



KING COUNTY, WASHINGTON SWM FEE PROTOCOLS

APRIL 2013
Revised 2020

Table of Contents

Section 1.0	SWM Fee Calculation.....	3
1.1	SWM Fee Rate Structure	3
1.2	What is Impervious Surface	4
Section 2.0	SWM Fee Rate Adjustments	7
2.1	General Requirements and Procedures For Rate Adjustments.....	8
2.2	Specific Review and Approval Procedures for Rate Adjustments	9
2.2.1	Senior or disabled persons Exemption.....	9
2.2.2	Corrective Rate Adjustment	9
2.2.3	Open Space Discount.....	10
2.2.4	Runoff Mitigation Discount	10
2.2.5	Public School District Discount.....	12
Section 3.0	Runoff Mitigation Discounts.....	13
3.1	Nonresidential Stormwater Controls Discount.....	13
3.1.1	Basic Flow Control Discount	15
3.1.2	Modern Flow Control Discount	15
3.1.3	Pervious Surface Absorption (PSA) Discount.....	16
3.1.4	Water Quality Facility Discount	16
3.1.5	NPDES Permit Discount.....	17
3.1.6	Technical Information Report (TIR).....	17
3.2	Residential Stormwater Facility Discount	19
3.3	Sixty-Five Ten Discount.....	20
3.3.1	Forested or Native Condition Area Restrictions and conditions	21
3.3.2	Infiltration Standards and BMPs.....	22
Section 4.0	Grant Program for Reducing the Stormwater Runoff Impacts of Developed Parcels.....	23
4.1	How the Grant Program works	23
4.1.1	Grant Program Process and Requirements	24
4.1.2	Plot Plan REQUIREMENTS	25
4.1.3	Prioritization of Grant Proposals.....	26
4.2	Retrofit Methods and Designs Eligible for Grant Funding.....	28
4.2.1	FLOW Control BMP Designs Detailed in the SWDM	28
4.2.2	Stormwater Facility Designs Detailed in the SWDM	28
4.2.3	Impervious Surface Reduction Designs .	28
4.2.4	Rain Barrel and cistern Design for Residential Parcels.....	32
Section 5.0	Definitions.....	35
Appendix A:	Declaration of Covenant for the Inspection and Maintenance of Stormwater Facilities/ BMPs for Purposes of a SWM Fee Rate Adjustment.....	39
Appendix B:	BMP Infiltration test	47

SWM FEE PROTOCOLS

This document presents King County's adopted procedures and standards for Surface Water Management (SWM) fee calculations, rate adjustments, discounts, and operation of a grant program to help residents reduce the stormwater runoff impacts of developed parcels. The SWM fee is an annual fee charged to the owners of developed parcels to pay for surface and storm water management services provided by King County's Surface Water Management Program as set forth in KCC 9.08. These SWM Fee Protocols are adopted by public rule under the procedures specified in KCC 2.98.

Surface water management is the implementation of regulations, capital improvements, facilities maintenance, and stewardship services for managing how rain – or surface water – drains on the land. Water drains through both natural and constructed drainage systems. Natural systems include streams, creeks, rivers, wetlands, and lakes. Constructed drainage systems include pipes, ditches, flow control facilities (e.g., detention ponds), and water quality treatment facilities (e.g., wetponds, grassed swales, etc.). Surface water management helps keep water clean, property safe, and our environment healthy by managing both systems. It serves the people, plants, animals, and fish of our region. Surface water management is also a requirement of the federal Clean Water Act and is integral to protection of Puget Sound salmon populations listed as threatened under the federal Endangered Species Act.

SWM fees pay for regulatory compliance activities, customer and technical assistance activities, capital improvement projects, facilities maintenance, and stewardship services all administered by King County's Department of Natural Resources and Parks. These services seek to manage the quantity and quality of surface waters and their effect on the health and safety of King County's waters and lands. King County is responsible for assessing the fee and providing surface water services only to property owners in unincorporated King County. Incorporated cities and towns are also subject to the same state and federal regulations and they assess their own fees to pay for program requirements.

The first half of the fee is due by April 30th and the second half by October 31 of each billed year. If late, a one-percent-per-month rate-of-interest penalty will be assessed. For further information on this, please phone (206) 477-4800 or email WLRCustomerService@kingcounty.gov and ask for a customer service representative in the Finance and Administration Section.

Document Organization

The information in this document is organized into the following five main sections:

Section 1.0, "SWM Fee Calculation" (p. 3)

Section 2.0, "SWM Fee Rate Adjustments" (p. 7)

Section 3.0, "Runoff Mitigation Discounts" (p. 13)

Section 4.0,

"Grant Program for Reducing the Stormwater Runoff Impacts of Developed Parcels " (p. 25)

Section 5.0, "Definitions" (p. 35)

SECTION 1.0 SWM FEE CALCULATION

The annual SWM fee is based on the relative contribution of increased surface and storm water runoff from a given parcel to the surface and storm water management system. The percentage of impervious surfaces on the parcel, the total parcel acreage, and any mitigating factors as provided in KCC 9.08.080 will be used to arrive at the relative contribution of increased surface and storm water runoff from the parcel to the surface and storm water management system. The relative contribution of increased surface and storm water runoff from each parcel determines that parcel's share of the overall SWM fee that is collected. The SWM fee revenue needs of the program are based upon all or any part, as determined by the King County Council, of the cost of surface and storm water management services or to pay or secure the payment of all or any portion of any issue of general obligation or revenue bonds issued in connection with the provision of those services.

1.1 SWM FEE RATE STRUCTURE

The Water and Land Resources Division of the Department of Natural Resources and Parks arrives at the annual SWM fee for each parcel within the service area using one of the following two approaches, whichever applies:

1. If the parcel is a residential parcel or a very lightly developed nonresidential parcel, a flat SWM fee rate is charged for the reasons set forth in KCC 9.08.060.
2. If the parcel is a light to very heavily developed non-residential parcel, a "per-acre" SWM fee rate is charged based on the parcel's impervious surface coverage. The Division classifies each such parcel into rate categories based on the percentage of impervious surface coverage, which is determined using land use codes or data collected from parcel investigations, or both. After assigning each parcel to the appropriate rate category, the annual SWM fee is calculated by multiplying the total acreage of the parcel times the rate for the category.

As of January 1, 2019, the following SWM fee rates have been set for developed properties within the SWM service area:

Rate Class	Rate Description	Percent Impervious Area	Annual Fee Rate
1	Residential (Single Family)	Varies	\$289.00/parcel
2	Very Light	≤ 10%	\$289.00/parcel
3	Light	> 10% and ≤ 20%	\$803.51/acre
4	Moderate	> 20% and ≤ 45%	\$1,504.04/acre
5	Moderately Heavy	> 45% and ≤ 65%	\$2,556.60/acre
6	Heavy	> 65% and ≤ 85%	\$3,575.37/acre
7	Very Heavy	> 85%	\$4,399.10/acre

The minimum annual SWM fee in any rate class is \$289.00 per parcel before any rate adjustments are applied (see Section 2.0).

The maximum annual SWM fee for parcels containing mobile home parks is \$289.00 times the number of mobile home spaces. In the event the mobile home park parcel has 3 or fewer mobile home spaces,

the annual SWM fee for the parcel is \$289.00. If the rate class of the parcel times the area of the parcel results in a lower SWM fee than maximum annual SWM fee for parcels containing mobile home parks, the lower fee is charged.

When a parcel with impervious surface is divided by the boundary of the service area and a portion of the parcel's impervious surface drains into the service area, the parcel shall be charged as otherwise provided in these protocols on the basis of the lands and impervious surfaces which drain into the service area. When the Director has determined that the impervious surface of a parcel, divided by the boundary of the service area, completely drains outside of the service area, the parcel is considered exempt from all SWM fee rates and charges.

The King County Council by ordinance may supplement or alter charges within specific basins and subbasins of the service area so as to charge properties or parcels of one basin or subbasin for improvements, studies or maintenance which the Council deems to provide service to or benefit the property owners of one or more basins or subbasins.

All parcels subject to SWM fees will be billed based on the parcel characteristics existing on November 1st of the year prior to the billing year. The *billing year* is the calendar year that the bills are sent.

1.2 WHAT IS IMPERVIOUS SURFACE

As explained in Section 1.1 above, each developed non-residential parcel is classified into rate categories based on the percentage of impervious surface coverage. This percentage of impervious surface coverage is determined by the Division using land use codes or data collected from parcel investigations, or both. In determining this coverage, the Division uses the definition of impervious surface found in KCC 9.08.010:

"Impervious surface" means either a hard surface area that either prevents or retards the entry of water into the soil mantle as it entered under natural conditions before development, or a hard surface area that causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions before development, or both. Common impervious surfaces include, but are not limited to, roofs, walkways, patios, driveways, parking lots, storage areas, areas that are paved, graveled or made of packed or oiled earthen materials or other surfaces which similarly impede the natural infiltration of surface and storm water. Open, uncovered flow control facilities shall not be considered as impervious surfaces.

In situations where application of the definition is subject to interpretation, the Division has authority to make such interpretation based on its engineering judgment and the guidelines contained in this section.

Based on this definition and Division interpretation of it, the following are examples/guidelines for what constitutes and does not constitute impervious surface:

1. Paved areas are considered impervious even if they are made of a permeable material (e.g., porous concrete, porous asphalt, or grassed modular grid pavement) as detailed in the King County Surface Water Design Manual. Properly maintained permeable pavements may qualify for a "Pervious Surface Absorption Discount" as described in Section 3.1.3.

2. Compacted gravel areas are considered impervious. The existence of grass or weeds growing in a gravel area does not convert it to pervious area¹.
3. Dirt (i.e., bare soil) compacted more than the surrounding native soil is considered impervious.
4. Landscape rock (pea gravel or round washed rock) that deforms when walked on or driven on is not considered impervious unless it is underlain by an impervious surface (such as compacted dirt, plastic, concrete, etc.).
5. Raised decks, coverings, or other structures that are slotted are considered pervious if they do not concentrate runoff at one end or the other and the slots are no wider than 12" on center. While the slotted structure is considered pervious, the ground underneath the structure needs to be evaluated to determine whether or not it is impervious.
6. Portable items, other than sheds and other structures, should not be included in the impervious area calculations unless the ground underneath them is considered impervious. Portable items can include, but are not limited to, such things as picnic tables, cars, stacked lumber, stored plastic, garbage dumpster, etc.
7. Vegetated roofs are considered impervious but may qualify for a "Pervious Surface Absorption Discount" as described in Section 3.1.3.
8. A surface that does not contribute to an increase in the rate or volume of surface and stormwater flow to the "surface and stormwater management system" is not considered impervious. An example would be a surface where surface water and stormwater flowing off the surface is discharged to a municipal sanitary sewer system. The key determinant for such a surface to be considered pervious is that the peak flow and volume that enters the "surface and storm water management system" must be less than or equal to the flow and volume from the surface in its natural state. This must be confirmed by a technical information report (TIR) showing that the rate and volume of runoff from the site meets these requirements. The TIR must be prepared by a licensed civil engineer in accordance with the procedures contained in the King County *Surface Water Design Manual* (SWDM) and submitted to the Division.

¹ In order to convert a compacted gravel area from impervious to pervious, it needs to be rototilled down to the depth of the native soil and then compacted no more than would be done to install grass, and it must not be subject to vehicular use.

SECTION 2.0 SWM FEE RATE ADJUSTMENTS

Any parcel owner billed for SWM fees may file a request for rate adjustment with the Division within three years of the date that the bill was sent for it to be considered. However, filing of such a request does not extend the deadline stated in the bill for payment of the fee. In addition, any adjustment in rate will be based on the parcel's characteristics as of November 1st of the year preceding the calendar year in which the rate adjustment is applied to the bill.

Requests for rate adjustment may be granted or approved by the Director (or the Division as delegated by the Director) under one or more of the following circumstances:

1. The parcel qualifies for a "**senior or disabled persons exemption**" because it is owned by and is the personal residence of a person or persons determined by the County Assessor as qualified for a senior or disabled persons exemption authorized under RCW 84.36.381. Parcels qualifying for this exemption are exempt from all SWM fee charges imposed in KCC 9.08.070.
2. The parcel is found by the Division to be subject to one or more of the following discrepancies requiring a "**corrective rate adjustment**" to the parcel's SWM fee:
 - The acreage of the parcel charged is in error.
 - The parcel is non-residential, and the actual impervious surface coverage of the parcel charged places it in a different rate category than the rate category assigned by the Division.
 - The SWM fee was not calculated in accordance with these protocols.

