

WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY SUMMARY

ID	TITLE	TYPE	SCHED	PERMIT CONDITION AREAS MET					
				2.1	2.2	2.3	2.4	2.5	2.6
UW-001	Partnership with City	P	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
UW-002	Storm Water Management Plan	P	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
UW-003	Storm Water Management Mass Communication Program	P	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
UW-004	Earth Day Events	M	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
UW-005	Storm Water Management Signage	P	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
UW-006	Environmentally Sensitive Planning & Design	M	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
UW-007	Environmental Groups & Business Activities	P	A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
UW-008	Erosion Control	E	A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
UW-009	Site Development Guideline	E	A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
UW-010	SLAMM Modeling	P	O	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
UW-011	Storm Water Operation & Maintenance Plans	E	A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
UW-012	Storm Sewer System Inspection	M	S	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
UW-013	Campus Storm Water Logo Contest	P	O	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PROGRAM ACTIVITY IMPLEMENTATION KEY

UW-### Immediate Implementation

UW-### Future Implementation

PROGRAM ACTIVITY TYPE KEY

E Existing Program Activity
M Existing Program Activity (Modified)
P Proposed Program Activity

PROGRAM ACTIVITY SCHEDULE KEY

A Annual
S Semi-Annual
O Other

PERMIT CONDITION AREA KEY

2.1 Public Education & Outreach
2.2 Public Involvement & Participation
2.3 Illicit Discharge Detection & Elimination
2.4 Construction Site Pollutant Control
2.5 Post-Construction Storm Water Mgmt
2.6 Pollution Prevention

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Partnership with City **Activity ID:** UW-001

Activity Description: The campus and the city will voluntarily partner together on all six (6) permit condition areas noted below wherever and whenever possible. Public meetings, educational opportunities, and training events will include both entities staff whenever possible.

Activity Notes: This program activity intends to show cooperation between the campus and the city. The campus intends to meet all the permit condition areas within the campus boundary, however, partnering with the city should provide a better and more comprehensive end result. It is anticipated the campus and the city will jointly develop a Memorandum of Understanding (MOU) to detail certain responsibilities for some or all of the permit condition areas.

PROGRAM ACTIVITY TYPE

- Existing Program Activity Proposed Program Activity
 Existing Program Activity (Modified)

MEASURABLE GOALS

- A. Document number of events the campus and the city collaborate on during the year.

IMPLEMENTATION SCHEDULE

- Annual
 Semi-annual
 Other (see below for details)

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | |
|---|---|
| <input checked="" type="checkbox"/> 2.1 Public Education & Outreach | <input checked="" type="checkbox"/> 2.4 Construction Site Pollutant Control |
| <input checked="" type="checkbox"/> 2.2 Public Involvement & Participation | <input checked="" type="checkbox"/> 2.5 Post-Construction Storm Water Mgmt |
| <input checked="" type="checkbox"/> 2.3 Illicit Discharge Detection & Elimination | <input checked="" type="checkbox"/> 2.6 Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Storm Water Management Plan **Activity ID:** UW-002

Activity Description: The campus will complete a comprehensive storm water management plan, hold at least one public informational meeting on the draft plan, and post the completed plan and public informational meeting presentation on the campus web site.

Activity Notes: The campus storm water management plan will be completed under State Project No. ##X#X by [INSERT A/E FIRM HERE]. The storm water management plan will be maintained and updated as required to reflect significant progress and/or change in regulations. The storm water management plan and presentation will also be posted on the UW System Administration web site with all other UW institution plans and presentations.

The storm water management plan will coordinate the preservation of sufficient and the best space for storm water management features. Storm water management will be incorporated and coordinated on campus with all future site development. Storm water management efforts will be scheduled to comply with the compliance deadlines. This plan will serve as a resource guide and application/implementation reference for future storm water management BMPs.

The storm water management plan will include details on the following topic areas:

- 1) various campus maps
 - a) geography
 - b) land use
 - c) soils
 - d) floodplain/wetland designations
 - e) drainage basins (regional and local)
 - f) storm water utility system
- 2) various management and control policies
 - a) lawn/turf management
 - b) debris/leaf management
 - c) fertilizer management
 - d) pesticide management
 - e) hazardous materials management
 - f) fuel/oil/coal management
 - g) spill prevention control & countermeasure plan
 - h) batch discharges
 - i) deicer/salt management
 - j) street sweeping
 - k) fleet maintenance & management
 - l) nutrient management
 - m) manure management
- 3) anticipated and proposed campus development
- 4) anticipated and proposed campus acquisitions
- 5) anticipated and proposed storm water management efforts

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Storm Water Management Mass Communication **Activity ID:** UW-003

Activity Description: The campus will develop and implement multiple channels of communicating storm water management goals and information to the campus community. This comprehensive mass communication program may include any combination of the following items:

- 1) Distribute storm water management educational and informational brochures to all on-campus student residents and all parking permit holders.
- 2) Periodically update campus web site with pertinent storm water management goals, guidelines, information, and external links.
- 3) Periodically send campus-wide email with pertinent storm water management goals, guidelines, information, and external links.
- 4) Periodically broadcast public service announcements relative to storm water management goals and guidelines through both campus and local media outlets.
- 5) Periodically develop and post informational and educational storm water management podcasts/videocasts to the campus web site and/or other web media outlet.

Activity Notes: Materials will include and highlight current practices for some or all of the following management areas: fuel/oil/coal, lawn/turf, debris/leaf, salt/deicer, fertilizer, pesticide, and hazardous material. Materials will also include formal communication protocol and contact information relative to campus storm water management and illicit discharge detection and prevention.

PROGRAM ACTIVITY TYPE

- | | |
|---|---|
| <input type="checkbox"/> Existing Program Activity | <input checked="" type="checkbox"/> Proposed Program Activity |
| <input type="checkbox"/> Existing Program Activity (Modified) | |

MEASURABLE GOALS

- A. # of brochures developed/purchased/distributed.
- B. # of campus web site messages posted.
- C. # of campus-wide emails sent.
- D. # of public service announcements/podcast/videocasts developed and posted.

IMPLEMENTATION SCHEDULE

- | |
|--|
| <input checked="" type="checkbox"/> Annual |
| <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other (see below for details) |

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | |
|---|--|
| <input checked="" type="checkbox"/> 2.1 Public Education & Outreach | <input type="checkbox"/> 2.4 Construction Site Pollutant Control |
| <input checked="" type="checkbox"/> 2.2 Public Involvement & Participation | <input type="checkbox"/> 2.5 Post-Construction Storm Water Mgmt |
| <input checked="" type="checkbox"/> 2.3 Illicit Discharge Detection & Elimination | <input checked="" type="checkbox"/> 2.6 Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Earth Day Events **Activity ID:** UW-004

Activity Description: The campus will incorporate educational and informational storm water management displays and/or presentations during its annual Earth Day activities.

Activity Notes: Annual Earth Day activities will be advertised on campus through the campus newspaper, campus-wide email, web site postings, and flyers/posters placed around campus. Typical Earth Day activities include debris/trash cleanup across campus.

