

IOWA STATE UNIVERSITY

MUNICIPAL SEPARATE STORM SEWER SYSTEM
2020 ANNUAL REPORT

Permit Number 85-03-0-04

March 2020

Prepared by
Department of Environmental Health and Safety
and
Facilities Planning and Management
2408 Wanda Daley Drive
Ames, Iowa 50011-3602

INTRODUCTION

The *2020 Annual Storm Water Report* for Iowa State University (ISU) was prepared by Environmental Health and Safety (EH&S) in accordance with Part III of the facility's Municipal Separate Storm Water System (MS4) permit, number 85-03-0-04. This report summarizes storm water compliance activities within the boundaries of ISU and outlying farm properties, including Central Campus, North Campus, South Campus, Applied Science Complex, Arboretum, Southwest Athletic Complex, College of Veterinary Medicine, Dairy Teaching Farm, and the BioCentury Research Farm.

1. STATUS OF IMPLEMENTING THE COMPONENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

ISU was issued a National Pollutant Discharge Elimination System (NPDES) permit on February 6, 2004. The permit was renewed in 2009, 2014, and 2019. The current permit expires on January 31, 2024. Modifications to the permit requested by ISU and approved by the Department included eliminating the requirement to publish quarterly the telephone number for the storm water hotline. This number is posted on the EH&S web page.

A. Public Education and Outreach on Storm Water Impacts

The storm water web page consists of storm water facts and information, Storm Water Management Policy statements, storm water hotline telephone number, publications and forms, links to pre- and post-construction activities, and a storm water survey. In 2020, the storm water web page was viewed 363 times.

1. General Storm Water Education Fact Sheet
2. Storm Water Pollution Prevention web page, both available at:
<https://www.ehs.iastate.edu/services/environmental/stormwater>
3. Education Program for Faculty and Staff. EH&S and FP&M staff participated in monthly storm water lunch and learn webinar series, provided through the Iowa Storm Water Education Partnership.

B. Public Involvement and Participation

1. Storm Water Management Team. In 2020, ISU's Storm Water Management Committee met each semester and once during the summer. Further communications between individual team members occurred regularly, concerning storm water policies and project sites. In addition, EH&S Staff and FP&M staff met in March 2020 to discuss storm water management practices on ISU construction projects. The team continues to discuss strategies to mandate or incentivize green infrastructure features during the design phase of new projects.

2. Public Notice Requirements. For each construction permit, a Notice of Intent was completed which includes submitting a Public Notice to the Iowa State Daily (using DNR Form 542-8117). Notarized copies of public notices are retained for three years.

Iowa State Daily Media Group
 2420 Lincoln Way, Suite 205
 Ames, IA 50014-7448
 515-294-4485



AFFIDAVIT OF PUBLICATION

STATE OF IOWA
 COUNTY OF STORY

The undersigned, Sarah Lefeber, being first duty sworn on oath states that she/he is the **General Manager**, of the Iowa State Daily Media Group, a corporation duly organized and existing under the laws of the State of Iowa, with its principal place of business in Ames, Iowa, the publisher of **THE IOWA STATE DAILY MEDIA GROUP** newspapers of general circulation printed and published in the City of Ames, Story County, Iowa, and that an advertisement, a printed copy of which is attached as Exhibit "A" and made a part of this affidavit, was printed and published in the Iowa State Daily on the following date (s):

Friday, May 3, 2019

Subscribed and sworn to before me by said affiant this 3rd day of May, 2019.

Sarah Lefeber

Notary Public in and for Story County, Iowa

COPY OF ADVERTISEMENT

PUBLIC NOTICE OF STORM WATER DISCHARGE

Iowa State University plans to submit a Notice of Intent to the Iowa Department of Natural Resources to be covered under the NPDES General Permit No. 2 "Storm Water Discharge Associated with Industrial Activity for Construction Activities".

The storm water discharge will be from the Sports Performance Center and Jack Trice Stadium Improvements North. Located in the NW 1/4 of Section 10, Township 83 North, Range 24 SW, Story County.

Storm water will discharge from multiple point sources and will enter Squaw Creek to the Skunk River.

Comments may be submitted to the Storm Water Discharge Coordinator, Iowa Department of Natural Resources, Environmental Protection Division, 502 ... 9th Street, Des Moines, IA 50319-0034. The public may review the Notice of Intent from 8 a.m. to 4:30 p.m., Monday through Friday, at the above address after it has been received by the Department.

