwater management plan which meets water quality requirements of NR 151 and requirements set forth in Ch. 18 of county ordinances.	An Erosion and Sedimentation Control Plan must be submitted with preliminary and final plats.	For WPDES construction site discharge permits: submit a notice of intent to D-Comm (if a commercial building) to be received at least 14 days in advance of any land disturbing activity. Submit a notice of termination after construction is complete and final stabilization.	For WPDES construction site discharge permits: submit a notice of intent to the DNR (or Commerce if a commercial building) to be received at least 14 days in advance of any land disturbing activity. Submit a notice of termination after construction is complete and final stabilization.
Construction site erosion and sediments control				
Reduce to the MEP 80% of sediment in runoff on an average annual basis, as compared with no controls. Credit shall be given for limiting the duration and/or area of land disturbing activity.	Optimize terrain, slopes, exposed area, and vegetation to prevent sediment runoff; divert runoff around disturbed areas; contain sediment on-site through BMPs; protect earth storage piles with silt fence, 25' of grass, straw	No large scale excavation where vegetative cover is removed after November 15 of each year (except for water and sewer lines). All topsoil restoration and revegetation must be completed by September 15 of each year.		Reduce to the MEP 80% of sediment in runoff on all new development and redevelopment sites as compared with no controls (for sites greater than 1 acre). No large scale excavation where vegetative cover is removed

	State of Wisconsin	La Crosse County Ordinances	City of La Crosse	Department of Commerce	Proposed UW-La Crosse Guidelines
		barriers, or other BMPS.	Construct sediment basins to trap sediment on-site. Optimize terrain, slopes, exposed area, and vegetation to prevent sediment runoff; divert runoff from disturbed areas; contain sediment on-site through BMPs. Earth storage piles shall be more than 25 ft from drainage channels or roadways and 100 ft from perennial waters or wetlands (or have silt fence).		after November 15 of each year (except for water and sewer lines). All topsoil restoration and revegetation must be completed by September 15 of each year. Optimize terrain, slopes, exposed area, and vegetation to prevent sediment runoff; divert runoff around disturbed areas; contain sediment on-site through BMPs; protect earth storage piles with silt fence, 25' of grass, straw barriers, or other BMPS.
	To the MEP, prevent tracking of sediment onto paved surfaces.	Install BMPs to minimize tracking of sediment onto roadways. Clean up off-site sediment deposition within 24 hrs of a storm; clean up off-site deposition due to construction activities within same workday.	Install BMPs to minimize tracking of sediment onto roadways. Clean up off-site deposition due to construction activities within same workday.		Install BMPs to minimize tracking of sediment onto roadways. Clean up off-site sediment deposition within 24 hrs of a storm; clean up off-site deposition due to construction activities within same workday.
	To the MEP, prevent discharge of sediment during dewatering.	Treat water pumped from the site; discharge shall not cause erosion of receiving channel.			Treat water pumped from the site; discharge shall not cause erosion of receiving channel.
	To the MEP, protect storm sewer inlets from sediment loads.	Protect all on-site storm drain inlets until site is stabilized.	Protect all on-site storm drain inlets until site is stabilized.		Protect storm sewer inlets from sediment loads.
		Provide temporary stabilization of areas receiving sheet flow runoff using mulching and/or seeding.	Protect critical areas with temporary stabilization, and provide permanent vegetation as soon as practical. Retain natural plant covering to the MEP. Install sod at intervals to prevent soil erosion.		Protect critical areas with temporary stabilization, and provide permanent vegetation as soon as practical. Retain natural plant covering to the MEP. Install sod at intervals to prevent soil erosion.
Construction site chemical controls					
	Properly manage and dispose of all chemicals and compounds from construction site.				Same as NR 151.

State of Wisconsin	La Crosse County Ordinances	City of La Crosse	Department of Commerce	Proposed UW-La Crosse Guidelines
II. POSTCONSTRUCTION PERFORMANCE STANDARDS				
Applicability				
All new and redevelopment post-construction sites disturbing 1 acre or more of land (finished construction sites which were required to get WPDES permit coverage under NR 216 Phase II). Exemptions: redevelopment site with no increase in exposed parking lots or roads, sites with less than 10% connected imperviousness and less than one acre of total impervious area, agricultural facilities, and underground utility construction.	For storm water management, all new subdivisions within the county, including unincorporated lands.	New subdivision development within corporate limits of city, or unincorporated area within the extraterritorial plat approval jurisdiction of city.		All new and redevelopment post-construction sites disturbing one acre or more of land. Exemptions: redevelopment site with no increase in exposed parking lots or roads, sites with less than 10% connected imperviousness and less than one acre of total impervious area, agricultural facilities, and underground utility construction.
Postconstruction sediment controls				
Reduce to the MEP 80% of sediment in runoff on an average annual basis as compared to no controls on all new development sites or in-fill development that occurs after October 1, 2012.				Same as NR 151.
Reduce to the MEP 40% of sediment in runoff on an average annual basis as compared to no controls on all redevelopment sites, or in-fill development under 5 acres that occurs before October 1, 2012.				Same as NR 151.
	Provide final stabilization of steep slopes, channels, and areas receiving sheet flow runoff using vegetation, retaining walls, or other approved materials.	Subdivider shall make provisions for disposal of water and protection of soil surfaces during and after construction to prevent soil erosion, siltation, sedimentation, and washing.		Provide final stabilization of steep slopes, channels, and areas receiving sheet flow runoff using vegetation, retaining walls, or other approved materials. Make provisions for disposal of water and protection of soil surfaces during and after construction to prevent soil erosion, siltation, sedimentation, and washing.

	State of Wisconsin	La Crosse County Ordinances	City of La Crosse	Department of Commerce	Proposed UW-La Crosse Guidelines
Postconstruction peak discharge					
	Maintain or decrease to the MEP the peak runoff discharge rate as compared with predevelopment conditions for the 2-yr 24-hr design storm.	For a new development site, maintain predevelopment peak runoff rates for the 2-yr 24-hr, and the 10-yr 24-hr design storm events. Safely pass the 25-yr 24-hr design storm event.			For a new development site, maintain predevelopment peak runoff rates for the 2-yr 24-hr, and the 10-yr 24-hr design storm events. Safely pass the 100-yr 24-hr design storm event.
	Exemptions: a site where the change in hydrology does not increase the existing surface water elevation at any point in downstream receiving water by more than 0.01 of a foot for the 2-yr, 24-hr storm event; a redevelopment site; an in-fill development area less than 5 acres.				Same as NR 151.
Postconstruction infiltration					
	For residential development, infiltrate 90% of predevelopment infiltration volume or 25% of postdevelopment runoff volume from the 2-yr 24-hr design storm.				Same as NR 151.
	No more than 1% of residential site must be effective infiltration area.				Same as NR 151.
	For nonresidential development, infiltrate 60% of predevelopment infiltration volume or 10% of post-development runoff volume from the 2-yr 24-hr design storm.				Same as NR 151.
	No more than 2% of nonresidential site must be effective infiltration area.				Same as NR 151.
	Pretreat runoff from parking lots and new road construction prior to infiltration.				Same as NR 151.
	Exclusions: runoff from areas near industrial facilities, fueling and maintenance areas; areas within 1,000 feet of karst features; areas with less than 3 feet between infiltration system and groundwater; nonresidential runoff from from parking lots and roads with less than 5 feet between infiltration system and groundwater; areas within 400 feet of a community well or 100 feet of a private well; areas where contaminants of concern are present in soil.				Exclusions: Same as NR 151.
	Exemptions: areas where infiltration rate is				Exemptions: Same as NR 151.

State of Wisconsin	La Crosse County Ordinances	City of La Crosse	Department of Commerce	Proposed UW-La Crosse Guidelines
less than 0.6 in/hr; nonresidential parking lots and access roads less than 5,000 sf; redevelopment sites; in-fill sites less than 5 acres; when ground is frozen; nonresidential roads and arterial residential roads.				
Credit towards infiltration volume for alternate use of runoff.				Same as NR 151.
Protective areas				
Keep impervious surfaces out of protective areas, to the MEP. ▪ 75 ft from exceptional resource waters ▪ 50 ft from perennial or intermittent streams ▪ 50 ft from highly susceptible wetlands ▪ 10-30 ft for less susceptible wetlands 10 ft from concentrated flow channels with drainage areas greater than 130 acres	Areas with steep slopes (30% or more) are Restricted Development Areas, and may not have any land disturbance within 10 feet.	Areas with steep slopes (30% or more) are Restricted Development Areas, and may not have any land disturbance within 10 feet.		Same as NR 151. Areas with steep slopes (30% or more) are Restricted Development Areas, and may not have any land disturbance within 10 feet.
If protective area land is disturbed but no impervious surfaces are present, 70% vegetative cover or stabilizing material must be established.				Same as NR 151.
Exemptions: redevelopment sites, in-fill sites less than 5 acres, structures over water, sites from which runoff does not enter surface water.	Exceptions: installation of access roads or utilities going to building sites of less than 30% slopes, or where sites are less than 4,000 sf.	Exceptions: installation of access roads or utilities going to building sites of less than 30% slopes, or where sites are less than 4,000 sf.		Exemptions: Same as NR 151. Exceptions: installation of access roads or utilities going to building sites of less than 30% slopes, or where sites are less than 4,000 sf.
Vehicle fueling and maintenance areas				
To the MEP, reduce petroleum within runoff from vehicle fueling and maintenance areas that enters waters of the state so that there is no visible sheen.				Same as NR 151.
Regional stormwater management				
BMPs required under WPDES permits may be located on-site or off-site as part of a regional stormwater device.				Same as NR 151.
III. DEVELOPED URBAN AREA PERFORMANCE STANDARD				
Applicability				
For information and education program under NR 151.13(1): Any incorporated municipality				UW-La Crosse campus.

	State of Wisconsin	La Crosse County Ordinances	City of La Crosse	Department of Commerce	Proposed UW-La Crosse Guidelines
	with more than 1,000 people per square mile and contiguous areas.				
Public information and education					
	Municipality must complete by March 10, 2008: ▪ Implement a public information and education program. ▪ Implement a yard waste collection program. ▪ Implement a nutrient management plan for the application of fertilizers to municipal-owned lands over 5 acres.				University must complete by March 10, 2008: ▪ Implement a public information and education program. ▪ Implement a nutrient management plan for the application of fertilizers to university-owned lands over 5 acres.

APPENDIX B
PHASE II NR 216 MS4 GENERAL PERMITTING REQUIREMENTS

Permit issuance

For WPDES MS4 permit: submit a permit application to DNR requesting coverage along with descriptions of minimum control measures used to meet permit requirements and storm sewer map description. Application must be submitted within 90 days of notification of permit coverage requirement.

Permitted municipalities (NR 151)

Municipality subject to Phase II MS4 permit under NR 216 must achieve:

- 20% reduction, to the MEP, of TSS in runoff to waters of the state as compared to no controls by March 10, 2008.
- 40% reduction, to the MEP, of TSS in runoff to waters of the state as compared to no controls by March 10, 2013.

Public Education and Outreach

Implement a public education and outreach program to increase awareness of stormwater impacts on state waters which will, at the minimum:

- Promote elimination of illicit discharges.
- Encourage proper management of pollutants from automobiles, pets, household waste, etc.
- Promote on-site reuse of yard waste and proper use of fertilizers and pesticides.
- Promote stream bank management.
- Promote infiltration practices.
- Promote environmentally sensitive land development.

Illicit discharge detection and elimination

Implement a program to detect and remove illicit discharges and improper disposal of wastes into the storm sewers.

Construction site pollutant control

Implement a program for erosion and sediment control BMPs to reduce pollutants in runoff from construction sites greater than 1 acre and any adjacent developing areas that discharge into MS4 and are planned to have a minimum density of 500 people per square mile. Note: This is separate from construction site discharge permits required under subch. III of NR 216.

Postconstruction site storm water management

Implement a program to manage discharges from new development or redevelopment sites greater than 1 acre and any adjacent developing areas that discharge into MS4 and are planned to have a minimum density of 500 people per square mile.

Pollution prevention

Install source area controls and BMPs to limit pollutant runoff. Includes operation and maintenance program with training.

- Street sweeping
- Garage and storage area maintenance
- Yard waste management

Storm sewer system map

Develop a storm sewer map with all important features and BMPs, boundaries, outfalls, structural controls, pollutant sources, etc.

Annual reports

Submit an annual report to department for first 5 years of permit coverage with all required information.

APPENDIX C
NR 151, NR 120, NR 216 CODES, STATE STATUTE CHAPTER 283

To save paper, we have included the following Web site address rather than including the entire NR 151, NR 120 and NR 216 Codes.

NR 151: http://www.legis.state.wi.us/rsb/code/nr/nr151.pdf

NR 120: http://www.legis.state.wi.us/rsb/code/nr/nr120.pdf

NR 216: http://www.legis.state.wi.us/rsb/code/nr/nr216.pdf

SS 283: http://www.legis.state.wi.us/statutes/stat0283.pdf

APPENDIX D
MS4 GENERAL PERMIT–WPDES PERMIT NO. WI-S050075-1

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM WPDES PERMIT NO. WI-S050075-1

In compliance with the provisions of ch. 283, Wis. Stats., and chs. NR 151 and 216, Wis. Adm. Code, owners and operators of municipal separate storm sewer systems are permitted to discharge storm water from all portions of the

MUNICIPAL SEPARATE STORM SEWER SYSTEM

owned or operated by the municipality to waters of the state in accordance with the conditions set forth in this permit.

The **Start Date** of coverage under this permit shall be included in the Department letter sent to the municipality authorizing coverage under this general permit. The Department is required to charge an annual permit fee to owners and operators authorized to discharge under this permit in accordance with s. NR 216.08, Wis. Adm. Code.

State of Wisconsin Department of Natural Resources
For the Secretary

By Russell A. Rasmussen
Russell A. Rasmussen, Director
Bureau of Watershed Management
Division of Water

January 19, 2006
Date Permit Signed/Issued

PERMIT EFFECTIVE DATE: Jan. 19, 2006 **EXPIRATION DATE: Dec. 31, 2010**

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1. APPLICABILITY CRITERIA

1.1 Permitted Area

This permit covers all areas under the ownership, control or jurisdiction of the permittee that contribute to discharges from a "municipal separate storm sewer system" or "MS4" that receives runoff from any of the following:

1.1.1 An "urbanized area", adjacent developing areas and areas whose runoff will connect to a municipal separate storm sewer regulated under subch. I of NR 216; or

1.1.2 An area associated with a municipal population of 10,000 or more and a population density of 1,000 or more per square mile, adjacent developing areas and areas whose runoff will connect to a MS4 regulated under subch. I of NR 216; or

1.1.3 An area that drains to a MS4 that is designated for permit coverage pursuant to s. NR 216.02(2) or 216.025, Wis. Adm. Code.

Note: "MS4" and "urbanized area" are defined in section 5 of this permit.

1.2 Authorized Discharges

This permit authorizes storm water point source discharges from the MS4 to waters of the state in the permitted area. This permit also authorizes the discharge of storm water co-mingled with flows contributed by process wastewater, non-process wastewater, and storm water associated with industrial activity, provided the discharges are regulated by other WPDES permits or are discharges which are not considered illicit discharges.

1.3 Water Quality Standards

1.3.1 This permit specifies the conditions under which storm water may be discharged to waters of the state for the purpose of achieving water quality standards contained in chs. NR 102 through 105 and NR 140, Wis. Adm. Code. For the term of this permit, compliance with water quality standards will be addressed by adherence to general narrative-type storm water discharge limitations and implementation of storm water management programs and practices.

1.3.2 This permit does not authorize water discharges that the Department, prior to authorization of coverage under this permit, determines will cause or have reasonable potential to cause or contribute to an excursion above any applicable water quality standards. Where such determinations have been made prior to authorization, the Department may notify the municipality that an individual permit application is necessary. However, the Department may authorize coverage under this permit where the storm water management programs required under this permit will include appropriate controls and implementation procedures designed to bring the storm water discharge into compliance with water quality standards.

1.4 Outstanding and Exceptional Resource Waters

1.4.1 The permittee shall determine whether any part of its MS4 discharges to an outstanding resource water (ORW) or exceptional resource water (ERW). ORWs and ERWs are listed in ss. NR 102.10 and 102.11, Wis. Adm. Code. An unofficial list of ORWs and ERWs may be found on the Department's Internet site at: http://dnr.wi.gov/org/water/wm/wqs/.

1.4.2 The permittee may not establish a new MS4 discharge of pollutants to an outstanding resource water (ORW) or an exceptional resource water (ERW) unless the storm water management programs required under this permit are designed to ensure that any new MS4 discharge of pollutants to an ORW or ERW will not exceed background levels within the ORW or ERW.

1.4.2.1 "New MS4 discharge of pollutants" means an MS4 discharge that would first occur after the permittee's start date of coverage under this permit to a surface water to which the MS4 did not previously discharge storm water, and does not include an increase in an MS4's discharge to a surface water to which the MS4 discharged on or before coverage under this permit.

1.4.3 If the permittee has an existing MS4 discharge to an ERW, it may increase the discharge of pollutants if the increased discharge would not result in a violation of water quality standards.

1.4.4 If the permittee has an existing MS4 discharge to an ORW, it may increase the discharge of pollutants provided all of the following are met:

1.4.4.1 The pollutant concentration within the receiving water and under the influence of the existing discharge would not increase as compared to the level that existed prior to coverage under this permit.

1.4.4.2 The increased discharge would not result in a violation of water quality standards.

1.5 Impaired Water Bodies and Total Maximum Daily Load Requirements

1.5.1 The permittee shall determine whether any part of its MS4 discharges to an impaired water body listed in accordance with section 303(d)(1) of the federal Clean Water Act, 33 USC §1313(d)(1)(C), and the implementing regulation of the US Environmental Protection Agency, 40 CFR §130.7(c)(1). Impaired waters are those that are not meeting applicable water quality standards. A list of Wisconsin impaired water bodies may be found on the Department's Internet site at: http://dnr.wi.gov/org/water/wm/wqs/303d/303d.html.

1.5.2 If the permittee's MS4 discharges to an impaired water body, the permittee shall include a written section in its storm water management program that discusses the management practices and control measures it will implement as part of its program to reduce, with the goal of eliminating, the discharge of pollutant(s) of concern that contribute to the impairment of the water body. This section of the permittee's program shall specifically identify control measures and practices that will collectively be used to try to eliminate the MS4's discharge of pollutant(s) of concern that contribute to the impairment of the water body and explain why these control measures and practices were chosen as opposed to other alternatives. Pollutant(s) of concern means a pollutant that is causing impairment of a water body.

1.5.3 After the permittee's start date of coverage under this permit, the permittee may not establish a new MS4 discharge of a pollutant of concern to an impaired water body or increase the discharge of a pollutant of concern to an impaired water body unless the new or increased discharge causes the receiving water to meet applicable water quality standards, or the Department has approved a total maximum daily load (TMDL) for the impaired water body.

1.5.4 The permittee shall determine whether its MS4 discharges to an impaired water body for which the Department has approved a TMDL. If so, the permittee shall assess whether the TMDL wasteload allocation for the MS4 is being met through the existing storm water management controls or whether additional control measures are necessary. The permittee's assessment of whether the TMDL wasteload allocation is being met shall focus on the adequacy of the permittee's storm water controls (implementation and maintenance). Approved TMDLs are listed on the Department Internet site at: http://dnr.wi.gov/org/water/wm/wqs/303d/index.html.

1.5.5 The storm water management program developed under section 2 of this permit shall be revised as necessary to achieve and maintain compliance with any Department approved-TMDL wasteload allocation for an impaired water to which the MS4 discharges. The redesigned storm water management programs shall be implemented as soon as possible.

1.6 Wetlands

The permittee's MS4 discharge shall comply with the wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code.

