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Document Title: SFR Stormwater Management & BMP Facilities Agreement
Grantee: City of Puyallup
Grantor: Richard & Kathy L Farris
Legal Description: Section 20 Township 20 Range 04 Quarter 34 L 2 OF SP 2019-02-05-5001
Complete Legal Description on 5 **Page of this Document**
Assessor's Tax Parcel or Account Numbers: 0420207029
Reference Number of Related Document(s): _____

SFR Stormwater Management & BMP Facilities Agreement

A. Parties. The parties to this agreement are Grantee City of Puyallup, a Washington State municipal corporation (City), and Grantor landowner Richard & Kathy L Farris (Landowner).

B. Property. Landowner is the owner of certain real property (Property), which is legally described in this document and is located at the following address: 2345 W STEWART, PUYALLUP WA.

C. Development Plan & Stormwater Facilities. The site improvements (Plan) for the Property, specifically, the site improvements (Plan) approved under City of Puyallup building Permit number B-20-0741, provides for detention, retention, treatment, infiltration or management of stormwater that is associated with the Property through the use of identified stormwater facilities or best management practices (collectively, Stormwater Facilities). Upon approval of the Plan by the City, the Plan shall be incorporated herein by this reference. In accordance with the Plan, Landowner shall adequately construct, operate, use, maintain and repair the Stormwater Facilities.

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D. Agreement. On the terms and conditions set forth herein, the City and Landowner agree as follows:

1. The Stormwater Facilities shall be constructed, operated, used, maintained andrepaired by Landowner in accordance with the requirements of the Plan, and any other applicable law or regulation.

2. Landowner (which expressly includes its agents, successors and assigns, including any homeowners association) shall adequately and properly operate, use, maintain and repair the Stormwater Facilities as described in the maintenance and operations manual, attached and recorded herewith as Exhibit 'B'. This duty extends to all associated pipes and channels, as well as all structures, improvements, and vegetation that are provided to control the quantity and quality of the stormwater. Adequate maintenance shall mean maintenance that is sufficient to keep the Stormwater Facilities in good working order and operating so as to satisfy the design and performance standards of the Plan.

3. Landowner shall regularly inspect the Stormwater Facilities and shall submit an inspection report to the City at least once a year on a date prescribed by the City. The purpose of the inspection(s) is to ensure that the Stormwater Facilities are safe and functioning properly. The scope of the inspection shall include the entire Stormwater Facilities, including but not limited to, berms, outlet structures, pond areas, access roads, and so forth. Deficiencies and any performance or other related issues shall be noted by Landowner in the inspection report. The annual report shall be in a form and include content as prescribed from time to time by the City. An example copy of the report form is attached hereto as Exhibit 'C'.

4. Landowner hereby grants permission to the City to enter upon the Property to inspect the Stormwater Facilities. Except in case of emergency, the City shall provide Landowner with at least forty-eight (48) hours written notice prior to entering on to the Property. Landowner shall be entitled to have a representative accompany the City during such inspection. The City shall provide Landowner with copies of written inspection reports.

5. If Landowner fails to adequately and properly operate, use, maintain or repair the Stormwater Facilities, and the City sees fit, the City shall notify Landowner in writing and provide Landowner with a reasonable opportunity to cure. If Landowner fails to timely cure, then the City may enter upon the Property and remedy the issue(s) identified in the notice and those reasonably related thereto; Furthermore, if the City performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like while remedying the identified issues, the City may charge the cost of the remedy to Landowner, and Landowner shall promptly pay the costs to the City. Notwithstanding the foregoing, the City shall be under no obligation to inspect, maintain or repair the Stormwater Facilities.

6. Landowner shall defend, indemnify and hold the City, its officers, officials, employees and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or in connection with activities or operations, performed by Landowner, or on Landowner's behalf, that relate to the Stormwater Facilities and the subject matter of this agreement, except for injuries and damages caused by the negligence of the City.

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E. Covenant. The terms and provisions of this agreement constitute a covenant, which is subject to the following: This covenant is an equitable covenant. It touches and concerns the land that is described as the Property herein. The parties intend that this covenant shall bind the parties' successor and assigns. This covenant shall run with the land that is described as the Property herein, and shall bind whoever has possession of the land, in whole or in part, without regard to whether the possessor has title, or has succeeded to the same estate that granting parties have or had. Possessors shall include, but are not limited to, leasehold tenants, contract purchasers, subtenants, and adverse possessors. This covenant shall run with the land even in the absence of the transfer of some interest in land, other than the covenant itself, between Landowner and the City. This covenant shall not be governed by the mutuality rule. The burden of the covenant can run independently from the benefit of the covenant, and the benefit need not run. The benefit may be in gross or personal to Landowner or the City. Landowner waives its right to assert any defenses to the enforcement of this covenant, including, but not limited to, the change of neighborhood doctrine, laches, estoppel, balancing of hardships, and abandonment. If Landowner breaches any term of this covenant and agreement, then all remedies in equity and at law, including, but not limited to, injunctions, mandamus, declaratory judgments, and damages, shall be available to the City.

F. Governing Law & Venue. This agreement shall be governed by and construed in accordance with the laws of the State of Washington. The venue for any action that arises from or out of this instrument shall be the Pierce County Superior Court.

<Signature page to follow>

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Exhibit 'A' – Legal Description

Section 20 Township 20 Range 04 Quarter 34 L 2 OF SP 2019-02-05-5001 AN AMEND OF SP 2015-12-14-5007 OUT OF 3-068 SEG 2016-0296 JP 03/02/16 JP 5360753DC 06/14/19 JP

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DocuSign Envelope ID: 3BA98E3D-88B6-4890-B10D-40B8E783B866

Dated: 8/1/23

Richard Farris

Dated: 8/1/23

Kathy L Farris

Dated: 7/31/2023

DocuSigned by: Hans Hunger

Grantee: City of Puyallup, Accepted by:
Hans Hunger, PE (City Engineer)

Dated: 7/31/2023

DocuSigned by: Joseph N Beck

Approved as to form:
Joseph N. Beck (City Attorney)

STATE OF WA)
-ss
COUNTY OF Pierce)

I certify that I know or have satisfactory evidence that Richard Farris is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the co-owner of said property to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: 8-1-2[illegible]

ROBYN BUCK-HOLDENER NOTARY PUBLIC 206817 COMMISSION EXPIRES 3-20-27 STATE OF WASHINGTON

Printed Name: Robyn Buck-Holdener
Notary Public, State of WA
My appointment expires: 03-20-2027