The amount of this adjustment will depend on the nature of the discrepancy and could result in either a decrease or increase in the parcel's SWM fee.

3. The parcel qualifies for an "**open space discount**" because it is a nonresidential parcel that meets the definition of *open space* in the Definitions Section 5.0. Parcels qualifying for this discount will be charged only for the area of impervious surface and at the rate which the parcel is classified under using the total parcel acreage.
4. The parcel is found by the Division to qualify for one of the following "**runoff mitigation discounts**" as described in Section 3.0:
 - Nonresidential Stormwater Controls Discount (see Section 3.1)
 - Residential Stormwater Facility Discount (see Section 3.2)
 - Sixty-Five Ten Discount (see Section 3.3)

The amount of this adjustment depends on the runoff mitigation discount applied based on the criteria for each discount detailed in Section 3.0. **Only one runoff mitigation discount may be applied** to a given parcel. If the parcel meets the criteria for more than one discount, the parcel owner (or designee) may choose which discount to apply.

5. The parcel is found by the Division to qualify for a "**public school district discount**" because it is owned or leased by a public school district that provides activities which directly benefit the County's surface water management program. The activities may include curriculum specific to the issues and problems of surface and storm water management and/or student activities in the community to expose students to the efforts required to restore, monitor, or enhance the surface and storm water management system. Pursuant to RCW 36.89.085, the amount of fee reduction associated with this discount shall be determined by the Director (or the Division as delegated by the Director) based upon the cost of the activities to the school district but not to exceed the value of the activity to the County's surface water management program. Determination of which activities qualify for this discount will be made by the Division. This discount will be granted only to school districts which provide programs/activities that have been evaluated by the Division. The discount

for qualifying programs/activities will be applied to any parcel in the SWM service area that is owned or leased by the school district, but only if all the following additional conditions are met:

- a) If the parcel is served by any **flow control facilities, water quality treatment facilities, or flow control best management practices (BMPs)** that were required by King County as part of a development permit/approval pursuant to KCC 9.04 and the King County *Surface Water Design Manual* (SWDM) or predecessor regulations, then the facilities/BMPs must be maintained in accordance with King County maintenance standards specified in the SWDM Appendix A for facilities and in Appendix C for flow control BMPs. The SWDM is available online at <http://www.kingcounty.gov/environment/waterandland/stormwater/documents/surface-water-design-manual.aspx>. Annual inspections of the facilities and BMPs will be performed to identify maintenance needs and verify that these needs are being met pursuant to the SWDM. These inspections will be performed by the Division or the Division will request the facility owner to perform the inspections using a checklist and information provided by the Division. Failure to comply with the Division's request for inspection or maintenance will constitute non-maintenance of the facilities or BMPs.
- b) Any **source control BMPs** applicable to the facilities or activities occurring on the parcel must be implemented pursuant to KCC 9.12 to prevent contaminants from entering stormwater runoff, surface water, or groundwater. Source control BMPs applicable to certain activities or facilities are detailed in the King County *Stormwater Pollution Prevention Manual* (SPPM), which is available online at <http://www.kingcounty.gov/environment/waterandland/stormwater/documents/pollution-prevention-manual.aspx>. If there are any questions about the application of source control BMPs, technical assistance is available by phoning (206) 477-4800 or emailing WLRCustomerService@kingcounty.gov.
- c) Any **violations of KCC Title 9** identified by the Division on the parcel must be corrected or a compliance plan for correction must be approved by the Division.

2.1 GENERAL REQUIREMENTS AND PROCEDURES FOR RATE ADJUSTMENTS

The following are general requirements and procedures applicable to all SWM fee rate adjustments:

1. The dollar amount of **debt service** on revenue or general obligation bonds issued to finance stormwater control facilities will not be reduced by the rate adjustments referred to above.
2. The parcel owner has the **burden of proving** that the rate adjustment sought should be granted.
3. **Decisions on requests for rate adjustments** will be made by the Water and Land Resources Division as delegated by the Director of the Department of Natural Resources and Parks. Such decisions will be based on information submitted by the applicant (parcel owner or designated agent of the parcel owner) and collected by the Division within 30 days of the adjustment request, except when additional information is needed. This additional information may entail a site assessment by the Division or collection of technical information by the applicant or both. The applicant will be notified in writing of the Division's decision. More specific review and approval procedures are outlined in Sections 2.2.1, 2.2.2, 2.2.3, 2.2.4, and 2.2.5 below.
4. If a rate adjustment is granted which reduces the charge for the **current calendar year or up to two prior calendar years**, the parcel owner will be refunded the amount overpaid in the current plus up to two prior years, depending on the calendar year in which the characteristics necessary for rate adjustment were existing as of November 1st.

5. If the Director (or the Division as delegated by the Director) finds that **a service charge bill has been undercharged**, then either an amended bill will be issued which reflects the increase in the service charge or the undercharged amount will be added to the next year's bill. This amended bill will be due and payable as required by KCC 9.08.100. The Division may include in the bill the amount undercharged for two previous billing years in addition to the current bill.
6. Rate adjustment decisions made by the Director (or the Division as delegated by the Director) are final unless, within 30 days of the date the decision was mailed, the applicant submits in writing to the Director a notice of **appeal** setting forth a brief statement of the grounds for appeal and requesting a hearing before the King County hearing examiner. The examiner's decision will be a final decision pursuant to KCC 20.24.080.

2.2 SPECIFIC REVIEW AND APPROVAL PROCEDURES FOR RATE ADJUSTMENTS

In addition to the general requirements and procedures noted in Section 2.1 above, each of the following types of rate adjustment has a different set of review and approval procedures:

- Senior or Disabled Persons Exemption, Section 2.2.1
- Corrective Rate Adjustment, Section 2.2.2
- Open Space Discount, Section 2.2.3
- Runoff Mitigation Discount, Section 2.2.4
- Public School District Discount, Section 2.2.5

2.2.1 SENIOR OR DISABLED PERSONS EXEMPTION

This exemption is applied automatically to any parcel that is determined by the County Assessor to qualify for a senior or disabled persons exemption authorized under RCW 84.36.381. If this exemption has not been applied automatically, please contact the Division at (206) 477-4800 or WLRCustomerService@kingcounty.gov and ask for a customer service representative in the Division's Finance and Administration Section.

2.2.2 CORRECTIVE RATE ADJUSTMENT

Any parcel owner, or their designee, who is concerned that their parcel's SWM fee is not correct may contact the Division to request an investigation of the basis for their SWM fee. This investigation will verify the accuracy of the information and methods used to calculate the SWM fee and may include a site visit to re-measure the parcel's impervious surface or evaluate other relevant characteristics. If a discrepancy is found, the Division will make the necessary adjustment to the SWM fee charged.

The following steps are necessary to pursue this adjustment:

1. The applicant (parcel owner or his or her designee) contacts the Division at (206) 477-4800 or WLRCustomerService@kingcounty.gov to request an investigation of the basis for SWM fee calculation. This investigation may require one or more site visits by Division staff. All necessary site visits will be arranged with the property owner or designee in advance of each visit.
2. Within 30 days of the applicant's request, the Division will either complete the investigation or notify the applicant of the date when the investigation can be completed based on current workload.

3. Upon completion of the investigation, the Division will contact the applicant and report one of the following determinations:
 - a) The basis for calculation of the SWM fee is incorrect and why, and a corrective adjustment of a particular amount will be applied. The Division will apply the corrective adjustment to the SWM fee charged for any calendar year in which the characteristics justifying the corrective adjustment were existing as of November 1st of the preceding calendar year. Any retroactive application of this adjustment will be limited to the current plus up to two prior calendar years as noted in No. 4 of Section 2.1.
 - b) The basis for calculation of the SWM fee is correct and therefore, no adjustment in annual fee will be made.

2.2.3 OPEN SPACE DISCOUNT

The open space discount applies to any nonresidential parcel that contains land classified for current use taxation under KCC 20.36 and RCW 84.34, or for which the development rights have been sold to King County under KCC 26.04. It also applies to any nonresidential parcel that contains land classified as open space, agricultural or timber land under criteria contained in KCC 20.36 and RCW 84.34. Parcels qualifying for this discount will be charged only for the area of impervious surface and at the rate which the parcel is classified under using the total parcel acreage.

The following steps are necessary to pursue this discount:

1. The applicant (parcel owner or his or her designee) contacts the Division at (206) 477-4800 or WLRCustomerService@kingcounty.gov to request an evaluation of the parcel for application of the open space discount.
2. Within 30 days of the applicant's request, the Division will either complete the evaluation or notify the applicant of the date when the evaluation can be completed based on current workload.
3. Upon completion of the evaluation, the Division will contact the applicant and report one of the following determinations:
 - a) The parcel is eligible for the discount based on the Division's determination that the parcel or a portion thereof meets the characteristics necessary for this discount. The Division will apply the discount to the SWM fee charged for any calendar year in which the characteristics necessary for the discount were existing as of November 1st of the preceding calendar year. Any retroactive application of this discount will be limited to the current plus up to two prior calendar years as noted in No. 4 of Section 2.1.
 - b) The parcel is not eligible for this discount and why.

2.2.4 RUNOFF MITIGATION DISCOUNT

In order for a parcel to start receiving one of the three "runoff mitigation discounts" described in Section 3.0 on an annual basis, an initial determination must be made by the Division that the parcel is eligible for the discount or elements of the discount that are not currently being credited (e.g., the stackable discount elements in Section 3.1). The purpose of this initial determination is to establish and document that the minimum characteristics necessary for discount are present and accounted for on the parcel. For the Nonresidential Stormwater Controls Discount, this means the stormwater control components eligible for discount are in place and fully functioning. For the Residential Stormwater Facility Discount, this means the flow control or water quality treatment facility eligible for discount is in place and fully functioning. For the Sixty-Five Ten Discount, this means the forested conditions and any required dispersion or infiltration measures are in place and fully functioning.

The process to initially determine if a parcel is eligible for one of the three available discounts or elements thereof involves the following steps (*note: a parcel cannot receive more than one of these*

three discounts; therefore, the following steps are not necessary for parcels that have previously received a facility discount unless the parcel owner wishes to switch discounts):

1. The applicant (parcel owner or his or her designee) may contact the Division's Stormwater Services Section at (206) 477-4800 or WLRCustomerService@kingcounty.gov to request a site assessment to determine eligibility for a rate adjustment discount. This assessment may require one or more site visits by Division staff. All necessary site visits will be arranged with the applicant in advance of each visit.
2. Within 30 days of the applicant's request, the Division will either complete the site assessment or notify the applicant of the date when the assessment can be completed based on current workload.
3. Upon completion of the site assessment, the Division will contact the applicant and report one of the following determinations:
 - a) The parcel is eligible for the discount based on the Division's determination that the minimum characteristics necessary for discount are in place. The first calendar year of eligibility will also be determined because the discount can be applied retroactively up to two calendar years prior to the current year (approval year) if the minimum characteristics for discount are determined to have been in place prior to the approval year. This will be the calendar year in which the Division finds that the characteristics necessary for the discount were existing as of November 1st of the preceding calendar year. The discount will be applied retroactively to the first calendar year of eligibility but for no more than two calendar years prior to the approval year. Upon receipt of the Division's notice of eligibility, the applicant will have 60 days to satisfy all other conditions required for application of the discount. Such conditions will be stated in the eligibility notice and may include the recording of a covenant and grant of easement allowing King County to do routine inspections of the parcel to verify maintenance of the minimum characteristics necessary for discount. Failure to satisfy these conditions within 60 days of the eligibility notice may result in the Division requiring the applicant to reapply for the discount. Applicants previously determined to be eligible for two years of retroactive discount should be aware that if reapplication occurs in the subsequent calendar year, they would lose one year's-worth of discount because of the two-year limit on applying discounts retroactively.
 - b) The parcel is not eligible for this discount and why.
 - c) The parcel is eligible for this discount if certain improvements, repairs, or other structural measures are implemented to the satisfaction of the Division. For example, the Division may require installation of a missing facility component or dispersion trench, etc.
 - d) Additional technical information is needed to make a determination of eligibility. For example, to determine eligibility for a Nonresidential Stormwater Controls Discount or Residential Stormwater Facility Discount, the Division may request that the applicant submit a technical information report (TIR) prepared by a licensed civil engineer, in accordance with the specifications for TIRs contained in the King County *Surface Water Design Manual* (SWDM). This TIR must include any information deemed necessary by the Division to show that the parcel meets the stormwater facility or BMP design standard found in the version of the SWDM in effect at the time the request for rate adjustment is received by the Division. If infiltration facilities or BMPs are involved, the Division may ask that the TIR include a soils report prepared by an onsite sewage designer or by a suitably trained person working under the supervision of a licensed civil engineer to verify infiltration rates and function. See Section 3.1.6 for more specifics on TIRs required to demonstrate eligibility for these discounts. To determine eligibility for a Sixty-Five Ten Discount, the Division may request that the applicant provide a topographical survey of the parcel or a portion of the parcel prepared by a licensed civil engineer or a registered land surveyor.
4. If additional technical information is requested, the applicant must submit the information within 60 calendar days from the date of the Division's request for information. Failure to meet this

- turnaround time may result in the Division requiring the applicant to reapply for the discount. If reapplication occurs in the subsequent calendar year, the applicant may lose one-year's worth of discount because of the two-year limit on applying discounts retroactively. If the additional requested information results in a determination that the parcel is eligible for discount, approval of the discount will be granted as described in Step 3.a) above. If the additional requested information results in the identification of improvements, repairs, or other structural measures necessary for eligibility, see Step 5 below.
5. If improvements, repairs, or other structural measures are identified as necessary for eligibility, these actions must be implemented to the Division's satisfaction and all other conditions required for discount must be met before approval is granted as described in Step 3.a) above.
 6. Once the parcel is approved for discount, the Division will do routine site inspections/spot checks or use inspection information by others to verify that all conditions required for application of the discount are in fact being met as specified in Sections 3.1, 3.2, and 3.3. Failure to meet these conditions could result in loss of the discount for any given year or years.

