

The University of Northern Iowa

Storm Water

Management Plan

Documentation and Annual Reporting for the MS4 Program
2021/2022 reporting year

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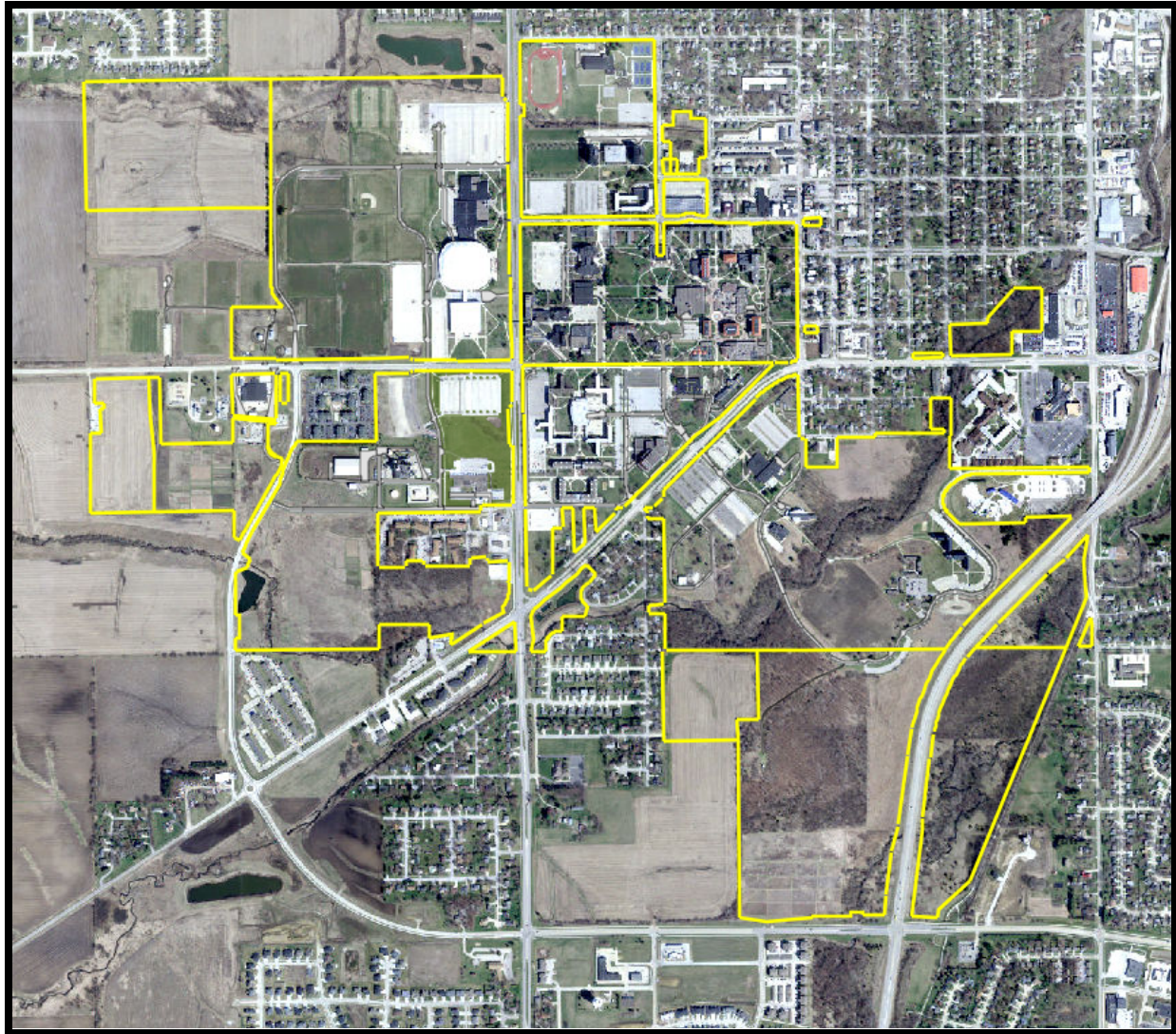
Organizational structure

| Committee Member | Title/Department | Contact |
|----------------------------|--|--|
| Michael W Zwanziger | Assistant Vice President & Director, Facilities Management | Michael.Zwanziger@uni.edu |
| Jonathan Butler | Manager, Custodial Services | jonathan.butler@uni.edu |
| Phillip O'Loughlin | Senior Construction Project Manager | phillip.oloughlin@uni.edu |
| Brent L Maitland | Power Plant Manager, Utilities & Power Plant | Brent.Maitland@uni.edu |
| Douglas G Lovejoy | Construction Project Mgr/Engr Planner, Facilities Planning | Douglas.Lovejoy@uni.edu |
| Steve Choplin | Supervisor, Transportation Services | Steve.Choplin@uni.edu |
| Gary L Saak | Assoc Dir Maintenance, Physical Plant Administration | gary.saak@uni.edu |
| Eric H O'Brien | Director of Sustainability, Finance & Operations | eric.obrien@uni.edu |
| Jeff Hermanson | Facilities Engineer, Facilities Management | jeffrey.hermanson@uni.edu |
| David C Velasco | Parking Manager, Public Safety | david.velasco@uni.edu |
| Lynn Pakala | Manager, Grounds Services | Lynn.pakala@uni.edu |
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The University of Northern Iowa MS4 Program