1.7 Endangered and Threatened Resources

The permittee's MS4 discharge shall comply with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats., and ch. NR 27, Wis. Adm. Code.

1.8 Historic Property

The permittee's MS4 discharge may not affect any historic property that is listed property, or on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats., unless the Department determines that the MS4 discharge will not have an adverse effect on any historic property pursuant to s. 44.40 (3), Wis. Stats.

1.9 General Storm Water Discharge Limitations

The permittee may not discharge the following substances from the MS4 in amounts that have an unreasonable effect on receiving water quality or aquatic life:

1. Solids that may settle to form putrescence or otherwise objectionable sludge deposits.
2. Oil, grease, and other floating material that form noticeable accumulations of debris, scum, foam, or sheen.
3. Color or odor that is unnatural and to such a degree as to create a nuisance.
4. Toxic substances in amounts harmful to aquatic life, wildlife, or humans.
5. Nutrients conducive to the excessive growth of aquatic plants and algae to the extent that such growth is detrimental to desirable forms of aquatic life, creates conditions that are unsightly, or is a nuisance.
6. Any other substances that may impair, or threaten to impair, beneficial uses of the receiving water.

1.10 Obtaining Permit Coverage

1.10.1 In order to obtain coverage under this permit, the owner or operator of an MS4 shall submit a complete Notice of Intent (NOI) to the Department. The Department will make an NOI form available on its Internet site or a copy may be obtained by contacting the storm water

program at (608) 267-7694. The NOI shall be mailed to Wisconsin DNR, Storm Water Program – WT/2, PO Box 7921, Madison, WI 53707-7921 or as otherwise directed by the Department.

1.10.2 Coverage under this permit does not become effective until the Department sends the owner or operator a letter expressly authorizing coverage under this permit.

1.11 Public Access to Information including Notices of Intent

The Department will list on its storm water Internet site, for a period of at least 30 days, the NOIs that are received by the Department requesting coverage under this permit. This list will be accessible via: http://dnr.wi.gov/org/water/wm/nps/stormwater/muni.htm. Official Department records for individual municipalities are typically maintained in the office of the Department's regional storm water contact. To gain access to facility records, you should contact the appropriate regional contact, who is listed at: http://dnr.wi.gov/org/water/wm/nps/stormwater/contact. Or you may contact the Department's storm water program coordinator for assistance at (608) 267-7694.

1.12 Public Comment and Request for Public Hearing on Notices of Intent

All written comments received by the Department within 30 days of the NOI being initially listed on the Internet site will be considered along with the NOI and any other information on file to determine if coverage under this permit is appropriate. A public informational hearing may also be held if significant public interest is expressed. Requests for a public informational hearing must be filed within 30 days of the NOI being initially listed on the Department's Internet site, and must indicate the interest of the party filing the request and the reasons why a hearing is warranted. Comments and requests for public hearing must be mailed to: Wisconsin DNR, Storm Water Program – WT/2, P.O. Box 7921, Madison, WI 53707. The Department will evaluate comments and requests for public hearing to determine is there is sufficient interest to hold a public hearing prior to authorizing coverage under this permit.

1.13 Transfers

Coverage under this permit is not transferable to another municipality without the express written approval of the Department. If the permittee's MS4 is annexed into another municipality, the permittee shall immediately notify the Department by letter of such change. If the permittee ceases to own or operate any MS4 regulated under this permit, the Department may terminate its coverage under this permit.

1.14 Exclusions

The following are excluded from coverage (i.e. are not authorized) under this permit:

1.14.1 Combined Sewer and Sanitary Sewer Systems

Discharges of water from a sanitary sewer or a combined sewer system conveying both sanitary and storm water. These discharges are regulated under s. 283.31, Wis. Stats, and require an individual permit.

1.14.2 Agricultural Facilities and Practices

Discharges from "agricultural facilities" and "agricultural practices". "Agricultural facility" means a structure associated with an agricultural practice. "Agricultural practice" means beekeeping; commercial feedlots; dairying; egg production; floriculture; fish or fur farming; grazing; livestock raising; orchards; poultry raising; raising of grain, grass, mint and seed crops; raising of fruits, nuts and berries; sod farming; placing land in federal programs in return for payments in kind; owning land, at least 35 acres of which is enrolled in the conservation reserve

program under 16 USC 3831 to 3836; and vegetable raising.

1.14.3 Other Excluded Discharges
Storm water discharges from industrial operations or land disturbing construction activities that require separate coverage under a WPDES permit pursuant to subchs. II or III of ch. NR 216, Wis. Adm. Code. For example, while storm water from industrial or construction activity may discharge from an MS4, this permit does not satisfy the need to obtain any other permits for those discharges. This exclusion does not apply to the permittee's responsibility to regulate construction sites within its jurisdiction in accordance with sections 2.4 and 2.5 of this permit.

1.14.4 Indian Country
Storm water discharges within Indian Country. The federal Clean Water Act requires that owners and operators of storm water discharges within Indian Country in Wisconsin to obtain permit coverage directly from the United States Environmental Protection Agency.

1.14.5 Non-MS4 Discharge
Storm water discharges that do not enter an MS4.

2. PERMIT CONDITIONS

The permittee shall establish written, measurable goals for achieving compliance with the programs developed under sections 2.1 through 2.6 in accordance with the compliance schedule contained in section 3 of this permit. The following permit conditions apply to the permittee, unless the Department issues a written determination that a condition is not appropriate under the circumstances. For example, where the permittee owns all of the land that drains to its MS4, it may be unnecessary to develop erosion control and storm water management ordinances since they are used to enforce against other landowners of construction and post-construction sites.

2.1 Public Education and Outreach

The permittee shall implement a public education and outreach program to increase the awareness of storm water pollution impacts on waters of the state to encourage changes in public behavior to reduce such impacts. The program shall establish measurable goals and, at a minimum, include the following elements:

2.1.1 Promote detection and elimination of illicit discharges and water quality impacts associated with such discharges from municipal separate storm sewer systems.

2.1.2 Inform and educate the public about the proper management of materials that may cause storm water pollution from sources including automobiles, pet waste, household hazardous waste and household practices.

2.1.3 Promote beneficial onsite reuse of leaves and grass clippings and proper use of lawn and garden fertilizers and pesticides.

2.1.4 Promote the management of streambanks and shorelines by riparian landowners to minimize erosion and restore and enhance the ecological value of waterways.

2.1.5 Promote infiltration of residential storm water runoff from rooftop downspouts, driveways and sidewalks.

2.1.6 Inform and where appropriate educate those responsible for the design, installation, and maintenance of construction site erosion control practices and storm water management facilities on how to design, install and maintain the practices.

2.1.7 Identify businesses and activities that may pose a storm water contamination concern, and where appropriate, educate specific audiences on methods of storm water pollution prevention.

2.1.8 Promote environmentally sensitive land development designs by developers and designers.

2.2 Public Involvement and Participation

The permittee shall implement a program to notify the public of activities required by this permit and to encourage input and participation from the public regarding these activities. This program shall include measurable goals for public involvement and participation and comply with applicable state and local public notice requirements.

2.3 Illicit Discharge Detection and Elimination

The permittee shall develop, implement and enforce a program to detect and remove illicit connections and discharges to the MS4. The program shall include measurable goals and include all of the following:

2.3.1 An ordinance or other regulatory mechanism to prevent and eliminate illicit discharges and connections to the MS4. At a minimum, the ordinance or other regulatory mechanism shall:

2.3.1.1 Prohibit the discharge, spilling or dumping of non-storm water substances or materials into waters of the state or the MS4.

2.3.1.2 Identify non-storm water discharges or flows that are not considered illicit discharges. Non-storm water discharges that are not considered illicit discharges include water line flushing, landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, fire fighting and discharges authorized under a WPDES permit unless identified by the permittee as significant source of pollutants to waters of the state.

2.3.1.3 Establish inspection and enforcement authority.

Note: Chapter NR 815, Wis. Adm. Code, regulates injection wells including storm water injection wells. Construction or use of a well to dispose of storm water directly into groundwater is prohibited under s. NR 815.11(5), Wis. Adm. Code.

2.3.2 Initial field screening at all major outfalls during dry weather periods. At a minimum, field screening shall be documented and include:

2.3.2.1 Visual Observation - A narrative description of visual observations including color, odor, turbidity, oil sheen or surface scum, flow rate and any other relevant observations

regarding the potential presence of non-storm water discharges or illicit dumping.

2.3.2.2 Field Analysis - If flow is observed, a field analysis shall be conducted to determine the presence of illicit non-storm water discharges or illicit dumping. The field analysis shall include sampling for pH, total chlorine, total copper, total phenol and detergents, unless the permittee elects instead to use detergent, ammonia, potassium and fluoride as the indicator parameters. Other alternative indicator parameters may be authorized by the Department in writing.

Note: Detergent, ammonia, potassium and fluoride indicator parameters provide a better screening tool to identify whether the flow is contaminated with sanitary or wastewater, and also whether the source is a tap water or a natural source of water. The Center for Watershed Protection (CWP) has illicit discharge identification and elimination guidance available at http://www.cwp.org/idde_verify.htm. The CWP guidance includes illicit discharge field sampling guidance developed by Robert Pitt from the University of Alabama on how best to detect illicit discharges including recommended indicator parameters and associated levels of detection.

2.3.2.2.1 Field screening points shall, where possible, be located downstream of any source of suspected illicit activity.

2.3.2.2.2 Field screening points shall be located where practicable at the farthest manhole or other accessible location downstream in the system. Safety of personnel and accessibility of the location shall be considered in making this determination.

2.3.3 On-going dry weather field screening of outfalls during the term of the permit. Outfalls that will be evaluated on an on-going basis and the field screening frequency shall be identified. Consideration shall be given to hydrological conditions, total drainage area of the site, population density of the site, traffic density, age of the structures or buildings in the area, history of the area and land use types. A description of this on-going field screening program shall be submitted to the Department in accordance with section 3.3.4.

2.3.4 Procedures for responding to known or suspected illicit discharges. At a minimum, procedures shall be established for:

2.3.4.1 As soon as possible, investigating portions of the MS4 that, based on the results of field screening or other information, indicate a reasonable potential for containing illicit discharges or other sources of non-storm water discharges.

2.3.4.2 Responding to spills that discharge into and/or from the MS4 including tracking and locating the source of the spill if unknown.

2.3.4.3 Preventing and containing spills that may discharge into or are already within the MS4.

2.3.4.4 Notifying the Department immediately in accordance with ch. NR 706, Wis. Adm. Code, in the event that the permittee identifies a spill or release of a hazardous substance, which has resulted or may result in the discharge of pollutants into waters of the state. The Department shall be notified via the 24-hour toll free spill hotline at 1-800-943-0003. The

permittee shall cooperate with the Department in efforts to investigate and prevent such discharges from polluting waters of the state.

2.3.4.5 To the maximum extent practicable, eliminating leakage from sanitary conveyance systems into the MS4.

2.3.4.6 Providing the Department with advance notice of the time and location of dye testing within a MS4. (Because the dye may get reported to the Department as an illicit discharge or spill, the Department requires prior notification of dye testing.)

2.3.5 The permittee shall take appropriate action to remove illicit discharges from its MS4 system as soon as possible. If it will take more than 30 days to remove an illicit connection, the Department shall be contacted to discuss an appropriate action and/or timeframe for removal.

2.3.6 In the case of an illicit discharge that originates from the permittee's permitted area and that discharges directly to a municipal separate storm sewer or property under the jurisdiction of another municipality, the permittee shall notify the affected municipality within one working day.

2.3.7 The name, title and phone number of the individual(s) responsible for responding to reports of illicit discharges and spills shall be included in the illicit discharge response procedure and submitted to the Department in accordance with section 3.3.2.

2.4 Construction Site Pollutant Control

Each permittee shall develop, implement and enforce a program to reduce the discharge of sediment and construction materials from construction sites. The program shall establish measurable goals and include:

2.4.1 An ordinance or other regulatory mechanism to require erosion and sediment control at construction sites and establish sanctions to ensure compliance. Note that Appendix A of ch. NR 152, Wis. Adm. Code, contains a construction site model ordinance. At a minimum, the ordinance or other regulatory mechanism shall establish or include:

2.4.1.1 Applicability and jurisdiction.

2.4.1.1.1 It shall apply to all construction sites with one acre or more of land disturbance, and to sites of less than one acre if they are part of a larger common plan of development or sale under the jurisdiction of the permittee.

2.4.1.1.2 It does not have to apply to construction sites that are listed under s. NR 216.42(2) to (11), Wis. Adm. Code, except that it shall apply to construction sites listed under s. NR 216.42 (4) and (9) where erosion control authority has been delegated to the permittee by the Wisconsin Department of Commerce.

2.4.1.1.3 If the permittee is a city, village, county or town and does not have authority from the Wisconsin Department of Commerce (Commerce) to regulate erosion control at public buildings and places of employment, the permittee shall request such authority from Commerce pursuant to s. 101.1205(4), Wis. Stats., **within 18 months after the start date.** If Commerce delegates to the permittee the authority to regulate erosion control at public buildings and places of employment, the permittee shall exercise such

authority as soon as possible.

2.4.1.2 Erosion and sediment control criteria, standards and specifications equivalent to those approved by the Department. Department erosion and sediment control standards are available through the Department's storm water Internet site at: http://dnr.wi.gov/org/water/wm/nps/stormwater.htm.

2.4.1.3 Construction site performance standards equivalent to or more restrictive than those in ss. NR 151.11 and 151.23, Wis. Adm. Code.

2.4.1.4 Erosion and sediment control plan requirements for landowners of construction sites equivalent to those contained in s. NR 216.46, Wis. Adm. Code.

2.4.1.5 Inspection and enforcement authority.

2.4.1.6 Requirements for construction site operators to manage waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site so as to reduce adverse impacts to waters of the state.

2.4.2 Procedures for construction site inspection and enforcement of erosion and sediment control measures. At a minimum, the procedures shall establish:

2.4.2.1 Municipal departments or staff responsible for construction site inspections and enforcement.

2.4.2.2 Construction site inspection frequency.

2.4.2.3 Construction site inspection documentation.

2.4.2.4 Enforcement mechanisms that will be used to obtain compliance.

2.4.3 Procedures for receipt and consideration of information submitted by the public.

Note: A town may demonstrate to the Department that an adequate county ordinance that meets the requirements of this permit is administered and enforced within its town and then the town could be excused from having to adopt its own ordinance.

2.5 Post-Construction Storm Water Management

The permittee shall develop, implement and enforce a program to require control of the quality of discharges from areas of new development and redevelopment, after construction is completed. The program shall establish measurable goals and include:

2.5.1 An ordinance or other regulatory mechanism to regulate post-construction storm water discharges from new development and redevelopment. Note that Appendix B of ch. NR 152, Wis. Adm. Code, contains a post-construction site model ordinance. At a minimum, the ordinance or other regulatory mechanism shall establish or include:

2.5.1.1 Applicability and jurisdiction that shall apply to construction sites with one acre or more of land disturbance, and sites of less than one acre if they are part of a larger common

plan of development or sale under the jurisdiction of the permittee.

2.5.1.2 Design criteria, standards and specifications equivalent to technical standards or the Wisconsin Storm Water Manual approved by the Department. The Department-approved technical standards shall take precedence over the Wisconsin Storm Water Manual. The Department-approved technical standards and the Wisconsin Storm Water Manual are available at http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm.

2.5.1.3 Post-construction performance standards equivalent to or more restrictive than those in ss. NR 151.12 and 151.24, Wis. Adm. Code.

2.5.1.4 Storm water plan requirements for landowners of construction sites equivalent to those contained in s. NR 216.47, Wis. Adm. Code.

2.5.1.5 Long-term maintenance requirements for landowners and other persons responsible for long-term maintenance of post-construction storm water control measures.

2.5.1.6 Inspection and enforcement authority.

2.5.2 Procedures that will be used by the permittee to ensure the long-term maintenance of storm water management facilities.

Note: A town may demonstrate to the Department that an adequate county ordinance that meets the requirements of this permit is administered and enforced within its town and then the town could be excused from having to adopt its own ordinance.

2.6 Pollution Prevention

Each permittee shall develop and implement a pollution prevention program that establishes measurable goals for pollution prevention. The program shall include:

2.6.1 Routine inspection and maintenance of municipally owned or operated structural storm water management facilities to maintain their pollutant removal operating efficiency.

2.6.2 Routine street sweeping and cleaning of catch basins with sumps where appropriate.

2.6.3 Proper disposal of street sweeping and catch basin cleaning waste.

2.6.4 If road salt or other deicers are applied by the permittee, no more shall be applied than necessary to maintain public safety.

Note: The DOT "Highway Maintenance Manual", chapter 35, contains guidance on application of road salt and other deicers that can be used to determine whether not application is necessary and what application rate is appropriate for deicing and ice prevention. This information is held on a secured server and users must first register with the state of Wisconsin to obtain an ID and password. You can learn more about getting connected to this secured server at: http://www.dot.wisconsin.gov/business/extranet/. The Wisconsin Department of Transportation (DOT) highway salt storage requirements are contained in ch. Trans 277, Wis. Adm. Code.

2.6.5 Proper management of leaves and grass clippings, which may include on-site beneficial

reuse as opposed to collection.

2.6.6 Storm water pollution prevention planning for municipal garages, storage areas and other sources of storm water pollution from municipal facilities.

2.6.7 Application of lawn and garden fertilizers on municipally controlled properties, with pervious surfaces over 5 acres each, in accordance with a site-specific nutrient application schedule based on appropriate soil tests.

2.6.8 Education of appropriate municipal and other personnel involved in implementing this program.

2.6.9 Measures to reduce municipal sources of storm water contamination within source water protection areas. Wisconsin's source water assessment program information is available at: http://www.dnr.state.wi.us/org/water/dwg/swap/index.htm.

2.7 Storm Water Quality Management

The permittee shall develop and implement a municipal storm water management program. This program shall achieve compliance with the developed urban area performance standards of s. NR 151.13(2), Wis. Adm. Code, for those areas of the municipality that were not subject to the post-construction performance standards of s. NR 151.12 or 151.24. The program shall include:

2.7.1 To the maximum extent practicable, implementation of storm water management practices necessary to achieve a 20% reduction in the annual average mass of total suspended solids discharging from the MS4 to surface waters of the state as compared to implementing no storm water management controls, by March 10, 2008. The permittee may elect to meet the 20% total suspended solids standard on a watershed or regional basis by working with other permittee(s) to provide regional treatment that collectively meets the standard.

Note: Pursuant to s. NR 151.13(2), Wis. Adm. Code, the total suspended solids reduction requirement increases to 40% by March 10, 2013. The 20% and 40% total suspended solids reduction requirements are applied to runoff from areas of urban land use and are not applicable to agricultural or rural land uses and associated roads. Additional MS4 modeling guidance for modeling the total suspended solids control is given on the Department's Internet site at: http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm.

2.7.2 Evaluation of all municipal owned or operated structural flood control facilities to determine the feasibility of retrofitting to increase total suspended solids removal from runoff.

2.7.3 Assessment of compliance with s. NR 151.13(2), Wis. Adm. Code, by conducting a pollutant-loading analysis using a model such as SLAMM, P8 or equivalent methodology approved by the Department. At a minimum, the average annual total suspended solids and phosphorus loads to the MS4 shall be determined for the cumulative discharge from all outfalls for the controls and no controls conditions. For purposes of evaluating the modeling, pollutant loads from grouped drainage areas as modeled shall be reported. The modeling shall calculate the theoretical annual average mass of total suspended solids generated for the entire area served by a MS4 within the permittee's jurisdiction with no controls or BMPs applied. Modeling to reflect the current state of controls and BMPs shall be judged against the no controls condition to determine the percent of reduction. A storm water infiltration system is considered to be a

control or BMP. Controls and BMPs that exist at the time of permit issuance may be used to achieve this reduction. This pollutant level reduction applies to total suspended solids only.

