

BEST MANAGEMENT PRACTICES FOR REDUCING ADVERSE IMPACTS FROM STORMWATER RUNOFF FROM DEVELOPMENT SITES

Best Management Practices (BMPs) include a schedule of activities, prohibited practices, maintenance procedures, and structural and/or managerial practices approved by the Department of Ecology that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to surface and groundwaters.



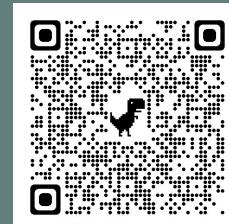
Bioinfiltration swale in Spokane Valley

The Permit requires project proponents and property owners to adhere to the Permit's minimum technical requirements. These include BMP selection, design, installation, operation, and maintenance standards for projects meeting the threshold triggers in the SRSM. **Failure to adequately select, design, and install required BMPs violates SVMC 22.150.110 and may result in penalties.**



Catch basin insert installed during construction

Erosion and Sediment Control Design (SRSM Chapter 9)



DRAINAGE SUBMITTAL REQUIREMENTS

A Drainage Submittal is a comprehensive report containing all of the technical information and analysis necessary for regulatory agencies to evaluate a proposed new development or redevelopment project for compliance with stormwater regulations. Contents of the Drainage Submittal vary with the type and size of the project, individual site characteristics, and city code requirements, and may include:

1. Road and drainage construction plans
2. Drainage report
3. Other supporting documents as needed

EROSION SEDIMENT CONTROL ELEMENTS

Erosion and Sediment Control (ESC) elements proactively manage erosion-related risks during construction. Developers must consider each of the following elements of pollution prevention to determine appropriate controls for the project site:

1. Clearing Limits
2. Construction Access
3. Flow Rates
4. Sediment Controls
5. Soil Stabilization
6. Slope Protection
7. Drain Inlet Protection
8. Channel and Outlet Stabilization
9. Pollutant Controls
10. Dewatering
11. BMP Maintenance
12. Project Management
13. Low-Impact Development Facility Protection

SWMMEW Chapter 7: Construction Stormwater Pollution Prevention



Certified Erosion and Sediment Control Lead (CESCL) Training and Certification Programs:



MUNICIPAL STORMWATER RESOURCE

This brochure introduces topics essential to stormwater design and includes resources for engineers, development review staff, and land use planners.



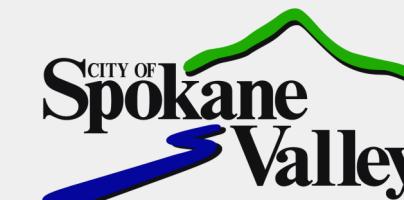
Stormwater construction in city right-of-way

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Municipal Stormwater Management Requirements Overview

Developed for Engineers, Development Review Staff, & Land Use Planners



MUNICIPAL STORMWATER CODE REQUIREMENTS

Municipal stormwater code promotes public health, safety, and welfare in compliance with state and federal laws. The Eastern Washington Phase II Municipal Stormwater Permit (Permit) requires jurisdictions to develop and administer code to:

- Prohibit non-stormwater discharges into their stormwater system
- Require erosion and sediment controls, and other construction-phase stormwater pollution controls
- Require post-construction stormwater controls

ADDITIONAL INFORMATION

City of Spokane Valley Stormwater Code can be found here: [Title 22: Design and Development Standards](#)

Not complying with municipal codes can result in project permit delays, permit denial, and civil penalties.

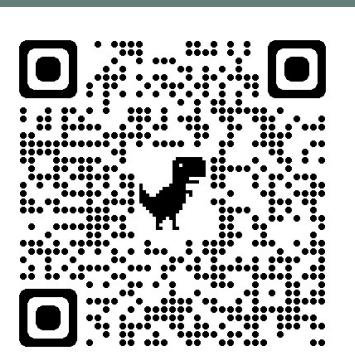
TECHNICAL STANDARDS

The [Spokane Regional Stormwater Manual](#)

(SRSM) provides technical guidance in the design, operation, and maintenance to control the quantity and quality of stormwater runoff from development projects in Spokane Valley.

Applying these measures can support achieving compliance with state and federal water quality laws, contributing to the protection of the beneficial uses of surface and groundwaters.

Spokane Regional Stormwater Manual



<https://www.spokanevalleywa.gov/326>

LOW IMPACT DEVELOPMENT

Low Impact Development (LID) applies stormwater and land use management strategies that strive to mimic natural processes utilizing the following principles:

- Preserve native vegetation
- Protect critical areas
- Minimize impervious surfaces
- Minimize grading and compaction of site soils
- Preserve existing flow paths
- Infiltrate stormwater runoff
- Disperse stormwater
- Utilize natural surfaces
- Utilize small-scale, distributed LID BMPs

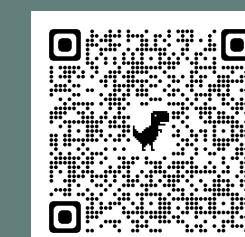
Examples of common practices adhering to these principles includes: bioretention cells, bioinfiltration swales, and natural dispersion. Implementing LID principles and practices manages runoff in a way that reduces the impact of built areas and promotes ecological functions.

For new development, Chapter 8.34 of the SRSM requires the preservation of natural location of drainage systems (NLDS), such as drainageways, floodplains, wetlands, and streams. Preserving these NLDS will help ensure that stormwater runoff can continue to be conveyed and disposed of at its natural location.



Bioinfiltration swales are an example of LID BMPs

SWMMEW Appendix 3-D:
Includes additional guidance on Low Impact Development Site Planning Principles and Design Strategies



UNDERGROUND INJECTION CONTROL

Underground Injection Control (UIC) wells are structures used to direct stormwater runoff underground, usually under the force of gravity.

UIC wells consist of:

- A dug hole whose depth exceeds its largest surface dimension
- An underground fluid distribution system (e.g., perforated pipes)

Pre-treatment water quality BMPs are typically required for all new stormwater UIC wells in order to protect groundwaters and/or aquifers.

Examples of stormwater UIC wells: drywells, an infiltration trench containing perforated pipe, bioretention systems with a perforated pipe below the treatment soil, and stormwater infiltration chamber systems.

The Department of Ecology (DOE) regulates UIC wells under the statewide UIC program to prevent groundwater contamination. **Owners of stormwater UICs must apply the guidance in the SRSM and submit UIC registration applications to the DOE 60 days prior to construction to allow for sufficient review time.**



Drywells are an example of a UIC

SRSM Chapter 6: Provides discussion on UIC facilities. See also Chapter 5.6 of the SWMMEW for more details on subsurface infiltration and UIC wells.

Ecology's UIC Program: [State UIC Registration:](#)



INFILTRATION

The SRSM defines infiltration as the passage of water through the soil surface into the ground. Infiltration BMP design allows stormwater runoff to soak into the ground as a means of filtering out pollutants and recharging groundwater. Infiltration BMPs can be used to meet requirements for water quality treatment, flow control, or both.

Examples of infiltration BMPs: dispersion, bioinfiltration, bioretention, drywells, infiltration ponds and trenches.



Bioinfiltration swale collecting stormwater road runoff



Dispersion BMPs allow runoff to infiltrate over a large area

SRSM Chapters 6 and 7: Gives details on different infiltration BMPs that meet Water Quality and/or Flow Control Requirements.