2.2.5 PUBLIC SCHOOL DISTRICT DISCOUNT

Any public school district wishing to receive this discount for a parcel or all parcels it owns or leases should contact the Division's Stormwater Services Section at (206) 477-4800 or WLRCustomerService@kingcounty.gov for more information.

In order for a public school district to receive this discount for all parcels it owns or leases, information must be submitted to the Division about the activities the district provides which directly benefit the County's surface water management program. These activities include curriculum specific to the issues and problems of surface and storm water management and/or student activities in the community to expose students to the efforts required to restore, monitor, or enhance the surface and storm water management system. The Division will evaluate the information submitted and determine if the activities qualify for the discount. If so, the Division will determine the amount of discount based on the cost of the activities to the school district and the value of the activities to the County's surface water management program.

Each year, the Division will send a letter to school districts with instructions describing the information needed to qualify for this discount and when the information is due. Within 30 days of receipt, the Division will evaluate the information submitted as described above or request any additional information or time needed to complete its evaluation. Before approving the discount, the Division will check that all other conditions necessary for discount are being met as specified in Section 2.0. If such conditions are not being met for one or more parcels owned or leased by the school district, the Division will notify the district of the corrective actions needed. Failure to implement the corrective actions or submit a correction plan approved by the Division will result in the district's discount not being applied to the non-compliant parcel or parcels.

SECTION 3.0 RUNOFF MITIGATION DISCOUNTS

This section describes the three "runoff mitigation discounts" allowed under SWM Fee Rate Adjustments, Section 2.0, and details the conditions, requirements, and technical specifications that must be met in order for a parcel to qualify for one of these discounts. Review and approval procedures for runoff mitigation discounts are detailed in Section 2.2.4.

3.1 NONRESIDENTIAL STORMWATER CONTROLS DISCOUNT

This discount is applicable only to nonresidential parcels and is a tiered system of stackable percentage discounts that can add up to a **maximum 90 percent discount**. It is intended to give credit for various levels or types of stormwater controls that mitigate the runoff from developed surfaces on the parcel. The stackable percentage discounts are as follows:

1. A maximum 20 percent discount is given for flow control facilities that meet any current or previous King County standard for design of such facilities. This discount is referred to as the "**basic flow control discount**," and any other qualifying discounts listed below are in addition to this discount.
2. A maximum 20 percent discount is given for flow control facilities that meet modern design standards, that is, standards adopted in the 1990 or later versions of the SWDM. Such facilities are typically four to ten times larger than those meeting pre-1990 design standards. This discount is in addition to the basic flow control facility discount above for a maximum possible discount of 40 percent for a modern flow control facility. The 40 percent value reflects the importance of flow control in protecting public safety and property from flooding and erosion and protecting streams and aquatic resources from erosive flows. This discount is referred to as the "**modern flow control discount**" and is in addition to any other qualifying discounts in this list.
3. A maximum 20 percent discount is given for County standard flow control BMPs and/or infiltration facilities that utilize existing pervious areas on the parcel (e.g., lawns, low areas, etc.) to absorb, retain, or disperse runoff onsite so its discharge to the surface water system is minimized. These types of controls encourage groundwater recharge and reduce the impacts of runoff volumes to streams and aquatic resources. What the County calls flow control BMPs are also referred to as "low impact development BMPs." This discount is referred to as the "**pervious surface absorption discount**" or "**PSA discount**" and is in addition to any other qualifying discounts in this list.
4. A maximum 20 percent discount is given for County standard water quality treatment facilities (or equivalent) that serve to remove pollutants from runoff prior to discharge to the surface water system or to groundwater. The "or equivalent" option applies only when impervious area runoff is managed under a state issued National Pollutant Discharge Elimination System (NPDES) stormwater permit that requires quarterly or more frequent monitoring of stormwater discharges and adherence to a site-specific stormwater pollution prevention plan. This discount is referred to as the "**water quality facility discount**" and is in addition to any other qualifying discounts in this list.
5. A maximum 10 percent discount is given to parcels in which stormwater discharges are regulated under an NPDES stormwater permit issued by the state. The discount recognizes the additional rigor in which surface and storm water runoff is required to be managed on a parcel with an NPDES permit. An NPDES permit requires ongoing monitoring and reporting of stormwater discharges and immediate correction of problems that are detected. Sites that are subject to an

NPDES permit also receive more frequent inspections. This discount is referred to as the "**NPDES permit discount**," and is in addition to any other qualifying discounts in this list.

The first four stackable discounts are prorated to the amount of the parcel's impervious surface that is served by the stormwater control eligible for discount. The amount of proration is as specified in Table 3.1.A below:

Percentage of Parcel's Impervious Surface Served	Discount Amount
4% TO <20%	4%
20% TO <30%	8%
30% TO <40%	12%
40% TO <50%	16%
50% TO 100%	20%

The **NPDES permit discount** of 10 percent is not prorated and will be applied if the majority of the parcel's impervious surface (greater than 50 percent) drains to the discharge point or points covered under the permit.

To qualify for a Nonresidential Stormwater Controls Discount, parcels must meet the following **general conditions**:

- a) The parcel must be served by one or more of the following stormwater controls in accordance with any additional conditions set forth for each control in the sections referenced below:
 - A basic flow control facility as detailed in Section 3.1.1
 - A modern flow control facility as detailed in Section 3.1.2
 - A pervious surface absorption (PSA) BMP as detailed in Section 3.1.3
 - A water quality treatment facility (or equivalent) as detailed in Section 3.1.4
 - An NPDES general stormwater permit as detailed in Section 3.1.5
- b) Any **flow control and water quality treatment facilities** identified in Condition a) above must be *maintained at the expense of the parcel owner*² to the King County maintenance standards specified in Appendix A of the SWDM if applicable, or other maintenance standards as approved by the Division. Any **pervious surface absorption BMPs** identified in Condition a) must also be maintained at the expense of the parcel owner in accordance with King County maintenance standards specified in Appendix A or Appendix C of the SWDM, whichever is applicable, or other maintenance standards as approved by the Division. Annual inspections of the facilities and BMPs will be performed to identify maintenance needs and verify that these needs are being met pursuant to the SWDM or other Division-approved maintenance standards. These inspections will be performed by the Division (or for the Division by another County agency) or the Division will request the parcel owner to perform the inspections using a checklist and information provided by the Division. Failure to comply with the Division's request for inspection or maintenance will constitute non-maintenance of the facilities or BMPs.

² *Maintained at the expense of the parcel owner* means that maintenance responsibility for the facility lies with the parcel owner or is shared with other owners of parcels served by the same facility. Any facility for which King County has maintenance responsibility cannot be used to qualify for this discount. This means that all residential parcels of subdivisions in which the parcels are collectively served by a King County maintained facility are not eligible for this discount.

- c) Any **source control BMPs** applicable to the facilities or activities occurring on the parcel must be implemented pursuant to KCC 9.12 to prevent contaminants from entering stormwater runoff, surface water, or groundwater. Source control BMPs applicable to business and residential activities or facilities are detailed in the King County SPPM. If there are any questions about the application of source control BMPs to business or residential activities or facilities, technical assistance is available by phoning (206) 477-4800 or emailing WLRCustomerService@kingcounty.gov.
- d) Any **violations of KCC Title 9** identified by the Division on the parcel must be corrected or a compliance plan for correction must be approved by the Division.
- e) A "**declaration of covenant and grant of easement**" granting King County right of access to the parcel for inspection purposes must be recorded with the King County Recorder's Office or its successor agency, or the owner must provide a grant of access in a different form as approved by the Division. A "declaration of covenant and grant of easement form" can be found in Appendix A of these protocols.

3.1.1 BASIC FLOW CONTROL DISCOUNT

This stackable discount is applicable if at least 4% of the parcel's impervious surface is served by one or more flow control facilities that were required by King County as part of a development permit/approval pursuant to KCC 9.04 and the SWDM or predecessor regulations.

This stackable discount is a **maximum of 20% which is prorated per Table 3.1.A** based on the percentage of the parcel's impervious surface served by basic flow control facilities (or facility). For example, if 22% of the parcel's impervious surface is served, then the discount amount for this stormwater control is 8%. If 55% of the parcel's impervious surface is served, then the discount amount is the full 20% possible.

3.1.2 MODERN FLOW CONTROL DISCOUNT

This stackable discount is applicable if at least 4% of the parcel's impervious surface is served by one or more flow control facilities that meet one of the following two conditions:

- a) The facilities (or facility) were required by King County as part of a development permit/approval and were designed per the 1990 or later adopted versions of the SWDM, OR
- b) The facilities (or facility) were not required by King County as part of a development permit/approval but can be demonstrated by the parcel owner to provide flow control consistent with the *site-specific need*³ and *performance standards*⁴ for such facilities as set forth in the current SWDM. To demonstrate this, a TIR prepared by a licensed civil engineer, in accordance with the specifications for TIRs contained in the SWDM, must be submitted to the Division. This TIR must include any information deemed necessary by the Division to show that the facility has maintenance access and meets the flow control standard found in the version of the SWDM in effect at the time the request for rate adjustment is received by the Division (see Section 3.1.6 for more specifics on TIRs required to demonstrate eligibility with discounts).

This stackable discount is a **maximum of 20%, which is prorated per Table 3.1.A** based on the percentage of the parcel's impervious surface served by modern flow control facilities (or facility). Note that modern flow control facilities also qualify for the basic flow control discount detailed in

³ *Site-specific need* means that if the facility did not exist, there would be an unacceptable increase in developed area runoff quantity as set forth in KCC 9.04 and the SWDM. In other words, if the parcel were to be developed today and found to be exempt from the facility requirement, then there is no *site-specific need* for the facility.

⁴ *Site-specific performance standard* means the flow control facility peak/duration-matching discharge criteria specified for the parcel based on its location and site characteristics.

Section 3.1.1. Therefore, the impervious surface served by modern flow control facilities also counts as impervious surface served by basic flow control facilities.

3.1.3 PERVIOUS SURFACE ABSORPTION (PSA) DISCOUNT

This stackable discount is applicable if at least 4% of the parcel's impervious surface is served by one or more infiltration facilities and/or flow control BMPs that meet one of the following two conditions:

- a) The infiltration facilities (or facility) and/or flow control BMPs were required by King County as part of a development permit/approval pursuant to KCC 9.04 and the SWDM, OR
- b) The infiltration facilities (or facility) and/or flow control BMPs were not required by King County as part of a development permit/approval but can be demonstrated by the parcel owner to either meet the design specifications for such facilities and BMPs set forth in the current SWDM (i.e., the SWDM in effect at the time the request for rate adjustment is received by the Division) or perform in a manner equivalent to such facilities and BMPs as approved by the Division. The design specifications for infiltration facilities are detailed in Chapter 5 of the SWDM and the specifications for flow control BMPs are detailed in Appendix C. To demonstrate compliance or equivalence, the Division may require submittal of a TIR prepared by a licensed civil engineer in accordance with the specifications for TIRs contained in the SWDM (see Section 3.1.6 below for more specifics on TIRs). Alternatively, the Division may require the parcel owner to provide certain technical information such as a soils report prepared by an onsite sewage designer or by a suitably trained person working under the supervision of a licensed civil engineer to verify infiltration rates.

