Exhibit E

Laird Family Vineyards
Jamieson Vineyard
Hydrology Study

Prepared by Napa Valley Vineyard Engineering, Inc July 18, 2017 Revised January 25, 2018

INTRODUCTION

This project is the development of approximately 100 gross acres of new vineyard within APN 057-140-016 located at 200 Kirkland Ranch Road, American Canyon.

This hydrology study is to determine the anticipated affect the proposed vineyard development project will have on local hydrology and runoff patterns. Hydrologic modeling of existing and proposed conditions was performed using HydroCad software with the CA-1 rainfall distribution curve. Following is a summary of the data used to complete the hydrologic analysis and the results of this analysis.

RAINFALL DATA

Rainfall depths for the project site were obtained from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 6, Version 2, Precipitation Frequency Data for California, which uses the latitude and longitude of a site to determine rainfall depths. The latitude and longitude of this project are estimated to be 38.226° N, 122.235° W, based on information obtained from All Topo V7 USGS mapping software.

The following rainfall data from the NOAA website was used in the analysis:

2 year, 24 hour	3.21 inches
5 year, 24 hour	4.26 inches
10 year, 24 hour	5.13 inches
25 year, 24 hour	6.41 inches
50 year, 24 hour	7.39 inches
100 year, 24 hour	8.43 inches

WATERSHED AREAS

The project site is located within eight watersheds as shown on the Drainage Area Maps in the Appendix. The watersheds are modeled separately, except for Watershed 3, which is broken into two subareas, both draining to a common point of interest (POI), and Watershed 4, which is broken into 3 subareas draining to a common POI. Watershed 4 contains a water storage reservoir located along the flow path used in this analysis. However, the project area draining into the reservoir is minimal, with no significant impact to flows; therefore, any attenuation which occurs at the reservoir is not

considered in either the pre-project or post-project modeling. Each watershed was determined based on Napa County contour mapping (2002).

PRE-PROJECT WATERSHED CONDITIONS

Soil Types

The United States Department of Agriculture Soil Conservation Service Soils Map for Napa County, August 1978, maps the following soil types within the watersheds:

SCS #132, 134, Fagan clay loam (Hydrologic Soil Group(HSG) C)

SCS #116, Clear Lake clay, drained (HSG D)

SCS #146, Haire loam (HSG D)

SCS #152, Hambright rock-outcrop complex (HSG D)

Land Use

Land use within each watershed was analyzed based on the 2011 aerial photograph obtained from the Napa County GIS website, and Google Earth. All watersheds are composed largely of grazed pasture with pockets of tree canopy and existing vineyard. The existing vineyard is tilled and sprayed, and is considered a "fair" hydrologic condition. The pasture land is alternately grazed, and the condition is dependent upon cattle access, but the ground cover is generally less than 75%, which is considered a "fair" hydrologic condition. There are a few small pockets where there is significant disturbance, and this analysis uses a "poor" hydrologic condition for those areas. In the grassland areas where cattle have no, or limited access, a "good" hydrological condition is used. A detailed breakdown of land uses by area and hydrologic soil group is included in the HydroCad reports in the Appendix, and is shown on the Drainage Area Maps.

Time of Concentration

The time of concentration represents the time it takes for rainfall in the most hydraulically remote portion of the watershed to reach the POI. The time of concentration is estimated assuming sheet flow up to 100 feet in the uppermost reaches of each watershed. A shallow concentrated flow regime is used to model the runoff down to a channel if one exists, or to the POI. Channel flow data was determined using a typical cross section of each channel. Due to the historical grazing in the project area, the flow paths within several of the watersheds alternate between eroded channels, and shallow concentrated flow, and are modeled accordingly. A detailed breakdown of the time of concentration parameters is included in the HydroCad reports, and is shown on the Drainage Area Maps.

POST-PROJECT WATERSHED CONDITIONS

Soil Types

Land preparation for the proposed vineyard development does not alter the permeability of the mapped soil types. The post-project HSG remains the same as pre-project HSG.

Land Use

The proposed project will convert approximately 100 acres of pasture and grassland to vineyard. All other areas within the subject watersheds remain unchanged. The project proposes a no-till cover crop with spot spray only, which is considered a "good" hydrologic condition. Vineyard avenues/turnspaces will be maintained in no-till cover and are modeled as part of the vineyard. Access drives are existing. A detailed breakdown of land uses by area and hydrologic soil group is included in the Appendix.

Time of Concentration

With the proposed cover crop maintenance, no ditching is required to meet pre-project conditions, and vineyard development will not otherwise alter the flow paths used in this analysis. Time of concentration under post-project conditions are considered the same as pre-project conditions. A detailed breakdown of time of concentration parameters is included in the Appendix.

CALCULATED RUNOFF RATE

Using the rainfall data, watershed area, land use and time of concentration parameters described above and included in the Appendix, the following runoff rates were calculated:

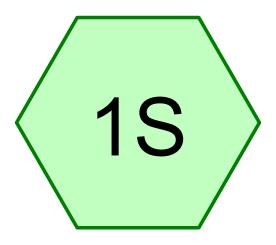
HydroCad Calculated Peak Runoff Rate (cfs)

24 hr. storm event	2	yr.	5	yr.	10	yr.	25	yr.	50	yr.	100	yr.
Project Condition	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post
Watershed 1	6.07	5.16	9.82	8.73	13.07	11.88	17.94	16.67	21.70	20.40	25.70	25.70
Watershed 2	4.19	4.19	7.22	7.22	9.91	9.91	14.01	14.01	17.21	17.21	20.64	20.64
Watershed 3	42.31	41.29	68.13	66.94	90.39	89.11	123.77	122.43	149.52	148.16	176.88	175.53
Watershed 4	35.16	34.35	57.37	56.40	76.63	75.57	105.60	104.47	128.01	126.86	151.86	150.69
Watershed 5	8.09	7.28	13.10	12.13	17.42	16.37	23.91	22.79	28.92	27.78	34.24	33.10
Watershed 6	0.71	0.63	1.18	1.08	1.59	1.49	2.21	2.10	2.69	2.58	3.21	3.09
Watershed 7	0.87	0.71	1.52	1.32	2.09	1.87	2.98	2.73	3.67	3.41	4.42	4.15
Watershed 8	11.66	11.66	18.86	18.86	25.09	25.09	34.44	34.44	41.65	41.65	49.33	49.33

CONCLUSION

The hydrologic analysis presented above, and supporting information in the Appendix, demonstrate that the proposed vineyard development will not increase the peak runoff rate in the affected watersheds.

