



Director's Rule

Title Stormwater Facility Credit Calculator	Number DWW-260.2	Rev. no. 0
Responsibility Finance Division	Supersedes DR-2011-003	Pages 2
SPU Director's Approval	Effective Date	

1. PURPOSE

To improve the equity of drainage charges, Seattle Public Utilities (SPU) has developed a Stormwater Facility Credit Program. This program provides credits on drainage bills to customers who have installed approved stormwater management facilities that mitigate the impact on the City's drainage system of stormwater runoff from their property. Approved stormwater management facilities must meet applicable technical design requirements described in the City's Stormwater (~~(, Grading and Drainage)~~) Code ("Stormwater Code"). This code was updated in 2009 per Ordinance 123106.

~~((This Director's Rule establishes a))~~The Director of SPU has established the 2009 Stormwater Facility Credit calculator ("2009 SFC Calculator"), ~~((Attachment A Table 2, incorporated herein,))~~ that reflects the updated performance goals of the City's Stormwater Code, as established per Ordinance 123106. The 2009 SFC Calculator applies to facilities ~~((constructed from December 1 forward))~~ built according to 2009 code requirements. ~~((This Director's Rule))~~ The Director has also ~~((maintains))~~ maintained the calculator ~~((established by DR 03-08))~~ which reflects the performance goals of the prior City Stormwater Code ("2000 SFC Calculator"), ~~((Attachment A Table 1, incorporated herein.))~~ The 2000 SFC Calculator applies to facilities ~~((permitted prior to December 1, 2009))~~ constructed according to 2000 code requirements. ~~((A list of all facilities that qualify as "approved stormwater management facilities" under this program is found in Table 1 (2000 SFC Calculator) and Table 2 (2009 SFC Calculator) of Attachment A to this Director's Rule.))~~

2. RULE

SPU has developed a "credit calculator" that is the formula used to calculate the percentage credit for each eligible parcel that has applied for such a credit on its drainage bill. The output of the credit calculator is a percentage credit, which may not exceed a maximum percentage, as specified in SMC 21.33.040. Credits are rounded to the nearest whole percentage, with no credit offered to calculated credits that round to less than 1 percent. The credit is then applied as a percentage discount to the customer's annual drainage bill for the parcel.

This credit calculator assigns a uniform percentage credit for each type of approved stormwater management facility, based on a weighting of the stormwater performance goals the facility satisfies and that are applicable to the appropriate drainage discharge point for that parcel. The credit calculator then considers information specific to the parcel, which is entered into the calculator by SPU, such as the percentage of the parcel's impervious surface managed by the approved facility and the parcel's drainage rate category assignment.

Both the 2009 and 2000 SFC Calculators include "Rate Tier Multipliers" which reflect the percentage of the drainage bill associated with runoff from impervious surface, with such multipliers used in the calculation of the final stormwater facility credit applied to the parcel's annual drainage bill. The Rate Tier Multipliers vary by rate tier.

A list of all facilities that qualify as "approved stormwater management facilities" under this program is found in Table 1 (2000 SFC Calculator) and Table 2 (2009) SFC Calculator) of Attachment A to this Director's Rule.

~~((The output of the credit calculator is a percentage credit, which may not exceed a maximum percentage, as specified in SMC 21.33.040. Credits are rounded to the nearest whole percentage, with no credit offered to calculated credits that round to less than 1 percent. The credit is then applied as a percentage discount to the customer's annual drainage bill for the parcel.))~~

3. REFERENCES

- SMC 21.33.040, Stormwater Facility Credit Program
- Ordinance 123106, updating code references to stormwater, grading and drainage control provisions
- Drainage Rate Incentive Program Credit Percentage Calculation: for Facilities Built According to 2009 Code Requirements. (Attachment A – Table 2)

4. ATTACHMENTS

- Attachment A - Table 1, Stormwater Facility Credit Program Credit Percentage Calculation: For facilities built according to 2000 and previous code requirements
- Attachment A -Table 2, Stormwater Facility Credit Program Credit Calculator: For facilities built according to 2009 code requirements

Stormwater Facility Credit Program Credit Percentage Calculation: For Facilities Built According to 2000 and Previous Code Requirements
Single and Multiple BMP Technologies, with Credits for Specific Rate Tiers

PROPOSED (11/25/15)

