STORMWATER MANAGEMENT FOR SINGLE FAMILY RESIDENCE & MINOR COMMERCIAL IMPROVEMENTS

Development and/or any other activities which create new impervious surfaces of greater than **500 square feet** in area at the time of application are required to incorporate permanent stormwater management facilities prior to any permits being issued. Stormwater shall be surface infiltrated onsite to the maximum extent feasible before discharging any flows offsite.

Assemble the following information for the proposed onsite stormwater management plan to be submitted with the building permit application. Detailed information and additional management options are available in the Portland Stormwater Management Manual located at [https://www.portlandoregon.gov/bes/64040](https://www.portlandoregon.gov/bes/64040).

1. **Perform an onsite infiltration test.** The following are options to complete this requirement.
   a. Use the *Simplified Approach* for projects of less than 10,000 square feet of new impervious improvement. Follow the instructions on the form attached with this packet.
   b. Use a geotechnical engineer to perform the infiltration test following the *Presumptive Approach* or the *Performance Approach*.

2. **Choose the method of surface infiltration to manage the stormwater.** Reference the details attached with this packet.
   a. Create a stormwater management site plan drawing that shows:
      i. The location and dimensions of all proposed impervious surfaces.
      ii. The infiltration test location.
      iii. The proposed location of the stormwater facility.
      iv. The dimensions of proposed stormwater facility.
      v. The required offsets from building foundations and property lines.
   b. Complete the Notice of Stormwater Facility Operation and Maintenance Plan document for the stormwater facility. Reference the attached form with this packet.

3. **Submit all the information with the building or development application to the City of Stayton Public Works for review and approval.**
   a. If the above information is not submitted with the permit application, the review process will **STOP** until the information is received by Public Works.
   b. If the information has been submitted but requires modification, the application review will continue while the modified stormwater management information is compiled and resubmitted.
   c. **A permit will not be issued until the stormwater management plan information has been approved.**
SIMPLIFIED APPROACH FORM

PROJECT INFORMATION WORKSHEET

PROJECT INFORMATION

Permit Number: _____________________________ Phone: _____________________________

Name: ____________________________________ Email: _____________________________

Site Address/R Number(s): __________________

Development Description: ___________________________________________________________

Total New or Redeveloped Impervious Area: __________________________

Signature: _____________________________ Date: _____________________________

SITE CHARACTERISTICS

S.1. Do slopes exceed 20% anywhere within the project area? □ Yes □ No

S. 2. Are there springs, seeps, or a high groundwater table anywhere within the project area? □ Yes □ No

If answer to S.1 or S.2 is yes, then lined or partial infiltration facility with an overflow to an approvable discharge point is required.

S.3. Is there a required geotechnical report? □ Yes □ No

S.4. Required infiltration testing complete? □ Yes □ No

If using prior test results at same site, provide Land Use case/permit number:_____________________

SIMPLIFIED INFILTRATION TESTING PROCEDURE

The Simplified Approach provides a method that a nonprofessional can use for design of simple stormwater systems on small projects. A geotechnical report or different infiltration test may be required at the discretion of the assigned BES plan reviewer. See Section 2.3.6 for infiltration testing requirements.

Test instructions:

1. Conduct test in and/or near location of proposed infiltration facility.

2. Excavate a test hole a minimum of 16" in depth, or to the bottom of the proposed infiltration system, whichever is greater. If a hard pan layer is encountered that prevents further excavation, or if noticeable moisture/water is encountered in the soil, stop and measure this depth and note it on the SIM form. If further excavation is not possible, conduct the test at this depth.

3. Fill the hole with water to a depth of at least 6" from the bottom of the hole. Record the amount of time required for the water to draw down to the bottom of the test pit. Check the water level at regular intervals to ensure accurate data collection.

4. Repeat the process two more times for a total of 3 rounds of testing. Conduct the tests in succession to accurately portray the soil's ability to infiltrate at different levels of saturation. The 3rd test provides the best measure of the infiltration rate at saturated conditions.

5. Record infiltration test data in the table at left and certify the results.

<table>
<thead>
<tr>
<th>TEST 1</th>
<th>TEST 2</th>
<th>TEST 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Time (of day)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Duration (hours) (1 hour minimum)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Initial Water Depth (inches)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Final Water Depth (inches)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Infiltration Rate* (inches/hour)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Infiltration Rate = Initial Depth (in) – Final Depth (in) / Duration of Test (hours)

Test pit location (site plan sketch)

Key information to include: 1) Site or parcel, 2) Adjacent road(s) or cross street(s), 3) Test pit location with dimensions

Certification of Infiltration Results (required)

I acknowledge the accuracy of these infiltration testing results.