HydroCad REPORTS & MAP APPENDIX



WS 1 - pre project





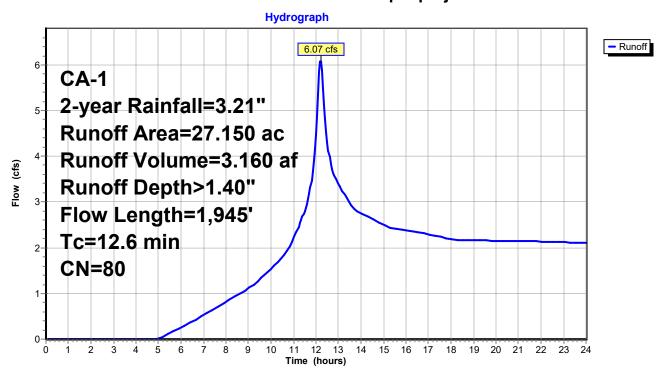




Runoff = 6.07 cfs @ 12.20 hrs, Volume= 3.160 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

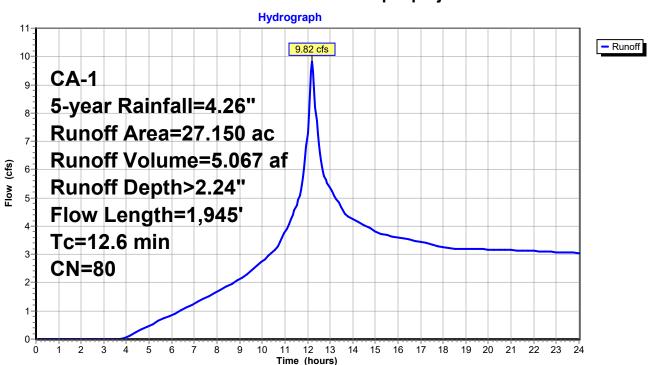
	Area	(ac)	CN	Desc	cription						
*	4.	770	79	Vine	yard, Fair,	HSG C					
*	0.	880	84	Vine	Vineyard, Fair, HSG D						
	14.	750	79		Pasture/grassland/range, Fair, HSG C						
	6.	410	84		Pasture/grassland/range, Fair, HSG D						
	0.020 74			Pasture/grassland/range, Good, HSG C							
	0.320 77				Woods, Good, HSG D						
	27.	150	80	Weig	hted Aver	age					
		150			00% Pervi	0					
	Tc	Lengt	h	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	2				
_	4.1	10		0.1300	0.40	(0.0)	Sheet Flow,				
	7.1	10	0 0	. 1300	0.40		Range n= 0.130 P2= 3.21"				
	1.9	57	6 N	.1000	5.09		Shallow Concentrated Flow,				
	1.9	31	0 0	. 1000	3.03		Unpaved Kv= 16.1 fps				
	6.6	1,26	o 0	.0400	3.22		Shallow Concentrated Flow,				
	0.0	1,20	9 0	.U 4 UU	3.22		Unpaved Kv= 16.1 fps				
_	40.0	4.04		- , ,			Ulipaveu NV- 10.1 lps				
	12.6	1,94	5 I	otal							



Runoff = 9.82 cfs @ 12.20 hrs, Volume= 5.067 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

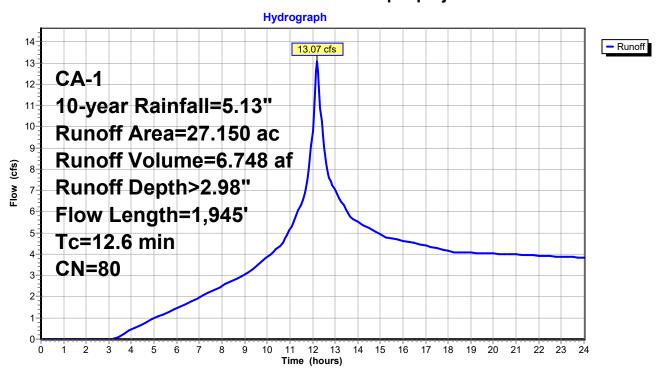
	Area	(ac)	CN	Desc	cription						
*	4.	770	79	Vine	yard, Fair,	HSG C					
*	0.	880	84	Vine	Vineyard, Fair, HSG D						
	14.	750	79	Past	Pasture/grassland/range, Fair, HSG C						
	6.	410	84		Pasture/grassland/range, Fair, HSG D						
	0.020 74			Past	Pasture/grassland/range, Good, HSG C						
	0.320 77			Woo	Woods, Good, HSG D						
	27.	150	80	Weig	hted Aver	age					
	27.	150		•	00% Pervi	•					
	Tc	Lengt	h	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	•				
_	4.1	10	0 0	0.1300	0.40	,	Sheet Flow,				
					00		Range n= 0.130 P2= 3.21"				
	1.9	57	6 0	.1000	5.09		Shallow Concentrated Flow,				
		•			0.00		Unpaved Kv= 16.1 fps				
	6.6	1,26	9 0	0.0400	3.22		Shallow Concentrated Flow,				
		,					Unpaved Kv= 16.1 fps				
	12.6	1,94	5 T	otal			<u> </u>				