Permit Area

This permit covers all areas within the boundaries of the University of Northern Iowa totaling approximately 808 acres which is drained by the University's Municipal Separate Storm Sewer System (MS4) and any other areas added while this permit is in effect.



Authorized Discharge

This permit authorizes all existing or new storm water point source discharges to water of the State from the MS4. This permit also authorizes the discharge of storm water commingling with flows contributed by process wastewater, non-process wastewater, or storm water associated with industrial activity

provided such discharges are authorized under the NPDES permit, as required by law. This permit does not authorize discharges to the MS4.

Partnerships

The University of Northern Iowa has been working with Blackhawk Soil and Water Conservation District to implement Storm water Best Management Practices (BMP)s during infrastructure improvements on campus. These efforts have been initiated with grant funding provided through the efforts of the Dry Run Creek Watershed project (DRCWP) and in conjunction with

Other partnerships created with local and national organizations for various aspects of this permit include:

- The City of Cedar Falls
- The Nature conservancy
- Hawkeye community college
- Americorps
- Green RU
- SAS (formerly Midland GIS)

| 2018-2019 |
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| DRCWP continues to partner with the UNI to provide technical support and grant funding options for BMP installation. Midland GIS and the City of Cedar Falls were huge contributors to the mapping and creation of the UNI ArcGIS database that contains the Universities Storm water map. |

| 2019-2020 |
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| DRCWP continues to partner with the UNI to provide technical support and grant funding options for BMP installation. |

| 2020-2021 |
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| DRCWP continues to partner with the UNI to provide technical support and grant funding options for BMP installation. |

| 2021-2022 |
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| DRCWP continues to partner with the UNI to provide technical support and grant funding options for BMP installation. Staffing changes at the university resulted in new individuals becoming involved in stormwater management efforts |

Funding

The University of Northern Iowa MS4 program is funded through the state of Iowa General Education Fund. Budget numbers and actual expenses are taken from Facilities 0011.

Funding is broken down by program components. These consist of:

- Design & Construction
- BMP Maintenance
- Storm Sewer Maintenance
- Stream Bank Restoration

Additional funding sources include grants and partnerships which vary from year to year.

| 2018-2019 |
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| Maintenance costs expended for the maintenance of storm water projects and initiatives included approximately \$1,200,000 for labor and contracted services. <ul style="list-style-type: none">● The large increase in spending this year was related to the installation of a storm water detention along University Ave. and Hudson Blvd. |

| 2019-2020 |
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| Maintenance costs expended for the maintenance of storm water projects and initiatives included approximately \$200,000 for labor and contracted services. |

| 2020-2021 |
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| Maintenance costs expended for the maintenance of storm water projects and initiatives included approximately \$150,000 for labor and contracted services. |

| 2021-2022 |
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| Maintenance costs expended for the maintenance of storm water projects and initiatives included approximately \$194,000 for labor and contracted services. |

Goals and Program Implementation

The long term goals of this program are to reduce the potential contaminants suspended in storm water from reaching the receiving creeks and rivers in our watershed. This will be achieved through the implementation of the components listed below.

The implementation of Storm water Best Management Practices through infrastructure improvement projects on campus shall be the driving factors in achieving these goals. Partnering with DRCWP for continual monitoring shall keep the program up to date to achieve positive and lasting impact to Dry Run Creek Watershed Project.

Short term goals are outlined by the MS4 program minimum control measures (MCM) listed in the next section.

Some overall pollutant and quality reductions to the DRC branches include the following:

1. Infiltrate a 1.25" rainfall in urban areas
2. Reduce sediment delivery by 30%

3. Improve streambank habitat along 25% of the stream
4. Conduct an extensive I&E program

Program Components & Management

STORM WATER POLLUTION PREVENTION & MANAGEMENT

A. Public Education and Outreach on StormWater Impacts

The permittee shall implement a public education and outreach program about the impacts of storm water discharges and measures which the residents of the permittee can implement to reduce pollutants in stormwater runoff that includes the following:

Informational web board – Inside UNI

Informational announcements shall continue to be submitted to “Inside UNI” a daily public announcement platform that reaches University-wide to faculty, staff and students. Through this platform significant topics can be shared with the University community in a timely manner.