% Site Impervious Managed	Basin Type	Design Standard	BMP Classification	Facility	Properties	Percent Reduction by Performance Target				Flow Credit Basis	Rate Tier (3): Overall Max: 50%	
						TSS	Volume	2-yr Peak & Duration	25-yr Peak		Facility Credit (1)	Adjusted Facility Credit (2)
Water Quality (WQ) - PGIS Area / Total Imperviousness												
Ex: Typically not CSO basins												
Weighting=						60%	40%	0%	0%			
0%	Separated System	6-month, 24-hour storm	Water Quality - Level 1	media filter, oil water separator, wetvault	no infiltration	80%	0%	NA	NA	Media filter (evaluated)	24%	0.0%
0%	Separated System	6-month, 24-hour storm	Water Quality - Level 2	wetponds, bioswales (basic, wet, and continuous inflow), filter strips	some infiltration (storage)	80%	15%	NA	NA	Wetpond (modeled)	27%	0.0%
0%	Separated System	6-month, 24-hour storm	Water Quality - Level 3	sand filter, bioretention or pervious pavement without underdrain, bioretention with underdrain	relies entirely on infiltration	95%	98%	NA	NA	Bioret w/o underdrain (modeled)	48%	0.0%
Flow Control 1 (FC1) (Public Combined Sewer/Capacity Constrained Basin)												
Ex: CSO with inadequate pipe conveyance and/or ditching												
Weighting=						0%	25%	40%	35%			
0%	Public Combined Sewer/Capacity Constrained Basins	2- and 25-year peak control	Detention - Level 1	vegetated roof (min. 4" soil depth)	no infiltration (some soil storage and evapotranspiration)	NA	30%	25%	20%	Professional Judgment	13%	0.0%
0%	Public Combined Sewer/Capacity Constrained Basins	2- and 25-year peak control	Detention - Level 2	cistern, vault, detention pipe or surface detention with impermeable liner	no infiltration	NA	0%	22%	63%	Vault (modeled)	16%	0.0%
0%	Public Combined Sewer/Capacity Constrained Basins	2- and 25-year peak control	Detention - Level 3	surface detention	minimal infiltration (some soil storage and evapotranspiration)	NA	5%	22%	81%	Pond (evaluated)	19%	0.0%
0%	Public Combined Sewer/Capacity Constrained Basins	2- and 25-year peak control	Detention - Level 4	infiltration trench, bioretention (cell or planter), or pervious pavement facility all with underdrain	some infiltration (storage)	NA	24%	79%	81%	Professional Judgment	33%	0.0%
0%	Public Combined Sewer/Capacity Constrained Basins	2- and 25-year peak control	Detention - Level 5	infiltration trench, dry well, bioretention (cell or planter), or pervious pavement facility all without underdrain	relies entirely on infiltration	NA	98%	99%	81%	Infiltration Trench (modeled)	46%	0.0%
Flow Control 2 (FC2) (Flow Critical Receiving Water Basin)												
Ex: Creeks and small lakes												
Weighting=						15%	10%	35%	40%			
0%	Flow Critical Receiving Water Basin	2-, 25- and 100-year peak control	Detention+100yr - Level 1	vegetated roof (min. 4" soil depth)	no infiltration (some soil storage and evapotranspiration)	0%	30%	25%	20%	Professional Judgment	10%	0.0%
0%	Flow Critical Receiving Water Basin	2-, 25- and 100-year peak control	Detention+100yr - Level 2	cistern, vault, detention pipe or surface detention with impermeable liner	no infiltration	0%	0%	25%	76%	Vault (modeled)	20%	0.0%
0%	Flow Critical Receiving Water Basin	2-, 25- and 100-year peak control	Detention+100yr - Level 3	surface detention	minimal infiltration (some soil storage and evapotranspiration)	8%	6%	25%	81%	Pond (modeled)	22%	0.0%
0%	Flow Critical Receiving Water Basin	2-, 25- and 100-year peak control	Detention+100yr - Level 4	infiltration trench, bioretention (cell or planter), or pervious pavement facility all with underdrain	some infiltration (storage)	98%	29%	99%	81%	Professional Judgment	43%	0.0%
0%	Flow Critical Receiving Water Basin	2-, 25- and 100-year peak control	Detention+100yr - Level 5	infiltration trench, dry well, bioretention (cell or planter), or pervious pavement facility all without underdrain	relies entirely on infiltration	98%	98%	99%	81%	Infiltration Trench (modeled)	46%	0.0%
Rainwater Harvesting Credit - % of Roof Area												
0%	All	Rainwater use - for Commercial Properties	NA	Tank with reuse	--	NA	NA	NA	NA	--	10%	0.0%
										Total Adjusted Facility Credit		0.0%