This stackable discount is a **maximum of 20% which is prorated per Table 3.1.A** based on the percentage of the parcel's impervious surface served by the infiltration facilities (or facility) and/or flow control BMPs.

3.1.4 WATER QUALITY FACILITY DISCOUNT

This stackable discount is applicable if at least 4% of the parcel's impervious surface is served by one or more water quality treatment facilities that meet one of the following two conditions:

- a) The facilities (or facility) were required by King County as part of a development permit/approval pursuant to KCC 9.04 and the SWDM, OR
- b) The facilities (or facility) were not required by King County as part of a development permit/approval but can be demonstrated by the parcel owner to provide water quality treatment consistent with the *site-specific need*⁵ and *performance standards*⁶ for such facilities as set forth in the current SWDM. To demonstrate this, a TIR prepared by a licensed civil engineer, in accordance with the specifications for TIRs contained in the SWDM, must be submitted to the Division. This TIR must include any information deemed necessary by the Division to show that the facility has maintenance access and meets the treatment standard found in the version of the SWDM in effect at the time the request for rate adjustment is received by the Division (see Section 3.1.6 for more specifics on TIRs required to demonstrate eligibility for this discount).

This stackable discount is a **maximum of 20% which is prorated per Table 3.1.A** based on the percentage of the parcel's impervious surface served by water quality treatment facilities (or facility).

⁵ *Site-specific need* means that if the facility did not exist, there would be an unacceptable increase in developed area pollution as set forth in KCC Chapter 9.04 and the SWDM. In other words, if the parcel were to be developed today and found to be exempt from the facility requirement, then there is no *site-specific need* for the facility.

⁶ *Site-specific performance standard* means the water quality treatment standard specified for the parcel based on its location and site characteristics.

Or Equivalent Option

In the **absence of standard water quality treatment facilities**, this stackable discount may still be applied if the runoff from at least 4% of the parcel's impervious surface is managed under a NPDES stormwater permit issued by the state Department of Ecology and the site is in full compliance with all permit requirements for protecting water quality. For the runoff to be considered managed under a stormwater permit, there must be a stormwater pollution prevention plan (SWPPP) designed specifically for the site and the site's stormwater discharges must be monitored quarterly or more frequently as required by the permit.

To initially qualify for this discount option, a copy of the site's latest SWPPP (text and maps only) must be provided to the Division along with the state's permit number. Initially and on an annual basis, the Division will use one or more of the following methods to determine the site's compliance with the permit: (1) review state Ecology's Permit and Reporting Information System (PARIS), (2) review inspection reports by Ecology or the King County Department of Permitting and Environmental Review (DPER), and/or (3) perform its own inspection. Any noncompliance issues identified by the Division will be documented in a correction letter sent to the property owner. To receive the discount in any calendar year, the corrections noted in the letter must be made within 45 days of receipt unless otherwise negotiated with the Division.

This "or equivalent discount option" is a **maximum of 20% which is prorated per Table 3.1.A** based on the percentage of the parcel's impervious surface from which runoff is managed under an NPDES stormwater permit as described above.

3.1.5 NPDES PERMIT DISCOUNT

This stackable discount is applicable if runoff from most of the parcel's impervious surface (greater than 50%) is managed under an NPDES stormwater permit issued by the state Department of Ecology for ongoing operations at the site. For the runoff to be considered managed under a stormwater permit, there must be a SWPPP designed specifically for the site and the site's stormwater discharges must be monitored quarterly or more frequently as required by the permit.

To initially qualify for this discount, a copy of the site's latest SWPPP (text and maps only) must be provided to the Division along with the state's permit number. Initially and on an annual basis, the Division will use one or more of the following methods to determine the site's compliance with the permit: (1) review state Ecology's PARIS reporting system, (2) review inspection reports by Ecology or King County DPER, and/or (3) perform its own inspection. Any noncompliance issues identified by the Division will be documented in a correction letter sent to the property owner. To receive the discount in any calendar year, the corrections noted in the letter must be made within 45 days of receipt unless otherwise negotiated with the Division.

This discount is a **maximum of 10% and is not prorated** like the other stackable discounts.

3.1.6 TECHNICAL INFORMATION REPORT (TIR)

This report is usually required if a parcel owner is requesting a runoff mitigation discount for a stormwater control facility or BMP that was **not** required by the County when the parcel was developed or redeveloped.

The TIR must contain all engineering plans, drawings, field information, tests, and calculations deemed necessary by the Division to demonstrate that the stormwater control facility or BMP meets the flow control standard, water quality treatment standard, or flow control BMP standard, whichever is applicable, found in the version of the SWDM in effect at the time the request for rate adjustment is received by the Division.

As specified in Section 2.3.1.1 of the SWDM, the TIR must be stamped and dated by a licensed civil engineer registered in the State of Washington and must contain the following **ten sections**, preceded

by a table of contents:

1. Project Overview
2. Conditions and Requirements Summary
3. Offsite Analysis
4. Flow Control and Water Quality Facility Analysis and Design
5. Conveyance System Analysis and Design
6. Special Reports and Studies
7. Other Permits
8. Erosion and Sediment Control Analysis and Design
9. Bond Quantities, Facility Summaries, and Declaration of Covenant and Grant of Easement
10. Operations and Maintenance Manual.

The content of each of these sections is specified in the SWDM, Section 2.3.1.1. **Every TIR must contain each of these sections.** However, if a section does not apply, the engineer may simply mark "N/A" with a brief explanation. This standardized format allows a quicker, more efficient review of the information required to grant this discount.

3.2 RESIDENTIAL STORMWATER FACILITY DISCOUNT

This discount is applicable only to residential parcels and is a **maximum 50 percent discount**. It is intended to give credit for a standard flow control facility or water quality treatment facility that serves only the residential parcel and is maintained at the expense of the parcel owner. This discount is applicable to any residential parcel that meets all of the following conditions:

1. The parcel is served by one or more **flow control or water quality treatment facilities** that are maintained at the expense of the parcel owner and meet one of the following two conditions:
 - a) The facilities (or facility) were required by King County as part of a development permit/approval pursuant to KCC 9.04 and the SWDM or predecessor regulations and provide flow control or water quality treatment of at least 50% of the parcel's developed area runoff, OR
 - b) The facilities (or facility) were not required by King County pursuant to KCC 9.04 and the SWDM but can be demonstrated by the parcel owner to provide flow control or water quality treatment of at least 50% of the parcel's developed area runoff consistent with the site-specific need⁷ and performance standards⁸ for such facilities as set forth in KCC 9.04 and the SWDM. To demonstrate this, a TIR prepared by a licensed civil engineer, in accordance with the specifications for TIRs contained in the SWDM, must be submitted to the Division. This TIR must include any information deemed necessary by the Division to show that the facility has maintenance access and meets the flow control standard or water quality treatment standard found in the version of the SWDM in effect at the time the request for rate adjustment is received by the Division (see Section 3.1.6 above for more specifics on TIRs required to demonstrate eligibility for this discount).
2. All flow control and water quality treatment facilities identified in Condition 1 above must be **maintained at the expense of the parcel owner to the King County maintenance standards** specified in Appendix A of the SWDM if applicable, or other maintenance standards as approved by the Division. The Division will perform routine inspections to identify maintenance needs and spot checks to verify that these needs are being met pursuant to Appendix A of the SWDM or other Division-approved maintenance standards.
3. Any **source control BMPs** applicable to the facilities or activities occurring on the parcel must be implemented pursuant to KCC 9.12 to prevent contaminants from entering stormwater runoff, surface water, or groundwater. Source control BMPs applicable to business and residential activities or facilities are detailed in the King County SPPM. If there are any questions about the application of source control BMPs, technical assistance is available by phoning (206) 477-4800 or emailing WLRCustomerService@kingcounty.gov.
4. Any violations of KCC Title 9 identified by the Division on the parcel must be corrected or a compliance plan for correction must be approved by the Division.
5. A "**declaration of covenant and grant of easement**" granting King County right of access to the parcel for inspection purposes must be recorded with the King County Recorder's Office or its successor agency, or the owner must provide a grant of access in a different form as approved by the Division. A "declaration of covenant and grant of easement form" can be found in Appendix A of these protocols.

⁷ *Site-specific need* means that if the facility did not exist, there would be an unacceptable increase in developed area runoff quantity or pollution as set forth in KCC 9.04 and the SWDM. In other words, if the parcel were to be developed today and found to be exempt from the facility requirement, then there is no *site-specific need* for the facility.

⁸ *Site-specific performance standard* means the flow control facility peak/duration-matching discharge criteria or the water quality treatment facility pollutant-removal goal specified for the parcel based on its location and site characteristics.

3.3 SIXTY-FIVE TEN DISCOUNT

This discount is applicable to any residential or nonresidential parcel that is not receiving one of the other two runoff mitigation discounts. Qualifying **residential parcels receive a 50% discount** while **nonresidential parcels receive an 80% discount**. The sixty-five ten discount recognizes the benefit of retaining at least 65 percent of a parcel in a forested or otherwise native condition (i.e., undeveloped natural condition) and minimizing the effect of impervious surface to that of a parcel that is 10 percent or less impervious using flow dispersion or infiltration techniques. Only parcels in rate classes 1, 2, and 3 are able to qualify for this discount.

To qualify for this discount, all of the following conditions must be met:

1. At least **65% of the parcel is in a forested or native condition**, or 65% or more of the parcel is set aside as forested or native-condition open space by a covenant, tract, or easement. See Section 3.3.1 for more information on forested area/open space restrictions and conditions.
2. The parcel's **effective impervious area (EIA)** as defined in these protocols is **no more than 10%** of the parcel area. *Note that parcels in the "very light" rate class already meet this condition by virtue of being no more than 10% impervious.* For the purposes of applying this limit to parcels in the "light" rate class or "residential" rate class, EIA includes all impervious surface area on the parcel except those portions which meet one of the following three conditions:
 - a) The impervious surface runoff (from an impervious area no larger than 10% of the parcel area) is "fully dispersed" according to the "full dispersion" BMPs detailed in Appendix C, Section C.2.1 of the SWDM, OR
 - b) The impervious surface runoff is fully and reliably infiltrated according to the infiltration standards and BMPs in the SWDM (see Section 3.3.2 for more information), OR
 - c) The impervious surface runoff is managed in an alternative way approved by the Division that effectively mitigates all of the hydrologic effects of the impervious surface (i.e., increased runoff peaks, frequencies, volumes, and flashiness, and decreased groundwater recharge).
3. Any **source control BMPs** applicable to the facilities or activities occurring on the parcel must be implemented pursuant to KCC 9.12 to prevent contaminants from entering stormwater runoff, surface water, or groundwater. Source control BMPs applicable to business and residential activities or facilities are detailed in the King County SPPM. If there are any questions about the application of source control BMPs, technical assistance is available by phoning (206) 477-4800 or emailing WLRCustomerService@kingcounty.gov.
4. Any **violations of KCC Title 9** identified by the Division on the parcel must be corrected or a compliance plan for correction must be approved by the Division.
5. A "**declaration of covenant and grant of easement**" granting King County right of access to the parcel for inspection purposes must be recorded with the King County Recorder's Office or its successor agency, or the owner must provide a grant of access in a different form as approved by the Division. A "declaration of covenant and grant of easement form" can be found in Appendix A of these protocols.

