

STORMWATER QUALITY MANAGEMENT PLAN

2019-2025

January 1, 2019 to December 31, 2025

Eastern Kentucky University

Environmental Health & Safety



Background and Purpose

Storm sewer systems are designed to collect and convey storm water runoff from street inlets, runoff control structures, and other locations where the accumulation of storm water is undesirable. The objective is to remove runoff from an area fast enough to avoid unacceptable ponding, inconvenience or damage.

The Clean Water Act (CWA) was passed in 1972 to help protect and restore the waters in the streams, rivers, and lakes of the nation. In 1990, Phase I of the National Pollutant Discharge Elimination System (NPDES), under authority of the CWA, was passed to regulate storm water management in large urban areas. Late in that same decade, Phase II regulations were developed and passed that require medium size cities meeting a certain population density and other criteria to develop storm water initiatives to address pollution associated with urban runoff.

The Phase II Rule was enacted to improve the quality of storm water runoff from Municipal Separate Storm Sewer Systems (MS₄'s) previously not included in the NPDES permitting program. MS₄'s operating under a National Pollutant Discharge Elimination System (NPDES) MS₄ permit are required to develop and implement a comprehensive Storm Water Quality Management Program (SWQMP) that must include flow controls, pollution prevention measures, treatment or removal techniques, monitoring, use of legal authority, and other appropriate measures to control the quality of storm water discharged to the storm drains and thence to waters of the United States. Phase II automatically covers on a nationwide basis all small MS₄s located in "urbanized areas" (UAs) as defined by the Bureau of the Census (unless waived by the NPDES permitting authority), and on a case-by-case basis those small MS₄'s located outside of UAs that the NPDES permitting authority designates. EKU falls under the latter category.

Target pollutants include roadway oil and grease, landscaping pesticides, construction site sediment and commonly discarded trash such as cigarette butts, paper wrappers, and plastic bottles. Operators of regulated small MS₄s are required to design their programs to:

- Reduce the discharge of pollutants to the "maximum extent practicable" (MEP)
- Protect water quality
- Satisfy the appropriate water quality requirements of the Clean Water Act

This is achieved by meeting the following Minimum Control Measures (MCM's):

1. Provide public education on the impacts of polluted urban runoff
2. Establish programs for public involvement and participation
3. Develop and implement a plan for illicit discharge detection and elimination
4. Establish guidelines and develop and implement a program of control for construction site storm water runoff when more than 1 acre is disturbed
5. Establish guidelines and develop and enforce a program for post-construction storm water management

6. Develop and implement responsible campus operations for good housekeeping and pollution prevention

Stormwater (hereafter SW) quality always refers to *both* flow management and water treatment, including both passive and active treatment practices. ECU operates under the requirements of the Kentucky Pollutant Discharge Elimination System (KPDES). As such, the University has developed and is implementing and enforcing the Best Management Practices (BMP's) outlined in this Stormwater Quality Management Plan (SWQMP) that address each of the MCM's. The primary goal of this SWQMP is to mitigate damage from SW runoff and to protect and maintain the physical, biological and chemical integrity of the waters of the Commonwealth, through adherence to the requirements of the EPA Stormwater Phase II rule via this SWQMP.

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MCM 1. Campus Education and Outreach – Office of Sustainability

Description: An informed and knowledgeable campus community is crucial to the success of a SW management program. It provides:

- Greater support for the program as the campus gains understanding of the reasons why it is necessary and important, along with increased volunteerism.
- Greater compliance with the program as the campus becomes aware of individual responsibilities, including personal behaviors that protect or improve SW quality.

EKU will maintain a campus education program to raise awareness of the impacts of SW discharges and the steps that the campus community can take to reduce both SW runoff and the introduction of pollutants to SW.