Additional outreach is performed through campus departments and faculty including:

- Dry Run Creek Watershed Improvement Project
- The Reuse, Recycle Technology Transfer Center
- Americorps
- Tallgrass Prairie Center
- Center for Energy and Environmental Education
- UNI Department of Sustainability

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| 2018-2019 |
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| 2019-2020 |
| This year’s campus announcement reported the approximate amount of storm water treated by campus BMPs. |
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| 2020-2021 |
| This year’s campus announcement displayed the campus Storm Water hotline phone number and encouraged students, faculty and staff to report any improper dumping. |
| Additionally we posted a Storm Water GIS story map that graphically displayed the BMP’s that have been installed on campus and discuss the benefits of those practices. https://fm.uni.edu/stormwater-management |

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| 2021-2022 |
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UNI worked with the Iowa Stormwater Education Partnership to serve as a demonstration site for a summer workshop. In the end, the full workshop was canceled, however the demonstration sites were identified and documented for educational materials by ISEP.

Updates were we posted to UNI's Storm Water GIS story map at <https://fm.uni.edu/stormwater-management>

Storm Drain Labeling

All new and replaced storm sewer intakes shall be either painted or receive a medallion with a no dumping, drains to river proscription. Should a catch basin be installed that has no such proscription, the permittee shall affix a placard so indicating. **The program shall continue to be implemented by the permittee to ensure all University storm sewer intakes are labeled for the duration of the permit.**

2018-2019

Storm water intake stenciling continued this annual cycle Midland GIS inc. was contracted to map all intakes and outfalls and create a GIP geodatabase for the University. The mapping has been completed and is available through the FM group administrators (Brian Hadley 319 273 4400)

2019-2020

Storm water intake stenciling continued this annual cycle with a focus on the central, eastern and northern campus intakes. Identifying medallions used are the same model used by the City of Cedar Falls.

2020-2021

Storm water intake stenciling was limited this annual cycle into staffing levels associated with COVID and staff medical leave. Some work was completed on the central and southern portion of campus intakes. Identifying medallions used are the same model used by the City of Cedar Falls.

2021-2022

Storm water intake stenciling was limited this annual cycle due to staffing shortages. The stenciling has been assigned to our Paint department for 2022-2023.

Storm Water Website

The permittee's website shall contain information regarding storm water impacts on water quality, measures residents can implement to reduce pollutants in storm water, regulations, current local topics, information in the brochures and links to other relevant websites. A form for reporting storm water complaints shall be provided on the website. **The website shall be updated as needed. The storm water web page shall be maintained by the permittee for the duration of the permit.**

The Storm water Page can be found at: <https://fm.uni.edu/stormwater-management>

2018-2019

The storm water web page was move this year from the UNI Environmental, Health and Safety web site to the UNI Facilities management website. <https://fm.uni.edu/stormwater-management>

2019-2020

The Storm water web site was updated with the current year's annual report. There is a need to refresh the website to be more interactive and beneficial. Committee will look for a student to take on the project in the new year.

2020-2021

The Storm water web site was updated with the current year's annual report. The entire website was completely reconfigured this past year. Policies were updated, links were repaired, and information was filtered to ensure that it more closely aligned with the annual reporting and DNR inspection. More work is needed to make the website user friendly.

2021-2022

The storm water web page updated with the current year's annual report. Updated storm water management contact information.

B. Public Involvement and Participation

The permittee shall continue implementing a public involvement and participation program that includes the following:

Storm Water Management Team

Storm water Management team meets annually, typically in during the Fall semester after students have returned to school. The Management team is made up of Facilities representatives as well as staff, and students.

Members of the storm water management team serve on the Dry Run Creek Advisory Board, supporting the watershed improvement program. This committee meets multiple times during the reporting year to advise the coordinated educational outreach of the DRCWIP.

2018-2019

The Fall storm water management team meeting was held August 9, 2019. Discussion on Web site update and move from EH&S web site to Facilities Management web site and continued discharge making project.

The DRC advisory board met on the following dates Friday May 10th, 2019. Discussions on the Hillside Courts Native Prairie BMP, the Gilchrist Parking lot BMP, Maintenance of BMP signage and Grant funding status as well as future UNI projects.

2019-2020

The Fall storm water management team meeting was postponed to the spring semester due to the impacts of the COVID-19 pandemic.

The DRC advisory board met Thursday July 18th, Friday October 11th, Monday Nov. 16th, & January 6th, 2020, discussions included wrapping up Hillside Courts Native Prairie BMP & the Gilchrist Parking lot BMP as well as future proposed watershed projects.

