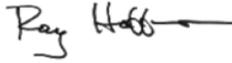


Title Stormwater Facility Credit Calculator	Number DR-2011-003
Responsibility Rates Manager, Finance Division	Supersedes DR-03-08
SPU Director's Approval  Ray Hoffman	Effective Date July 13, 2011

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 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, 2009 forward. This Director's Rule also maintains 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.

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. 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.

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

Attachment A - Table 1

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

% Site Impervious Managed	Basin Type	Design Standard	BMP Classification	Facility	Properties	Percent Reduction by Performance Target				Flow Credit Basis	Rate Tier (3):	
						TSS	Volume	2-yr Peak & Duration	25-yr Peak		Overall Max:	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%	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%	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%
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%	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%	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%	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%	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%
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%	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%	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%	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%	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%
Rainwater Harvesting Credit - % of Roof Area												
0%	All	Rainwater use - for Commercial Properties	NA	Tank with reuse	--	NA	NA	NA	NA	--	10%	0%
Total Adjusted Facility Credit											0%	

Final Parcel Credit Calculation	
Total Adjusted Facility Credit	0%
Rate Tier Multiplier (3)	0.00%
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	0-15%		G1	19.57%
Light	16-35%		G2	48.93%
Moderate	36-65%		G3	74.27%
Heavy	66-85%		G4	89.99%
Very Heavy	86-100%		G5	97.41%
Small Residential (square feet)				
<3,000 sq ft			R1	87.78%
3,000-4,999 sq ft			R2	72.55%
5,000-6,999 sq ft			R3	70.19%
7,000-9,999 sq ft			R4	64.48%

Attachment A - Table 2. Stormwater Facility Credit Calculator: For facilities built according to 2009 Code requirements. 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	Calculated Credit	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)	48%	24%	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)	48%	24%	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	WQ- Level 3	Bioretention cell (without underdrain) Permeable pavement facility (without underdrain)	95%	91%	NA	NA	Bioret w/o underdrain (modeled)	93%	47%	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 (with underdrain)	NA	0%	20%	NA	Bioret w/ underdrain (modeled)	10%	5%	0%	Flow modeled using WWHM3 Pro.
0%	Impervious surface reduction methods	FC#1- Level 2	Green roof	NA	22%	44%	NA	Green Roof (modeled)	33%	17%	0%	Flow modeled using WWHM3 Pro.
0%	Runoff reduction methods	FC#1- Level 3	Dispersion	NA	54%	85%	NA	Dispersion (modeled)	70%	35%	0%	Flow modeled using WWHM3 Pro.
0%	Infiltration and reuse facilities	FC#1- Level 4	Bioretention (cell or planter without underdrains) Permeable pavement facility (without underdrain)	NA	91%	58%	NA	Bioret w/o underdrain (modeled)	75%	37%	0%	Flow modeled using WWHM3 Pro.
0%	Infiltration and reuse facilities	FC#1- Level 5	Rainwater harvesting	NA	NA	NA	NA	Professional Judgment	100%	50%	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	38%	19%	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	49%	25%	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	83%	42%	0%	Flow and water quality performance evaluated based on results for pre-developed pasture and professional judgment.
0%	Infiltration and reuse facilities	FC#3- Level 4	Bioretention (cell or planter without underdrains) Permeable pavement facility (without underdrain)	100%	100%	100%	33%	Professional Judgment	83%	42%	0%	Flow and water quality performance evaluated based on results for pre-developed pasture and professional judgment.
0%	Infiltration and reuse facilities	FC#3- Level 5	Rainwater harvesting	NA	NA	NA	NA	Professional Judgment	100%	50%	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)	33%	17%	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)	46%	23%	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	98%	98%	99%	30%	Infiltration Trench (modeled)	92%	46%	0%	Flow modeled using WWHM3 Pro. Water quality performance based on volume reduction (% infiltration).
0%	Infiltration and reuse facilities	FC#4- Level 4	Bioretention (cell or planter without underdrains) Permeable pavement facility (without underdrain)	98%	98%	99%	30%	Infiltration Trench (modeled)	92%	46%	0%	Flow modeled using WWHM3 Pro. Water quality performance based on volume reduction (% infiltration).
0%	Infiltration and reuse facilities	FC#4- Level 5	Rainwater harvesting	NA	NA	NA	NA	Professional Judgment	100%	50%	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)	41%	21%	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)	46%	23%	0%	Flow modeled using WWHM3 Pro.
0%	Non-infiltrating facilities	FC#5- Level 3	Bioretention (cell or planter with underdrains) Permeable pavement facility (with underdrain)	NA	0%	75%	80%	Bioret w/ underdrain (modeled)	58%	29%	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)	87%	44%	0%	Flow modeled using WWHM3 Pro.
0%	Infiltration and reuse facilities	FC#5- Level 5	Bioretention (cell or planter without underdrains) Permeable pavement facility (without underdrain)	NA	98%	100%	64%	Infiltration Trench (modeled)	87%	44%	0%	Flow modeled using WWHM3 Pro.
0%	Infiltration and reuse facilities	FC#5- Level 6	Rainwater harvesting	NA	NA	NA	NA	Professional Judgment	100%	50%	0%	Credit based on professional judgment.
Rainwater Harvesting Credit for Commercial Properties -% of Roof Area												
0%	Infiltration and reuse facilities	NA	Rainwater harvesting (commercial)	NA	NA	NA	NA	--	--	10%	0%	Commercial properties only
Total Adjusted Facility Credit											0.0%	

Final Parcel Credit Calculation	
Total Adjusted Facility Credit	0%
Rate Tier Multiplier (3)	0.00%
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	0-15%			G1	19.57%
Light	16-35%			G2	48.93%
Moderate	36-65%			G3	74.27%
Heavy	66-85%			G4	89.99%
Very Heavy	86-100%			G5	97.41%
Small Residential (square feet)					
<3,000 sq ft				R1	87.78%
3,000-4,999 sq ft				R2	72.55%
5,000-6,999 sq ft				R3	70.19%
7,000-9,999 sq ft				R4	64.48%
Color Key:					
20%	Ranges for customer/appllicant 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.				