3.3.1 FORESTED OR NATIVE CONDITION AREA RESTRICTIONS AND CONDITIONS

The following restrictions and conditions apply to the parcel's forested or native condition area used to qualify for the Sixty-Five Ten Discount:

1. The 65% forested or native condition area need not be set aside in an open space covenant, tract, or easement. However, the Division will perform routine inspections or reviews of aerial photos to verify that at least 65% of the parcel is kept in an undisturbed forested or native condition, except as allowed in Nos. 4, 5, and 6 below.
2. On parcels where a previous development permit required 65% of the parcel to be set aside as open space through a covenant, tract, or easement, compliance with the restrictions and conditions of that covenant, tract, or easement is required in order to qualify for the Sixty-Five Ten Discount. The principal restriction on open space areas is the prohibition of removing vegetation and trees.
3. The 65% forested or native condition area may include sensitive areas such as steep slopes and their buffers, wetlands and their buffers, and streams and their buffers. However, only the *unsubmerged portion*⁹ of these sensitive areas may be counted towards meeting the minimum requirements for full dispersion in Section C.2.1 of the SWDM. For sensitive areas designated under KCC 21A, allowable uses shall be limited to those specified in KCC 21A.24 which are also consistent with No. 5 below.
4. The 65% forested or native condition area may contain utilities and utility easements, including stormwater flow dispersion devices.
5. The 65% forested or native condition area may be used for passive recreation and related facilities, including pedestrian and bicycle trails, nature viewing areas, fishing and camping areas, and other similar activities that do not require permanent structures, provided that cleared areas and areas of compacted soil associated with these areas and facilities do not exceed 8% of the 65% forested or native condition area. All remaining portions of the area must be kept in an undisturbed condition, except as allowed in Nos. 4 and 5 above.
6. Except as stated above, if any portion of the 65% area is changed to eliminate the hydrologic benefits of the area in its natural state, except as allowed in Nos. 4 and 5 above, the Sixty-Five Ten Discount will cease to be applicable to the parcel until such time as a restoration plan is approved by the Division and is confirmed to be successfully underway in implementation.
7. Parcel owners who wish to qualify for the Sixty-Five Ten Discount on parcels less than 65% forested or native, must install Division-approved "native vegetated landscape" as needed to meet the 65% requirement. For more information on native vegetated landscape, see Section 4.2.3.2 or call the Division's Stormwater Services Section at (206) 477-4800 or WLRCustomerService@kingcounty.gov.
8. Forested or native condition open space set aside by covenant, easement, or tract may be eligible for tax benefits through the *Public Benefit Rating System*¹⁰ program. Parcel owners may choose to develop a long-term Forest Management Plan, which may qualify for additional tax relief under the Public Benefit Rating System. The Forest Management Plan should require reforestation of any open space areas that have been previously cleared.

⁹ *Unsubmerged portion* means the portion outside the ordinary high water line of streams, lakes, and wetlands.

¹⁰ The *Public Benefit Rating System* provides tax credit for properties which preserve four acres or more of contiguous open space in rural areas. Additional credits are granted under the forested open space category, provided a Forest Management Plan is developed which, for the purpose of these requirements, shall maintain the open space in a fully forested condition.

3.3.2 INFILTRATION STANDARDS AND BMPS

Any impervious surface from which the runoff is "fully and reliably" infiltrated is considered to be non-effective impervious surface for the purposes of applying the Sixty-Five Ten Discount. "Fully infiltrated" means all the runoff from nearly all storm events is soaked into the ground. "Reliably infiltrated" means that soil conditions are favorable enough to assure that the device used to soak water into the ground (e.g., infiltration trench, drywell, etc.) will perform as expected for a reasonable number of years before having to be replaced. The majority of soil in King County is underlain by a compacted layer of soil (i.e., glacial till) which severely limits soaking capacity and makes full infiltration impracticable, cost-prohibitive, unreliable, or all three.

In order for an impervious area to be considered non-effective impervious surface, its runoff must be directed to an infiltration facility or BMP required by a previous development permit pursuant to KCC 9.04 and the SWDM, or demonstrated to be consistent with the design standards and specifications for such facilities and BMPs in the SWDM. The infiltration facility or BMP must also be maintained at the parcel owner's expense to the King County maintenance standards specified in Appendix A of the SWDM if applicable, or other maintenance standards as approved by the Division. The Division will perform routine inspections and/or spot checks to identify maintenance needs and verify that these needs are being met pursuant to Appendix A of the SWDM or other Division-approved maintenance standards.

If infiltration facilities or BMPs were not required by a previous development permit, the parcel owner must demonstrate that the impervious area runoff is infiltrated consistent with the design standards for infiltration facilities in Section 5.4 of the SWDM or those for infiltration trenches and drywells in Section C.2.2 of Appendix C, *Small Project Drainage Requirements*, of the SWDM. To demonstrate this, a soils report prepared by an onsite sewage designer or by a suitably trained person working under the supervision of a licensed civil engineer must be submitted to the Division. This report must demonstrate infiltration performance and reliability consistent with the current adopted design standards in effect at the time the request for rate adjustment is received by the Division. For infiltration BMPs such as the trenches and drywells specified in Appendix C of the SWDM, the requirement of a professionally prepared soils report to demonstrate infiltration performance and reliability may be waived if the Division is able to verify such compliance based on a simplified infiltration test performed by the property owner or designee in accordance with the test procedure in Appendix B of these protocols.

SECTION 4.0 GRANT PROGRAM FOR REDUCING THE STORMWATER RUNOFF IMPACTS OF DEVELOPED PARCELS

Each biennium budget cycle (two-year cycle beginning on odd years), the Division sets aside grant funding to incentivize improvements to existing developed parcels to reduce the impacts of stormwater runoff and pollutants from those parcels. These improvements are referred to as "stormwater retrofits." These retrofits may include any change to a parcel that results in decreased stormwater flow rates, increased infiltration of stormwater, and/or improved water quality of runoff. A main goal of the program is to maximize the stormwater benefits of each dollar granted. See Section 4.1.3 for more details on how proposals are prioritized. A project rating system will be used to prioritize the projects that best meet this goal.

Retrofits eligible for grant funding include, but are not limited to, the methods and designs detailed in Section 4.2. See Section 4.1 for a description of how the grant program works.

Completion of retrofits on non-residential parcels may make the parcel eligible for a SWM fee adjustment as described in Sections 2 and 3. **Parcel owners (or their representatives) must apply for these discounts to receive them.** Owners of completed retrofits are encouraged to follow the steps detailed in Section 2 to determine if they are eligible for a SWM fee adjustment.

4.1 HOW THE GRANT PROGRAM WORKS

This section describes the Division's process and requirements for intake, review, prioritization, approval, and implementation of stormwater retrofit grant proposals submitted by owners of developed parcels.

Applications received by the program are typically reviewed for completeness and prioritized as they are received. The application is then added to the list of active applications. The active application list is sorted according to their priority score; higher priority applications are offered funding first. This allows the Division to choose projects that maximize the goals of the program. However, this may also result in applications with low priority scores never being offered funding.

Most grant offers are typically made at the beginning of biennium cycle. However, grant offers may be made at any point throughout the biennium budget cycle until the entire grant budget has been awarded. The projects with the highest priority scores are offered funding first. Applicants offered funding will have a limited period of time to begin and complete construction. This time period will vary based on what is deemed reasonable for the particular project based on Division experience; the time of year and its impacts on a reasonable project timeline; and the level of involvement of the Division with permitting, design, and/or other technical assistance.

When projects fail to begin construction within the time limit given, the grant award is withdrawn and the project with the next highest priority score is offered a grant.

The requirements and process for participating in the grant program are listed in Section 4.1.1. Section 4.1.3, outlines information the Division will use to review and prioritize applications. The characteristics, benefits, and design specifications of possible retrofit types an applicant may propose are described in Section 4.2.

4.1.1 GRANT PROGRAM PROCESS AND REQUIREMENTS

Individuals and entities interested in the grant program are encouraged to contact the Division ahead of time to discuss potential retrofits for a particular parcel. Below is the process and requirements for a typical grant application.

1. The applicant (i.e., the parcel owner or their designee) submits a grant application to the Division. The Division will provide the application form. All retrofits proposed must have **prior written approval of the parcel owner** if the applicant is not the parcel owner. The following items must be submitted with the grant application form:
 - A **plot plan** of the parcel showing the location(s), size(s), and type(s) of "impervious surface reduction measure" or "alternative surface" proposed plus the information specified in Section 4.1.2 below. This plan may be prepared by the applicant or applicant's contractor. The plan need not be prepared by an engineer unless required by the project design or terms of the grant offer.
 - A written **description** of the proposed project, its area, and its estimated installation cost.
 - Any relevant **technical information** that is available or has been prepared in support of the proposal such as topographic survey, soils reports, contractor bids, original drainage plans, engineering reports, approved permits, etc.
 - A list of the tasks required to complete the project and who will be responsible for completing them.
2. Applications submitted to the Division are first reviewed for completeness. Incomplete applications are returned to the applicant with a request for additional information.
3. Complete applications are reviewed by the Division and assigned a priority score. Proposals are scored by how well the retrofit meets the criteria detailed in Section 4.1.3. Some exceptions may be made to this process, for example if a grant request is larger than the remaining biennium budget it may be delayed in order to process applications for lower amounts. Near the end of a biennium, the Division will identify the applicants expected to be offered grants for the funds available in the next biennium. The applicants identified will be contacted at the beginning of the next biennium.
4. Grant offers are typically made at the beginning of a biennium. Additional grant offers are made after offers are rejected or construction fails to begin on a project within the time frame specified by the offer. New applications can be submitted at any time and are eligible for grant offers after they have been reviewed and given a priority score.
5. Proposals may not violate King County codes or rules such as those governing minimum parking requirements, minimum roadway widths, fire lanes, etc.
6. Grant funding may not be used to implement stormwater controls or improvements required for new or replaced impervious surface by a King County development permit or approval.
7. When an applicant receives a grant offer, they will have 30 days to accept or decline it. If the applicant declines the offer or fails to respond within 30 days, the offer is withdrawn, and a new applicant is selected from the application priority list.
8. Applicants accepting offers must sign and record a declaration of covenant and grant of easement before proceeding any further in the process. A "**declaration of covenant and grant of easement**" granting King County right of access to the parcel for inspection purposes must be recorded with the King County Recorder's Office or its successor agency.
9. The applicant is responsible for carrying out all tasks related to the proposal unless their application requests technical assistance from the Division and this assistance was part of the grant offer made by the Division. Technical assistance is limited and if requested may reduce the likelihood an application is offered a grant. Some examples of tasks that may be required to

complete a project are acquiring permits, securing variances, land surveying work, hiring engineering consultants and/or other professionals, hiring contractors, arranging for utility locating, and acquiring construction materials.

10. **Construction work must begin by the date specified in the grant offer.** If this deadline is not met by the applicant, the offer may be rescinded per the terms of the offer. This is done in order to offer the award to another applicant and assure that all of the grant funding is spent by the end of the biennium.
11. Failure to finish construction work by the date specified in the grant offer will result in the loss of further funding for the application unless the Division determines there are exceptional circumstances warranting an extension.
12. Construction/installation of the retrofit must be consistent with the submitted application and grant offer unless otherwise approved by the Division.
13. Upon completion of construction/installation, the Division will inspect the retrofit to confirm it is consistent with the application and the terms of the grant.
14. Purchase receipts and contract documents must be retained and submitted to the Division prior to final approval of the completed project.
15. Grants will not be awarded to any parcel where the Department of Local Services, Permitting Division has determined an uncorrected violation of KCC requirements has occurred.
16. All projects shall implement Construction Stormwater Pollution Prevention (CSWPP) Principles to the construction site and implement practices that are consistent with Appendix D of the SWDM (available here: <https://www.kingcounty.gov/services/environment/water-and-land/stormwater/documents/surface-water-design-manual.aspx>).
17. Any **source control BMPs** applicable to the facilities or activities occurring on the parcel must be implemented pursuant to KCC 9.12 to prevent contaminants from entering stormwater runoff, surface water, or groundwater. Source control BMPs applicable to business and residential activities or facilities are detailed in the King County SPPM. They can also be accessed here: <https://www.kingcounty.gov/services/environment/water-and-land/stormwater/documents/pollution-prevention-manual/commercial-bmp.aspx> (Commercial) and <https://www.kingcounty.gov/services/environment/water-and-land/stormwater/documents/pollution-prevention-manual/residential-bmp.aspx> (Residential). If there are any questions about the application of source control BMPs, technical assistance is available by phoning (206) 477-4800 or WLRCustomerService@kingcounty.gov.

4.1.2 PLOT PLAN REQUIREMENTS

The Division uses the submitted plot plan to understand the application and the proposed project. For simple projects (for example projects not requiring permits) the plot plan may be detailed enough to use as construction drawings. Projects that require permitting will typically need to prepare plans that are more extensive and detailed. See SWDM 2.3.1.2 for details on plan requirements for flow control facilities. See SWDM C.4.2. for details on plan requirements for flow control BMPs.

The plot plan should be drawn on 8½" x 11", 8½" x 14", or 11" x 17" paper. In many cases, the information can be provided by using the iMap tool (<https://gismaps.kingcounty.gov/iMap/>) to produce the plot plan.