Runoff = 13.07 cfs @ 12.20 hrs, Volume= 6.748 af, Depth> 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

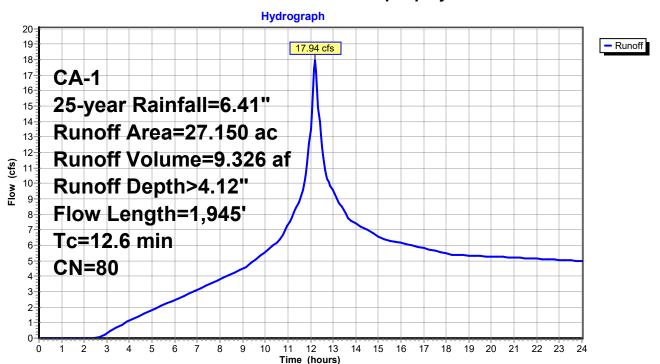
	Area	(ac)	CN	Desc	cription						
*	4.	770	79	Vine	yard, Fair,	HSG C					
*	0.	880	84	Vine	Vineyard, Fair, HSG D						
	14.	750	79		Pasture/grassland/range, Fair, HSG C						
	6.	410	84		Pasture/grassland/range, Fair, HSG D						
	0.020 74			Pasture/grassland/range, Good, HSG C							
	0.320 77				Woods, Good, HSG D						
	27.	150	80	Weig	hted Aver	age					
		150			00% Pervi	0					
	Tc	Lengt	h	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	2				
_	4.1	10		0.1300	0.40	(0.0)	Sheet Flow,				
	7.1	10	0 0	. 1300	0.40		Range n= 0.130 P2= 3.21"				
	1.9	57	6 N	.1000	5.09		Shallow Concentrated Flow,				
	1.9	31	0 0	. 1000	3.03		Unpaved Kv= 16.1 fps				
	6.6	1,26	o 0	.0400	3.22		Shallow Concentrated Flow,				
	0.0	1,20	9 0	.U 4 UU	3.22		Unpaved Kv= 16.1 fps				
_	40.0	4.04		- , ,			Ulipaveu NV- 10.1 lps				
	12.6	1,94	5 I	otal							



Runoff = 17.94 cfs @ 12.20 hrs, Volume= 9.326 af, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

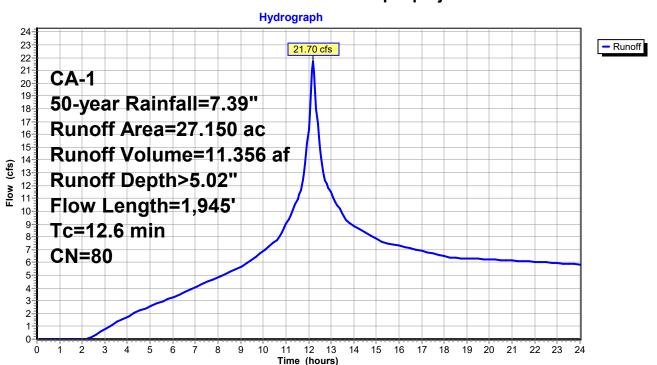
	Area	(ac)	CN	Desc	cription						
*	4.	770	79	Vine	yard, Fair,	HSG C					
*	0.	880	84	Vine	Vineyard, Fair, HSG D						
	14.	750	79	Past	Pasture/grassland/range, Fair, HSG C						
	6.	410	84		Pasture/grassland/range, Fair, HSG D						
	0.020 74			Past	Pasture/grassland/range, Good, HSG C						
	0.320 77			Woo	Woods, Good, HSG D						
	27.	150	80	Weig	hted Aver	age					
	27.	150		•	00% Pervi	•					
	Tc	Lengt	h	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	•				
_	4.1	10	0 0	0.1300	0.40	,	Sheet Flow,				
					00		Range n= 0.130 P2= 3.21"				
	1.9	57	6 0	.1000	5.09		Shallow Concentrated Flow,				
		•			0.00		Unpaved Kv= 16.1 fps				
	6.6	1,26	9 0	0.0400	3.22		Shallow Concentrated Flow,				
		,					Unpaved Kv= 16.1 fps				
	12.6	1,94	5 T	otal			<u> </u>				



Runoff = 21.70 cfs @ 12.20 hrs, Volume= 11.356 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

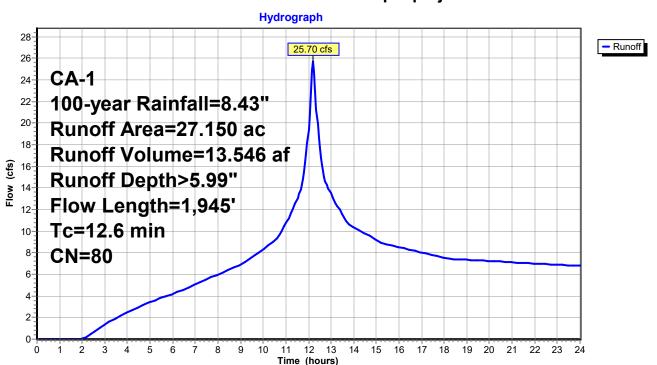
	Area	(ac)	CN	Desc	cription						
*	4.	770	79	Vine	yard, Fair,	HSG C					
*	0.	880	84	Vine	Vineyard, Fair, HSG D						
	14.	750	79		Pasture/grassland/range, Fair, HSG C						
	6.	410	84		Pasture/grassland/range, Fair, HSG D						
	0.020 74			Pasture/grassland/range, Good, HSG C							
	0.320 77				Woods, Good, HSG D						
	27.	150	80	Weig	hted Aver	age					
		150			00% Pervi	0					
	Tc	Lengt	h	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	2				
_	4.1	10		0.1300	0.40	(0.0)	Sheet Flow,				
	7.1	10	0 0	. 1300	0.40		Range n= 0.130 P2= 3.21"				
	1.9	57	6 N	.1000	5.09		Shallow Concentrated Flow,				
	1.9	31	0 0	. 1000	3.03		Unpaved Kv= 16.1 fps				
	6.6	1,26	o 0	.0400	3.22		Shallow Concentrated Flow,				
	0.0	1,20	9 0	.U 4 UU	3.22		Unpaved Kv= 16.1 fps				
_	40.0	4.04		- , ,			Ulipaveu NV- 10.1 lps				
	12.6	1,94	5 I	otal							