PROGRAM ACTIVITY TYPE

- | | | | |
|-------------------------------------|--------------------------------------|--------------------------|---------------------------|
| <input type="checkbox"/> | Existing Program Activity | <input type="checkbox"/> | Proposed Program Activity |
| <input checked="" type="checkbox"/> | Existing Program Activity (Modified) | | |

MEASURABLE GOALS

IMPLEMENTATION SCHEDULE

- | | | |
|---|-------------------------------------|-------------------------------|
| A. # of storm water management activities or displays incorporated into Earth Day events. | <input checked="" type="checkbox"/> | Annual |
| B. # of campus newspaper articles/ads for Earth Day events. | <input type="checkbox"/> | Semi-annual |
| C. # of campus-wide emails sent and web site postings for Earth Day events. | <input type="checkbox"/> | Other (see below for details) |
| D. # lbs. of debris/trash removed from grounds. | | |

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | | | | | |
|-------------------------------------|-----|---|-------------------------------------|-----|-------------------------------------|
| <input checked="" type="checkbox"/> | 2.1 | Public Education & Outreach | <input type="checkbox"/> | 2.4 | Construction Site Pollutant Control |
| <input checked="" type="checkbox"/> | 2.2 | Public Involvement & Participation | <input type="checkbox"/> | 2.5 | Post-Construction Storm Water Mgmt |
| <input type="checkbox"/> | 2.3 | Illicit Discharge Detection & Elimination | <input checked="" type="checkbox"/> | 2.6 | Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Storm Water Management Signage **Activity ID:** UW-005

Activity Description: The campus will install educational and informational signage designating all rain gardens constructed and stencil appropriate "no waste dumping" near all storm water inlets.

Activity Notes: The rain garden signage will provide a brief description of the rain garden features and its intended purpose. All signage will be maintained and updated as required for appearance and legibility.

PROGRAM ACTIVITY TYPE

- Existing Program Activity Proposed Program Activity
 Existing Program Activity (Modified)

MEASURABLE GOALS

- A. # of rain gardens marked.
B. # of inlets stenciled.

IMPLEMENTATION SCHEDULE

- Annual
 Semi-annual
 Other (see below for details)

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | | | | | |
|-------------------------------------|-----|---|-------------------------------------|-----|-------------------------------------|
| <input checked="" type="checkbox"/> | 2.1 | Public Education & Outreach | <input type="checkbox"/> | 2.4 | Construction Site Pollutant Control |
| <input checked="" type="checkbox"/> | 2.2 | Public Involvement & Participation | <input type="checkbox"/> | 2.5 | Post-Construction Storm Water Mgmt |
| <input checked="" type="checkbox"/> | 2.3 | Illicit Discharge Detection & Elimination | <input checked="" type="checkbox"/> | 2.6 | Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]
Activity Title: Environmentally Sensitive Planning & Design **Activity ID:** UW-006

Activity Description: The campus will promote and incorporate environmentally sensitive site development throughout all its planning and design activities.

Activity Notes: All future campus physical development planning and project implementation will incorporate the applicable and affordable recommendations and best management practices included in the storm water management plan.

PROGRAM ACTIVITY TYPE

- | | |
|--|--|
| <input type="checkbox"/> Existing Program Activity | <input type="checkbox"/> Proposed Program Activity |
| <input checked="" type="checkbox"/> Existing Program Activity (Modified) | |

MEASURABLE GOALS

- A. # of site development projects implemented.
- B. # of site development projects planned.
- C. # of best management practices implemented.
- D. # of best management practices planned.

IMPLEMENTATION SCHEDULE

- Annual
- Semi-annual
- Other (see below for details)

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | |
|--|--|
| <input checked="" type="checkbox"/> 2.1 Public Education & Outreach | <input type="checkbox"/> 2.4 Construction Site Pollutant Control |
| <input checked="" type="checkbox"/> 2.2 Public Involvement & Participation | <input type="checkbox"/> 2.5 Post-Construction Storm Water Mgmt |
| <input type="checkbox"/> 2.3 Illicit Discharge Detection & Elimination | <input checked="" type="checkbox"/> 2.6 Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Environmental Groups and Business Activities **Activity ID:** UW-007

Activity Description: The campus will identify all established and campus-affiliated environmental departments/student groups and routine business related activities that impact storm water management and promote responsible activities and behaviors.

Activity Notes: The campus will distribute appropriate educational and information brochures to each environmental entity outlining current campus best management practices, formally train staff as required, and annually monitor and review performance.

PROGRAM ACTIVITY TYPE

- | | |
|---|---|
| <input type="checkbox"/> Existing Program Activity | <input checked="" type="checkbox"/> Proposed Program Activity |
| <input type="checkbox"/> Existing Program Activity (Modified) | |

MEASURABLE GOALS

- A. # and list of environmental departments.
- B. # and list of environmental student groups.
- C. # of brochures distributed.
- D. # of staff trained and in what area(s) of storm water management.

IMPLEMENTATION SCHEDULE

- Annual
- Semi-annual
- Other (see below for details)

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | |
|---|--|
| <input checked="" type="checkbox"/> 2.1 Public Education & Outreach | <input type="checkbox"/> 2.4 Construction Site Pollutant Control |
| <input checked="" type="checkbox"/> 2.2 Public Involvement & Participation | <input type="checkbox"/> 2.5 Post-Construction Storm Water Mgmt |
| <input checked="" type="checkbox"/> 2.3 Illicit Discharge Detection & Elimination | <input checked="" type="checkbox"/> 2.6 Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Erosion Control **Activity ID:** UW-008

Activity Description: The campus will implement DOA-DSF erosion control standards for all capital projects (new construction and maintenance & renovation) and report all incidents to the DOA-DSF Project Manager and/or Construction Representative.

Activity Notes: Capital project sites are solely DOA-DSF responsibility. The campus can monitor construction site activities and inform DOA-DSF of any incidents not conforming to the published standards, but cannot enforce a resolution.

The current DOA-DSF Division 31 "[Erosion Control](#)" standards can be viewed [here](#). These standards are in the process of being updated by DOA-DSF. The most current draft is attached here for reference.

PROGRAM ACTIVITY TYPE

- Existing Program Activity Proposed Program Activity
 Existing Program Activity (Modified)

MEASURABLE GOALS

- A. # of capital projects implemented.
B. # of incidents reported.

IMPLEMENTATION SCHEDULE

- Annual
 Semi-annual
 Other (see below for details)

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | | | | | |
|--------------------------|-----|---|-------------------------------------|-----|-------------------------------------|
| <input type="checkbox"/> | 2.1 | Public Education & Outreach | <input checked="" type="checkbox"/> | 2.4 | Construction Site Pollutant Control |
| <input type="checkbox"/> | 2.2 | Public Involvement & Participation | <input type="checkbox"/> | 2.5 | Post-Construction Storm Water Mgmt |
| <input type="checkbox"/> | 2.3 | Illicit Discharge Detection & Elimination | <input type="checkbox"/> | 2.6 | Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

**SECTION 31 25 00
EROSION CONTROL**

PART I - GENERAL

SCOPE

The work under this section consists of providing all work, materials, labor, equipment, and supervision necessary to provide and construct erosion control measures necessary to protect property and the environment. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Submittals
- Erosion Control Plan

PART 2 - MATERIALS

- General
- Straw Bale Barriers
- Silt Fence

PART 3 - EXECUTION

- General
- Grading and Earthwork
- Drainage
- Tracking Control
- Maintenance

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

31 10 00 – Site Clearing
31 20 00 – Earthmoving

Provide erosion control in accordance with the following references:

- Department of Natural Resources current Technical Standards for Construction Site Erosion & Sediment Control (<http://www.dnr.state.wi.us/org/water/wm/nps/stormwater/techstds.htm#Construction>) Erosion Control Product Acceptability List (“PAL”), current version as published by the Wisconsin Department of Transportation (<http://www.dot.wisconsin.gov/business/engrserv/pal.htm>).