Activities

1. SW quality information distributed to students, staff, and faculty on Earth Day; annually
2. At least one campus activity or event to promote the SW Quality message (e.g. “Ban the Bottle”); annually
3. Tours of campus SW BMP’s; periodically, in cooperation with academic programs
4. Projects involving academic studies at ECU; periodically
5. Obtain and distribute SW brochures at orientation and housing check-in; annually
6. ECU Students Today SW awareness postings; at least annually
7. Stencil “No Trash - Goes To Stream” on storm drains not having medallions as needed
8. Stormwater Quality Management Plan Webpage, to include tracking hits and reports filed; on-going
9. Conduct an online survey to determine the awareness of staff, faculty and students about how they impact SW quality. Track the number of surveys completed and make modifications to educational activities to address educational needs identified - once per permit period
10. Arrange for SW PSA’s to be run in the Eastern Progress, including publicizing the SW hotline for reporting polluters to the 24/7 EMS number; on-going
11. Arrange for SW PSA’s to be run on WEKU, including publicizing the SW hotline for reporting polluters to the 24/7 EMS number; on-going
12. SW PSA videos; on campus and regionally; on-going
13. SW documentary screenings; as available
14. Kentucky Broadcasters Association (KBA) PSA regional broadcasts; on-going
15. University representatives’ attendance at quarterly KSA meetings; on-going



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EASTERN KENTUCKY UNIVERSITY



Funding

Budgeted for and implemented by the Office of Sustainability.

1. Provide fiscal record for each activity conducted as applicable
2. Tally total resources and expenses for each July – June period
3. Submit budget requirements and any additional resources required to execute planned Campus Education and Outreach involvement activities for inclusion in the coming fiscal year.

MCM 2. Campus Involvement and Participation - Office of Sustainability

Description: Maintain a Campus Involvement and Participation program that complies with state and local requirements.

Activities

1. Publicize regular time and location of Sustainability Team meetings and hold meetings.
2. Develop list of possible volunteer activities:
 - Student service projects (e.g. Greek society clean-ups, “Paddle Out Pollution” litter collection at Lake Reba, “Colonels Cleanup Program”); at least one annually
 - Projects in support of academic research (e.g. “The Big Dip” water sampling project); periodically
3. Determine what activities volunteers could do that would be most beneficial to EKU. Select actions that may be completed by volunteers based on complexity, safety, cost, available materials, skill sets, and staff support. Review at least biannually.
4. Identify potential sources of volunteers. Initiate involvement with campus and community groups to cultivate volunteer opportunities. Establish a list and make contacts. Review biannually.
5. Develop potential list of campus involvement activities that includes events in which campus and community groups and individuals can participate to address water quality concerns. List should consider available volunteer groups, campus environmental organizations, applicable campus events, etc., as well as pollutants of most concern. Review biannually.
6. From the lists, determine the annual activities to be held and schedule accordingly. Evaluate available budget, staffing and timing of events to establish a plan for the year. Publicize all activities.
7. Identify ways to quantify effectiveness of campus involvement. Post surveys, etc. that can identify changes in behavior (less litter, debris, fewer hotline reports, more volunteers, etc.) and participation in water quality initiatives.
8. Annually review activities conducted in the previous calendar year for completion and for benefit to the campus community. Assess whether activities were sufficient and if the message was successfully received. Determine changes that need to be made.
9. Ensure campus involvement activities are conducted. Track measures of campus involvement activities.

Funding

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1. Provide fiscal record for each activity conducted
2. Tally total resources and expenses for each July - June period
3. Submit budget requirements and any additional resources required to execute planned Campus Involvement and Participation activities for inclusion in the coming fiscal year.

MCM 3. Illicit Discharge Detection and Elimination

Description: Develop, implement and enforce an illicit discharge detection and elimination program (IDDE). Illicit discharge is any discharge to an MS₄ that is not composed entirely of SW which campus storm sewer systems are not designed to accept, process or discharge. Sources of illicit discharges may include sanitary wastewater leaks or cross-connections, laundry wastewater, chemical wastes, spills from roadways and improper disposal of petroleum products, paint or pesticides. All major outfalls to the City of Richmond will be identified and monitored.