STATE OF WA)
-ss
COUNTY OF Pierce)

I certify that I know or have satisfactory evidence that Kathy L Farris is the person who appeared before me, and said person acknowledged that she signed this instrument, on oath stated that she was authorized to execute the instrument and acknowledged it as the co-owner of said property to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: 8-1-202[illegible]

ROBYN BUCK-HOLDENER NOTARY PUBLIC 206817 COMMISSION EXPIRES 3-20-27 STATE OF WASHINGTON

Printed Name: Robyn Buck Holdener
Notary Public, State of WA
My appointment expires: 03-20-2027

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To view the stormwater site plan pages, go to the City of Puyallup CityView permit portal using this web address:
https://permits.puyallupwa.gov/Portal/Permit/GetFile/116631

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Exhibit 'B' – Operations and Maintenance Manual

Onsite Single Family Stormwater Operation and Maintenance Manual

A stormwater maintenance program is essential to ensure that the facilities designed for this property and installed during construction, continue to function as designed to prevent possible flooding and property damage to this property and to its neighbors. They are typically a combination of vegetation management and structural components that slow, filter, detain, or infiltrate stormwater runoff on-site after a rainfall event.

A maintenance program for all stormwater controls that are associated with development is required by City code, State of Washington RCWs and Federal Guidelines. This Manual is meant to include a maintenance program that addresses every component of the onsite stormwater system, to ensure the system does not lose its intended capability to manage stormwater.

In addition, Puyallup Municipal Code requires that owners of private stormwater management facilities prepare an annual inspection report be submitted to the City of Puyallup no later than January 30th for the preceding year and the facility be available to the city for inspection at all reasonable times. These reports are required to be kept on hand, at the site for a minimum of 3 years.

Stormwater management facilities are not intended to replace good housekeeping procedures. Good housekeeping includes proper storage and disposal of chemicals and potential pollutants, procedures for spill cleanup, proper use of fertilizers and other lawn care products, and maintenance of equipment to prevent release of pollutants to the stormwater system. Guidelines for establishing good housekeeping procedures (Source Control BMPs) can be found in the Stormwater Management Manual for Western Washington.

The intent of this stormwater maintenance manual is to assist single family stormwater facility owners in performing proper maintenance of the facilities and the required reporting of maintenance procedures to the City of Puyallup.

Vegetation Management

Goals and Philosophy

The vegetation management focus is establishing and maintaining healthy low-maintenance native plantings and sustaining the design function of vegetated filters and buffers. This includes controlling invasive plants where feasible, and planting cover on bare soils.

The State of Washington recognizes the special importance of rivers, streams, wetlands, ponds, and stormwater control and treatment facilities. The sensitive nature of such habitats, their plant and animal communities, and their direct link with other waterways require that we establish specific policies to ensure their health.

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General Practices

Preferred vegetation is native. However, there are non-native plants that are adaptive and drought tolerant that are acceptable to use within the stormwater facilities. Native and non-native plants are listed in the ***Rain Garden Handbook for Western Washington***, appendices a-1 through a-18, and are allowed for use in plantings with in the City of Puyallup.

Stormwater control facilities discharge to surface water or groundwater either directly or through pipes or ditches. Many facilities are built to remove pollutants from stormwater.

Generally, vegetation should be maintained to blend into surrounding areas. Stormwater facilities can provide habitat for aquatic life and birds. Promoting natural vegetation where feasible improves habitat. Swales often blend into intensively managed landscapes. Pond perimeters can include natural vegetation.

The use of pesticides and, in most cases fertilizer, is not compatible with the task of pollutant removal or the direct connection of stormwater facilities to streams and groundwater.

Features of Stormwater Facilities:

- There is a mix of native and non-native plants
- Generally, not used by the homeowner for recreation or other use
- Include areas managed to promote design function, such as turf in swales
- Managed landscapes may be nearby
- May be used by fish and wildlife

Objectives for Stormwater Facilities:

- Maintain healthy plant communities
- Avoid or minimize need for chemical intervention
- Control invasive plants where feasible
- No bare soil areas are allowed
- Tolerance for natural appearance and weeds

Please reference the most current accepted and available ***Rain Garden Handbook for Western Washington*** for approved plant lists located in appendices a-1 through a-18. Not all plants in the Rain Garden Handbook are native, please be sure to locate the correct zone and plants that will best suit your facility. Some plants, other than native, may be approved for use in storm facilities if climate adaptable, low maintenance and drought tolerant for the Puget Sound region. If you do have any questions regarding plant selections please contact the city's Stormwater management team.

In some cases, the original plantings may not be appropriate for the actual condition at a facility. One example is a frequently flooded swale that cannot support normal turf. In cases like this, replace turf with appropriate wetland plants if the underlying drainage problem cannot be fixed.

All onsite areas that were disturbed during initial construction and not initially designed to include impervious area (I.E. sidewalk, driveway, etc.) shall follow the city's vegetation management standards manual- minimum 8" soil depth, 40% compost amended soil by volume. Limit mulch use to covering bare soil while establishing plantings.

Chemical use should be avoided within 25 feet of any area that holds or conveys surface water or stormwater.

Annual Reporting Requirements and Storm Facility Checklists

AS MENTIONED PREVIOUSLY, PRIVATE STORMWATER FACILITY OWNERS ARE REQUIRED BY PUYALLUP MUNICIPAL CODE TO SUBMIT A REPORT TO THE CITY OF PUYALLUP STORMWATER DEPARTMENT ANNUALLY, AND KEEP THOSE REPORTS ON HAND FOR UP TO 3 YEARS.

THE FOLLOWING ARE CHECK LISTS THAT WILL HELP THE HOME OWNER INSPECT AND MAINTAIN THE SPECIFIC STORMWATER FACILITIES ON THIS PROPERTY. THESE CHECKLISTS WILL NEED TO BE USED AND FILLED OUT BASED ON THE FREQUENCY OF THE REQUIRED MAINTENANCE, AS STATED ON THE CHECKLISTS. THE COMPLETED CHECKLISTS SHALL BE SUBMITTED ALONG WITH YOUR ANNUAL REPORT.