Method of measurement and basis of payment sections in any referenced erosion control documents shall not apply to this contract.

These documents are available on line at the websites shown above.

SUBMITTALS

Submit shop drawings for the following erosion control features:

- Silt fence
- Inlet Protection
- Erosion mat

EROSION CONTROL PLAN

The A/E has prepared an erosion control plan for the project. The A/E will complete, apply for, and pay for a WPDES Stormwater Discharge Permit from WDNR. The Contractor will provide the A/E with submittals for materials used to implement the erosion control plan, as well as any modifications to the erosion control plan that are necessary due to the Contractor's means and methods of construction.

Contractor shall comply with all the requirements of the erosion control plan, and if applicable, the WPDES Stormwater Discharge Permit for Erosion Control.

PART 2 - MATERIALS

GENERAL

Silt fence shall be listed on the current Product Acceptability List for Multi-Modal Applications ("PAL") as published by the Wisconsin Department of Transportation.

STRAW BALE BARRIERS

Rectangular bales of hay or straw, tightly bound with twine, not wire.

SILT FENCE

Fence fabric shall comply with the requirements of Standard Specifications for Highway Construction 628.2.6, in 3 foot tall rolls, with 4' tall 2" x 2" nominal cross section hardwood posts spaced a maximum of 10' o.c.. Silt fence shall be Mirafi, Trevira, Amoco, CFM, or approved equal on the WisDOT "PAL".

PART 3 - EXECUTION

GENERAL

Install erosion control measures as required by the erosion control plan and contract documents. Provide additional erosion control measures as dictated by Contractor's means and methods, or by differing site conditions. Notify Construction Representative of additional erosion control features that are provided, but not shown on the plan.

Contractor shall provide all erosion control measures necessary to protect property and the environment. Include all erosion control measures as required by the most stringent of applicable sections of The Best Management Practice Handbook or Standard Specifications for Highway Construction.

Perform all work in accordance with manufacturer's instruction where these specifications do not specify a higher requirement.

GRADING AND EARTHWORK

Install all temporary or permanent erosion control measures prior to any onsite grading, grubbing or land disturbances.

Clear only those areas designated for the placement of improvements or earthwork before placement of the final cover. Perform stripping of vegetation, grading, excavation, or other land disturbing activities in a logical sequence and manner which will minimize erosion. If possible, schedule construction for times of the year when erosion hazards are minimal.

Do not clear the site of topsoil, trees, and other natural ground covers before the commencement of construction. Retain natural vegetation and protect until the final ground cover is placed.

Do not stockpile soil within 25 feet of any roadway, parking lot, paved area, or drainage structure or channel. Provide temporary stabilization and control measures (seeding, mulching, covering, erosion

matting, barrier silt fencing, etc.) for the protection of disturbed areas and soil piles which will remain unworried for a period of more than 14 consecutive calendar days.

Remove surplus excavation materials from the site immediately after rough grading. The disposal site for the surplus excavation materials shall also be subject to these erosion control requirements.

DRAINAGE

Minimize water runoff and retain or detain on-site whenever possible so as to promote settling of solids and groundwater recharge.

Convey drainage to the nearest adequate public facility. Do not discharge water in a manner that will cause erosion or sedimentation of the site or receiving facility.

Protect storm sewer inlets and catch basins in accordance with the erosion control plan, if provided. If not specified, protect inlets with straw bale barriers, silt fencing, filter basket, gabion stone weepers, or other equivalent methods approved by the A/E which provide the necessary erosion protection.

Divert roof drainage and runoff from all areas upslope of the site around areas to be disturbed or channel them through the site in a manner that will not cause erosion.

Minimize the pumping of sediments when dewatering. Discharge to a sedimentation basin or sedimentation vessel to reduce the discharge of sediments. Do not discharge water in a manner that will cause erosion or sedimentation of the site or receiving facility.

TRACKING CONTROL

Provide each entrance to the site with a stone tracking pad. Tracking pad shall be constructed of Breaker Run.

If applicable, wash water shall be discharged to sedimentation basins, sedimentation vessels, or other such control areas.

MAINTENANCE

Inspect all erosion control measures within 24 hours of the end of each rainfall event that exceeds 0.25", or daily during period of prolonged rainfall, or weekly during periods without rainfall. Immediately repair and/or replace any and all damaged, failed, or inadequate erosion control measures.

Maintain records of all inspections and any remedial actions taken.

Maintain stockpile stabilization measures as necessary after rainfall events and heavy winds. Replace tarps, re-seed, and reapply mulch, tackifiers and stabilizers as necessary.

Remove sediment from stormwater and erosion control structures, basins and vessels as necessary.

Repair or replace damaged inlet protection.

Replace or supplement stone tracking pads with additional stone when they become ineffective.

Remove by any sediment reaching a public or private roadway, parking lot, sidewalk, or other paved. Do not remove tracked sediments by flushing. Completely remove any accumulations not requiring immediate attention at least once daily at the end of the workday.

Frequently dispose of all waste and unused construction materials in licensed solid waste or wastewater facilities. Do not bury, dump, or discharge, any garbage, debris, cleaning wastes, toxic materials, or

hazardous materials on the site, on the land surface or in detention basins, or otherwise allow materials to be carried off the site by runoff onto adjacent lands or into receiving waters or storm sewer systems.

END OF SECTION

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Site Development Guidelines **Activity ID:** UW-009

Activity Description: The campus will implement DOA-DSF civil engineering and sitework design guidelines for all capital projects (new construction and maintenance & renovation).

Activity Notes: Capital project sites are solely DOA-DSF responsibility. The campus can monitor activities and inform DOA-DSF of any incidents not conforming to the published standards, but cannot enforce a resolution.

The current DOA-DSF Division 31 "[Civil and Sitework Guidelines](#)" standards can be viewed [here](#). These standards are in the process of being updated by DOA-DSF. The most current draft is attached here for reference.

PROGRAM ACTIVITY TYPE

- Existing Program Activity Proposed Program Activity
 Existing Program Activity (Modified)

MEASURABLE GOALS

A. # of projects implemented.

IMPLEMENTATION SCHEDULE

- Annual
 Semi-annual
 Other (see below for details)

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | | | | | |
|--------------------------|-----|---|-------------------------------------|-----|-------------------------------------|
| <input type="checkbox"/> | 2.1 | Public Education & Outreach | <input checked="" type="checkbox"/> | 2.4 | Construction Site Pollutant Control |
| <input type="checkbox"/> | 2.2 | Public Involvement & Participation | <input type="checkbox"/> | 2.5 | Post-Construction Storm Water Mgmt |
| <input type="checkbox"/> | 2.3 | Illicit Discharge Detection & Elimination | <input type="checkbox"/> | 2.6 | Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
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Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

CIVIL DESIGN GUIDELINES -- (A/E Consultant and Agency Design Staff)

We view the following guidelines as the minimum design requirements. Most projects will require additional consideration. We expect the A/E consultant or the Design/Build team to complete the applicable items in these guidelines. Please use them as a checklist or reference in addition to the DFD master specifications (<http://www.doa.state.wi.us/dfd/dfdmain.htm>).

