

Year 2 Annual Report
Massachusetts Small MS4 General Permit
New Permittees
Reporting Period: July 1, 2019-June 30, 2020

Please DO NOT attach any documents to this form. Instead, attach all requested documents to an email when submitting the form

Unless otherwise noted, all fields are required to be filled out. If a field is left blank, it will be assumed the requirement or task has not been completed. Please ONLY report on activities between July 1, 2019 and June 30, 2020 unless otherwise requested.

Part I: Contact Information

Name of Municipality or Organization: University of Massachusetts Lowell

EPA NPDES Permit Number: MAR042054

Primary MS4 Program Manager Contact Information

Name: Glenn MacDonald Title: Director, Environmental Health and Safety

Street Address Line 1: 220 Pawtucket St

Street Address Line 2: Suite 140

City: Lowell State: MA Zip Code: 01854

Email: glenn_macdonald@uml.edu Phone Number: (978) 934-2632

Stormwater Management Program (SWMP) Information

SWMP Location (web address): Directions for requesting a copy of the SWMP can be found at: <https://www.uml.edu/eem/policies-and-procedures/>

Date SWMP was Last Updated: Jun 30, 2020

If the SWMP is not available on the web please provide the physical address:

The document has not been posted to the website due to the need to make the SWMP compliant with the Americans with Disabilities Act prior to posting, but a copy of the SWMP can be requested by calling or emailing the University's Storm Water Coordinator, Carl Shreder, at 978-934-2672 or Carl_Shreder@uml.edu, respectively, or by emailing ehs@uml.edu. In addition, hard copies of the document may be reviewed at the Lydon Library Circulation Desk, O'Leary Library Circulation Desk, and the Emergency Management Office Suite 140, located at University Crossing.

Part II: Self-Assessment

Check off all requirements below that have been completed. By checking each box you are certifying that you have completed that permit requirement fully. If you have not completed a requirement leave the box unchecked. Additional information will be requested in later sections.

Annual Requirements

- Provided an opportunity for public participation in review and implementation of SWMP and complied with State Public Notice Requirements
- Kept records relating to the permit available for 5 years and made available to the public
- Properly stored and disposed of catch basin cleanings and street sweepings so they did not discharge to receiving waters

Optional: If you would like to describe progress made on any incomplete requirements listed above, provide any additional information for your self-assessment, and/or if any of the above year 2 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

The University of Massachusetts Lowell (UML or University) is a new, non-traditional MS4 permittee.

In Permit Year 2, the University created an internal stormwater committee to include key contacts and leads for certain implementation tasks in the SWMP. Meetings were held on July 30, 2019 and September 19, 2019 to establish roles and responsibilities.

The University's Greenhouse and Urban Agriculture Farm uses all organic growing methods without use of synthetic fertilizers or pesticides. The University has planted raised berms with Rhubarb to divert stormwater runoff to the existing drainage system onsite. Rainwater collected through the gutter system is funneled to an 1,800-gallon storage tank inside the greenhouse and is used to irrigate plants. Interpretive signage is located outside of the greenhouse to inform the public of University's work to promote and implement sustainable stormwater management.

All leaf waste collected on campus is shredded and either used on the University's Urban Agriculture Farm or sent to Mill City Grows' "Big Farm" Urban Farm location at 1001 Pawtucket Boulevard in Lowell.

In addition to the existing sedum tray green roofs at the University Crossing and Emerging Technologies and Innovation Center, the University has developed a green roof garden at University Crossing that is used to grow food for the campus in partnership with Mill City Grows. The approximately 500 square foot space is located in one of the most visible spaces on campus and employs highly-effective rainwater management techniques utilizing drainage tiles and permeable surfaces to minimize runoff. In addition, irrigation methods on the green roof garden are highly efficient, using drip emitters in an on-demand system tied to local weather station data. As a result, stormwater runoff from the roof is kept to a minimum. A larger 2,000 square foot green roof garden is currently being developed for the O'Leary Library on South Campus.

UML has installed three pollinator habitats on campus in the past two years. Utilizing a native wildflower mix, these areas have significantly reduced the University's irrigation and maintenance needs while promoting the campus's unique approach to grounds management in an urban setting. In addition, the University's Director of Sustainability, Ruairi O'Mahony, is a member of the State of Massachusetts Pollinator Habitat Working Group.

The University applies fertilizers around campus four times per year. To reduce the impacts on stormwater runoff quality, the University selected a product that contains 0% phosphorus, 50% organic materials, and total nitrogen of approximately 3.5 pounds per 1,000 square feet.