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Catch Basin

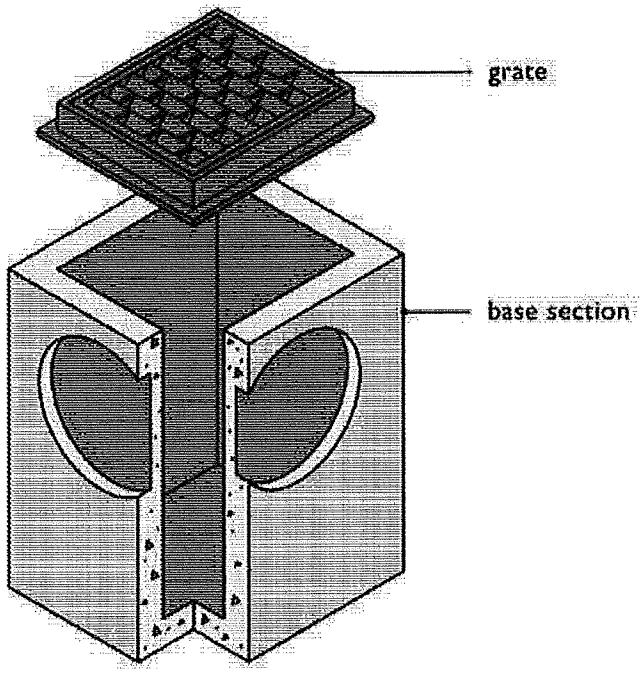
A catch basin is an underground concrete structure typically fitted with a slotted grate to collect stormwater runoff and route it through underground pipes. Catch basins can also be used as a junction in a pipe system and may have a solid lid. There are two types.

A Type 1 catch basin is a rectangular box with approximate dimensions of 3'x2'x5'. Type 1 catch basins are utilized when the connected conveyance pipes are less than 18 inches in diameter and the depth from the gate to the bottom of the pipe is less than 5 feet.

A Type 2 catch basin, also commonly referred to as a storm manhole, is listed separately under "Manhole" in this book.

Catch basins typically provide a storage volume (sump) below the outlet pipe to allow sediments and debris to settle out of the stormwater runoff. Some catch basins are also fitted with a spill control device (inverted elbow on outlet pipe) intended to contain large quantities of grease or debris.

Catch basins are frequently associated with all stormwater facilities.



Type I

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Key Operations and Maintenance Considerations

- The most common tool for cleaning catch basins is an industrial vacuum truck with a tank and vacuum hose (e.g. Vactor® truck) to remove sediment and debris from the sump.
- A catch basin may be an enclosed space where harmful chemicals and vapors can accumulate. Therefore, if the inspection and maintenance requires entering a catch basin, it should be conducted by an individual trained and certified to work in hazardous confined spaces.

Catch Basin			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
			Note: table spans multiple pages.
General	Trash and Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%.	No trash or debris located immediately in front of catch basin or on grate opening.
		Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe.	No trash or debris in the catch basin.
		Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height.	Inlet and outlet pipes free of trash or debris.
		Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No dead animals or vegetation present within the catch basin.
	Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the catch basin.
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch. (Intent is to make sure no material is running into basin.)	Top slab is free of holes and cracks.
		Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached.	Frame is sitting flush on the riser rings or top slab and firmly attached.
	Fractures or Cracks in	Maintenance person judges that structure is unsound.	Basin replaced or repaired to design standards.

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	Basin Walls/ Bottom	Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	Pipe is regrouted and secure at basin wall.
	Settlement/ Misalignment	Catch basin has settled more than 1 inch or has rotated more than 2 inches out of alignment.	Basin replaced or repaired to design standards.
	Vegetation Inhibiting System	Vegetation growing across and blocking more than 10% of the basin opening.	No vegetation blocking opening to basin.
		Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation or root growth present.
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. Sheen, obvious oil, or other contaminants present. • Identify and remove source	No contaminants or pollutants present.
Catch Basin Cover	Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.	Catch basin cover is closed.
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread. One or more bolts are missing.	Mechanism opens with proper tools. All bolts are seated and no bolts are missing. Cover is secure.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure (Intent is to keep cover from sealing off access to maintenance).	Cover can be removed by one maintenance person.
Metal Grates (If Applicable)	Grate Opening Unsafe	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.
Oil/Debris Trap (If Applicable)	Dislodged	Oil or debris trap is misaligned with or dislodged from the outlet pipe.	Trap is connected to and aligned with outlet pipe.

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Compost-Amended Soil

Naturally occurring (undisturbed) soil and vegetation provide important stormwater functions including: water infiltration; nutrient, sediment, and pollutant adsorption; sediment and pollutant biofiltration; water interflow storage and transmission; and pollutant decomposition.

Compaction from construction can reduce the soil's natural ability to provide these functions. Compost-amended soils are intended to replace these lost functions by establishing a minimum soil quality and depth in the post-development landscape.

Sufficient organic content is a key to soil quality. Soil organic matter can be attained through numerous amendments such as compost, composted woody material, biosolids, and forest product residuals. The full benefits of compost-amended soils are realized when desired soil media depths are maintained and soil compaction is minimized.

Key Operations and Maintenance Considerations

- Replenish soil media as needed (as a result of erosion) and address compacted, poorly draining soils.
- Site uses should protect vegetation and avoid soil compaction. Care should be taken to prevent compaction of soils via vehicular loads and/or excessive foot traffic, especially during wet conditions.
- The table below provides the recommended maintenance frequencies, standards, and procedures for compost-amended soils. The level of routine maintenance required and the frequency of corrective maintenance actions may increase for facilities prone to erosion due to site conditions such as steep slopes or topography tending to concentrate flows.

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Compost-Amended Soil			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
Soil Media	Soils Waterlogged or Not Infiltrating	Soils become waterlogged, or otherwise do not appear to be infiltrating.	Soils have been aerated or amended such that infiltration occurs and soils to not remain completely saturated, per design specifications.
	Erosion/Scouring	Areas of potential erosion are visible, such as gullies or scouring.	Any eroded areas have been repaired, and sources of erosion addressed to prevent further soil erosion.
Vegetation	Vegetation in Poor Health	Less than 75% of planted vegetation is healthy with a generally good appearance.	At least 75% of planted vegetation is healthy with generally good appearance. Any conditions found that were deleterious to plant health have been corrected where possible. Routine maintenance schedule has been updated as necessary to ensure continued plant health and satisfactory appearance.
	Poisonous Plants and Noxious Weeds	Any poisonous plants or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations.	No danger of poisonous vegetation where maintenance personnel or the public might normally be. Eradication of Class A weeds as required by State law. Control of other listed weeds as directed by local policies. Apply requirements of adopted IPM policy for the use of herbicides.
	Other Weeds Present	Other weeds (not listed on City/State noxious weed lists) are present on site.	Weeds have been removed per the routine maintenance schedule, following IPM protocols.

