



VOLUNTARY CURBSIDE BIORETENTION

Last Revised 12/29/2016

Curbside bioretention systems are shallow, planted depressions that collect and filter runoff from adjacent paved streets and sidewalks. They can be located in the planting strip on non-arterial streets, between the sidewalk and curb. They are engineered systems that may be large and complex, with designed soil mixes that collect stormwater runoff from the street through openings in the curb. This Client Assistance Memo (CAM) addresses siting criteria, design guidelines, and the permitting process for voluntary curbside bioretention systems. Information about installing voluntary curbside rain gardens is available in [CAM 2308](#).

Bioretention areas collect and filter runoff, allowing rainwater to soak into the soil and reducing the amount of polluted runoff entering Seattle's waterways. Bioretention systems planted with native plants also benefit urban habitat, beautify the streetscape, and serve as a planted buffer between the sidewalk and street to create a safe and pleasant place for people to walk. They may be installed by a single property owner in the planting strip in front of their property and are also suitable for a block-long or multi-block installation sponsored by a neighborhood group or community organization.

Please note that voluntary curbside bioretention systems are not eligible for City of Seattle incentives or credit and do not fulfill any code requirements. If you plan on installing facilities to satisfy Seattle [Stormwater Code](#) requirements or the [Seattle Green Factor](#) program, follow the [Street Improvement Permit \(SIP\)](#) process (see [CAM 2200](#)).

Note: This CAM for voluntary curbside bioretention does not cover installations on streets without sidewalks and curbs. These proposals must follow the SIP process.

DESIGN

Location

Before you design a voluntary bioretention system, be sure to verify that:

- Your site is located in a planting strip on a non-arterial street with an existing sidewalk and curb
- The street slope is less than 5%
- The planting strip must be at least 7 feet wide
- The sidewalk has an elevation 4 inches higher than the curb and gutter
- The site does not have a steep slope, shallow-lying bedrock, high groundwater, or contaminated soil
- The site is feasible for infiltration. Check the "Infiltration Evaluation Not Required" layer on the [Seattle Department of Construction and Inspections GIS Map](#). If the site is within an area that is mapped, voluntary bioretention is **not** permitted.

Access to Information

Client Assistance Memos are available online at: www.seattle.gov/transportation/stuse_home.htm. Paper copies of these documents are available at our Permit Services Counter located on the 23rd floor of the Seattle Municipal Tower at 700 5th Avenue in downtown Seattle; phone number (206) 684-5253.

LEGAL DISCLAIMER: This Client Assistance Memo (CAM) should not be used as a substitute for codes and regulations. The applicant is responsible for compliance with all code and rule requirements, whether or not described in this CAM.

- The soil drainage rate is adequate for infiltration using the Simple Infiltration Test method described in the City of Seattle Stormwater Manual, [Appendix D-3.2](#). The measured drainage rate must be at least 0.6 inches per hour.
- The project does not conflict with underground utilities or large tree roots. Call [811](#) to request the location of all underground utilities.

Design

Your bioretention design should follow these guidelines:

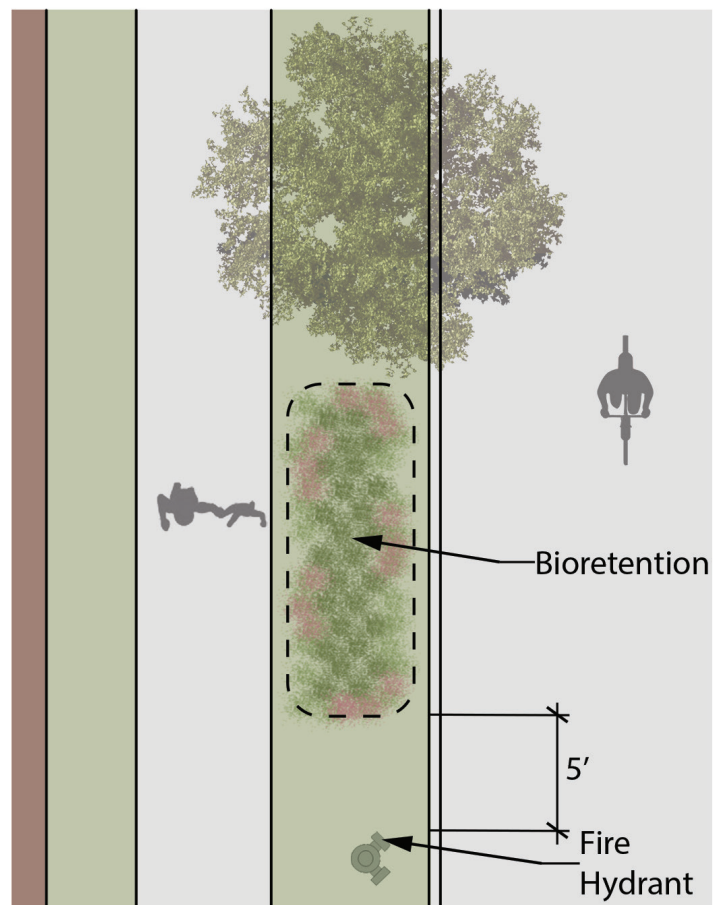
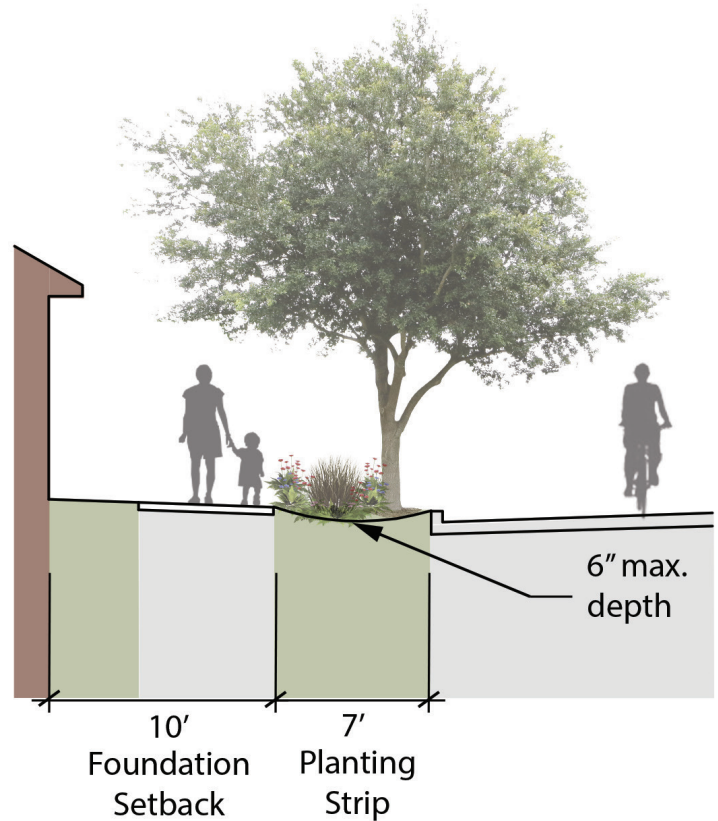
- The design shall be consistent with design elements for stormwater performance as described in the City of Seattle [Stormwater Manual](#), [Standard Specifications](#) Section 9-14.1(3), and [Standard Plans](#) No. 292, 295, and 299.
- The bioretention area should be located at least 10 feet from all building foundations
- Provide a minimum 5-foot setback from utility poles, vaults, meters, and fire hydrants
- The infiltration surface area should be 5 to 10% of the size of the paved surface area that drains to it
- The maximum ponding depth is 6 inches
- Plants should have a maximum mature height of 3 feet
- Plants within 10 feet of a driveway should have a maximum mature height of 30 inches (see [CAM 2305](#))

VEGETATION

Street Trees

Trees growing in the right of way are protected by [Seattle Municipal Code 15.43](#). Existing street trees may be compatible with bioretention in some cases, but care must be taken to avoid injuring any street tree. Changes in soil type, grade, and/or water infiltration can cause short- and long-term health problems for trees. If there are street trees in the planting strip where you wish to install a bioretention system, please note them on your site plan.

We encourage you to plant new street trees in bioretention areas. Trees intercept rainfall, helping to reduce runoff. Detailed guidance on planting and maintaining street trees is available in SDOT's [Street Tree Manual](#).



Plant Selection

We recommend including native vegetation in your plant palette. Plants should be selected that tolerate dry summer weather, as well as periods of heavy rain during the fall and winter. For approved plant recommendations, refer to the plant list in [Appendix E](#) of the City of Seattle [Stormwater Manual](#).

Remember that planting strips are shared public spaces, so plants should not obstruct the sidewalk or reduce visibility at intersections and driveways. Your plants should have a maximum mature height of 36 inches, or they should be 24 to 30 inches if your site is located within 30 feet of an intersection (see [CAM 2305](#)).