Note: It is recommended that the pollutant-loading analysis be conducted as soon as possible. This analysis is needed to provide the permittee with information on which BMPs are needed to meet the implementation date of March 10, 2008.

2.8 Storm Sewer System Map

The permittee shall develop and maintain a MS4 map. The municipal storm sewer system map shall include:

2.8.1 Identification of waters of the state, name and classification of receiving water(s), identification of whether the receiving water is an ORW, ERW or listed as an impaired water under s. 303(d) of the Clean Water Act, storm water drainage basin boundaries for each MS4 outfall and municipal separate storm sewer conveyance systems.

2.8.2 Identification of any known threatened or endangered resources, historical property and wetlands, as defined in sections 1.6 through 1.8 of this permit, which might be affected.

2.8.3 Identification of all known MS4 outfalls discharging to waters of the state and other MS4s. Major outfalls shall be uniquely identified.

2.8.4 Location of any known discharge to the MS4 that has been issued WPDES permit coverage by the Department. A list of WPDES permit holders in the permittee's area may be obtained from the Department.

2.8.5 Location of municipally owned or operated structural storm water management facilities including detention basins, infiltration basins, and manufactured treatment devices. If the permittee will be taking credit for pollutant removal from privately-owned facilities, they must be identified.

2.8.6 Identification of publicly owned parks, recreational areas and other open lands.

2.8.7 Location of municipal garages, storage areas and other public works facilities.

2.8.8 Identification of streets.

2.9 Annual Report

The permittee shall submit an annual report to the Department in accordance with section 3.10 of this permit. The permittee shall invite the municipal governing body, interest groups and the general public to review and comment on the annual report. The annual report shall include:

2.9.1 The status of implementing the permit requirements, status of meeting measurable program goals and compliance with permit schedules.

2.9.2 A fiscal analysis which includes the annual expenditures and budget for the reporting year, and the budget for the next year.

2.9.3 A summary of the number and nature of inspections and enforcement actions conducted

to ensure compliance with the required ordinances.

2.9.4 Identification of any known water quality improvements or degradation in the receiving water to which the permittee's MS4 discharges. Where degradation is identified, identify why and what actions are being taken to improve the water quality of the receiving water.

2.9.5 A duly authorized representative of the permittee shall sign and certify the annual report and include a statement or resolution that the permittee's governing body or delegated representatives have reviewed or been apprised of the content of the annual report. A signed copy of the annual report and other required reports shall be submitted to the appropriate Department regional storm water contact or to the Wisconsin DNR, Storm Water Program – WT/2, PO Box 7921, Madison, WI 53707-7921. Section 3.10 of this permit contains the date by which annual reports shall be submitted to the Department.

2.10 Cooperation

The permittee may, by written agreement, implement this permit with another municipality or contract with another entity to perform one or more of the conditions of this permit. For example, if a county is implementing and enforcing an adequate storm water ordinance(s) within a town, the town would then not have to adopt its own ordinance. However, the permittee is ultimately responsible for compliance with the conditions of this permit.

3. COMPLIANCE SCHEDULE

The permittee's programs under section 2 shall be submitted to the Department for review. The Department intends to review the program within the 6-month period prior to implementation to verify compliance with the requirements of this permit. The permittee shall comply with the specific permit conditions contained in section 2 according to following schedule:

3.1 Public Outreach and Education

The permittee shall submit the proposed public education and outreach program to the Department within **18 months of the start date** of permit coverage. The permittee shall implement the public education and outreach program **within 24 months of the start date.**

3.2 Public Involvement and Participation

The permittee shall submit the proposed public involvement and participation program to the Department within **18 months of the start date** of permit coverage. The permittee shall implement the public involvement and participation program **within 24 months of the start date.**

3.3 Illicit Discharge Detection and Elimination

3.3.1 The permittee shall submit the proposed illicit discharge and elimination ordinance to the Department **within 24 months of the start date** of permit coverage. The permittee shall adopt the illicit discharge and elimination ordinance **within 30 months of the start date.**

3.3.2 The permittee shall submit the proposed illicit discharge response procedures to the Department **within 24 months of the start date** of permit coverage. The permittee shall implement the illicit discharge response procedures **within 30 months of the start date.**

3.3.3 The permittee shall complete initial field screening **within 36 months of the start date**

of permit coverage.

3.3.4 The permittee shall submit the proposed on-going field screening program to the Department **within 36 months of the start date** of permit coverage. The permittee shall implement the on-going field screening program **within 48 months of the start date.**

3.4 Construction Site Pollutant Control

3.4.1 The permittee shall submit the proposed construction site pollutant control ordinance to the Department **within 18 months of the start date** of permit coverage. The permittee shall adopt the construction site pollutant control ordinance within **24 months of the start date.** If revision to any existing construction site pollutant control ordinance is necessary, the existing ordinances shall continue to be enforced until the revised ordinance becomes effective.

3.4.2 The permittee shall submit the proposed construction site inspection and enforcement procedures to the Department **within 18 months of the start date** of permit coverage. The permittee shall implement the construction site inspection and enforcement procedures **within 24 months of the start date.**

3.5 Post-Construction Storm Water Management

3.5.1 The permittee shall submit the proposed post-construction storm water management ordinance to the Department **within 18 months of the start date** of permit coverage. The permittee shall adopt the post-construction storm water management ordinance within **24 months of the start date.** If revision to any existing post-construction storm water management ordinance is necessary, the existing ordinances shall continue to be enforced until the revised ordinance becomes effective.

3.5.2 The permittee shall submit the proposed long-term maintenance procedures to the Department **within 18 months of the start date** of permit coverage. The permittee shall implement the long-term maintenance procedures **within 24 months of the start date.**

3.6 Pollution Prevention

The permittee shall submit the proposed pollution prevention program to the Department **within 24 months of the start date** of permit coverage. The pollution prevention program shall be implemented **within 30 months of the start date.**

3.7 Storm Water Quality Management

The permittee shall complete the evaluation of flood control structures and assessment of compliance and submit the results to the Department **by March 10, 2008 or within 24 months of the start date** of permit coverage.

3.8 Storm Sewer System Map

The permittee shall submit the MS4 map to the Department within **24 months of the start date** of permit coverage.

3.9 Amendments

The permittee shall amend a program required under this permit as soon as possible if the permittee becomes aware that it does not meet a requirement of this permit. The permittee shall amend its

program if notified by the Department that a program or procedure is insufficient or ineffective in meeting a requirement of this permit. The Department notice to the permittee may include a deadline for amending and implementing the amendment.

3.10 Annual Report

The permittee shall submit an annual report for each calendar year by **March 31st of the following year**. However, an annual report does not have to be submitted after the initial calendar year of permit coverage. The first annual report sent to the Department shall report on the previous 2 calendar years of permit coverage.

3.11 Reapplication for Permit Coverage

To retain authorization to discharge after the expiration date of this permit, the permittee shall apply for reissuance of this permit in accordance with the requirements of s. NR 216.09, Wis. Adm. Code, at least 180 days prior to this permit's expiration date.

COMPLIANCE SCHEDULE SUMMARY

PERMIT CONDITION	ACTIVITY	DUE TO DNR	IMPLEMENT
Public Education and Outreach – Section 3.1	Submit public education and outreach program	Within 18 months of the start date	Within 24 months of the start date
Public Involvement and Participation – Section 3.2	Submit public involvement and participation program	Within 18 months of the start date	Within 24 months of the start date
Illicit Discharge Detection and Elimination – Section 3.3	1. Submit illicit discharge ordinance	Within 24 months of the start date	Within 30 months of the start date
	2. Submit illicit discharge response procedures	Within 24 months of the state date	Within 30 months of the state date
	3. Complete initial field screening		Within 36 months of the start date
	4. Submit on-going field screening	Within 36 months of the start date	Within 48 months of the start date
Construction Site Pollutant Control – Section 3.4	1. Submit construction site pollutant control ordinance	Within 18 months of the start date	Within 24 months of the start date
	2. Submit construction site inspection and enforcement procedures	Within 18 months of the start date	Within 24 months of the start date
Post-Construction Storm Water Management – Section 3.5	1. Submit post-construction storm water management ordinance	Within 18 months of the start date	Within 24 months of the start date
	2. Submit long-term maintenance procedures	Within 18 months of the start date	Within 24 months of the start date
Pollution Prevention – Section 3.6	Submit pollution prevention program	Within 24 months of the start date	Within 30 months of the start date
Storm Water Quality Management – Section 3.7	1. Submit evaluation of flood control structures	By March 10, 2008 or within 24 months after start date	
	2. Submit assessment of compliance	By March 10, 2008 or within 24 months after start date	
MS4 Map – Section 3.8	Submit MS4 map	Within 24 months of the state date	
Annual Report – Section 3.10	Submit annual report	By March 31 of each year*	
Reapplication for Permit Coverage – Section 3.11	Submit reapplication	By March 31, 2009	

***Note:** An annual report does not have to be submitted after the initial calendar year of permit coverage. The first annual report sent to the Department shall report on the previous 2 calendar years of permit coverage.

4. STANDARD CONDITIONS

The conditions in s. NR 205.07(1) and (3), Wis. Adm. Code, are incorporated by reference in this permit. The permittee shall be responsible for meeting these requirements, except for s. NR 205.07(1)(n), which does not apply to facilities covered under general permits. Some of these requirements are outlined below in sections 4.1 through 4.18. Requirements not specifically outlined below can be found in s. NR 205.07(1) and (3), Wis. Adm. Code.

4.1 Duty to Comply: The permittee shall comply with all conditions of the permit. Any act of noncompliance with this permit is a violation of this permit and is grounds for enforcement action or withdrawal of permit coverage under this permit and issuance of an individual permit. If the permittee files a request for an individual WPDES permit or a notification of planned changes or anticipated noncompliance, this action by itself does not relieve the permittee of any permit condition.

4.2 Enforcement Action: The Department is authorized under s. 283.89 and 283.91, Wis. Stats., to utilize citations or referrals to the Department of Justice to enforce the conditions of this permit. Violation of a condition of this permit is subject to a fine of up to $10,000 per day of the violation.

4.3 Compliance Schedules: Reports of compliance or noncompliance with interim and final requirements contained in any compliance schedule of the permit shall be submitted in writing within 14 days after the scheduled due date, except that progress reports shall be submitted in writing on or before each schedule date for each report. Any report of noncompliance shall include the cause of noncompliance, a description of remedial actions taken, and an estimate of the effect of the noncompliance on the permittee's ability to meet the remaining scheduled due dates.

4.4 Noncompliance

4.4.1 Upon becoming aware of any permit noncompliance that may endanger public health or the environment, the permittee shall report this information by a telephone call to the Department regional storm water specialist within 24 hours. A written report describing the noncompliance shall be submitted to the Department regional storm water specialist within 5 days after the permittee became aware of the noncompliance. The Department may waive the written report on a case-by-case basis based on the oral report received within 24 hours. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

4.4.2 Reports of any other noncompliance not covered under STANDARD CONDITIONS sections 4.3, 4.4.1, or 4.6. shall be submitted with the annual report. The reports shall contain all the information listed in STANDARD CONDITIONS section 4.4.1.

4.5 Duty to Mitigate: The permittee shall take all reasonable steps to minimize or prevent any adverse impact on the waters of the state resulting from noncompliance with the permit.

4.6 Spill Reporting: The permittee shall immediately notify the Department, in accordance with ch. NR 706, Wis. Adm. Code, in the event of a spill or accidental release of hazardous substances which has resulted or may result in a discharge of pollutants into waters of the state. The Department shall be notified via the 24-hour spill hotline (1-800-943-0003).

4.7 Proper Operation and Maintenance: The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the municipality to achieve compliance with the conditions of the permit and the storm water management plan. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with conditions of this permit.

4.8 Bypass: The permittee may temporarily bypass storm water treatment facilities if necessary for maintenance, or due to runoff from a storm event which exceeds the design capacity of the treatment facility, or during an emergency.

4.9 Duty to Halt or Reduce Activity: Upon failure or impairment of storm water management practices identified in the storm water management program, the permittee shall, to the extent practicable and necessary to maintain permit compliance, modify or curtail operations until the storm water management practices are restored or an alternative method of storm water pollution control is provided.

4.10 Removed Substances: Solids, sludges, filter backwash or other pollutants removed from or resulting from treatment or control of storm water shall be stored and disposed of in a manner to prevent any pollutant from the materials from entering the waters of the state, and to comply with all applicable federal, state, and local regulations.

4.11 Additional Monitoring: If a permittee monitors any pollutant more frequently than required by the permit, the results of that monitoring shall be reported to the Department in the annual report.

4.12 Inspection and Entry: The permittee shall allow authorized representatives of the Department, upon the presentation of credentials, to:

4.12.1 Enter upon the municipal premises where a regulated facility or activity is located or conducted, or where records are required to be maintained under the conditions of the permit;

4.12.2 Have access to and copy, at reasonable times, any records that are required under the conditions of the permit;

4.12.3 Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit; and

4.12.4 Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

4.13 Duty to Provide Information: The permittee shall furnish the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking or reissuing the permit or to determine compliance with the permit. The permittee shall also furnish the Department, upon request, copies of records required to be kept by the permittee.

4.14 Property Rights: The permit does not convey any property rights of any sort, or any

exclusive privilege. The permit does not authorize any injury or damage to private property or an invasion of personal rights, or any infringement of federal, state or local laws or regulations.

4.15 Other Information: Where the permittee becomes aware that it failed to submit any relevant facts in applying for permit coverage or submitted incorrect information in any plan or report sent to the Department, it shall promptly submit such facts or correct information to the Department.

4.16 Records Retention: The permittee shall retain records of all monitoring information, copies of all reports required by the permit, and records of all data used to complete the notice of intent for a period of at least 5 years from the date of the sample, measurement, report or application.

4.17 Permit Actions: Under s. 283.35, Wis. Stats., the Department may withdraw a permittee from coverage under this general permit and issue an individual permit for the municipality if: (a) The municipality is a significant contributor of pollution; (b) The municipality is not in compliance with the terms and conditions of the general permit; (c) A change occurs in the availability of demonstrated technology or practices for the control or abatement of pollutants from the municipality; (d) Effluent limitations or standards are promulgated for a point source covered by the general permit after the issuance of that permit; or (e) A water quality management plan containing requirements applicable to the municipality is approved. In addition, as provided in s. 283.53, Wis. Stats., after notice and opportunity for a hearing this permit may be suspended, modified or revoked, in whole or in part, for cause.

4.18 Signatory Requirements: All applications, reports or information submitted to the Department shall be signed by a ranking elected official, or other person authorized by those responsible for the overall operation of the MS4 and storm water management program activities regulated by the permit. The representative shall certify that the information was gathered and prepared under his or her supervision and, based on report from the people directly under supervision that, to the best of his or her knowledge, the information is true, accurate, and complete.

4.19 Attainment of Water Quality Standards after Authorization: At any time after authorization, the Department may determine that the discharge of storm water from a permittee's MS4 may cause, have the reasonable potential to cause, or contribute to an excursion of any applicable water quality standard. If such determination is made, the Department may require the permittee to do one of the following:

4.19.1 Develop and implement an action plan to address the identified water quality concern to the satisfaction of the Department.

4.19.2 Submit valid and verifiable data and information that are representative of ambient conditions to demonstrate to the Department that the receiving water or groundwater is attaining the water quality standard.

4.19.3 Submit an application to the Department for an individual storm water discharge permit.

5. DEFINITIONS

Definitions for some of the terms found in this permit are as follows:

5.1 Controls Condition means a surface-water pollutant-loading analysis that includes pollutant reductions from storm water management practices.

5.2 Department means the Wisconsin Department of Natural Resources.

5.3 Erosion means the process by which the land's surface is worn away by the action of wind, water, ice or gravity.

5.4 Hazardous substance means any substance which may pose a substantial present or potential hazard to human health or the environment because of its quantity, concentration or physical, chemical or infectious characteristics.

5.5 Illicit Connection means any man-made conveyance connecting an illicit discharge to a MS4.

5.6 Illicit Discharge means any discharge to a MS4 that is not composed entirely of storm water except discharges authorized by a WPDES permit or other discharge not requiring a WPDES permit such as landscape irrigation, individual residential car washing, fire fighting and similar discharges.

5.7 Infiltration means the entry and movement of precipitation or runoff into or through soil.

5.8 Infiltration system means a device or practice such as a basin, trench, rain garden or swale designed specifically to encourage infiltration, but does not include natural infiltration in pervious surfaces such as lawns, redirecting of rooftop downspouts onto lawns or minimal infiltration from practices, such as swales or road side channels designed for conveyance and pollutant removal only.

5.9 Jurisdiction means the area where the permittee has authority to enforce its ordinance(s) or otherwise has authority to exercise control over a particular activity of concern.

5.10 Land Disturbing Construction Activity means any man-made alteration of the land surface resulting in a change in the topography or existing vegetative or non-vegetative soil cover that may result in storm water runoff and lead to increased soil erosion and movement of sediment into waters of the state. Land disturbing construction activity includes, but is not limited to, clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities.

5.11 Maximum Extent Practicable or MEP means a level of implementing management practices in order to achieve a performance standard or other goal which takes into account the best available technology, cost effectiveness and other competing issues such as human safety and welfare, endangered and threatened resources, historic properties and geographic features.

5.12 Major Outfall means a municipal separate storm sewer outfall that meets one of the following criteria:

5.12.1 A single pipe with an inside diameter of 36 inches or more or equivalent conveyance (cross sectional area of 1,018 square inches) which is associated with a drainage area of more than 50 acres.

5.12.2 A single pipe with an inside diameter of 12 inches or more or equivalent conveyance (cross sectional area of 113 square inches) which receives storm water runoff from land zoned for industrial activity with 2 or more acres of industrial activity, but not land zoned for industrial activity that does not have any industrial activity present.

5.13 Municipality means any city, town, village, county, county utility district, town sanitary district, town utility district, school district or metropolitan sewage district or any other public entity created pursuant to law and having authority to collect, treat or dispose of sewage, industrial wastes, storm water or other wastes.

5.14 Municipal Separate Storm Sewer System or MS4 means a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains, which meets all of the following criteria:

5.14.1 Owned or operated by a municipality.

5.14.2 Designed or used for collecting or conveying storm water.

5.14.3 Which is not a combined sewer conveying both sanitary and storm water.

5.15 No Controls Condition means a surface water pollutant-loading analysis that does not include pollutant reductions from existing storm water management practices including, but not limited to, infiltration systems.

5.16 Outfall means the point at which storm water is discharged to waters of the state or leaves one municipality and enters another.

5.17 Permittee means the owner or operator of a MS4 authorized to discharge storm water into waters of the state.

5.18 Permitted Area refers to the areas of land under the jurisdiction of the permittee that drains into a MS4, which is regulated under a permit issued pursuant to subch. I of NR 216, Wis. Adm. Code.

5.19 Redevelopment means areas where development is replacing older development.

5.20 Riparian Landowners are the owners of lands bordering lakes and rivers.

5.21 Sediment means settleable solid material that is transported by runoff, suspended within runoff or deposited by runoff away from its original location.

5.22 Start Date is the initial date of permit coverage, which is specified in the Department letter authorizing coverage under this permit.

5.23 Storm Water Management Practice means structural or non-structural measures, practices, techniques or devices employed to avoid or minimize soil, sediment or pollutants carried in runoff to waters of the state.

5.24 Storm Water Pollution Prevention Planning refers to the development of a site-specific

plan that describes the measures and controls that will be used to prevent and/or minimize pollution of storm water.

5.25 Structural Storm Water Management Facilities are engineered and constructed systems that are designed to provide storm water quality control such as wet detention ponds, constructed wetlands, infiltration basins and grassed swales.

5.26 Urbanized Area means a place and the adjacent densely settled surrounding territory that together have a minimum population of 50,000 people, as determined by the U.S. bureau of the census based on the latest decennial federal census.