2020-2021

The storm water management team meeting did not occur in the spring due to the pandemic. The meeting is scheduled for Fall semester as students, Faculty and Staff return to campus.

The DRC advisory board met Nov. 16th, 2020, May 7th 2021. The discussions included the Redeker plaza storm system upgrade and biocell installation, and the Artificial turf conversion project biocell.

2021-2022

The storm water management team meeting did not occur in the spring due organization changes. The meeting is scheduled for November 2022

The DRC advisory board met March 29, 2022 and is scheduled to meet again in October 2022. The discussions included UNI's football practice field biocell project, as well as the Redeker plaza storm system upgrade and biocell installation.

Storm Water Hotline

The permittee shall provide a telephone number for the reporting of storm water related problems. **The telephone number shall be made available on the website and included in other storm water educational materials. The telephone number shall be made available for the duration of the permit.**

The Storm water Hotline number is: 319-273-4EPA (319-273-4372). Information regarding the hotline is available at: <https://fm.uni.edu/stormwater-management>

2018-2019

The status of this MCM is current and no change to the hotline are necessary.

No complaints were logged during the current reporting cycle.

2019-2020

The status of this MCM is current and no change to the hotline are necessary.

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| No complaints were logged during the current reporting cycle. |
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| 2020-2021 |
| The status of this MCM is current and no change to the hotline are necessary. |
| No complaints were logged during the current reporting cycle. |

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| 2021-2022 |
| The status of this MCM is current and no change to the hotline are necessary. |

Events Cleanup Program

The permittee shall continue to implement cleanup procedures after events located on campus. Cleanup of campus outdoor events will primarily be completed by the Facilities Management group, specifically the Grounds organization. Campus sponsored groups will be encouraged through the event scheduling process to provide garbage cans and labor to police and cleanup after individual events. Larger campus events sponsored by the Athletics and Performing Arts departments will provide labor either with staff, students or contractors to mitigate waste from associated events.

Public Notice Requirements

When implementing a public involvement and participation program, the permittee must comply with all state and local public notice requirements. The University will comply with all state and local public notice requirements associated with the management and permitting of the MS4 permit.

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| 2018-2019 |
| There were no required public notice in this reporting cycle. |

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| 2019-2020 |
| There were no required public notice in this reporting cycle. |

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| 2020-2021 |
| There were no required public notice in this reporting cycle. |

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| 2021-2022 |
| There were no required public notice in this reporting cycle. |

C. Illicit Discharge Detection and Elimination

The Permittee shall continue implementing and enforcing a discharge detection and elimination program that includes the following.

Illicit Discharge Prohibition Policy Statement

A policy statement will continue to be implemented that prohibits discharges to the University operated MS4 that are not comprised of storm water, properly permitted storm water discharges associated with industrial activity or allowable non-storm water. **The policy statement shall specify penalties for non-compliance.**

<https://fm.uni.edu/illicit-discharge-prohibiton>

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| 2017-2018 |
| No changes to the ordinance was necessary |
| 1 potential unknown illicit discharge was identified and investigated. |

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| 2018-2019 |
| No changes to the ordinance was necessary |
| No known illicit discharge violations were noted. |

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| 2019-2020 |
| No changes to the ordinance was necessary |
| No known illicit discharge violations were noted. |

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| 2021-2022 |
| No changes to the ordinance was necessary |
| No known illicit discharge violations were noted. |

Illicit Discharge Detection and Elimination program

A program shall continue to be implemented to identify and eliminate illicit discharge for the MS4. The program shall include annual dry weather flow inspections of all outfalls not already inspected since flows from newly developed or re-developed areas have been discharged from the outfalls, sampling and analysis of these dry weather flows and procedures for disconnecting illicit connections. Records shall be kept of when inspections are performed, the results of the inspections and measures taken to identify and, when appropriate, eliminate the sources of any fry weather flows. The plan shall be evaluated annually to assess the effectiveness of the program and any necessary changes made. **All illicit discharges found must be eliminated no more than 21 days after the discovery.** If it is not possible to eliminate an illicit discharge within 21 days of discovery, the permittee shall submit to the Department

the reasons why the discharge cannot be eliminated within 21 days of discovery and a plan which contains a timeline of activities which will result in the elimination of the discharge. This statement and plan shall be submitted within 21 days of discovery of the illicit discharge. If the Department does not approve the plan, the permittee will then be required to eliminate the discharge no later than a date specified by the Department. **All illicit discharges shall be reported to the Department no later than the end of the first business day after the day of the discovery. The plan shall be implemented by the permittee for the duration of the permit.**

<https://fm.uni.edu/illicit-discharge-detection-and-elimination-program> - **UNI illicit detection and elimination program**

