

UMaine Stormwater Pollution Prevention Municipal Storm Sewer Separation System (MS4) Best Management Practices

Below find a series of BMPs UMaine chooses from depending on the scope of a given activity. UMaine's BMPs are broken down into the six categories of minimum control measures required by the MS4 General Permit.

MS4 Minimum Control Measure	Best Management Practice	Goal
Public Education and Outreach	Educational Displays, Pamphlets, Booklets and Utility Stuffers	Increase employee and resident student's awareness of stormwater management plan.
	Promotional Give-aways	Use promotional materials to reinforce proper habits, adherence to procedures and BMPs, and the impacts of various activities on stormwater quality.
	Proper Disposal of Household Hazardous Waste (HHW)	Support adherence to proper hazardous waste disposal and management procedures and BMPs and increase awareness of the impacts of hazardous wastes on stormwater quality.
	Stormwater Educational Materials	Develop various education materials and strategies that reinforce proper habits, adherence to procedures and BMPs, and increase awareness of the impact of various activities on stormwater quality.
	Trash Management	Continuously reinforce proper proper waste management and recycling habits, promote available services and adherence to procedures and BMPs, and increase awareness of the impact of improper trash management on stormwater quality.
Public Participation and Involvement	Attitude Surveys	Assess employee and student awareness of stormwater management program.
	Community Cleanups	Involve employees and students in stormwater management activities.
	Community Hotlines	Provide employees, students, and public users of campus facilities an avenue to report stormwater pollution issues.

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Public Participation and Involvement (cont.)	Storm Drain Stenciling	Point of use awareness tool to prevent illegal dumping.
Illicit Discharge Detection and Elimination	Identifying Illicit Connections	Eliminate illicit connections to reduce/eliminate non-stormwater discharge through storm drain system.
	Information Management System (IMS)	Database for monitoring and recording illicit discharges, inspection results, and improvements/corrective actions.
	Recycling Program	Promote material recovery, conservation, and reduce/eliminate the occurrence of improper disposal of wastes that can impact stormwater quality.
	Sanitary Sewer Overflow (SSO)	Prevent SSO events and continue ongoing infrastructure assessments and maintenance activities.
	Campus-wide Sewer System Map	Assist in the management, inspections, maintenance, and development of storm drain system.
	Employee Training	Ensure impacted employees are trained to identify and investigate illicit discharges via inspections and monitoring activities.
	Wastewater Connections to the Storm Drain System	Eliminate illicit waste water connections to storm drain system.
Construction Site Runoff Control	BMP Inspection and Maintenance	Ensure erosion and sediment control devices are in place and functioning properly.
	Check Dams	Reduce erosion and sedimentation through velocity reduction.
	Construction Entrances	Reduce soil loss from movement off site.
	Construction Reviewer	Ensure BMPs are in place and functioning properly.
	Dust Control	Reduce erosion and sedimentation from construction site.
	Filter Berms	Reduce erosion and sedimentation from construction site.

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Construction Site Runoff Control (cont.)	Construction Site Waste Management and Recycling	Reduce potential polluting of surface or ground water from construction site wastes (special, hazardous, solid) and provide/require recycling.
	Grass-lined Channels	Reduce erosion and sedimentation from construction site.
	Information Management System (IMS)	Database for monitoring and recording BMP inspection results and improvements/corrective actions.
	Land Grading	Reduce erosion and sedimentation.
	Mulching	Reduce erosion and sedimentation.
	Ordinance/Regulatory Mechanism	To ensure all bidders and awardees of contracts are aware of UMaine's construction site management requirements, to include erosion and sediment control BMPs.
	Permanent Seeding	Reduce erosion and sedimentation from construction site.
	Preserving Natural Vegetation	Protect desirable plantings and reduce erosion and sedimentation from construction sites.
	Riprap	Reduce erosion and sedimentation.
	Silt Fence	Reduce erosion and sedimentation.
	Sodding	Reduce erosion and sedimentation.
	Soil Retention	Reduce erosion and sedimentation.
	Employee Training	Ensure BMPs, structures, and inspections are completed and reviewed as required and maintenance activities are initiated as per Bid Documents and Project Manual.
	Storm Drain Inlet Protection	Reduce erosion and sedimentation from construction site.
Vegetated Buffer	Protect water quality of areas adjacent to construction sites.	

