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University of Washington Stormwater Code Adjustment for Minimum Requirements for On-Site Stormwater Management and Water Quality Treatment in San Juan Drainage Basin

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Approved

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Date

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Date

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I. PURPOSE

Provide an adjustment to On-Site Stormwater Management (OSM) and Water Quality Treatment (WQT) requirements for the University of Washington's (UW) San Juan Basin through a substantially equivalent regional green stormwater infrastructure facility.

II. RULE

A. San Juan Basin Project Requirements

The regional facility meets all On-Site Stormwater Management best management practices (OSM BMP), except for OSM BMPs shown in Table 1, and also meets requirements for Basic Metals WQT for all hard surfaces (including pollution-generating) up to 17.7 acres that are directed to the regional facility. All other code requirements remain applicable. The regional facility was originally constructed under the Seattle Department of Construction and Inspections (SDCI) Grading Permit # 6790476-GR and Side Sewer Permit # 6841595-SS. Construction was completed in 2022. The rule will remain in effect until the City of Seattle revises or rescinds it.

1. Stormwater Management

a. Regional Capacity

Unless updated by the SPU General Manager and SDCI Director, in coordination with UW, the regional green stormwater infrastructure (RGSI) facility will provide basic water quality treatment for runoff from up to 17.7 acres of hard surface area within the Basin. The method used to calculate this capacity (referred to as "the bank") is described in Appendix C.

b. OSM Evaluation/List

i. Applicability of OSM Requirements

UW development projects in the Basin that elect the OSM list-based approach may waive the OSM BMPs struck off in Table 1, provided that

- The UW maintains, monitors and reports as required under this agreement.
- The facility provides equivalent or better environmental protection than parcel-based OSM.

All other code requirements remain applicable.

ii. Required Project-Level OSM

For OSM BMPs that remain on Table 1, the UW shall

- Evaluate feasibility for each project in the Basin, and
- Construct all feasible BMPs in accordance with the Code.

Feasibility shall be determined pursuant to SMC 22.805.070.D.

iii. Bank Accounting

BMPs from the Table 1 OSM list that are constructed on a project-by-project basis—whether required or voluntary—do not reduce the bank capacity for the area they manage.

- Only unmanaged hard surface area is debited from the bank.
- If no Table 1 BMPs are feasible, the entire hard surface area of the project counts against the bank.
- Example:
 - A project creates 50,000 square feet of hard surface.
 - Feasible on-site BMPs manage 5,000 square feet.
 - 45,000 square feet is debited from the bank.

iv. Exceedance of Bank Capacity

If cumulative new-plus-replaced hard surface in the Basin exceeds 17.7 acres, UW shall either

- Expand the regional GSI facility to manage the additional flows; or
- Revert to project-by-project OSM compliance, evaluating all BMPs using the full list-based approach required by code.

Table 1: On-Site List for Parcel-Based Projects

Category	Best Management Practices (BMP)	Projects Discharging to a Designated Receiving Water or its Basin
1	Full Dispersion	R, S
1	Infiltration Trenches	R, S ^g
1	Drywells	R, S ^g
1	Rainwater Harvesting—Category 1 Sizing	X^e
2	Rain Gardens with or without tree	R^a, S^a
2	Infiltrating Bioretention with or without tree	R, S
2	Infiltrating Soil Cell Bioretention with tree	X
2	Permeable Pavement Facilities ^h	R, S
2	Permeable Pavement Surfaces ^{i-k}	S
2	Sidewalk/Trail Compost Amended Strip ^k	S
3	Infiltrating Soil Cell Bioretention without tree	X
3	Sheet Flow Dispersion	R, S
3	Concentrated Flow Dispersion	S
3	Splashblock Downspout Dispersion	R
3	Trench Downspout Dispersion	R
4	Non-infiltrating Bioretention	R^d, S^d
4	Non-Infiltrating Soil Cell Bioretention with tree	X
4	Rainwater Harvesting—Category 4 Sizing	X^f
4	Vegetated Roofs	R^e
4	Residential Cistern	X
5	Perforated Stub-out Connections	R
5	Trees ^j	S