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Conveyance Pipe

Storm sewer pipes convey stormwater. Inlet and outlet stormwater pipes convey stormwater in, through, and out of stormwater facilities.

Pipes are built from many materials. Pipes are cleaned to remove sediment or blockages when problems are identified. Stormwater pipes must be clear of obstructions and breaks to prevent localized flooding. All stormwater pipes should be in proper working order and free of the possible defects listed below.

Key Operations and Maintenance Considerations

- The most common tool for cleaning stormwater conveyance pipes is a truck with a tank, vacuum hose, and a jet hose (Vactor® truck) to flush sediment and debris from the pipes.

Conveyance			
Drainag Syste Feature	Potenti Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
General	Contaminan ts and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants. Sheen, obvious oil, or other contaminants present. • Identify and remove source.	No contaminants or pollutants present.
	Obstructions 'Including Roots	Root enters or deforms pipe, reducing flow.	Roots have been removed from pipe (using mechanical methods; do not put root- dissolving chemicals in storm sewer pipes). If necessary, vegetation over the line removed.
	Sediment and Debris	Sediment depth is greater than 20% of pipe diameter.	Pipe has been cleaned and is free of sediment/ debris. (Upstream debris traps installed where applicable.)
	Debris Barrier Rack Missing or Trash	Stormwater pipes > than 18 inches need debris barrier.	Debris barrier present on all stormwater pipes 18 inches and greater.
	Damage to protective coating or corrosion	Protective coating is damaged; rust or corrosion is weakening the structural integrity of any part of pipe.	Pipe repaired or replaced.
	Damaged	Any dent that decreases the cross section area of pipe by more than 20% or is determined to have weakened structural integrity of the pipe.	Pipe repaired or replaced.

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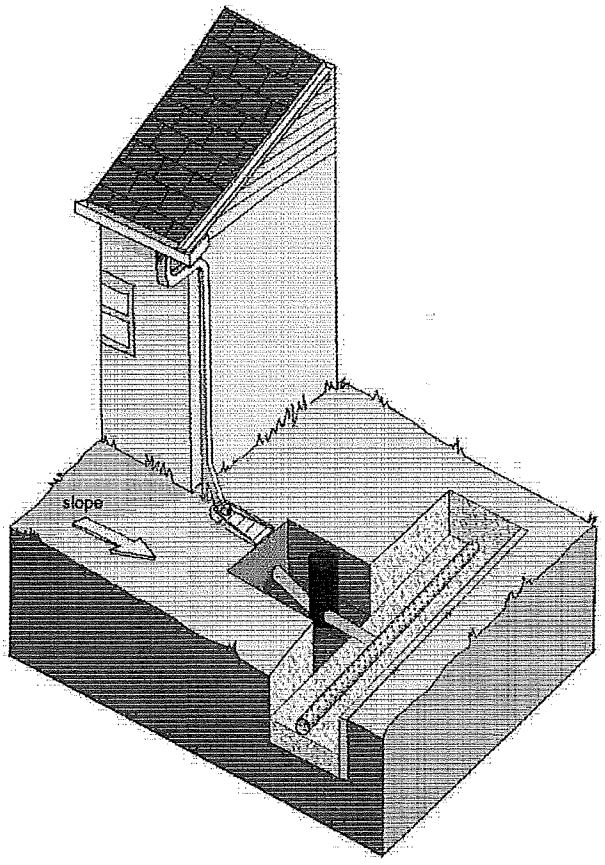
Downspout Dispersion Trench

Downspout dispersion trench systems consist of gravel-filled trenches, which serve to spread roof runoff over vegetated pervious areas.

Facility objects that are typically associated with downspout dispersion trench include:

- Dispersion trench: Gravel-filled trenches used to spread stormwater runoff from a downspout drain over a vegetated pervious area. Downspout drains are routed to a trench via a perforated or slotted pipe. The trench typically includes a notched grade board or other device to distribute flow equally along the length of the trench.
- Dispersal area: Stormwater is dispersed to an area vegetated with well-established lawn or pasture, landscaping with well-established groundcover, or native vegetation with natural groundcover. The required vegetated flow path is 50 feet for splash blocks and concentrated dispersion, 25 feet when using a dispersion trench and varies for sheet flow dispersion.



Schematic Downspout Dispersion using Dispersion Trench

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Key Operations and Maintenance Considerations

- For dispersion practices to be effective, the dispersion area must remain covered with dense, well-established vegetation. Site uses should protect vegetation and avoid compaction.
- A notched grade board at a dispersion trench must be maintained at a level grade to prevent concentrated flow. Downspout drains are directed to the trench via a storage sump that must be maintained to remove accumulated sediment.
- The groundcover for the extent of the flow in any dispersal area must be maintained to be dense enough to help disperse and infiltrate flows and to prevent erosion.
- The most common tools for cleaning these systems are hand tools to redistribute material disturbed by concentrated flows and a hose to flush downspouts.

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Downspout Dispersion Trench

Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
			Note: table spans multiple pages.
General	Pests	Signs of pest infestations (IPM protocol threshold(s) are exceeded), including rodent holes or mounds that disturb dispersion flow paths.	Pests are not present or engaged in activities that present a significant public health risk or compromise to the intended design function of the facility. Pests that have exceeded acceptable thresholds have been addressed using appropriate IPM measures.
Dispersion Trench	Concentrated Discharge	Visual evidence of water discharging at concentrated points along trench (normal condition is a "sheet flow" from edge of trench; intent is to prevent erosion damage).	Water is discharging as a sheet flow and any disruptive material (e.g. trash, debris, sediment accumulation) has been removed from trench surface.
	Surface of Trench	Accumulated trash, debris, or sediment on drain rock surface impedes sheet flow from facility. Vegetation/moss present on drain rock surface impedes sheet flow from facility.	Surface of drain rock is free of trash, debris, and sediment accumulation. Rock surface is open, free of vegetation buildup, and drains freely.
	Damage to or Trash/Sediment Accumulation Around Pipes	Accumulation of trash, debris, or sediment in roof drains, gutters, driveway drains, area drains, etc. Pipe from sump to trench or drywell has accumulated sediment or is plugged. Cracked, collapsed, broken, or misaligned drain pipes.	Trash, debris, and sediment is cleared from dispersion trench components (gutters, pipes, etc.). Pipes are free of damage or defects that hinder system from functioning according to design.
Storage Sump	Sediment in Sump	Sediment in the sump.	Sediment not present in sump. Sediment has also been removed from adjacent components (inlet/outlet pipes, etc.) to prevent immediate re-accumulation.
	Access Lid Not Working	Cannot be easily opened; buried; or cover missing.	Access lid present and functioning per design standards.
	Erosion	Erosion of the pond's side slopes and/or scouring of the pond bottom, which exceeds 6-inches, or where continued erosion is prevalent.	Slopes stabilized using proper erosion control measures and repair methods.
Rock Pad	General	Only one layer of rock exists above native soil in area 6 square feet or larger, or any exposure of native soil. Soil erosion in or adjacent to rock pad.	Rock pad has been repaired or replaced to meet design standards.