The following sections are included in these guidelines:

- DRAWINGS AND PROJECT MANUAL (SPEC BOOK)
- BUILDING SITE DEVELOPMENT
- GRADING/EARTHWORK
- STORM WATER AND EROSION CONTROL MANAGEMENT
 - ⇒ General Drainage
 - ⇒ Detention and Retention Basins
 - ⇒ Erosion Control
 - ⇒ Storm Sewer
- TRAFFIC CONTROL DURING CONSTRUCTION
- SITE ACCESS AND TRAFFIC CIRCULATION
- PEDESTRIAN / BICYCLE CIRCULATION AND BUS STOPS
- ROADS, DRIVEWAYS, AND PARKING LOTS
 - ⇒ Curb & Gutter and Medians
 - ⇒ Pavement
 - ⇒ Pavement Marking and Signage
 - ⇒ Parking
 - ⇒ Snow Removal and Storage
- REFUSE/RECYCLE CONTAINERS & LOADING DOCKS
- UNDERGROUND UTILITIES – GENERAL
- SANITARY SEWER FACILITIES
 - ⇒ Wastewater Treatment
 - ⇒ Sanitary Sewer Lift Station
 - ⇒ Sanitary Sewer Collection System
- WATER SYSTEM
 - ⇒ Water Pumping and Storage Facilities
 - ⇒ Water Distribution System
- LANDSCAPING AND RESTORATION
 - ⇒ Irrigation Systems
 - ⇒ Restoration of Pavement and Vegetation

DRAWINGS AND PROJECT MANUAL (SPEC BOOK)

- All Bid Drawing Sets should be provided with State, community, campus/institution, and/or other area locator maps on title sheet and/or first page inside cover sheet as necessary for bidders to readily locate the specific site of the proposed project.
- The final version of the documents must be stamped, signed, and dated by an A/E registered in the State of Wisconsin.
- Provide a graphic scale on all plan and plan/profile sheets (including horizontal and vertical scales on profile or cross section sheets). Minimum text size is 1/8 inch. Sheets will be microfilmed or digitally scanned for permanent record retention, and may be photoreduced to a working drawing plan set size (approx. 11 x 17) for the review and/or construction phases.
- Be sure all Plan Views (including floor plans), on all sheets, have a North Arrow.

- Include horizontal and vertical benchmark / survey control information in plans if applicable to project.
- Arrange sitework sheets in logical order based on the sequence of the work (e.g. site survey, site demolition/clearing plan, grading plan, erosion control plan, etc.).
- Make sure the drawing titles on the cover sheet index match the titles on the individual drawing sheets, and the project manual.
- Based on the quantities of work involved, determine whether the sitework piping/utilities work should be part of the Division 2 (Sitework - Civil) or Division 15A (Plumbing) trade and use the appropriate specifications and drawings. The DFD website includes master specifications for both these sections. <http://www.doa.state.wi.us/dfd/dfdmain.htm> Click master specifications and follow the instructions.
- Show existing and proposed structures and piping together on at least one sheet to check for conflicts. Verify clearances from exterior of pipe or outside of structure.

BUILDING SITE DEVELOPMENT

- Maintain adequate separation distances between buildings for purposes of controlling fire exposure. Clustered buildings, even with protected window and door openings, add to fire flow demands on the sprinkler and water distribution systems.

GRADING/EARTHWORK

- Slopes shall be no flatter than
 - ⇒ 2% across turf areas or
 - ⇒ 1% across pavements.
- Slopes shall be no steeper than
 - ⇒ 4 horizontal : 1 vertical for mowed turf slopes or
 - ⇒ 3 horizontal : 1 vertical for turf slopes that are not mowed or
 - ⇒ 12% on short driveways that will be snow plowed or
 - ⇒ 10% on sustained grades on long driveways and minor roads that will be snow plowed or
 - ⇒ 8% on sustained grades on major roads that will be snow plowed.
- Show limits of grading activities on plans and designate staging/stockpile areas available to Contractor. Clearly label areas that shall not be disturbed or used for ingress/egress. Show tree preservation fencing around trees and note location at the dripline.
- State whether the site is intended to balance, or if soil will be imported or exported, and provide estimated raw quantities in a table on the grading plan or in the specification manual. Make a note that the Contractor shall be responsible for verification of the excavation/embankment quantities prior to bidding. No adjustments will be made to the contract unless the plan grades are changed by more than (insert applicable limitations such as more than 3 feet or the plan quantity of earthwork is changed by more than 20%).

STORM WATER AND EROSION CONTROL MANAGEMENT

General Drainage

- Site improvements should be designed to minimize runoff as much as possible.
- Direct drainage **away** from buildings, adjacent private properties or building sites, and toward nearest available public drainage facilities of adequate capacity. If the public drainage facilities lack adequate capacity, the drainage system and other site improvements must be designed to:

- ⇒ Detain storm water runoff (see following guidelines) such that the peak runoff rate does not exceed the capacity of the public drainage facilities, or
- ⇒ The public drainage facilities must be improved to provide adequate capacity.
- State the design storm(s) used for storm sewer design in the design report.
- Verify stability of receiving facilities is adequate for the design storm flows. Verify the receiving facilities will not erode or be damaged by the design storm flows.
- Drainage piping and pumping systems cannot economically be sized to convey all storms. All sites and drainage systems must anticipate and provide for an overland path for storm waters which cannot be conveyed by piping or pumping systems to overflow with minimum resulting impact on permanent structures. This path must not go into building openings, or flood parking lots to a depth of more than 6 inches.

Detention and Retention Basins

- Detention basins (with outlets operating during the design storm) are preferred to retention basins (no outlets except for infiltration and/or overflow). Retention basins, including infiltration basins, will be accepted only where their use is justified on a case-by-case basis by DFD.
- Incorporate onsite storm water detention as necessary to prevent damage to site or receiving property / facilities. Check requirements of local ordinance. DFD is not required to abide by local ordinances except for zoning requirements. However, we do have a responsibility to design our facilities to prevent flooding, erosion, or other storm water damage to downstream property.
- If a basin is planned for the site, design overflow outlets to operate safely without damaging the basin or outlets during storms up to and including the 100-year, 24-hour storm. Overflow overtopping a road shall be prevented if possible. Installation of overflow culverts under the road is preferred. If the basin will overtop the road, the agency or community that owns the road right-of-way must approve the plan. *All basins shall have an overflow outlet including those basins that are designed as infiltration basins.*
- Detention basins should be designed to minimize maintenance, while maximizing water quality.

Erosion Control

- If the size of the disturbed areas is greater than 5 acres, a Notice of Intent to Construct will have to be filed in accordance with NR 216 or COMM 50.115 (to be revised to COMM 65 in fall of 1999 or beginning of 2000). The erosion control plan shall be included in the plans and a copy of the semi-completed NOI shall be attached in the specification book. (Do not submit the NOI.) This provides the base for the contractors to prepare their bids.

