

UW Seattle Stormwater Management Program

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Introduction

Stormwater runoff may contain high levels of contaminants such as suspended sediment, nutrients, heavy metals, pathogens, toxins, oxygen-demanding substances and trash. Stormwater runoff carries these pollutants into nearby bodies of water.

This Stormwater Management Program (SWMP) is required by the Phase I Municipal Stormwater Permit National Pollutant Discharge Elimination System (NPDES) permit, modified August 19, 2016. The University of Washington Seattle Campus (UW) is required to comply with the applicable requirements of the Phase I permit since the UW is a public entity that owns and operates a municipal separate storm sewer system (MS4) within the City of Seattle.

UW is a Phase I Secondary Permittee and must also comply with all relevant ordinances, rules and regulations of the local jurisdiction, which is the City of Seattle. Seattle's stormwater, grading and drainage control code, Chapter 22.800 (<http://www.seattle.gov/dpd/codesrules/codes/stormwater>). The City of Seattle 2016 Stormwater Code and Manual became effective on January 1, 2016.

This SWMP is designed and implemented to reduce the discharge of pollutants from the stormwater system to the maximum extent practicable and protect water quality. To this end, UW has developed this SWMP that implements six (6) minimum measures as follows:

- Public education and outreach on the impacts of stormwater pollution
- Public involvement and participation
- Detection and elimination of illicit discharges
- Construction site stormwater runoff control
- Post-construction stormwater management for new development and redevelopment
- Pollution prevention and good housekeeping for facilities operations

The six minimum measures above are described in the Phase I Permit and in this SWMP. Following the descriptions of each minimum measure are lists of items that UW is already doing or plans to do to meet these requirements. A list of deadlines for requirements are listed at

<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/index.html>

The entire campus has about 63,000 faculty, staff, and students. It includes dormitories, cafeterias, a power plant, research laboratories, gardens, roads, parking lots, playing fields, a stadium, and a motor pool facility with a gas station and a car wash.

Public Education and Outreach

According to the permit, UW shall implement the following stormwater education strategies:

- a. Storm drain inlets owned or operated by the Secondary Permittee that are located in maintenance yards, in parking lots, along sidewalks, and at pedestrian access points shall be clearly labeled with the message similar to "Dump no waste – Drains to water body." As identified during visual inspection and regular maintenance of storm drain inlets per the requirements of S6.D.3.d. and S6.D.6.a.i. below, or as otherwise reported to the Secondary Permittee, any inlet having a label that is no longer clearly visible and/or easily readable shall be re-labeled within 90 days.
- b. Each year, beginning no later than three years from the initial date of permit coverage, public ports, colleges, and universities shall distribute educational information to tenants and residents on the impact of stormwater discharges on receiving waters, and steps that can be taken to reduce pollutants in stormwater runoff. Distribution may be by hard copy or electronic means. Appropriate topics may include:

- i. How stormwater runoff affects local water bodies.
- ii. Proper use and application of pesticides and fertilizers.
- iii. Benefits of using well-adapted vegetation.
- iv. Alternative equipment washing practices, including cars and trucks that minimize pollutants in stormwater.
- v. Benefits of proper vehicle maintenance and alternative transportation choices; proper handling and disposal of vehicle wastes, including the location of hazardous waste collection facilities in the area.
- vi. Hazards associated with illicit connections, and illicit discharges.
- vii. Benefits of litter control and proper disposal of pet waste.

All storm drains on campus have labels stating “No Dumping – Drains to Lake”. UW has a catch basin preventative maintenance program. Storm drains are inspected annually and cleaned as necessary. Work orders are submitted for reapplying storm drain labels as necessary.

UW has an outreach webpage on stormwater quality. This webpage is located at <http://www.ehs.washington.edu/epowaterqual/index.shtm>. EH&S has a stormwater awareness brochure for students and staff.

A stormwater management training module has been created and added to the training menu at UW Facility Services. All employees are encouraged to take this training.

<https://www.washington.edu/facilities/orgrel/facilities-services-training-center>

Public Participation and Involvement

According to the permit, UW shall:

- a. Make the annual report available on the Permittee’s website.
- b. Make available on the Permittee’s website the latest updated version of the SWMP Plan.
- c. A Secondary Permittee that does not maintain a website may submit their updated SWMP Plan in electronic format to Ecology for posting on Ecology’s website.