Signature of tester (required)

Print Name

Date
Proposed Stormwater Facilities

Please note: Each individual taxlot is required to manage the stormwater runoff it generates from new construction or redevelopment on the same lot to the maximum extent feasible. The following table includes accepted simplified stormwater management facilities as described in Chapter 2 of the 2016 Stormwater Management Manual. Copies of the manual are available online at [www.portlandoregon.gov/bes/swmm](http://www.portlandoregon.gov/bes/swmm).

<table>
<thead>
<tr>
<th>STORMWATER FACILITY TYPE</th>
<th>TOTAL AREA MANAGED BY FACILITY TYPE (SF)</th>
<th>FACILITY SIZING FORMULA</th>
<th>FACILITY SIZE (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPERVIOUS AREA REDUCTION TECHNIQUE</td>
<td>Tree Credit</td>
<td>Complete Tree Credit Worksheet and attach</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Ecoroof</td>
<td>1:1 ratio only</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Pervious Pavement</td>
<td>1:1 ratio only</td>
<td>n/a</td>
</tr>
<tr>
<td>SURFACE INFILTRATION OR FILTRATION</td>
<td>Downspout Extension</td>
<td>Area x 0.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rain Garden</td>
<td>Area x 0.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Basin</td>
<td>Area x 0.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Swale</td>
<td>Area x 0.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Planter</td>
<td>Area x 0.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Filter Strip (paved areas only)</td>
<td>Area x 0.20</td>
<td></td>
</tr>
<tr>
<td>SUBSURFACE DISPOSAL UIC</td>
<td>Soakage Trench</td>
<td>Westside soakage trench no longer an option under the simplified approach. Only a single soakage trench sizing possible. See below for sizing information.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drywell</td>
<td>Enter drywell type and quantity for facility size. See below for sizing information.</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL IMPERVIOUS AREA MANAGED

Total Impervious Area Managed must match Total New or Redeveloped Impervious Area. Site plans must identify stormwater facility location, drainage areas, overflows and escape routes.

Subsurface facilities can receive overflow from impervious area reduction techniques or surface infiltration/filtration facilities or can be used independently to manage runoff. If stormwater is generated from anything other than roof area, stormwater facilities are subject to UIC requirements (see Chapter 1 for UIC requirements).

Sizing Charts:

<table>
<thead>
<tr>
<th>DRYWELL TYPE</th>
<th>AREA MANAGED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2’x2’ mini drywell</td>
<td>Up to 500 sf</td>
</tr>
<tr>
<td>28”x5’</td>
<td>Up to 1,000 sf</td>
</tr>
<tr>
<td>4’x5’</td>
<td>Up to 3,000 sf</td>
</tr>
<tr>
<td>4’x10’</td>
<td>Up to 6,000 sf</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOAKAGE TRENCH LENGTH PER 1,000 SF OF IA</th>
<th>WIDTH</th>
<th>DEPTH</th>
<th>SIZING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soakage Trench</td>
<td>20’</td>
<td>2.5’</td>
<td>1.5’</td>
</tr>
</tbody>
</table>
1. Site Suitability: Downspout extensions are suitable for sites that have well draining soils, >2" per hour, and have an overall slope of 10% or less.

2. Sizing: Area of discharge must be 10% of the contributing roof area. A maximum of 500 sf of roof area is allowed to drain to each downspout.

3. Downspouts must drain at least 6 feet from basement walls and at least 2 feet from crawl spaces and concrete slabs.

4. The end of the downspout must be at least 5 feet from the property line, and possibly more if the landscape slopes toward the neighbor’s property.

5. Do not discharge onto driveways, hardscape or other impervious areas including public sidewalks and streets.

6. Using a splash block at the end of the extension is optional, but it will help prevent soil erosion.
1. Provide protection from all vehicle traffic, equipment staging, and foot traffic in proposed infiltration areas prior to, during, and after construction.

2. Dimensions:
   Ponding depth (from top of growing medium to overflow elevation): 12".
   Flat bottom width: 2'x2' min.
   Side slopes of swale: 3:1 maximum.

3. Setbacks:
   A ten foot setback required from buried oil tanks or retaining walls over 36 inches high. The deepest point of a rain garden should be at least 10 ft from all structures. It is recommended to avoid installation over water service lines.