The NOI submittal may be specified as the contractor's responsibility. This will allow the contractor to amend the plan and supporting documents as necessary for his means and methods, and gain approval of DFD prior to submitting the NOI. The Contractor and DFD will both sign the NOI prior to submittal.

- Design and specify for erosion control during and after construction. Do not disturb more of site cover than is necessary at any one time. Provide Erosion Control Plan as a separate drawing on large projects, or incorporate Erosion Control items in the other site work drawings.
- Erosion control measures shall be in accordance with the DNR Construction Site Handbook as a minimum. In addition, the plans shall state erosion control measures to be used in sensitive areas of the site.
- Consider requiring that some specific amount of erosion mat, silt fence or other erosion control materials are kept onsite and ready for immediate installation as directed by the construction

representative. This can be accomplished through the specifications or a note on the erosion control plan.

- DFD does not recommend placing silt fence or other fabric horizontally over or under inlet grates. Fabric placed over becomes worn under traffic. Fabric placed under is difficult to remove and frequently drops into the inlet with all the silt. In either case a worker or resident with a utility knife can easily cut a hole in the fabric to “let the water drain out”. Instead, we recommend blocking the grates with stone weepers, bales, or sandbags.
- Erosion control and turf stabilization measures shall be designed and specified in accordance with the WDOT Facilities Development Manual (FDM) procedures and the WDOT Product Acceptability List for Erosion Control (PAL).
- Turf areas that receive runoff directly from pavement shall be sodded and reinforced with net or seeded and reinforced with erosion mat. Erosion mat shall be designed and specified in accordance with the WDOT Facilities Development Manual (FDM) and the WDOT Product Acceptability List for Erosion Control (PAL).
- Turf areas that receive runoff directly from a culvert, storm sewer outfall or retention/detention basin outlet or overflow shall be stabilized with riprap. The size of the pieces of riprap and the dimensions of the riprap pad shall be determined in accordance with the procedures in the drainage section of the WDOT FDM. All riprap shall be underlain with geotextile appropriate for the weight of the riprap.

Storm Sewer

- Culverts and storm sewers in security locations should be reinforced concrete pipe to preclude security breaches in the pipe. Any openings into the piping system having dimensions greater than 8 inches must be provided with security grates. Where debris/security grates are used on inlet structures, the surface area of the grating should be several times the end area of the pipe to minimize flooding and to keep flood velocities at the grate down. Manhole covers must be lockable both inside and outside the secure perimeter to avoid a security breach from outside the secure perimeter. Check with the institution for any preferences on the types of lockable covers. DO NOT use strap-type manhole cover locks in pavement areas subject to snow plowing.
- Inlet frames and grates, and manhole frames and covers manufacturer and models should be consistent with those currently in use on the site UNLESS the site wants to change, and can identify problems with the existing items.

TRAFFIC CONTROL DURING CONSTRUCTION

Discuss the interruption of any traffic or deliveries with the occupants/owners of nearby buildings/properties to determine how work can be accomplished with minimum disruption. Indicate in the specifications and/or working drawings, if work is required outside of regular work hours or in secured areas. Add specifics regarding locations, hours, lengths of disruption, etc.

SITE ACCESS AND TRAFFIC CIRCULATION

- Plan driveway(s) to account for adequate stacking of exit traffic without blocking on-site traffic patterns, and adequate stacking of entrance traffic without blocking the road.
- Show proposed traffic signing and pavement markings on the plans. All signs and markings shall be in accordance with the Manual of Uniform Traffic Control Devices (MUTCD).
- Yellow pavement markings shall be used to separate vehicles traveling in opposite directions and where there are traffic restrictions that need to be highlighted. White pavement markings shall be used to separate lanes traveling in the same direction and for parking stalls.

- If possible, separate access points for car traffic and truck or bus traffic (typically applicable to parks, historic sites, and schools).
- Treat the driveway(s) as an intersection and designate a vision triangle restricting the height of landscaping, signing or other obstacles (including snowbanks) near the driveway.
- Assume that all larger buildings will need an access suitable for maneuvering of semi-trailer traffic for delivery of furniture and equipment (even if only for the initial occupancy of the building).
- Plan complete travel path for waste removal vehicles – Example: drive through the parking area, back up and maneuver to empty the dumpsters, turn around and leave through the parking area.
- Show construction vehicle routes and/or restrictions on the site. If construction vehicles will be routed over existing roadways, paths or shallow underground utilities, specifications shall include provisions for repair/replacement prior to project acceptance and closeout.

PEDESTRIAN / BICYCLE CIRCULATION AND BUS STOPS

- If the site is a public building and located in a community with bus service, a location suitable for a bus stop should be included along the fronting road. The bus stop should have sidewalk and enough space for a shelter.
- Do not locate sidewalk between rows of parking unless it is part of a median area. The median should be wide enough to accommodate the over hang of parked cars and a 4-foot wide sidewalk (minimum). Avoid narrow strips of lawn on either side of the sidewalk since these tend to be high maintenance areas.
- Locate pedestrian routes through and along parking lots at the same elevation as the parking lot.
- Existing pedestrian paths or patterns, should be maintained as much as possible with the new development. Paths may be relocated, but the pedestrian access must be maintained.
- Show intended path of travel from handicap accessible parking stalls to the handicap accessible building entrance.
- Pedestrian paths shall generally be paved in areas requiring snow removal.
- Provide bicycle parking racks near employee entrance. Bicycle racks may also be desirable near the main entrance.
- Bicycle facilities should be designed in accordance with WDOT or AASHTO design procedures if possible.

ROADS, DRIVEWAYS, AND PARKING LOTS

Curb & Gutter and Medians

- Match existing curbing or curb and gutter used on the site, or match local community standard.
- Plowable ends are required at the termination of curb. 6-inch high curb may taper down to the ground over a distance of 3 feet (minimum).
- Some medians will also require plowable or mountable noses (see DOT standard for Concrete Median Nose, Sloped Nose Detail).

Pavement

- Drive aisles and pavement areas receiving high volumes of truck or bus traffic, or heavily loaded vehicles (e.g. loading docks, bus stops, bus parking, refuse and recycling dumpster locations etc.) shall be paved with a thicker pavement section (Heavy Duty Pavement). The actual pavement structure (aggregate base course and asphalt or concrete pavement) shall be designed based on the soil conditions at the site and the type of traffic to be encountered (heavy vehicles and/or large quantities of vehicles). The WDOT FDM design procedure for flexible or rigid pavements may be used. Recent typical designs for Heavy Duty Pavement have been around 4 inches of asphalt pavement with 12 inches of gravel base course.
- The minimum pavement structure for typical asphalt pavement shall be 3 inches of WDOT Type MV or LV (contractor's choice based on local availability) asphalt pavement over 8 inches of gravel base course. The pavement structure for paved parking lots shall be designed based on the soil conditions at the site.
- The minimum section for concrete sidewalks is 5 inches of concrete with 6" x 6" No. 6 (W1.4) welded wire mesh reinforcement.
- Concrete roadways or sidewalks subject to vehicular traffic (snowplows, service trucks, delivery trucks, fire lanes, etc.) should be a minimum of 7 inches thick with 6" x 6" No. 6 (W1.4) welded wire mesh reinforcement, or 8 inches thick without mesh reinforcement, but with doweled joints.
- If concrete pavement is used, include a diagram or information regarding joint location and spacing.
- The use of brick pavers as an exterior paving material is NOT recommended. Their poor performance in the Wisconsin climate has resulted in high maintenance, and potential liabilities from tripping hazards. It is recommended that alternative architectural paving materials (e.g. concrete with patterns, textures, exposed aggregates, colors, etc.) be used in place of the pavers. Although a slightly higher initial cost, the long-term maintenance and liability savings of the alternative materials make brick pavers a more expensive material.
- Where new bituminous pavements abut existing bituminous pavements, the existing pavement should be sawcut to form a neat vertical edge and a good butt joint between the new and existing pavements. This vertical edge, and those between adjacent paver passes (on the surface course) should be given a coat of tack.
- Where existing bituminous pavements are being removed for replacement with new pavement, DFD recommends milling or thoroughly scarifying (with the underlying gravel) the existing bituminous pavement, and reusing the material as all or part of the base course for new pavement.