5.27 Waters of the State include surface waters, groundwater and wetlands.

5.28 WPDES Permit means a Wisconsin Pollutant Discharge Elimination System permit issued pursuant to ch. 283, Wis. Stats.

APPENDIX E
CITY OF LA CROSSE EROSION CONTROL ORDINANCE

In lieu of including the entire *City of La Crosse Municipal Code Chapter XIV–Subdivision and Construction Site Erosion Control Regulations*, to save paper we have included the following website address. The ordinance can be found at:

http://library10.municode.com/gateway.dll/2?f=templates&fn=default.htm&vid=nextpage:500130&npusername=50013&nppassword=MCC&npac_credentialspresent=true

Or an alternative way to get to the address is to go to www.municode.com, click *Online Library*, then *Wisconsin*, then *La Crosse Code of Ordinances*, then *Municipal Code Chapters*, then *Chapter XIV Subdivision and Construction Site Erosion Control Regulations.*

APPENDIX F
LA CROSSE COUNTY EROSION CONTROL ORDINANCE

In lieu of including the entire *La Crosse County Code of Ordinances Chapter 21–Erosion Control and Land Disturbance Ordinance*, to save paper we have included the following website address. The ordinance can be found at:

http://www.co.la-crosse.wi.us/code/pdf/Chapter%2021%20Erosion%20Control_Land%20Disturbance.pdf

Or an alternative way to get to the address is to go to http://www.co.la-crosse.wi.us/code/default.htm, click *Table of Contents*, then *Chapter 21 Erosion Control/Land Disturbance*.

APPENDIX G
LA CROSSE COUNTY SUBDIVISION AND PLATTING ORDINANCE

In lieu of including the entire *La Crosse County Code of Ordinances Chapter 18–Subdivision and Platting*, to save paper we have included the following website address. The ordinance can be found at:

http://www.co.la-crosse.wi.us/code/pdf/Chapter%2018%20Subdivision%20and%20Platting.pdf

Or an alternative way to get to the address is to go to http://www.co.la-crosse.wi.us/code/default.htm, click *Table of Contents*, then *Chapter 18 Subdivision and Platting*.

APPENDIX H
LA CROSSE COUNTY SHORELINE ZONING ORDINANCE

In lieu of including the entire *La Crosse County Code of Ordinances Chapter 20–Shoreline Zoning*, to save paper we have included the following website address. The ordinance can be found at:

http://www.co.la-crosse.wi.us/code/pdf/Chapter%2020%20Shoreland%20Zoning.pdf

Or an alternative way to get to the address is to go to http://www.co.la-crosse.wi.us/code/default.htm, click *Table of Contents*, then *Chapter 20 Shoreline Zoning*.

APPENDIX I
DRAINAGE EVALUATION FORM

University of Wisconsin–La Crosse

Drainage Evaluation Form

Part A–General (To be completed by resident)

Today's Date:

Location of Drainage Problem (include building name, parking lot number or feature name):

Building Manager / Contact Name:

Phone Number:_____(Office)
_____(Mobile/Pager)

Part B–Description of Problem (To be completed by resident)

Provide detailed description or sketch or photo of the problem in the space below:

How frequently or under what conditions does this problem occur (heavy rain, prolonged wet weather, frozen ground, etc.)?

Provide approximate dates of occurrence:

Describe damages incurred on your property. Note exterior versus interior damage:

Have you attempted to correct this problem? If so, what measures were taken?

Part C–Attachments

1. Photographs Attached?____Yes_____No
2. Building or Utility Plans (if available) Attached?____Yes_____No
3. Reports/Records (if available) Attached?____Yes_____No
4. Other (Describe)

Part D–UW-La Crosse Engineer's Inspection (To be completed by UW-La Crosse)

Name of Inspector:

Date of Field Inspection:

Inspector's Notes:

List of properties affected:

Photos: Attached or N/A

Is drainage problem:

1. Located on UW-La Crosse property? _____Yes_____No

2. Associated with a UW-La Crosse-owned or -maintained storm sewer facility or drainage way? _____Yes_____No

3. Caused by damage to the storm sewer or obstruction of the drainage way?_____Yes____No

Part E–Evaluation/Responsibility (To be completed by UW-La Crosse)

Recommended Action:

Comments:

ROUTING: (PLACE CHECK MARK BY APPLICABLE REVIEWERS)

UW-La Crosse Plumbing Department (All Submittals)
UW-La Crosse Engineer (Where Applicable)

REVIEWED BY:

_____
UW-La Crosse Plumbing Department

_____
UW-La Crosse Engineer

APPENDIX J
STORMWATER FUNDING BROCHURE

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812-372-9911
Columbus, OH
614-835-0460
Indianapolis, IN
317-423-0935
Milwaukee, WI
414-271-0771
Cincinnati, OH
513-861-5600

www.strand.com

To learn how Strand can secure funding for your project or for additional information regarding stormwater or water resources funding, please contact Jon Lindert at our Madison office, 608-251-4843 or e-mail at jon.lindert@strand.com Please also visit us at www.strand.com

Print Date: May 2008

Additional Grant Opportunities:

- Small and Abandoned Dam Removal Grant Program - WDNR
- Dam Maintenance, Repair, Modification, and Removal Grant - WDNR
- Coastal Management Grant - WDNR
- Wisconsin Waterfront Planning Grant - WDNR
- Local Water Quality Management Planning Aids - WDNR
- Urban Water Quality Grant Program - Dane County
- Plant Dane! Rain Garden Grant - Dane County

Summarized below are a number of the more popular WDNR grant programs.

Funding Type	Application Date	State/Local % Cost Share	Eligible Projects	Non-Eligible Projects	Restrictions/ Details
Urban Nonpoint Source & Stormwater Grant (UNPS&SW)–WDNR *Priority: Urban Area Water Quality-Based Projects. Planning, Design, and Construction.* *Wisconsin administers the USEPA Section 319 monies through this program.*	Approximately April 15 Annually	Planning: 70/30 Design: 50/50 Construction: 50/50 Acquisition: 50/50 ▪ Max of $85,000 for Planning Project ▪ Max of $150,000 for Construction Project ▪ Projects Involving Land Acquisition and/or Permanent Easements can request an additional $50,000.	▪ Streambank/ Shoreline Restoration ▪ Wet Detention Ponds ▪ Stormwater Utilities ▪ Stormwater Mapping ▪ Stormwater Management Plans ▪ Stormwater/ Erosion Control Ordinances ▪ Public Information/Education ▪ Street Sweepers*	▪ Best Management Practice (BMP) construction for new development ▪ Projects that are not water quality based, such as projects to solely solve drainage flooding problems ▪ Dredging Projects	▪ *Urban Area Definition*: Population Density of 1,000/sq miles or Commercial Land Use or for Planning Projects, projected to be urban in 20 years. ▪ Check NPS Ranking on *Watersheds and Lakes* List for basin priorities.
Targeted Runoff Management Grant (TRM) - WDNR *Priority: Control Polluted Runoff from both Urban and Rural Sites . . . Design and Construction of BMPs.*	Approximately April 15 Annually	70/30 up to a maximum of $150,000 50/50 for property acquisition (included in the $150,000 maximum)	▪ Streambank Restoration ▪ Wetland Construction ▪ Detention Ponds ▪ Cropland Protection ▪ Livestock Waste Management Practices ▪ Property Acquisition	▪ BMP construction for new development ▪ Projects that are not water quality based, projects to solely solve drainage/flooding problems ▪ Dredging projects ▪ Rural projects in priority watershed areas. ▪ Projects to control pollution regulated under WI law as a point source (i.e., NR 216 permitted communities). ▪ Planning projects.	▪ Design and construction of BMPs (previously construction only). ▪ No Phase I or Phase II NR 216 Permitted Communities
Municipal Flood Control Grant – WDNR *Priority: See eligible projects column . . . Planning, Design, Construction, and Administrative Activities.*	January 15, 2008 Every two years, if funding available	70/30 Maximum allowed per applicant: 20% of funding available in that grant cycle.	▪ Acquisition & Removal of Structures ▪ Floodproofing and elevation of Structures ▪ Streambank Restoration ▪ Dam Removal ▪ Fish & Native Plant Habitat ▪ Restoration ▪ Acquisition of Vacant Land for Flood Storage and Conveyance ▪ Flood collection, retention, detention, storage facilities. ▪ Flood Insurance Studies and Flood Mapping Projects		▪ Eligible projects are in order of DNR priority. (Projects near bottom have less chance of being funded.). ▪ Must have appraisal done prior to grant application forac-quisitions (must include copy with application).
Lake Planning Grant - WDNR (Large Scale) *Note: wetland restoration grants also available.*	February 1 and August 1, annually	75/25 Maximum of $10,000 per grant. Maximum of two grants per grant cycle.	▪ Physical, chemical, biological and sociological data collection ▪ Water Quality Assessment ▪ Watershed Evaluation ▪ Wetland Restoration ▪ Ordinance Development ▪ Management/Implementation plans for lake protection rehabilitation		▪ Each lake eligible for more than one planning grant with a lifetime maximum of $100,000
Lake Protection and Classification Grant - WDNR	May 1, annually Pre-application with WDNR highly recommended.	75/25 ▪ Maximum of $200,000 ▪ Maximum of $100,000 for wetland and shoreland restoration ▪ Maximum of $50,000 for regulations ordinances	▪ Purchase Property or Conservation Easement ▪ Restoration of wetlands and shorelands ▪ Development of local regulations or ordinances ▪ Lake management plan implementation projects	▪ Dam repair operation or removal ▪ Purchase of property on which a dam is located ▪ Water safety patrols ▪ Dredging ▪ Sanitary sewer septic systems ▪ Chemical treatment ▪ Aquatic plant harvesting ▪ Operation and maintenance	
River Protection Grant - WDNR ▪ Planning ▪ Management	May 1, annually	75/25 ▪ Plan: Maximum of $10,000 per grant. ▪ Management: Maximum $50,000 per grant.	▪ Plan: River organization development, information and education, water quality/fish/aquatic life assessment, non-point source assessments. ▪ Management: In-stream/shoreland habitat restoration, land/easement purchase, local ordinance development.	▪ Dam repair/operation ▪ Dredging	

*DNR will fund the incremental cost to go from a conventional brush streetsweeper to a high-efficiency sweeper when buying a new sweeper.

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Stormwater Management Funding

The Wisconsin Department of Natural Resources (WDNR) and the Federal Emergency Management Association (FEMA) have a long history of providing funding for stormwater management planning, design, and construction. Some of the WDNR and FEMA programs include Urban Nonpoint Source and Stormwater Grants (UNPS & SW), Municipal Flood Control Grants, Lake and River Planning and Management Grants, Targeted Runoff Management Grants, Clean Water Fund – Urban Runoff Loans, and FEMA – Hazard Mitigation Grants. In the last eight years, we have been successful in helping many of our clients procure stormwater and lake grants as shown in the table below.

Community	Project	Grant Type	Grant Amount
Algoma, WI	SW Quality Management Plan	U	$17,990
Algoma, WI	Regional Detention Basin Plan	U	$10,976
Bonduel, WI	Stormwater Management Plan	U	$16,450
Bristol, WI	North Lake George Flood Reduction Project	M	$333,603
Bristol, WI	Detention Pond A Restoration and Enhancement *	U	$121,000
Bristol, WI	Stormwater Quality Management Plan – Phase II	U	$19,950
Dodgeville, WI	Stormwater Utility	U	$28,840
Dodgeville, WI	Stormwater Plan	U	$21,600
Evansville, WI	Lake Leota Management Plan - Phase I and II *	L	$20,000
Fulton, WI	Rock River Property Purchase	M	$200,000
Hartland, WI	Stormwater Management Plan *	U	$35,700
Hartland, WI	Stormwater Utility	U	$42,000
Hartland, WI	Detention Basin Construction	U	$150,000
Janesville, WI	Ordinances and Regional Detention Basin Plan	U	$84,000
Lake Mills, WI	Owen Street Regional Detention Basin	U	$45,750
Lake Mills, WI	Stormwater Plan and Utility	U	$55,860
Lancaster, WI	Stormwater Utility	U	$28,000
Lancaster, WI	Kolar Property Regional Detention Facility	U	$55,920
Madison, WI	Wingra Creek Streambank Restoration *	U	$101,050
Maple Bluff, WI	Stormwater Quality Management Plan	U	$12,600
Marshfield, WI	Stormwater Utility and Ordinances	U	$73,010
Marshfield, WI	Stormwater Management Plan	U	$36,800
Monona, WI	Stormwater Utility Feasibility Study	U	$28,000
Monona, WI	Stormwater Management Plan and Mapping	U	$24,220
New Glarus, WI	Little Sugar River Streambank Restoration	TRM	$150,000
New Glarus, WI	Stormwater Management Plan	U	$23,100
New Glarus, WI	Stormwater Utility	U	$18,900
Omro, WI	Wet Detention Basin Design, Construction, and Acquisition	U	$83,300
Omro, WI	Stormwater Quality Management Plan	U	$12,250
Omro, WI	Northeast Stormwater Management Plan	U	$4,270
Onalaska, WI	Stormwater Quality Management Plan and Utility Feasibility Study	U	$46,750
Oshkosh, WI	Murdock Detention Basin Property Acquisition	M	$330,000
Oshkosh, WI	Anchorage Basin Relief Channel Construction *	M	$698,500
Oshkosh, WI	Sawyer Creek Floodway Land Acquisition	M	$101,500
Oshkosh, WI	Baldwin Detention Basin Construction	M	$200,000
Prairie du Sac, WI	Stormwater Utility	U	$30,000
Whitewater, WI	Stormwater Utility Implementation	U	$27,000
Whitewater, WI	Cravath & Tripp Lakes Stormwater & Erosion Ordinances*	L	$7,500
Whitewater, WI	Stormwater Plan and Utility	U	$57,500
		Total:	**$3,353,889**

M = Municipal Flood Control Grants
U = Urban Nonpoint Source and Stormwater Grants
L = Lake Planning and Management Grants
TRM = Targeted Runoff Management Grants

* *Project Description Inside*

Grant-Funded Stormwater Projects

Oshkosh - Anchorage Basin Flood Relief Channel

The Anchorage Basin is a 428-acre residential/commercial area in east Oshkosh currently experiencing frequent flooding. This project will convert an abandoned railroad line into a flood relief channel to alleviate this flooding. The proposed flood relief channel will provide a positive outlet to Lake Winnebago to augment the currently undersized storm sewer system serving the area. Construction and replacement of culverts are an integral component of the proposed project. An associated project in this basin, as shown in the table on the front of this brochure, is the Murdock Detention Basin. This detention basin is a component of the overall flooding relief plan for the Anchorage Basin and received funding for property acquisition.

Estimated Construction Cost: $2 million

Whitewater - Cravath and Tripp Lakes Stormwater and Erosion Control Ordinances

This project was prompted by a study showing that Year 2000 pollutant loadings were expected to result in total phosphorus concentrations in Cravath and Tripp Lakes that exceed the recommended levels for recreational use and for the maintenance of a warm-water fishery. To begin to address these findings, the City of Whitewater sought to establish administrative authority to control stormwater discharge from construction and post-construction sites. The stormwater and erosion control ordinances will minimize impacts of future development and prevent lake degradation. In addition, watershed divide and land use mapping was completed to facilitate future analysis of pollution sources and resultant water quality problems in the lake.

Technical Assistance Cost: $10,000

Whitewater - Cravath Lake Waterfront

Bristol - Pond A Restoration and Enhancement

Pond A was originally built as a flood control pond but provided minimal water quality benefits. This project rehabilitated the existing pond that had filled in with sediment and was becoming a nuisance and potential hazard because of stagnant water and steep slopes. The project design included 4:1 side slopes, a 10' safety shelf, sediment forebay, outlet control structure, 100-year emergency overflow, and shoreline/wet edge seed mix around the perimeter of the pond. The restoration brought the pond into compliance with WDNR Wet Detention Basin Standard and will remove 80% of the total suspended solids reaching the pond from the 73-acre commercial land use watershed. In addition, the pond will control peak discharge up to a 100-year storm.

Pond Construction Cost: $148,000

Bristol - Pond A (Before)

Bristol - Pond A (After)

Evansville - Lake Leota Watershed Study

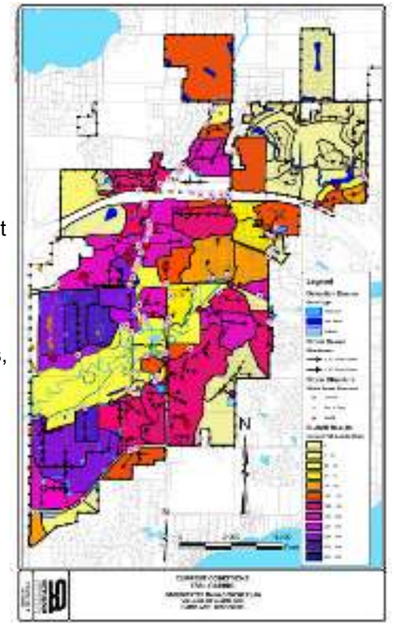
As the first step in implementing recommendations in our 2004 Lake Dredging Study, we prepared and submitted two successful Lake Planning grants for the City of Evansville. The study's ultimate goal is to identify and address upstream sedimentation and nutrient solutions in an effort to protect the City's upcoming dredging investment. Lake Leota is an impoundment of Allen Creek which originated as a mill pond in 1847. Over time, Lake Leota has filled in resulting in a current, average lake depth of 18-inches or less. This study focused on identification of source areas of nonpoint source (NPS) pollutants, estimation of pollutant loading (TSS and TP) in the lake from upstream agricultural lands and streambank erosion, exploration and recommendation of BMPs to improve watershed conditions, research of funding sources, and development of an informational and educational framework.

Technical Assistance Cost: $26,666

Hartland - Phase II Stormwater Quality Management Plan

The Village of Hartland was designated by the USEPA and the DNR as a permitted municipality under Phase 2 Stormwater Rules. In response to this designation and in an effort to protect the Bark River and other local resources, the Village budgeted funds to develop a Stormwater Management Plan. The primary objective of the plan was to reduce the adverse impacts of nonpoint source stormwater runoff discharging from the Village to adjacent water resources including the Bark River, nearby wetlands, and groundwater resources. The project mapped the urban discharge points and drainage basins within the Village, evaluated current Village practices and programs, developed SLAMM computer models to estimate pollutant loadings to each identified outfall, identified and evaluated potential types and locations of Best Management Practices (BMPs) to address impacts on stormwater runoff, developed a Capital Improvements Plan on prioritization of stormwater management practices, including stormwater management report, and assistance with grant administration.

Technical Assistance Cost: $53,000



Madison - Wingra Creek Streambank Restoration - Phase I

Wingra Creek is a major watercourse in the Lake Monona watershed, draining approximately 10 square miles of area in the City and Town of Madison, including UW-Madison Arboretum lands. The Wingra Creek watershed has experienced rapid urbanization, including significant filling of adjacent wetlands over the past century. This has contributed to significant erosion of the streambanks. The goals of this project were to restore streambanks, improve aesthetics of the watercourse, and reduce sediment loss to downstream areas. Since the creek, long ago, was a manmade channel, the City requested that we re-meander the creek to provide greater interest to the route. Streambank restoration techniques implemented on this project are: vegetated geogrid, vegetated boulder revetment, littoral shelf, sack gabions, toe stone protection, and paddling access. Two in-line stormwater treatment devices were also part of this project to help reduce sediment loads to the creek.

Technical Assistance Cost: $44,300

Vegetated Boulder Revetment Treatment

In-Line Stormwater Treatment Device

Vegetated Geogrid & Sack Gabion Treatment

APPENDIX K
UW-EXTENSION KARST BROCHURE

Groundwater

If you dig a hole and water begins to seep in, you have hit groundwater. It is simply the area beneath the land's surface where all the spaces between soil particles, or in rocks, are filled with water.