UMass Lowell's Facilities Department replaced three gas-powered lawn mowers with electric, solar assisted mowers. The two ride-along CXR-52s and walk behind WBX-33HD utilize lithium energy modules for power supply and produce zero emissions without sacrificing power, torque, or efficiency. The tires on the mower are airless, known as Tweels® and do not require air, tubes, or any maintenance. The mowers recycle grass clippings back into the soil via mulching blades, allowing for longer intervals between fertilizer applications. There is also reduced operator stress from lower noise, engine vibration, exhaust fumes, and heat radiating from the engine. The new mowers have 90% efficiency, save approximately 1,170 gallons of gasoline per year, and reduce annual greenhouse gas emissions by approximately 22,900 pounds.

The University made efforts in Permit Year 2 to modify their shuttle bus washing protocol to mitigate impacts to stormwater quality as a result of the activity. A decision was made by the University's Director of Environmental Health and Safety and the Director of Transportation to conduct the activity away from storm drains and on a pervious surface to allow washwater to drain into the ground.

The University is in the process of drafting a policy regarding pets on campus. The new policy will outline the potential negative impacts pet waste can have on stormwater quality and will make pet owners and handlers responsible for managing their own pet's waste.

Part III: Receiving Waters/Impaired Waters/TMDL

Have you made any changes to your lists of receiving waters, outfalls, or impairments since the NOI was submitted? Make sure you are referring to the most recent EPA approved Section 303(d) Impaired Waters List which can be found here: <https://www.epa.gov/tmdl/region-1-impaired-waters-and-303d-lists-state>

- Yes
- No

If yes, describe below, including any relevant impairments or TMDLs:

Part IV: Minimum Control Measures

Part IV includes some of the metrics that will be required in upcoming annual reports. For this annual report, these metrics are optional for new permittees; please fill out any of the metrics below that you have started within this reporting period. Then, proceed to Part V.

MCM1: Public Education

Number of educational messages completed **during this reporting period**: 2

*Below, report on the educational messages completed **during this reporting period**. For the measurable goal(s) please describe the method/measures used to assess the overall effectiveness of the educational program.*

BMP:1A - Website Updates for General Public

Message Description and Distribution Method:

In Permit Year 2, the University developed a stormwater web page. The web page currently includes educational information relevant to students, faculty, the general public, businesses, industries, and contractors. Examples of topics currently covered on the web page include: what is stormwater pollution?; why is stormwater runoff pollution a problem?; impaired waterbodies surrounding the campus; what causes stormwater runoff pollution?; why is the University addressing stormwater runoff?; what is the University doing?; what can you do to help?; and contact information for the University's Facilities Service Desk and Environmental Health and Safety Department to report any drainage or potential pollution issues.

In future Permit Years, the University plans to update the website to include additional educational messages for each of the four target audiences and include links to the EPA's MS4 Permit website and other informational web pages to increase general knowledge of the permit and stormwater quality.

The stormwater web page can be found at: <https://www.uml.edu/eem/ehs/storm-water-management/>

Targeted Audience: Students, Faculty, General Public

Responsible Department/Parties: UML Director of Environmental Health & Safety

Measurable Goal(s):

Update website annually

Message Date(s): Ongoing

Message Completed for: Appendix F Requirements Appendix H Requirements

Was this message different than what was proposed in your NOI? Yes No

If yes, describe why the change was made:

BMP:1C - Storm Water Coordinator

Message Description and Distribution Method:

The UML Director of EHS appointed Carl Shreder as the University's Storm Water Coordinator to serve as a point of contact for information about UML's stormwater program and volunteer opportunities. Carl's contact information has been updated on the University's new stormwater web page. This information will be updated annually to reflect any changes in the Storm Water Coordinator position.

The Storm Water Coordinator's contact information can be found at: <https://www.uml.edu/eem/ehs/storm-water-management/stormwater-contact.aspx>

Targeted Audience: Students, Faculty, Contractors, General Public

Responsible Department/Parties: UML Director of Environmental Health & Safety

Measurable Goal(s):

Post Storm Water Coordinator name and contact information on the University's stormwater webpage and update annually

Message Date(s): Ongoing

Message Completed for: Appendix F Requirements Appendix H Requirements

Was this message different than what was proposed in your NOI? Yes No

If yes, describe why the change was made:

BMP:1B - Letters to Contractors and 1D - Public Education Brochures

Message Description and Distribution Method:

In Permit Year 3, the University will deliver the following educational materials:

- Letters to contractors and businesses outlining the potential impacts to stormwater from contractor and business operations.
- A spring brochure encouraging general stormwater pollution prevention regarding car washing, illegal dumping into storm drain, and proper lawn maintenance.
- A summer brochure encouraging the proper management of pet waste.
- A fall brochure encouraging the proper disposal of leaf litter.

Targeted Audience: Contractors, Businesses, Students, Faculty, and General Public

Responsible Department/Parties: UML Director of Capital Projects, UML Director of EHS

Measurable Goal(s):

- Provide letters to contractors and businesses at the start of new contracts
- Publish and distribute annual spring, summer, and fall messages

Message Date(s): Permit Year 3

Message Completed for: Appendix F Requirements Appendix H Requirements

Was this message different than what was proposed in your NOI? Yes No

If yes, describe why the change was made:

Add an Educational Message

MCM2: Public Participation

Describe the opportunity provided for public involvement in the development of the Stormwater Management Program (SWMP) **during this reporting period:**

The University's SWMP can be requested by calling or emailing the University's Storm Water Coordinator or may be reviewed at the Lydon Library Circulation Desk, O'Leary Library Circulation Desk, and the Emergency Management Office Suite 140, located at University Crossing. The public is encouraged to provide questions or comments on the SWMP to the Storm Water Coordinator at any time during the year.

During this Permit Year, the University's Director of Health and Safety planned to host a public meeting on stormwater to allow for students and the general public to comment on the SWMP. This meeting was not held this Permit Year because of the COVID-19 pandemic.

Was this opportunity different than what was proposed in your NOI? Yes No

Describe any other public involvement or participation opportunities conducted **during this reporting period:**

The University typically works with the UML Outdoor Recreation Program, Mass Sierra Club, and the Merrimack River Watershed Council to host an annual Merrimack River clean-up. The event, which was held for three years running in 2017, 2018, and 2019, did not happen in June 2020 as a result of the COVID-19 pandemic.

UML has established a Catch Basin Stenciling/Marking Program where University staff and student volunteers can stencil a message next to catch basins or install storm drain markers reminding people not to dump anything down the storm drains. Catch basin stenciling/marketing sends a clear message to all University employees, faculty, and students to keep trash, debris, leaf litter, and pollutants out of the storm drainage system. Ways to get involved in the University's Stenciling/Marking Program are detailed at this web page: <https://www.uml.edu/EEM/EHS/Storm-Water-Management/Catch-Basin-Stenciling.aspx>

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Sanitary Sewer Overflows (SSOs)

Check off the box below if the statement is true.

This SSO section is NOT applicable because we DO NOT have sanitary sewer

Below, report on the number of SSOs identified in the MS4 system and removed during this reporting period.

Number of SSOs identified: 0

Number of SSOs removed: 0

Below, report on the total number of SSOs identified in the MS4 system and removed to date. At a minimum, report SSOs identified since the effective date of the permit (July 1, 2018).

Total number of SSOs identified: 0

Total number of SSOs removed: 0

MS4 System Mapping

Below, check all that apply.

The following elements of the Phase I map have been completed:

- Outfalls and receiving waters
- Open channel conveyances
- Interconnections
- Municipally-owned stormwater treatment structures
- Waterbodies identified by name and indication of all use impairments
- Initial catchment delineations

Describe any additional progress you made on your map during this reporting period or provide additional status information regarding your map:

The University has a base map of stormwater infrastructure which includes pipes, manholes, catch basins, and outfalls. This map is updated regularly as new information becomes available. A complete Phase I map will be prepared by the end of Permit Year 5, in accordance with the MS4 Permit requirements for Non-Traditional permittees.

Screening of Outfalls/Interconnections

If conducted, please submit any outfall monitoring results from this reporting period. Outfall monitoring results should include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from all analyses.

- The outfall screening data is attached to the email submission
- The outfall screening data can be found at the following website:

Below, report on the number of outfalls/interconnections screened during this reporting period.

Number of outfalls screened: 0

Catchment Investigations

If conducted, please submit all data collected during this reporting period as part of the dry and wet weather investigations. Also include the presence or absence of System Vulnerability Factors for each catchment.

- The catchment investigation data is attached to the email submission
- The catchment investigation data can be found at the following website:



Below, report on the number of catchment investigations completed during this reporting period.

Number of catchment investigations completed this reporting period: 0

Below, report on the percent of catchments investigated to date.

Percent of total catchments investigated: 0

Optional: Provide any additional information for clarity regarding the catchment investigations below:

As a new non-traditional Massachusetts MS4 Permittee, the University is not required to complete dry weather outfall screening until Permit Year 6 and problem area catchment investigations until Permit Year 10.

IDDE Progress

If illicit discharges were found, please submit a document describing work conducted over this reporting period, and cumulative to date, including location source; description of the discharge; method of discovery; date of discovery; and date of elimination, mitigation, or enforcement OR planned corrective measures and schedule of removal.

- The illicit discharge removal report is attached to the email submission
- The illicit discharge removal report can be found at the following website:

Below, report on the number of illicit discharges identified and removed, along with the volume of sewage removed during this reporting period.

Number of illicit discharges identified: 0

Number of illicit discharges removed: 0

Estimated volume of sewage removed: 0 gallons/day

Below, report on the total number of illicit discharges identified and removed to date. At a minimum, report on the number of illicit discharges identified and removed since the effective date of the permit (July 1, 2018).

Total number of illicit discharges identified: 0

Total number of illicit discharges removed: 0

Optional: Provide any additional information for clarity regarding illicit discharges identified, removed, or planned to be removed below:

To be conducted in future permit years upon verification of an illicit discharge.

Employee Training

Describe the frequency and type of employee training if conducted during this reporting period:

As a new non-traditional Massachusetts MS4 Permittee, the University is not required to provide IDDE

program training to staff members until Permit Year 4.

MCM4: Construction Site Stormwater Runoff Control

Below, report on the construction site plan reviews, inspections, and enforcement actions completed during this reporting period.

Number of site plan reviews completed: 0

Number of inspections completed: 0

Number of enforcement actions taken: 0

MCM5: Post-Construction Stormwater Management in New Development and Redevelopment

Ordinance Development

Describe the status of the post-construction ordinance required to be complete by year 3 of the permit term:

The University is subject to State regulations and does not have the authority to develop ordinances for development on campus.

As-built Drawings

Describe the status of the measures the MS4 has utilized to require the submission of as-built drawings and ensure long term operation and maintenance of completed construction sites:

The University does not have the authority to prepare its own development requirements, as all construction on campus is management by the state.

Street Design and Parking Lots Report

Describe the status of the street design and parking lots assessment including any planned or completed changes to local regulations and guidelines:

As a new non-traditional Massachusetts MS4 Permittee, the University is not required to complete the Street Design and Parking Lots Report until Permit Year 6.

The University completed a project in Permit Year 2 to reduce the amount of impervious area at the large parking lot on their North Campus between the Pinanski and Perry Buildings. The project reduced impervious area within the parking lot by approximately 5,850 square feet by replacing paved areas with plantings.

Green Infrastructure Report

Describe the status of the green infrastructure report, including the findings and progress towards making the practice allowable:

The University is a non-traditional permittee and is therefore not required to prepare a Green Infrastructure Report to meet the requirements of Section 2.3.6.C. of the MS4 Permit.

Retrofit Properties Inventory

Describe the status of the inventory of permittee-owned properties that could be modified or retrofitted with BMPs to mitigate impervious areas and report on any properties that have been modified or retrofitted:

As a new non-traditional Massachusetts MS4 Permittee, the University is not required to complete the Retrofit Properties Inventory until the end of Permit Year 6.

MCM6: Good Housekeeping

Catch Basin Cleaning

Describe the status of the catch basin cleaning optimization plan:

As a new non-traditional Massachusetts MS4 Permittee, the University is not required to complete their catch b



If complete, attach the catch basin cleaning optimization plan or the schedule to gather information to develop the optimization plan:

- The catch basin cleaning optimization plan or schedule is attached to the email submission
- The catch basin cleaning optimization plan or schedule can be found at the following website:

Below, report on the number of catch basins inspected and cleaned, along with the total volume of material removed from the catch basins during this reporting period.

Number of catch basins inspected: 127

Number of catch basins cleaned: 127

Total volume or mass of material removed from all catch basins: 17 tons

Below, report on the total number of catch basins in the MS4 system, if known.

Total number of catch basins: 135

If applicable:

Report on the actions taken if a catch basin sump is more than 50% full during two consecutive routine inspections/cleaning events:

If necessary, schedule adjustments will be made to prioritize catch basins located at known problem areas (low spots) and near construction activities (roadway construction, residential, commercial, or industrial development). If inspections and maintenance activities indicate excessive sediment and debris loading (i.e. the sump is more than 50% full during two consecutive routine inspections/cleanings), these catch basins will be marked for more frequent cleaning. Where necessary, street sweeping will be utilized to aid in minimizing catch basin sediment loading.

Street Sweeping

Describe the status of the written procedures for sweeping streets and municipal-owned lots:

As a new non-traditional Massachusetts MS4 Permittee, the University is not required to complete their written procedures for sweeping street and University-owner parking lots until the end of Permit Year 3.

Report on street sweeping completed during the reporting period using one of the three metrics below.

- Number of miles cleaned:
- Volume of material removed: [Select Units]
- Weight of material removed: [Select Units]

If applicable:

For rural uncurbed roadways with no catch basins, describe the progress of the inspection, documentation, and targeted sweeping plan:

The UML campus does not contain any rural uncurbed roadways with no catch basins.

The University uses salt instead of sand on roads, parking lots, and walkways during winter deicing activities. As a result, the University does not find a critical need to perform large-scale street sweeping throughout campus. Public roads are typically swept by the City of Lowell.

O&M Procedures and Inventory of Permittee-Owned Properties

Below, check all that apply.

The following permittee-owned properties have been inventoried:

- Parks and open spaces
- Buildings and facilities
- Vehicles and equipment

The following O&M procedures for permittee-owned properties have been completed:

- Parks and open spaces
- Buildings and facilities
- Vehicles and equipment

Winter Road Maintenance

Describe the status of the written procedures for winter road maintenance including the storage of salt and sand:

As a new non-traditional Massachusetts MS4 Permittee, the University is not required to complete their written procedures for winter road maintenance until the end of Permit Year 3.

Stormwater Pollution Prevention Plan (SWPPP)

Describe the status of any SWPPP for permittee-owned or operated facilities including maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater:

As a new non-traditional Massachusetts MS4 Permittee, the University is not required to complete Stormwater Pollution Prevention Plans for applicable facilities until the end of Permit Year 4.

Below, report on the number of site inspections for facilities that require a SWPPP completed during this reporting period.

Number of site inspections completed: 0

Describe any corrective actions taken at a facility with a SWPPP:

N/A

O&M Procedures for Stormwater Treatment Structures

Describe the status of the written procedure for stormwater treatment structure maintenance:

As a new non-traditional Massachusetts MS4 Permittee, the University is not required to complete their written procedures for stormwater treatment structure maintenance until the end of Permit Year 3.

Part V: Additional Information

Monitoring or Study Results

Results from any other stormwater or receiving water quality monitoring or studies conducted during the reporting period not otherwise mentioned above, where the data is being used to inform permit compliance or permit effectiveness must be attached.

- Not applicable
- The results from additional reports or studies are attached to the email submission
- The results from additional reports or studies can be found at the following website(s):

If such monitoring or studies were conducted on your behalf or if monitoring or studies conducted by other entities were reported to you, a brief description of the type of information gathered or received shall be described below:

Additional Information

Optional: Enter any additional information relevant to your stormwater management program implementation during the reporting period. Include any BMP modifications made by the MS4 if not already discussed above:

The entire UML campus is regulated as a non-traditional MS4 and has been mapped and inventoried to facilitate campus operations. This inventory will be evaluated and O&M procedures will be developed for the University by the end of Permit Year 4, in accordance with the MS4 Permit.

COVID-19 Impacts

Optional: If any of the above year 2 requirements could not be completed due to the impacts of COVID-19, please identify the requirement that could not be completed, any actions taken to attempt to complete the requirement, and reason the requirement could not be completed below:

Activities Planned for Next Reporting Period

Please confirm that your SWMP has been, or will be, updated to comply with all applicable permit requirements including but not limited to the year 3 requirements summarized below. (Note: impaired waters and TMDL requirements are not listed below)

Yes, I agree

- Complete IDDE ordinance
- Complete Construction/ Erosion and Sediment Control (ESC) ordinance
- Develop written procedures for site inspections and enforcement of sediment and erosion control measures
- Develop written procedures for site plan review

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters
- Continue public education and outreach program

Provide any additional details on activities planned for permit year 3 below:

Part VI: Certification of Small MS4 Annual Report 2020

40 CFR 144.32(d) Certification

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 gather and evaluate 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, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name:

Title:

Signature:

Date:

[Signatory may be a duly authorized representative]