Pavement Marking and Signage

- Pavement markings should be WHITE unless yellow paint is necessary for centerline marking between opposing traffic streams, or to highlight parking restrictions or traffic obstructions. Reflective glass beads are not necessary in the paint unless warranted as a safety measure on an individual project. Avoid using other pavement paint colors since white and yellow are the only two colors in the MUTCD and are readily available. Yellow paint shall be used to separate vehicles traveling in opposite directions. White paint shall be used to separate lanes traveling in the same direction and for parking stalls.
- Traffic signing and barricading in construction areas should be in accordance with the appropriate Chapter of the MUTCD. **Note:** Traffic cones are temporary measures to be used only during daylight hours and when the danger to motorist or construction workers is minimal. All traffic control utilized during darkness must be reflectorized at a minimum, and should be equipped with flashers or steady burn lights depending upon the amount and type of traffic and ambient nightline lighting levels.

- In accordance with Statutes, permanent traffic signing should be specified for purchase from Badger State Industries (the Department of Corrections industries program). Signs should be made from aluminum blanks.
- Show proposed traffic signing and pavement markings on the plans. All signs and markings shall be in accordance with the MUTCD.

Parking

- Fulltime vehicle parking is generally not desirable in front of the main building entrance. Loading / unloading is acceptable.
- The minimum parking stall dimensions for a stall at 90 degrees to the aisle, are 9.0 feet wide by 18.5 feet deep, unless local ordinances are more restrictive. Stalls at angles other than 90 degrees to the aisle should be provided with the geometric equivalents of the 9.0 x 18.5-foot stall.
- Where parking stalls abut the edge of the parking lot, and adjacent landscaping will allow vehicles to overhang the edge of the parking lot pavement, the stall depth may be reduced to 16.5 feet if curbing or wheel stops are present for drainage and/or landscape protection.
- One-way traffic patterns in parking lots must NOT utilize 90 degree parking stalls since vehicles can exit the stall and travel in the wrong direction. One way traffic patterns should use diagonal parking as a means to reinforce the one-way traffic patterns.
- Typical parking lot aisle widths should be 24 feet for two-way traffic patterns. A 20-foot-wide travel path is the minimum. Lesser widths will be accepted for one-way traffic aisles where the aisle still provides sufficient back-out space. Maneuvering/turning space at the ends of the aisles should not be less than 24 feet unless it can be shown that the vehicles using the parking lot can traverse a lesser space.
- To avoid motorists parking illegally in the side access aisle of 8 foot wide van accessible parking stalls, DFD recommends that the van accessible stalls be 11 feet wide with a 5 foot wide access aisle (per the dimensions in ADA Appendix A4.6.3), together with a "van accessible" sign. The "van accessible" placard can be deleted if all the accessible stalls are laid out to these "11 foot and 5 foot" widths. Comply with local ordinances, where more restrictive.
- Motorcycle parking areas should be paved in concrete if these areas are located in the sun during the warmest times of the day. Motorcycle kickstands tend to sink into asphalt pavement during hot weather causing the motorcycles to become unstable and tip over.

Snow Removal and Storage

- Design paved roads and parking areas for snow removal using the methods employed by the agency (usually plows). Provide sufficient openings in curbs to access areas designated for snow storage. Keep raised landscape islands to a minimum except where necessary for control of critical traffic patterns.
- Design paved paths for snow removal with tractor-type (riding) snow blowers, brooms/brushes and loaders. Path width and curvature should allow the operator to stay on the pavement as much as possible.
- Show snow storage areas on plans.
- Do not locate snow storage areas across the parking lot or road/path from the drainage facilities or on the uphill side of the normal drainage pattern. Drainage from melting snow piles crossing the pavement causes icing problems and increased maintenance.

REFUSE/RECYCLE CONTAINERS & LOADING DOCKS (typically larger buildings and facilities)

- Refuse and recycle containers shall be covered containers located in a designated storage area. The area shall be graded to drain. The pad for the containers shall be concrete pavement.
- Screening around refuse and recycle containers is generally desirable and is required by many zoning codes.
- Loading dock traffic shall not interfere with parking lot or driveway traffic. See guidelines in the Site Access and Traffic Circulation section.
- If loading dock bumper posts do not have to be painted (some federal facilities require yellow posts), use 6-inch diameter aluminized steel culvert pipes for concrete-filled bumper posts at loading docks.

UNDERGROUND UTILITIES – GENERAL

- Insulate shallow utility pipelines crossing roadways, sidewalks or other pavements where snow will be removed. Deeper frost penetrations caused by snow removal can cause freezing in pipelines.
- Insulate utility lines adjacent to storm sewer inlets and culverts where cold air can settle into the structure and possibly freeze the nearby utility line.
- Do not insulate *under* pipes since this may actually promote freezing by blocking heat from the ground below.
- When selecting the type of piping material to be specified, give consideration to the likelihood of the installed pipeline being damaged during future utility trenching or landscaping excavation, driving sign posts into the pipeline from above grade, or other activities that may damage the pipeline. Plastic and flexible pipe materials are not recommended where shallow enough to be struck during the placement of a sign or fence post, or within areas subject to other utility or landscaping work.
- Manholes or other underground vaults and structures are typically confined spaces including those located inside wastewater treatment facilities or on primary electric and steam distribution systems. Any structures or manholes with hatch covers (easily open by one person) or containing electrical or plumbing/hydraulic equipment that requires frequent monitoring or service (typical on wastewater lift stations) shall be posted as confined spaces. Posting may be accomplished by a sign at the entrance to the confined space stating the following or something similar (a permit may not be required):

**DANGER – (PERMIT REQUIRED)
CONFINED SPACE
AUTHORIZED ENTRANTS ONLY**

The sign must be placed in a location readily visible to anyone try to enter the space such as the inside of the hatch cover. Do not post the sign on the exterior top of the lid if the structure is in a driving or snow plow area. Do not post the sign on a building adjacent to the confined space if people unfamiliar with the confined space use the area. (They become concerned about the “danger”.) The sign material and printing must stand up to the environment in the sign location.

SANITARY SEWER FACILITIES

Wastewater Treatment

- Design in accordance with current WDNR regulations and present and future waste load and flow requirements. Consider industry, food service, and laundry facilities that may be provided on the site in the future. Discuss present and future uses with agency and project manager. DNR requires designs for a 20-year design period.