Final Parcel Credit Calculation	
Total Adjusted Facility Credit	0%
Rate Tier Multiplier (3)	0%
Final Parcel Credit (4)	0%

Notes:
 1) The facility credit is the scaled weighted average of the percent reductions by performance target.
 2) The adjusted facility credit is the facility credit multiplied by the percentage of total impervious area managed by the applicable facility.
 3) The rate tier multiplier is the percentage of the customer's bill attributable to impervious area run-off. Credit is only offered for run-off managed which originates on impervious surface.
 4) The Final Parcel Credit is the rate tier multiplier multiplied by the sum of a property's adjusted facility credits (i.e., the "total adjusted facility credit"). The Final Parcel Credit is capped at 50%. The Final Parcel Credit is the credit percentage applied to the customer bill.

Rate Tier Multipliers			Tier	Multiplier (3)	
General Service/Large Residential (% impervious)	Undeveloped-Regular	0-15%	G1	19.67% 30%	
	Undeveloped-Low Impact	0-15%	G1L	23%	
	Light-Regular	16-35%	G2	48.93% 63%	
	Light-Low Impact	16-35%	G2L	62%	
	Moderate-Regular	36-65%	G3	74.27% 83%	
	Moderate-Low Impact	36-65%	G3L	79%	
	Heavy	66-85%	G4	89.99% 93%	
	Very Heavy	86-100%	G5	97.41% 99%	
	Small Residential (square feet)		<2,000 sq ft	R1a	87.78% 85%
		2,000-2,999 sq ft	R1b	87.78% 84%	
	3,000-4,999 sq ft	R2	72.55% 79%		
	5,000-6,999 sq ft	R3	70.19% 78%		
	7,000-9,999 sq ft	R4	64.48% 74%		

Single and multiple BMP technologies, with credits for specific rate tiers.