Deep soils help filter out sediment and pollutants as water from rain and melting snow percolates downward. Shallow soils are not as effective and, in karst areas, surface water may flow into the groundwater with little or no soil filtration.

In karst areas, groundwater can move 100 feet or more per day (in other areas, groundwater typically moves less than 1 foot per day). The water follow cracks in the limestone, moving deep and spreading out under the ground.

Eventually this water returns to the surface at a spring, river or lake. It can also be held deep underground for thousands of years, only reaching the surface again when pumped out of wells.

What can be done?

Once contaminants enter the groundwater, little can be done to remove them. The best, easiest and cheapest thing to do is to prevent contamination in the first place.

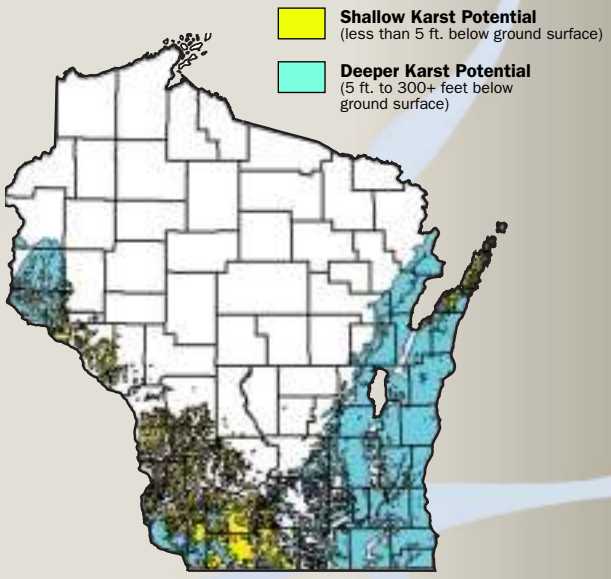
Specific suggestions can be found on the other side of this brochure.

Karst:

Why be concerned?

Where soils are shallow, karst conditions make it easier for groundwater to be contaminated with bacteria, nitrate and pesticides.

Even wells that are hundreds of feet deep can be contaminated.



Help is available

For more information about bedrock concerns, drinking water or cost-share programs, contact:

County Land and Water Conservation Departments
Public Health Departments
University of Wisconsin – Extension
USDA Natural Resources Conservation Department
Wis. Dept. of Natural Resources Service Centers
Wis. Geological and Natural History Survey
Wis. Dept. of Agriculture, Trade and Consumer Protection

Or web sites:
clean-water.uwex.edu/rockriver/groundwater
www.uwex.edu/wgnhs/karst.htm

Produced by the Rock River Coalition, Inc. and the University of Wisconsin-Extension, with funds through the Environmental Quality Incentives Program Educational Assistance funds of the USDA.

Graphics design by Brooke Wentland, UW-Extension Environmental Resources Center.

Karst

Avoid that

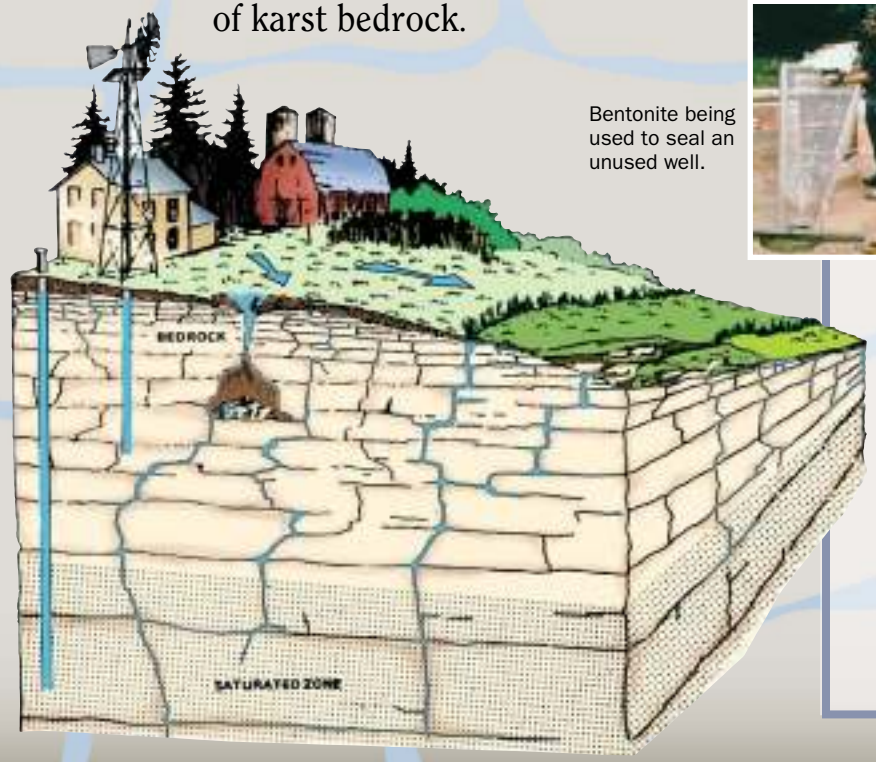
Sinking Feeling

Sinkholes, Limestone and Groundwater Contamination

Karst

What is it?

Karst refers to an area where bedrock such as limestone is easily dissolved by water. Karst regions are generally characterized by connecting cracks and layers between rocks that easily transport water and pollutants to the groundwater. Sinkholes, shallow soils, sinking streams and springs are found in areas of karst bedrock.



In karst areas, groundwater is threatened by:

Contaminated water from

- ✔ Barnyards and other areas where manure accumulates.
- ✔ Cropland where chemicals and manure are applied.
- ✔ Septic systems and household waste disposal.
- ✔ Roads and other paved areas.

This is a typical karst spring, but not all springs bubble out of karst areas. Many springs in Wisconsin flow out of deep gravel and sand deposited by the glaciers.

Sinkholes like the one above are often used to dispose of unwanted junk. Sometimes this junk can contaminate a well miles away.

Caves such as this one can be an important home for bats and hibernating animals.

The fractures in the bedrock under shallow soil can be seen during a drought. The alfalfa was able to send deep roots down into the moist soil that had accumulated through the cracks.

Take action to prevent groundwater contamination in karst areas

Bentonite being used to seal an unused well.

In the community

- Use care when planning and constructing roads and ditches to avoid runoff draining into cracks in the bedrock.
- Provide “clean sweep” programs to properly dispose of home, business and farm chemicals.
- Consider geology and groundwater in land use planning.

Around the home

- Properly seal unused wells.
- Test wells annually for nitrate and bacteria.
- Pump your septic system at least every three years.

The water along this ditch disappears into a sinkhole, carrying with it oils, lead, salt and other chemicals from roadways.

On the farm

- Grow a grass buffer 10 - 200 feet wide, depending on site conditions, around sinkholes and crevices.
- Do not apply manure, fertilizers, pesticides or other agricultural chemicals near sinkholes.
- Any manure applied near sinkholes should be incorporated into the soil as soon as possible.

  See your NRCS or LCD office for site-specific guidelines.
- Divert water away from sinkholes and crevices.
- Do not dispose of chemical containers, dead animals, or anything else in sinkholes.

A sinkhole without a protective berm before and during flooding. A berm would have prevented runoff containing fertilizers and pesticides from draining into the sinkhole.

APPENDIX L
INFORMATION AND EDUCATION PLAN FRAMEWORK

INFORMATION AND EDUCATION PLAN FRAMEWORK UW–L

We recommend initiating a program to educate University employees and residents of measures that they can take to reduce nonpoint source discharges to surrounding water resources. The information and education program is intended to raise awareness among individuals and organizations concerning stormwater runoff and the measures that can be taken to minimize its harmful effects. Measures may include the following:

1. Distribute leaflets and pamphlets regarding such topics as proper usage of lawn care products, disposal of oil and other car care products, proper approaches to vehicle washing, pet waste collection, water conservation practices for homeowners, proper disposal of household hazardous wastes. Preprinted materials may be available from sources such as the UW-Extension, DNR, La Crosse County, or the City of La Crosse to minimize development costs. These may be distributed at such locations as student orientations, Murphy Library, or in relevant coursework. Murphy Library may be a good location to be a repository of the pamphlets and leaflets.

2. Provide educational displays/booths on how to improve water quality at various public events and gatherings including student orientations. Students from the Environmental Studies minor program, Campus Progressives group, or other campus organizations could man the booths to answer questions and hand out educational materials.

3. Develop newsletter articles for publication in campus organization newsletters.

4. Bring experts in the stormwater field to the University to give presentations with extensive advertisement to the target student population.

5. Stencil storm drains to discourage dumping of oil and other pollutants. A cost-effective approach may be to work with Boy Scout and other groups and school organizations to promote this activity as an educational program.

6. Include stormwater information resources on the University's Web site.

7. Work with the City of La Crosse to provide information and education in a joint effort, where feasible.

8. Track public information/education activities for annual reporting to the DNR once a Phase II permit is issued. Tracking should include numbers of leaflets, pamphlets, etc., distributed and related information regarding the items above.

9. Develop a schedule of when each of these items will be implemented by the University once the Phase II permit is issued.

APPENDIX M
ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM FRAMEWORK UW-L

A. Rationale for Priority Areas and Outfalls to be Screened and Tested

The UW-L campus has only one major outfall (36-inch-diameter or equivalent) and only one other outfall near campus. It is proposed to screen, test, and eliminate any illicit discharges from these two outfalls. The major outfall is technically on City of La Crosse property, so the campus could also discuss having the City perform this work. See Figure 3.02-1 for the major outfall locations. Table M-1 shows the outfalls near campus and their associated sewershed areas in acres.

Outfall ID	Size	Drainage Basin	Sewershed Area	Comments
1	60"	G and Cross-connected Upstream	Further Investigation Needed	On City property
2	24”	H	Further Investigation Needed	Drains yard and parking lot

Table M-1 Outfalls on UW-L Campus and Associated Sewershed Areas

B. Schedule for Screening and Testing

Table M-2 shows a proposed schedule of screening and testing for illicit discharges to the outfalls within proximity of UW-L campus.

Year	Activity
2006	Illicit Discharge Screening and Testing of 2 outfalls
2007	Complaint and Event Driven Illicit Discharge Screening and Testing
2008	Illicit Discharge Screening and Testing of 2 outfalls
2009	Complaint and Event Driven Illicit Discharge Screening and Testing
2010	Illicit Discharge Screening and Testing of 2 outfalls
2011	Complaint and Event Driven Illicit Discharge Screening and Testing
2012	Illicit Discharge Screening and Testing of 2 outfalls
2013	Complaint and Event Driven Illicit Discharge Screening and Testing

Table M-2 Proposed Schedule for Illicit Discharge Screening and Testing

C. Methodologies to be Used for Determining Sources

The intention of the Field Screening Analysis is to provide a preliminary determination about the existence, extent, and location of illicit connections and illegal dumping. The analysis identifies sources of nonstormwater to the UW-L campus municipal separate storm sewer system (MS4). During dry weather, separate storm sewers may convey a variety of legally and illegally discharged substances that originate from illicit connection with sanitary sewers and/or industrial discharges, improper disposal

of wastes, wastewater and liter, spills, leaking sanitary sewage systems, malfunctioning septic tanks, and infiltration of groundwater polluted by a variety of sources including leaking storage tanks. Nonstormwater discharges to separate storm sewers occur in a haphazard and apparently random manner; they can occur in any segment of the system at any time; and they can have a continuous or intermittent flow. The intention of the NPDES stormwater regulations is to eliminate illicit discharges, as identified in the regulations, to the UW-L campus separate storm sewer system. However, some illicit discharges may not have to be eliminated in the UW-L Campus Stormwater Management Plan and may be allowed under terms of an NPDES permit if identified as not being sources of pollutants to waters of the United States. Also, in terms of this permit application, the campus is required only to do illicit discharge screening at all major outfalls, not all outfalls.

Field Screening will be completed on the above schedule and at the above three locations. For these locations, the attached “Field Screening for Illicit Connections” data sheet will be prepared that will narrate general information, field site description, dominant watershed land uses, photographs, and visual observations such as odor, color, turbidity, presence of oil sheen, presence of surface scum, clarity, floatables, deposits, stains, vegetative condition, structural condition, and biological condition.

If and when flow is observed at the three locations, two grab samples will be collected during a 24-hour period with a minimum period of four hours between samples. In addition to completing a narrative data sheet mentioned above, flow estimation measurements will be taken. Field screening analyses will also include pH and total chlorine, total copper, total phenol, and detergents or surfactants. Test kits using analytical methods approved under 40 CFR 136 will be used during field screening. Commercially available field test kits will be used for the parameters defined above. No laboratory analysis is anticipated or known to be required.

D. Procedures for Investigation of Illicit Discharges

The following is a list of procedures for the investigation of illicit discharges.

1. Conduct Field Screening.
2. Conduct Manhole to Manhole surveillance observations upstream from observed discharges.
3. Test discharges and suspected source.
4. Request voluntary compliance measures.
5. Follow ordinance/guideline enforcement procedures if compliance is refused.
6. Implement procedures to look for and eliminate illicit discharges discovered during normal operations.

FIELD SCREENING FOR ILLICIT CONNECTIONS

Site Number: _____
Inspection Date: _____
Inspector: _____
Site Name: _____
Site Street Address: _____
Description of Site: _____

Is Flow Present? ☐

* * * * *

Grab Sample 1 Date: _____ Time: _____
Color: _____ Surface Scum: _____
Odor: _____ pH: _____
Turbidity: _____ Cl Total: _____
Oil Sheen: _____ Cu Total: _____
Flow Rate: _____ Phenol: _____
Detergents: _____
Comments: _____

* * * * *

Grab Sample 2 Date: _____ Time: _____
Color: _____ Surface Scum: _____
Odor: _____ pH: _____
Turbidity: _____ Cl Total: _____
Oil Sheen: _____ Cu Total: _____
Flow Rate: _____ Phenol: _____
Comments: _____ Detergents: _____

APPENDIX N
UW-LA CROSSE 2005 TURFGRASS MANAGEMENT PLAN

UNIVERSITY OF WISCONSIN-LACROSSE
Landscape Services
Peter F. Bemis, Landscape Architect

Turfgrass Management Plan for 2003

April Turn on all irrigation systems, repairs as necessary
Vertidrain aerifier on stadium field and football practice fields, pull cores
Aer-a-va-tor aerifier on all sportsturf fields
Overseed stadium field, three passes in three directions
Aer-a-va-tor aerifier on all campus turfgrass areas
Overseed practice fields that will be closed off
Overseed campus where necessary to reestablish turfgrass
Light fertilizer (.5 lb/1000) on all sportsfields, per soil test recommendations

May Overseed practice fields that are to be closed off, (second and third pass), install fencing to keep people off of these fields
Aer-a-va-tor aerifier on all sportsturf fields
Broadleaf control immediately after end of semester when campus is vacant, do not spray newly seeded areas
Aerifying and reseeding damage to practice fields that are a result of intramural softball

June Aer-a-va-tor aerifier on all sportsfields
Vertidrain aerifier on football practice fields and stadium field
Fertilize, per recommendations, at 1 lb. of Nitrogen/1000 sq. ft.
Broadleaf control on fields, spot treatment

July Aer-a-va-tor aerifier on all sportsfields
Vertidrain aerifier on football practice fields and stadium

August Aer-a-va-tor aerifier on all sportsfields
Aerator on football practice fields
Vertidrain stadium field before the start of high school season
Fertilize, per recommendations, at 1 lb of Nitrogen/1000 sq. ft.

September Overseed campus where necessary to reestablish turfgrass
Aerator aerifier for all sportsfields
Vertidrain stadium field
Fertilize stadium at .5 lb/1000

October Aer-a-va-tor aerifier on all sportsfields
Fertilizer, late month, per recommendations at 1 lb. of Nitrogen/1000 sq.ft
Late month, winterize irrigation systems
Odd number years-collect soil samples for testing

November Plow and sweep fields as necessary for football practices and games

December specify and bid fertilizer requirements based on results from soil sample

APPENDIX O
CITY OF LA CROSSE NOI TO APPLY FOR NR 216 PHASE II PERMIT
(MARCH 2003)

CITY OF LA CROSSE
DIRECTOR OF PUBLIC WORKS

400 La Crosse St
La Crosse WI 54601-3396
Phone (608) 789-7599
Fax (608) 789-8322

Patrick Caffrey, P.E.
Director
caffreyp@cityoflacrosse.org

Anthony Hutchens, P.E.
Assistant Director
hutchensa@cityoflacrosse.org

Sean Hutchison
Public Works Specialist
hutchisons@cityoflacrosse.org

Jane Mueller
Clerk Steno
muellerj@cityoflacrosse.org

March 7, 2003

Wisconsin Department of Natural Resources
Storm Water Program – WT/2
PO Box 7921
Madison WI 53707-7921

Dear Sir or Madam:

Enclosed is the completed Notice of Intent to Apply for Coverage Under Municipal Storm Water Discharge Permit for the City of La Crosse.

If there are any questions regarding this submittal please contact me.

Sincerely,

Patrick Caffrey, P.E.
Director of Public Works

CC: Mark Johnson, Utilities Manager
Greg Paul, Wastewater Superintendent
Rick Doering, Assistant Superintendent of Sewers
Ken Dentice, Director of Building & Inspections
Dave Esser, Engineering Department

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Notice of Intent to Apply for Coverage Under Municipal Storm Water Discharge Permit

Owners and operators of small Municipal Separate Storm Sewer Systems (MS4) within an "Urbanized Area" as defined in 40 CFR 122.32(a)(1), must apply to the Wisconsin Department of Natural Resources (Department) for coverage under a MS4 permit by March 10, 2003, in accordance with 40 CFR 122.33(c)(1). This Notice of Intent form is provided for your voluntary use in applying for coverage under a general MS4 storm water permit that will be issued by the Department. The Department is revising ch. NR 216, Wis. Adm. Code, to comply with the new federal Phase II storm water regulations. After the revisions take effect, the Department will issue a general MS4 storm water permit authorizing storm water discharges from MS4s.

Workshops: There are 5 workshops scheduled across the state to provide assistance in filling out this NOI form in January 2003. See the enclosed sheet for more details on these workshops.

Questions: If you have any questions, feel free to call your Department contact as indicated on the enclosed Wisconsin DNR Municipal Contact List.

Return this completed form to:

Wisconsin DNR
Storm Water Program – WT/2
PO Box 7921
Madison, WI 53707-7921

General Information

Owner/Operator:	City of La Crosse		
Address:	Public Works, 400 La Crosse St.		
City:	LA CROSSE	State: WI	Zip: 54601
Contact Person:	Patrick Caffrey		
Phone Number:	608-789-7599	E-mail Address:	caffreyp@cityoflacrosse.org

MS4 Area Served: Estimate the area served by and the population within the MS4 in an Urbanized Area (UA). Urbanized Area maps are available on the EPA web site at: http://cfpub1.epa.gov/npdes/stormwater/urbanmaps.cfm

MS4 area served within UA (in square miles): 22.08 (Total City) 18.1 in UA +/-

Population residing within MS4 UA: 51,818 (2000 Census)

Potential Permit Exemption: The Department may be able exempt permit coverage for certain MS4s that serve less than 1000 people in an Urban Area provided the MS4 does not contribute substantially to the pollutant loadings of a physically interconnected MS4 and the MS4 does not contribute to the water quality impairment of a surface water.

Do you believe that your MS4 may be eligible for this potential exemption: YES or (NO)

Notice of Intent to Apply for Coverage Under Municipal Storm Water Discharge Permit
City of La Crosse Wisconsin

Public Education & Outreach: Describe existing programs or activities in your municipality that can be used to comply with this proposed requirement.

The City has worked with school groups, scouting groups, and similar organizations to stencil "DRAINS TO RIVER" on catch basins, but only a small portion of the catch basins in the City have been marked. Beginning in 2003 all new catch basin castings purchased will have a similar message cast into the metal.