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| 2018-2019 |
| No illicit discharge was reported during this reporting cycle. |

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| 2019-2020 |
| No illicit discharge was reported during this reporting cycle. |

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| 2020-2021 |
| Alterations were made to the wording of our Illicit Discharge Detection and Elimination Program. These changes were made to update the department responsible for inspection reporting and to update University department names. These alterations were noted in the re-permitting of the campus MS4 2021. |
| A suspect discharge was reported 8/28/2021 associated with the campus solid fuel power plant. The DNR was made aware and there is an active investigation in progress. |

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| 2021-2022 |
| No illicit discharge was reported during this reporting cycle. |

Storm Sewer System Map

All intakes and outfalls of the MS4 shall continue to be mapped for the duration of the permit. New intakes and outfalls added during the term of the permit shall be mapped as they are constructed. The UNI Storm sewer map shall be maintained in the Campus ArcGIS mapping software. (For access contact UNI dispatch 319 273-4400) <https://fmgis.uni.edu/fmgis/>

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| 2018-2019 |
| UNI continues to maintain the ArcGIS map for the campus Storm sewer system. |

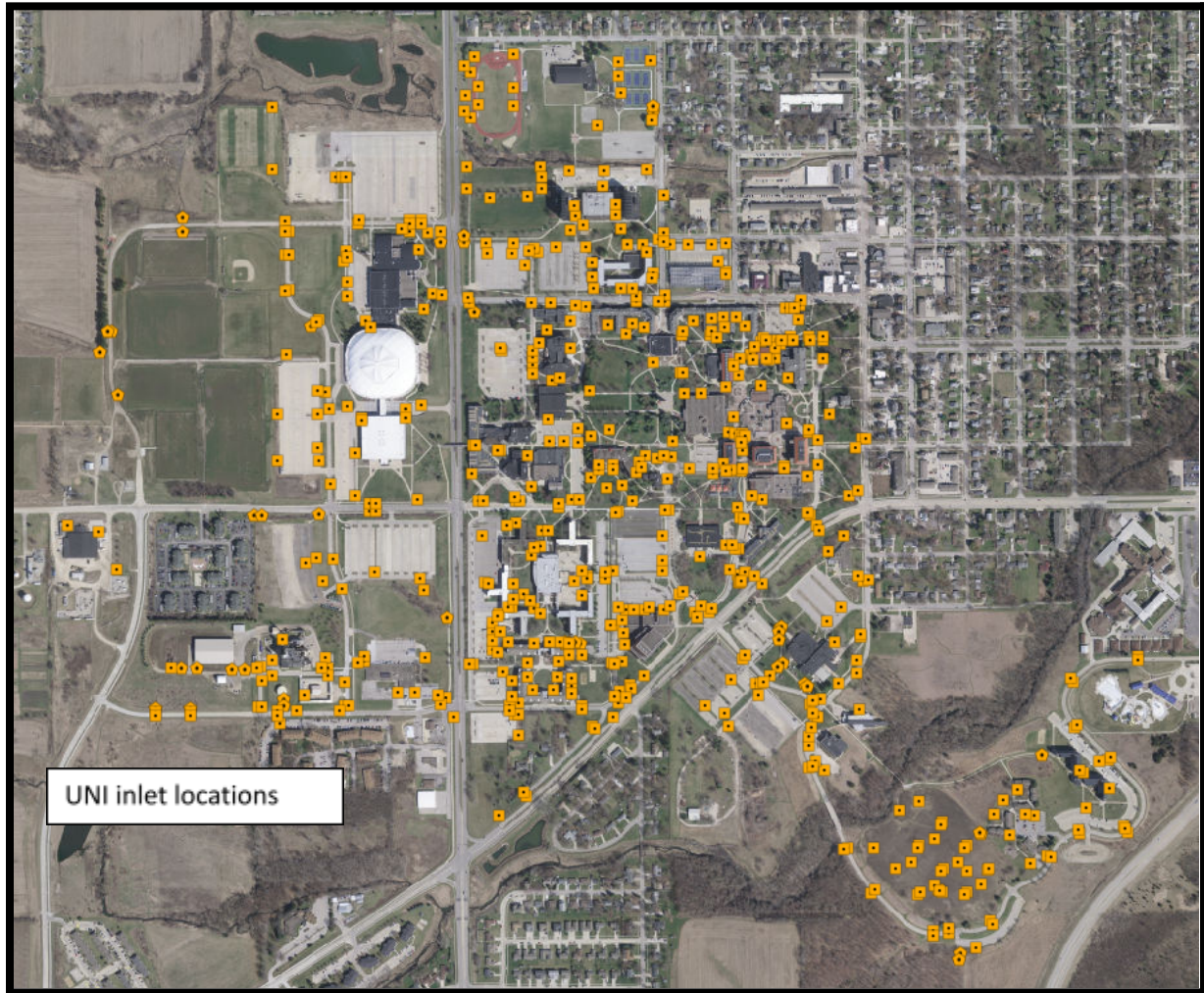
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| 2019-2020 |
| UNI continues to maintain the ArcGIS map for the campus Storm sewer system. |

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| 2020-2021 |
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UNI continues to maintain the ArcGIS map for the campus Storm sewer system.