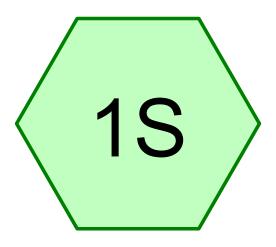


Runoff = 25.70 cfs @ 12.20 hrs, Volume= 13.546 af, Depth> 5.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac)	CN	Desc	cription						
*	4.	770	79	Vine	yard, Fair,	HSG C					
*	0.	880	84	Vine	Vineyard, Fair, HSG D						
	14.	750	79	Past	Pasture/grassland/range, Fair, HSG C						
	6.	410	84		Pasture/grassland/range, Fair, HSG D						
	0.	020	74		Pasture/grassland/range, Good, HSG C						
	0.	320	77	Woo	Woods, Good, HSG D						
	27.	150	80	Weio	hted Aver	age					
	27.	150			, 00% Pervi						
	Тс	Lengt	h	Slope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	•				
	4.1	10	0 0	0.1300	0.40	, ,	Sheet Flow,				
					0.10		Range n= 0.130 P2= 3.21"				
	1.9	57	6 0	.1000	5.09		Shallow Concentrated Flow,				
	1.0	01	•		0.00		Unpaved Kv= 16.1 fps				
	6.6	1,26	9 0	0.0400	3.22		Shallow Concentrated Flow,				
	3.0	.,20			J.LL		Unpaved Kv= 16.1 fps				
	12.6	1 94	5 T	otal							
	12.6	1,94	5 T	otal							





WS1 - post project







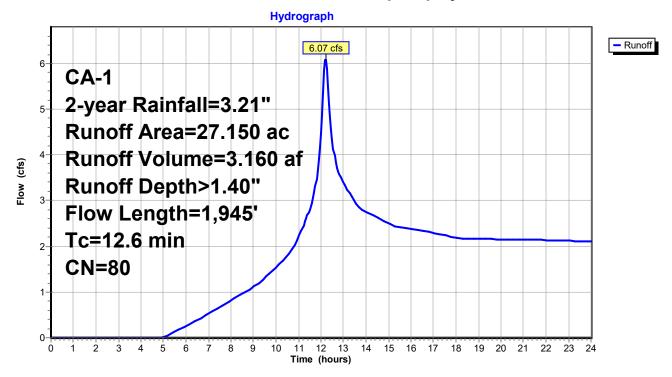


Summary for Subcatchment 1S: WS1 - post project

Runoff = 6.07 cfs @ 12.20 hrs, Volume= 3.160 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac)	CN	Desc	ription						
*					Vineyard, Good, HSG C						
		420	75								
*	4.	770	79		yard, Fair,						
*	0.	880	84	Vine	yard, Fair,	HSG D					
	13.	330	79	Past	ure/grassla	and/range.	Fair, HSG C				
		410	84				Fair, HSG D				
		020	74				Good, HSG C				
		320	70		ds, Good,		0000, 1100 0				
_											
27.150 80 Weighted Average											
	27.	150		100.0	00% Pervi	ous Area					
	Tc	Lengt	h	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	2 de dispusión				
_						(013)					
	4.1	10	0	0.1300	0.40		Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	1.9	57	6	0.1000	5.09		Shallow Concentrated Flow,				
	-	-					Unpaved Kv= 16.1 fps				
	6.6	1,26	a	0.0400	3.22		Shallow Concentrated Flow,				
	0.0	1,20	9	0.0400	5.22		· · · · · · · · · · · · · · · · · · ·				
_							Unpaved Kv= 16.1 fps				
	12.6	1,94	5	Total							

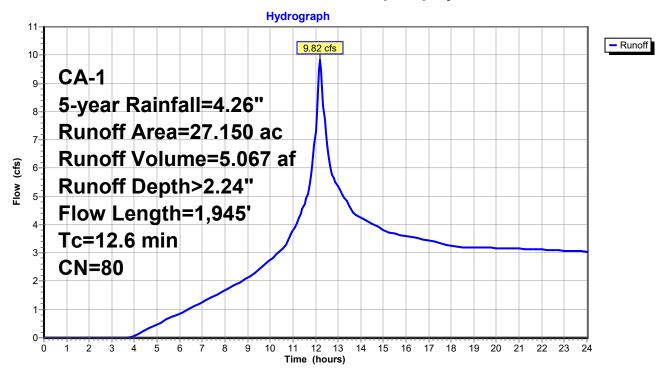


Summary for Subcatchment 1S: WS1 - post project

Runoff = 9.82 cfs @ 12.20 hrs, Volume= 5.067 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac)	CN	Desc	ription						
*	1.	420	75	Vine	ineyard, Good, HSG C						
*	4.	770	79	Vine	yard, Fair,	HSG C					
*	0.	880	84		yard, Fair,						
	13.	330	79				Fair, HSG C				
		410	84				Fair, HSG D				
		020	74		-	0 /	Good, HSG C				
_	0.	320	70	Woo	ds, Good,	HSG C					
	27.	150	80		ghted Aver	•					
	27.	150		100.0	00% Pervi	ous Area					
	_						—				
	Tc	Lengt		Slope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)					
	4.1	10	0 0.	.1300	0.40		Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	1.9	57	6 0.	.1000	5.09		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	6.6	1,26	90.	.0400	3.22		Shallow Concentrated Flow,				
_							Unpaved Kv= 16.1 fps				
	12.6	1,94	5 To	otal							