The City distributes brochures to all residential structures of four units or less describing proper disposal of yard waste, and also issues Public Service Announcements in the fall telling residents not to put leaves in the street or gutter. Our brochures promote on-site composting.

The City of La Crosse web site for the Building and Inspections Department lists erosion control as a required inspection for building construction projects. Erosion control requirements are provided to contractors when a building permit is obtained.

The City has installed signs at locations popular with people walking their dogs asking dog owners to pick up and properly dispose of dog waste.

The City is participating with La Crosse County and other La Crosse County municipalities in funding and staffing a household hazardous waste site. This facility should be constructed in 2003.

All subdivision developers, contractors, and homeowners seeking plat approvals or building permits are made aware of erosion control requirements.

City staff have spoken to and sent letters to many restaurants, bars, carpet cleaning services, and other commercial enterprises that have used or have been suspected of using storm sewers for disposal of contaminated water. This action has been reactive rather than proactive however.

The City has adopted a shoreline zoning ordinance to protect waterfront property from erosion and development too close to the water's edge.

Do you believe that your current programs or activities fully satisfy the public education and outreach requirements?

No

Public Involvement and Participation: Describe existing programs or activities in your municipality that can be used to comply with this proposed requirement.

The City has solicited and received considerable public input on ordinances related to erosion control and shoreland and floodplain zoning.

The City has worked with school groups, scouting groups, and similar organizations to stencil "DRAINS TO RIVER" on catch basins, which has successfully involved area youth in a program to protect storm water quality.

Do you believe that your current programs or activities fully satisfy the public involvement and participation requirements? Yes or No

No

Notice of Intent to Apply for Coverage Under Municipal Storm Water Discharge Permit
City of La Crosse Wisconsin

Illicit Discharge Detection & Elimination: Describe existing programs or activities in your municipality that can be used to comply with this proposed requirement.

A number of large industries are permitted and inspected annually as part of the City's Industrial Pretreatment Program. DNR has also issued individual storm permits to some of these industrial sites. The City, as part of our wastewater industrial pretreatment program, checks for and requires appropriate spill containment in permitted industrial facilities to reduce the probability of spilled chemicals reaching sanitary or storm sewers.

The City is participating with La Crosse County and other La Crosse County municipalities in funding and staffing a household hazardous waste site. This facility should be constructed in 2003. It is hoped this will reduce the temptation for citizens to dispose of toxic or hazardous wastes in storm or sanitary sewers.

Projects were completed in the 1960's and 1970's to construct separate storm and sanitary sewer systems, and to the best of our knowledge all sanitary connections to storm sewers have been eliminated, and no combined sewers exist.

Some community projects were completed in the past to stencil inlets into the storm sewer system, and new catch basin castings will have wording cast into them indicating the sewer drains directly to the river.

The City's Recycling Program includes information describing proper disposal methods for items sometimes dumped into the storm sewer system (EXAMPLES: waste oil, pet waste, yard waste, etc.). City properties receive semi-annual mailings with this information.

The City responds immediately to all notifications by citizens and City employees of illicit discharges when the discharge event is observed, or contamination is noted at an outfall. We have readily available maps of the storm sewer system to trace outfall contamination upstream to the source if the illicit discharge continues long enough or leaves evidence in the sewers or manholes to allow tracing.

The City has a procedure in place so employees know who to notify and what actions to take if a spill of a hazardous or toxic material or pollutant should occur.

Current City ordinances include sections listing and describing prohibited discharges to storm sewers and include enforcement provisions.

Do you believe that your current programs or activities fully satisfy the illicit discharge detection and elimination requirements?

No

Notice of Intent to Apply for Coverage Under Municipal Storm Water Discharge Permit
City of La Crosse Wisconsin
Page 4 of 6

Construction Site Pollution Control: Describe existing programs or activities in your municipality that can be used to comply with this proposed requirement.

The City of La Crosse has a comprehensive erosion control ordinance that was adopted in 1995. This ordinance mandates erosion control for subdivision development and for individual construction sites where more than 4,000 SF of land will be disturbed, or more than 2,000 SF on land with a slope of 20% or greater, more than 400 CY of excavation or fill, alteration of any watercourse, or more than 300 LF of trenching.

The erosion control requirements were developed in cooperation with the La Crosse County Department of Land Conservation and the Wisconsin DNR. This ordinance also regulates storm water peak flow rates to pre-development levels. Requirements include compliance with the Wisconsin Construction Site Best Management Practice Handbook.

Erosion control for all building permits issued by the City of La Crosse is inspected by Wisconsin Certified Inspectors. The City has municipal citation and stop work authority.

The City has developed standard specifications for the implementation of erosion control, and includes these specifications in all City construction contracts involving excavation or other earth work.

Do you believe that your current programs or activities fully satisfy the construction site pollution control requirements? Yes or No.

No. City of La Crosse requirements may satisfy the requirements of NR 151.11 and 151.23, but we had not yet verified through modeling that the City's regulations are adequate to assure an 80% reduction in sediment transport and the other requirements of NR 151.

Post Construction Site Storm Water Management: Describe existing programs or activities in your municipality that can be used to comply with this proposed requirement.

The City has best management practices in place to reduce pollution from public streets following construction, including street sweeping, catch basin cleaning, de-icing materials management, yard waste collection and regulations, etc.

The City has a program to regularly inspect and maintain storm water conveyance and sedimentation facilities that are owned by the City.

The City does require controls on post development peak runoff, generally to not exceed pre-development peak flow rates.

Do you believe that your current programs or activities fully satisfy the post-construction site storm water management requirements? Yes or No.

No.

Notice of Intent to Apply for Coverage Under Municipal Storm Water Discharge Permit
City of La Crosse Wisconsin

Pollution Prevention: Describe existing programs or activities in your municipality that can be used to comply with this proposed requirement.

1. The wastewater treatment plant has a Storm Water Pollution Prevention Plan.
2. Storm lift station wet wells are cleaned once per year to remove sediment.
3. Chemical storage at pretreatment permitted industrial facilities is inspected on a limited basis as part of the annual inspection.
4. The City has a catch basin cleaning program, although the cleaning frequency is not adequate to keep sediment levels below the elevation of the discharge pipe.
5. Information mailed as part of the City's Recycling Program addresses the potential affects of placing yard waste and other similar materials in the street. A city ordinance prohibits placing leaves, grass clippings or other waste material in the street or gutter.
6. The City provides two yard waste drop off sites, and provides curbside collection of yard waste in appropriate containers on a bi-weekly schedule.
7. The City provides collection of bulk leaves in the autumn from the boulevard, and instructs citizens through public service announcements and recycling brochures not to put leaves in the street or gutter.
8. The City stores deicing salt inside a building specifically designed to contain salt.
9. The City has an aggressive street sweeping program, with streets in the central business district swept twice weekly when temperatures are above freezing. Most other streets in the City with curb and gutter are swept approximately every ten working days except during winter.
10. Any blended sand-salt that is left at the end of the winter season is covered under a large tarp to prevent leaching of salt.
11. Winter programs for snow and ice control attempt to control and limit the quantities of chemical de-icing materials used.
12. Street sweeping is started as soon as possible in the spring to pick up as much sand and street debris as possible before it is washed into the storm sewer system by spring rains.
13. The City has a policy in place to prevent waste materials from sand blasting or pressure washing of buildings, etc. from entering the storm water system.

Do you believe that your current programs or activities fully satisfy the pollution prevention requirements? Yes or No

No

Notice of Intent to Apply for Coverage Under Municipal Storm Water Discharge Permit
City of La Crosse Wisconsin

Storm Sewer System Map: Describe existing storm sewer system mapping in your municipality that can be used to comply with the proposed requirement.

The current storm sewer system maps include the following information:

1. The municipal separate storm sewer system.
2. The City of La Crosse municipal boundary.
3. The size and location of all storm water outfalls.
4. The identification of publicly owned parks, recreational areas and other open lands.
5. The identification of public streets.

The City currently has a consultant preparing digital maps of the City's storm sewer system to replace the paper maps currently used. The digital maps should be available before the end of 2003. The City has maps showing publicly owned parks, recreational areas, and open lands.

Do you believe that your current storm sewer maps fully satisfy the storm sewer system map requirements? YES or NO

No.

APPENDIX P
GRANTS AVAILABLE FOR STORMWATER FUNDING

P.01 DNR GRANTS

The DNR Urban Nonpoint Source and Storm Water Management Grants Program is a state-level grant program that facilitates implementation of the NR 151 urban (nonagricultural) performance standards. Appendix J includes a brochure produced by Strand Associates that describes some of the more popular DNR grant programs. The following programs are available:

- Urban Nonpoint Source and Stormwater Grant
- Targeted Runoff Management Grant
- Municipal Flood Control Grant
- Lake Planning and Management Grant
- River Protection Planning and Management Grant

P.02 NATIONAL INTEGRATED WATER QUALITY PROGRAM

The *National Integrated Water Quality Program (NIWQP)*, a cooperative program of the USDA *Cooperative State Research, Education, and Extension Service (CSREES)* provides funding for research, education, and extension projects aimed at improving water quality in agricultural and rural watersheds. Funding is only available to universities, and awards are made in four program areas–National Facilitation Projects, Regional Coordination Projects, Extension Education Projects, and Integrated Research, Education and Extension Projects. The CSREES NIWQP has identified eight "themes" that are being promoted in research, education, and extension. The eight themes are:

1. Animal manure and waste management
2. Drinking water and human health
3. Environmental restoration
4. Nutrient and pesticide management
5. Pollution assessment and prevention
6. Watershed management
7. Water conservation and agricultural water management
8. Water policy and economics

P.03 FEDERAL GRANTS

Funding for 2004 totaled approximately $8.7 million, and University of Wisconsin-Madison was one of the universities awarded grants from this program in 2004. For more information, visit http://www.usawaterquality.org/default.html.

For a catalog of federal grant programs available, visit the website http://cfpub.epa.gov/fedfund/. Specifically, many funding opportunities are available to education and research institutions.

The Catalog of Federal Funding Sources for Watershed Protection Web site is a searchable database of financial assistance sources (grants, loans, cost-sharing) available to fund a variety of watershed protection projects. To select funding programs for particular requirements, use either of two searches

below. One is based on subject matter criteria, and the other is based on words in the title of the funding program.

Criteria searches include the type of organization (e.g., non-profit groups, private landowner, state, business), type of assistance sought (grants or loans), and keywords (e.g., agriculture, wildlife habitat).

Contact Information on the Web site

For more information about the Catalog of Federal Funding Sources for Watershed Protection, or to submit changes or additions to the Web site, please contact the Watershed Academy at:
E-mail: wacademy@epa.gov

- **Everything.**
- **In one place.**
- **Click on over!**

Visit the Web site at:
www.epa.gov/watershedfunding

INFORMATION = POWER (and Funding!)

- ***Agricultural impacts?***
- ***Runoff from developed areas?***
- ***Failing septic systems?***
- ***Stream restoration?***

Find sources for the support you need for working in your watershed!

U.S. Environmental Protection Agency
Office of Wetlands, Oceans and Watersheds
Mailcode 4503T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

EPA 841-F-03-001
March 2003

Check out the simple, searchable Web site for federal funding sources today!

Visit the Web site at:
www.epa.gov/watershedfunding

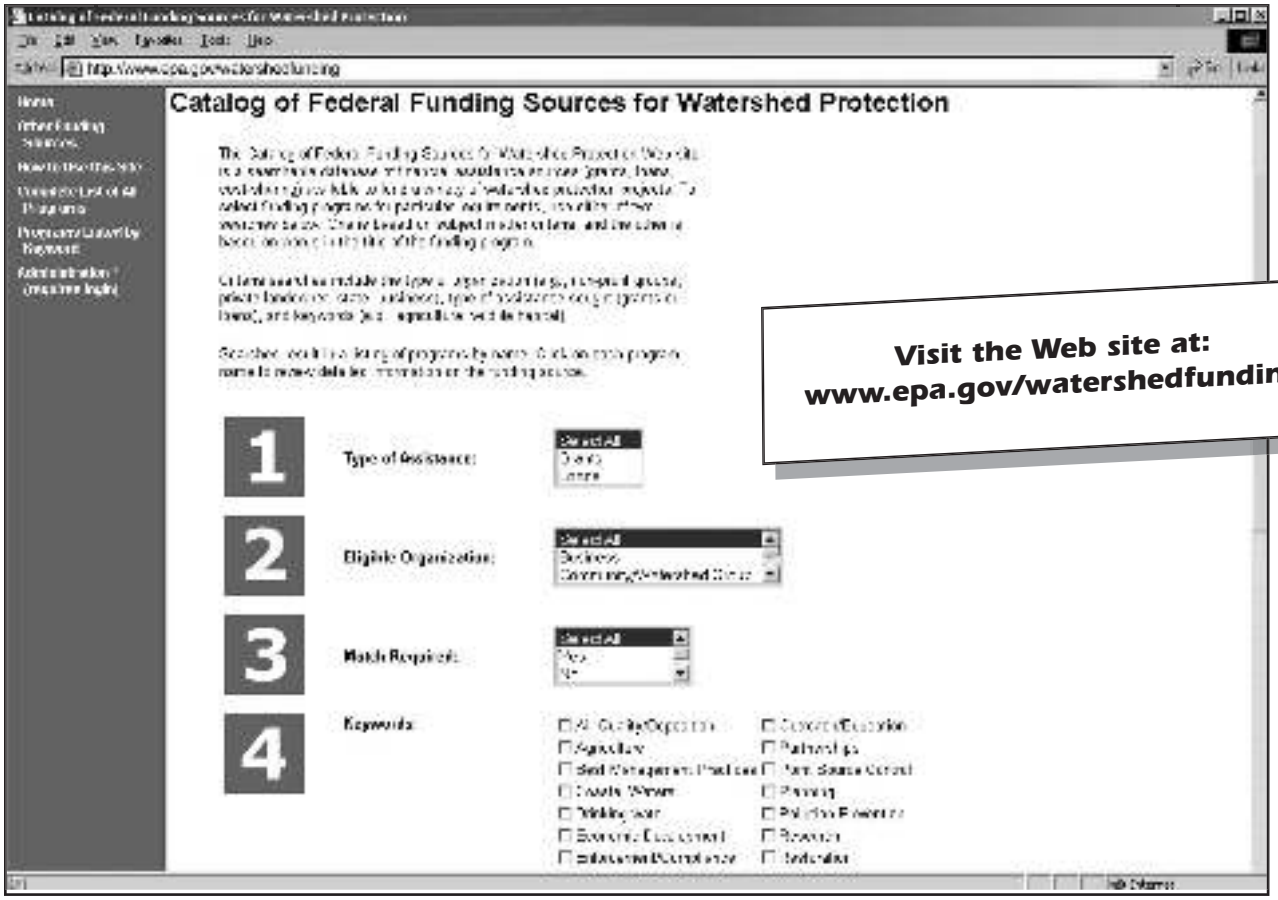
Catalog of Federal Funding Sources for Watershed Protection

Do you need funding for your watershed project?

Visit the new, easy to use, searchable Web site to find federal funding for watershed projects.

Visit the Web site at:
www.epa.gov/watershedfunding

Bringing Funding to Watersheds



Visit the Web site at:
www.epa.gov/watershedfunding

The U.S. Environmental Protection Agency has developed a searchable, interactive Web site to support watershed stakeholders' efforts to secure funding to implement watershed protection projects.

- The Web site offers users access to a database of approximately 100 programs offering financial assistance (grants, loans, cost-sharing) specially geared towards watershed-related projects.
- Users input their program specifications and/or topic keywords to generate a list of funding programs for which they are eligible. The list is hyperlinked to detailed information on each program.
- Users can also browse through a complete listing of programs, or click on a specific keyword to browse a list of programs associated with the keyword.

Drill down into each program in the Web site to see:

- Brief descriptions of programs
- Contact information
- Funding history
- Typical past awards
- Eligibility requirements
- Application deadlines
- Matching funds/criteria requirements

About the Web site

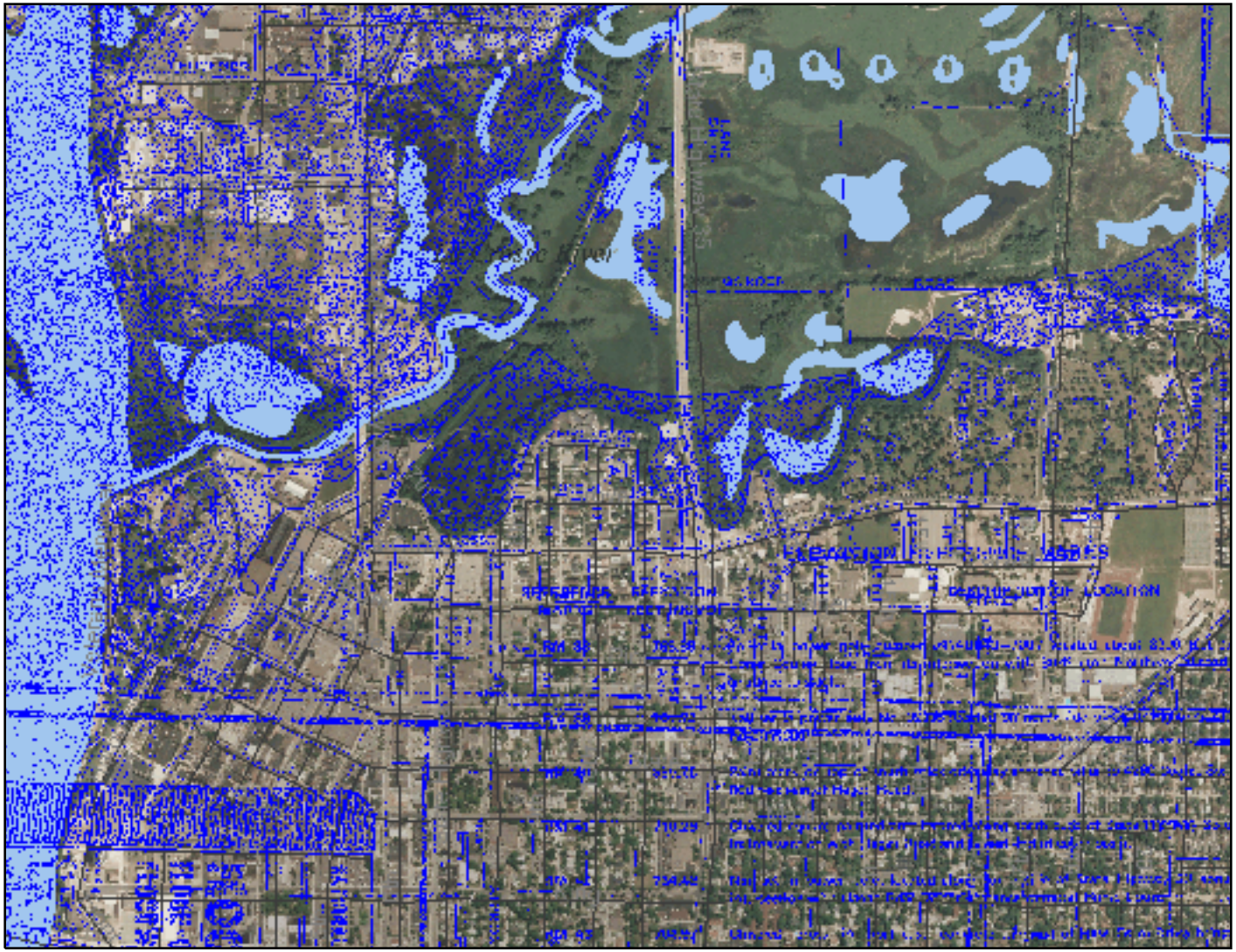
This searchable Web site updates EPA's Catalog of Federal Funding Sources for Watershed Protection (Second Edition) printed in 1999 (EPA 841-B-99-003). This Web site does not present sources that offer only technical assistance. In addition, it also does not contain information about small, site-specific federal sources or non-federal sources. EPA's Office of Water will be updating the Web site on an ongoing basis.