The Division will use the plot plan in its prioritization process. It is in the best interests of the applicant to provide a site plan that includes as much of the information listed below as practicable. The applicant should add any other details they believe would be useful for evaluating the application:

Identification

- Name, address, and phone number of applicant
- Name and phone number of the person that prepared the plot plan, if not the applicant
- Use a standard scale (e.g. 1"=10', 1"=50', 1"=100', etc.) suitable to show the entire project on one to two pages
- Text should be 10pt or larger
- Parcel number, legal description, and property address
- North arrow
- Dimensions of property lines and easements
- Street names

Building and Site Development Features

- Approximate location and footprint of existing structures on the parcel
- Approximate location of any existing retaining walls and rockeries
- Existing parking areas and driveways
- Other existing impervious surfaces
- Location of existing septic system(s), including system components and primary and reserve drainfields. Many record drawings of these systems can be found here: <https://www.kingcounty.gov/depts/health/environmental-health/piping/onsite-sewage-systems/records/as-built-drawings.aspx>.
- Utility structures (poles, fire hydrants, etc.)
- The existing storm drainage system in the area as shown in iMap if available including relevant features within 200' of the downstream discharge point of the project.
- Other existing feature(s) relevant to the project
- Distances between important site features. Tape measured on site or located with survey data are two possible methods to obtain this information.

Topography

- The five-foot contours available through the iMap application are typically acceptable for this requirement. Some areas of the project may require more detailed topography.

Critical Areas and Drainage Features

- Location of existing ditches, swales, pipes, and/or other stormwater facilities
- Locations of critical areas and buffers. The "Environmentally Sensitive Areas" layer in iMap shows critical areas that have been mapped into King County GIS and may be useful for this purpose. Other critical areas may exist on the site and should be identified by the applicant.

4.1.3 PRIORITIZATION OF GRANT PROPOSALS

The Division will consider the general goals listed below to create a system for prioritizing grant proposals:

1. Effectiveness of the retrofit in reducing stormwater impacts, including (but not necessarily limited to), runoff rates and volumes, and water quality of runoff.
2. Estimated full unit cost per square foot of impervious surface addressed by the improvement.
3. The watershed or subbasin in which the project is located

4. The existence of, and the ability of the retrofit to improve, downstream flooding, erosion, sedimentation, and/or water quality problems.
5. Equity and social justice benefits.
6. Outreach and education benefits.
7. Creation of greenspace
8. For those projects requesting support from Division staff, the availability of Division staff will be considered

4.2 RETROFIT METHODS AND DESIGNS ELIGIBLE FOR GRANT FUNDING

This section presents design and construction recommendations for grant funded retrofits. These recommendations are intended to provide construction methods and specifications the Division finds acceptable for installation of the retrofit types presented. This section is not intended to be a complete list of retrofit types that are eligible for grant funding. Retrofit designs proposed by applicants are evaluated according to the criteria in 4.1.3.

4.2.1 FLOW CONTROL BMP DESIGNS DETAILED IN THE SWDM

Any of the flow control BMP designs detailed in the King County Surface Water Design Manual (SWDM) or equivalent may be proposed for grant funding. The specifications for these designs can be found in Appendix C of the SWDM. Although it is strongly recommended that these specifications be followed when proposing a flow control BMP design from the SWDM, the Division may consider variations from the specifications for purposes of stormwater retrofitting.

4.2.2 STORMWATER FACILITY DESIGNS DETAILED IN THE SWDM

Any of the flow control facility or water quality treatment facility designs detailed in the King County SWDM or equivalent may be proposed for grant funding. The specifications for these designs can be found in Chapters 5 and 6 of the SWDM. Although it is strongly recommended that these specifications be followed when proposing a facility design from the SWDM, the Division may consider variations from the specifications for purposes of stormwater retrofitting.

4.2.3 IMPERVIOUS SURFACE REDUCTION DESIGNS

Three types of impervious surface conversion may be proposed for grant funding using the design specifications detailed in this section. Although it is strongly recommended that these specifications be followed, the Division may consider variations for purposes of grant funding.

4.2.3.1 IMPERVIOUS SURFACE CONVERSION TO COMPOST-AMENDED LAWN

Compost amended lawn is one in which the underlying soil has been amended with compost to increase stormwater storage and infiltration, and reduce irrigation, pesticide, and fertilizer needs. Such effects reduce runoff peaks and volumes, water pollution, and demand on limited water supplies. These lawns also increase groundwater recharge important to stream flows during drier months.

The cost of converting from pavement to compost amended lawn is roughly estimated to be around \$8 per square-foot.

The Division recommends the following design specifications for this type of retrofit:

1. The dimensions of impervious surface area to be converted may be any length and width, but the area of compost-amended lawn must be no smaller than 5 feet in length and 5 feet in width. If the total impervious area to be converted is made up of smaller conversion areas in separate locations on the parcel, the area of compost-amended lawn for each separate conversion area shall be no smaller than 5 feet in length and 5 feet in width.
2. Existing impervious surface and any underlying base course (e.g., crushed rock, gravel, etc.) shall be completely removed from the conversion area(s).

3. Conversion area soils shall be broken up to the depth of the native uncompacted soil, typically a depth of 12 to 18 inches. This can be accomplished using a backhoe equipped with a bucket with teeth, a ripper towed behind a tractor, or other comparable method. The soil must then be tilled to further break up and decompact the soil. Rocks and other debris that slow the infiltration rate relative to natural conditions should be removed.
4. At least 4 inches of 100% decomposed compost and any other required amendments of lime and fertilizer as recommended by a soil analysis shall be tilled or otherwise mixed into the top 8 inches of the decompact soil. After tilling, conversion-area soils shall be only lightly compacted. A grass roller and hand tools are appropriate for light compaction.
5. Grass (or other dense ground cover as approved by the Division) shall be planted over the entire conversion area(s). Trees or shrubs may also be planted in the conversion area(s). Planting of grass shall be done by hydroseeding or hand seeding; application of sod is not acceptable.

4.2.3.2 IMPERVIOUS SURFACE CONVERSION TO NATIVE VEGETATED LANDSCAPE

Native vegetated landscape is intended to have the soil, vegetation, and runoff characteristics approaching that of natural forestland. Conversion requires the planting of native trees, shrubs, and ground cover in compost-amended soil. Such conversion reduces peak surface-water volumes and runoff by increasing stormwater storage, infiltration, and evapotranspiration (absorption and evaporation by native plants). A forested landscape also increases groundwater recharge important to stream flows during drier months and reduces water temperatures with shade, which are both beneficial for salmon juveniles.

The cost of converting from pavement to native vegetated landscape is roughly estimated to be \$10 per square-foot.

The Division recommends the following design specifications for this type of retrofit:

1. The dimensions of impervious surface area to be converted may be any length and width, but the area of native vegetated landscape shall be no smaller than 20 feet in length and 20 feet in width. If the total impervious area to be converted is made up of smaller conversion areas in separate locations on the parcel, the area of native vegetated landscape for each separate conversion area shall be no smaller than 20 feet in length and 20 feet in width.
2. Existing impervious surface and any underlying base course (e.g., crushed rock, gravel, etc.) shall be completely removed from the conversion area(s).
3. Underlying soils shall be broken up to a depth of 18 inches. This can be accomplished using either a backhoe equipped with a bucket with teeth, or a ripper towed behind a tractor.
4. At least 4 inches of well-decomposed compost shall be thoroughly mixed into the upper 8 inches of soil through tilling or other means. The finished surface should be gently undulating and shall be only lightly compacted.
5. The area of native vegetated landscape shall be planted with native-species trees, shrubs, and ground cover from Table 4.2.A. Species shall be selected as appropriate for site shade and moisture conditions, and in accordance with the following requirements:
 - a) Trees: a minimum of two species of trees shall be planted, one of which is a conifer. Conifer and other tree species shall cover the entire site at the spacing given in Table 1.
 - b) Shrubs: a minimum of two species of shrubs should be planted. Space plants to cover the entire site, excluding points where trees are planted.
 - c) Groundcover: a minimum of two species of ground cover should be planted. Space plants so as to cover the entire site, excluding points where trees or shrubs are planted.

Note: for sites larger than 10,000 square feet, planting a greater variety of species than the minimum suggested above is strongly encouraged. For example, an acre could easily accommodate three tree species, three species of shrubs, and two or three species of groundcover.

6. At least 4 inches of hog fuel shall be placed between plants as mulch for weed control. It is also possible to mulch the entire area before planting; however, an 18-inch diameter circle shall be cleared for each plant when it is planted in the underlying amended soil. *Note: plants and their root systems that come in contact with hog fuel or raw bark have a poor chance of survival.*
7. Plantings shall be watered consistently once per week during the dry season for the first two years.

TABLE 4.2.A SELECTED NATIVE VEGETATION, SIZE, AND SPACING REQUIREMENTS

Species	Type	Sun and Moisture Preferences	Planted Size	Spacing
TREES				
Douglas fir (<i>Pseudotsuga menziesii</i>)	conifer	Sun, dry to moist soil	5 gallon, 6'-7' B&B †	12' o.c.*
Western red cedar (<i>Thuja plicata</i>)	conifer	Sun or shade, moist to wet soil	5 gallon, 6'-7' B&B	12' o.c.
Western hemlock (<i>Tsuga heterophylla</i>)	conifer	Sun or shade, well-drained soil	5 gallon, 6'-7' B&B	12' o.c.
Sitka spruce (<i>Picea sitchensis</i>)	conifer	Sun or shade, moist mineral soils to wet soils	5 gallon, 6'-7' B&B	12' o.c.
Red alder (<i>Alnus rubra</i>)	tree	Sun, a Nitrogen fixer,	5 gallon, 5'-6' B&B	12' o.c.
Bigleaf maple (<i>Acer macrophyllum</i>)	tree	Sun or shade, dry to moist soil	5 gallon, 5'-6' B&B	12' o.c.
Black cottonwood (<i>Populus trichocarpa</i>)	tree	Sun, wet soil	5 gallon, 5'-6' B&B	12' o.c.
Cascara (<i>Rhamnus purshiana</i>)	tree/shrub	Sun to partial shade, dry to moist soil	5 gallon, 5'-6' B&B	8' o.c.
Pacific willow (<i>Salix lucida</i>)	tree/shrub	Sun, damp soil	1 gallon 2 gallon 5 gallon	4' o.c. 6' o.c. 8' o.c.
SHRUBS				
Sitka willow (<i>Salix sitchensis</i>)	shrub	Sun or shade, dry to damp soil	1 gallon 2 gallon 5 gallon	4' o.c. 6' o.c. 8' o.c.
Vine maple (<i>Acer circinatum</i>)	shrub	Shade, moist to damp soils	1 gallon 2 gallon 5 gallon	4' o.c. 6' o.c. 8' o.c.
Filbert (hazelnut) (<i>Corylus cornuta</i>)	shrub	Sun to shade, dry soil	1 gallon 2 gallon 5 gallon	4' o.c. 6' o.c. 8' o.c.
Salmonberry (<i>Rubus spectabilis</i>)	shrub	Sun to shade, moist to wet soil	1 gallon 2 gallon 5 gallon	4' o.c. 6' o.c. 8' o.c.
Thimbleberry (<i>Rubus parviflorus</i>)	shrub	Sun to partial shade, dry to moist soil	1 gallon 2 gallon 5 gallon	4' o.c. 6' o.c. 8' o.c.
Ocean spray (<i>Holodiscus discolor</i>)	shrub	Sun to partial shade, dry	1 gallon 2 gallon 5 gallon	4' o.c. 6' o.c. 8' o.c.
Tall Oregon grape (<i>Berberis aquifolium</i>)	shrub	Sun to shade, dry to moist soil	1 gallon	4' o.c.
Snowberry (<i>Symphoricarpos albus</i>)	shrub	Sun to shade, dry to wet soil	1 gallon, 30-36"	4' o.c.
Service berry (<i>Amelanchier alnifolia</i>)	shrub	Sun to shade, dry to wet soil	1 gallon	6' o.c.
Indian plum (<i>Oemleria cerasiformis</i>)	shrub	Sun to shade, moist soil	1 gallon	4' o.c.
Twinberry (<i>Lonicera involucrata</i>)	shrub	Sun to partial shade, moist soil	1 gallon	4' o.c.
GROUND COVER				
Evergreen huckleberry (<i>Vaccinium ovatum</i>)	groundcover	Sun to partial shade, moist soil	1 gallon	2' o.c.
Kinnikinick (<i>Arctostaphylos uva-ursa</i>)	groundcover	Sun to partial shade, dry soil	1 gallon	2' o.c.
Salal (<i>Gaultheria shallon</i>)	groundcover	Sun to shade, dry to moist soil	1 gallon	18" o.c.
Low Oregon grape (<i>Mahonia repens</i>)	groundcover	Sun to partial shade, dry to moist soil	9-12"	18" o.c.
Sword fern (<i>Polystichum munitum</i>)	groundcover	Sun to deep shade, dry to moist soil	2 gallon	3' o.c.

†B&B means balled and burlap.