The SWMP is posted on the UW EHS stormwater management page:

<http://www.ehs.washington.edu/epowaterqual/storm.shtm>

Illicit Discharge Detection and Elimination

According to the permit, UW Seattle shall:

- a. From the initial date of permit coverage, comply with all relevant ordinances, rules, and regulations of the local jurisdiction(s) in which the Secondary Permittee is located that govern non-stormwater discharges.
- b. Implement appropriate policies prohibiting illicit discharges and an enforcement plan to ensure compliance with illicit discharge policies.

These policies shall address, at a minimum: illicit connections; non-stormwater discharges, including spills of hazardous materials; and improper disposal of pet waste and litter.

- i. Allowable discharges: The policies do not need to prohibit the following categories of non-stormwater discharges:

- (1) Diverted stream flows
 - (2) Rising ground waters
 - (3) Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
 - (4) Uncontaminated pumped ground water
 - (5) Foundation drains
 - (6) Air conditioning condensation
 - (7) Irrigation water from agricultural sources that is commingled with urban stormwater
 - (8) Springs
 - (9) Uncontaminated water from crawl space pumps
 - (10) Footing drains
 - (11) Flows from riparian habitats and wetlands
 - (12) Discharges from emergency firefighting activities in accordance with S2 Authorized Discharges
 - (13) Non-stormwater discharges authorized by another NPDES or State Waste Discharge permit
- ii. Conditionally allowable discharges: The policies may allow the following categories of non-stormwater discharges only if the stated conditions are met and such discharges are allowed by local codes:
- (1) Discharges from potable water sources, including but not limited to water line flushing, hyper-chlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a total residual chlorine concentration of 0.1 ppm or less, pH-adjusted if necessary, and volumetrically and velocity controlled to prevent re-suspension of sediments in the MS4.
 - (2) Discharges from lawn watering and other irrigation runoff. These discharges shall be minimized through, at a minimum, public education activities and water conservation efforts conducted by the Secondary Permittee and/or the local jurisdiction.
 - (3) De-chlorinated swimming pool, spa, and hot tub discharges. The discharges shall be de-chlorinated to a total residual chlorine concentration of 0.1 ppm or less, pH-adjusted and re-oxygenated if necessary, and volumetrically and velocity controlled to prevent re-suspension of sediments in the MS4. Discharges shall be thermally controlled to prevent an increase in temperature of the receiving water. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.
 - (4) Street and sidewalk wash water, water used to control dust, and routine external building washdown that does not use detergents. The Secondary Permittee shall reduce these discharges through, at a minimum, public education activities and/or water conservation efforts conducted by the Secondary Permittee and/or the local jurisdiction. To avoid washing pollutants into the MS4, the Secondary Permittee shall minimize the amount of street wash and dust control water used.
 - (5) Other non-stormwater discharges shall be in compliance with the requirements of a pollution prevention plan reviewed by the Permittee which addresses control of such discharges.
- iii. The Secondary Permittee shall address any category of discharges in i or ii above if the discharge is identified as a significant source of pollutants to waters of the State. August 1, 2013 Phase I Municipal Stormwater Permit Page 42 of 74

- c. Maintain a storm sewer system map showing the locations of all known storm drain outfalls, labeling the receiving waters (other than groundwater), and delineating the areas contributing runoff to each outfall. Make the map (or completed portions of the map) available on request to Ecology and to the extent appropriate to other Permittees. The preferred format for mapping is an electronic format with fully described mapping standards. An example description is provided on Ecology's website.
- d. Conduct field inspections and visually inspect for illicit discharges at all known MS4 outfalls. Visually inspect at least one third (on average) of all known outfalls each year beginning no later than two years from the initial date of permit coverage. Implement procedures to identify and remove illicit discharges. Keep records of inspections and follow-up activities.
- e. Implement a spill response plan that includes coordination with a qualified spill responder.
- f. No later than two years from initial date of permit coverage, provide staff training or coordinate with existing training efforts to educate staff on proper BMPs for preventing illicit discharges, including spills. Train all Permittee staff who, as part of their normal job responsibilities, have a role in preventing such illicit discharges.

UW has a policy to meet or exceed all environmental laws. This policy is online at http://www.washington.edu/about/environmentalstewardship/statement_esac.html.

UW has developed and adopted policies that prohibit illicit discharges and illegal dumping. This policy is online at <http://www.washington.edu/admin/rules/policies/APS/11.03.html>.