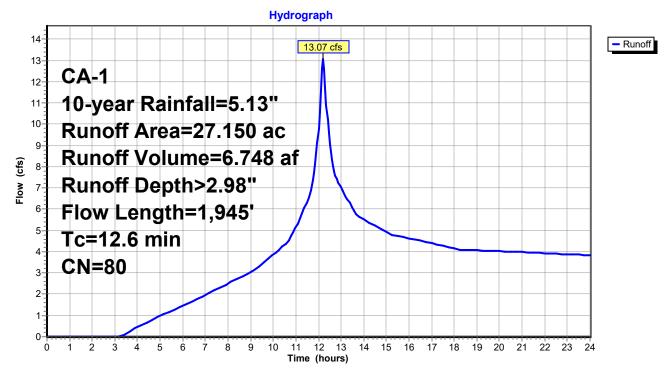


Summary for Subcatchment 1S: WS1 - post project

Runoff = 13.07 cfs @ 12.20 hrs, Volume= 6.748 af, Depth> 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac)	CN	Desc	cription		
*	1.	420	75	Vine	yard, Goo	d, HSG C	
*	4.	770	79	Vine	yard, Fair,	HSG C	
*	0.	880	84	Vine	yard, Fair,	HSG D	
		330	79				Fair, HSG C
		410	84				Fair, HSG D
	0.	020	74			U /	Good, HSG C
	0.	320	70	Woo	ds, Good,	HSG C	
	27.	150	80	Weig	ghted Aver	age	
	27.	150		100.	00% Pervi	ous Area	
	Тс	Lengt		Slope	Velocity	Capacity	Description
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	4.1	10	0 0	.1300	0.40		Sheet Flow,
							Range n= 0.130 P2= 3.21"
	1.9	57	6 0	0.1000	5.09		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	6.6	1,26	9 0	0.0400	3.22		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	12.6	1,94	5 T	otal			

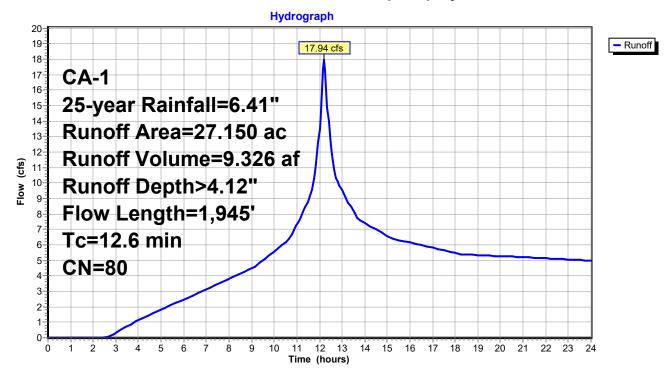


Summary for Subcatchment 1S: WS1 - post project

Runoff = 17.94 cfs @ 12.20 hrs, Volume= 9.326 af, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area	(ac)	CN	Desc	cription		
*		420	75		yard, Goo	HSG C	
*		770	79		yard, Fair,		
*	0.	880	84		yard, Fair,		
	13.	330	79				Fair, HSG C
	6.	410	84				Fair, HSG D
	0.	020	74	Past	ure/grassl	and/range,	Good, HSG C
	0.	320	70	Woo	ds, Good,	HSG C	
	27.	150	80	Weig	ghted Aver	age	
	27.	150		100.	00% Pervi	ous Area	
	Тс	Lengt	h	Slope	Velocity	Capacity	Description
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	4.1	10	0 (0.1300	0.40		Sheet Flow,
							Range n= 0.130 P2= 3.21"
	1.9	57	6 (0.1000	5.09		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	6.6	1,26	9 (0.0400	3.22		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	12.6	1,94	5 7	Γotal			



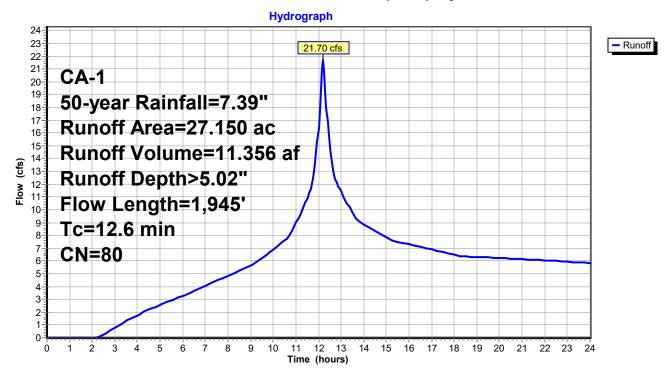
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Summary for Subcatchment 1S: WS1 - post project

Runoff = 21.70 cfs @ 12.20 hrs, Volume= 11.356 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(ac)	CN	J Desc	ription							
*					_ •	4 USC C						
		420	75		ineyard, Good, HSG C							
*	4.	770	79		yard, Fair,							
*	0.	880	84	4 Vine	yard, Fair,	HSG D						
	13.	330	79	9 Past	ure/grassla	and/range.	Fair, HSG C					
		410	84		Pasture/grassland/range, Fair, HSG D							
		020	74		Pasture/grassland/range, Good, HSG C							
					ds, Good,		000d, 1100 0					
_		320	70									
	27.	150	80		ghted Aver							
	27.150			100.0	00% Pervi	ous Area						
	Tc	Leng	th	Slope	Velocity	Capacity	Description					
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	Bocompaion					
_						(013)						
	4.1	10	00	0.1300	0.40		Sheet Flow,					
							Range n= 0.130 P2= 3.21"					
	1.9	57	6	0.1000	5.09		Shallow Concentrated Flow,					
		-	-				Unpaved Kv= 16.1 fps					
	6.6	1,26	0:	0.0400	3.22		Shallow Concentrated Flow,					
	0.0	1,20	פו	0.0400	3.22		· · · · · · · · · · · · · · · · · · ·					
_							Unpaved Kv= 16.1 fps					
	12.6	1,94	-5	Total								