*o.c. means "on center", i.e. the spacing is measured from center of plant to center of plant

4.2.3.3 IMPERVIOUS SURFACE CONVERSION TO VEGETATED ROOF

A vegetated roof (also known as a "green roof") consists of (1) a soil layer sufficient in depth to grow grass or other vegetative cover, (2) an underdrain system to dissipate excess water from the soil, and (3) a plastic or rubber membrane to waterproof the roof surface.

The benefits of this impervious surface conversion design are reduced runoff peaks and volumes resulting from the increased water storage provided by the soil and the increased evapotranspiration provided by the vegetation.

The cost of this conversion is quite variable depending on the type of roof, access to the roof, the depth of the soil layer, the type of underdrain system used, and the extent to which the roof shall be reinforced to handle the additional load of the soil. Installation cost is roughly estimated to be \$15 per square foot.

The Division recommends the following design specifications for this type of retrofit:

1. A building permit must be obtained to alter or build the structure that will support the green roof. Contact the Department of Local Services, Permit Division (DLS/PD) (<https://www.kingcounty.gov/depts/local-services/permits.aspx>) to determine the requirements the project must meet.
2. A 60- to 80-mil reinforced PVC membrane (or equivalent) shall be placed on the roof surface to provide waterproofing and protect against root penetration. If the roof is asphalt-based, the membrane shall be high-density polyethylene (HDPE).
3. If the roof surface is flat or has a pitch flatter than 1 in 12, an underdrain system or layer shall be provided to drain excess water away from the root zone of the soil layer.
4. The soil layer shall be adequately contained on the roof with sidewalls or other appropriate means. On roofs with a pitch steeper than 3 in 12, the soil containment system shall be designed by a licensed civil engineer.
5. The composition of the soil layer shall be confirmed by a licensed civil engineer as meeting the desired soil storage and the maximum allowable loading specified by the structural engineer.
6. Potentially suitable plants for the vegetated roof can be found in the Ground Cover section of Table 4.2.A.

4.2.4 RAIN BARREL AND CISTERN DESIGN FOR RESIDENTIAL PARCELS

A rain barrel is an above-ground system that collects a fraction of roof runoff and stores it for non-potable uses such as irrigation. A cistern is an above or below ground system that collects a larger volume of roof runoff for non-potable uses. The stored water can be used for non-potable purposes that would otherwise use drinking water as the source. This reduces demand on the drinking water system. When used for landscaping, the water is typically released during dry summer months. This can contribute to groundwater and stream flows during critical summer months. The larger the volume of water stored by these systems, the greater the impact on stormwater runoff.

Generally, rain barrels and cisterns have these features:

- Downspout diversion: Typically, fittings are added to an existing downspout to direct runoff to the system.
- A storage container designed to hold liquid.
- A suitable foundation: The system must sit on a suitable foundation for the size of the system. Above ground systems must be stable and should be secured as needed. For

underground systems, the container bedding, backfill, and native soil must be capable of supporting the container and the surface above it without significant settlement. The potential for buoyant forces caused by groundwater conditions must be considered and mitigated as necessary.

- An outlet that allows the entire storage container to drain, either by gravity or by use of a pump.
- A “first-flush” device: The initial runoff from a storm, particularly after a long period of dry weather, can carry with it debris and pollutants. A first-flush device diverts the first several gallons of rainfall away from the storage container to reduce maintenance needs and improve the quality of the stored water.
- A coarse material filter: A device that prevents coarse debris from entering the system. Rain barrels may be able to use pest exclusion devices for this purpose.
- An overflow outlet: After the storage container fills, the system should direct runoff to the point where the downspout the system is attached to originally discharged the roof runoff.
- Cleanout access: Rain barrels generally have built-in cleanout access – their lids. Cisterns should have an access port big enough to allow sediment buildup to be removed easily.
- Pest exclusion: All inlets, outlets, access ports, or any other openings shall be covered with a mesh screen or solid cover capable of preventing insects and other pests from entering the system.

This page provides useful information on rain barrels:

<https://www.kingcounty.gov/services/environment/stewardship/nw-yard-and-garden/rain-barrels.aspx>.

SECTION 5.0 DEFINITIONS

Best Management Practice (BMP) means any schedule of activities, prohibition of practices, maintenance procedure, or structural or managerial practice approved by King County that, when used singly or in combination, prevents or reduces the release of pollutants and other adverse impacts to surface water, stormwater and groundwater.

Developed Parcel means any parcel altered from the natural state by the construction, creation, or addition of impervious surfaces.

Director means the Director of the King County Department of Natural Resources and Parks or its successor agency or the Director's designee.

Division means the King County Water and Land Resources Division or its successor agency.

Drainage Facility means the system of collecting, conveying, and storing surface and storm water runoff. Drainage facilities shall include, but not be limited to, all surface and storm water conveyance and containment facilities including streams, pipelines, channels, ditches, swales, lakes, wetlands, closed depressions, infiltration facilities, flow control facilities, erosion/sedimentation control facilities and other drainage structures and appurtenances, both natural and constructed.

Drainage System means the system that collects, conveys, stores, and treats surface and storm water runoff. The drainage system includes streams, pipes, ditches, swales, lakes, wetlands, closed depressions, flow control facilities, water quality treatment facilities, erosion and sediment control facilities, and other drainage structures and appurtenances, both natural and constructed.

Effective Impervious Area (EIA) means the portion of actual impervious area that is connected, or has the effect of being connected as defined in the King County Surface Water Design Manual, directly to the storm water drainage system via surface flow or discrete conveyances such as pipes, gutters or ditches.

For purposes of these protocols, EIA is interpreted to mean all impervious surface area on a development site except those portions which meet one of the following three conditions:

1. The impervious surface runoff is "fully dispersed" using the full dispersion BMPs set forth in Section C.2.1 of the SWDM.
2. The impervious surface runoff is fully infiltrated according to the infiltration standards in Sections 5.4 and C.2.2 of the SWDM.
3. The impervious surface runoff is managed in an alternative way approved by the County that effectively mitigates all the hydrologic effects of the impervious surface (i.e., increased runoff peaks, frequencies, volumes, and flashiness, and decreased groundwater recharge).

Impervious surface area that does not meet one of the above three conditions is considered to be effective impervious area (at the "site scale" as opposed to a "watershed scale") even if its runoff flows over pervious area before reaching the local drainage system or flows through an onsite stormwater detention facility.

Flow Control Facility means a drainage facility designed to mitigate the impacts of increased surface and stormwater runoff generated by site development pursuant to the drainage requirements in KCC 9.04 and the SWDM. Flow control facilities are designed either to hold water for a considerable length of time and then release it by evaporation, plant transpiration, and/or infiltration into the ground or to hold runoff for a short period of time and then release it to the conveyance system.

Flow Control BMP means a method or design for dispersing, infiltrating or otherwise reducing or preventing development-related increases in surface and storm water runoff at, or near, the sources of

those increases. "Flow control best management practice" includes the methods and designs specified in the Surface Water Design Manual.

Forest (or Forested) means a native vegetated area in which the soil conditions, ground cover, and species of vegetation are like those of the original native condition for the parcel. More specifically, this means (1) the soil is either undisturbed or has been treated according to the "native vegetated landscape" specifications in Section 4.2.3.2 of these protocols, (2) the ground is either naturally covered with vegetation litter or has been top-dressed with 4 inches of hog fuel consistent with the native vegetated landscape specifications in Section 4.2.3.2 of these protocols, and (3) the vegetation is either (a) comprised predominantly of plant species, other than noxious weeds, which are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the parcel, or (b) comprised of plant species as specified for a native vegetated landscape in Section 4.2.3.2 of these protocols. Examples of plant species include trees such as Douglas fir, western hemlock, western red cedar, alder, big-leaf maple, and vine maple; shrubs such as willow, elderberry, salmonberry, and salal; and herbaceous plants such as sword fern, foam flower, and fireweed.

Full Dispersion BMP means an approved technique for dispersing runoff from impervious surfaces into forested areas for the purposes of reducing effective impervious surface. In order to reduce effective impervious surface, such BMPs must be applied as specified in Section C.2.1 of the SWDM.

Impervious Surface means either a hard surface area that either prevents or retards the entry of water into the soil mantle as it entered under natural conditions before development, or a hard surface area that causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions before development, or both. Common impervious surfaces include, but are not limited to, roofs, walkways, patios, driveways, parking lots, storage areas, areas that are paved, graveled or made of packed or oiled earthen materials or other surfaces which similarly impede the natural infiltration of surface and storm water. Open, uncovered flow control facilities shall not be considered as impervious surfaces.

Infiltration BMP means a simple device (e.g., gravel trench) or ground feature (e.g., topographic depression) that soaks the runoff generated by most storm events from a relatively small impervious area (up to 5,000 square feet) into the ground at or very near the impervious area.

Infiltration Facility means a device or ground feature that meets the infiltration facility standards in the SWDM and is designed by an engineer to absorb the runoff generated by most storm events from a relatively large impervious area or multiple impervious areas.

Parcel Area means a parcel's total land area as defined by its boundaries.

Maintenance means the act or process of cleaning, repairing, or preserving a system, unit, facility, structure, or piece of equipment.

Licensed Civil Engineer means a person registered with the State of Washington as a professional engineer (PE) in civil engineering.

Licensed Land Surveyor means a person registered with the State of Washington as a professional land surveyor (PLS).

Licensed Structural Engineer means a person registered with the State of Washington as a professional engineer in structural engineering.

National Pollutant Discharge Elimination System (NPDES) means the national program for controlling pollutants from point source discharges directly into waters of the United States under the Clean Water Act. The Washington State Department of Ecology develops and administers this program in Washington State.

NPDES Permit means a permit issued by the Washington State Department of Ecology for discharges to waters of the United States under the Clean Water Act.

Open Space means any parcel, property or portion thereof classified for current use taxation under KCC chapter 20.36 and chapter 84.34 RCW, or for which the development rights have been sold to King County under KCC chapter 26.04. This definition includes lands that have been classified as open space, agricultural or timber lands under criteria contained in KCC chapter 20.36 and chapter 84.34 RCW.

Parcel means the smallest separately segregated unit or plot of land having an identified owner, boundaries and surface area that is documented for property tax purposes and given a tax lot number by the King County assessor.

Rainwater Harvesting System means the cistern(s), pipe, fittings, pumps, and other plumbing appurtenances required for and/or used to harvest and distribute rainwater for the purpose of supplying water to hose bibs, water closets, urinals, industrial applications, or irrigation.

Rate Category means the classification given to a parcel in the service area based upon the type of land use on the parcel and the percentage of impervious surface area contained on the parcel.

Residence means a building or structure or portion thereof, designed for and used to provide a place of abode for human beings. The term residence includes the term "residential" or "residential unit" as referring to the type of or intended use of a building or structure.

Residential Parcel means any parcel which contains no more than three residences or three residential units which are within a single structure and is used primarily for residential purposes.

Runoff means water originating from rainfall and other precipitation that is found in drainage facilities, rivers, streams, springs, seeps, ponds, lakes, and wetlands as well as shallow groundwater.

Runoff Mitigation Discount means a type of SWM fee rate adjustment whereby a parcel's annual SWM fee is reduced in recognition of the parcel owner's maintenance of a stormwater facility or other impact reduction measures as allowed in KCC 9.08.080 B.5 through B.7 and implemented according to the SWM Fee Protocols and the SWDM.

Service Area means the entire unincorporated King County area, which is served by the activities, programs, and capital improvements funded by the annual SWM fee collected from developed properties in the area.

Source Control BMP means a BMP intended to prevent contaminants from entering surface water, stormwater or groundwater including the modification of processes to eliminate the production or use of contaminants. "Source control BMPs" can be either structural or nonstructural. Structural source control BMPs involve the construction of a physical structure on site, or other type of physical modification to a site. An example of a structural source control BMP is building a covered storage area. A nonstructural source control BMP involves the modification or addition of managerial or behavioral practices. An example of a nonstructural source control BMP is using less toxic alternatives to current products or sweeping parking lots.

Stormwater Control Facility or BMP means a structure, feature, device, or measure for controlling the quantity and/or quality of surface and storm water runoff from developed land in accordance with applicable King County standards. Stormwater control facilities or BMPs include but are not limited to flow control facilities, water quality treatment facilities, infiltration facilities, and flow control BMPs.

Stormwater Pollution Prevention Manual (SPPM) means the manual adopted in accordance with KCC chapter 2.98, and supporting documentation referenced or incorporated in the manual, describing best management practices and procedures for existing facilities and existing and new activities not covered by the SWDM. It is available here:
<https://www.kingcounty.gov/services/environment/water-and-land/stormwater/documents/pollution-prevention-manual/commercial-bmp.aspx>.