The following are *not* illicit discharges:

Water line flushing	Air conditioning condensation
Landscape irrigation	Irrigation water
Diverted stream flows	Springs
Rising ground waters	Water from crawl space pumps
Uncontaminated ground water infiltration	Footing drains
Uncontaminated pumped ground water	Lawn watering
Discharges from potable water sources	Individual residential car washing
Foundation drains	Flows from riparian habitats and wetlands
	Dechlorinated swimming pool discharges
	Street wash water

3A. Implement Illicit Discharge Detection and Elimination Program - Environmental Health & Safety

Activities

1. Prepare and maintain a written IDDE plan for identifying, reporting, tracing and remediating illicit discharges.
2. Inspect all campus outfalls during dry weather for evidence of illicit discharges on a semi-annual basis. Indicators of pollutants include odor, oil sheens, discoloration, and high degrees of siltation or aquatic plant growth. If pollutants/discharges are indicated, develop an action plan to determine the likely source(s). Action plan should be based on known hot spots, HAZMATs stored within the outfall-shed, past history, and characteristics of the discharge indicators. Complete any follow-up water quality sampling and/or laboratory analysis.
3. Provide annual training for field and other affected Facilities staff on the components of the IDDE program.
4. Identify ways to quantify IDDE program effectiveness; number and type of spills or illicit discharges identified, number and schedule of inspections, number of hotline reports, as well as visible improvements in SW discharge.

5. Based on any areas of deficiency, revise the IDDE program and implement the new procedures. Educate affected staff on changes as part of the training for the following year.

3B. Develop and Maintain a Storm Sewer System Map - Capital Construction

Activities

1. Develop and continuously update a Storm Sewer System map, showing the location of all outfalls, catch basins, pipes, ditches, retention ponds, detention ponds, and other permanent SW BMPs.
2. Maintain map in electronic format. Paper maps to be made available for State field staff and field investigations.
3. If mapping is completed using Geographical Information Systems (GIS) or Computer Aided Drafting (CAD) software, the permittee shall provide to the Division of Water, at a minimum, the MS₄ boundary and the mapped infrastructure ESRI shape file.
4. Mapping is currently 50% complete and will be completed within this permit term as follows:
 - July 2019 70% complete
 - July 2020 90% complete
 - July 2021 100% complete

Funding

Staffed by EH&S and Capital Construction

MCM 4. Construction Site Stormwater Runoff – Capital Construction

Description: Develop, implement, and enforce a program to reduce pollutants in storm water runoff during construction activities that result in a land disturbance of greater than or equal to one acre, utilizing both types of construction site SW runoff control:

- Non-Structural - incorporation of site planning and design techniques to control SW runoff, including the use of open space, vegetated conveyance and buffers, natural infiltration, stream buffers, green infrastructure, and use of low-impact development
- Structural - management of SW runoff through control structures

Activities

1. Enforce SW control requirements, having provisions for escalating enforcement remedies for repeat or uncorrected violations, per 00 220.1 EKU Storm Water Management Design and Control Guidance.
2. Develop contract language requiring designers to develop and implement SW pollution prevention plans (SWPPPs) and obtain a Notice of Coverage (NOC) from the KY Division of Water if disturbing one acre or more. Develop contract language requiring the operator to conduct inspections according to KYR10 (Kentucky's general permit for construction SW discharges). Contract should also address the proper management of construction site waste. SWPPP's are to be posted at job sites.
3. Provide SW training to construction site operators.
4. Ensure implementation of appropriate temporary BMPs during the construction period to control erosion and sediment and other waste at the site.
5. Ensure weekly inspections by the contractor of all construction sites disturbing one acre or more via receipt of electronic copies.
6. Determine appropriate permanent BMPs for each construction project:
 - Utilize retention and detention BMPs to gather runoff in wet ponds, dry basins, or multi-chamber catch basins that provide slow release to effect both SW flow control and to settle out pollution particulates.
 - Reduce the impermeable surface areas connected to storm sewer systems by using permeable options.
 - Provide natural storm water conveyance, rather than hardscape, whenever possible.
 - Include landscaping features that, with optimal design and good soil conditions, remove pollutants and facilitate percolation of runoff, thereby maintaining natural site hydrology, promoting healthier habitats, and increasing aesthetic appeal. Examples include grassy swales, filter strips, artificial wetlands, and rain gardens.
7. Review the site plans submitted by the construction site operator for SW quality impact and appropriate BMPs, before ground is broken.

