MUNICIPAL SEPARATE STORM SEWER SYSTEM
2009 ANNUAL REPORT

Permit Number 85-03-0-04

March 2010

Prepared by:
Iowa State University
Department of Environmental Health and Safety
2809 Daley Drive
Ames, Iowa 50011-3660
INTRODUCTION
The following is the Stormwater Annual Report for Iowa State University, prepared in accordance to Part III of the facility’s Municipal Separate Stormwater System (MS4) permit, number 85-03-0-04. This report summarizes stormwater compliance activities within the boundaries of Iowa State University and outlying farm properties, including: Central Campus, North Campus, South Campus, Applied Science Complex, the Arboretum, the Southwest Athletic Complex, the Veterinary Medicine College, the Iowa State University Dairy Teaching Farm and the Iowa State University, BioCentury Research Farm.

STATUS OF IMPLEMENTING THE COMPONENTS OF THE STORMWATER POLLUTION PREVENTION AND MANAGEMENT PROGRAM

Iowa State University was issued a National Pollutant Discharge Elimination System (NPDES) permit on February 6, 2004, that was renewed on February 6, 2009. The renewed permit includes minor edits to the previous 5-year NPDES permit that have been incorporated into the facility compliance program.

Iowa State University fulfilled all scheduled requirements for 2009 as stated in Part II of the MS4 permit.

STATUS OF COMPLIANCE WITH ANY COMPLIANCE SCHEDULE ESTABLISHED BY THIS PERMIT OR BY ANY MODIFICATIONS TO THIS PERMIT

During the 2009 calendar year, the following six (6) construction sites operated under NPDES General Permit No. 2 authorizations:

<table>
<thead>
<tr>
<th>Site Description</th>
<th>Permit Number</th>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISU Hach Chemistry Building</td>
<td>IA-15828-15609</td>
<td>Active</td>
<td>7/01/2008</td>
</tr>
<tr>
<td>ISU Biorenewables Research</td>
<td>IA-16408-16151</td>
<td>Active</td>
<td>9/30/2008</td>
</tr>
<tr>
<td>ISU BSL 3 Facilities</td>
<td>IA-17878-17647</td>
<td>Active</td>
<td>10/01/2009</td>
</tr>
<tr>
<td>ISU West Rec Expansion</td>
<td>IA-17879-17648</td>
<td>Active</td>
<td>11/01/2009</td>
</tr>
<tr>
<td>ISU New Bio Century Farm</td>
<td>IA-14992-14780</td>
<td>Discontinued</td>
<td>10/07/2009</td>
</tr>
<tr>
<td>ISU Jack Trice Stadium Phase 2</td>
<td>IA-16615-16382</td>
<td>Discontinued</td>
<td>08/12/2009</td>
</tr>
</tbody>
</table>

Two (2) sites reached final stabilization as defined in the permits and Notices of Discontinuation were submitted to IDNR. Iowa State University had four (4) active permitted sites as of December 31, 2009 (Attachments A and B).
A SUMMARY OF THE DATA, INCLUDING MONITORING DATA, WHICH IS GENERATED WITHIN THE REPORTING PERIOD, INCLUDING NARRATIVE DESCRIPTION OF STORMWATER QUALITY IMPROVEMENTS OR DEGRADATION

Stormwater Web Page
The Environmental Health and Safety (EH&S) stormwater web page, consisting of stormwater facts and information, the stormwater hotline telephone number, and a stormwater survey, was viewed 564 times in 2009. A total of 208 members of the campus community participated in the stormwater survey; the stormwater fact sheet was viewed 243 times.

Stormwater Hotline
The stormwater hotline received five (5) calls related to stormwater construction activities on campus. All five calls were investigated and pertained to off-site tracking of disturbed soil onto local roads. Soil traced to hard surfaces was immediately collected, unacceptable stormwater management practices were halted and on-site re-training was provided to the parties involved.

New Capital Improvement
Iowa State University has implemented multiple new capital improvement projects with targeted BMP’s. Additional projects are in the planning and design phase (Attachment C).