HOLLE J HENZE
 Commission No. 809824
 My Comm. Expires 3/22/23

Iowa State Daily Friday, May 03, 2019

C. Illicit Discharge Detection and Elimination

1. Illicit Discharge Prohibition Policy Statement, available at:
<https://www.ehs.iastate.edu/publications/policies/swpolicy.pdf>
2. EH&S conducted annual dry flow inspections of MS4 campus storm water outfalls throughout 2020. EH&S staff visually inspected storm water outfalls to public waterways and dry land with no illicit discharges detected during the inspections. A review of the annual outfall inspection process was conducted; no changes were made to the inspection program.

D. Construction Site Storm Water Runoff Control

1. Construction Site Runoff Control Policy Statement, available at:
<https://www.ehs.iastate.edu/publications/policies/swpolicy.pdf>
2. Standard Operating Procedures for NPDES Construction Permits. A summary process flow diagram is available at:
<https://www.ehs.iastate.edu/sites/default/files/uploads/publications/reports/Stormwater%20Construction%20Permit%20Flow%20Chart.pdf>
3. Construction Site Inspection Program. EH&S completed 316 storm water inspections at nine construction sites covering a total of 82.0 acres. Construction teams implemented erosion prevention and sediment control practices that prevented 21 tons (that's 120 wheelbarrow loads) of soil from entering our waterways. Keeping soil on site and out of our local creeks and streams improves water quality.
4. Pollution Prevention Plan Review Procedures. In addition to the stormwater construction permit flow chart ISU developed to accompany the SOP, each capital project includes contract language that requires compliance with good engineering practices for stormwater management and a template for on-site best management practices for sediment and erosion control. These are available to contractors through the Centric Project Management file sharing application.

E. Post-Construction Storm Water Management

1. Post-Construction Site Runoff Control Policy Statement, available at:
<https://www.ehs.iastate.edu/publications/policies/swpolicy.pdf>

2. Site Plan Review Procedures. The University follows the Iowa Stormwater Management Manual and Statewide Urban Design and Specifications (SUDAS) manual where practical, including storm water detention, retention, infiltration, quality, and quantity considerations. These post-construction requirements are included in the contract language for capital projects. ISU does not close out a permit until the site meets all contract requirements, including stormwater management obligations.
3. Re-Pavement and Storm Water Repair Retrofit Evaluation Program. ISU evaluates re-pavement and repair projects as needed to minimize runoff from streets and parking lots.

F. Pollution Prevention / Good Housekeeping

1. Educational Programs for ISU Staff. EH&S trained 92 employees during calendar year 2020. Training topics included storm water regulatory compliance, construction site BMPs, storm water hotline, NPDES General Permit No 2, and SWPPP compliance and review.
2. ISU departments apply pesticides and fertilizers and continue to operate according to defined management programs. The university follows proper storage procedures, employs approximately 30 certified applicators, minimizes application rates, and maintains application records. Annual reviews determine best management practices (BMPs) and minimization of pesticides and fertilizer application usage.

Campus Services

Since 2007, Campus Services (CS) has practiced Integrated Pest Management (IPM) on university grounds. The goal of IPM is to reduce the number of chemical and fertilizer applications while maintaining an acceptable appearance of campus grounds. CS utilizes a scouting program to establish maintenance levels for specific areas.

Reiman Gardens

Reiman Gardens has committed to practicing sustainable principles for chemical application and supplemental watering. These practices are dependent on specific environmental conditions and pest/weed pressures.

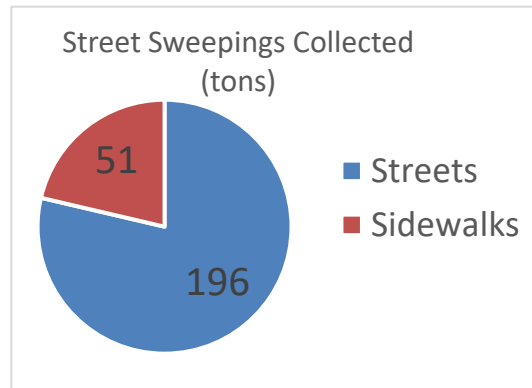
Iowa State Athletics Department

ISU Athletics manages landscape and turf grasses using sustainable environmental practices including water conservation and timely fertilizer/pesticide applications. The annual priorities of minimizing chemical application while treating target areas continues to be a goal. Providing for safety of student athletes is forefront while developing playable conditions for Big Twelve Conference athletic events and band activities. In addition, ISU Athletics participates in a recycling program after each sporting event.

Veenker Golf Course and Campus Services

Veenker Golf Course continues to incorporate sustainable philosophies. Golf course staff have implemented BMP's of advanced environmental conservation. The best management practices include lowering application rates of herbicide/pesticides/fungicides, selection of improved disease-resistance cultivars, elimination and reduction of irrigation, establishment of low maintenance areas with wild flowers, fescues, buffalo grasses, and establishment of natural areas. The golf course has used lower application rates of urea fertilizer since 2011.