2021-2022

UNI continues to maintain the ArcGIS map for the campus Storm sewer system.





D. Construction Site Storm Water Runoff and Control

Construction Site Runoff Control Policy Statement

A policy statement shall continue to be implemented on all sites for which NPDES permits are required that requires proper soil erosion and sediment control. This policy statement shall also address waste at construction sites that may cause adverse impacts to water quality such as building materials, concrete truck washout, chemicals, solid waste and sanitary waste. Authority to issue an order to terminate activities due to failure to implement or maintain pollution control BMPs shall be included. The statement shall require site plan and pollution prevention plan review and shall reference the Iowa Construction Site Erosion Control Manual and the Iowa Department of Transportation Erosion Control Standards.

The policy shall require compliance with the Department’s Storm Water General Permit no. 2. **The ordinance shall be enforced by the permittee for the duration of the permit. The policy statement shall specify penalties for non-compliance.**

<https://fm.uni.edu/illicit-discharge-prohibiton> - **Illicit Discharge procedure**

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| 2018-2019 |
| The status of the Construction Site Runoff Control is current and no changes to the policy are necessary. |

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| 2019-2020 |
| The status of the Construction Site Runoff Control is current and no changes to the policy are necessary. |

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| 2020-2021 |
| The status of the Construction Site Runoff Control was updated to include penalties for non-compliance. This update was included in the re-permitting for the MS4. |

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| 2021-2022 |
| The status of the Construction Site Runoff Control is current and no changes to the policy are necessary. |

Standard Operating Procedures for NPDES Construction Permits

A Standard Operating Procedure (SOP) for the handling of areas of soil disturbance for which NPDES permits are required shall continue to be implemented. The SOP shall be compatible with all relevant requirements of the Iowa Administrative Code and the storm water NPDES General permit no. 2 The SOP shall outline the responsibilities of University personnel and shall include the minimum requirements for preparing storm water pollution prevention plans, relevant contract information and required information for inspection logs.

<https://fm.uni.edu/stormwater-management> - **Site Plan Review Procedures**

Construction Site Review and Inspection Program

A construction site inspection program shall continue to be implemented for areas of soil disturbance for which NPDES permits are required. The inspection program shall be used to ensure that contractors are correctly implementing BMP’s which have been approved in the pollution prevention plan and any additional necessary measures. The program shall require inspection by the permittee at least every 7 days and include any other provisions necessary to ensure compliance by contractors with the storm water General Permit no. 2. Inspections conducted by the permittee that meet the requirements of General Permit no. 2 may be used to satisfy these requirements. University personnel shall ensure that

all topsoil preservation requirements stipulated by General Permit no 2. Are implemented on those sites for which they are required.

<https://fm.uni.edu/stormwater-management> - **Site Plan Review Procedures**

Pollution Prevention Plan (PPP) Review Procedures

A PPP review procedure shall continue to be implemented for areas of soil disturbance for which NPDES permits are required. The procedure shall indicate who is responsible for reviewing PPP's, outline submittal requirements and reviewer response time. The criteria for acceptance shall be, at a minimum that which is required in the storm water General Permit no. 2.

<https://fm.uni.edu/stormwater-management> - **Site Plan Review Procedures**

E. Post-Construction Storm Water Management

Post-Construction Runoff Control Policy Statement

A design and implementation policy statement shall be developed that will address the control of runoff from building activities after construction has been completed. The policy statement shall require water quality and quantity components be considered in the design of new construction and implementation when practical. The statement shall promote the use of storm water detention, retention, infiltration, other Best Management Practices specific to each site which address water quality and quantity issues and proper operation and maintenance of these facilities. Written documentation of the analyses determining the practicality of implementing measures to reduce increased in water quantity and decreases in water quality shall be retained as required elsewhere in this permit.

<https://fm.uni.edu/illicit-discharge-prohibiton> - **Post-Construction Site Runoff Control**

Site Plan Review Procedures of Post-Construction Runoff Controls

Site plan review procedures shall continue to be implemented which address sites for which storm water coverage is required. The procedure will designate who is responsible for reviewing site plans submittal requirements, reviewer response time and plan approval criteria and the purpose shall be to ensure that construction site and post-construction runoff BMP's are incorporated into site planning when possible and designed properly. The review procedures shall be implemented for the duration of the permit.

