ANNUAL REPORT for 2008

MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)

Reporting period January 1, 2008 to December 31, 2008

Due June 30, 2009

USE OF THIS FORM IS MANDATORY By completing this Annual Report form, you are providing the Minnesota Pollution Control Agency (MPCA) with a summary of your status of compliance with permit conditions, including an assessment of the appropriateness of your identified best management practices (BMPs) and progress towards achieving your identified measurable goals for each of the minimum control measures as required by the MS4 Permit. If an MS4 determines that program status or compliance with the permit can not be adequately reflected within the structure of this form additional explanation and/or information may be referenced in an attachment. This form has significant limitations and provides only a snap shot of MS4 compliance with the conditions in the Permit. After reviewing the information MPCA staff may need to contact the MS4 to clarify or seek additional information. MPCA enforcement policy is to provide the opportunity to respond to any alleged violations before any enforcement action is taken.

Submit your annual report by June 30, 2009 to:

Minnesota Pollution Control Agency
Municipal Division
520 Lafayette Road North
St. Paul, MN 55155-4194

This Annual Report may be submitted electronically via email to the MPCA MS4 Program mailbox: ms4permit@pca.state.mn.us. If submitting electronically, this form must be sent via email from the person that is duly authorized to sign this form under the Owner/Operator Certification section. A confirmation email will be sent in response to electronic submissions. If you would like to obtain an electronic copy of the MS4 Annual Report for 2008 form, please visit: www.pca.state.mn.us/water/stormwater/stormwater-ms4.html.

If you have further questions, please contact one of these MPCA staff members (call toll-free 800-657-3864). Note new numbers effective November 2008:

- Keith Cherryholmes 651-757-2270
- Joyce Cieluch 218-846-7387
- Scott Fox 651-757-2368
- Amy Garcia 651-757-2377

Minimum Control Measure 1: Public Education and Outreach [V.G.1]

U of M-Duluth MS4		
Name of MS4		
John King, Director – UMD Facilites Management		
Name of Contact Person		
218-726-8821	jking@d.umn.edu	
Telephone (including area code)	Email Address	
1049 University Drive, 241 DAdB		
Mailing Address		
Duluth	MN	55812
City	State	ZIP code

A. The permit requires each MS4 to implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and steps that the public can take to reduce pollutants in stormwater runoff. [Part V.G.1.a] **NOTE:** Please indicate which of the following distribution methods you used during the 2008 calendar year. Indicate the number distributed in the spaces provided (enter "0" if the method was not used or "NA" if the data does not exist)::

Media type	Number of media	Number of times published	Circulation/Audience
Example: Brochures:	*3 different brochures*	*published 5 times*	*about 10,000*
Brochures:	Rain Gdn tour brochure Stormwater is not just Rain	1 1	450 250
Newsletter:	NA	NA	NA
Posters:	NA	NA	NA
Newspaper articles:	0	0	0
Utility bill inserts:	NA	NA	NA
Radio ads:	1	3	Regional Audience
Television ads:	3	400	Regional Audience
Cable Access Channel:	0	0	0
Other: Workshops View of the Lake boat Presentations / tours billboards SEE ATTACHED SUMMARY	4 1 4 2	1 60 40 1	about 300 400 about 1000 about 10,000

If you use a stormwater Web site as a tool to distribute stormwater educational materials:

What is the URL: http://www.d.umn.edu/fm/stormwater/index.htm

http://www.lakesuperiorstreams.org/

How many hits to the stormwater page during 2008: lss.org received 5.27 million requests in 2008.

Did you hold stormwater related events, presentations to schools or other such activities ☒ **Yes** ☐ **No**

If yes, please describe: See attached Summary of Activities for 2008.

B. What stage of development would you assign to each area of your stormwater education program? (If there are multiple components for a Minimum Control Measure (MCM) check the one box that most accurately reflects the overall stage for that MCM). You may include an attachment if further explanation is desired.

	Not started	Research	Development	Early Implementation	Program in place
MCM 1:	☐	☐	☐	☐	☒
MCM 2:	☐	☐	☐	☐	☒
MCM 3:	☐	☐	☐	☐	☒
MCM 4:	☐	☐	☒	☐	☐
MCM 5:	☐	☐	☒	☐	☐
MCM 6:	☐	☐	☐	☐	☒

C. Have you developed partnerships with other MS4s, watershed districts, local or state governments, educational institutions, etc. to assist you in fulfilling the requirements for Minimum Control Measure 1? ☒ **Yes** ☐ **No**

D. List those entities with which you have a partnership to meet the requirements of this MCM and describe the nature of the agreement(s) (list if level of effort exceeded 10 hours): See attached additional comments sheet

Minimum Control Measure 2: Public Participation/Involvement [V.G.2]

A. Did you hold a public meeting to present accomplishments for calendar year 2008 and to discuss your Stormwater Pollution Prevention Program (SWPPP)? [Part V.G.1.e] If no, explain: _____ ☒ **Yes** ☐ **No**

B. What was the date of the public meeting? 4-15-09	
C. How many citizens attended specifically for stormwater (excluding board/council members and staff/hired consultants)? 22	
D. Was the public meeting a stand-alone meeting for stormwater or was it combined with some other function such as a City Council meeting?	☐ **Stand-alone** ☒ **Combined**
E. Each MS4 must receive and consider input from the public prior to submittal of your annual report. Did you receive written and/or oral input on your SWPPP? [Part V.G.2.b.1-3].	☒ **Yes** ☐ **No**
F. Have you revised your SWPPP in response to comments received from the public in calendar year 2008 or early 2009 (if meeting held in 2009)? [Part V.G.2.c] If *yes*, describe. Attach a separate sheet if necessary: There were no comments received that required modifications to our SWPPP.	☐ **Yes** ☒ **No**

Minimum Control Measure 3: Illicit Discharge Detection and Elimination [V.G.3]

The permit requires MS4s to develop, implement and enforce a program to detect and eliminate illicit discharges as defined in 40 CFR 122.26(b)(2) in your SWPPP. You must also select and implement a program of appropriate BMPs and measurable goals for this minimum control measure.

A. Have you completed a storm sewer system map in accordance with the requirements of the permit? (MPCA assumes that completed maps will still need updates and corrections as changes occur). If *yes*, describe the form in which the map is available: ☐ Hardcopy only ☐ GIS system ☒ CAD ☐ Other system: _____ If *no*, please explain: _____ **NOTE:** The storm sewer system map was to be completed by June 30, 2008. [Part V.G.3.a]	☒ **Yes** ☐ **No**
B. Has an ordinance or other regulatory mechanism been adopted to prohibit illicit discharges or other non-stormwater discharges from entering your system? Provide the date for the most relevant part of the regulatory mechanism that was adopted or estimated date of adoption: 2/2009	☒ **Yes** ☐ **No**
C. Have you completed the tasks associated with the schedule listed on BMP Summary Sheet 3c-1 in your program for illicit discharge detection and elimination? (attach additional information if needed) Indicate the status of development for tasks associated with BMP Summary Sheet 3c-1: ☐ Not started ☐ Research ☐ Development ☒ Implementation ☐ Program in place	☐ **Yes** ☒ **No**
D. Have you completed the tasks associated with the schedule listed on BMP Summary Sheet 3d-1 for your Public and Employee Illicit Discharge Information Program? Indicate the status of development for tasks associated with BMP Summary Sheet 3d-1: ☐ Not started ☐ Research ☐ Development ☐ Implementation ☒ Program in place	☒ **Yes** ☐ **No**

Minimum Control Measure 4: Construction Site Stormwater Runoff Control [V.G.4]

The permit requires that each MS4 **develop, implement, and enforce a program** to reduce pollutants in any stormwater runoff to your small MS4 from construction activities within your jurisdiction that result in a land disturbance of equal to or greater than one acre, including the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb one or more acres (include if your MS4 established a smaller site size). [Part V.G.4.]

A. Have you adopted an ordinance or other regulatory mechanism that regulates stormwater runoff from construction activities that results in a land disturbance of greater than or equal to one acre and/or less than one acre that is part of a common plan of development or sale that will ultimately disturb one	☒ **Yes** ☐ **No**

acre or more? **NOTE:** Your regulatory mechanism must be fully developed and implemented within six months from the extension of permit coverage.	