3. Street and Parking Lot Sweeping Program. In 2019, Iowa State University collected 247 tons of sweepings from 69 miles of streets, sidewalks, and bike paths, and 178 acres of parking lots.



4. Inspection and Maintenance Program – Mike Murray, PE, Chief Mechanical Engineer

Inspection and Maintenance Program requires us to inspect the entire storm system every 5 years, recording areas inspected, dates, methods, individual conducting inspection, observations, and corrective actions.

Approximately 2100 service entry structures (junctions and intakes) covered under the ISU MS4 permit. These structures are labelled on the ISU campus maps based on map grid and a sequential number. To date the exact location of approximately 1,500 of structures have been confirmed on our maps using a global positioning system surveying device. ISU Utilities will continue to survey manholes to improve map accuracy. ISU will inspect each service entry once every 5 years averaging 420 inspections per year.

Since 2013 ISU Utilities has visually inspected the entire system at least once, with 502 inspected in calendar year 2020. In addition, ISU Utilities televises lines where needed to

verify cleaning or investigate sewer backups. In 2020, 9 areas representing approximately 3650 feet televised. A typical photo still from a video is included.



ISU employs a facilities management program (FAMIS) to store all maintenance records including date, location of maintenance, assigned staff, manhole number, cost, and items and services purchased which tells us what was done. FAMIS works well to capture metrics and document maintenance

and repair activities.

To document that the University is inspecting each service entry cover once every 5 years, ISU Utilities has implemented a separate data collection process. Utility crews systematically inspect the MS4 system based on campus map grid sheets. The data are kept on paper forms recording manhole number, date, person inspecting, method of inspection, and observation. The forms are scanned and maintained in electronic format. This combination of systematic inspections and digitized record keeping ensures that ISU Utilities satisfies MS4 permit requirements. In addition, Utilities is prototyping methods to collect and store this information electronically to evaluate cost effective choices for the MS4 system.

In 2020, 12 storm service entries were grouted, had tops rebuilt or were raised/lowered as a direct result of inspections.

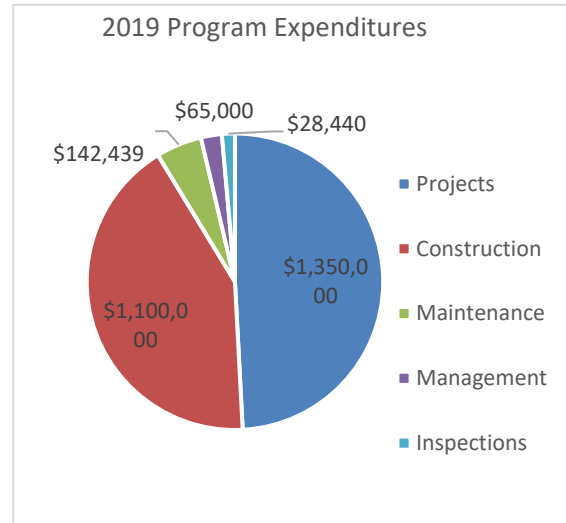
2. SUMMARY OF THE MONITORING DATA ON STORM WATER QUALITY IMPROVEMENTS

ISU is investigating new options for monitoring stream water quality. The discontinuation of the IOWATER program has temporarily eliminated this resource for tracking water chemistry and ecological health. Historic records are still available, but a source of new data and a mechanism for collecting it has not yet been identified.

3. AN ESTIMATE OF THE PREVIOUS FISCAL YEAR EXPENDITURES FOR IMPLEMENTATION OF THE MANAGEMENT PROGRAM AND THE BUDGET FOR THE CURRENT FISCAL YEAR

The storm water management budget for calendar year 2019 was funded “as needed” by several campus entities:

- EH&S dedicated ½ fulltime equivalent (FTE) staff time to storm water activities, that included regular inspections of all permitted construction sites. EH&S conducted 316 weekly site inspections in 2020 at a total expenditure of \$28,440.
- EH&S staff maintained the storm water website, managed quarterly storm water hotline advertisements in the student newspaper, attended storm water training, and developed ISU staff training programs, at an estimated expenditure of \$65,000 in salary and benefits.
- Construction of new storm water management projects and design fees associated with capital site, parking and building projects estimated at \$1,100,000.
- FP&M expenditures associated with storm water project design/BMPs, project support, implementation, maintenance, MS4 televising and cleaning, and seeding/sodding were approximately \$1,350,000.
- FP&M maintains 45 lane miles of paved institutional roads, 15 lane miles of gravel roads, 191 acres of parking lots, and 51 miles of sidewalks and bike paths throughout campus. To ensure safe passage of all vehicles, sweeping of pedestrian and cyclist roadways, parking lots, and bike paths resulted in an expenditure of \$142,439. The 247 tons of sweepings included 196 tons from streets and 51 tons from sidewalks.