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Post-Construction Runoff Control	Alternative Pavers and Surfaces	Reduce/contain amount of impervious surfaces to encourage and enhance infiltration.
	Alternative Turnarounds	Reduce amount of impervious surfaces by creating loop roads, hammerheads, etc.
	BMP Inspection and Maintenance	Ensure BMPs are in place, inspected, and functioning properly.
	Buffer Zones	Concentrate development to preserve or establish open spaces and maintain pervious surfaces.
	Catch Basin Cleaning/Inserts	Stormwater pretreatment to capture oils and solids, and reduce pollutants and particulates in the storm drain system.
	Dry Extension Detention Ponds	Stormwater pretreatment to allow particulates to settle out and not enter storm drain system.
	Eliminating Curbs and Gutters	Reduce potential pollutant load from stormwater through use of vegetative areas, etc.
	Grassed Filter Strip	Reduce velocity and potential pollutant/particulate load from stormwater.
	Grassed Swales	Encourage infiltration and filtration of particulates and potential pollutants to reduce volume and pollutants entering storm drain system.
	Green Parking	Reduce impervious surfaces and reduce stormwater volumes entering storm drain system.
	Identification of BMPs	Develop a single location/point of contact/document for stormwater management plan description and facilitation.
Infiltration Basins and Trenches	Reduce stormwater volume to storm drain system through infiltration.	

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Post-Construction Runoff Control (cont.)	Infrastructure Planning	Develop appropriate infrastructure planning to support the growth and development needs of the campus while consolidating structures and infrastructure where possible to preserve open spaces and pervious surfaces for pretreatment.
	In-line Storage	Reduce flow velocities in storm drain system to reduce impact at outfall.
	Manufactured Products for Stormwater Inlets	Pretreatment structures to reduce pollutants and particulates in storm drain.
	On-lot Treatment	Reduce amount of stormwater entering the storm drain system and reduce potential pollutants through infiltration and filtration.
	Open Space Design	Reduce amount of impervious surfaces by maintaining open spaces and pervious surfaces to support infiltration and filtration.
	Publication of BMPs	Publicize stormwater related BMPs to increase compliance and awareness.
	Stormwater Wetland	Reduce stormwater volumes entering storm drain system by creating pond areas with plantings.
	Wet Ponds	Reduce stormwater volumes entering storm drain system by detaining stormwater to support infiltration and filtration.
Pollution Prevention/Good Housekeeping	Alternative Products	Reduce the use of toxic chemicals, solvents, compounds, and other pollutants to the maximum extent possible.
	Automobile Maintenance	Reduce toxics in fleet and motorpool maintenance activities and continue to support the Spill Prevention Control and Counter Measure Plan (SPCC) and Stormwater Pollution Prevention Plan (SWPPP) requirements by inspecting areas, cleaning up/managing spills, and spill prevention/elimination.

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Pollution Prevention/Good Housekeeping (cont.)	Pollution Prevention (P2) Plan	Develop a comprehensive resource detailing stormwater and industrial activity inspection and management protocols.
	Employee Training and Training Materials	Train staff on P2 elements, ensure an understanding of and compliance with the requirements, and provide forms and instruction documents as necessary.
	Hazardous Materials Storage	Follow established University policies and procedures to properly store hazardous materials and prevent/eliminate spills.
	Illegal Dumping Control	Develop and implement strategies to prevent/eliminate illegal dumping.
	Information Management System (IMS)	Database for monitoring and recording BMP inspection results and improvements/corrective actions.
	Landscaping and Lawn Care	Conserve water, prevent/eliminate erosion, and contribute to and use product from on-site composting program.
	Materials Management	Store, cover, protect, and secure materials for storage to prevent spills, run-off, leaching, sedimentation, and erosion.
	Parking Lot and Street Sweeping	Maintain parking lot and road management and maintenance practices to reduce pollutants entering storm drain system.
	Pest Control	Utilize integrated pest management approach to managing pests and reduce/eliminate opportunities for pests (rodents, birds, etc.) to scavenge and spread trash.
	Road Salt Application and Storage	Cover stored sand/salt/mix to prevent/eliminate leaching, sedimentation, and wash-out, and use sand/salt mix as efficiently as possible.

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Pollution Prevention/Good Housekeeping (cont.)	Roadway Maintenance	Maintain road and walkway surfaces, vegetative areas, and runoff control structures to reduce concentrations of contaminants entering storm drain system.
	Spill Response and Prevention	Following University SPCC Plan and Hazardous Material Management Program.
	Storm Drain System Cleaning	Reduce or eliminate SSO events and reduce pollutants and debris in storm drain system.
	Used Oil Recovery	Reduce or eliminate used oil from entering the storm drain system from do-it-yourself oil changing on campus and fleet/motorpool functions.
	Vehicle Washing	Wash all vehicles in designated facilities that collect and discharge wash water and contaminants to sanitary sewer system.