A stormwater management training module has been created and added to the training menu at UW Facility Services. All employees are encouraged to take this training. <https://www.washington.edu/facilities/orgrel/facilities-services-training-center>

UW has a digital stormwater system map showing all known storm drain outfalls, receiving waters and storm drainage areas. UW provided this map to the City of Seattle, which has incorporated it into its own digital stormwater system map.

UW inspects all known stormwater outfalls (to Portage Bay, Union Bay Natural Area and the University Slough).

UW has a campus spill response plan and a current contract with a qualified spill responder.

All relevant staff persons are currently trained in hazardous waste management, including proper waste disposal and spill prevention. Chemical storage locations are audited by EH&S to help ensure that proper management procedures are in place.

Construction Site Stormwater Runoff Control

From the date of permit coverage, UW shall:

- a. Comply with all relevant ordinances, rules, and regulations of the local jurisdiction(s) in which the Secondary Permittee is located that govern construction phase stormwater pollution prevention measures.
- b. Ensure that all construction projects under the functional control of the Secondary Permittee which require a construction stormwater permit obtain coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction Activities, or an individual NPDES permit prior to discharging construction related stormwater.
- c. Coordinate with the local jurisdiction regarding projects owned or operated by other entities which discharge into the Secondary Permittee's MS4, to assist the local

- jurisdiction with achieving compliance with all relevant ordinances, rules, and regulations of the local jurisdiction(s).
- d. Provide training or coordinate with existing training efforts to educate relevant staff in erosion and sediment control BMPs and requirements, or hire trained contractors to perform the work.
 - e. Coordinate as requested with Ecology or the local jurisdiction to provide access for inspection of construction sites or other land disturbances, which are under the functional control of the Secondary Permittee during land disturbing activities and/or the construction period.

Contract specifications for UW Capital Projects Office must include full compliance with City of Seattle's stormwater requirements for construction activities. EH&S and Facilities Services conduct design and site plan reviews to verify that best management practices are implemented to control erosion and sediment at the site.

For each project that requires a construction stormwater permit (disturbed area of greater than one acre), UW will obtain a permit.

All Temporary Erosion Control Plans (TESCs), submitted with building permits, are subject to approval by City of Seattle whether construction drains to the City of Seattle or UW MS4. The City of Seattle and UW sees no distinction between the two systems when it comes to building permits and construction stormwater protection.

Project contractors are required to have staff trained in erosion control if a TESC is required.

Inspection of all construction sites is allowed.

Post-construction Stormwater Management in New Development and Redevelopment

From the date of permit coverage, UW Seattle shall:

- a. Comply with all relevant ordinances, rules, and regulations of the local jurisdiction(s) in which the Secondary Permittee is located that govern post-construction stormwater pollution prevention measures.
- b. Coordinate with the local jurisdiction regarding projects owned or operated by other entities which discharge into the Secondary Permittee's MS4, to assist the local jurisdiction with achieving compliance with all relevant ordinances, rules, and regulations of the local jurisdiction(s).

Contract specifications for UW Capital Projects Office must include full compliance with City of Seattle's stormwater requirements for post-construction activities. EH&S and Facilities Services conduct design and site plan reviews to verify that best management practices are implemented to control erosion and sediment at the site. The UW already has other policy statements that guide sustainable building on campus. The UW Capital Projects Office has over 25 Leadership in Energy and Environmental Design (LEED) accredited professionals on staff. Under new state law, state funded construction projects of a certain square footage must obtain LEED certification.

Building permits, including post-construction stormwater management, are submitted to the City of Seattle whether construction drains to the City's or UW's MS4. The City sees no distinction between the two systems when it comes to post-construction stormwater management.

Pollution Prevention and Good Housekeeping for Municipal Operations

According to the permit, UW Seattle Campus shall:

- a. Implement a municipal operation and maintenance (O&M) plan to minimize stormwater pollution from activities conducted by the Secondary Permittee. The O&M Plan shall include appropriate pollution prevention and good housekeeping procedures for all of the following operations, activities, and/or types of facilities that are present within the Secondary Permittee's boundaries and under the functional control of the Secondary Permittee.
- i. Stormwater collection and conveyance systems, including catch basins, stormwater pipes, open channels, culverts, and stormwater treatment and flow control BMPs/facilities. The O&M Plan shall address, at a minimum: scheduled inspections and maintenance activities, including cleaning and proper disposal of waste removed from the system. Secondary Permittees shall properly maintain stormwater collection and conveyance systems owned or operated by the Secondary Permittee and regularly inspect and maintain all stormwater facilities to ensure facility function. Secondary Permittees shall establish maintenance standards that are as protective as or more protective of facility function than those specified in Chapter 4 Volume V of the 2012 Stormwater Management Manual for Western Washington. Secondary Permittees shall review their maintenance standards to ensure they are consistent with the requirements of this section. Secondary Permittees shall conduct spot checks of potentially damaged permanent stormwater treatment and flow control BMPs/facilities following major storm events (24 hour storm event with a 10-year or greater recurrence interval).
 - ii. Roads, highways, and parking lots. The O&M Plan shall address, but is not limited to: deicing, anti-icing, and snow removal practices; snow disposal areas; material (e.g. salt, sand, or other chemical) storage areas; all-season BMPs to reduce road and parking lot debris and other pollutants from entering the MS4.
 - iii. Vehicle fleets. The O&M Plan shall address, but is not limited to: storage, washing, and maintenance of Secondary Permittee vehicle fleets; and fueling facilities. Secondary Permittees shall conduct all vehicle and equipment washing and maintenance in a self-contained covered building or in designated wash and/or maintenance areas.
 - iv. External building maintenance. The O&M Plan shall address, building exterior cleaning and maintenance including cleaning, washing, painting; maintenance and management of dumpsters; other maintenance activities.
 - v. Parks and open space. The O&M Plan shall address, but is not limited to: proper application of fertilizer, pesticides, and herbicides; sediment and erosion control; BMPs for landscape maintenance and vegetation disposal; and trash and pet waste management.
 - vi. Material storage facilities, and heavy equipment maintenance or storage yards. Secondary Permittees shall develop and implement a Stormwater Pollution Prevention Plan to protect water quality at each of these facilities owned or operated by the Secondary Permittee and not covered under the General NPDES Permit for Stormwater Discharges Associated with Industrial Activities or under another NPDES permit that authorizes stormwater discharges associated with the activity.
 - vii. Other facilities that would reasonably be expected to discharge contaminated runoff. The O&M Plan shall address proper stormwater pollution prevention practices for each facility.
- b. From the initial date of permit coverage, Secondary Permittees shall also have permit coverage for all facilities operated by the Secondary Permittee that are required to be covered under the General NPDES Permit for Stormwater Discharges Associated with Industrial Activities or another NPDES permit that authorizes discharges associated with the activity.

c. The O&M Plan shall include sufficient documentation and records as necessary to demonstrate compliance with the O&M Plan requirements in S6.D.6.a.i. through vii above.

d. No later than three years from the initial date of permit coverage, Secondary Permittees shall implement a program designed to train all employees whose primary construction, operations, or maintenance job functions may impact stormwater quality. The training shall address:

- i. The importance of protecting water quality.
- ii. The requirements of this Permit.
- iii. Operation and maintenance requirements.
- iv. Inspection procedures.
- v. Ways to perform their job activities to prevent or minimize impacts to water quality.
- vi. Procedures for reporting water quality concerns, including potential illicit discharges (including spills).

EH&S wrote an O&M Plan for stormwater system maintenance, road and parking lot maintenance, vehicle fleet maintenance, external building maintenance, grounds maintenance, and material and equipment storage areas.

UW uses lake water for building cooling purposes. The system is classified as an industrial activity. Therefore, General NPDES Permit for Stormwater Discharges Associated with Industrial Activities requirements apply to the UW.

UW will keep documentation to demonstrate compliance with the O&M Plan.

EH&S is finalizing a Stormwater Protection BMP document for the purposes of training staff who are involved in the high risk activities listed above. Many of these BMPs are already used. For example:

Grounds maintenance staff use Integrated Pest Management practices on all the University grounds. The use of pesticides is already limited to spot applications as needed. The University's use of insecticides and aphicides has decreased from 3500 ounces in 1996 to less than 500 ounces in 2000. They also replaced some areas with low maintenance landscaping which minimize the use of irrigation water and pesticides and at the same time to increase surface water retention and filtering. Irrigation is conducted sparingly, with some lawns allowed to "go brown" in summer.

Facilities Services has decreased the amount of pressure washing on campus. Currently, pressure washing is performed only when moss, graffiti, and unusual material buildup must be removed. All water from pressure washing and street cleaning, and cleaning of related equipment, is collected and disposed to sanitary sewer.

For more information about stormwater protection and other sustainability efforts, see.