4. Overflow:
   Each rain garden design needs to include an escape route that allows stormwater to drain to a safe disposal point in periods of heavy rainfall, away from building foundations and adjacent properties. Escape routes should be planted or rocked to assist with potential erosion issues.

5. Piping: must be composed of cast iron or Schedule 40 ABS per 2.3.4 and the Uniform Plumbing Code. Flexible downspout extensions are not approvable materials.


7. Vegetation: Follow landscape plans otherwise refer to plant list in SWMM Section 2.4.1. Minimum container size is #1. # of plantings per 100sf of facility area:
   80 herbaceous plants OR 72 herbaceous plants and 4 shrubs. Consider adding a tree if the rain garden is over 200 sf.

8. Splash Block: Splash blocks, rock, or flagstone must be utilized for erosion control and flow dispersal at the point of discharge.

9. Mulch: Rain gardens may be topped with 2" of compost

10. Inspections: Call City of Stayton, 503-769-2919 for required inspections.

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STORMWATER MANAGEMENT TYPICAL DETAILS

Simplified Design Approach -
Rain Garden

NUMBER
SW-121
7-1-16
1. Provide protection from all vehicle traffic, equipment staging, and foot traffic in proposed infiltration areas prior to, during, and after construction.

2. Dimensions:
   - Width of swale: 6'-6" minimum
   - Depth of swale (from top of growing medium to overflow elevation): 9".
   - Longitudinal slope of swale: 6.0% or less.
   - Flat bottom width: 2' recommended.
   - Side slopes of swale: 3:1 maximum.

3. Setbacks:
   Swale must be 10’ away from foundation and 5’ away from property lines.

4. Overflow:
   Swales must connect to approved discharge point according to SWMM Section 1.3.1.
   Inlet elevation must allow for 2’ of freeboard, minimum.
   Protect from debris and sediment with strainer or grate.

5. Piping must be cast iron, ABS or PVC. 3” pipe required for facilities draining up to 1500 s.f., otherwise 4” minimum pipe. Uniform Plumbing Code also applies.

6. Drain Layer:
   - 3/4" – 1 1/2" washed rock. Depth: 12”.
   - Separation between drain rock and growing medium:
     Pea gravel layer, 2 to 3 inches deep.

7. Growing Medium:
   18” minimum depth. Use sand/loam/compost 3-way mix, or approved mix that will support healthy plants.

8. Vegetation: Follow landscape plans otherwise refer to plant list in SWMM Section 2.4.1. Minimum container size is #1. # of plantings per 100sf of facility area:
   - Zone A (wet): 80 herbaceous plants OR 72 herbaceous plants and 4 small shrubs.
   - Zone B (moderate to dry): 7 large or small shrubs AND 70 groundcover plants.
   The delineation between Zone A and B shall be either at the outlet elevation or the check dam elevation, whichever is lowest.
   If project area is over 200sf consider adding a tree.

9. Check Dams: Shall be placed every 10’ where slope exceeds 4% and be equal to the width of the planter.

10. Splash Block: Install 4-6” washed river rock or splash pad for erosion control at inlets and downsputs.

Inspections: Call City of Stayton Public Works, 503-769-2919, for appropriate inspections. 3 inspections required.

DRAWING NOT TO SCALE

STORMWATER MANAGEMENT TYPICAL DETAILS

- Simplified Design Approach -

Swale = unlined

CITY OF STAYTON PUBLIC WORKS

NUMBER

SW-131

7-1-16
1. Provide protection from all vehicle traffic, equipment staging, and foot traffic in proposed infiltration areas prior to, during, and after construction.

2. Dimensions:
   - Width of planter: 24" minimum.
   - Depth of planter (from top of growing medium to overflow elevation): 12".
   - Longitudinal slope of planter: 0.5% or less.

3. Setbacks:
   - Planters must be 5-feet from property line and 10-feet from building foundations.

4. Planter Walls:
   - Material must be concrete, unless otherwise approved. Walls must be included on foundation plans.

5. Piping must be cast iron, ABS or PVC. 3" pipe required for facilities draining up to 1500 s.f., otherwise 4" minimum pipe. Uniform Plumbing Code also applies.

6. Drain Layer:
   - 3/4" - 1 1/2" washed. Depth: 9".
   - Separation between drain rock and growing medium: Pea gravel lens, 2 to 3 inches deep.

7. Overflow:
   - Planters must connect to approved discharge point according to section 1.3.1 and detail SW-190.
   - Inlet elevation must allow for 2' of freeboard, minimum. Protect from debris and sediment with strainer or grate.