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Downspout Dispersion Trench			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
			Note: table spans multiple pages.
Dispersal Area	Erosion or Sediment Accumulation	Erosion (gullies/ rills) greater than 2 inches deep in dispersal area. Accumulated sediment or debris to extent that blocks or channelizes flow path.	Cause of erosion has been eliminated and the damaged area has been repaired and stabilized.
	Standing Water After Storm Event	Standing surface water in dispersion area remains for more than 3 days after the end of a storm event.	Standing water drains within 72 hours of a storm event.
	Transition Zone Erosion and Sizing	Adjacent soil erosion; uneven surface creating concentrated flow discharge; or less than two feet of width.	Transition zone meets design criteria and does not exhibit erosion or other evidence of concentrated flows.
	Poor Vegetation Cover	Poor vegetation cover such that erosion is occurring.	Vegetation has been properly watered and established to meet facility design specifications.
	Excessive Vegetation Cover	Vegetation inhibits dispersed flow along flow path.	Vegetation has been weeded, trimmed, pruned, or thinned to meet facility design criteria.

RANGE	TOWNSHIP	SECTION	QUARTER	028	21/33
04E-	20 N-	20	3		
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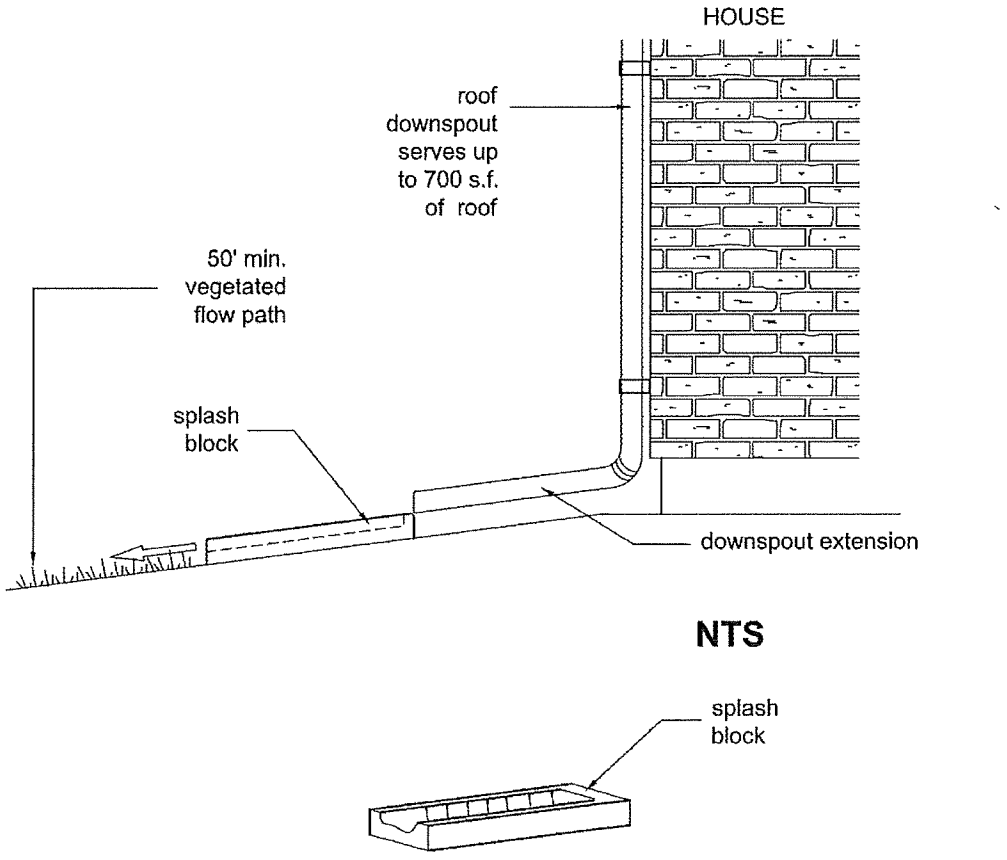
Downspout Splash Block

Downspout splash block dispersion systems consist of splash blocks, which serve to spread roof runoff over vegetated pervious areas.

Facility objects that are typically associated with downspout splash block include:

- Splash block
- Downspout extension
- Dispersal area: Stormwater is dispersed to an area vegetated with well-established lawn or pasture, landscaping with well-established groundcover, or native vegetation with natural groundcover. The required vegetated flow path is 50 feet for splash blocks and concentrated dispersion.



Downspout Dispersion using Splash Blocks

RANGE	TOWNSHIP	SECTION	QUARTER	028	22/33
04E-	20 N-	20	3		
DOCUMENT NUMBER				SERIAL NUMBER	PAGE NUMBER

Key Operations and Maintenance Considerations

- For dispersion practices to be effective, the dispersion area must remain covered with dense, well-established vegetation. Site uses should protect vegetation and avoid compaction.
- The groundcover for the extent of the flow in any dispersal area must be maintained to be dense enough to help disperse and infiltrate flows and to prevent erosion.
- The most common tools for cleaning these systems are hand tools to redistribute material disturbed by concentrated flows and a hose to flush downspouts.