APPLICATION PROCESS

To apply for a voluntary bioretention system, you will need to submit a [Street Improvement Permit \(SIP\)](#) application. Voluntary bioretention qualifies for a streamlined SIP with a modified survey. The base map and survey requirements will be detailed in an initial meeting with your SIP project manager. A licensed professional civil engineer must prepare the SIP plans, and typically facilitates the permitting process.

FEES

Voluntary bioretention in the right of way incurs a base permit fee of \$1,912. A \$1,250 review deposit is due when you apply. When the review is complete and your permit is ready to be issued, you will pay a \$146 issuance fee and a \$516 inspection deposit. The deposit allows for 30-minute inspections before, during, and after construction. Depending on the extent of your project, a surety bond may be required. Consult your SDOT SIP project manager about bonding requirements.

INSTALLATION

If you need to use any parking spaces during installation for staging equipment or materials, you'll need to place [Temporary "No Parking" Signs](#) in those spaces 72 hours before breaking ground (see [CAM 2114](#)).

All excavation work should take place during the dry season (May 1 to September 30). Erosion and sediment control must be in place during construction periods to prevent erosion and debris flowing into the City's drainage system. Guidance on erosion and sediment control measures is available in the City of Seattle [Stormwater Manual](#).

If there is an established tree in the planting strip, protection fencing should be placed in a minimum 4-foot diameter area around the trunk. Construction materials and equipment should not be placed in this area. See the [Street Tree Manual](#) to learn more about how to protect existing street trees.

Planting in spring (mid-March to June) or fall (late September to October) is recommended to take advantage of natural rainfall. You will need to water adequately to establish the plants. Apply a 2- to 3-inch layer of mulch to help suppress weeds and conserve soil moisture.

MAINTENANCE

[Seattle Municipal Code 10.52.030](#) requires the adjacent property owner to maintain the vegetation in the planting strip adjacent to their property. Like any landscape feature, bioretention systems must be cared for. Plants will need watering for a minimum of three years until their root systems are well established. Weeding, mulching, and replacing diseased or dead plants should be done in the spring or fall. For help, refer to the [Rain Garden Care Guide](#).

If the bioretention area fails to drain, resulting in standing water for more than 72 hours, the City will require the adjacent property owner(s) or responsible party to restore the right of way to the condition that existed before the bioretention area was installed. The City is not responsible for maintaining voluntary bioretention systems.

RELATED LINKS AND ADDITIONAL RESOURCES

Call Before You Dig: <http://call811.com/>

City of Seattle Stormwater Code:

www.seattle.gov/dpd/codesrules/codes/stormwater/default.htm

City of Seattle Stormwater Manual:

www.seattle.gov/dpd/cs/groups/pan/@pan/documents/web_informational/p2358283.pdf

Client Assistance Memos (CAMs):

www.seattle.gov/transportation/stuse_docs.htm

Rain Garden Care Guide:

www.12000raingardens.org/wp-content/uploads/2013/03/RainGardenCareGuideComplete.pdf

Rain Garden Planting Plans:

www.700milliongallons.org/wp-content/uploads/2015/06/RainWise_PlantingPlan_16.pdf

Right of Way Impact Site Plan Templates:

www.seattle.gov/transportation/stuse_forms.htm

Right of Way Improvements Manual Bioretention Design Guidance:

www.seattle.gov/transportation/rowmanual/manual/4_17.asp

SDOT Street Use Applications, Forms & Templates:

www.seattle.gov/transportation/stuse_forms.htm

Seattle Department of Construction and Inspections GIS Map

<http://web6.seattle.gov/DPD/Maps/dpdgis.aspx>

Seattle Green Factor Plant List:

www.seattle.gov/dpd/cs/groups/pan/@pan/documents/web_informational/dpds021347.pdf

Seattle Municipal Code (SMC):

10.52.030, 15.43

Street Improvement Permit:

www.seattle.gov/transportation/stuse_sip.htm#PlanPrep

Standard Plans and Specifications for Municipal Construction:

www.seattle.gov/util/engineering/standardspecsplans/

Temporary No Parking Zone Information:

www.seattle.gov/transportation/parking/tempnoparking.htm

Traffic Control Manual for In-Street Work:

www.seattle.gov/transportation/trafficcontrolmanual.htm

SDOT Street Tree Manual

www.seattle.gov/transportation/forestry.htm

Property owners may be eligible for a RainWise rebate in some areas of Seattle. The rebate covers up to 100% of costs associated with installing a rain garden or cistern on private property to capture water from the roof of their home or building. To learn more, visit www.rainwise.seattle.gov.