Rate Tier:		Performance Factors						Maximum Facility Credit	50%		
% Impervious Surface Managed	BMP Type	WQ/FC Classification	Stormwater Facility Type	TSS	Volume	2-yr Peak & Duration	25-yr Peak	Flow Credit Basis	Facility Credit (1)	Adjusted Facility Credit (2)	Notes
Water Quality (WQ) Treatment PGIS Area/Total Impervious (5)											
Design Standard: Treatment of the water quality design storm volume or flow rate											
Basin types: Basins requiring basic, enhanced, phosphorus, or oil treatment											
Weighting=				60%	40%	0%	0%				
0%	Traditional stormwater infrastructure (non-infiltrating facilities)	WQ- Level 1	Media filter Oil/water separator Wet vault	80%	0%	NA	NA	Media filter (evaluated)	24%	0.0%	Flow modeling not needed. Water quality performance based on Ecology's General Use Level Designation (GULD) basic treatment (TSS removal) goal.
0%	Traditional stormwater infrastructure (minimal evaporation)	WQ- Level 2	Detention/wet pond Detention/stormwater wetland Bioswales (basic, wet, and continuous inflow) Filter strips	80%	0%	NA	NA	Wetpond (modeled)	24%	0.0%	Flow modeling not needed. Water quality performance based on basic treatment goal in the Stormwater Management Manual for Western Washington (Ecology 2005).
0%	Infiltration and reuse facilities Infiltration facilities	WQ- Level 3	Bioretention cell (without underdrain) Permeable pavement facility and surface (without underdrain)	95%	91%	NA	NA	Bioret w/o underdrain (modeled)	47%	0.0%	Flow modeling not needed. Water quality performance estimated based on professional judgment.
Flow Control #1 (FC#1) - Green Stormwater Infrastructure to the Maximum Extent Feasible Only											
Design Standard: 91 percent infiltration or 91 percent reduction for 1-year peak flow											
Basin types: All											
Weighting=				0%	50%	50%	0%				
0%	Non-infiltrating facilities	FC#1- Level 1	Bioretention (cell or planter with underdrains) Permeable pavement facility and surface (with underdrain) SFR Cisterns	NA	0%	20%	NA	Bioret w/ underdrain (modeled)	5%	0.0%	Flow modeled using WWHM3 Pro.
0%	Impervious surface reduction methods	FC#1- Level 2	Green roof	NA	22%	44%	NA	Green Roof (modeled)	17%	0.0%	Flow modeled using WWHM3 Pro.
0%	Runoff reduction methods	FC#1- Level 3	Dispersion	NA	54%	85%	NA	Dispersion (modeled)	35%	0.0%	Flow modeled using WWHM3 Pro.
0%	Infiltration and reuse facilities Infiltration facilities	FC#1- Level 4	Bioretention (cell or planter without underdrains) Permeable pavement facility and surface (without underdrain)	NA	91%	58%	NA	Bioret w/o underdrain (modeled)	38%	0.0%	Flow modeled using WWHM3 Pro.
0%	Infiltration and reuse facilities Reuse facilities	FC#1- Level 5	Rainwater harvesting	NA	NA	NA	NA	Professional Judgment	50%	0.0%	Credit based on professional judgment.
Flow Control #3 (FC#3) - Pre-developed Forest											
Design Standard: Match half 2-year to 50-year flow duration to forest condition											
Basin types: Some creek basins											
Weighting=				15%	30%	30%	25%				
0%	Impervious surface reduction methods	FC#3- Level 1	Green roof	0%	25%	47%	68%	Professional Judgment	19%	0.0%	Flow and water quality performance evaluated based on results for pre-developed pasture and professional judgment.
0%	Traditional stormwater infrastructure (non-infiltrating facilities)	FC#3- Level 2	Detention cistern Detention vault Detention pipe Detention pond (with impermeable liner)	0%	0%	83%	98%	Professional Judgment	25%	0.0%	Flow and water quality performance evaluated based on results for pre-developed pasture and professional judgment.
0%	Traditional stormwater infrastructure (small-scale/distributed infiltrating facilities)	FC#3- Level 3	Infiltration trench Dry well	100%	100%	100%	33%	Professional Judgment	42%	0.0%	Flow and water quality performance evaluated based on results for pre-developed pasture and professional judgment.
0%	Infiltration and reuse facilities Infiltration facilities	FC#3- Level 4	Bioretention (cell or planter without underdrains) Permeable pavement facility and surface (without underdrain)	100%	100%	100%	33%	Professional Judgment	42%	0.0%	Flow and water quality performance evaluated based on results for pre-developed pasture and professional judgment.
0%	Infiltration and reuse facilities Reuse facilities	FC#3- Level 5	Rainwater harvesting	NA	NA	NA	NA	Professional Judgment	50%	0.0%	Credit based on professional judgment.
Flow Control #4 (FC#4) - Pre-developed Pasture											
Design Standard: Match half 2-year to 2-year flow duration to pasture condition											
Basin types: Some creek basins											
Weighting=				15%	30%	45%	10%				
0%	Impervious surface reduction methods	FC#4- Level 1	Green roof	0%	22%	44%	65%	Green Roof (modeled)	18%	0.0%	Flow modeled using WWHM3 Pro. Water quality performance estimated based on professional judgment.
0%	Traditional stormwater infrastructure (non-infiltrating facilities)	FC#4- Level 2	Detention cistern Detention vault Detention pipe Detention pond (with impermeable liner)	0%	0%	80%	95%	Vault (modeled)	24%	0.0%	Sized using SPU Vault spreadsheet. Flow control modeled using WWHM3 Pro. Water quality performance based on professional judgment.
0%	Traditional stormwater infrastructure (small-scale/distributed infiltrating facilities)	FC#4- Level 3	Infiltration trench Dry well	96%	98%	99%	30%	Infiltration Trench (modeled)	41%	0.0%	Flow modeled using WWHM3 Pro. Water quality performance based on volume reduction (% infiltration).
0%	Infiltration and reuse facilities Infiltration facilities	FC#4- Level 4	Bioretention (cell or planter without underdrains) Permeable pavement facility and surface (without underdrain)	98%	98%	99%	30%	Infiltration Trench (modeled)	41%	0.0%	Flow modeled using WWHM3 Pro. Water quality performance based on volume reduction (% infiltration).
0%	Infiltration and reuse facilities Reuse facilities	FC#4- Level 5	Rainwater harvesting	NA	NA	NA	NA	Professional Judgment	50%	0.0%	Credit based on professional judgment.
Flow Control #5 (FC#5) - Peak Flow Control											
Design Standard: 2- and 25-year peak control											
Basin types: Public combined sewer, capacity-constrained, small lakes											
Weighting=				0%	25%	40%	35%				
0%	Traditional stormwater infrastructure (non-infiltrating facilities)	FC#5- Level 1	Detention cistern Detention vault Detention pipe Detention pond (with impermeable liner)	NA	0%	48%	63%	Vault (modeled)	21%	0.0%	Sized using SPU Vault spreadsheet. Flow modeled using WWHM3 Pro.
0%	Impervious surface reduction methods	FC#5- Level 2	Green roof	NA	22%	44%	65%	Green Roof (modeled)	23%	0.0%	Flow modeled using WWHM3 Pro.
0%	Non-infiltrating facilities	FC#5- Level 3	Bioretention (cell or planter with underdrains) Permeable pavement facility and surface (with underdrain)	NA	0%	75%	80%	Bioret w/ underdrain (modeled)	29%	0.0%	Flow modeled using WWHM3 Pro.
0%	Traditional stormwater infrastructure (small-scale/distributed infiltrating facilities)	FC#5- Level 4	Infiltration trench Dry well	NA	98%	100%	64%	Infiltration Trench (modeled)	44%	0.0%	Flow modeled using WWHM3 Pro.
0%	Infiltration and reuse facilities Infiltration facilities	FC#5- Level 5	Bioretention (cell or planter without underdrains) Permeable pavement facility and surface (without underdrain)	NA	98%	100%	64%	Infiltration Trench (modeled)	44%	0.0%	Flow modeled using WWHM3 Pro.
0%	Infiltration and reuse facilities Reuse facilities	FC#5- Level 6	Rainwater harvesting	NA	NA	NA	NA	Professional Judgment	50%	0.0%	Credit based on professional judgment.
Rainwater Harvesting Credit for Commercial Properties -% of Roof Area											
0%	Infiltration and reuse facilities Reuse facilities	NA	Rainwater harvesting (commercial)	NA	NA	NA	NA	--	10%	0.0%	Commercial properties only