Downspout Splash Block			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
			Note: table spans multiple pages.
General	Pests	Signs of pest infestations (IPM protocol threshold(s) are exceeded), including rodent holes or mounds that disturb dispersion flow paths.	Pests are not present or engaged in activities that present a significant public health risk or compromise to the intended design function of the facility. Pests that have exceeded acceptable thresholds have been addressed using appropriate IPM measures.
	Inspection Frequency	Annually and after large storms.	Rain harvesting equipment is functioning normally.
Splash Block	Water Directed Towards Building	Water is being directed towards building structure.	Water is directed away from foundations and other building structures.
	Downspout water misdirected	Water coming from the downspout is not discharging to the dispersal area.	Water is discharging normally to the dispersal area.
	Dislodged	Splash block moved from outlet of downspout.	Splash block correctly positioned to catch discharge from downspout.
	Trash and Debris	Trash and debris accumulated on the splash block.	Splash block site free of any trash or debris.
	Erosion	Water coming off the splash block causing erosion.	No erosion occurs from the splash block.
		Water disrupts soil media.	Water is dispersed into soil/mulch/plantings in a manner that does not create erosion or other issues due to concentrated flows.

RANGE	TOWNSHIP	SECTION	QUARTER	028	23/33
04E-	20 N-	20	3		
DOCUMENT NUMBER				SERIAL NUMBER	PAGE NUMBER

Dispersal Area	Erosion or Sediment Accumulation	Erosion (gullies/ rills) greater than 2 inches deep in dispersal area. Accumulated sediment or debris to extent that blocks or channelizes flow path.	Cause of erosion has been eliminated and the damaged area has been repaired and stabilized.
	Standing Water After Storm Event	Standing surface water in dispersion area remains for more than 3 days after the end of a storm event.	Standing water drains within 72 hours of a storm event.
	Transition Zone Erosion and Sizing	Adjacent soil erosion; uneven surface creating concentrated flow discharge; or less than two feet of width.	Transition zone meets design criteria and does not exhibit erosion or other evidence of concentrated flows.
	Poor Vegetation Cover	Poor vegetation cover such that erosion is occurring.	Vegetation has been properly watered and established to meet facility design specifications.
	Excessive Vegetation Cover	Vegetation inhibits dispersed flow along flow path.	Vegetation has been weeded, trimmed, pruned, or thinned to meet facility design criteria.

RANGE	TOWNSHIP	SECTION	QUARTER	028	24/33
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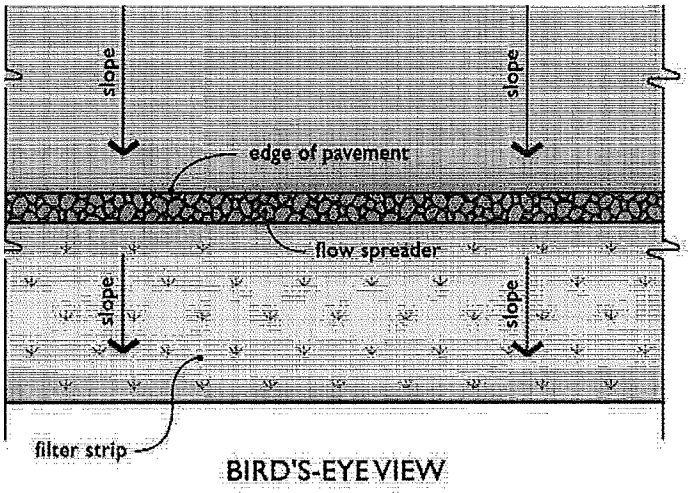
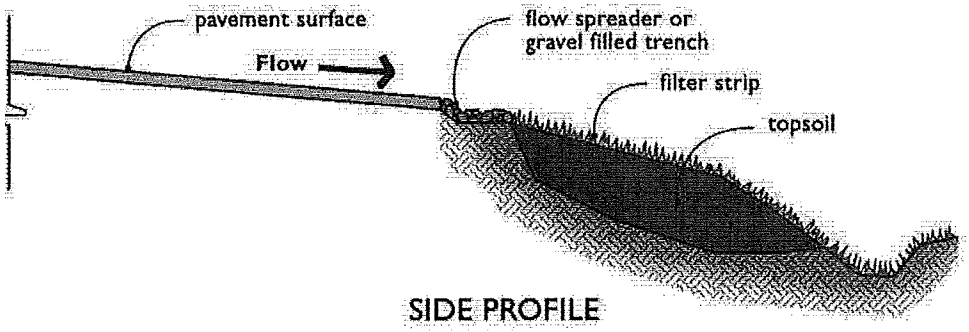
DOCUMENT NUMBER				SERIAL NUMBER	PAGE NUMBER

Filter Strip

A filter strip is a linear strip of grass that removes sediment and oils from stormwater by filtering it. Stormwater is treated as it runs across the filter. Usually, filter strips are placed along the edge of linear paved areas such as parking lots and roads. Where designed filter strips are installed, road shoulders should only be graded to maintain level flow off the road.



BIRD'S-EYE VIEW



SIDE PROFILE

RANGE	TOWNSHIP	SECTION	QUARTER	028	25/33
04E-	20 N-	20	3		
DOCUMENT NUMBER				SERIAL NUMBER	PAGE NUMBER

Key Operations and Maintenance Considerations

- For filtration to be effective, the filter strip area must remain covered with well-established vegetation. Site uses should protect vegetation and avoid compaction.
- Inspect the filter strip frequently, especially after intense rainfall events and runoff events of long duration. Small breaks in the sod and small erosion channels quickly become large problems.
- Inspect flow spreader area for clogging and remove built-up sediment.
- Minimize the development of erosion channels within the filter. Even small channels may allow much of the runoff from the field to bypass the filter. These areas should be repaired and reseeded immediately to help ensure proper flow of runoff through the filter.
- Reseed or interseed bare areas of the filter. Since it may be difficult to re-establish vegetation in an established filter strip, the use of mulch or sod can help to reduce some problems.
- Mow and remove cuttings as required to maintain moderate vegetation height. Mowing two to three times per year may be necessary. The vegetation should not be mowed closer than 6 inches. More frequent mowing may be needed to prevent thatch buildup and smothering of vegetation. To avoid destruction of wildlife nesting areas, delay mowing until after mid-July. Fall mowing of the filter no closer than 6 inches will provide adequate winter habitat for wildlife.
- Control trees, brush and noxious weeds in the filter using either mechanical means or approved IPM practices.
- The most common tools for maintenance of filter strips are mowers and hand tools to remove built up debris at the edge of the filter strip and restore evenly distributed flow across the strip.