B. A complete copy of your erosion and sediment control ordinance or other regulatory mechanism addressing the requirements of Part V.G.4 of the Permit must be submitted with this Annual Report. This documentation may be submitted in hard copy, as a separate electronic file, or electronically attached to this Annual Report. Have you submitted a copy of your erosion and sediment control ordinance or other regulatory mechanism? ☒ **Yes** ☐ **No**

Check here if you have **No Regulatory Authority** ☒

C. The following are among the criteria used to evaluate the effectiveness of this program. Which of the following BMP components and pollution prevention management measures have been incorporated into your regulatory mechanism? Check all that apply and include a citation for each checked measure outlining specifically where it can be located in the documents submitted with this Annual Report. If you are utilizing the "Other Regulatory Mechanism" option, please respond in the same manner and follow the above submittal procedures.

BMP Component/P2 Measure	**Citation** (Ordinance, Rule, Statute, Code, MOU, or other official agreement, page #, paragraph, line item, or other reference)
☒ Temporary erosion controls	U of M Storm Water Compliance Procedure 3. Construction Site SWPPP - Construction Site Erosion and Sediment Controls, Appendix A , U of M Construction Standards - Program Information/Requirements 3.3., and U of M Construction Standards - Division 1 - 01500 - 7. Temporary Erosion and Sediment Controls.
☒ Record keeping for rainfall and inspections	U of M Storm Water Compliance Procedure 3. Construction Site SWPPP Construction Site Erosion and Sediment Control #4 / Appendix A - Site Inspections, and U of M Construction Standards - Division 1 - 01500 - 7. Temporary Erosion and Sediment Controls 7.7 Inspections.
☒ Permanent erosion controls	U of M Construction Standards - Program Information/Requirements 3.3.
☒ Waste controls for hazardous waste	U of M Construction Standards - Division 1 - 01505 - Construction Waste Management 1. Hazardous Waste Management
☒ Waste controls for solid waste	U of M Construction Standards - Division 1 - 01505 - Construction Waste Management 2. Solid Waste Management
☒ Dewatering and basin draining	Appendix A - Dewatering Treatment and U of M Construction Standards - Division 1 - 01500 - 7. Temporary Erosion and Sediment Controls.
☒ Regular inspections by site operators	U of M Storm Water Compliance Procedure 3. Construction Site SWPPP Construction Site Erosion and Sediment Control #4, Appendix A - Site Inspections, and U of M Construction

	Standards - Division 1 - 01500 - 7. Temporary Erosion and Sediment Controls.
☒ Site plan submittal including erosion and sediment control BMPs	U of M Storm Water Compliance Procedure 3. Construction Site SWPPP - Construction Site Erosion and Sediment Control paragraph 2
☒ BMP maintenance	Appendix A, U of M Storm Water Compliance Procedure 4. Post Construction Storm Water Management - Runoff:Rate and Quality - G and U of M Construction Standards - Division 1 - 01500 - 7. Temporary Erosion and Sediment Controls 7.9.
☒ Site plan review and approval prior to activity on site	U of M Storm Water Compliance Procedure 3. Construction Site SWPPP - Construction Site Erosion and Sediment Control paragraph 2
☒ Permanent stormwater management facility approval	U of M Storm Water Compliance Procedure 4. Post Construction Storm Water Management - Design and Construction Process paragraph 2
☐ Other: _____	_____

D. Your ordinance or regulatory mechanism must include sanctions to ensure compliance and contain enforcement mechanisms. Which of the following enforcement mechanisms are contained in your ordinance or regulatory mechanism? Check all existing and added sanctions for 2008. Include with each checked measure a citation outlining where each mechanism can be located in the documents submitted with this Annual Report.

Enforcement Mechanism	**Citation** (Ordinance, Rule, Statute, Code, MOU, or other official agreement, page #, paragraph, line item, or other reference)
☐ Verbal warnings	_____
☐ Written warnings	_____
☐ Stop-work orders	_____
☐ Fines	_____
☐ Forfeit of security bond money	_____
☐ Withholding of certificate of occupancy	_____
☐ Other: _____	_____

E. Identify which of the following types of enforcement actions you used for construction activities during the reporting period, indicate the number of actions or note those for which you do not have authority:

	Number of actions	
☐ Yes Notice of violation	#0	No Authority ☒
☐ Yes Administrative fines	#0	No Authority ☒
☐ Yes Stop Work Orders	#0	No Authority ☒
☐ Yes Civil penalties	#0	No Authority ☒
☐ Yes Criminal actions	#0	No Authority ☒

☐ Yes Administrative orders	#0	No Authority ☒

F. Does your regulatory mechanism address the regulation of construction sites which disturb less than one acre? If yes please cite where this is addressed in the documents submitted with the Annual Report	☒ **Yes** ☐ **No** U of M Storm Water Compliance Procedure 4 Post Construction Storm Water Management paragraph 2
G. How many construction sites were inspected for compliance with your erosion and sediment control regulatory mechanism during the 2008 calendar year	0
H. On average, how many times each, or with what frequency, are construction sites inspected (e.g., weekly, monthly, etc.)?	As requested
I. Do you prioritize certain construction sites for more frequent inspections? If yes, based on what criteria? _____	☐ **Yes** ☒ **No**

Minimum Control Measure 5: Post-construction Stormwater Management in New Development and Redevelopment [V.G.5]

The permit requires each MS4 to develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects within your jurisdiction that disturb an area greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale that discharge into your small MS4. Your program must ensure that controls are in place that would prevent or reduce water quality impacts. You must also select and implement a program of appropriate BMPs and measurable goals for this minimum control measure. **NOTE:** The MS4 permit requirements associated with this minimum control measure were required to be fully developed and implemented by June 30, 2008.

A. Have you developed and implemented strategies which include requirements for a combination of structural and/or non-structural BMPs appropriate for your community?	☒ **Yes** ☐ **No**
B. Is an ordinance or other regulatory mechanism currently in place to address post-construction runoff from new development and redevelopment projects to the extent allowable under law? Provide the date the regulatory mechanism was adopted or estimated date of adoption: 2/2009.	☒ **Yes** ☐ **No**
C. Is a plan in place to ensure adequate long-term operation and maintenance of BMPs installed as a result of these requirements?	☒ **Yes** ☐ **No**

D. How are you funding the long-term operation and maintenance of your stormwater management system? (Check all that apply)

- ☐ Grants
- ☐ Stormwater utility fee
- ☐ Taxes
- ☒ Other: Repair and Replacement Budgets

Minimum Control Measure 6: Pollution Prevention/Good Housekeeping for Municipal Operations [V.G.6]

The permit requires each MS4 to develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Your program must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

A. Is your MS4 current on development of all the BMPs listed in the BMP Summary Sheets for MCM 6 as indicated in the timeline/implementation schedules? If no, explain:
See attached additional comments sheet

☐ **Yes** ☒ **No**

B. Indicate the total number of structural pollution control devices (for example-grit chambers, sumps, floatable skimmers, etc) within your MS4, how many were inspected, and calculate the percent inspected. Enter "0" if your MS4 does not contain structural pollution control devices or "NA" if the data does not exist:

	Total Number	Number Inspected	Percentage
Structural Pollution Control Devices:	19	19	100

C. Did you repair, replace, or maintain any structural pollution control devices?

☒ **Yes** ☐ **No**

D. For each BMP below, indicate the total number within your MS4, how many of each BMP type were inspected, and calculate the percent inspected:

Structure/Facility Type	Total Number	Number Inspected	Percentage
Outfalls to receiving waters	58	16	28
Sediment basins/ponds	4	1	25
TOTAL	62	17	27

Section 7: Impaired Waters Review

The permit requires that any MS4 that discharges to a Water of the State which appears on the current U.S. EPA approved list of impaired waters under Section 303(d) of the Clean Water Act review whether changes to your SWPPP may be warranted to reduce the impact of your discharge [Part IV.D]

A. MPCA has provided an MS4 Mapping tool which provides information for compliance with the permit and water quality rules. It can also help MS4 staff and stakeholders view relationships between an MS4 and various other water features in the layers including impaired waters. Please go to the MS4 Mapping tool located at http://www.pca.state.mn.us/water/stormwater/stormwater-ms4.html by clicking on "MS4 mapping tool" under "Maps of MS4s" and rate this web mapping tool for its usefulness in helping you identify impaired waterbodies your MS4 may discharge to, including impaired waters as defined on the 303d listing (This request is optional) :

☐ Not Useful at all ☒ Somewhat Useful ☐ Useful ☐ Very Useful ☐ Other:_____

Check here if your MS4 has no impaired waters: ☐

Additional Comments on the MS4 Mapping Tool can be emailed to: paul.leegard@pca.state.mn.us

Section 8: Additional SWPPP Issues

A. Did you make a change to any identified BMPs or measurable goals in your SWPPP since your last report? [Part V.H.] If *yes*, explain: Added Tree Preservation, Protection, and Planting BMP to 5a-1

☒ **Yes** ☐ **No**

B. Briefly list the BMPs using their unique SWPPP identification numbers you have changed in your SWPPP or any measurable goals that will be changed in your updated SWPPP, and why they have changed: *(Attach a separate sheet if necessary)* 5a-1:Added Tree Preservation, Protection, and Planting BMP

C. Did you rely on any other entities (MS4s, consultants or contractors) to implement any portion of your SWPPP? If *yes*, please identify them and list activities they assisted with: Regional Storm Water Protection Team – 1a-1, 1b-2, 1c-1. U of M Twin Cities Campus MS4 (UM Enviromnental Health and Safety Department) – 1c-4, 1c-5, 3b-1, 4a-1, 4b-2, 4c-1, 4d-1, 4e-1, 4f-1, 5b-1, IV.D-1	☒ Yes ☐ No

Owner or Operator Certification

The person with overall administrative responsibility for SWPPP implementation must sign the annual report. This person must be duly authorized and should be the person who signed the MS4 permit application or a successor.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete (Minn. R. 7001.0070). I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment (Minn. R. 7001.0540).

X John F. King 26 June 2009

Authorized Signature (This person must be duly authorized to sign the annual report for the MS4. Electronic submissions must be sent from this person's email address to qualify for Authorized Signature status) — Date

King	John	Interim Vice Chancellor – Finance & Operations
Last Name	First Name	Title
1049 University Drive, 500 DAdB		
Mailing Address		
Duluth	MN	55812-3011
City	State	ZIP code
218-726-7101	vcfo@d.umn.edu	
Telephone (include area code)	E-mail Address	

Additional Comments to the 2008 Small Municipal Separate Storm Sewer Systems (MS4) Annual Report

MCM 1 – Public Education and Outreach

D) University of Minnesota Duluth is a member of the Regional Stormwater Protection Team, (RSPT) which was formed by Memorandum of Understanding to formalize a supportive network of agencies and jurisdictions including, but not limited to: City of Cloquet, City of Duluth, City of Hermantown, City of Proctor, City of Superior, Duluth Township, Fond du Lac Reservation, Lake County, Minnesota, Minnesota Department of Natural Resources, Minnesota Department of Transportation, Minnesota Pollution Control Agency, Nonpoint Education for Municipal Officials (NEMO), St. Louis County, St. Louis River Citizens Action Committee , South St. Louis Co. Soil & Water Conservation, University of Minnesota - Duluth, University of Wisconsin - Superior, Western Lake Superior Sanitary District , Wisconsin Department of Natural Resources. The RSPT Mission is to protect and enhance the regions' shared water resources by providing coordinated educational programs and technical assistance. See the attached document "Summary of Activities for 2008" for RSPT activities. U of M – Twincities Campus is responsible for capital construction activites on all U of M campuses. MCM 4 and 5 educational responsibilities are the responsibility of U of M Twin Cities Environmental Health and Safety per our SWPPP.

MCM 2 – Annual Meeting / Public Participation

F) There were no comments received that required modifications to our SWPPP.

MCM 3 – Illicit Discharge Detection and Elimination

B) The U of M Storm Water Compliance Procedure can be found at http://policy.umn.edu/groups/ppd/documents/procedure/environmental_proc01.cfm

C) We are still working on completing our drain tile and sump pump mapping that was to be completed in 2008. Significant resources were diverted to working with the City of Duluth on checking for I&I issues in our sanitary lines.

MCM 4 – Construction Site Stormwater Runoff Control

A) The U of M Storm Water Compliance Procedure was approved February 2009. While U of M-Duluth permit coverage was extended 11/22/2006, U of M Twin Cities Campus had not yet been extended. U of M-Duluth relies on the U of M Twin Cities for compliance with all MCM4's BMPs.

B) The U of M Storm Water Compliance Procedure was not approved until February 2009, therefore we did not have a regulatory mechanism during 2008.

D) The U of M Storm Water Compliance Procedure was not approved until February 2009, therefore we did not have a regulatory mechanism during 2008. 3. Construction Site SWPPP Paragraph 4 of the new procedure allows for verbal and written warnings and stop-work orders.

G-I) The U of M Storm Water Compliance Procedure was not approved until February 2009, therefore we did not have a regulatory mechanism during 2008. Assistance was given when requested by contractor or project manager.

MCM 5 – Post-construction Stormwater Management in New Development and Redevelopment

B) The U of M Storm Water Compliance Procedure was approved February 2009.

MCM 6 – Pollution Prevention / Good Housekeeping for Municipal Operations

A) 6a-3: Exterior Loading Docks – Practices were reviewed, draft recommendations were developed. Final recommendations and procedure are still underway.
6a-4: Impervious Surface Management – 2008 work was not started.
6a-7: Snow Storage – Procedures were not formalized, but operators were trained.
6a-9: Dumpster Management - Web page not completed, but all dumpsters were inspected.
6a-11: Vehicle and Equipment Washing – Review and recommendations not completed.
6a-13: Roof Top Weed Control – Review and recommendations completed, final procedure was not completed.
6a-15: Landscape and Turf Management – IPM plan not complete.

University of Minnesota Duluth Storm Water Pollution Prevention Program (SWPPP)
Annual Meeting 4/15/2009 - Summary of Activities for 2008

The mission of the University of Minnesota Duluth storm water pollution prevention program is to reduce, to the maximum extent practicable, the possible negative impacts of the campus on the surrounding watersheds and ultimately the Lake Superior ecosystem. Our written SWPPP is available on-line at http://www.d.umn.edu/fm/stormwater/downloads.htm

UMD's 2008 Storm Water Pollution Prevention Program activities and Best Management Practice Update Summary:

Minimum Control Measure 1: Public Education and Outreach

- Environmental Studies and Environmental Education students investigated stormwater as Senior projects, with five remaining as summer interns in Facilities Management.
- Technology in Education class continues to devote a class period each semester to a storm water presentation and Rain Garden tour for future science teachers.
- Environmental Education graduate students were engaged in stormwater issues related to disk golf courses.
- Forty Entrepreneurship students in the Business School learned about Lake Superior, stormwater, and possible entrepreneurship opportunities related to environmental management of the lake.
- Stormwater related Best Management Practice training materials for UMD employees were prepared for publication.
- UMD SWPPP was presented at a system wide gathering to overview stormwater work on U of M campuses.
- Storm Water Pollution Prevention Program website is being updated: http://www.d.umn.edu/fm/stormwater

Brochures / Presentations / Tours:

- The UMD Rain Gardens were enjoyed by many and formally toured by over 200 people in 2008.
- UMD's Landscape Supervisor presented a Rain Garden workshop to MN Extension's Spring Garden program and to two community groups.
- 425 UMD Rain Garden brochures, 250 storm water brochures were distributed.
- Minnesota Sea Grant and University of Wisconsin Extension presented stormwater information to 400 people on the 2008 *View From the Lake* boat trips.

UMD also supported these Regional Stormwater Protection Team education and outreach activities:

- RSPT stormwater Videos had their YouTube debut in March 2008 http://www.youtube.com/user/LakeSuperiorRSPT
- UMD's Center for Freshwater Research and Policy published a story on LakeSuperiorStreams.org and R.S.P.T.
- Two Highway billboard displays raised awareness of the Superior Streams Partner Program in March and April 2008.
- WDIO Story on salt + urban runoff effects on Duluth streams - Aired 10PM Tuesday 2/26/08
- Presentations from the University of Minnesota Water Research Center Symposium helped to define Impaired Waters/TMDL research needs.
- UMD and RSPT were well represented at the 3/13/2008, Minnesota Landscape Arboretum conference: Adapting Community Infrastructure to Climate Change: Solutions for Stormwater Management and Community Forests.
- Twenty-Two people attended "From Sumps to Storms - Tips for Managing Excess Water on Your Property" Engwalls partnered with RSPT on May 18, 2008 as part of their Spring seminar series.
- Initial meetings and surveys were done in Spring 2008 for the Lakeside Stormwater Reduction Project near west branch of Amity Creek as part of a Paired Neighborhoods grant.
- Workshops on Erosion and Sediment Control for small sites and Correct Application of Salt/Sand were well attended.
- Duluth Home Show booth demonstrated stormwater features and literature in April 2008.
- Site design toolkit at www.lakesuperiorstreams.org website sponsored by Natural Resources Research Institute, Sea Grant College, University of Minnesota - Duluth and City of Duluth Stormwater Utility was updated.
- *LakeSuperiorStreams continues to grow and peak in May and October every year, presumably in part due to student/teacher usage cycles. Overall website activity in 2008 totaled 5.27 million requests (similar to "hits") and 1.21 million page requests (i.e. webpages dow*nloaded) See more at: http://www.lakesuperiorstreams.org

Minimum Control Measure 2: Public Involvement and Participation

- The SWPPP defines the UMD "public" as employees, students, and contractors that make up the campus community
- April 18, 2008 Annual Meeting invited public comments which were documented and responded to.
- UMD representatives were actively involved in the Regional Stormwater Protection Team (RSPT), a coalition of 26 local communities and interested agencies jointly addressing stormwater education and technical stormwater support.
- The UMD SWPPP Steering Committee met three times in 2008 and participated in multiple email discussions and document reviews.
- The 2008 to 2010 Storm Water Steering Committee was appointed by the Vice Chancellor of Finance and Operations and includes: one student, three faculty, two MN Sea Grant educators, six staff. Five students were also hired as storm water interns in 2008.
- Facilities Management provided supplies and disposal for Student Association Better Neighbors Spring clean-up.
- Over 200 students participated in Better Neighbors, Beautiful U Day and Earth Day litter cleanup events

Minimum Control Measure 3: Illicit Discharge Detection and Elimination

- We had one report of a tipped portable toilet and one report of discharged fire extinguishers, neither resulted in an illicit discharge. We did have some informal discussions with others about what is appropriate to put in a storm sewer.
- The Department of Environmental Health and Safety (DEHS) completed the Environmental Management Policy (http://policy.umn.edu/groups/ppd/documents/Policy/Environmental_pol.cfm) and Water Compliance Procedure (http://policy.umn.edu/groups/ppd/documents/procedure/environmental_proc01.cfm**)**. Illicit discharges, spills and dumping are included as part of the Environmental Management Policy and Storm Water Compliance Procedure.
- We continued the review of building sumps, drain tile and sanitary systems to verify that we have no storm water discharges connected to the sanitary system. Storm sewer discharges to sanitary systems contribute to sanitary overflows during wet weather.
- We repaired several broken and cracked storm sewer and sanitary pipes. Broken and cracked sewer pipes allow infiltration and can contribute to sanitary overflows during wet weather. We will be lining over 2500 feet of sanitary pipe in 2009 to eliminate additional infiltration.

Minimum Control Measure 4: Construction Storm Water Runoff Control

- Requirements for construction site erosion and sediment controls and environmental compliance are included in the Environmental Management Policy (http://policy.umn.edu/groups/ppd/documents/Policy/Environmental_pol.cfm) and Water Compliance Procedure (http://policy.umn.edu/groups/ppd/documents/procedure/environmental_proc01.cfm**)**.
- The DEHS continues to review each project for inclusion of proper storm water controls, relating to erosion and soil runoff from construction sites.

Minimum Control Measure 5: Post Construction Storm Water Management

- Requirements for post construction run off control and environmental compliance are included in the Environmental Management Policy (http://policy.umn.edu/groups/ppd/documents/Policy/Environmental_pol.cfm) and Water Compliance Procedure (http://policy.umn.edu/groups/ppd/documents/procedure/environmental_proc01.cfm**)**.
- Storm water improvements for Eric Clarke and Fire Hall Ponds were funded by DEHS in 2008 and the project is currently under construction.
- Student intern reviewed tree cover on the main portion of campus. He found that about 90 of the 250 acres are covered by tree canopy. This is about 36% coverage.
- We developed a Tree Preservation, Protection and Planting BMP. The BMP address what replacement is necessary if a tree is removed, how to protect trees from construction equipment, and things to consider when planting a tree.
- Reconstruction of the walls along Oregon Creek at RLB has been put on hold due to high cost.

Minimum Control Measure 6: Pollution Prevention and Good Housekeeping

- All of our structural storm water management features were inspected in 2008 (19 - 6 sand filters, 5 rain gardens, 4 stormcepters , 2 underground storage tanks, 1 bio-retention pond, 1 attenuation pond). None of the inspections found issues that were a significant threat to the environment, however, five devices were outside of their original design parameters and nine had minor issues that may decrease their useful life or effectiveness. We are still determining which of these items will be repaired and which will be watched for another year.
- Sixteen outfalls were inspected at Glensheen. None of the inspections found issues that were a significant threat to the environment mainly because of the small size of the outfalls. Three outfalls showed some erosion and three more have erosion potential in the near future. We are still determining which of these items will be repaired.
- The rain garden's sedimentation trap was cleaned out 3 times this year, yielding .7 cubic yards of material.
- All campus dumpsters were inspected in 2008.
- Student intern requested information from 16 municipalities and universities on their street sweeping practices. There were no responses. We will continue to look into street sweeping practices in 2009.
- Student intern reviewed loading docks, loading areas, exterior storage areas, and exposed stock piles with responsible persons for each site. Student developed draft educational signage and BMP, work to continue in 2009.
- Salt mixing and storage procedures were reviewed with grounds staff.
- Eric Clarke, Fire Hall and Rock Ponds were inspected for trash, debris and erosion. Trash was removed.
- Roof top weed control practices were reviewed. Currently no herbicides are used. Still working on formal BMP.
- Vehicle and equipment washing practices were reviewed. Still working on formal BMP.

Comments on our program are always welcome at http://www.d.umn.edu/fm/stormwater/hotline.htm

UMD Stormwater Pollution Prevention Program Steering Committee:
Rich Axler, Tim Bates, Peggy Dahlberg, Mindy Granley, Cindy Hagley, Mahjoub Labyad, Erik Larson, Cheryl Love, Candice Richards, David Schimpf, Jesse Schomberg, Judith Trolander, Zandy Zweibel

UNIVERSITY OF MINNESOTA

Storm Water Compliance

PROCEDURE

Related Policies
- Environmental Management

Last Updated: February 2009

Responsible University Officer:
- Vice President University Services

Procedure Contact:
- See Contacts section of related policy.

PROCEDURE

Note: See Storm Water Compliance Definitions for the definition of terms used in this procedure. Please also review Erosion and Sediment Control Methods.

The University of Minnesota maintains Municipal Separate Storm Sewer System (MS4) permits for its Twin Cities (UMTC) and Duluth (UMD) campuses. These permits require the University to implement Best Management Practices (BMPs) as detailed in the campus-specific Storm Water Pollution Prevention Program in addressing storm water runoff from these campuses, with the goal of reducing pollutants to the maximum extent practicable. The University will implement these BMPs at other campuses and locations for all applicable construction projects and as otherwise appropriate. The required BMPs include implementation of a regulatory control program to address (1) prohibitions of illicit discharges and connections; (2) reduction of pollutants to the Maximum Extent Practicable; (3) establishment and enforcement of construction site runoff controls for waste, sediment and erosion; and (4) establishment and enforcement of post-construction runoff controls for new development and major renovation projects. This document establishes administrative procedures implementing the regulatory controls for these permits.

1. Discharge Prohibitions

Illegal discharges. No person shall discharge to the storm drain system materials other than storm water. The following non-storm water discharges are exempt from this prohibition: uncontaminated groundwater infiltration, springs, uncontaminated pumped groundwater, water line flushing, irrigation water, uncontaminated foundation and footing drains, water from crawl space pumps, street wash waters, and flows from fire fighting. The prohibition shall not apply to non-storm water discharges permitted by the MPCA under a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit, provided that the discharger is in full compliance with the terms of the permit and that written approval has been granted for discharge to the storm drain system. DEHS may exempt other non-storm discharges that are not the source of pollutants to the storm system; examples are short term construction site dewatering where there is no visible sediment and the discharge is monitored regularly; and dye testing of sewer lines. Notifications and approvals must be in writing.

Illicit Connections. The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited. The illicit connection of highest concern is sanitary effluent released to the storm drain system. This prohibition includes such connections made in the past, regardless of whether such connections were permissible at the time of connection. Upon discovery of such connections, written notification must be made immediately to DEHS. A plan to disconnect and redirect, if necessary, to the sanitary sewer system (upon approval of the authorized regulatory agency), must be submitted to DEHS within seven working days.

In addition, the University will systematically evaluate and address connections involving release of storm water to the sanitary sewer system. This process will involve identification of connections and the design, funding and implementation of solutions wherever feasible.

Spills. Spills and any known or suspected release of prohibited wastes must be reported to DEHS. Public reporting of illicit discharges can be made on-line through the University web site (www.ureport.umn.edu).

2. Reduction of Pollutants to the Maximum Extent Practicable

Activities, Operations, Facilities. The University through DEHS or its designated campus storm water point-of-contact, in consultation with campus representatives, shall identify activities, operations and facilities that may cause pollution or contamination to the storm drain system. DEHS staff shall work with appropriate managers, staff, and contractors to implement the Best Management Practices (BMPs) to the extent they are technologically achievable to prevent or reduce such pollutants. DEHS or its designated campus storm water point-of-contact will periodically monitor compliance with established BMPs.

Facilities Management is responsible for planning, funding, operation, and maintenance of the storm water conveyance system and storm water treatment BMPs. These activities are carried out in accordance with the campus Storm Water Pollution Prevention Program.

UMTC and UMD shall each maintain a storm water advisory task force, comprised of, at a minimum, representatives from Facilities Management Engineering, Landcare, Parking, and DEHS. The purpose of this task force is to develop operational practices and identify desired outcomes related to the storm water program and water quality. This taskforce will coordinate with academic research and teaching activities that utilize or impact storm water BMPs.

3. Construction Site Storm Water Pollution Prevention Plans

National Pollutant Discharge Elimination System (NPDES) Construction Permits. The University shall ensure that NPDES Construction Permits are in place before commencement of construction for all new development or redevelopments that require such permits. Such permits are required for any construction activity disturbing:

- One acre or more of land.
- Less than one acre of land if that activity is part of a "larger common plan of development or sale" that is greater than one acre.
- Less than one acre of soil, but the Minnesota Pollution Control Agency (MPCA) determines that the activity poses a risk to water resources.

These permits will include the requisite Storm Water Pollution Prevention Plans (SWPPP). The SWPPPs will be prepared by the Architect/Engineer to comply with NPDES permit requirements and adhere to the storm water standards established by the campus storm water committee and this procedure. The campus storm water steering committees will be appointed by the Vice Chancellor of Finance and Operations at UMD and the Vice President for University Services at UMTC and comprise operational, academic and community members with interest and expertise in storm water management. These requirements will become part of the contractual relationships with the Architect/Engineer and the Contractor through contractual language or through the incorporation of University Construction Standards into the contracts. DEHS and its designated campus storm water point-of-contact will review, approve all NPDES Construction permit applications, and arrange for the owner's signature on permit applications.

Construction Site Erosion and Sediment Controls. All construction projects that fall under the NPDES Construction Permit criteria (see above) are required to have temporary erosion and sediment controls. For each project Capital Planning Project Management (CPPM) project managers shall ensure that:

1. The Architect/Engineer incorporates into construction documents and SWPPPs these controls which shall meet the established standards of campus storm water steering committee and the State of Minnesota. Standards for temporary erosion and sediment controls are detailed in Appendix A.
2. The Contractor implements these controls according to schedules and specifications in the construction documents.
3. On projects for which a field representative of the Architect/Engineer is on site during construction, the field representative provides direction and feedback to the Contractor concerning the Contractor's installation of erosion and sediment controls per the construction documents.
4. The Contractor is inspects for effectiveness of these controls and correct any problems. The Contractor must document all inspections and corrections. The Contractor shall provide an Erosion Control Supervisor with a valid certification in erosion prevention to direct the Contractor's and subcontractors' operations. Certification will be the equivalent of that offered by the University of Minnesota Erosion and Sediment Control Certification Program.

DEHS or its designated campus storm water point-of-contact will review these plans during the design phases of a project and review Contractor compliance during and after construction. Failure to comply with the SWPPP and this procedure will be reported to the Contractor through the Project Manager and may result in formal project review and appropriate corrective actions, up to and including work stoppages. Work stoppage orders will be implemented in cases of imminent environmental damage by written directive of the Director of DEHS, with notice to the affected Vice-President; in all other cases, only after completion of the established dispute resolution process for capital projects.

4. Post Construction Storm Water Management

The University in its construction and planning processes is committed to minimizing the negative impacts on the natural

site hydrologic cycle as much as possible by treating storm water close to where it falls, reducing downstream impacts thereby improving the overall water quality and clarity, recharging groundwater through infiltration as local soils and subsurface conditions allow, and re-using storm water wherever possible.

To create a sustainably viable storm water system each campus will establish a campus-wide standard for pre-settlement runoff conditions based on United States Department of Agriculture's Natural Resources Conservation Service curve number methodology. Projects that fall under the NPDES Construction Permit criteria (see above) and projects disturbing more than 0.5 acres of land will implement a storm water management plan that minimizes impervious cover, promotes infiltration, and captures and treats the storm water runoff to meet campus-wide pre-settlement conditions using acceptable Best Management Practices (BMPs). These plans will also meet the criteria developed by the campus storm water steering committee which will be responsible for updating and revising additional standards and required submittals expected for these projects. At a minimum, these standards will include the following required performance criteria:

Runoff: Rate and Quantity

A.

1. Control the rate of runoff from the site to pre-settlement conditions for the 100 year 24 hour precipitation event (e.g., Minneapolis 100yr/24hr = 5.9 inches) and

2. There shall be no discharge from the site for a 1.25" rainfall (in Minneapolis a 2yr/1hr event = 1.25 inches which is 90% of the total annual rainfall) based on the Rational Method (Source: MPCA Stormwater Manual, Chapter 3, Sections 1.1-5 and 6). Methods to achieve this shall be consistent with those found in the Minnesota Pollution Control Agency's "Minnesota Stormwater Manual". The first flush of larger storm events equal to the 1.25" rainfall shall be captured on site.

B. Create micro catchments less than 1 acre and treat storm water at these 1 acre source points for a 2-year, 1 hour storm event.

C. For Type D soils, abstract the difference in volume between the pre-settlement conditions and the proposed site conditions using the Rational Method for a 1.25" rainfall. This difference must be stored for irrigation, nonpotable uses, or other alternative purposes and/or transpired using proposed vegetation (e.g. trees, shrubs, herbaceous vegetation, green roofs, and green walls) with supporting calculations.

Runoff Quality

D. For a 2 year, 24-hour rainfall event, provide treatment systems designed to remove 80% of the average annual post development Total Suspended Solids (TSS), by implementing Best Management Practices (BMPs) outlined in the handbook "Urban Small Sites Best Management Practices" (Metropolitan Council), "Protecting Water Quality in Urban Areas" handbook (Minnesota Pollution Control Agency), or the "Minnesota Stormwater Manual" (Minnesota Pollution Control Agency). All BMP treatment systems for each site need to include safety factors, maintenance, and a back-up plan in case of failure. All manufactured devices require independent laboratory testing to confirm product claims.