Final Parcel Credit Calculation	
Total Adjusted Facility Credit	0%
Rate Tier Multiplier (3)	0%
Final Parcel Credit (4)	0%

Notes:

- The facility credit is the scaled weighted average of the percent reductions by performance target.
- The adjusted facility credit is the facility credit multiplied by the percentage of total impervious area managed by the applicable facility.
- The rate tier multiplier is the percentage of the customer's bill attributable to impervious area runoff. Credit is only offered for runoff managed which originates on impervious surface.
- The final parcel credit is the rate tier multiplier multiplied by the sum of a property's adjusted facility credits (i.e., the "total adjusted facility credit"). The final parcel credit is capped at 50%. The final parcel credit is the credit percentage applied to the customer bill.
- For the water quality treatment PGIS/impervious area, enter PGIS as a percent of the total impervious area.
- Where flow control is provided, it is estimated that 75% of the total impervious surface is managed. This is based upon past business inspections.
- Fractional credits are not offered - note that no credit will be offered for credits that are calculated to round to less than 1%.
- FC1 applies to all parcels. Possible basin combinations include:
 WQ only WQ and FC3 FC3 and FC5
 FC1 only WQ and FC4 FC4 and FC5
 FC3 only WQ and FC5
 FC4 only WQ and FC3 and FC5
 FC5 only WQ and FC4 and FC5
- Flow Control 2 (FC2) - Wetland Protection requirements may also apply. A separate credit will be calculated outside of this calculator if necessary.
- A separate credit will be calculated for infiltration basins (or other traditional stormwater infrastructure) outside of this calculator if necessary.
- Applicable standards will depend on project type, size, and drainage basin (see Vol III, Section 2.5.3)
- TSS is used as an indicator of water quality treatment; Volume is used as an indicator of volume reduction via infiltration or reuse.

Rate Tier Multipliers			Tier	Multiplier (3)	
General Service/Large Residential (% impervious)	Undeveloped-Regular	0-15%	G1	19.67%	
	Undeveloped-Low Impact	0-15%	G1L	23%	
	Light-Regular	16-35%	G2	48.89%	
	Light-Low Impact	16-35%	G2L	62%	
	Moderate-Regular	36-65%	G3	74.27%	
	Moderate-Low Impact	36-65%	G3L	79%	
	Heavy	66-85%	G4	89.99%	
	Very Heavy	86-100%	G5	97.44%	
	Small Residential (square feet)	<2,000 sq ft		R1a	87.78%
		2,000-2,999 sq ft		R1b	87.78%
3,000-4,999 sq ft			R2	72.55%	
5,000-9,999 sq ft			R3	70.49%	
	7,000-9,999 sq ft		R4	64.48%	

Color Key:

20%	Ranges for customer/applicant data entry regarding Rate Tier and % Impervious or PGIS area managed.
65%	Maximum goal-based credit percentage for impervious area served by each BMP Classification.
10%	Credit contributions by BMP Classification, for applying facility's BMPs of impervious area.
Mult	Lookup Table to convert impervious area impacts of facility to composite Rate Credit Percentage.
15.0%	Rate Credit percentage that will appear on and modify bills, reflecting applicant facilities, their sizes and the Rate Tier of the applying parcel.