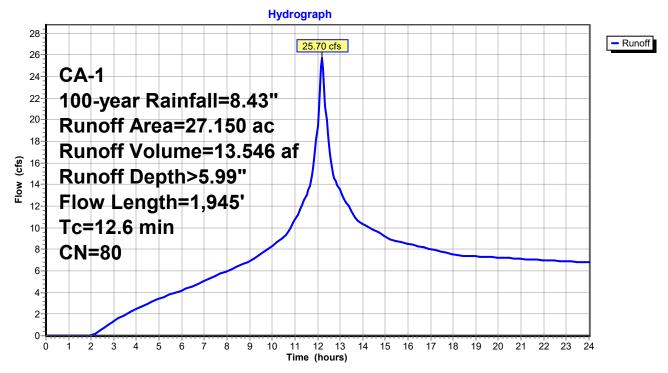
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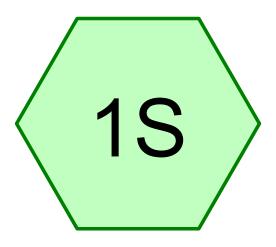
Summary for Subcatchment 1S: WS1 - post project

Runoff = 25.70 cfs @ 12.20 hrs, Volume= 13.546 af, Depth> 5.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac)	CN	Desc	cription						
*	1.	420	75	Vine	yard, Goo	d, HSG C					
*	4.	770	79	Vine	ineyard, Fair, HSG C						
*	0.	880	84	Vine	yard, Fair,	HSG D					
		330	79				Fair, HSG C				
		410	84				Fair, HSG D				
	0.	020	74			U /	Good, HSG C				
	0.	320	70	Woo	ds, Good,	HSG C					
	27.	150	80	Weig	Weighted Average						
	27.150		100.	00% Pervi	ous Area						
	Тс	Lengt		Slope	Velocity	Capacity	Description				
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)					
	4.1	10	0 0	.1300	0.40		Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	1.9	57	6 0	0.1000	5.09		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	6.6	1,26	9 0	0.0400	3.22		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	12.6	1,94	5 T	otal							





WS2 - pre project





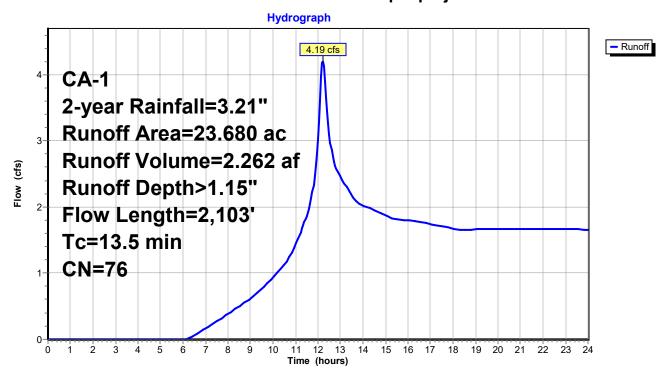




Runoff = 4.19 cfs @ 12.22 hrs, Volume= 2.262 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

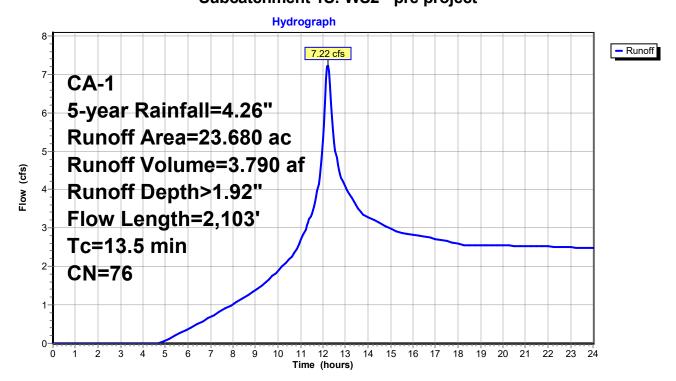
	Area	(ac)	CN	Desc	Description							
*	7.	360	79	Vine	yard, Fair,	HSG C						
	3.	180	79	Past	Pasture/grassland/range, Fair, HSG C							
	11.	720	74	Past	Pasture/grassland/range, Good, HSG C							
	0.	670	86	Past	Pasture/grassland/range, Poor, HSG C							
	0.	750	70	Woo	ds, Good,	HSG C						
	23.680 76			Weig	Weighted Average							
	23.680		100.00% Pervious Area									
	Тс	Lengt	h	Slope	Velocity	Capacity	Description					
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)						
	5.0	10	0 0	.0800	0.33		Sheet Flow,					
							Range n= 0.130 P2= 3.21"					
	3.9	1,12	0 0	.0900	4.83		Shallow Concentrated Flow,					
							Unpaved Kv= 16.1 fps					
	4.6	88	3 0	.0400	3.22		Shallow Concentrated Flow,					
							Unpaved Kv= 16.1 fps					
	13.5	2,10	3 T	otal								



Runoff = 7.22 cfs @ 12.21 hrs, Volume= 3.790 af, Depth> 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac)	CN	Desc	ription						
*	* 7.360 79			Vine	Vineyard, Fair, HSG C						
	3.	180	79		Pasture/grassland/range, Fair, HSG C						
	11.	720	74	Past	Pasture/grassland/range, Good, HSG C						
	0.	670	86	Past	Pasture/grassland/range, Poor, HSG C						
	0.	750	70	Woo	Woods, Good, HSG C						
	23.680 76			Weid	Weighted Average						
	23.680			100.00% Pervious Area							
	Tc	Lengt	h :	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	·				
	5.0	10	0 0.	.0800	0.33		Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	3.9	1,12	0 0	.0900	4.83		Shallow Concentrated Flow,				
		,					Unpaved Kv= 16.1 fps				
	4.6	88	3 0.	.0400	3.22		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	13.5	2,10	3 T	otal			· · · · · · · · · · · · · · · · · · ·				



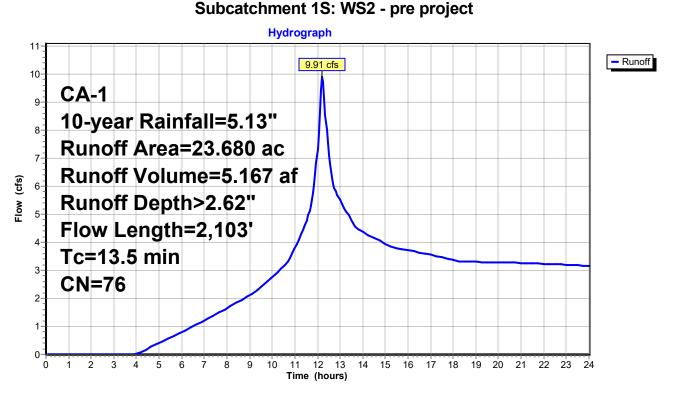
Summary for Subcatchment 1S: WS2 - pre project

Runoff = 9.91 cfs @ 12.21 hrs, Volume= 5.167 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac)	CN	Desc	ription						
*	7.360 79		Vine	Vineyard, Fair, HSG C							
	3.	180	79	Past	Pasture/grassland/range, Fair, HSG C						
	11.	720	74	Past	Pasture/grassland/range, Good, HSG C						
	0.	670	86	Past	Pasture/grassland/range, Poor, HSG C						
	0.	750	70	Woo	ds, Good,	HSG C					
	23.680 76		Weig	hted Aver	age						
	23.680		100.00% Pervious Area		ous Area						
	Тс	Lengt	h ·	Slope	Velocity	Capacity	Description				
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)					
	5.0	10	0 0	.0800	0.33		Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	3.9	1,12	0 0	.0900	4.83		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	4.6	88	3 0	.0400	3.22		Shallow Concentrated Flow,				
_							Unpaved Kv= 16.1 fps				
	13.5	2,10	3 T	otal							

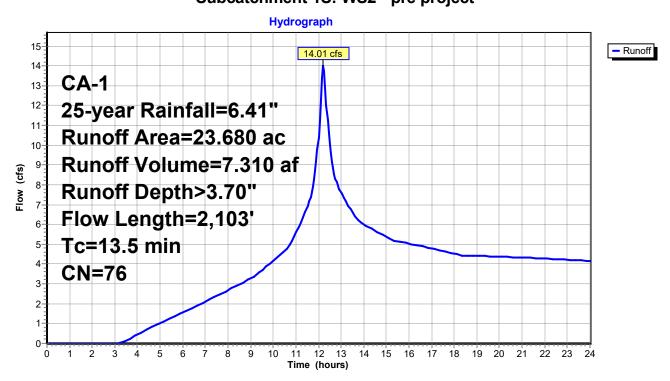
Cuboatabment 1C: WC2 pre project



Runoff = 14.01 cfs @ 12.21 hrs, Volume= 7.310 af, Depth> 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area	(ac)	CN	Desc	ription						
*	* 7.360 79			Vine	Vineyard, Fair, HSG C						
	3.	180	79		Pasture/grassland/range, Fair, HSG C						
	11.	720	74	Past	Pasture/grassland/range, Good, HSG C						
	0.	670	86	Past	Pasture/grassland/range, Poor, HSG C						
	0.	750	70	Woo	Woods, Good, HSG C						
	23.680 76			Weid	Weighted Average						
	23.680			100.00% Pervious Area							
	Tc	Lengt	h :	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	·				
	5.0	10	0 0.	.0800	0.33		Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	3.9	1,12	0 0	.0900	4.83		Shallow Concentrated Flow,				
		,					Unpaved Kv= 16.1 fps				
	4.6	88	3 0.	.0400	3.22		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	13.5	2,10	3 T	otal			· · · · · · · · · · · · · · · · · · ·				

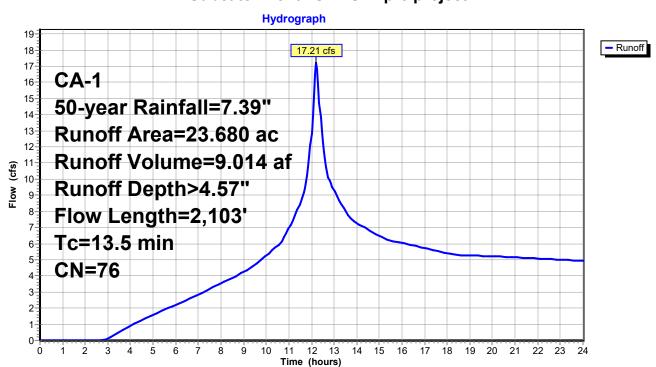


Summary for Subcatchment 1S: WS2 - pre project

Runoff = 17.21 cfs @ 12.21 hrs, Volume= 9.014 af, Depth> 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