8. Growing Medium:
   - 18" minimum depth. Use sand/compost 3-way mix, or approved mix that will support healthy plants. 24" minimum depth is required if the lined facility is also meeting BOS landscape requirements.

9. Vegetation: Refer to plant list in SWMM Section 2.4.1. Minimum container size is #1, # of plantings per 100sf of facility area: 80 herbaceous plants OR: 72 herbaceous plants and 4 small shrubs.

10. Splash Block: Install 4-6" washed river rock or splash pad for erosion control at inlets and downspout.

9. Inspections: Call City of Stayton Public Works, 503-769-2919, for appropriate inspections. 3 inspections required.
1. Provide protection from all vehicle traffic, equipment staging, and foot traffic in proposed infiltration areas prior to, during, and after construction.

2. Dimensions:
   - Width of basin: 9’ minimum
   - Depth of basin (from top of growing medium to overflow elevation): 9”.
   - Flat bottom width: 2’ minimum.
   - Side slopes of swale: 3:1 maximum.

3. Setbacks:
   - Basin must be 10’ away from foundations and 5’ away from property lines.

4. Overflow:
   - Basins must connect to approved discharge point according to SWMM Section 1.3.1 and detail SW-190.
   - Inlet elevation must allow for 2’ of freeboard, minimum.
   - Protect from debris and sediment with strainer or grate.

5. Piping must be cast iron, ABS or PVC. 3” pipe required for facilities draining up to 1500 s.f., otherwise 4” minimum pipe. Uniform Plumbing Code also applies.

6. Drain Layer:
   - 3/4” – 1 1/2” washed rock. Depth: 9”.
   - Separation between drain rock and growing medium: Pea gravel lens, 2 to 3 inches deep.

7. Growing Medium:
   - 18” minimum depth. Use sand/loam/compost 3-way mix, or approved mix that will support healthy plants.

8. Vegetation: Follow landscape plans otherwise refer to plant list in SWMM Section 2.4.1. Minimum container size is #1. # of plantings per 100sf of facility area:
   - Zone A (wet): 80 herbaceous plants OR 72 herbaceous plants and 4 small shrubs.
   - Zone B (moderate to dry): 7 large or small shrubs AND 70 groundcover plants.
   - The delineation between Zone A and B must be either at the outlet elevation or the check dam elevation, whichever is lowest. If project area is over 200sf consider adding a tree.

9. Splash Block: Install 4”–6” washed river rock or splash pad for erosion control at inlets and downspout.

9. Inspections: Call City of Stayton Public Works, 503-769-2919, for appropriate inspections. 3 inspections required.

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**STORMWATER MANAGEMENT TYPICAL DETAILS**

- Simplified Design Approach -

**Basin - unlined**

**NUMBER**

**SW-151**

**CITY OF STAYTON PUBLIC WORKS**

**7-1-16**
1. Provide protection from all vehicle traffic, equipment staging, as well as foot traffic for proposed infiltration areas prior to and during construction.

2. Dimensions:
   a. Flow line length: 5' minimum.
   b. Slopes: 0.5 – 10%

3. Setbacks (from beginning of facility):
   a. 5' from property line
   b. 10ft from buildings
   c. 50ft from wetlands, rivers, streams, and creeks where required.

4. Overflow: Collection from filter strip shall be specified on plans to approved discharge point according to SWMM Section 1.3.

5. Growing Medium: Unless existing vegetated areas are used for the filter strip, growing medium shall be used within the top 18” (Use sand/loam/compost 3-way mix or approved mix that will support healthy plants).

6. Vegetation: The entire filter strip must have 100% coverage by native grasses, native wildflower blends, native ground covers, or any combination thereof.

7. Flow Spreaders: A grade board or sand/gravel trench may be required to disperse the runoff evenly across the filter strip to prevent a point of discharge. The top of the level spreader must be horizontal and at an appropriate height to provide sheetflow directly to the soil without scour. Level spreaders shall not hold a permanent volume of runoff. Grade boards can be made of any material that will withstand weather and solar degradation. Trenches used as level spreaders can be filled with washed crushed rock, pea gravel, or sand.

8. Check Dams: shall be placed according to facility design otherwise:
   a. 12” in length
   b. Equal to the width of the filter
   c. 3 to 5” in height
   d. Every 10’ where slope exceeds 5%.