<https://fm.uni.edu/post-construction-re-pavement-site-plan-review-program-statement> - **Post construction & site plan review program statement**

Re-pavement and Storm Water Repair retrofit Evaluation Program

Re-pavement projects shall be evaluated to determine if post-construction BMPs to minimize and/or treat runoff are feasible and shall be implemented when possible. The feasibility of installing post-construction runoff controls to minimize and/or treat runoff from existing streets and parking lots shall be considered and implemented when possible.

<https://fm.uni.edu/repavement-stormwater-repair-retrofit-evaluation-policy-statement> - **Repavement, Stormwater Repair Retrofit Evaluation Policy Statement**

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| 2018-2019 |
| Re-construction project for Schindler Education Center plaza implemented pervious paver BMP treating approximately 22,400 ft ² and 276,000 gallons of storm water annually. |

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| 2019-2020 |
| Re-pavement project in the Gilchrist parking lot implemented porous pavement BMP treating an estimated 57,700 ft ² and 703,000 gallons of storm water annually. |

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| 2020-2021 |
| Renovation project for Redeker plaza is currently under construction and is designed to improve the storm water system pipe sizing as well as installing bioretention cells. Estimation of storm water treated is still being estimated. |

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| 2021-2022 |
| Five Storm Sewer Intakes (two each on PE center drive and two each on Kansas Street, one each in AEB West Parking Lot) are set to be replaced this fall. Renovations to Redeker Plaza have been completed this year including the installation of the bioretention cells. A Storm Sewer Improvement project at Warehouse I Gravel Parking Lot just bid and will be completed prior to Dec 31st. Project includes routing storm water into an existing detention basin owned by the City of Cedar Falls. |

F. Pollution Prevention / Good housekeeping

Educational Program for Staff

An educational program shall continue to be implemented that provides training on proper waste disposal and maintenance for staff members and students working on operations that may discharge to the MS4.

The following University departments are trained:

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| Construction services | Carpentry |
| Custodial services | Electrical |
| Energy management | HVAC |
| Grounds | Plumbing |
| Mail Center | Painting |
| Utilities | Transportation |

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| 2019-2020 |
| Staff participants monthly in safety training and the January topic encompasses how to handle chemicals including transport and spills. |

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| 2020-2021 |
| Staff participants monthly in safety training and the January topic encompasses how to handle chemicals including transport and spills. |
| Every 3 years in September staff training on hazardous material handling and disposal, including spill containment and reporting. |

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| 2021-2022 |
| Staff participants monthly in safety training and one month encompasses how to handle chemicals including transport and spills. |

Operations and Maintenance of MS4

A program for inspecting, maintaining and cleaning components of the MS4 shall continue to be implemented. The MS4 shall be inspected at least once every five years and maintenance performed as appropriate.

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| 2019-2020 |
| Plumbing crew is televising sanitary sewers as maintenance issues arise. Efforts to attach videos to the new University GIS system have been discussed. |

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| 2020-2021 |
| No new areas have been televised this past year. |

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| 2021-2022 |
| Visual inspections of all the institutional roads storm sewer intakes performed this year after finding two that were failing to a point of creating a hazard. TV and Jet the existing storm sewer that we are connecting into prior to designing the a project at Warehouse 1. Additionally, the majority parking lot intakes inspected as well. |

Spill Response and Prevention Plan

A program to identify material handling procedures and storage requirements to reduce spill potential and impacts on storm water quality shall continue to be implemented. Individuals to be notified when spills occur shall be included.

<https://fm.uni.edu/stormwater-management> - **Spill Prevention Control & Countermeasures Plan (SPCC)**

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| 2019-2020 |
| SPCC is evaluated on an five year basis by Blank engineering. |
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| 2020-2021 |
| The SPCC is reviewed and evaluated once every five years. It was re-permitted this year April 2021. |

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| 2021-2022 |
| The SPCC is reviewed and evaluated once every five years. It was re-permitted this year April 2021. |