c. Water Quality Treatment

- i. The San Juan Basin directly discharges to Lake Union, a basic treatment receiving water. Projects in the Basin that trigger minimum water quality treatment requirements shall provide basic water quality treatment. If other WQT requirements apply, the UW will either retrofit the regional facility to comply or meet the requirements at the project level.
- ii. The regional GSI facility provides basic water quality treatment for runoff from up to 17.7 acres of pollution-generating hard surface area within the Basin. The methodology used to calculate this treatment capacity (“the bank”) is described in Appendix C.
- iii. For projects in the San Juan Basin that generate new or replaced pollution-generating hard surfaces, UW may comply with water quality treatment requirements using either of the following methods:
 - Bank Method
Deduct the project’s new and replaced pollution-generating hard-surface area from the bank; or
 - On-Site Treatment Method
Provide basic water quality treatment BMPs in accordance with the Stormwater Code Manual in effect at the time of project construction, without use of the bank.

2. Stormwater Code Requirements

Except as stated in 11.A.1, development projects in the Basin shall meet all other requirements per the Stormwater Code, including, but not limited to:

- Post-Construction Soil Quality and Depth (SMC 22.805.050.A)
- Flow Control (SMC 22.805.080)
- Construction Stormwater Control (SMC 22.805.020.D)
- Source Control for Real Property (SMC 22.803.030)

3. Project Tracking & Documentation

- a. For new projects, the UW shall submit a drainage report to SDCI for review as part of the Building Permit or Grading Permit that describes the intent to use this Director’s Rule. The drainage report shall indicate which OSM BMPs are installed from the alternative OSM List in Table 1 and document technical infeasibility for the remaining BMPs according to SMC 22.805.070.D. It shall also identify which surfaces require WQT per SMC 22.805.
- b. The drainage report shall include an updated version of the Bank Area Tracking Table shown in Appendix C, updated for each subsequent Building or Grading Permit, with the new-plus-replaced hard surface that uses the alternative OSM list and/or WQT allowance.
- c. Once the Building Permit or Grading Permit is issued by SDCI, UW shall submit a Memorandum of Drainage Control (MDC) that includes the updated version of the Bank Area Tracking Table with the SPU Side Sewer Permit application.
- d. UW shall maintain an updated Bank Area Tracking Table and submit it with the annual Monitoring Report as described in Section B.2 below.

B. Regional Facility Overview & Requirements

The UW built a biofiltration swale in a repurposed concrete flume in the San Juan Basin and established a regional offline stormwater treatment facility. The facility discharges to a 36-inch UW-owned storm drain outfall to Portage Bay. A network of conveyance piping connects the facility to:

- A diversion structure and pump station to divert up to 0.72 cubic feet per second (cfs) from the existing 36-inch outfall to the facility.
- A pretreatment facility located between the diversion structure and the pump station to provide pretreatment and sediment removal.
- A forebay at the head of the swale for secondary settling.
- New storm drain piping to convey up to 0.72 cfs of runoff to and from the biofiltration swale.

The pretreatment structure and pump station will feature access points that provide safe and adequate access for operation and maintenance activities.

1. Maintenance

- a. The engineer of record agrees to create an operations and maintenance (O&M) plan as a guide for UW maintenance staff. The O&M plan should rely on available guidance in the Seattle Stormwater Manual and allow for adaptive management in response to ongoing monitoring of facility performance.
 - i. The O&M plan will, at a minimum, describe the following:
 - Maintenance schedule
 - Maintenance actions
 - Adaptive management strategies
 - Performance criteria
 - Troubleshooting strategies
 - ii. Components of the O&M plan may be updated by UW, as needed, based on historical evidence and sound scientific and engineering judgment. Any updates will not decrease facility efficacy.
- b. UW will maintain the facility according to the O&M plan.
- c. Records of maintenance and troubleshooting activities will be retained by UW for a minimum of two years.