Other Funding Sources:

The Web site provides users with an extensive listing of public and private sector sources, such as publications and funding-related Web sites that might help secure additional sources of funding. Click the "Other Funding Sources" link to check it out.

APPENDIX Q
LA CROSSE AND MISSISSIPPI RIVER FLOODPLAINS

Map Created on Apr 11, 2008



Legend

- Local Roads
- Digital Flood Boundaries (Where available)
- Floodway
- AE, Floodfringe
- A, Floodfringe
- 500 Year
- 24K Open Water
- 24K Rivers and Shorelines

0 1500 3000 4500 ft.

Scale: 1:15,516

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: Appendix Q - LaCrosse and Mississippi River Floodplains from DNR Surface Water Data Viewer

APPENDIX R
PUBLIC MEETING SLIDES AND ATTENDEE LIST

Overview

- Introduction, Goals, & Scope of Study
- Pertinent Code
- Problem Areas
- Existing Stormwater Management Practices
- Anticipated/Proposed Campus Development
- Anticipated Stormwater Management Efforts
- Implementation Plan
- Recommendations
- Funding Opportunities

Introduction

- Much of development occurring in watershed was prior to advent of strong stormwater guidelines
- Resulted in several areas with stormwater quality and quantity issues
- Management plan will address ways to mitigate existing problems and suggest ways to decrease impacts of further development

Goals

- Develop orderly plan for stormwater runoff.
- Suggest methods to address existing stormwater problems.
- Develop uniform policy to address future stormwater issues.
- Identify actions necessary to be consistent with local municipality stormwater issues.
- Identify actions necessary to be consistent with Phase 2 EPA National Pollutant Discharge Elimination System (NPDES) Stormwater requirements.
- Identify actions necessary to be consistent with NR 120, NR 151, and NR 216 Performance Standards.

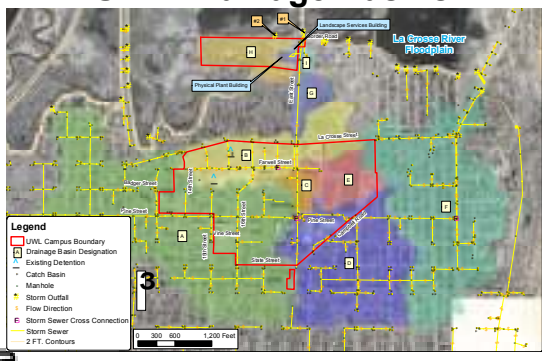
Scope of Study

- Stormwater System Mapping
- Proposed/Anticipated Campus Development
- Existing Stormwater Management Practices
- Problem Area Identification
- Regulatory Environment Research and Proposed Performance Standards
- Anticipated Stormwater Management Efforts/Recommendations
- Infiltration Assessment
- Information and Education Discussion/Outline
- Policies and Practices
- Implementation Plan
- Preparation of Project Report

Pertinent Code

- NPDES/WPDES Phase II Permits
- DNR Runoff Management – NR 151
- Priority Watersheds and Lakes – NR 120
- Local Ordinances
- Department of Commerce Regulations
- Other WPDES General Discharge Permits
- Proposed Stormwater Guidelines for UWL Campus

UWL Drainage Basins

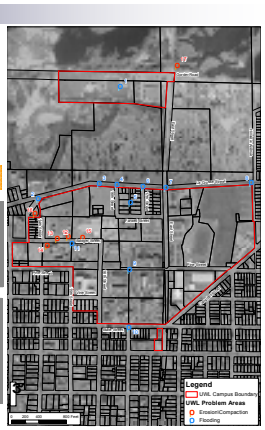


UWL Infiltration Potential

Problem Areas

Flooding

Erosion/Compaction



Existing Stormwater Management Practices -Pollution Prevention on Campus

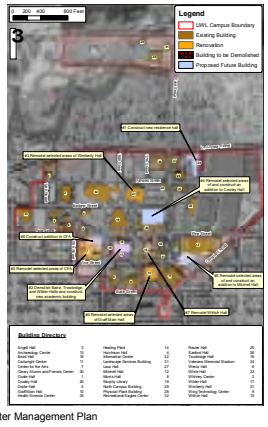
- Street Sweeping/Deicing Management
- Yard Waste, Fertilizer, and Pesticide Management
- Municipal Garage and Storage Area Management
- Existing Structural BMPs

Existing Stormwater Management Practices - Miscellaneous

- BMPs for New Construction
- Public Education and Outreach – No Program
- Spill Prevention Control – March 2004 SPCC

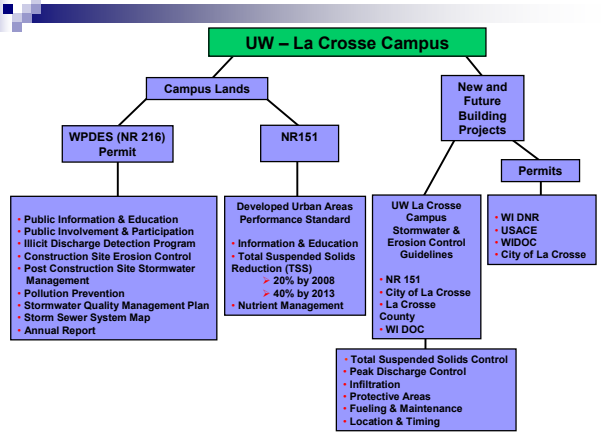
Anticipated Campus Development

Campus Physical Development Plan, 2005-2011



Anticipated Stormwater Management Efforts

- Stormwater Management to Comply with Phase II Permit
- Stormwater Management to Comply with NR 151 on Campus
- Stormwater Management for New Building Projects
- Stormwater Management for Future Building Projects
- Permits Necessary for Typical Building Projects
- Stormwater Management Efforts To Alleviate Existing Flooding Problems
- Stormwater Management Efforts to Alleviate Existing Compaction & Erosion Problems



Phase II Permit – Information and Education

Information and Education Plan Framework
University of Wisconsin – La Crosse

We recommend initiating a program to educate University employees and residents of measures that they can take to reduce nonpoint source discharges to surrounding water resources. The information and education program is intended to raise awareness among individuals and organizations concerning stormwater runoff and the measures that can be taken to minimize its harmful effects. Measures may include the following:

1. Distribute leaflets and pamphlets regarding such topics as proper usage of lawn care products, disposal of oil and other car care products, proper approaches to vehicle washing, pet waste collection, water conservation practices for homeowners, proper disposal of household hazardous wastes. Preprinted materials may be available from sources such as the UW-Extension, WDNR, La Crosse County, or the City of La Crosse to minimize development costs. These may be distributed at such locations as student orientations, Murphy Library, or in relevant coursework. Murphy Library may be a good location to be a repository of the pamphlets and leaflets.
2. Provide educational displays/booths on how to improve water quality at various public events and gatherings including student orientations. Students from the Environmental Studies minor program, Campus Progressives group, or other campus organizations could man the booths to answer questions and hand out educational materials.
3. Develop newsletter articles for publication in campus organization newsletters.
4. Bring experts in the stormwater field to the University to give presentations with extensive advertisement to the target student population.
5. Stencil storm drains to discourage dumping of oil and other pollutants. A cost-effective approach may be to work with Boy Scout and other groups and school organizations to promote this activity as an educational program.
6. Include stormwater information resources on the University's Web site.
7. Work with the City of La Crosse to provide information and education in a joint effort, where feasible.
8. Track public information/education activities for annual reporting to the DNR once a Phase II permit is issued. Tracking should include numbers of leaflets, pamphlets, etc., distributed and related information regarding the items above.
9. Develop a schedule of when each of these items will be implemented by the University once the Phase II permit is issued.

Phase II Permit – Potential BMPs

Campus Pollution Prevention

SWPP Component	Comments
Inspection & Maintenance of Existing Stormwater Management Facilities	Perform maintenance and track activities.
Street Sweeping and Catch Basin Cleaning and Proper Disposal of Generated Waste	Identify Locations of Sumps Develop Targeted Inlet Cleaning Plan. Track miles of street sweeping Track Sediment removed from sumps
Road Salt and Deicer Application at Minimum Rate to Maintain Public Safety	Track quantities of sand, salt, and deicer Track daily weather conditions
Leaf and Grass Clipping Collection Management	Continue current program Assess for future improvements
SWPP for Physical Plant and Vehicle Maintenance	Continue current program Assess need for improvements at storage areas Track pounds of oil recycled
Lawn and Garden Fertilizer Application	Continue current program Track fertilizer use each year

Stormwater Management for New Building Projects

- New Residence Hall
  - Erosion control, stormwater inlet sumps, in-line stormwater treatment devices, grass buffer
- New Academic Building
  - Erosion control, rain garden
- Cowley Hall parking Lot Reconstruction/Addition
  - Erosion control, in-line stormwater treatment device
- Mitchell Hall Addition
  - Erosion control, in-line stormwater treatment device, rain garden
- Center for the Arts Addition
  - Erosion control, rain garden

Stormwater Management for New Building Projects

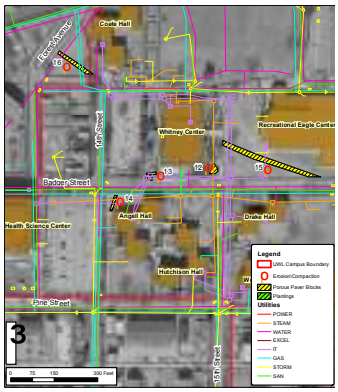
Stormwater Management for Future Building Projects

- Peak Discharge Control
  - Wet detention basins
  - Underground detention
  - Pocket wetlands
  - Inlet restrictors/pavement storage
  - Rain gardens
  - Green rooftops
- Water Quality
  - Wet detention basins
  - In-line stormwater treatment devices
  - Sand filters, bioretention cells, filter strips
  - Grass swales
  - Vegetative buffers
  - Biofilters
- Infiltration
  - Infiltration trenches
  - Infiltration basins
  - Bioretention for infiltration
  - Infiltration sumps
  - French drains and dry wells
  - Pervious pavements for sidewalks
  - Pervious pavers around catch basins in parking lots
  - Grass swales
  - Rain gardens
- Oil and Grease Control
  - Stone trench
  - Inlet hoods
- Miscellaneous
  - Green rooftops

Stormwater Management Efforts to Alleviate Existing Flooding

- Collaborate with City-wide modeling effort, if possible.

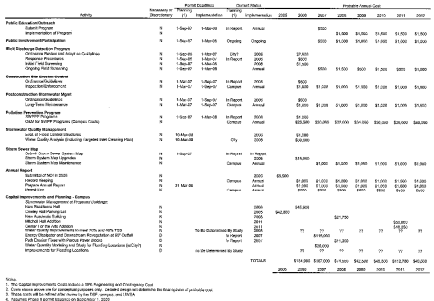
Recommended Improvements for Compaction Locations



Recommended Improvements for Outfall Erosion – City Project

Energy Dissipater

Projected Stormwater Management Costs and Implementation Plan



Recommendations for Achieving Stormwater Management Goals

- Adopt the proposed stormwater guidelines to meet NR 151 performance standards and local requirements for erosion control and stormwater management
- Submit a Notice of Intent (NOI) to pursue Phase II general permit coverage once the Phase II permit has been issued
- Investigate and document all existing WPDES-permitted discharges on campus to comply with storm sewer mapping requirements
- Update the campus storm sewer system map to resolve deficiencies in mapping or consider a full storm sewer remapping effort

Recommendations Cont.

- Collaborate with the City of La Crosse on citywide hydrologic/hydraulic and water quality modeling studies of the storm sewer system to obtain recommendations for improvements necessary to alleviate the flooding, and to meet the requirements of the Phase II permit.
- Investigate all campus-owned stormwater inlets to verify the existence of a sump and the amount of debris in each one
- Coordinate with the City of La Crosse, La Crosse County, UW-Extension, and local organizations in implementation of the Public Information and Education program

Recommendations Cont.

- Track annual use of pesticides, fertilizers, salt, and other chemicals and nutrients on campus as well as street sweeping miles, pounds of recycled oil, and sediment cleared out of sumps to comply with NR 151 Pollution Prevention requirements
- Budget for and implement best management practices (BMPs) at new building projects and a more frequent street sweeping program to meet total suspended solids requirements
- Budget for and implement soil compaction improvements on campus by installing porous pavement on soil compacted areas and plantings to deter pedestrian traffic at the locations identified

Recommendations Cont.

- Consider applying for a WDNR Urban Nonpoint Source Grant for completion of some of the work required by the Phase II Permit and the 60-Inch Outfall Energy Dissipater Project (City Project), and an Urban Nonpoint Source and Stormwater Grant for the stormwater quality modeling study
- Adopt the policies and practices identified in Section 7.04 and the Drainage Evaluation Form in Appendix I

Funding Opportunities

- DNR Grants
  - Urban Nonpoint Source and Stormwater Grant
  - Targeted Runoff Management Grant
  - Municipal Flood Control Grant
  - Lake Planning and Management Grant
  - River Protection Planning and Management Grant
- National Integrated Water Quality Program

Questions?

Thanks for your time!

5

UW-L Campus Stormwater Management Plan
University of Wisconsin – La Crosse
DSF Project No. 03K2D
October 11, 2006
ATTENDANCE LIST

Present	Representing	Contact Info	
Tom Bittner	UWSA	608-263-4420	tbittner@uwsa.edu
David Kaul	DOA/DSF	608-267-7993	david.kaul@wisconsin.gov
Matt Lewis	UW La Crosse	608-785-8019	lewis.matt@uwlax.edu
Jon Lindert	Strand Associates, Inc.	608-251-4843	jon.lindert@strand.com

APPENDIX S
DNR MS4 MEMO TO UWSA (NOVEMBER 1, 2006)

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary

101 S. Webster St.
Box 7921
Madison, Wisconsin 53707-7921
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

November 1, 2006

Mr. Thomas J. Bittner
Planning & Systems Specialist
University of Wisconsin System Administration
P.O. Box 8010
Madison, WI 53708-8010

Subject: University of Wisconsin System 4-Year Institutions
Municipal Separate Storm Sewer System Permit Application Materials

Dear Mr. Bittner:

You have been sent this letter because the Department of Natural Resources believes that the 4-year University of Wisconsin institutions own or operate a "small" municipal separate storm sewer system (MS4) that require coverage under a Wisconsin Pollutant Discharge Elimination System (WPDES) permit. Under federal law (40 CFR § 122.32(a)(1) and (2)) and state law (section NR 216.02(2), (3) and (4), Wis. Adm. Code), MS4s within an "Urbanized Area" or serving a population of 10,000 or more with a population density of 1,000 or more per square mile are required to obtain WPDES storm water permit coverage.

The enclosed MS4 general permit is the means by which municipalities, including 4-year UW institutions, will be required to implement storm water management control measures (Please note that the general permit is being provided to you for informational purposes. Accordingly, the UW institutions listed in this letter are not covered under the general permit until notified by the Department after receipt and review of the application materials.). The Department has made a preliminary determination that your MS4s should be regulated under the enclosed MS4 general permit. The enclosed Notice of Intent (NOI) application form is used to apply for coverage under the MS4 general permit. **MS4 operators have 90 days after the receipt of this letter to complete the NOI application form and submit it to the Department.** An electronic fillable NOI form and information on Wisconsin's municipal storm water management program is available at the Department's storm water website at: **http://www.dnr.state.wi.us/org/water/wm/nps/stormwater/muni.htm**

If you have questions regarding the storm water program and filling out the NOI application for coverage under the MS4 general permit, feel free to contact me or the appropriate DNR storm water program contact listed below.

UW Campus (4-year)	**DNR Contact**
Eau Claire	*Steve Thon
Green Bay	Cheryl Bougie (920-662-5441)
La Crosse	Kurt Rasmussen (608-785-9910)
Madison	*Eric Rortvedt
Milwaukee	Susan Eichelkraut (414-263-8682)
Oshkosh	Jennifer Huffman (920-832-1803)
Parkside (T. of Somers)	Pete Wood (262-884-2360)

Platteville	**Eric Rortvedt
River Falls	Jim Devlin (715-684-2914 ext.123)
Stevens Point	Brad Johnson (715-359-2872)
Stout (Menomonie)	Steve Thon (715-839-3776)
Superior	Vacant (temporary contact: Jim Bertolacini, 608-264-8971)
Whitewater	Pete Wood (262-884-2360)

* *This letter does not apply to the UW - Eau Claire and the UW - Madison because they already have MS4 discharge permit coverage.*

** *Since the 2000 Decennial Census of the City of Platteville was below 10,000, the City and UW – Platteville are not required to submit an NOI application for MS4 discharge permit coverage at this time. It is expected that the City and UW – Platteville would be subject to MS4 permit coverage if/when the Decennial Census for the City is 10,000 or greater.*

Thank you for your future cooperation with the Department's municipal storm water program. If you have any questions, please contact the appropriate DNR storm water contact listed above or myself at 608-264-8971.

Sincerely,

Jim Bertolacini
Storm Water Management Specialist
Bureau of Watershed Management

Enclosures: WPDES General Permit No. WI-S050075-1
Notice of Intent application for coverage under WPDES General Permit No. WI-S050075

cc: DNR Regional Contacts:
Cheryl Bougie, NER/Green Bay
Jim Devlin, WCR/Baldwin
Susan Eichelkraut, SER/Milwaukee
Jennifer Huffman, NER/Appleton
Brad Johnson, WCR/Wausau
Kurt Rasmussen, WCR/LaCrosse
Eric Rortvedt, SCR/Fitchburg
Steve Thon, WCR/Eau Claire
Pete Wood, SER/Sturtevant

Municipal Storm Water Contacts:

Edward Wiesner, City of Green Bay	Reid Wronski, City of River Falls
Anthony Hutchens, City of La Crosse	F. Joseph Euclide, City of Stevens Point
Nader Jaber, City of Milwaukee	Randy Eide, City of Menomonie
Steven Gohde, City of Oshkosh	Diane Thompson, City of Superior
William Morris, Town of Somers	Dean Fischer, City of Whitewater

APPENDIX T
UW MS4 NOI APPLICATION

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

RECEIVED

Notice of Intent to Apply for Coverage Under MS4 General Permit
WPDES Permit No. WI-S050075

Form 3400-NNN (R 2/06)

NOTICE: This application form is authorized by section 283.37, Wis. Stats., and Chapters NR 151 and 216, Wis. Adm. Code. Personally identifiable information on this form may be used for other program purposes and may be made available to requestors under Wisconsin's Public Records laws and be posted on the Department's internet site.

BUREAU OF WATERSHED MGNT

Instructions: Complete the following for all permit applications. If additional space is needed to respond to a question, attach additional pages. Provide descriptions below that explain the program activities that you expect to develop and implement to comply with the Municipal Separate Storm Sewer System (MS4) general permit (http://dnr.wi.gov/org/water/wm/nps/stormwater/muni.htm). Section 3 of the MS4 general permit contains the compliance schedules that direct when the individual program activities need to be developed and submitted to the Department for review. The detailed programs that are developed and submitted to the Department for review may deviate from the program activities described below if necessary. The descriptions provided below are necessary for the Department to verify that the municipality's program activities comply with the permit.