9. Inspections: Call City of Stayton Public Works, 503-769-2919, for appropriate inspections.

--- DRAWING NOT TO SCALE ---

STORMWATER MANAGEMENT TYPICAL DETAILS

- Simplified Design Approach -

Filter Strip

CITY OF STAYTON PUBLIC WORKS

NUMBER

SW–160

7-1-16
INfiltration 
Stormwater Hierarchy Category 1

Hybrid 
Stormwater Hierarchy Category 2 
Overflow Directed to Drain Rock

Partial Infiltration 
Stormwater Hierarchy Category 3 or 4 
Overflow and Underdrain Required, Set Underdrain Within Drain Rock

Lined 
Stormwater Hierarchy Category 3 or 4 
Overflow and Underdrain Required, Set Underdrain at Base of Drain Rock Liner

Note: Hybrid facilities must be registered as a UIC designed under the presumptive approach.

Drawing Not to Scale

Stormwater Management Typical Details

Simplified Design Approach

Facility Overflow Configurations

City of Stayton Public Works

SW-190

7-1-16
CITY OF STAYTON
Notice of Stormwater Facility
Operation and Maintenance Plan
(for Residential Lot Roof Drainage Infiltration Systems only)

IT IS DECLARED, that we, __________________________________________________, the
undersigned OWNER(s), possesses title to real property

located in the __________ 1/4 of Section _____, Township ____ South, Range ____ West, Willamette
Meridian, located in the City of Stayton, County of Marion, State of Oregon, as described and
recorded ___________________ in Reel ________, Page ________, Marion County Deed Records,
hereinafter referred to as the “Property”.

Property Address: _________________________________________, Stayton, OR 97383.

Tax Assessor’s Map and Lot No.: ____________________________.

WHEREAS, the OWNER(s) had certain residential lot roof drainage infiltration systems (hereafter referred
to as Stormwater Facilities), designed and constructed for the purpose of retaining stormwater runoff from
the Property in accordance with the Stayton Municipal Code, Stayton Public Works Standards, and
applicable permits, laws and regulations. The OWNERS(s) hereby gives notice that the Stormwater
Facilities shall be operated and maintained in accordance with the Property’s “Stormwater Facility
Operations and Maintenance Plan” to be placed on-file with the City of Stayton Public Works Department.
References are made to the Stormwater Facility Operations and Maintenance Plan for all terms,
conditions, provisions and particulars thereof, which are hereby incorporated by reference as though fully
set forth herein.

NOW, THEREFORE, the City has the right to ensure site compliance with the Stormwater Facilities
Operation and Maintenance Plan in accordance with the Stayton Municipal Code, Stayton Public Works
Standards, and applicable permits, laws and regulations. The requirement to operate and maintain the
Stormwater Facility in accordance with the on-file Stormwater Facility Operations and Maintenance Plan
is binding on all current and future owners of the Property. The Stormwater Facility Operations and
Maintenance Plan may be modified under written consent of the new owner(s) with written approval by,
and re-filing with the City of Stayton Public Works Department.

The Stormwater Facility Operations and Maintenance Plan pursuant to this notice may be reviewed and
examined at the Stayton Public Works and Planning Building at 311 N. Third Avenue, Stayton, OR,
97383, between the hours of 8 a.m. and 5 p.m., Monday through Friday, except legal holidays. Call (503)
769-2919. Copies of the Stormwater Facility Operations and Maintenance Plan may be obtained upon
payment of a non-refundable fee.

The on-going operational, maintenance and financial responsibility of the Stormwater Facilities shall be
the responsibility of (check one):

☐ HOMEOWNER’S ASSOCIATION
☐ PROPERTY OWNER(S)
☐ OTHER (describe): ______________________________________________
ACCORDINGLY, the undersigned has caused this instrument to be executed by our duly authorized legal representative. If OWNER(s) is an entity (Inc., LLC, LLP, Co., etc) or principal, their representative, by signing below, certifies that such representative is authorized by the entity or principal to execute this instrument.

Dated this ______________________ day of __________________________, 20____.

OWNER(S):

_________________________________  _______________________________________
  (Signature)                       (Signature) \\

_________________________________  _______________________________________
  (Print)                          (Print) \\

STATE OF OREGON  } \\
COUNTY OF MARION  } ss

Personally appeared before me this ______________________ day of __________________________, 20____.

and __________________________________________, Owner(s) of the above described Property has acknowledged the foregoing instrument to be his/her voluntary act and deed.

_________________________________ \\
Notary Public for OREGON
My Commission expires: