

DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0

<input type="radio"/> 2011 BMP Standards and Specifications		<input checked="" type="radio"/> 2013 Draft BMP Standards and Specifications		<input type="button" value="CLEAR ALL"/>		data input cells			
Project Name:						constant values			
Date:						calculation cells			
Site Information		Linear Development Project? No				final results			

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area (acres) →	0.03	Check:	
		BMP Design Specifications List:	2013 Draft Stds & Specs
Maximum reduction required:	10%	Linear project?	No
The site's net increase in impervious cover (acres) is:	0.016528926	Land cover areas entered correctly?	✓
Post Development TP Load Reduction for Site (lb/yr):	0.01	Total disturbed area entered?	✓

Pre-Development Land Cover (acres)	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed				0.06	0.06
Impervious Cover (acres)					0.00
					0.06

Post-Development Land Cover (acres)	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land				0.04	0.04
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed				0.01	0.01
Impervious Cover (acres)				0.02	0.02
Area Check	OK.	OK.	OK.	OK.	0.06

* Forest/Open Space areas must be protected in accordance with the Virginia Runoff Reduction Method

Constants		Runoff Coefficients (Rv)				
		A Soils	B Soils	C Soils	D Soils	
Annual Rainfall (inches)	43					
Target Rainfall Event (inches)	1.00					
Total Phosphorus (TP) EMC (mg/L)	0.26	Forest/Open Space	0.02	0.03	0.04	0.05
Total Nitrogen (TN) EMC (mg/L)	1.86	Managed Turf	0.15	0.20	0.22	0.25
Target TP Load (lb/acre/yr)	0.41	Impervious Cover	0.95	0.95	0.95	0.95
Pj (unitless correction factor)	0.90					

LAND COVER SUMMARY PRE REDEVELOPMENT			LAND COVER SUMMARY POST DEVELOPMENT					
Land Cover Summary-Pre			Land Cover Summary-Post (Final)		Land Cover Summary-Post		Land Cover Summary-Post	
Pre-ReDevelopment	Listed	Adjusted ^a	Post ReDev. & New Impervious	Post-ReDevelopment	Post-ReDevelopment	Post-ReDevelopment	Post-Development New Impervious	
Forest/Open Space Cover (acres)	0.00	0.00	Forest/Open Space Cover (acres)	0.04	Forest/Open Space Cover (acres)	0.04		
Weighted Rv(forest)	0.00	0.00	Weighted Rv(forest)	0.05	Weighted Rv(forest)	0.05		
% Forest	0%	0%	% Forest	65%	% Forest	88%		
Managed Turf Cover (acres)	0.06	0.05	Managed Turf Cover (acres)	0.01	Managed Turf Cover (acres)	0.01		
Weighted Rv(turf)	0.25	0.25	Weighted Rv (turf)	0.25	Weighted Rv (turf)	0.25		
% Managed Turf	100%	100%	% Managed Turf	9%	% Managed Turf	12%		
Impervious Cover (acres)	0.00	0.00	Impervious Cover (acres)	0.02	ReDev. Impervious Cover (acres)	0.00	New Impervious Cover (acres)	0.02
Rv(impervious)	0.95	0.95	Rv(impervious)	0.95	Rv(impervious)	0.95	Rv(impervious)	0.95
% Impervious	0%	0%	% Impervious	26%	% Impervious	0%		
Total Site Area (acres)	0.06	0.05	Final Site Area (acres)	0.06	Total ReDev. Site Area (acres)	0.05		
Site Rv	0.25	0.25	Final Post Dev Site Rv	0.30	ReDev Site Rv	0.07		

Treatment Volume and Nutrient Load		
Pre-ReDevelopment Treatment Volume (acre-ft)	0.0013	0.0010
Pre-ReDevelopment Treatment Volume (cubic feet)	58	43
Pre-ReDevelopment TP Load (lb/yr)	0.04	0.03
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	0.57	0.57
Baseline TP Load (lb/yr) (0.41 lbs/acre/yr applied to pre-redevelopment area excluding pervious land proposed for new impervious cover)		0.02

Final Post-Development Treatment Volume (acre-ft)	0.0016
Final Post-Development Treatment Volume (cubic feet)	70
Final Post-Development TP Load (lb/yr)	0.04
Final Post-Development TP Load per acre (lb/acre/yr)	0.69

Treatment Volume and Nutrient Load		
Post-ReDevelopment Treatment Volume (acre-ft)	0.0003	
Post-ReDevelopment Treatment Volume (cubic feet)	13	
Post-ReDevelopment Load (TP) (lb/yr)*	0.01	
Post-ReDevelopment TP Load per acre (lb/acre/yr)	0.17	
Max. Reduction Required (Below Pre-Development Load)	10%	

Post-Development Treatment Volume (acre-ft)	0.0013
Post-Development Treatment Volume (cubic feet)	57
Post-Development TP Load (lb/yr)	0.04

^aAdjusted Land Cover Summary:
Pre-Development land cover minus pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover.
Adjusted total acreage is consistent with Post-ReDevelopment acreage (minus acreage of new impervious cover).
Column 1 shows load reduction requirement for new impervious cover (based on new development load limit, 0.41 lbs/acre/year).

TP Load Reduction Required for Redeveloped Area (lb/yr)	-0.02
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TP Load Reduction Required for New Impervious Area (lb/yr)	0.03
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