Name of Municipality **University of Wisconsin - La Crosse**			
Mailing Address **1725 State Street**	City **La Crosse**	State **WI**	Postal Code **54601**
County(s) in which Applicant is located **La Crosse**	Type of Municipality: (check one) ☐ County ☐ City ☐ Village ☐ Town ☒ Other (specify) University Campus		

Name of Municipal Contact Person **Mr. William Colclough**		Title **Interim Vice Chancellor for Administration & Finance**	
Mailing Address **1725 State Street**	City **La Crosse**	State **WI**	Postal Code **54601**
E-mail address **colcloug.will@uwlax.edu**	Telephone Number (include area code) **(608) 785-8021**	Fax Number (include area code) **(608) 785-8035**	

Yes	No	
☒	☐	Does any part of the MS4 discharge to an outstanding resource water (ORW) or exceptional resource water (ERW) listed under s. NR 102.10 or 102.11, Wis. Adm. Code? (An unofficial list of ORWs and ERWs may be found on the Department's Internet site at: http://dnr.wi.gov/org/water/wm/wqs/)
☐	☒	Does any part of the MS4 discharge to an impaired waterbody listed in accordance with section 303(d)(1) of the federal Clean Water Act, 33 USC § 1313(d)(1)(C)? (A list of Wisconsin impaired waterbodies may be found on the Department's Internet site at: http://dnr.wi.gov/org/water/wm/wqs/303d/303d.html)

Yes	No	
☒	☐	Is the MS4 within an "Urbanized Area" as defined by U.S. EPA? (See http://www.epa.gov/npdes/pubs/fact2-2.pdf)

If no, skip the rest of this section and continue to Section V. If yes, estimate the area served by and the population within the MS4 in an Urbanized Area (UA).
(Urbanized Area maps are available on the EPA web site at: http://cfpub1.epa.gov/npdes/stormwater/urbanmaps.cfm)

Total municipal area (in square miles):	Total municipal population (in year 2000):
0.190	2900
MS4 service area within Urbanized Area (in square miles):	Municipal population within Urbanized Area (in year 2000):
0.190	2900

Yes	No	Section NR 216.023, Wis. Adm. Code, allows certain MS4s that have less than 1000 people residing in an urbanized area to be waived from having to obtain municipal storm water permit coverage.
☐	☒	Do you believe that the MS4 may be eligible for this potential exemption?

Describe the programs or activities the municipality is doing or will do to comply with the requirements of the MS4 general permit. Attach additional pages if necessary.

Describe the public education and outreach program activities that the municipality will implement to comply with section 2.1 of the MS4 general permit.

UW-001, UW-002, UW-003, and UW-013. (PLEASE SEE ATTACHED FOR FURTHER DETAIL)

Describe the public involvement and participation program activities that the municipality will promote to comply with section 2.2 of the MS4 general permit.

UW-001, UW-002, UW-003, and UW-013. (PLEASE SEE ATTACHED FOR FURTHER DETAIL)

Describe the illicit discharge detection and elimination program authority and activities that the municipality will develop and implement to comply with section 2.3 of the MS4 general permit.

UW-001, UW-002, UW-003, and UW-012. (PLEASE SEE ATTACHED FOR FURTHER DETAIL)

Describe the construction site pollutant control program authority and activities that the municipality will develop and implement to comply with section 2.4 of the MS4 general permit.

UW-001, UW-002, UW-008, and UW-009. (PLEASE SEE ATTACHED FOR FURTHER DETAIL)

Describe the post-construction storm water management program authority and activities that the municipality will develop and implement to comply with section 2.5 of the MS4 general permit.

UW-001, UW-002, UW-010, UW-011, and UW-012. (PLEASE SEE ATTACHED FOR FURTHER DETAIL)

Describe the pollution prevention program activities that the municipality will implement to comply with section 2.6 of the MS4 general permit.

UW-001, UW-002, UW-003, UW-011, and UW-012. (PLEASE SEE ATTACHED FOR FURTHER DETAIL)

Certification: I hereby certify that I am an authorized representative of the municipality that is the subject of this application for general permit coverage, and that the information provided is true and complete, to the best of my knowledge. I understand that Wisconsin law provides severe penalties for submitting false information.

Authorized Representative Name	Title	
Mr. William Colclough	**Interim Vice Chancellor for Administration & Finance**	
Signature		Date Signed 1/26/07
E-mail address **colcloug.will@uwlax.edu**	Telephone Number (include area code) **(608) 785-8021**	Fax Number (include area code) **(608) 785-8035**

Return this completed form to:

Wisconsin Department of Natural Resources
Storm Water Program – WT/2
PO Box 7921
Madison, WI 53707-7921

APPENDIX U
UW ANNUAL REPORT TEMPLATE (PHASE 2)

University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

[INSERT CAMPUS
LOGO HERE]

[INSERT YOUR INSTITUTION'S CITY/TOWN/VILLAGE HERE], WI

Storm Water Management Program

[INSERT REPORTING YEAR HERE] Annual Report

WPDES Permit No. WI-S050075-1

[INSERT REPORTING DATE HERE]

TABLE OF CONTENTS

BACKGROUND AND PURPOSE

Revisions to State of Wisconsin Department of Natural Resources administrative rules (NR 120, NR 151, and NR 216) to control polluted runoff from urban and rural lands went into effect on 10/1/2002. The laws require changes to non-point source water pollution abatement and to soil and water resources management. A summary of the laws applicable to UW System are included below for reference:

NR 120 (Priority Watershed and Lake Program): The rule under which the DNR administers the Non-point Source Water Pollution Abatement Program, includes a mandatory component for addressing critical non-point source pollution sites and the procedures to administer grants for cost sharing Best Management Practices (BMPs). Changes in cost-sharing administration include an increase in the duration of priority watershed projects and cost-share rates for several BMPs. Changes in critical site administration include increased flexibility in notification schedule and an explicit requirement that grantees cover all critical site needs when adequate cost-sharing is made available by the DNR. All Priority Watershed and Lake Program projects must be completed by 2009.

NR 151 (Runoff Management - Performance Standards and Prohibitions): The rule establishes polluted runoff performance standards for non-agricultural practices, including transportation, as well as performance standards and prohibitions for agricultural facilities and practices. This rule sets minimum performance standards to achieve water quality standards. Compliance with non-agricultural and transportation performance standards is required regardless of whether cost-sharing is available. For selected state areas, where performance standards do not achieve desired water quality, more site specific and targeted performance standards may be established. NR 151 also establishes implementation and enforcement provisions for the performance standards and prohibitions. Subchapter II of NR 151 (agricultural performance standards and prohibitions) is intended to protect water quality by minimizing soil erosion, nutrients from manure and croplands, and other non-point source pollutants entering waterways. Water quality management areas are located 300 feet from a stream, 1,000 feet from a lake, or are susceptible to groundwater contamination.

NR 216 (Storm Water Discharge Permits): The rule establishes criteria and procedures to issue storm water discharge permits (Wisconsin Pollution Discharge Elimination System - WPDES) for certain construction sites, industrial facilities, and municipalities to limit pollutant discharge carried by storm water runoff into waterways and bodies of water. This rule was primarily revised to incorporate NR 151's non-agricultural performance standards. Components of construction and municipal storm water discharge permits (i.e. storm water management programs and plans, storm water pollution prevention plans, erosion control plans) must meet the non-agricultural performance standards. Recent development of additional impervious surfaces at various campuses has increased pressure on storm water systems reaching or surpassing their designed capacities. Planned future developments will place even more pressure on these storm water systems.

The UW System has a responsibility to appropriately and comprehensively manage its storm water and limit erosion control and runoff pollutants entering bodies of water and waterways. To avoid problems of past practices which addressed storm water issues uniquely within each project boundary, in January 2004, the UW System began developing a comprehensive storm water management plan at each 4-year institution to identify problem areas, determine solutions, and develop an implementation plan. Since the storm water management plan was completed/updated in [INSERT STORM WATER MANAGEMENT PLAN COMPLETION MONTH AND YEAR HERE], all future campus development can now be planned and designed with the overall campus storm water management plans completed and incorporated as necessary, specific to each project.

On November 1, 2006, the Wisconsin Department of Natural Resources (WDNR) notified UW System Administration each 4-year institution was considered the owner and operator of a "small" municipal separate storm sewer system (MS4) and required coverage under a Wisconsin Pollutant Discharge Elimination System (WPDES) permit. Federal law [*CFR 40 § 122.32(a)(1) and (2)*] and state law [*section NR 216.02(2), (3), and (4), Wis. Adm. Code*] require MS4s within an "urbanized area" or serving a population of 10,000 or more with a population density of 1,000 or more per square mile to obtain WPDES storm water permit coverage.

On [INSERT DATE OF NOI SUBMITTAL TO WDNR HERE], UW-[INSERT YOUR INSTITUTION HERE] submitted the required Notice of Intent (NOI) application packet to the WDNR for coverage under the WPDES Permit No. WI-S050075-1. On [INSERT DATE OF WDNR ACCEPTANCE OF NOI SUBMITTAL HERE], the WDNR accepted the NOI submittal and granted UW-[INSERT YOUR INSTITUTION HERE] coverage under WPDES Permit No. WI-S050075-1. This report responds to conditions and required content detailed in sections 2.9 and 3.10 of the permit.

STATUS REPORT

The university developed a comprehensive storm water management program to meet the requirements for owner/operators of municipal separate storm sewer systems (MS4s). This program will be implemented in phases starting in 2007. Each activity identifies measurable goals, implementation schedule, and pertinent contacts. Appendix A of this report includes a summary table quantifying the activities and measurable goals. Appendix B of this report includes a summary table quantifying various materials management efforts, mass communication efforts, and best management practices as they relate to storm water management.

A brief description of the university's annual storm water management activities is provided below for each of the WPDES permit condition areas required. Most activities relate to multiple requirement areas, and are documented accordingly to reflect the diverse nature of these efforts.

Public Education and Outreach

UW-001: Partnership with City

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-002: Storm Water Management Plan

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-003: Storm Water Management Mass Communication Program

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-013: Campus Storm Water Logo Contest

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

Public Involvement and Participation

UW-001: Partnership with City

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-002: Storm Water Management Plan

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-003: Storm Water Management Mass Communication Program

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-013: Campus Storm Water Logo Contest

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

Illicit Discharge Detection and Elimination

UW-001: Partnership with City

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-002: Storm Water Management Plan

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-003: Storm Water Management Mass Communication Program

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-012: Storm Sewer System Inspection

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

Construction Site Pollution Control

UW-001: Partnership with City

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-002: Storm Water Management Plan

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-008: Erosion Control

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-009: Site Development Guideline

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

Post Construction Site Storm Water Management

UW-001: Partnership with City

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-002: Storm Water Management Plan

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-010: SLAMM Modeling

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-011: Storm Water Operation & Maintenance Plans

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-012: Storm Sewer System Inspection

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

Pollution Prevention

UW-001: Partnership with City

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-002: Storm Water Management Plan

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-003: Storm Water Management Mass Communication Program

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-011: Storm Water Operation & Maintenance Plans

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

UW-012: Storm Sewer System Inspection

[ENTER BRIEF NARRATIVE HERE RELATIVE TO THIS STORM WATER PROGRAM ACTIVITY]

ASSESSMENT AND SUMARY

[ENTER BRIEF NARRATIVE SUMMARIZING AND ASSESSING YOUR INSTITUTION'S PERFORMANCE RELATIVE TO THE STORM WATER ACTIVITIES AND MEASURABLE GOALS]

APPENDICES

University of Wisconsin System
Storm Water Program Activity Detail Summary for Annual Report

UW - [ENTER YOUR INSTITUTION HERE]
DATE: [MM/DD/YYYY]

			[ENTER CALENDAR YEAR HERE]											
		TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
UW-001	PARTNERSHIP WITH CITY													
A.	COLLABORATIVE EVENTS	0	0	0	0	0	0	0	0	0	0	0	0	0
UW-002	STORM WATER MANAGEMENT PLAN													
A.	WEB SITE POSTING	0	0	0	0	0	0	0	0	0	0	0	0	0
B.	PUBLIC MEETING(S)	0	0	0	0	0	0	0	0	0	0	0	0	0
C.	ATTENDEES LIST	MM/DD/YYYY												
UW-003	STORM WATER MANAGEMENT MASS COMMUNICATION													
A.	BROCHURES (DISTRIBUTED)	0	0	0	0	0	0	0	0	0	0	0	0	0
B.	WEB SITE POSTING(S)	0	0	0	0	0	0	0	0	0	0	0	0	0
C.	EMAIL	0	0	0	0	0	0	0	0	0	0	0	0	0
D.	PUBLIC SERVICE ANNOUNCEMENTS	0	0	0	0	0	0	0	0	0	0	0	0	0
	PODCAST(S)	0	0	0	0	0	0	0	0	0	0	0	0	0
	VIDEOCAST(S)	0	0	0	0	0	0	0	0	0	0	0	0	0
UW-004	EARTH DAY EVENTS													
A.	ACTIVITIES	0	0	0	0	0	0	0	0	0	0	0	0	0
B.	NEWSPAPER ADS	0	0	0	0	0	0	0	0	0	0	0	0	0
C.	EMAIL	0	0	0	0	0	0	0	0	0	0	0	0	0
D.	DEBRIS REMOVED (LBS.)	0	0	0	0	0	0	0	0	0	0	0	0	0
UW-005	STORM WATER MANAGEMENT SIGNAGE													
A.	RAIN GARDENS	0	0	0	0	0	0	0	0	0	0	0	0	0
B.	INLET STENCILS	0	0	0	0	0	0	0	0	0	0	0	0	0
UW-006	ENVIRONMENTALLY SENSITIVE PLANNING & DESIGN													
A.	SITE DEVELOPMENT IMPLEMENTED	0	0	0	0	0	0	0	0	0	0	0	0	0
B.	SITE DEVELOPMENT PLANNED	0	0	0	0	0	0	0	0	0	0	0	0	0
C.	BMPs IMPLEMENTED	0	0	0	0	0	0	0	0	0	0	0	0	0
D.	BMPs PLANNED	0	0	0	0	0	0	0	0	0	0	0	0	0
UW-007	ENVIRONMENTAL GROUPS & BUSINESS ACTIVITIES													
A.	ENVIRONMENTAL DEPARTMENTS	0	0	0	0	0	0	0	0	0	0	0	0	0
B.	ENVIRONMENTAL STUDENT GROUPS	0	0	0	0	0	0	0	0	0	0	0	0	0
C.	BROCHURES	0	0	0	0	0	0	0	0	0	0	0	0	0
D.	TRAINING	0	0	0	0	0	0	0	0	0	0	0	0	0
UW-008	EROSION CONTROL													
A.	PROJECTS IMPLEMENTED	0	0	0	0	0	0	0	0	0	0	0	0	0
B.	INCIDENTS	0	0	0	0	0	0	0	0	0	0	0	0	0
UW-009	SITE DEVELOPMENT GUIDELINES													
A.	PROJECTS IMPLEMENTED	0	0	0	0	0	0	0	0	0	0	0	0	0

University of Wisconsin System
Storm Water Program Activity Detail Summary for Annual Report

UW - [ENTER YOUR INSTITUTION HERE]
DATE: [MM/DD/YYYY]

			[ENTER CALENDAR YEAR HERE]											
		TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
UW-010	**SLAMM MODELING**													
A.	SLAMM MODEL COMPLETE	MM/DD/YYYY												
B.	20% TSS REDUCTION	03/10/2008												
C.	40% TSS REDUCTION	03/10/2013												
D.	80% TSS REDUCTION	NEW CONST												
UW-011	**STORM WATER OPERATION & MAINTENANCE PLANS**													
A.	O&M PLANS DEVELOPED	0	0	0	0	0	0	0	0	0	0	0	0	0
UW-012	**STORM SEWER SYSTEM INSPECTION**													
A.	INSPECTIONS (ISSUED)	0	0	0	0	0	0	0	0	0	0	0	0	0
B.	INSPECTIONS (COMPLETED)	0	0	0	0	0	0	0	0	0	0	0	0	0
C.	WORK ORDERS (ISSUED)	0	0	0	0	0	0	0	0	0	0	0	0	0
D.	WORK ORDERS (COMPLETED)	0	0	0	0	0	0	0	0	0	0	0	0	0
UW-013	**CAMPUS STORM WATER LOGO CONTEST**													
A.	DESIGN ENTRIES	0	0	0	0	0	0	0	0	0	0	0	0	0
B.	CAMPUS LOGO SELECTED	MM/DD/YYYY												

University of Wisconsin System
Storm Water Program Activity Detail Worksheet

UW - [ENTER YOUR INSTITUTION HERE]
[ENTER DATE HERE]

		TOTAL	UNIT	[ENTER CALENDAR YEAR HERE] JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A-00.	**BATCH DISCHARGES**														
A-01.	CHILLED WATER LOOP	0	GAL	0	0	0	0	0	0	0	0	0	0	0	0
A-02.	COOLING TOWER	0	GAL	0	0	0	0	0	0	0	0	0	0	0	0
A-03.	ICE RINK	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
A-04.	SWIMMING POOL	0	GAL	0	0	0	0	0	0	0	0	0	0	0	0
A-05.	WHIRLPOOL	0	GAL	0	0	0	0	0	0	0	0	0	0	0	0
B-00.	**MATERIALS MANAGEMENT**														
B-01.	ANTIFREEZE/GLYCOL	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
B-02.	DEBRIS/LEAF	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
B-03.	FERTILIZER	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
B-04.	HAZ MATS	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
B-05.	HERBICIDE	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
B-06.	OIL	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
B-07.	PESTICIDE	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
B-08.	SALT/SAND	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
B-09.	STREET SWEEPING	0	LBS	0	0	0	0	0	0	0	0	0	0	0	0
C-00.	**MASS COMMUNICATION**														
C-01.	BROCHURES (DISTRIBUTED)	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-02.	EMAIL	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-03.	EVENTS	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-04.	FLYERS (DISTRIBUTED)	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-05.	INLETS STENCILED	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-06.	NEWSPAPER	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-07.	PODCAST	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-08.	PUBLIC MEETINGS	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-09.	PUBLIC SERVICE ANNOUNCEMENT	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-10.	RADIO SPOT	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-11.	SIGNS	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-12.	TELEVISION SPOT	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-13.	VIDEOCAST	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-14.	WEB SITE POSTS	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
C-15.	WEB SITE VISITS	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
D-00.	**OPERATIONS & MAINTENANCE**														
D-01.	DEPT. REVIEW	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
D-02.	INCIDENT (EROSION)	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
D-03.	INCIDENT (ILLICIT DISCHARGE)	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
D-04.	INSPECTIONS	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
D-05.	O&M PLANS	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
D-06.	SPCC PLAN	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
D-07.	SWPP PLAN	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
D-08.	TRAINING	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
D-09.	WORK ORDERS	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0

University of Wisconsin System
Storm Water Program Activity Detail Worksheet

UW - [ENTER YOUR INSTITUTION HERE]
[ENTER DATE HERE]

				[ENTER CALENDAR YEAR HERE]											
		TOTAL	UNIT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
E-00.	BEST MANAGEMENT PRACTICES														
E-01.	BIOFILTRATION/RAIN GARDEN	0	SF	0	0	0	0	0	0	0	0	0	0	0	0
E-02.	DETENTION POND (DRY)	0	SF	0	0	0	0	0	0	0	0	0	0	0	0
E-03.	DETENTION POND (WET)	0	SF	0	0	0	0	0	0	0	0	0	0	0	0
E-04.	DETENTION (UNDERGROUND)	0	GAL	0	0	0	0	0	0	0	0	0	0	0	0
E-05.	GREEN ROOFS	0	SF	0	0	0	0	0	0	0	0	0	0	0	0
E-06.	INLINE DEVICE	0	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
E-07.	POROUS PAVEMENT	0	SF	0	0	0	0	0	0	0	0	0	0	0	0
E-08.	ROOF DRAINS DISCONNECTED	0	LF	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX V
RELEVANT WEB LINKS
(EPA STORMWATER, DNR RUNOFF, AND UW EXTENSIONS)

The following Web sites discuss additional stormwater management activities that could be used on campus to maintain the MS4 General Permit.

EPA stormwater Web site: http://www.epa.gov/ebtpages/watestormwater.html

DNR runoff management: http://www.dnr.state.wi.us/runoff

UW Extension water resources education: http://clean-water.uwex.edu