RANGE	TOWNSHIP	SECTION	QUARTER	028	26/33
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Filter Strip			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Minimum Performance Standard
General	Sediment Accumulation on Grass	Sediment depth exceeds 2 inches.	Grass is free of accumulated sediment. Slope is even and water flows pass evenly through strip.
	Vegetation	Grass becomes excessively tall (greater than 10-inches); nuisance weeds and other vegetation starts to take over.	Vegetation is mowed to less than 3"-4" height. Nuisance vegetation has been removed such that flow is not impeded.
	Trash and Debris Accumulation	Trash and debris accumulated on the filter strip.	Filter strip is free of trash and debris.
	Erosion/Scouring	Eroded or scoured areas due to flow channelization, or higher flows.	Eroded/scoured areas have been repaired and facility filters stormwater per design function. (Ruts or bare areas less than 12 inches wide may be repaired filling damaged portion with crushed gravel; grass will creep in over the rock in time. For large bare areas [generally >12" wide], the filter strip should be re-graded and re-seeded. For smaller bare areas, over seed when bare spots are evident.)
	Flow Spreader	Flow spreader uneven or clogged so that flows are not uniformly distributed through entire filter width.	Spreader is level and clean so that flows are spread evenly over entire filter width.

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Grounds

Grounds (Landscaping)			
Drainage System Feature	**Potential Defect**	**Conditions When Maintenance Is Needed**	**Minimum Performance Standard**
Site	Trash or litter	Any trash and debris which exceed 1 cubic foot per 1,000 square feet (this is about equal to the amount of trash it would take to fill up one standard size office garbage can). In general, there should be no visual evidence of dumping.	Trash and debris cleared from site.
	Noxious weeds	Any noxious or nuisance vegetation which may constitute a hazard to County personnel or the public.	Noxious and nuisance vegetation removed according to applicable regulations. No danger of noxious vegetation where County personnel or the public might normally be.
	Contaminants and pollution	Any evidence of contaminants or pollution such as oil, gasoline, concrete slurries or paint.	Materials removed and disposed of according to applicable regulations. Source control BMPs implemented if appropriate. No contaminants present other than a surface oil film.
	Grass/groundcover	Grass or groundcover exceeds 18 inches in height.	Grass or groundcover mowed to a height no greater than 6 inches.
Trees and Shrubs	Hazard	Any tree or limb of a tree identified as having a potential to fall and cause property damage or threaten human life. A hazard tree identified by a qualified arborist must be removed as soon as possible.	No hazard trees in facility.
	Damaged	Limbs or parts of trees or shrubs that are split or broken which affect more than 25% of the total foliage of the tree or shrub.	Trees and shrubs with less than 5% of total foliage with split or broken limbs.
		Trees or shrubs that have been blown down or knocked over.	No blown down vegetation or knocked over vegetation. Trees or shrubs free of injury.
		Trees or shrubs which are not adequately supported or are leaning over, causing exposure of the roots.	Tree or shrub in place and adequately supported; dead or diseased trees removed.

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04E-	20 N-	20	3		
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Sheet Flow and Concentrated Flow Dispersion

Dispersion attenuates peak flows by slowing the runoff entering into the conveyance system, allowing some infiltration, and providing some water quality benefits. The following two types of dispersion systems are covered in this section:

- Sheet flow dispersion systems: Sheet flow dispersion is the simplest method of runoff control. This BMP can be used for any impervious or pervious surface that is graded to avoid concentrating flows. Because flows are already dispersed as they leave the surface, they need only traverse a narrow band of adjacent vegetation for effective attenuation and treatment.
- Concentrated dispersion systems: Dispersion of concentrated flows from driveways or other pavement through a vegetated pervious area.

Facility objects that are typically associated with sheet flow and concentrated dispersion include:

- Transition zone (sheet flow dispersion): A 2-foot-wide transition zone is typically included to discourage channeling between the edge of the impervious surface (or building eaves) and the downslope vegetation. This transition zone may consist of an extension of subgrade material (crushed rock), modular pavement, drain rock, or other material.
- Rock pad at discharge point (concentrated flow dispersion): A rock pad must be maintained to provide energy dissipation and initial dispersion at any point that a concentrated flow enters a dispersion area.
- Dispersal area: Stormwater is dispersed to an area vegetated with well-established lawn or pasture, landscaping with well-established groundcover, or native vegetation with natural groundcover.

Key Operations and Maintenance Considerations

- For dispersion practices to be effective, the dispersion area must remain covered with dense, well-established vegetation. Site uses should protect vegetation and avoid compaction.
- The groundcover for the extent of the flow in any dispersal area must be maintained to be dense enough to help disperse and infiltrate flows and to prevent erosion.
- The most common tools for cleaning these systems are hand tools to redistribute material disturbed by concentrated flows.

RANGE	TOWNSHIP	SECTION	QUARTER	028	29/33
04E-	20 N-	20	3		
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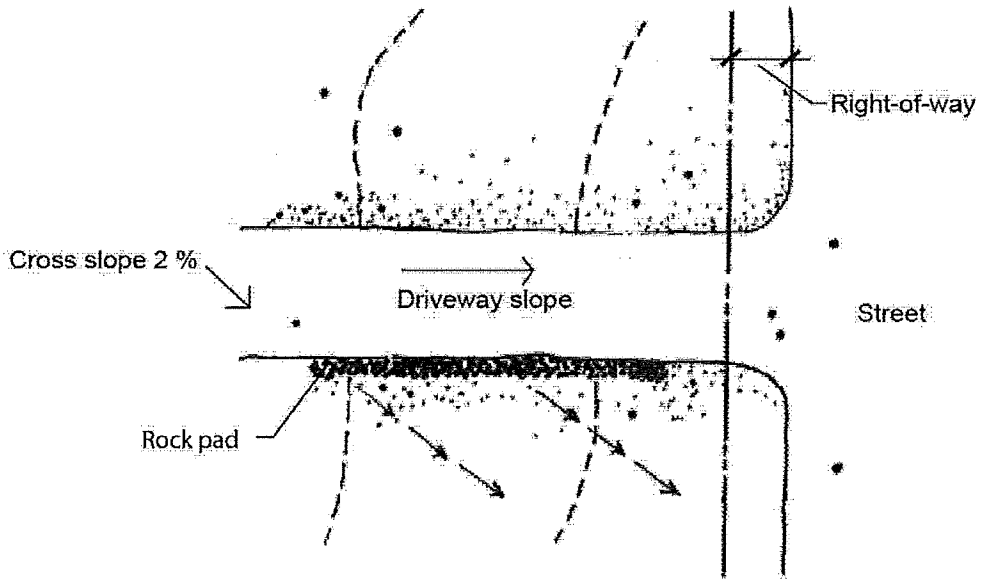
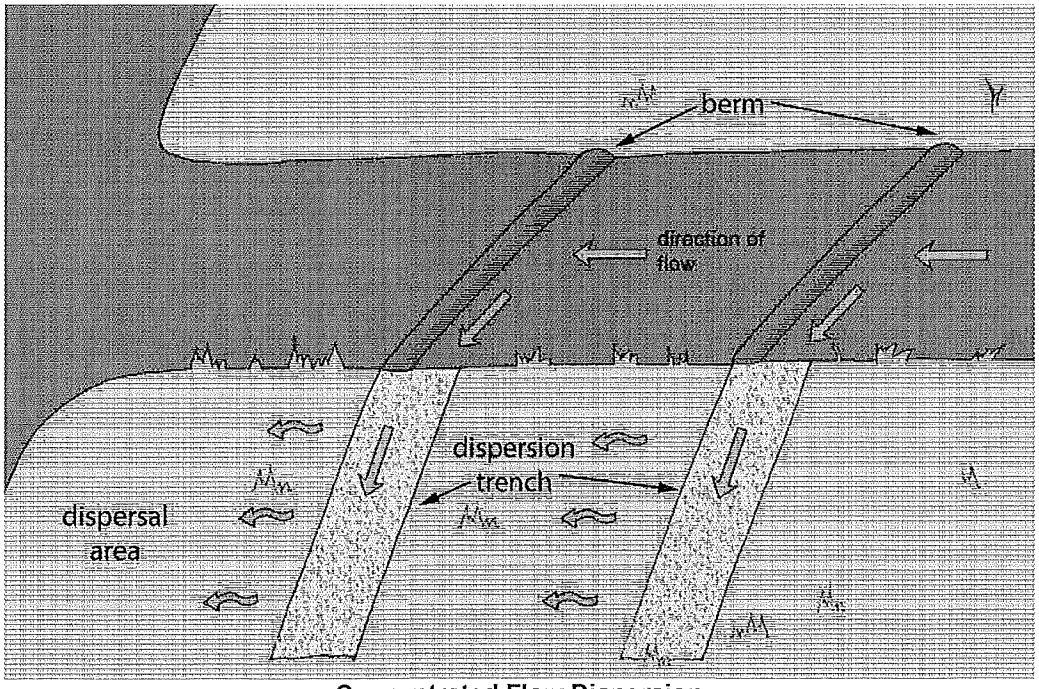


Sheet Flow Dispersion



Concentrated Flow Dispersion

RANGE	TOWNSHIP	SECTION	QUARTER	028	30/33
04E-	20 N-	20	3		
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Sheet Flow and Concentrated Flow Dispersion			
Drainage System Feature	**Potential Defect**	**Conditions When Maintenance Is Needed**	**Minimum Performance Standard**
General	Pests	Signs of pest infestations (IPM protocol threshold(s) are exceeded), including rodent holes or mounds that disturb dispersion flow paths.	Pests are not present or engaged in activities that present a significant public health risk or compromise to the intended design function of the facility. Pests that have exceeded acceptable thresholds have been addressed using appropriate IPM measures.
Dispersion Trench	Concentrated Discharge	Visual evidence of water discharging at concentrated points along trench (normal condition is a "sheet flow" from edge of trench; intent is to prevent erosion damage).	Water is discharging as a sheet flow and any disruptive material (e.g. trash, debris, sediment accumulation) has been removed from trench surface.
	Surface of Trench	Accumulated trash, debris, or sediment on drain rock surface impedes sheet flow from facility. Vegetation/moss present on drain rock surface impedes sheet flow from facility.	Surface of drain rock is free of trash, debris, and sediment accumulation. Rock surface is open, free of vegetation buildup, and drains freely.
	Damage to or Trash/Sediment Accumulation Around Pipes	Accumulation of trash, debris, or sediment in driveway drains and area drains, etc. Pipe from sump to trench has accumulated sediment or is plugged. Cracked, collapsed, broken, or misaligned drain pipes.	Trash, debris, and sediment is cleared from dispersion trench components Pipes are free of damage or defects that hinder system from functioning according to design.
Rock Pad	General	Only one layer of rock exists above native soil in area 6 square feet or larger, or any exposure of native soil. Soil erosion in or adjacent to rock pad.	Rock pad has been repaired or replaced to meet design standards.
Dispersal Area	Erosion or Sediment Accumulation	Erosion (gullies/ rills) greater than 2 inches deep in dispersal area. Accumulated sediment or debris to extent that blocks or channelizes flow path.	Cause of erosion has been eliminated and the damaged area has been repaired and stabilized.
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Exhibit C – Annual Inspection Report Form

Annual Inspection Report

City of Puyallup - Stormwater BMP Facilities Inspection and Maintenance Log

Facility Name _____

Address _____

Begin Date _____ End Date _____

Date	BMP ID#	BMP Facility Description	Inspected by:	Cause for Inspection	Exceptions Noted	Comments and Actions Taken

Instructions:
Record all inspections and maintenance for all treatment BMPs on this form. Use additional log sheets and/or attach extended comments or documentation as necessary. Submit a copy of the completed log with the Annual Independent Inspectors' Report to the City, and start a new log at that time.

BMP ID# — Always use ID# from the Operation and Maintenance Manual.
Inspected by — Note all inspections and maintenance on this form, including the required independent annual inspection.
Cause for inspection — Note if the inspection is routine, pre-rainy-season, post-storm, annual, or in response to a noted problem or complaint.
Exceptions noted — Note any condition that requires correction or indicates a need for maintenance.
Comments and actions taken — Describe any maintenance done and need for follow-up.

Return Form to: Stormwater Engineer/City of Puyallup
333 South Meridian
Puyallup, WA 98371

Annual Inspection Report

City of Puyallup - Stormwater BMP Facilities Inspection and Maintenance Log

Facility Name _____

Date	BMP ID#	BMP Facility Description	Inspected by:	Cause for Inspection	Exceptions Noted	Comments and Actions Taken

RANGE	TOWNSHIP	SECTION	QUARTER	DOCUMENT NUMBER	SERIAL NUMBER	PAGE NUMBER
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