E. For a 2 year, 24-hour rainfall event, provide treatment systems designed to remove 60% of the average annual post development Total Phosphorus (TP), by implementing Best Management Practices (BMPs) outlined in the handbook "Urban Small Sites Best Management Practices" (Metropolitan Council), "Protecting Water Quality in Urban Areas" handbook (Minnesota Pollution Control Agency), or the "Minnesota Stormwater Manual" (Minnesota Pollution Control Agency). All BMP treatment systems for each site need to include safety factors, maintenance, and a back-up plan in case of failure.

F. Sites' included within or adjacent to municipal or Local Governing Unit (LGU) potable well head protection areas may follow rules as laid out in Section E.

G. All storm water BMPs must have an Operations and Maintenance manual created which addresses potential maintenance issues. Basins, ponds, and reservoirs must be inspected annually and cleaned of deposited materials per the Minnesota Stormwater Manual.

Recharge Rate and Quality:

I. Maintain or increase recharge rates from pre-project site conditions.

J. Provide treatment systems designed to remove solids and pollutants for on-site water recharge using good engineering practices, equivalent to those recommended in the "Urban Small Sites Best Management Practices" (Metropolitan Council).

Overall:

K. Implement a storm water management plan that reduces impervious cover, promotes infiltration, and captures and treats

the storm water runoff from 90% of average annual rainfall using acceptable Best Management Practices (from rainfall frequency curves 90% of the total annual rain fall in Minnesota occurs as events equal to or smaller than the 2yr/1hr event; 1.25 inches in Minneapolis).

Design and Construction Process

As part of the design process, CPPM project managers shall ensure that:

1. Architect/Engineer incorporates post construction BMPs into construction documents to meet these standards to the maximum extent practicable and, as part of the plan review process, that the A/E will submit to DEHS the Construction Project Worksheet documenting project compliance with this requirement.

2. The Contractor implements these BMPs according to the construction documents.

DEHS will review plans and submittals for compliance and review contractor compliance during and after construction. Failure to comply with this procedure may result in formal project review and appropriate corrective actions, up to and including work stoppages. Work stoppage orders will be implemented in cases of imminent environmental damage by written directive of the Director of DEHS, with notice to the affected Vice-President; in all other cases, only after completion of the established dispute resolution process for capital projects.

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Please go to the following URL for the most current version of the policy
http://policy.umn.edu/groups/ppd/documents/Procedure/Environmental_proc01.cfm ?view=all

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Appendix A: Erosion and Sediment Control Methods

Construction projects that fall under the NPDES Construction Permit criteria are required to have temporary erosion and sediment controls as listed below.

Silt Fence – Silt fence shall be installed along the perimeter of the area to be cleared and graded before any grading that takes place. Silt fence shall also be placed around all soil and erodible materials stockpile site. Silt fence shall be properly installed by being trenched and buried at least six inches into the soil. All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/3 of the height of the fence. These repairs must be made within 24 hours of discovery, or as soon as field conditions allow access.
Less extensive silt fencing, limited to down-gradient contours, or alternate perimeter controls may be installed upon written approval by the Department of Environmental Health and Safety

Stockpile Protections – Erodible stockpiles shall not be placed in surface waters, including storm water conveyances such as curb and gutter systems, conduits, and ditches. All exposed soil areas shall be stabilized if they have not been worked for 7 days on slopes greater than 3 feet horizontal to one foot vertical (3:1 slope); 14 days on sloped ranging from 3:1 to 10:1; and 21 days on flatter slopes. Stabilization measures include hydro-seeding, mulching, plastic sheeting, or similar measures to protect the stockpile from rain and wind erosion.

Vehicle Entrances – Temporary rock construction entrances must be installed and maintained wherever vehicles enter and exit a site. Construction entrance shall be stabilized with 1½ inch to 3 inch clear aggregated or an approved equal. On sites with high traffic, BMPs such as stone pads, concrete or steel wash racks, or equivalent systems may be required to minimize vehicle tracking of sediment. *Wash or replace rock as needed to maintain effectiveness. Wash water should be directed to sediment traps and not allowed to leave the site.*

Dust Control – Dust control of the construction site will be primarily in the form of water or as specified by the Engineer. Fugitive dust deposited on off-site streets and surfaces shall be swept or removed within 24 hours of discovery.

Street Cleaning – Tracked sediment must be removed from all off-site paved surfaces by street sweeping within 24 hours of discovery.

Dewatering Treatment – Sediment-laden water that is being removed from construction site by pumping or trenching shall be treated to remove suspended solids before discharge. Water may not be discharged in a manner that causes erosion to receiving channels or flooding of the discharge site.

Concrete Washout – Washouts must be designed to properly handle solids, wash water and rainfall to prevent overflow. Check all concrete washouts facilities daily to determine if they have been filled to 75 percent capacity, which is when materials need to be removed. Self-installed washouts must be inspected daily to ensure that plastic linings are intact and sidewalls have not been damaged by construction activities.

Storm Drain Protection – Inlet protection shall be placed prior to or concurrent with any up-gradient disturbance. Storm drain inlets shall remain in place until stabilization of the site. Sediment deposits shall be removed from these devices when the sediment has accumulated to between 1/3 and ½ of the design depth of the device, or when the device is no longer functioning as designed.

Site Inspections – The Contractor shall be responsible for inspections and maintenance on the site. Inspections and maintenance must be documented and readily available for review. Inspections are required as follows:

-Once every 7 days on exposed soil areas.

-Within 24 hours after a one-half inch rain event over 24 hours.

-Once every 30 days on stabilized areas.

-As soon as runoff occurs or prior to resuming construction on frozen ground.

Storm Water Compliance Definitions

The terms used in this Procedure have the following meanings:

Best Management Practices (BMPs). Engineered devices or strategies implemented to control, treat or prevent storm water runoff. BMPs can include, but are not limited to, schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters or storm water conveyance systems. BMPs also include treatment practices, operating procedures and practices to control site runoff, spillage or leaks, sludge or water disposal or drainage from raw materials storage.

Clean Water Act. The federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), and any subsequent amendments thereto.

Construction Activity. Activities subject to NPDES Construction Permits. These include construction projects resulting in land disturbance of 1 acre or more. Such activities include, but are not limited to, clearing and grubbing, grading, excavating and demolition.

Hazardous Materials. Any material, including any substance, water or combination thereof, which because of its quantity, concentration or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

Illegal Discharge. Any direct or indirect non-storm water discharge to the storm drain system, except as exempted under this procedure.

Illicit Connections. An illicit connection is defined as ether of the following:

- Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted or approved by a government agency; or

- Any drain or conveyance connected to the storm drain system which has not been documented in plans, maps or equivalent records and approved by the **University**.

Industrial Activity. Activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).

Minnesota Pollution Control Agency (MPCA). The MPCA has regulatory authority to ensure compliance with Federal Clean Water Act requirements.

National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permits. General, group and individual storm water discharge permits that regulate facilities defined in federal NPDES regulation pursuant to the Clean Water Act or under state adopted implementation plans as applicable.

Non-Storm Water Discharge. Any discharge to the storm drain system that is not composed entirely of storm water.

Pollutant. Anything that causes or contributes to pollution. Pollutants may include, but are not limited to, paints, varnishes and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter or other discarded or abandoned objects, articles and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure (including but not limited to sediments, slurries and concrete rinsates); and noxious or offensive matter of any kind.

Pre-Development or Pre-Existing Conditions. Site conditions existing prior to proposed improvements.

Pre-Settlement Conditions. Conditions prevalent before European settlement.

Post-Development Conditions. Conditions after site improvements are completed.

Premises. Any building, lot, parcel of land or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Storm Drain System. University Owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs and other drainage structures which are within the University and are not part of a publicly owned treatment works as defined at 40 CFR Section 122.2.

Storm Water. Any surface flow, runoff and discharge consisting entirely of water from rainstorm events.

Storm Water Committee. Committee charged by University Administration with reviewing internal policies and standards, individual projects and Master Planning efforts for consistency with external regulations and best practice and representing academic interests in storm water BMPs at the University.

Storm Water Pollution Prevention Plan. A document which describes BMPs and activities to be implemented by a person, department or operational area to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Storm Water, Storm Water Conveyance Systems and/or Receiving Waters to the Maximum Extent Practicable.

Wastewater. Any water or other liquid, other than uncontaminated storm water, discharged from a facility.

Waters of the United States. Surface watercourses and water bodies as defined at 40 CFR Section 122.2 including all natural waterways and definite channels and depressions in the earth that may carry water, even though such waterways may only carry water during rains and storms and may not carry storm water at, and during, all times and seasons.

2.2. There are some functional areas that have special requirements. For some of the most common special function areas, a more detailed description of their needs has been prepared. The special function areas, and the location of the detailed requirements are as follows:

A. Chemical Laboratories	Appendix L
B. Food Service	Appendix EE
C. General Purpose Classrooms	Appendix DD
D. Parking and Transportation Services	Appendix Q

2.3. The A/E shall notify the owner's representative if the specific requirements for one of the special function areas conflict with other requirements of the construction standards.

3. Permits

3.1. The university is responsible for securing and paying for all permits, with the exception of high-pressure steam. The contractor applies for and secures high-pressure steam permits, which are paid as part of the contractor's cost.

3.2. Air Permit Regulations: Air permit regulations are extremely complex and have different permit requirements depending on the specific project and facility. Therefore, the Department of Environmental Health and Safety (DEHS) requires evaluation of all air emission sources including, but not limited to, emergency generators, engine-powered fire pumps, combustion equipment, printing facilities, paint spray guns, building exhausts and/or air pollution control devices. For a complete list of air emission sources requiring evaluation, see Appendix HH - New Processes and Equipment that May Require Air Permits. Once an application has been submitted, the Minnesota Pollution Control Agency (MPCA) permitting process can take a minimum of six months and up to 14 months, depending on the complexity of the emission source. The MPCA requires that a permit be issued prior to starting construction. This process applies when modifying existing equipment and installing new equipment. The A/E shall notify the owner's representative and DEHS in writing if a project shall include any air emission equipment. The A/E shall allow adequate time in the project schedule for an air permit to be issued before starting construction. DEHS shall issue a letter of approval to the owner's representative, indicating that construction can start based upon the evaluation or issuance of a permit from MPCA. Refer to Division 15, Section 15320 - Firepumps, Division 15, Section 15750 - Thermal Energy Distribution and Transfer and Division 16, Section 16230 - Generator Assemblies. (LINK)

3.3. Storm Water Permits and Requirements

3.3.1. The A/E shall incorporate Minnesota Department of Transportation, City of Minneapolis, City of Duluth and Ramsey County Erosion and

Sediment Control requirements and guidance into the construction specifications as applicable. At a minimum, the A/E shall identify temporary and permanent erosion and sediment control measures that are site-specific.

3.3.2. Temporary controls include, but are not limited to, silt fences, storm inlet protection, entry/exit stabilization and site stabilization procedures for any exposed soil. Along with temporary controls, Environmental Protection Agency (EPA) Phase 2 Storm Water Rules require that all new development and redevelopment include permanent control measures to reduce storm water impact on receiving water to the maximum extent practicable (MEP).

3.3.3. Permanent controls are based on a goal of no net increase in storm water volume, rate or pollutant loads from new construction and redevelopment that add impervious surfaces. Permanent controls include, but are not limited to, vegetation swales, rain gardens, sediment ponds, retention areas, pervious surfaces and other alternatives to direct plumbing.

3.3.4. For regulatory permits, the Minnesota Pollution Control Agency (MPCA) requires a separate National Pollutant Discharge Elimination System (NPDES) construction permit for any construction site or common project that disturbs more than one acre. Like the EPA, this MPCA permit requires site-specific temporary and permanent erosion and sediment control plans to be incorporated into the project design. After confirming that the final construction specifications comply with MPCA temporary and permanent control requirements, the A/E shall complete a MPCA permit to be forwarded to DEHS for submittal to MPCA. For more information, contact DEHS, Air and Water Compliance, W140 Boynton, 410 Church St. SE, Minneapolis, MN 55455, www.dehs.umn.edu/ Guidance on storm water best management practices (BMP) can be found at www.pca.state.mn.us/water/pubs/sw-bmpmanual.html and at www.metrocouncil.org/environment/watershed/bmp/manual.htm

4. Building Design Service Life Expectancy: University facilities shall be designed with either a 20-year or 50-year life expectancy. The life expectancy for any facility shall equal the life expectancy for the following items: designed life of building; inaccessible or structural components; expensive or difficult to replace components, including below ground drainage; major, replaceable components; and service, installation and external work. Exception: Buildings with a 50-year life expectancy shall have a life expectancy for major, replaceable components; and service, installation and external work of 25 years.

5. Preservation of Architecturally Significant Elements

4. Vermin Control: To ensure that pests and vermin are not attracted to the job site, all food waste shall be disposed of in a container with a lid. Refer to Division 2 – Site Work, Section 02050 – Demolition for more information. Also Refer to Appendix U - Insect and Rodent Control.

5. Dust Control: The A/E shall specify measures to contain construction-related dust, contaminates and odors within the construction limits. Construction-related dust, contaminates and odors shall not interfere with normal university operations. Refer to Appendix B - Dust, Contaminant, Odor and Fungal Control Measures.

6. Weather Protection: To protect facilities during remodeling or new construction from damage due to weather, the A/E shall specify the following. This language is required whenever roofs, walls or windows are disturbed as part of a remodeling project, or when exterior work may impact existing drainage systems.

6.1. Provide necessary measures to protect temporary and final work, existing and adjacent buildings, material and equipment from weather damage. This includes groundwater, rainwater, wind, ice, snow and the backing up of sewers and drains.

6.2. Provide temporary weather-tight enclosures, pumps, equipment, grading, bailing or other work necessary to ensure this protection.

6.3. Provide temporary insulated weather-tight enclosures of all openings in exterior walls and roofs.

6.4. Provide temporary enclosures to withstand gale force wind.

6.5. The contractor shall inspect, protect, maintain and ensure constant operation of existing roof drains.

6.6. The contractor shall protect areas of partial demolition until area is enclosed and weather-tight.

6.7. The contractor shall inspect, protect, maintain and ensure intended operation of existing interior building floor drains in the construction area.

6.8. The contractor shall inspect, protect, maintain and ensure intended operation of existing site drainage, exterior catch basins and areaway drains within the construction site so water does not pond.

7. Temporary Erosion and Sediment Controls

7.1. General Requirements: As identified in the Program Information/General Requirements section, Basic Design Requirements of these construction standards, the A/E must include temporary and permanent erosion and sediment

control measures as part of the construction specification. In general, guidance on temporary erosion and sediment control measures can be found at www.pca.state.mn.us/water/pubs/sw-bmpmanual.htm and at www.metrocouncil.org/environment/watershed/bmp/manual.htm. Specifically, the erosion and sediment control measures must comply with City of Minneapolis Erosion Control, Ramsey County Erosion and Sediment Control Handbook and City of Duluth Erosion Control Requirements as applicable. These measures include, but are not limited to, silt fences, storm inlet protection and entry/exit provisions to minimize tracking and stabilize exposed soil.

7.2. Silt Fences: Silt fences must be installed down gradient from all disturbed areas prior to beginning construction. The A/E shall identify on the construction plans specifically where the silt fences shall be installed to control sediment migration for the construction site. Install silt fences with posts 4 feet apart or shorter. Drive posts at least 2 feet into the ground. Anchor the silt fence in a trench that is at least 6 inches wide and 6 inches deep on the upside slope of the posts. Lay fabric in trench, backfill trench and compact it. Make splices in fabric at fence posts. Overlap fabric at least 6 inches. Silt fence post shall be at least 2-inch square or larger hardwood pine, T-section or U-section steel posts that weigh no less than 1 pound per lineal foot.

7.3. Storm Inlet Protection

7.3.1. PROHIBITED: Bales or fabric under grates.

7.3.2. Install inlet protection at all catch basins and storm sewer inlets that could possibly receive runoff from the construction site. Catch basin inserts or staked silt fences are preferred.