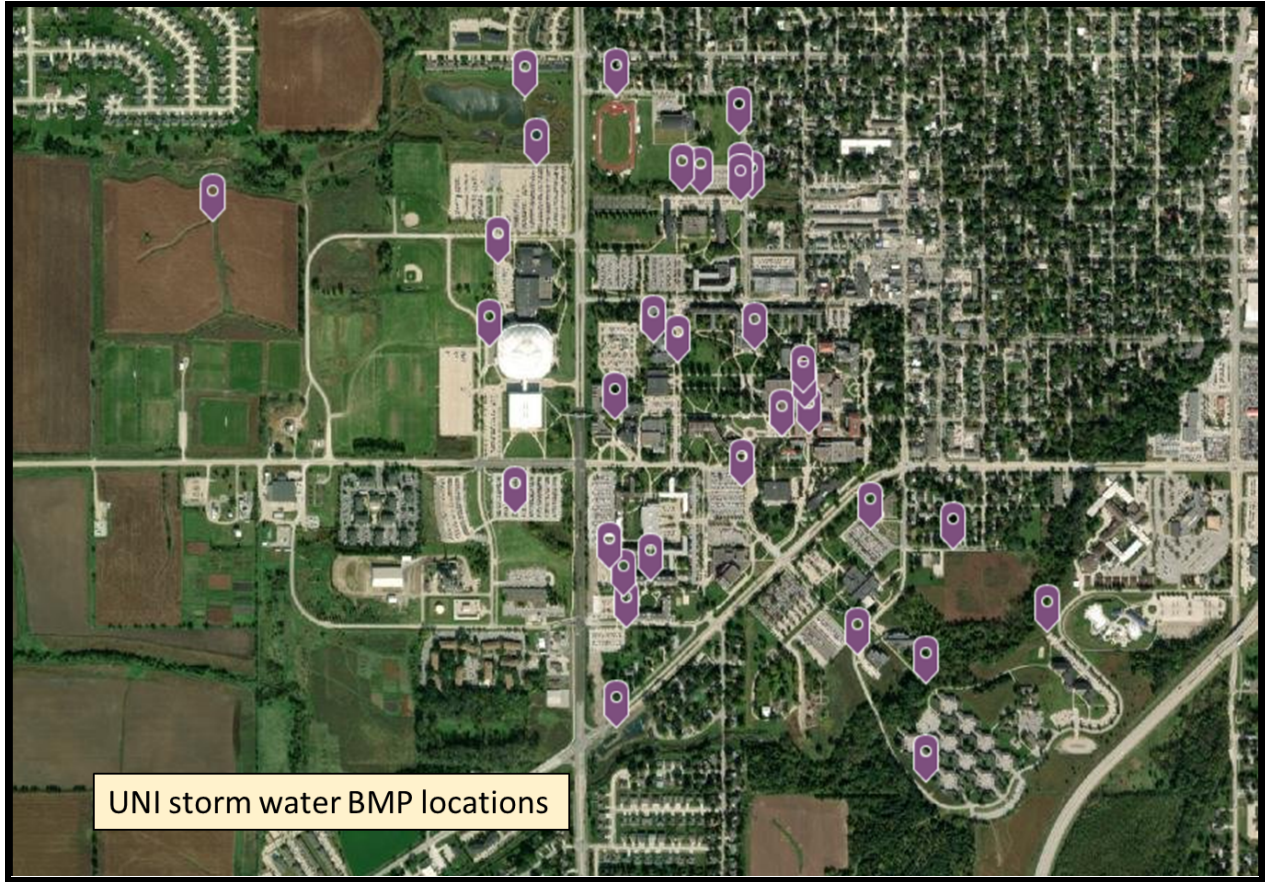
University Facilities BMPs

A program shall continue to be implemented to assess BMPs on campus facilities owned by the permittee. These BMPs shall be designed to reduce pollutants in the storm water from these facilities. The BMPs shall be implemented whenever practical. These facilities shall be inspected and BMPs assessed and modified as necessary during the duration of the permit. A campus map of existing BMPs can be found at: <https://fm.uni.edu/stormwater-management>

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| 2019-2020 |
| Gilchrist parking lot was assessed and found to be a good location for the implementation of a porous asphalt BMP. This was installed as a component of a parking lot rehab. |
| Two bio-retention cells on the South side of the Commons building were assessed and determined to be failing. The BMPs were reconstructed and planted with new plants. |

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| 2020-2021 |
| Redeker Plaza was determined to be a good location for a storm water improvement project. Currently it is under construction improving storm water pipe sizing and installing bio-retention cells |
| The artificial turf conversion project on the practice football field was determined to be a good application for a bio-retention cell to accommodate the change in water infiltration over the site. This is currently under construction. |
| One BMP in the West Dome parking lot was removed this past year due to construction of a new steam tunnel. The BMP was a porous asphalt application that had not been a successful process. |

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| 2021-2022 |
| Warehouse I Storm Sewer System was reviewed and identified as needing upgrades. |
| Bio-retention cell was completed, Redeker- completed |
| Initial site preparation for construction of a biocell at UNI's Applied Engineering Building was done in association with building construction. During the course of this project, two separate large biocells are planned, with one on the NW side of the building and the other on the SE side of the building. |



Storm water BMPs on the University of Northern Iowa campus are cataloged in a GIS based story map found at <https://fm.uni.edu/stormwater-management>.