Total estimated storm water management expenditures were \$2,685,879. No annual amounts are appropriated by ISU, as storm water expenses are funded on a per-project basis.

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

IDNR Inspections

No IDNR inspections occurred during 2020.

Permitted Site Inspections by ISU Staff

316 inspections were conducted by Environmental Health and Safety on all Iowa State University construction sites requiring a National Pollutant Discharge Elimination System General Permit Number 2. The inspections evaluated contractor compliance with BMPs as described on the site-specific Storm Water Pollution Prevention Plan (SWPPP). EH&S and FP&M staff coordinated mitigation efforts with site contractors when deficiencies were noted.

Active and Discontinued Construction Sites

During the 2020 calendar year, nine construction sites operated under NPDES General Permit No. 2 authorizations. The status of these permits is summarized in Table 1.

TABLE 1. STATUS OF CONSTRUCTION PERMITS

<u>Facility</u>	<u>Permit</u>	<u>Status</u>
Gerdin Addition	IA-34443-34122	Discontinued 10/1/20
Iowa State Center Steam Supply Replacement	IA-34873-34528	Discontinued 4/22/20
Poultry Farm Teaching Research Facility	IA-34872-34527	Discontinued 6/10/20
Recreation Services East Of University Boulevard	IA-35197-34867	Discontinued 11/4/20
Reiman Gardens SW Corner Improvements	IA-30651-30379	Discontinued 12/4/20
Sports Performance Center & Jack Trice Stadium	IA-35214-34883	Active
Student Innovation Center	IA-30467-30197	Discontinued 4/29/20
Vet Med Field Services Building Expansion	IA-36393-36050	Discontinued 10/1/20
Kent Feed Mill and Grain Sciences Complex	IA-38275-37912	Active

Two permitted sites were still active as of December 31, 2020 (See Attachments A).

Notices of Discontinuation

Seven construction projects reached final stabilization as defined in General Permit. (Refer to Active and Discontinued Sites, Table 1).

Reported Spills and Releases

The Storm Water Hotline, (515) 294-7229, received one call requiring a response during 2020.

On Monday December 7, 2019 ISU EH&S staff were notified by a citizen that “pollution “is evident on College Creek. ISU EH&S responded and verified the presence of a green fluorescent sheen and what appeared to be a petroleum type sheen. In the immediate vicinity of the sheens was a drill rig performing drinking water well shocking for the City of Ames. The following City of Ames email response is the explanation for the sheen.

“Last Friday, Northway (our contractor for well rehabilitations) was hauling off tanker(s) of acidized water and discharging them to the Water Plant lime ponds as they always do. Yesterday, Northway was discharging approximately 800 gpm of “normal” well water to test pump it after the rehab. That water would be high in iron, which probably oxidized in the creek and may give it a rusty color/sediment to some extent. This is more noticeable with the lower than normal creek flows. They did this discharge according to an IDNR GP6 permit. I took pictures of College Creek yesterday morning when I walked the creek from well 17 to Squaw Creek. After walking the creek, others and I see that there is evidence of biological “stuff” from the normal cleaning and discharge according to the permit. We do not see any petroleum-based sheen on the water, and there are no petroleum-based cleaners used or involved in the well rehabilitation”.

Community and Public Education Programs

Campus Volunteer Activities –

Due to Covid-19, no public activities were held during 2020.

Attachment A
NPDES-Permitted Construction Sites on ISU Campus



Key:

- | | |
|--|-----------------------|
| 1. Gerdin Addition | IA-34443-34122 |
| 2. Kent Feed Mill and Grain Sciences Complex | IA-38275-37912 |
| 3. Iowa State Center Steam Supple Replacement | IA-34873-34528 |
| 4. Poultry Farm Teaching Research Facility | IA-34872-34527 |
| 5. Recreation Services East Of University Boulevard | IA-35197-34867 |
| 6. Reiman Gardens SW Corner Improvements | IA-30651-30379 |
| 7. Sports Performance Center & Jack Trice Stadium | IA-35214-34883 |
| 8. Student Innovation Center | IA-30467-30197 |
| 9. Vet Med Field Services Building Expansion | IA-36393-36050 |

Active sites in **bold**.

Attachment B Campus Storm Water Management Projects