2. Monitoring

- a. Baseline Monitoring
 - i. UW shall perform baseline monitoring of the facility a minimum of once per calendar quarter:

First quarter: January, February, and March

Second quarter: April, May, and June

Third quarter: July, August, and September

Fourth quarter: October, November, and December
 - ii. Baseline monitoring shall be conducted at the following structures:
 - Vortech (presettling)

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- Forebay of the swale
- Trench drain inlet
- Trench drain outlet

- iii. Baseline monitoring consists of a quantitative assessment of material volume within structures identified in section II.B.2.a.ii. Material volume may be calculated from the known structural dimensions and a single point measurement from the finished grade to top of material.
- iv. For each baseline monitoring event performed, the following information will be recorded and retained for a minimum of two years.
 - Monitoring date
 - Monitoring location
 - Depth from finished grade to top of material
- v. If more than one monitoring event occurs in a single calendar quarter, then any additional monitoring events shall be included in the annual report, described below in section IV.A.

b. Voluntary Monitoring

- i. UW may choose to engage with faculty and students to monitor, assess, and gauge performance of the facility, collectively referred to as voluntary monitoring. Any voluntary monitoring performed by UW staff is not required to be reported to the City of Seattle. However, UW may elect to provide voluntary monitoring records and results to the City of Seattle in any coincident annual report for the sole purpose of scientific study.
- ii. Results of voluntary monitoring will not subject the facility to additional maintenance requirements aside from what is already described in the O&M plan.
- iii. Results of voluntary monitoring will not have any required retention schedule.

3. Reporting

- a. UW will submit an annual report to the City of Seattle every May 15. The contents of the annual report will cover the following elements:
 - Results of quarterly baseline monitoring for the previous calendar year.
 - A summary of maintenance activities for the previous calendar year.
 - An updated Bank Area Tracking Table.
- b. UW may elect to include results of voluntary monitoring to any annual report.
- c. A copy of the annual report will be retained by UW for a minimum of two years.
- d. The annual report will be sent to: SPU_GSI_Partnering@seattle.gov

III. AUTHORITY

- A. The SPU General Manager/CEO may approve an adjustment when finding that the adjustment provides substantially equivalent environmental protection and that the objectives of safety, function, environmental protection, and facility maintenance are met (SMC 22.800.040.B).

- B. Adjustments shall be documented as an Integrated Drainage Plan (IDP), authorized under SMC 22.800.080.E, which states that the “Director of SPU is authorized, to the extent allowed by law, to develop, review or approve an [IDP] as an equivalent means of complying with [Code] requirements.” Using the approved IDP, “the developer of a project voluntarily enters into an agreement with the Director of SPU to implement [the] IDP that is specific to one or more sites where best management practices are employed such that the cumulative effect on the discharge from the site(s) to the same receiving water is the same or better than that which would be achieved by a less integrated, site-by-site implementation of best management practices.”

IV. APPENDICES

A. San Juan Basin



The UW Health and Sciences Education Building (HSEB) is the first in a series of development projects planned under the 2019 Seattle Campus Master Plan , which includes constructing a new building within the San Juan Drainage Basin. The area includes portions of South Campus, City right-of-way (Northeast Pacific Street), and Central Campus (see Appendices A and B for basin map and campus master plan map, respectively). Runoff from the approximately 34-acre basin discharges to a 36-inch-diameter, UW-owned stormwater drainage main with an outfall to Portage Bay.

The HSEB project triggers OSM requirements in the Seattle Stormwater Code. While compliance with both OSM and Basic Water Quality (WQ) treatment is required for all development within the Basin according to SMC thresholds, many typical UW redevelopment projects only exceed the new-plus-replaced hard surface thresholds for OSM and not for WQ. As an alternative to constructing OSM on a project-by-project basis (with certain exceptions as outlined in Table 1 of section II.A.1.), the UW proposes building an end-of-pipe regional GSI facility, immediately upstream of the UW-owned outfall to manage low flows from the Basin (as described in the

Regional Facility Overview of section II.B.). The facility will be constructed on UW property and will be owned and maintained by the UW.

Based on an assessment of the facility's treatment potential, SPU and SDCI find and agree that this approach will yield better and faster WQ outcomes for the receiving water as the Basin redevelops than would be achieved through incremental OSM on a site-by-site basis. The UW will continue to evaluate the feasibility of, and construct if feasible, the BMPs identified in Table 1 below to reduce associated runoff volumes.