- EH&S woods landscape – low grow, native grass and wildflower planting
- Carver Co-Lab – infiltration basin, native plantings
- Chemistry facility – gray water system
- College of Design – bioretention, green roof, native plantings, permeable paving
- Biorenewables Research Laboratory – bioretention, green roof, native plantings, rain gardens, gray water system
- West Recreational Facility and Expansion – bioswales, gray water system, and native plantings
- Haber Pasture – stormwater management study
- Parking Lot 63 – bioretention
- Haber Road Horse Pasture – stormwater management study
- Maple-Willow-Larch Dining Addition – rain gardens, bioretention and native plantings
- Alumni Center – bioswales, native plantings, rain gardens
- Horticulture Greenhouses – bioretention, native plantings
- East Campus Parking Deck Sand Filter – grading and groundcover
- College Creek Culvert – remove silt and debris from culvert under Beach Avenue.
- ISU Center Parking Lot Drainage – remove silt and debris, grade and re-seed
- College of Veterinary Medicine Small Animal Hospital – bioswales, native plantings, bioretention
- College of Veterinary Medicine Large Animal Hospital – bioswales, french drain, native plantings, bioretention, and splash pads
- Oak Elm Residence Hall – green roof
Iowa State Landscape Design Services: A Decade of Greening our Campus

Over the past decade Iowa State University Facilities Planning and Management (FP&M) Landscape Design Services has partnered with FP&M Design and Construction Services, Campus Services and Utilities, Administrative Service Units, EH&S, Parking Division, Civil Construction and Environmental engineering, Landscape Architecture, Natural Resource Ecology and Management, and multiple other departments and teaching laboratories to benefit stormwater quality on the Iowa State campus. A summary of projects are listed in Appendix D. Benefits include:

• improving water quality
• reducing water runoff
• supporting academic learning and research
• providing community demonstration opportunities
• 26 stormwater projects completed
• 3 stormwater projects currently under construction
• 6 stormwater projects in planning
• 4,000 trees planted
• 11,000 shrubs planted
• 40,000 perennials planted

Stormwater Management Committee

Iowa State University’s Stormwater Management Committee is required to meet periodically to discuss university stormwater activities. The Iowa State University Stormwater Committee held two meetings in 2009.

EH&S Playground Restoration Project

A deteriorated park shelter and unsafe playground equipment was removed in the fall of 2009 by EH&S staff and a local contractor. The non porous concrete slab was removed and backfilled with amended soil from the Iowa State University Compost facility. Undesirable trees were removed and minimal re-grading was performed to allow for favorable saturation of the soil. Compacted soils were remediated along the north 1/3 boundary of the project. Hydro-seeding of low grow native grass and wildflowers completed the project. Partnering between EH&S, FP&M and a local contractor allowed for a cost effective ($4,269.00) successful re-capture of .41 acres of low impact stormwater treatment of a former
park shelter and playground use property. The successful completion of this project should stimulate similar low impact stormwater treatment areas on and near campus.

**Training and Development**

As part of the continued training and professional development of University staff responsible for stormwater management, members of the Iowa State University Stormwater Committee, EH&S staff, and FP&M Design and Operations staff participated in programs to improve knowledge of stormwater management. Programs include EH&S training of the Stormwater Management Committee, FP&M Utility’s staff and managers, Iowa State University Golf Course and Athletic Department grounds crews, and other EH&S staff members. FP&M landscape architects have established a Learning Circle on Riparian Landscapes that focuses on stream environments and explores management practices and opportunities to improve Iowa’s waterways. EH&S and FP&M staff attended workshops presented by the Iowa Association of Municipalities (IAMU) regarding construction site SWPPPs and site inspections. EH&S staff attended an additional workshop on Construction Site Erosion and Sediment Control at the IAMU as well the Annual Stormwater Conference in Des Moines. Training opportunities are continuously reviewed and will be utilized as time and budget allow.

**Pesticide and Fertilizer Management Program**

Iowa State University departments which apply pesticides and fertilizers continue to operate according to defined management programs. The university follows proper storage procedures, and meets guidelines for training of certified applicators, minimizing application rates, maintaining record keeping data bases, and annual reviews determining best management and minimization of pesticides and fertilizer application amounts. Upon review of annual application rates, when lower application rates are effective, lower rates are applied in subsequent applications.

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**AN ESTIMATE OF THE PREVIOUS FISCAL YEAR’S EXPENDITURES FOR IMPLEMENTATION OF THE MANAGEMENT PROGRAM AND THE BUDGET FOR THE CURRENT FISCAL YEAR**

The stormwater management budget for calendar year 2009 was funded, “as needed” by several campus entities.

EH&S dedicated ½ full time equivalent (FTE) of staff time to stormwater activities. Salary and benefit expenses are estimated to be approximately $40,000.