7.4. Street Sweeping: Remove all soil and sediment tracked or otherwise deposited on public or private pavement areas. Remove soil and sediment on a daily basis. Street washing is only allowed after sweeping or shoveling sediment from the areas.

7.5. Construction Site Vehicle Entry/Exit: Before beginning construction, install temporary rock construction exit(s) at each point where vehicles exit the construction site. Use 1-inch and 2-inch diameter rock such as MNDOT CA-1 or MNDOT CA-1 Course Aggregate. Place the aggregate in a layer at least 6 inches thick across the entire width of the exit(s). Extend the aggregate at least 50 feet into the construction site. Use geotextile fabric beneath the fabric to prevent migration of soil into the rock from below. If this control measure does not adequately control sediment tracking onto paved surfaces, a tire wash station shall be added.

7.6. Site Stabilization: All disturbed areas shall be stabilized according to MPCA Construction Site Storm Water Requirements. All exposed soil areas with a

continuous positive slope within 100 lineal feet of state waters, or from a curb, gutter, storm sewer inlet, temporary or permanent drainage ditch or other storm water conveyance, shall have temporary protection or permanent cover within the following timeframes. For slopes steeper than 3:1, temporary protection or permanent cover shall be established within seven days of disturbance if the contractor has not been or will not be working in the area. For slopes between 10:1 and 3:1, temporary protection or permanent cover shall be established within 14 days of disturbance if the contractor has not been or will not be working in the area. For the purpose of this provision, exposed soil areas do not include stockpiles or surcharge areas of sand, gravel, aggregate, concrete or bituminous.

7.7. Inspections: At a minimum, the contractor shall inspect each erosion and sediment control device after it rains or weekly, whichever is applicable. The contractor shall keep copies of inspection logs in the site trailer that identify which items were inspected and what corrections were made, as applicable.

7.8. Discharge

7.8.1. PROHIBITED: Concrete truck washout and other construction-generated wastes being discharged into storm sewers.

7.8.2. Any storm water discharge from a construction site must be visibly free of sediment and contain only rainwater.

7.8.3. Refer to Division 15 - Mechanical, Section 15025 - Storm Drainage for more information.

7.9. Maintenance: The contractor shall maintain all temporary erosion and sediment control measures until the project is complete or final site stabilization. The contractor shall replace or repair damaged or defective erosion and sediment control measures. The contractor also shall completely remove all temporary erosion and sediment control measures upon completion of the project or final site stabilization.

01505 - CONSTRUCTION WASTE MANAGEMENT

1. Hazardous Waste Management

1.1. General: Evaluation, on-site storage, transportation, disposal and other aspects of Hazardous Waste Management shall comply with Pollution Control Agency Hazardous Waste Rules, Chapter 7045.

1.2. Hazardous Waste from Abatement and Demolition: Appendix K - Section 13280 - Hazardous Materials Procedures specifies the requirements for the disposal of hazardous wastes during the abatement and demolition phases. The

contractor shall be responsible for collecting the listed materials in containers that the DEHS provides. The contractor also shall arrange for DEHS to collect the containers when full.

1.3. Hazardous Waste from Construction Activities: The contractor is responsible for the proper management of hazardous waste generated by his or her construction activities. Such waste is considered excess or unwanted hazardous construction-related materials, including, but not limited to, aerosols, paints, activators, adhesives and caulks. In no case shall such construction hazardous waste be co-mingled with demolition hazardous waste (refer to item 1.2). In no case shall such construction hazardous waste be co-mingled with non-hazardous construction or demolition waste.

1.4. Submittals

1.4.1. The contractor shall submit the Demolition and Construction Hazardous Waste Management Plan to the hazardous materials manager in Facilities Management 10 calendar days prior to the start of construction, and copy the owner's representative. The plan shall include the following elements:

1.4.1.1. The facilities to be used, indicating which of the targeted wastes are to be received, projected volumes and documented permit status of each.

1.4.1.2. Maintenance of a Demolition and Construction Hazardous Waste Log. The log shall include dates, facility, transporter, weights, and a file of waste receipts and shipping papers for all waste shipped off-site.

1.4.2. The contractor shall maintain the Demolition and Construction Hazardous Waste Log and submit the completed log to the hazardous material manager in Facilities Management at the end of demolition and at the end of construction.

2. Solid Waste Management Plan

2.1. General

2.1.1. Manage construction and demolition waste through reuse, recycling and reduction methods. Typical designated waste streams are land clearing debris, concrete and masonry, metals, dimensional wood and lumber, wooden pallets, gypsum wallboard, paper and cardboard. Depending upon the project, other large volume wastes may be included such as bricks, asphalt and carpeting.

2.1.2. A specified percentage of the waste shall be collected, segregated and sent for recycling or reuse. Documented waste reduction strategies shall be credited toward the percentage of waste goal.

2.1.3. Specifications of the Solid Waste Management Plan shall include standard instructions for handling designated wastes. The instructions shall stress the need for not contaminating the recyclable wastes.

2.1.4. The contractor is encouraged to work with the university Waste Management Division to evaluate recycling options. The Waste Management Division can recycle properly segregated and uncontaminated cardboard, and scrap metal at no cost.

2.1.5. Where required, the A/E and the owner's representative shall determine whether existing carpets, carpet cushions and accessories shall be removed and/or demolished. If deemed necessary, the contractor shall remove, store and replace existing furniture, furnishings and detached equipment. Refer to Appendix M - Carpet Specification Guide for more information.

2.2. Definitions

2.2.1. Reduction: Eliminating excess material or waste by ordering materials to fit the module of the design. Two ways to achieve reduction is to eliminate cut-off waste from lumber, drywall or carpeting; and working with suppliers to eliminate or reduce packaging.

2.2.2. Reuse: Salvaging components from remodeling or demolition projects. These components are then resold or transferred to salvage businesses, non-profits, material exchange networks or used in new construction at the same site or elsewhere. Reusable items include plumbing and mechanical equipment, doors, windows, fixtures and trim. Other reuse strategies include returning unused products or shipping containers/pallets to vendors.

2.2.3. Recycling: Recovering materials that have existing and stable markets that can be used as raw materials for manufacturing new products. Examples include cardboard, metals and concrete.

2.3. Submittals: The contractor shall submit the Solid Waste Management Plan to the owner's representative 10 calendar days prior to the start of construction. The plan shall include the following elements:

2.3.1. Whether construction waste shall be recycled or reused by source separation, time-based separation or co-mingled for delivery to an off-site separation facility.

2.3.2. The targeted materials for recycling and reuse, the projected volume and their destination. Identify recyclable or other recoverable materials that shall not be targeted in this project, and provide reasons why they shall not be recycled/recovered.

2.3.3. The goal of what percentage of waste shall be diverted from landfills or incinerators.

2.3.4. The landfill and recycling facilities to be used. Indicate the targeted wastes to be received and the projected volumes. Document the permit status.

2.3.5. Maintenance of a construction waste log that includes dates, facility, transporter and weights. Also include a file of receipts for waste shipped off-site.

2.4. Implementation

2.4.1. The contractor shall conduct a pre-construction waste management conference to discuss the plan requirements, schedules and procedures. Attendees shall include the owner's representative, the architect, a representative from the university Waste Management Division, waste management personnel from the contractor's firm and suppliers when appropriate.

2.4.2. The contractor shall designate an on-site party that is responsible for implementing the plan and instructing workers during orientation and safety meetings. The party shall provide instruction on separation, handling and recovery methods, and distribute the plan to site foremen and each subcontractor.

01525 - CONSTRUCTION AIDS

Fully enclose waste chutes with tight joints. Rigidly support them at each floor. Provide water spray or full enclosure at the discharge end to prevent noticeable dust dispersal.

01530 - BARRIERS AND ENCLOSURES

1. Fences

1.1. The contractor shall enclose the construction site limits, including the staging area, with a 2-inch and 6-foot-high mesh chain link fence with a top rail and lockable gates. Anchor steel posts, and space them not more than 10 feet on center. To avoid cutting or damaging pavement, sidewalks or waterproof plaza membranes, use portable base posts where appropriate.