Sanitary Sewer Lift Station

- Plan for future upgrades or expansion if possible. Pumps may be selected such that the impellers or motors could be changed out to increase capacity in the future without having to modify the pump seating in the bottom of the wetwell (prevent entering the confined space as much as possible). Location may have to be selected to maximize the amount of land served.
- Meet site's requirements for features that simplify maintenance and operation. This may include using specific brands, models or types of equipment and/or materials; specifying valves for operation with a specific type of wrench; or locating generator connections for easy access by personnel and equipment.
- Determine who will own the lift station and who will operate and maintain it.
- Determine and specifically state how the lift station is communicating with the owner/operator, and who is responsible for completing connections to the owner/operator's communication and operational monitoring system.
- Lift station pumping systems may need to be provided with protection from debris that typically finds its way into the sewers of institutional users. Determine whether local sewer use ordinances require this material to be removed from the sewage stream, or whether a sewage grinder system may be used as part of the pump protection system.
- If wastewater is expected to be corrosive, consider using braided nylon rope instead of steel lift chains or cable. The rope should be rated for at least 1½ times the weight that it will have to lift. All knots should be non-slip knots. Do not use poly rope since it will stretch.

Sanitary Sewer Collection System

- Gravity sewer system pipe that are
 - ⇒ 10" in diameter or less and
 - ⇒ Buried at depths of less than 15 feet and
 - ⇒ Located in lawn areas or under roads carrying typical street trafficshall be constructed out of the same materials as are currently in use at the site unless the existing pipe is clay or the existing materials are causing problems. Pipes that are larger, deeper or in areas carrying heavy (weight) traffic or other loads shall be analyzed with regards to appropriate materials and installation techniques. Manhole frames and covers manufacturer and models should be consistent with those currently in use on the site UNLESS the site wants to change, and can identify problems with the existing items.
- Manhole frames and covers shall match those currently in use at the site **except:**
 - ⇒ Areas prone to flooding or surcharging shall have frame and cover assembly that is flood proof.
 - ⇒ Security areas shall have frames and covers that are lockable and anchored to the concrete structure (both inside and outside the perimeter fence). *Strap type locking mechanisms shall not be used in pavement areas subject to snow plowing.*
 - ⇒ Lids shall have closed pick holes and "O"-ring seals to minimize infiltration of surface water.
- Sanitary sewer systems MUST be designed to exclude clear water.
- Sewer pipe locations shall be evaluated with respect to future construction and site enhancements such as building additions, fence construction or signpost installation. In areas where fencing or signposts can not be avoided, use pipe materials that will resist damage if they are inadvertently hit during post installation (i.e. reinforced concrete).
- Sewer pipe shall be located far enough away from buildings and structures that future excavation along the building will not require special protection (sheeting, shoring, piling) of the pipe, and future excavation of the pipe will not require special protection of the building foundation.

- Landscaping areas should not be located over sewer pipe since these areas will be disturbed if the sewer is excavated. Under no circumstances should trees be planted over the sewer pipe or within 15 feet either side of the pipe (additional space is recommended if the sewer is more than 8 feet deep).
- If sanitary sewer will be extended in the future, stub sewer pipe out of the last manhole and securely cap or permanently plug pipe end.

WATER SYSTEM

Water Pumping and Storage Facilities

- Design in accordance with current site water use, WDNR regulations, and fire flow requirements as a minimum. Consider increasing water quantity and pressure above WDNR minimums for comfort and convenience of residents or users. For example: most State facilities utilize toilet flush valves that require a minimum system pressure for proper operation that is higher than the WDNR minimum requirements.
- If possible, the site shall be connected to the nearest municipal water system.
- If a pump is installed, consider connecting a braided nylon lift rope from the top of the pump to the top of the pit instead of steel lift chains or cable. The rope should be rated for at least 1½ times the weight that it will have to lift. All knots should be non-slip knots. Do not use poly rope since it will stretch.

Water Distribution System

- Distribution and service pipes 4 inches or more in diameter shall be ductile iron unless soil conditions warrant the use of AWWA C900 PVC pipe. Service lines less than 4 inches in diameter shall be copper.
- Fire hydrant spacing shall be in accordance with WDNR and Commerce regulations as a minimum. Additional hydrants may be considered based on the use of the structures and accessibility of the site.
- It should be noted that the frost protection requirements of Comm 82.30 are minimums and that DFD recommends more conservative protection be provided. Frost protection design, including depth of cover and insulation, should be based on the practices of local water utilities and their experiences with frost protection.
- Insulate all water lines with less than 5.5 feet of cover over the top of the pipe. Consider insulating watermains and service lines located in cleared pavement areas with low use during extended periods during the winter. Frost penetration in these areas can be more than 6 feet deep.
- Do not insulate under watermains since this may block heat from the earth below and allow the watermain to freeze.
- Valves, hydrants, and other fittings manufacturer and models should be consistent with those currently in use on the site UNLESS the site wants to change, and can identify problems with the existing items.
- Watermain shall be located far enough away from buildings and structures that future excavation along the building will not require special protection of the pipe (sheeting, shoring, piling), and future excavation of the pipe will not require special protection of the building foundation.
- Landscaping areas should not be located over watermains or services since these areas will be disturbed if the water pipe is excavated. Under no circumstances should trees be planted over the water pipe or within 15 feet either side of the pipe.

LANDSCAPING AND RESTORATION

Irrigation Systems

- Existing irrigation systems shall be maintained during work if possible. Specify that contractor shall plan access and haul routes to prevent or minimize crossing irrigation lines, valves or sprinkler heads.
- Plans shall show irrigation system facilities that can be located, and shall include a note that the irrigation system exists and shall be protected. Any damage shall be repaired to a condition equal to or better than preconstruction.

Restoration of Pavement and Vegetation

- All disturbed areas shall be restored to a stable surface. Unpaved areas shall be seeded or sodded and protected from erosion while the grass is becoming established. The specifications may require the contractor to provide water, mowing, and weeding until the grass is established if these can not be provided by the site staff. Discuss these responsibilities with the site staff.
- Use grasses and planting that will tolerate the planting location and minimize maintenance if possible. Examples follow:
 - ⇒ “No-mow” fescues for open areas, but not at the front entrance since it tends to look weedy;
 - ⇒ Salt tolerant species of shrubs, trees, perennials and grasses for islands / medians and planting areas in and along drives, parking lots and roads;
 - ⇒ Species tolerant of snow load and icing for use along drives, parking lots and roads.
- Do not use “nature grasses” or prairie landscape within 100 yards of the building or any structure since these should occasionally be burned. These types of plantings also tend to look weedy and are best kept to large open areas.
- Large open areas and storm water storage areas that will be seeded or sodded or used for infiltration should be deep tilled prior to placing topsoil. This procedure is intended to loosen the subsoil and reduce the effects of compaction that occurs under construction equipment. This will increase the infiltration and aerate the soil improving both the storm water and vegetation characteristics. Deep tilling may also be referenced as “subsoiling” in some documents (see <http://www.co.dane.wi.us/landconservation/papers/subsoil2.doc> for more information regarding appropriate depths and methods of deep tilling or “subsoiling”.)
- Vegetated areas that receive runoff directly from pavement shall be sodded and reinforced with net or seeded and reinforced with erosion mat. Erosion mat shall be designed and specified in accordance with the WDOT Facilities Development Manual (FDM) and the WDOT Product Acceptability List for Erosion Control (PAL).
- Pavement that has been cracked, tipped, rutted, settled or otherwise damaged during construction and areas where pavement has been removed shall be patched. The patch shall be extended to tie into pavement in good condition and shall match the existing pavement in type and depth. The quality of paving materials used for patching shall meet or exceed the quality of the remaining pavement. Consider the shape and size of pavement patches with regard to drainage in construction area. Correct standing water problems if possible.