Stormwater Retrofit is a project that may include, but is not necessarily limited to, any change to a parcel that results in decreased stormwater flow rates, increased infiltration of stormwater, and/or improved water quality of runoff as determined by the Director or their agent.

Surface and Storm Water means water originating from rainfall and other precipitation that is found in drainage facilities, rivers, streams, springs, seeps, ponds, lakes and wetlands as well as shallow groundwater.

Surface and Storm Water Management System means constructed drainage facilities and any natural surface water drainage features that do any combination of collection, storing, controlling, treating or conveying surface and storm water. Note that because "surface and storm water" includes "shallow groundwater," any discharge or infiltration of storm water into the ground is considered a discharge to the "surface and storm water management system."

Surface Water Design Manual (SWDM) means the manual (and supporting documents as appropriate) describing surface and storm water design and analysis requirements, procedures, and guidance which has been formally adopted by rule under the procedures specified in KCC 2.98. The *Surface Water Design Manual* is available from the King County Department of Permitting and Environmental Review or the Department of Natural Resources and Parks. It is available at <http://www.kingcounty.gov/environment/waterandland/stormwater/documents/surface-water-design-manual.aspx>

Surface Water Management (SWM) Fee means the annual fee charged to owners of developed parcels to pay for services provided by King County's Surface Water Management Program as set forth in KCC 9.08 to address the impacts of surface and storm water runoff.

SWM Fee Protocols means the surface water management fee standards and procedures which have been formally adopted by rule under the procedures specified in KCC 2.98. The SWM Fee Protocols are maintained by the Department of Natural Resources and Parks, Water and Land Resources Division or its successor agency. It is available here: <https://www.kingcounty.gov/depts/dnrp/wlr/surface-water-mgt-fee/swm-fee-protocols.aspx>.

SWM Fee Rate Adjustment means a Division-approved change in the amount of a parcel's annual SWM fee as allowed in KCC 9.08.080 and implemented by this Public Rule.

Technical Information Report (TIR) means the report detailed in Chapter 2 of the SWDM that contains all the engineering plans, drawings, field information, tests, and calculations deemed necessary by the Division to demonstrate that a parcel's stormwater control facilities or BMPs meet the standards and conditions necessary for a discount as set forth in these protocols. The TIR must be stamped and dated by a licensed civil engineer.

Undeveloped Parcel means any parcel that has not been altered from its natural state by the construction, creation, or addition of impervious surface.

Water Quality Treatment Facility means a drainage facility designed to reduce pollutants once they are already contained in surface and storm water runoff. Water quality treatment facilities are the structural component of best management practices (BMPs). When used singly or in combination, water quality facilities reduce the potential for contamination of surface water and groundwater.

**APPENDIX A: DECLARATION OF COVENANT FOR
THE INSPECTION AND
MAINTENANCE OF STORMWATER
FACILITIES/ BMPS FOR PURPOSES
OF A SWM FEE RATE ADJUSTMENT**

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

**DECLARATION OF COVENANT
FOR THE INSPECTION AND MAINTENANCE OF STORMWATER
FACILITIES/BMPS FOR PURPOSES OF A SWM FEE RATE ADJUSTMENT**

Grantor: _____

Grantee: King County

Legal Description: _____

Additional Legal(s) on: _____

Assessor's Tax Parcel ID#: _____

IN CONSIDERATION of receiving (check one of the following) a discount to the King County Surface Water Management ("SWM") Fee pursuant to Title 9 of the King County Code (KCC), as amended from time to time, or funding for conversion of impervious surface to pervious or pervious-like surface, the Grantor(s), the owner(s) in fee of that certain parcel of land more particularly described above ("Property"), hereby covenants(covenant) with King County, a political subdivision of the state of Washington, and its municipal successors in interest and assigns ("King County" and "the County," or "its municipal successor"), that he/she(they) will observe, consent to, and abide by the conditions and obligations set forth and described in Paragraphs 1 through 7 below with regard to the Property, and hereby grants(grant), covenants(covenant), and agrees(agree) as follows:

1. Grantor(s) or his/her(their) successors in interest and assigns ("Owners") shall, at its (their) own cost, operate, maintain, and keep in good repair, the Property's stormwater facilities/ best management practices

("Stormwater Facilities/BMPs") identified in Exhibit A attached hereto and incorporated herein. Stormwater facilities include pipes, swales, tanks, vaults, ponds, and other engineered structures designed to manage stormwater on the Property. Stormwater BMPs include dispersion and infiltration devices, native vegetated areas, permeable pavements, vegetated roofs, rainwater harvesting systems, reduced impervious surface coverage, and other measures designed to reduce the amount of stormwater runoff on the Property.

2. King County shall provide at least 30 days written notice to the Owners that entry on the Property is planned for the inspection of the Stormwater Facilities/BMPs. After the 30 days, the Owners shall allow King County to enter for the sole purpose of inspecting the Stormwater Facilities/BMPs. In lieu of inspection by the County, the Owners may elect to engage a licensed civil engineer registered in the State of Washington who has expertise in drainage to inspect the Stormwater Facilities/BMPs and provide a written report describing their condition and affirming that they are still providing their intended function. If the engineer option is chosen, the Owners shall provide written notice to the Director of the Water and Land Resources Division or its municipal successor in interest ("WLR") within fifteen days of receiving the County's notice of inspection. Within 30 days of giving this notice, the Owners, or the engineer on behalf of the Owners, shall provide the engineer's report to WLR. If the report is not provided in a timely manner as specified above, the County may inspect the Stormwater Facilities/BMPs without further notice.

3. If King County determines from its inspection, or from an engineer's report provided in accordance with Paragraph 2, that maintenance, repair, restoration, and/or mitigation work is required to be done to the Stormwater Facilities/BMPs, WLR shall notify the Owners of the specific maintenance, repair, restoration, and/or mitigation work (Work) required pursuant to the obligations and conditions set forth in this covenant and/or pursuant to KCC Chapter 9.04. WLR shall also set a reasonable deadline for completing the Work or providing an engineer's report that verifies completion of the Work. After the deadline has passed, the Owners shall allow the County access to re-inspect the Stormwater Facilities/BMPs unless an engineer's report has been provided verifying completion of the Work. If the Work is not completed properly within the timeframe set by WLR, King County may, depending on the above indicated purpose of this covenant, deny the SWM Fee discount for the Property, or, if it has been less than ten years since the final approval date of cost-share funding provided by King County for conversion of impervious surface to pervious or pervious-like surface, require reimbursement of the

cost-share money to King County. If any portion of the Work is otherwise required pursuant to KCC Chapter 9.04, King County may initiate an enforcement action, which may subject the Owners to fines and penalties.

4. Apart from performing routine landscape maintenance, the Owners are hereby required to provide written notice to WLR if any alterations or modifications are made to the Stormwater Facilities/BMPs. Because alterations or modifications to the Stormwater Facilities/BMPs may, depending on the above indicated purpose of this covenant, result in discontinuation of the SWM Fee discount for the Property, or, if it has been less than ten years since the final approval date of cost-share funding provided by King County for conversion of impervious surface to pervious or pervious-like surface, require reimbursement of the cost-share money to King County, the Owners are encouraged to contact WLR prior to performing said alterations or modifications. Also, if any of the alterations or modifications violate King County Code 9.04, King County may initiate an enforcement action, which may subject the Owners to fines and penalties.

5. Any notice or approval required to be given by one party to the other under the provisions of this Declaration of Covenant shall be effective upon personal delivery to the other party, or after three (3) days from the date that the notice or approval is mailed with Delivery Confirmation to the current address on record with each Party. The parties shall notify each other of any change to their addresses.

6. This Declaration of Covenant is intended to promote the efficient and effective management of surface water drainage on the Property, and it shall inure to the benefit of all the residents of King County, its municipal successors and assigns. This Declaration of Covenant shall run with the land and be binding upon Grantor(s), and Grantor's (s') successors in interest and assigns.

7. This Declaration of Covenant may be terminated by execution of a written agreement by Owners and King County that is recorded by King County in its real property records.

IN WITNESS WHEREOF, this Declaration of Covenant is executed this _____ day of

_____, 20 ____.

GRANTOR, owner of the Property

GRANTOR, owner of the Property

STATE OF WASHINGTON)
COUNTY OF KING)ss.

On this day personally appeared before me:

_____, to me known to be the individual(s) described in and who executed the within and foregoing instrument and acknowledged that they signed the same as their free and voluntary act and deed, for the uses and purposes therein stated.

Given under my hand and official seal this _____ day of _____, 20 ____.

Printed name

Notary Public in and for the State of Washington,
residing at

My appointment expires _____

APPENDIX B: BMP INFILTRATION TEST

BMP INFILTRATION TEST

For purposes of obtaining a runoff mitigation discount, the infiltration test described herein may be used in lieu of the otherwise required soils report to design or evaluate the design of infiltration BMPs such as the infiltration trenches and drywells specified in Appendix C of the King County *Surface Water Design Manual*. This test may be performed by the property owner or the property owner's contractor or other designee and must be approved by the King County Water and Land Resources Division prior to granting a discount. *NOTE, THIS TEST MAY NOT BE USED TO SIZE NEW INFILTRATION SYSTEMS REQUIRED AS PART OF A DEVELOPMENT PERMIT BY THE KING COUNTY DEPARTMENT OF LOCAL SERVICES PERMITTING DIVISION OR ITS SUCCESSOR AGENCY.*

TEST PROCEDURE:

Number and Location of Tests

A minimum of two infiltration tests are to be performed within the area proposed for an infiltration BMP. If soil conditions are highly variable, more tests may be required. The infiltration tests should be spaced uniformly throughout the proposed absorption area.

Maximum Wet Season Water Table

The maximum wet season water table must be at least one foot below the bottom of an infiltration trench, drywell, or other infiltration BMP. For infiltration trenches that are two feet deep, this means the water table must be at least three feet below the ground surface. Generally, soils above the wet season water table are brown while soils below the water table are gray or mottled (streaked or spotted with colored mineral deposits).

Preparation of Test Hole

The diameter of each test hole is to be 6 to 8 inches, dug or bored to a depth of at least one foot below the bottom of the trench, drywell, or other infiltration BMP. To expose a natural soil surface, scratch the sides of the hole with a sharp, pointed instrument and remove the loose material from the bottom of the test hole. Place two inches of gravel into the bottom of the hole to protect the bottom from scouring action when the water is added.

Soaking Period

Fill the test hole(s) with clear water and maintain full for a period of four hours the evening prior to the test. If accurate results are to be obtained, it is extremely important that the soil be allowed to soak for a sufficiently long period of time to allow the soils to swell. If, after filling the hole twice with water and the water seeps completely away in ten minutes, the tests can proceed immediately.

Measurements of Infiltration Rate

Each infiltration test is conducted by filling the test hole with clean water to the level corresponding to the bottom of the infiltration trench, drywell, or other BMP, and then timing how long it takes for the water to drop three inches. This must be repeated three times and the results must be recorded on the form provided below. To make these measurements, a piece of lath or 1 x 2 board with two nails spaced three inches apart should be placed in the hole and secured to prevent floating when the hole is filled with water. The uppermost nail should be located at the level that corresponds with the bottom of the infiltration BMP. For a gravel trench, this would be about two feet below the ground surface. Both nails should be visible inside the hole. *Note, if you stagger the nails, they will be easier to see.*

After the tests, **DO NOT FILL IN THE HOLES.** Cover the holes with a sturdy board or block access to the holes with a barricade. Then call a Division Engineer to arrange a site visit. If you do not have a phone number for a specific Division Engineer, call (206) 477-4800 or email WLRCustomerService@kingcounty.gov. The Division will use this test information to determine whether the existing or proposed infiltration BMP is adequate for the purposes of obtaining a runoff mitigation discount.

**KING COUNTY WATER AND LAND RESOURCES DIVISION
INFILTRATION TEST RESULTS**

TAX PARCEL NUMBER _____

OWNERS NAME AND ADDRESS _____

PHONE NUMBER (____) _____

TIMED 3 INCH DROP RESULTS:

Test Hole No. 1

- 1. _____
- 2. _____
- 3. _____

Test Hole No. 2

- 1. _____
- 2. _____
- 3. _____

AVERAGE: _____ MIN/3 IN AVERAGE: _____ MIN/3 IN

AVERAGE/3: _____ MIN/IN AVERAGE/3: _____ MIN/IN

I certify that I conducted or witnessed the Infiltration Test Procedure as stated in the King County "On-Site Infiltration Test" handout and the timed results as stated above are correct.

(Contractor/Designee) (Owners) Signature Date