

## Wake County Stormwater Hybrid Tool Directions

[For additional submittal and design guidance, please see Wake County's SW Manual](#)

The Wake County Stormwater Hybrid Tool is required for all stormwater submittals in Wake County jurisdiction. Engineer will input all data requested that is highlighted in **blue**. Engineer may follow provided links to view calculations used in this tool. Calculations for peak flow, runoff, time of concentration, etc. are for individual drainage areas. Engineer should complete a worksheet for each drainage area within a project area.

1	<p>Complete <b>all inputs</b> on the SITE DATA worksheet. SITE DATA worksheet should be submitted with preliminary plan submittals and modified and submitted for construction plan submittals.</p> <p>Residential Stormwater Details should be completed for all residential submittal.</p> <p>Stormwater Narrative should describe the site conditions in pre- and post-development conditions including a description of site improvements and proposed stormwater BMPs.</p>
2	<p>Complete DA worksheets. Most of the site data is inputted by the engineer on the DA worksheets. A Links/Comments column provides details regarding individual inputs. Engineers may also enter comments in this column as needed.</p> <p>DA Worksheets will calculate pre and post runoff, time of concentration, peak flow, and volume of runoff per drainage area. Inputs on these sheets will also be used to calculate the site composite curve numbers for pre and post development, Target Curve Number (TCN), and nitrogen and phosphorus loading calculations.</p> <p>Offsite values should be included when there is offsite drainage onto the site to ensure that the peak flow is an accurate value. Otherwise, peak flow represents only the site peak flow. Offsite drainage is not used in Target Curve Number or nutrient loading calculations.</p>
3	<p>SITE SUMMARY worksheet summarizes the pre and post runoff, Tc, and peak flow per drainage area based on inputs from DA worksheets. This worksheet denotes the volume required for management per drainage area based on high density requirements.</p> <p>TCN and composite curve numbers for pre and post development are also calculated and summarized. If the TCN is exceeded, this worksheet will calculate total volume to be managed for the entire site based on TCN requirements.</p> <p>Nitrogen and Phosphorus Loading: Nitrogen and Phosphorus Loading Rates for the site are calculated based on the land use acreages imputed on DA worksheets. This worksheet calculates the total amount of nitrogen and phosphorus for pre and post development. Nitrogen and phosphorus totals will be used on following BMP worksheets.</p> <p>Disconnected Impervious - This area will be used to provide an adjusted post development composite curve number (<math>CN_{adjusted}</math>) to allow a credit for the use of disconnected impervious. Site plans should clearly indicate areas of disconnected impervious.</p> <p>Note: There is only one engineer input on this sheet and all exceedances from DA worksheets will be flagged in <b>red</b>.</p>
4	<p>DA BMP worksheets require engineer to input proposed BMP information. BMPs are categorized by sub-basins within the drainage area. Engineer should input BMP device name, type, and volume provided. BMP requirements are automatically imported from previous inputs.</p> <p>Engineer should input land uses by sub-basin. Off-site drainage to the BMP should be included to ensure that the water quality volume required is calculated correctly.</p> <p>BMPs are required in each DA where post-development peak flow is higher than pre-development peak flow by 10%. Note that there is no 10% for projects within the Falls and Jordan Lake Watersheds.</p> <p>DA BMP worksheets will ensure that proposed BMPs meet requirements for peak flow, TCN, and for Nitrogen and Phosphorus.</p> <p>Engineer must input post-BMP discharge.</p>
5	<p>BMP SUMMARY worksheet summarizes the pre and post BMP runoff, and peak flow per drainage area based on inputs from DA BMP worksheets.</p> <p>Nitrogen and Phosphorus Loading: calculated based on the inputs on DA BMP worksheets.</p> <p>Note: There are no engineer inputs on this sheet and all exceedances from DA BMP worksheets will be flagged in <b>red</b>.</p>



## SITE DATA

Project Information	
Project Name:	Broadmoor
Permit No (if known):	
Applicant:	WithersRavenel
Applicant Contact Name:	Brandon Miller
Applicant Contact Number:	919-535-5200
Contact Email:	<a href="mailto:bmiller@withersravenel.com">bmiller@withersravenel.com</a>
Last Modified Date:	Wednesday, April 10, 2024
Site Data:	
River Basin:	Neuse
Regulatory Watershed:	N/A
Physiographic/Geologic Region:	Piedmont
Type of Development (Select from Dropdown menu):	Residential
Zoning:	Residential Highway
Total Site Area (Ac):	103.63
Existing Lake/Pond Area (Ac):	
Proposed Disturbed Area (Ac):	
Proposed Impervious Surface Area from DA Sheets (acre):	21.84
Percent Built Upon Area (BUA):	21%
Is the proposed project a site expansion?	No
Number of Drainage Areas on Site (Points of Analysis):	4
Annual Rainfall (in):	45.41
One-year, 24-hour rainfall (in):	3.00
Two-year, 24-hour rainfall (in):	3.60
Proposed Residential Stormwater Details (if applicable):	
Site Square Footage:	4,514,071
Total Acreage in Lots:	
Lot Square Footage:	
Number of Lots:	225
Average Lot Size (SF):	5,062
Proposed Impervious Surface Area from DA sheets (SF):	951,466
Proposed Impervious Surface Area Devoted to Lots (SF):	664,231
Total Impervious Surface Area Devoted to Roads (SF):	249,824
Other Impervious Surface Area (SF):	835,278

**Stormwater Narrative (limit to 1,200 characters - attach additional pages with submittal if necessary):**

Large empty text area for stormwater narrative.



Project Name:

Broadmoor

**DRAINAGE AREA 1  
STORMWATER PRE-POST CALCULATIONS**

LAND USE & SITE DATA	PRE-DEVELOPMENT								POST-DEVELOPMENT							
	Drainage Area (Acres)=								125.91							
	Site Acreage within Drainage=								103.66							
	One-year, 24-hour rainfall (in)=								3.00							
Land Use (acres) by Soil Group:	A Soils		B Soils		C Soils		D Soils		A Soils		B Soils		C Soils		D Soils	
	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
<b>Commercial</b>																
Parking lot																
Roof																
Open/Landscaped																
<b>Industrial</b>																
Parking lot																
Roof																
Open/Landscaped																
<b>Transportation</b>																
High Density (interstate, main)																
High Density (Grassed Right-of-ways)																
Low Density (secondary, feeder)																
Low Density (Grassed Right-of-ways)																
Rural																
Rural (Grassed Right-of-ways)																
Sidewalk																
<b>Misc. Pervious</b>																
Managed pervious (Open Space)			42.63	17.47	8.38	0.04	15.87	2.58			14.65	17.45	6.52	0.03	10.48	3.89
Unmanaged (pasture)																
Woods (not on lots)			2.52	0.23	1.78		8.01	1.31			2.16	0.03	1.78		5.62	
<b>Residential</b>																
Roadway				0.18								4.26	0.40	0.50		0.94
Grassed Right-of-ways																
Driveway												1.40		0.07		0.45
Parking lot												0.17				0.66
Roof			0.07	0.30				0.15			5.70	0.30	0.26		1.96	0.15
Sidewalk (Includes Patios)											3.72	0.00	0.30	0.00	0.93	0.00
Lawn											10.34		0.61		2.37	
Managed pervious (Open Space)																
Woods (on lots)																
<b>Land Taken up by BMP</b>																
<b>JURISDICTIONAL LANDS</b>																
Natural wetland			0.00		0.93		20.64				0.00		0.91		20.59	
Riparian buffer (Zone 1 only)																
Open water			0.02				2.83				0.02				2.83	
Totals (Ac)=	0.00	0.00	45.23	18.17	11.08	0.04	47.34	4.04	0.00	0.00	42.41	18.18	10.95	0.03	46.82	4.04

SITE FLOW	PRE-DEVELOPMENT $T_c$	POST-DEVELOPMENT $T_c$
<b>Sheet Flow</b>		
Length (ft)=	100.00	
Slope (ft/ft)=	0.03	
Surface Cover:	Grass	
n-value=	0.24	
$T_i$ (hrs)=	0.21	0.00
<b>Shallow Flow</b>		
Length (ft)=	860.00	
Slope (ft/ft)=	0.02	
Surface Cover:	Unpaved	
Average Velocity (ft/sec)=	2.45	0.00
$T_i$ (hrs)=	0.10	0.00
<b>Channel Flow 1</b>		
Length (ft)=	1706.00	
Slope (ft/ft)=	0.01	
Cross Sectional Flow Area (ft <sup>2</sup> )=	13.00	
Wetted Perimeter (ft)=	16.33	
Channel Lining:	Grass	
n-value=	0.04	
Hydraulic Radius (ft)=	0.80	0.00
Average Velocity (ft/sec)=	3.47	0.00
$T_i$ (hrs)=	0.14	0.00
$T_c$ (hrs)=	0.44	0.08
<b>RESULTS</b>		
	<b>PRE-DEVELOPMENT</b>	<b>POST-DEVELOPMENT</b>
Site Impervious Surface Area (Ac) =	0.07	21.31
Lot Impervious Surface Area (Ac) =	0.07	14.79
<b>1-year, 24-hour storm (Peak Flow)</b>		
Volume of runoff (ft <sup>3</sup> ) =	276,287	445,629
Volume change (ft <sup>3</sup> ) =	169,341	
Runoff (inches) = $Q^*$ =	0.6045	1.0028
Peak Discharge (cfs)= $Q$ =	56.0813	196.6039
Composite Curve Number (DA)=	67	73
Composite Curve Number (Site only)=	68	75
<b>DISCONNECTED IMPERVIOUS - Credit given only to residential development with drainage area with less than 30% impervious</b>		
Percent Disconnected Impervious Credit (Residential Only) =		
Disconnected impervious area (Ac) =	0.00	
Drainage Area $CN_{adjusted}$ =	73	
Site Only $CN_{adjusted}$ =	75	

Post-development peak flow exceeds pre-development peak flow for this DA!



Project Name:

Broadmoor

**DRAINAGE AREA 2**  
**STORMWATER PRE-POST CALCULATIONS**

LAND USE & SITE DATA	PRE-DEVELOPMENT								POST-DEVELOPMENT							
Drainage Area (Acres)=	4.00								4.01							
Site Acreage within Drainage=	1.36								1.39							
One-year, 24-hour rainfall (in)=	3.00															
Land Use (acres) by Soil Group:	A Soils		B Soils		C Soils		D Soils		A Soils		B Soils		C Soils		D Soils	
Commercial	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Parking lot																
Roof																
Open/Landscaped																
Industrial	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Parking lot																
Roof																
Open/Landscaped																
Transportation	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
High Density (interstate, main)																
High Density (Grassed Right-of-ways)																
Low Density (secondary, feeder)																
Low Density (Grassed Right-of-ways)																
Rural																
Rural (Grassed Right-of-ways)																
Sidewalk																
Misc. Pervious	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Managed pervious (Open Space)			0.69	0.87	0.67	1.39					0.68	0.69	0.52	1.30		
Unmanaged (pasture)																
Woods (not on lots)																
Residential	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Roadway				0.13		0.16					0.04	0.30		0.23		
Grassed Right-of-ways																
Driveway											0.00		0.01			
Parking lot																
Roof			0.00	0.08		0.02					0.00	0.08	0.03	0.02		
Sidewalk (Includes Patios)											0.06		0.04			
Lawn											0.00		0.02			
Managed pervious (Open Space)																
Woods (on lots)																
Land Taken up by BMP																
JURISDICTIONAL LANDS	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Natural wetland																
Riparian buffer (Zone 1 only)																
Open water																
Totals (Ac)=	0.00	0.00	0.69	1.08	0.67	1.57	0.00	0.00	0.00	0.00	0.78	1.07	0.60	1.56	0.00	0.00

SITE FLOW	PRE-DEVELOPMENT T <sub>c</sub>	POST-DEVELOPMENT T <sub>c</sub>
<b>Sheet Flow</b>		
Length (ft)=		
Slope (ft/ft)=		
Surface Cover:		
n-value=		
T <sub>i</sub> (hrs)=	0.00	0.00
<b>Shallow Flow</b>		
Length (ft)=		
Slope (ft/ft)=		
Surface Cover:		
Average Velocity (ft/sec)=	0.00	0.00
T <sub>i</sub> (hrs)=	0.00	0.00
<b>Channel Flow 1</b>		
Length (ft)=		
Slope (ft/ft)=		
Cross Sectional Flow Area (ft <sup>2</sup> )=		
Wetted Perimeter (ft)=		
Channel Lining:		
n-value=		
Hydraulic Radius (ft)=	0.00	0.00
Average Velocity (ft/sec)=	0.00	0.00
T <sub>i</sub> (hrs)=	0.00	0.00
T <sub>c</sub> (hrs)=	0.45	0.45
<b>RESULTS</b>		
	<b>PRE-DEVELOPMENT</b>	<b>POST-DEVELOPMENT</b>
Site Impervious Surface Area (Ac) =	0.00	0.17
Lot Impervious Surface Area (Ac) =	0.00	0.14
<b>1-year, 24-hour storm (Peak Flow)</b>		
Volume of runoff (ft <sup>3</sup> ) =	12,367	15,624
Volume change (ft <sup>3</sup> ) =		3,257
Runoff (inches) = Q* =	0.8513	1.0722
Peak Discharge (cfs) = Q =	2.5868	3.3478
Composite Curve Number (DA) =	71	74
Composite Curve Number (Site only) =	67	71
<b>DISCONNECTED IMPERVIOUS - Credit given only to residential development with drainage area with less than 30% impervious</b>		
Percent Disconnected Impervious Credit (Residential Only) =		
Disconnected impervious area (Ac) =		0.00
Drainage Area CN <sub>adjusted</sub> =		74
Site Only CN <sub>adjusted</sub> =		71

Post-development peak flow exceeds pre-development peak flow for this DA!



Project Name:

Broadmoor

**DRAINAGE AREA 3  
STORMWATER PRE-POST CALCULATIONS**

LAND USE & SITE DATA	PRE-DEVELOPMENT								POST-DEVELOPMENT							
	Drainage Area (Acres)=								4.01							
	Site Acreage within Drainage=								1.36							
	One-year, 24-hour rainfall (in)=								3.00							
Land Use (acres) by Soil Group:	A Soils		B Soils		C Soils		D Soils		A Soils		B Soils		C Soils		D Soils	
	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
<b>Commercial</b>																
Parking lot																
Roof																
Open/Landscaped																
<b>Industrial</b>																
Parking lot																
Roof																
Open/Landscaped																
<b>Transportation</b>																
High Density (interstate, main)																
High Density (Grassed Right-of-ways)																
Low Density (secondary, feeder)																
Low Density (Grassed Right-of-ways)																
Rural																
Rural (Grassed Right-of-ways)																
Sidewalk																
<b>Misc. Pervious</b>																
Managed pervious (Open Space)			0.69	0.87	0.67	1.39					0.68	0.69	0.52	1.30		
Unmanaged (pasture)																
Woods (not on lots)																
<b>Residential</b>																
Roadway					0.13	0.16					0.04	0.30		0.23		
Grassed Right-of-ways																
Driveway											0.00		0.01			
Parking lot																
Roof			0.00	0.08		0.02					0.08		0.05			
Sidewalk (Includes Patios)											0.06		0.04			
Lawn											0.00		0.02			
Managed pervious (Open Space)																
Woods (on lots)																
<b>Land Taken up by BMP</b>																
<b>JURISDICTIONAL LANDS</b>																
Natural wetland																
Riparian buffer (Zone 1 only)																
Open water																
Totals (Ac)=	0.00	0.00	0.69	1.08	0.67	1.57	0.00	0.00	0.00	0.00	0.86	0.99	0.63	1.53	0.00	0.00



SITE FLOW	PRE-DEVELOPMENT $T_c$	POST-DEVELOPMENT $T_c$
<b>Sheet Flow</b>		
Length (ft)=		
Slope (ft/ft)=		
Surface Cover:		
n-value=		
$T_t$ (hrs)=	0.00	0.00
<b>Shallow Flow</b>		
Length (ft)=		
Slope (ft/ft)=		
Surface Cover:		
Average Velocity (ft/sec)=	0.00	0.00
$T_t$ (hrs)=	0.00	0.00
<b>Channel Flow 1</b>		
Length (ft)=		
Slope (ft/ft)=		
Cross Sectional Flow Area (ft <sup>2</sup> )=		
Wetted Perimeter (ft)=		
Channel Lining:		
n-value=		
Hydraulic Radius (ft)=	0.00	0.00
Average Velocity (ft/sec)=	0.00	0.00
$T_t$ (hrs)=	0.00	0.00
$T_c$ (hrs)=	0.24	0.24
<b>RESULTS</b>		
	<b>PRE-DEVELOPMENT</b>	<b>POST-DEVELOPMENT</b>
Site Impervious Surface Area (Ac) =	0.00	0.27
Lot Impervious Surface Area (Ac) =	0.00	0.24
<b>1-year, 24-hour storm (Peak Flow)</b>		
Volume of runoff (ft <sup>3</sup> ) =	12,376	15,586
Volume change (ft <sup>3</sup> ) =		3,210
Runoff (inches) = $Q^*$ =	0.8502	1.0703
Peak Discharge (cfs) = $Q$ =	3.5757	4.5440
Composite Curve Number (DA) =	71	74
Composite Curve Number (Site only) =	67	72
<b>DISCONNECTED IMPERVIOUS - Credit given only to residential development with drainage area with less than 30% impervious</b>		
Percent Disconnected Impervious Credit (Residential Only) =		
Disconnected impervious area (Ac) =		0.00
Drainage Area $CN_{adjusted}$ =		74
Site Only $CN_{adjusted}$ =		72

Post-development peak flow exceeds pre-development peak flow for this DA!



Project Name:

Broadmoor

**DRAINAGE AREA 4**  
**STORMWATER PRE-POST CALCULATIONS**

LAND USE & SITE DATA	PRE-DEVELOPMENT								POST-DEVELOPMENT							
Drainage Area (Acres)=	2.51								2.55							
Site Acreage within Drainage=	0.54								0.58							
One-year, 24-hour rainfall (in)=	3.00															
Land Use (acres) by Soil Group:	A Soils		B Soils		C Soils		D Soils		A Soils		B Soils		C Soils		D Soils	
<b>Commercial</b>	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Parking lot																
Roof																
Open/Landscaped																
<b>Industrial</b>	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Parking lot																
Roof																
Open/Landscaped																
<b>Transportation</b>	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
High Density (interstate, main)																
High Density (Grassed Right-of-ways)																
Low Density (secondary, feeder)																
Low Density (Grassed Right-of-ways)																
Rural																
Rural (Grassed Right-of-ways)																
Sidewalk																
<b>Misc. Pervious</b>	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Managed pervious (Open Space)			0.54	1.60							0.45	1.09				
Unmanaged (pasture)																
Woods (not on lots)																
<b>Residential</b>	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Roadway				0.32								0.73				
Grassed Right-of-ways																
Driveway											0.00					
Parking lot																
Roof				0.05							0.03	0.05				
Sidewalk (Includes Patios)											0.06	0.10				
Lawn											0.04					
Managed pervious (Open Space)																
Woods (on lots)																
<b>Land Taken up by BMP</b>																
<b>JURISDICTIONAL LANDS</b>	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite	Site	Offsite
Natural wetland																
Riparian buffer (Zone 1 only)																
Open water																
Totals (Ac)=	0.00	0.00	0.54	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.58	1.97	0.00	0.00	0.00	0.00

SITE FLOW	PRE-DEVELOPMENT $T_c$	POST-DEVELOPMENT $T_c$
<b>Sheet Flow</b>		
Length (ft)=		
Slope (ft/ft)=		
Surface Cover:		
n-value=		
$T_i$ (hrs)=	0.00	0.00
<b>Shallow Flow</b>		
Length (ft)=		
Slope (ft/ft)=		
Surface Cover:		
Average Velocity (ft/sec)=	0.00	0.00
$T_i$ (hrs)=	0.00	0.00
<b>Channel Flow 1</b>		
Length (ft)=		
Slope (ft/ft)=		
Cross Sectional Flow Area (ft <sup>2</sup> )=		
Wetted Perimeter (ft)=		
Channel Lining:		
n-value=		
Hydraulic Radius (ft)=	0.00	0.00
Average Velocity (ft/sec)=	0.00	0.00
$T_i$ (hrs)=	0.00	0.00
<b><math>T_c</math> (hrs)=</b>	<b>0.19</b>	<b>0.19</b>
<b>RESULTS</b>	<b>PRE-DEVELOPMENT</b>	<b>POST-DEVELOPMENT</b>
Site Impervious Surface Area (Ac) =	0.00	0.09
Lot Impervious Surface Area (Ac) =	0.00	0.09
<b>1-year, 24-hour storm (Peak Flow)</b>		
Volume of runoff (ft <sup>3</sup> ) =	6,564	11,868
Volume change (ft <sup>3</sup> ) =		5,305
Runoff (inches) = $Q^*$ =	0.7216	1.2840
Peak Discharge (cfs)= $Q$ =	1.9202	3.8988
Composite Curve Number (DA)=	66	75
Composite Curve Number (Site only)=	61	67
<b>DISCONNECTED IMPERVIOUS - Credit given only to residential development with drainage area with less than 30% impervious</b>		
Percent Disconnected Impervious Credit (Residential Only) =		
Disconnected impervious area (Ac) =		0.00
Drainage Area $CN_{adjusted}$ =		75
Site Only $CN_{adjusted}$ =		67

Post-development peak flow exceeds pre-development peak flow for this DA!

Project Name: **Broadmoor**

**DA SITE SUMMARY**  
**STORMWATER PRE-POST CALCULATIONS**

SITE SUMMARY						
<b>DRAINAGE AREA SUMMARIES</b>						
DRAINAGE AREA:	DA1	DA2	DA3	DA4	DA5	DA6
<b>Pre-Development (1-year, 24-hour storm)</b>						
Runoff (in)=Q* =	0.604	0.851	0.850	0.722		
Peak Flow (cfs)=Q <sub>post</sub> =	56.081	2.587	3.576	1.920		
<b>Post-Development (1-year, 24-hour storm)</b>						
Proposed Impervious Surface (acre) =	21.31	0.17	0.27	0.09		
Runoff (in)=Q* =	1.003	1.072	1.070	1.284		
Peak Flow (cfs)=Q <sub>post</sub> =	196.604	3.348	4.544	3.899		
<b>TARGET CURVE NUMBER (TCN) - Residential Only</b>						
<b>SITE SOIL COMPOSITION</b>						
<b>HYDROLOGIC SOIL GROUP</b>	<u>Site Area</u>	<u>%</u>	<u>Target CN</u>			
A	0.00	0%	43			
B	44.62	43%	63			
C	12.19	12%	76			
D	46.82	45%	81			
Total Site Area (acres) =	103.63					
Zoning =	Residential Highway					
Target Curve Number (TCN) =	73					
% Impervious =	21%					
Post Development CN <sub>adjusted</sub> =	75					
Required Volume to be Managed (TCN)= ft <sup>3</sup> =	38,563					
<b>SITE NITROGEN AND PHOSPHORUS LOADING</b>						
<b>Nitrogen and Phosphorus Targets (Based on Regulatory Watershed)</b>						
Target Nitrogen Load (lb/ac/yr)=	3.6					
Target Phosphorus Load (Falls and Jordan Lakes Only) (lb/ac/yr)=	N/A					
% N Loading Reduction Option for Expansions (Falls and Jordan Lakes Only) =	N/A					
% Loading Reduction Nitrogen Target (Falls and Jordan Lakes Only) (lb/ac/yr)=	N/A					
% P Loading Reduction Option for Expansions (Falls and Jordan Lakes Only) =	N/A					
% Loading Reduction Phosphorus Target (Falls and Jordan Lakes Only) (lb/ac/yr)=	N/A					
<b>Pre Development Nitrogen and Phosphorus Load</b>						
Total Nitrogen (lb/ac/yr)=	1.31					
Total Phosphorus (lb/ac/yr)=	N/A					
<b>Post Development Nitrogen and Phosphorus Load</b>						
Total Nitrogen (lb/ac/yr)=	3.65					
Total Phosphorus (lb/ac/yr)=	N/A					



Project Name: Broadmoor

**DRAINAGE AREA 1  
BMP CALCULATIONS**

DRAINAGE AREA 1 - BMP DEVICES AND ADJUSTMENTS			
DA1 Site Acreage=	100.18		
DA1 Off-Site Acreage=	22.25		
Total Required Storage Volume for Site TCN Requirement (ft <sup>3</sup> )=	38,563		
Will site use underground water harvesting?		Enter % volume reduction in decimal form=	Note: Supporting information/details should be submitted to demonstrate water usage.

**ENTER AREA TREATED BY BMP**

Land Use (acres)	Sub-DA1(a) (Ac)		Sub-DA1(b) (Ac)		Sub-DA1(c) (Ac)		Sub-DA1(d) (Ac)		Sub-DA1(e) (Ac)	
	Site	Off-site	Site	Off-site	Site	Off-site	Site	Off-site	Site	Off-site
<b>Commercial</b>										
Parking lot										
Roof										
Open/Landscaped										
<b>Industrial</b>										
Parking lot										
Roof										
Open/Landscaped										
<b>Transportation</b>										
High Density (interstate, main)										
High Density (Grassed Right-of-ways)										
Low Density (secondary, feeder)										
Low Density (Grassed Right-of-ways)										
Rural										
Rural (Grassed Right-of-ways)										
Sidewalk										
<b>Misc. Pervious</b>										
Managed pervious	1.32	0.32	5.26	1.00	3.56	6.39	2.37			
Unmanaged (pasture)										
Woods (not on lots)	0.76				1.14	0.03	0.00			
<b>Residential</b>										
Roadway	1.17		2.38	0.22	1.48	0.17	0.67			
Grassed Right-of-ways										
Driveway	0.48		0.59		0.38		0.27			
Parking lot	0.69									
Roof	2.38	0.00	3.62	0.08	2.68		1.42			
Sidewalk	0.84		1.87		1.29		0.54			
Lawn	1.43		5.10		3.82		1.28			
Managed pervious										
Woods (on lots)										
<b>Land Taken up by BMP</b>										
<b>JURISDICTIONAL LANDS</b>										
Natural wetland			0.00		0.00		0.00			
Riparian buffer (Zone 1 only)										
Totals (Ac)=	9.07	0.32	18.82	1.31	14.35	6.59	6.54	0.00	0.00	0.00

**Sub-DA1(a) BMP(s)**

Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
SCM #1	Wet Detention Pond	19,888	1.31	8.09	0.43	2.67	1.04	5.80	0.15	0.83	22,493
Outflow Total Nitrogen (lb/ac/yr)=			5.80		Outflow Total Phosphorus (lb/ac/yr)=			0.83			

**Sub-DA1(b) BMP(s)**

If Sub-DA1(b) is connected to upstream sub-basin(s), select all contributing sub-basin(s) from dropdown menus:											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
SCM #2	Wet Detention Pond	32,271	1.35	6.32	0.50	2.32	1.05	4.40	0.16	0.65	34,092
Outflow Total Nitrogen (lb/ac/yr)=			4.40			Outflow Total Phosphorus (lb/ac/yr)=			0.65		
<b>Sub-DA1 (c) BMP(s)</b>											
If Sub-DA1(c) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
SCM #3	Wet Detention Pond	23,399	1.34	5.74	0.48	2.06	1.05	4.02	0.15	0.59	26,403
Outflow Total Nitrogen (lb/ac/yr)=			4.02			Outflow Total Phosphorus (lb/ac/yr)=			0.59		
<b>Sub-DA1 (d) BMP(s)</b>											
If Sub-DA1(d) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
SCM #4	Wet Detention Pond	10,632	1.34	6.19	0.45	2.08	1.05	4.33	0.15	0.62	14,448
Outflow Total Nitrogen (lb/ac/yr)=			4.33			Outflow Total Phosphorus (lb/ac/yr)=			0.62		
<b>Sub-DA1 (e) BMP(s)</b>											
If Sub-DA1(e) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=						Outflow Total Phosphorus (lb/ac/yr)=					
<b>DA1 BMP SUMMARY</b>											
Total Volume Treated (c.f.)=		97436									
DA1 Outflow Total Nitrogen (lb/ac/yr)=		4.33									
DA1 Outflow Total Phosphorus (lb/ac/yr)=		0.62									
<b>1-year, 24-hour storm</b>											
Pre Development Peak Discharge (cfs)= Q <sub>1-year</sub> =		56.08									
Post BMP Peak Discharge (cfs)= Q <sub>1-year</sub> =		35.04									



Project Name: Broadmoor

**DRAINAGE AREA 2  
BMP CALCULATIONS**

DRAINAGE AREA 2 - BMP DEVICES AND ADJUSTMENTS			
DA2 Site Acreage=	1.39		
DA2 Off-Site Acreage=	2.63		
Total Required Storage Volume for Site TCN Requirement (ft <sup>3</sup> )=	38,563		
Will site use underground water harvesting?		Enter % volume reduction in decimal form=	Note: Supporting information/details should be submitted to demonstrate water usage.

**ENTER AREA TREATED BY BMP**

Land Use (acres)	Sub-DA2(a) (Ac)		Sub-DA2(b) (Ac)		Sub-DA2(c) (Ac)		Sub-DA2(d) (Ac)		Sub-DA2(e) (Ac)	
	Site	Off-site	Site	Off-site	Site	Off-site	Site	Off-site	Site	Off-site
<b>Commercial</b>										
Parking lot										
Roof										
Open/Landscaped										
<b>Industrial</b>										
Parking lot										
Roof										
Open/Landscaped										
<b>Transportation</b>										
High Density (interstate, main)										
High Density (Grassed Right-of-ways)										
Low Density (secondary, feeder)										
Low Density (Grassed Right-of-ways)										
Rural										
Rural (Grassed Right-of-ways)										
Sidewalk										
<b>Misc. Pervious</b>										
Managed pervious	6.26									
Unmanaged (pasture)										
Woods (not on lots)										
<b>Residential</b>										
Roadway	2.60									
Grassed Right-of-ways										
Driveway	0.56									
Parking lot										
Roof	3.70									
Sidewalk	1.35									
Lawn	5.65									
Managed pervious										
Woods (on lots)										
<b>Land Taken up by BMP</b>										
<b>JURISDICTIONAL LANDS</b>										
Natural wetland	0.00									
Riparian buffer (Zone 1 only)										
Totals (Ac)=	20.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Sub-DA2(a) BMP(s)**

Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
		30,471	1.36	5.83	0.45	1.95					
Outflow Total Nitrogen (lb/ac/yr)=											
					Outflow Total Phosphorus (lb/ac/yr)=						

**Sub-DA2(b) BMP(s)**

If Sub-DA2(b) is connected to upstream sub-basin(s), select all contributing sub-basin(s) from dropdown menus:											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
Sub-DA2 (c) BMP(s)											
If Sub-DA2(c) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
Sub-DA2 (d) BMP(s)											
If Sub-DA2(d) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
Sub-DA2 (e) BMP(s)											
If Sub-DA2(e) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
DA2 BMP SUMMARY											
Total Volume Treated (c.f.)=		0									
DA2 Outflow Total Nitrogen (lb/ac/yr)=											
DA2 Outflow Total Phosphorus (lb/ac/yr)=											
1-year, 24-hour storm											
Pre Development Peak Discharge (cfs)= $Q_{1-year}$ =		2.59									
Post BMP Peak Discharge (cfs)= $Q_{1-year}$ =											





Project Name: Broadmoor

**DRAINAGE AREA 3  
BMP CALCULATIONS**

DRAINAGE AREA 3 - BMP DEVICES AND ADJUSTMENTS			
DA3 Site Acreage=	1.49		
DA3 Off-Site Acreage=	2.52		
Total Required Storage Volume for Site TCN Requirement (ft <sup>3</sup> )=	38,563		
Will site use underground water harvesting?		Enter % volume reduction in decimal form=	Note: Supporting information/details should be submitted to demonstrate water usage.

**ENTER AREA TREATED BY BMP**

Land Use (acres)	Sub-DA3(a) (Ac)		Sub-DA3(b) (Ac)		Sub-DA3(c) (Ac)		Sub-DA3(d) (Ac)		Sub-DA3(e) (Ac)	
	Site	Off-site	Site	Off-site	Site	Off-site	Site	Off-site	Site	Off-site
<b>Commercial</b>										
Parking lot										
Roof										
Open/Landscaped										
<b>Industrial</b>										
Parking lot										
Roof										
Open/Landscaped										
<b>Transportation</b>										
High Density (interstate, main)										
High Density (Grassed Right-of-ways)										
Low Density (secondary, feeder)										
Low Density (Grassed Right-of-ways)										
Rural										
Rural (Grassed Right-of-ways)										
Sidewalk										
<b>Misc. Pervious</b>										
Managed pervious		6.35								
Unmanaged (pasture)										
Woods (not on lots)	1.14	0.03								
<b>Residential</b>										
Roadway	1.65									
Grassed Right-of-ways										
Driveway	0.34									
Parking lot										
Roof	2.66									
Sidewalk	0.91									
Lawn	7.86									
Managed pervious										
Woods (on lots)										
<b>Land Taken up by BMP</b>										
<b>JURISDICTIONAL LANDS</b>										
Natural wetland										
Riparian buffer (Zone 1 only)										
Totals (Ac)=	14.56	6.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Sub-DA3(a) BMP(s)**

Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
		21,965	1.32	5.35	0.44	1.77					
Outflow Total Nitrogen (lb/ac/yr)=				Outflow Total Phosphorus (lb/ac/yr)=							

**Sub-DA3(b) BMP(s)**

If Sub-DA3(b) is connected to upstream sub-basin(s), select all contributing sub-basin(s) from dropdown menus:											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
Sub-DA3 (c) BMP(s)											
If Sub-DA3(c) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
Sub-DA3 (d) BMP(s)											
If Sub-DA3(d) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
Sub-DA3 (e) BMP(s)											
If Sub-DA3(e) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
DA3 BMP SUMMARY											
Total Volume Treated (c.f.)=		0									
DA3 Outflow Total Nitrogen (lb/ac/yr)=											
DA3 Outflow Total Phosphorus (lb/ac/yr)=											
1-year, 24-hour storm											
Pre Development Peak Discharge (cfs)= Q <sub>1-year</sub> =		3.58									
Post BMP Peak Discharge (cfs)= Q <sub>1-year</sub> =											



Project Name: Broadmoor

**DRAINAGE AREA 4  
BMP CALCULATIONS**

DRAINAGE AREA 4 - BMP DEVICES AND ADJUSTMENTS			
DA4 Site Acreage=	0.58		
DA4 Off-Site Acreage=	1.97		
Total Required Storage Volume for Site TCN Requirement (ft <sup>3</sup> )=	38,563		
Will site use underground water harvesting?		Enter % volume reduction in decimal form=	Note: Supporting information/details should be submitted to demonstrate water usage.

**ENTER AREA TREATED BY BMP**

Land Use (acres)	Sub-DA4(a) (Ac)		Sub-DA4(b) (Ac)		Sub-DA4(c) (Ac)		Sub-DA4(d) (Ac)		Sub-DA4(e) (Ac)	
	Site	Off-site	Site	Off-site	Site	Off-site	Site	Off-site	Site	Off-site
<b>Commercial</b>										
Parking lot										
Roof										
Open/Landscaped										
<b>Industrial</b>										
Parking lot										
Roof										
Open/Landscaped										
<b>Transportation</b>										
High Density (interstate, main)										
High Density (Grassed Right-of-ways)										
Low Density (secondary, feeder)										
Low Density (Grassed Right-of-ways)										
Rural										
Rural (Grassed Right-of-ways)										
Sidewalk										
<b>Misc. Pervious</b>										
Managed pervious										
Unmanaged (pasture)										
Woods (not on lots)	0.00									
<b>Residential</b>										
Roadway	0.67									
Grassed Right-of-ways										
Driveway	0.28									
Parking lot										
Roof	1.42									
Sidewalk	0.37									
Lawn	3.80									
Managed pervious										
Woods (on lots)										
<b>Land Taken up by BMP</b>										
<b>JURISDICTIONAL LANDS</b>										
Natural wetland	0.00									
Riparian buffer (Zone 1 only)										
Totals (Ac)=	6.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Sub-DA4(a) BMP(s)**

Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
		10,147	1.31	5.74	0.40	1.78					
Outflow Total Nitrogen (lb/ac/yr)=											
				Outflow Total Phosphorus (lb/ac/yr)=							

**Sub-DA4(b) BMP(s)**

If Sub-DA4(b) is connected to upstream sub-basin(s), select all contributing sub-basin(s) from dropdown menus:											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
<b>Sub-DA4 (c) BMP(s)</b>											
If Sub-DA4(c) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
<b>Sub-DA4 (d) BMP(s)</b>											
If Sub-DA4(d) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
<b>Sub-DA4 (e) BMP(s)</b>											
If Sub-DA4(e) is connected to upstream sub-basin(s), select all contributing sub-basin(s):											
Device Name (As Shown on Plan)	Device Type	Water Quality Volume (c.f.)	Inflow N EMC (mg/L)	Total Inflow N (lb/ac/yr)	Inflow P EMC (mg/L)	Total Inflow P (lb/ac/yr)	Outflow N EMC (mg/L)	Total Outflow N (lb/ac/yr)	Outflow P EMC (mg/L)	Total Outflow P (lb/ac/yr)	Provided Volume Managed (c.f.)
Outflow Total Nitrogen (lb/ac/yr)=			Outflow Total Phosphorus (lb/ac/yr)=								
<b>DA4 BMP SUMMARY</b>											
Total Volume Treated (c.f.)=		0									
DA4 Outflow Total Nitrogen (lb/ac/yr)=											
DA4 Outflow Total Phosphorus (lb/ac/yr)=											
<b>1-year, 24-hour storm</b>											
Pre Development Peak Discharge (cfs)= Q <sub>1-year</sub> =		1.92									
Post BMP Peak Discharge (cfs)= Q <sub>1-year</sub> =											



Project Name: **Broadmoor**

**DA SITE SUMMARY**  
**BMP CALCULATIONS**

<b>BMP SUMMARY</b>						
<b>DRAINAGE AREA SUMMARIES</b>						
DRAINAGE AREA:	DA1	DA2	DA3	DA4	DA5	DA6
<b>Post-Development (1-year, 24-hour storm)</b>						
Peak Flow (cfs)= $Q_{1-year}$ =	196.60	3.35	4.54	3.90		
<b>Post-Development with BMPs (1-year, 24-hour storm)</b>						
% Impervious =	21%					
Volume Managed (CF)=	97,436					
Post BMP Peak Discharge (cfs)= $Q_{1-year}$ =	35.04					
Have Target Curve Number Requirements been met?	YES					
<b>Pre Development Nitrogen and Phosphorus Load</b>						
Total Nitrogen (lb/ac/yr)=	1.31					
Total Phosphorus (lb/ac/yr)=	N/A					
<b>Post Development Nitrogen and Phosphorus Load</b>						
Total Nitrogen (lb/ac/yr)=	3.65					
Total Phosphorus (lb/ac/yr)=	N/A					
<b>Post-BMP Nitrogen Loading</b>						
Outflow Total Nitrogen (lb/ac/yr)=	0.41					
Outflow Total Phosphorus (lb/ac/yr)=	-0.27					
Has site met the Target?	YES					
Has site met requirements for offsetting?	YES					