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: SLAMM Modeling **Activity ID:** UW-010

Activity Description: The campus will work with the city to complete campus SLAMM models equivalent to the criteria and specifications implemented for the city's SLAMM models (no controls, current condition, proposed condition).

Activity Notes: The SLAMM modeling was not included in the current storm water management plan activities and must be completed under a separate contract. The campus will work with the city and their selected A/E firm to complete a SLAMM model consistent with the host community standards.

PROGRAM ACTIVITY TYPE

- | | |
|---|---|
| <input type="checkbox"/> Existing Program Activity
<input type="checkbox"/> Existing Program Activity (Modified) | <input checked="" type="checkbox"/> Proposed Program Activity |
|---|---|

MEASURABLE GOALS

- A. SLAMM models completed by 07/2007.
- B. 20% average TSS reduction.
- C. 40% average TSS reduction.
- D. 80% TSS reduction for all new development.

IMPLEMENTATION SCHEDULE

- | | |
|--|--|
| <input type="checkbox"/> Annual
<input type="checkbox"/> Semi-annual
<input checked="" type="checkbox"/> Other (see below for details) | <ul style="list-style-type: none"> • 20% TSS reduction required by 03/10/2008. • 40% TSS reduction required by 03/10/2013. • 80% TSS reduction required for all new development > 1 acre. • 20% TSS reduction required for all new development < 1 acre. |
|--|--|

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | |
|---|---|
| <input type="checkbox"/> 2.1 Public Education & Outreach
<input type="checkbox"/> 2.2 Public Involvement & Participation
<input type="checkbox"/> 2.3 Illicit Discharge Detection & Elimination | <input type="checkbox"/> 2.4 Construction Site Pollutant Control
<input checked="" type="checkbox"/> 2.5 Post-Construction Storm Water Mgmt
<input type="checkbox"/> 2.6 Pollution Prevention |
|---|---|

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Storm Water Operation & Maintenance Plans **Activity ID:** UW-011

Activity Description: The campus will establish storm water operation and maintenance plans w/ the WDNR as required by COMM 82.36(13) for all storm water plumbing systems with drainage areas of one (1) or more acres installed after 12/01/2004.

Activity Notes: This program is already required and active for all UW capital projects meeting the COMM 82.36(13) criteria.

PROGRAM ACTIVITY TYPE

Existing Program Activity Proposed Program Activity
 Existing Program Activity (Modified)

MEASURABLE GOALS

A. # of operation & maintenance plans developed.

Annual
 Semi-annual
 Other (see below for details)

IMPLEMENTATION SCHEDULE

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

<input type="checkbox"/> 2.1	Public Education & Outreach	<input type="checkbox"/> 2.4	Construction Site Pollutant Control
<input type="checkbox"/> 2.2	Public Involvement & Participation	<input checked="" type="checkbox"/> 2.5	Post-Construction Storm Water Mgmt
<input type="checkbox"/> 2.3	Illicit Discharge Detection & Elimination	<input checked="" type="checkbox"/> 2.6	Pollution Prevention

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Storm Sewer System Inspection **Activity ID:** UW-012

Activity Description: The campus will inspect all accessible and exposed components of the storm sewer system and document any defects or damaged components discovered and make necessary arrangements for any and all corrective action(s) required. The campus will routinely schedule and record all inspection dates and components and track any and all corrective actions.

Activity Notes: The storm sewer system inspections will be completed during the Spring and Fall each year and coincide with the semi-annual roof inspections. Inspections will be scheduled and tracked on the campus computerized maintenance management system (CMMS).

PROGRAM ACTIVITY TYPE

- | | |
|--|--|
| <input type="checkbox"/> Existing Program Activity | <input type="checkbox"/> Proposed Program Activity |
| <input checked="" type="checkbox"/> Existing Program Activity (Modified) | |

MEASURABLE GOALS

- A. # of work orders for inspection issued.
- B. # of work orders for inspection completed.
- C. # of corrective work orders issued post-inspection.
- D. # of corrective projects requested post-inspection.

IMPLEMENTATION SCHEDULE

- Annual
- Semi-annual
- Other (see below for details)

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | |
|---|--|
| <input type="checkbox"/> 2.1 Public Education & Outreach | <input type="checkbox"/> 2.4 Construction Site Pollutant Control |
| <input type="checkbox"/> 2.2 Public Involvement & Participation | <input checked="" type="checkbox"/> 2.5 Post-Construction Storm Water Mgmt |
| <input checked="" type="checkbox"/> 2.3 Illicit Discharge Detection & Elimination | <input checked="" type="checkbox"/> 2.6 Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
Department: [INSERT CONTACT DEPARTMENT HERE]
Title: [INSERT CONTACT POSITION TITLE HERE]
Email: [INSERT CONTACT EMAIL ADDRESS HERE]
Phone: [INSERT CONTACT TELEPHONE NUMBER HERE]
Fax: [INSERT CONTACT FAX NUMBER HERE]

**WPDES PERMIT NO. WI-S050075-1
MUNICIPAL SEPARATE STORM SEWER SYSTEM
STORM WATER PROGRAM ACTIVITY DETAIL**

Location: University of Wisconsin - [INSERT YOUR INSTITUTION HERE]

Activity Title: Campus Storm Water Logo Contest **Activity ID:** UW-013

Activity Description: The campus will promote and sponsor a campus storm water logo design contest to designate all campus related storm water management publications.

Activity Notes: The design contest will be open to both faculty/staff and students and optionally to the host community. The contest should spark interest in learning more about storm water management and once a logo is designed and implemented, should provide instant campus-wide recognition of storm water management related materials.

PROGRAM ACTIVITY TYPE

- | | |
|---|---|
| <input type="checkbox"/> Existing Program Activity | <input checked="" type="checkbox"/> Proposed Program Activity |
| <input type="checkbox"/> Existing Program Activity (Modified) | |

MEASURABLE GOALS

- A. # of design entries submitted.
- B. selection of campus storm water logo.

IMPLEMENTATION SCHEDULE

- Annual
- Semi-annual
- Other (see below for details)
one-time event only.

PERMIT CONDITION AREA(S) ADDRESSED BY THIS PROGRAM ACTIVITY

- | | |
|--|--|
| <input checked="" type="checkbox"/> 2.1 Public Education & Outreach | <input type="checkbox"/> 2.4 Construction Site Pollutant Control |
| <input checked="" type="checkbox"/> 2.2 Public Involvement & Participation | <input type="checkbox"/> 2.5 Post-Construction Storm Water Mgmt |
| <input type="checkbox"/> 2.3 Illicit Discharge Detection & Elimination | <input type="checkbox"/> 2.6 Pollution Prevention |

PROGRAM ACTIVITY PRIMARY CONTACT INFORMATION

Name: [INSERT CONTACT NAME HERE]
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