EH&S conducted inspections of all permitted construction sites. EH&S staff conducted 195 weekly site inspections, and 27 post rain event inspections, totaling 222 stormwater site inspections for 2009.

EH&S staff maintained and developed upgrades of the stormwater website, maintained a quarterly stormwater hotline advertisement in the student newspaper, attended stormwater training conferences, and developed Iowa State University staff training programs. EH&S staff trained 434 university employees on stormwater awareness. A graduate seminar was also presented to approximately 40 graduate students and professors in Civil Construction and Environmental Engineering.
Stormwater program expenditures associated with stormwater project design and implementation and maintenance were approximately $1,131,746. Included in this figure was the purchase of a new sidewalk sweeper for $79,000. Additional project costs were associated with construction BMP’s and final grading and landscaping at the Iowa State University BioCentury Research Farm.

Iowa State University also experienced costs associated with project compliance of BMP’s on permitted construction sites; maintenance management issues on construction sites totaled approximately $85,000.

Total estimated expenditures for fiscal year 2009 were $1,255,246. No annual amounts are appropriated for ISU stormwater management. Stormwater expenses are funded on an as-needed basis.

**SUMMARY DESCRIBING THE NUMBER AND NATURE OF INSPECTIONS, ENFORCEMENT ACTIONS AND PUBLIC EDUCATION PROGRAMS CONDUCTED DURING THE REPORTING PERIOD**

**Inspections**

EH&S conducted 222 site inspections in 2009. 195 were weekly inspections and 27 were post rain event inspections. Inspections were conducted by EH&S on all Iowa State University construction sites requiring an NPDES General Permit No. 2. The inspections verified contractors were following specified BMP’s as provided on the site-specific Stormwater Pollution Prevention Plan.

Iowa State University conducted its annual November dry flow inspection of all campus stormwater outfalls. EH&S employees visually inspected all stormwater outfalls to public waterways listed in the university database. The visual inspection involved walking streams on campus in order to verify there were no illicit discharges. All dry land outfalls were visually inspected. No illicit discharges were detected. A review of the annual outfall inspection process was conducted; no changes were administered to the inspection program.

Iowa State University FP&M continued to inspect the stormwater system (MS4) and conducts repairs as needed. No major problems were identified for corrections in 2009. Data is maintained in the FP&M computerized work management system FAMIS.

**Notices of Discontinuation**

Two (2) construction projects reached final stabilization as defined in the permits and Notices of Discontinuation were submitted to IDNR. Iowa State University had four (4) active permitted sites at the end of 2009. Iowa State University was not subject to any stormwater enforcement actions during the 2009 reporting period.

**IDNR Compliance Inspections**

The Iowa Department of Natural Resources conducted an inspection of the MS4 permit in February 2009. No violations were received resulting from the inspection.
**Stormwater Education Program**

EH&S developed training for Iowa State University employees who could potentially impact stormwater quality functioning during normal work activities. During the 2009 calendar year, 474 ISU employees and students received education on stormwater and what each employee can do to improve stormwater quality.

**SUMMARY**

All permit required activities for the 2009 reporting period were completed on or before specified deadlines. It is estimated that the cost of compliance activities completed during calendar year 2009 exceeded $1,255,246. Iowa State University will continue to evaluate opportunities to improve stormwater quality. Individuals with questions, comments or concerns about stormwater quality issues at Iowa State University should contact Steve Mayberry, Environmental Specialist III, Iowa State University, Department of Environmental Health and Safety, 2809 Daley Drive, Ames, Iowa 50011-3660.
Attachment A

Main Campus

ISU Permitted Construction Sites as of December 31, 2009

- ISU Hach Chemistry Building
  IA-15828-15609

- ISU Bio Renewables laboratory
  IA-16408-16151

- ISU West Recreation Expansion
  IA-17879-17648
Attachment B

South of Main Campus

ISU Permitted Construction Sites as of December 31, 2009

ISU BSL 3 Facilities
IA-17878-17647
Attachment D

Landscape Design Services: A Decade of GREENing Our Campus...

A Decade of GREEN Benefits...
- Improving water quality
-Demonstrating sound Best Management Practices
-Providing community demonstration opportunities

A Decade of GREEN Sites Planning & Construction...
-25 stormwater projects completed
-3 stormwater projects under construction
-6 stormwater projects in planning

A Decade of Planting...
-Over 4,000 trees;
-11,600 shrubs
-40,000 perennials

For additional information contact:
- Cathy Brown
- Angie Holberg
- Patrick Wallace

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