8. Ensure that construction site operators demonstrate protective measures for storage of hazardous materials such as petroleum products, chemicals etc. Verify provision and maintenance of waste receptacles, concrete wash outs, secondary containment systems, etc.
9. Obtain KEPSC Inspector Qualification for those conducting SW management inspections.
10. Establish inspection procedure and approval process for construction site SW management inspections.
11. Perform periodic inspection audits of all construction sites disturbing one acre or more to ensure that contractor/s are properly performing and documenting inspections.
12. Inspect SW MCMs for proper construction as they are being installed.
13. Utilize a checklist for approval or rejection of installation and final SW management sign-off to ensure that staff reviews are consistent and thorough, to include:
 - Minimize Clearing and Grading
 - Protect Waterways
 - Phase Construction to Limit Soil Exposure
 - Immediately Stabilize Exposed Soils
 - Protect Steep Slopes and Cuts
 - Install Perimeter Controls to Filter Sediments
 - Employ Advanced Sediment Settling Controls
 - Certify and Train Contractors on SW Site Plan Implementation
 - Control Waste at the Construction Site
 - Inspect and Maintain BMP's

Funding

Staffed by Capital Construction

MCM 5. Post-Construction Stormwater Management – Capital Construction and Plumbing Shop

Description: Provide permanent SW BMP management to ensure intended SW infiltration, retention and detention for reducing and mitigating the impact of SW runoff.

Activities

1. Conduct post-construction site inspections of all permanent BMPs prior to rainfall events, during rainfall events, and the condition after rainfall events for proper operation.
2. Perform a final inspection on newly constructed BMPs for installation per the approved plans.
3. Obtain as-built drawings from the architect.
4. Maintain a comprehensive list of permanent SW BMP's, adding new ones as they are constructed.
5. Inspect and record condition of each BMP at least once annually. Prioritize storm drain systems and catch basins. Catch basins on steep grades may need more frequent cleaning.

Funding

Staffed by Capital Construction and Plumbing Shop

MCM 6. Pollution Prevention & Good Housekeeping – EH&S and Facilities Services

Description: Examine, and subsequently alter, maintenance activities to help ensure a reduction in the amount and type of pollution that:

- collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways
- results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems

Activities

1. Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from campus operations into the storm sewer system and procedures for proper disposal of SW waste and debris.
2. Develop and implement Facilities Services staff training on preventing or reducing pollutant runoff during:
 - landscaping and lawn care
 - catch basin and storm drain cleaning
 - street sweeping
 - road salt and deicer storage and application
 - pest control
 - vehicle/equipment maintenance
3. Minimize pesticide use.

Funding

Staffed by Environmental Health & Safety and Facilities Services



Affirmation of Ownership

The signees below affirm that they have participated in the preparation of this SWQMP and are in concurrence with the assigned responsibilities as listed. As the principal owners, these persons accept primary responsibility for overseeing the completion of the requisite BMP's for each of the MCM's and providing annual results for the designated measureable goals.


Owner Signature

11/30/18
Date

Steve Caudill, Finance & Administration Business Officer, Office of Sustainability
Name; Title


Owner Signature

11/30/18
Date

Brian Wilcox; Associate Vice President, Facilities Services & Capital Planning
Name; Title


Owner Signature

11/30/18
Date

Bryan Makinen; Executive Director, Public Safety & Risk Management
Name; Title