Specific benefits this approach brings to downstream receiving waters include:

- Treatment of hard surfaces within the Basin that would not otherwise be triggered or achieved through Code application.
- Immediate removal of more total suspended solids (TSS) by constructing and maintaining a regional GSI facility for the whole basin now rather than waiting for redevelopment to trigger OSM on a site-by-site basis.
- Treatment of runoff that enters the piped system from roadways, including City-owned Pacific Avenue NE, a principal arterial running through the Basin with frequent vehicle and bus traffic, which it is assumed would not otherwise be treated as part of future parcel-based projects in the Basin.

B. 2019 UW Seattle Campus Master Plan – Planned Development



C. Bank Area Tracking Table (OSM & WQT)

The following tracking table must be created and completed for each project that uses the modified OSM and WQT requirements allowed under this Director's Rule.

Project Name and SDCI Permit Number	New & Replaced Non- Pollution Generating Hard Surface By Project (Acres)	New & Replaced Pollution Generating Hard Surface By Project (Acres)	Total New & Replaced Hard Surface By Project (Acres)	Total Hard Surface Managed w/ OSM or WQ BMP's on Project Site By Project (Acres)	OSM/WQT Bank Area Used By Project (Acres)	Total Remaining OSM/WQT Bank Area 17.7 (Initial OSM/WQT Bank Area) (Acres)	Date
Health Sciences Education Building (SDCI #6756569-PH)	0.9		0.9	0	0.9	16.8	1/20/2021
Chemical Sciences Building	1	0.5	1.5	0.15	1.35	15.45	tbd

Note: Do not double count for the same area of hard surface regardless of type. Calculate surface area for either OSM or WQ, or both.

D. Background & Bank Area Methodology

KPFF, the engineering firm of record for the UW, determined the volume treated through the facility to be approximately 8,150 acre-feet (af) over the 158-year analysis period and used this volume to back out an equivalent bank area of roughly 25 acres total (17.7 acres of new plus replaced hard surface for a typical project of 70 percent hard surface). The 17.7-acre hard surface bank area was calculated using MGS Flood, Version 4, demonstrating that 91 percent of the runoff volume from the 25-acre basin is equivalent to the volume that flows through the proposed regional facility over the 158-year analysis period. The City agrees that a volume of 8,150 af has the potential to be treated by the proposed facility if using a flow diversion approach that allows all flow from the 34-acre basin to enter the facility up to 0.72 cubic feet per second (cfs), provided sufficient pre-settling is achieved.

The 17.7-acre bank area indicates the sum of new-plus-replaced hard surface area from all future development projects in the Basin that may be counted towards those projects' OSM and water quality treatment requirements. This sum does not include

new-plus-replaced hard surface mitigated by OSM BMPs that this Rule requires each project to assess and, if feasible, to build. If the collective new-plus-replaced hard surface area from the HSEB and future development projects should exceed the 17.7-acre bank total, the UW may expand the GSI facility footprint to manage additional flows for future projects in the Basin, or projects may revert to standard OSM and water quality treatment requirements per the Seattle Stormwater Manual.

E. Water Quality Treatment Methodology

In September 2025, SPU and SDCI agreed that, as a regional facility, the San Juan Basin RGSI Facility can be used for water quality treatment per SMC 22.800.080.E [Integrated Drainage Plan] and 22.800.080.F [Alternative Location] (as well as Washington Department of Ecology's (Ecology) Stormwater Management Manual for Western Washington (SWMMWW)).

The RGSI facility complies with SMC 22.805.090.B and the technical requirements of a "Basic Biofiltration Swale" per 2026 Seattle Stormwater Code Manual Volume 3, Section 5.9.33 or 2021 version Section 5.8.3 (and Ecology's BMP T9.10). As such, SPU and SDCI agree that the RGSI facility can also be used as a regional facility bank under the "Presumptive Approach" outlined in the SWMMWW for water quality treatment requirements for parcel-based projects in the (expanded) San Juan basin including the current proposed building and parking lot.