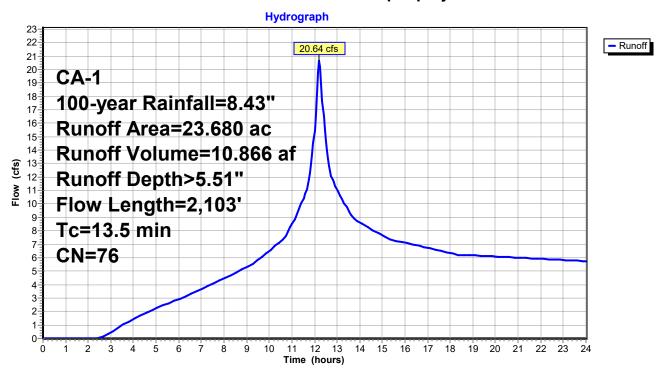
_	Area	(ac)	CN	Desc	cription						
*	7.	360	79	Vine	Vineyard, Fair, HSG C						
	3.	180	79	Past	Pasture/grassland/range, Fair, HSG C						
	11.	720	74	Past	Pasture/grassland/range, Good, HSG C						
	0.	670	86	Past	Pasture/grassland/range, Poor, HSG C						
	0.	750	70	Woo	Woods, Good, HSG C						
	23.680 76			Weig	Weighted Average						
	23.680		100.00% Pervious Area								
	Tc	Lengt	h S	Slope	Velocity	Capacity	Description				
_	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)					
	5.0	10	0.0	.0800	0.33		Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	3.9	1,12	0.0	.0900	4.83		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	4.6	88	3 0.	.0400	3.22		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	13.5	2,10	3 To	otal							

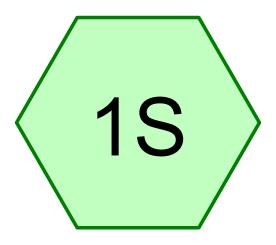


Runoff = 20.64 cfs @ 12.21 hrs, Volume= 10.866 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

_	Area	(ac)	CN	Desc	cription						
*	7.	360	79	Vine	Vineyard, Fair, HSG C						
	3.	180	79	Past	Pasture/grassland/range, Fair, HSG C						
	11.	720	74	Past	Pasture/grassland/range, Good, HSG C						
	0.	670	86	Past	Pasture/grassland/range, Poor, HSG C						
	0.	750	70	Woo	Woods, Good, HSG C						
	23.680 76			Weig	Weighted Average						
	23.680		100.00% Pervious Area								
	Tc	Lengt	h S	Slope	Velocity	Capacity	Description				
_	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)					
	5.0	10	0.0	.0800	0.33		Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	3.9	1,12	0.0	.0900	4.83		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	4.6	88	3 0.	.0400	3.22		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	13.5	2,10	3 To	otal							





WS2 - post project





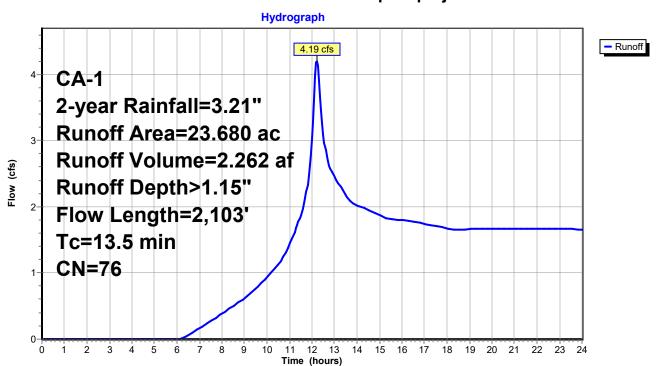




Runoff = 4.19 cfs @ 12.22 hrs, Volume= 2.262 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac)	CN	Desc	ription						
*	1.	530	75	Vine	yard, Good	d HSG C					
*	7.	360	79	Vine	Vineyard, Fair, HSG C						
	1.650 79			Past	Pasture/grassland/range, Fair, HSG C						
	0.	670	86		Pasture/grassland/range, Poor, HSG C						
	11.	720	74		Pasture/grassland/range, Good, HSG C						
	0.	750	70		ds, Good,		•				
	23.	680	76	Weig							
	23.680			00% Pervi	0						
	Tc	Lengtl	h S	Slope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	'				
	5.0	100	$\hat{0}$.0800	0.33	, ,	Sheet Flow,				
	0.0	10	J 0.	.0000	0.00		Range n= 0.130 P2= 3.21"				
	3.9	1,12	ე ი	.0900	4.83		Shallow Concentrated Flow,				
	0.0	1,12	J 0.	.0000	4.00		Unpaved Kv= 16.1 fps				
	4.6	88	3 N	.0400	3.22		Shallow Concentrated Flow,				
	7.0	00.	<i>.</i>	.0-100	J.ZZ		Unpaved Kv= 16.1 fps				
_	13.5	2,10	2 T	otal			Onparoa Itt 10.11po				
	13.5	∠, 10.) I	otal							

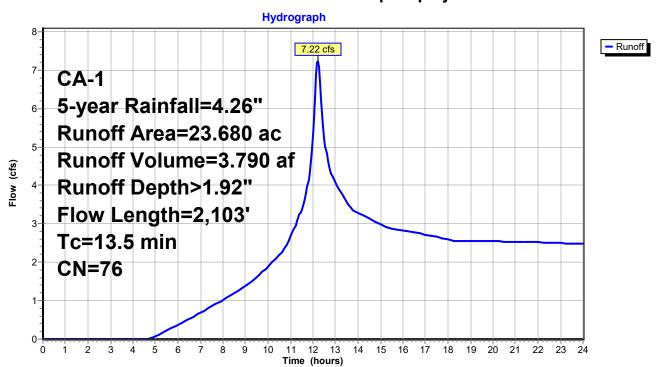


Summary for Subcatchment 1S: WS2 - post project

Runoff = 7.22 cfs @ 12.21 hrs, Volume= 3.790 af, Depth> 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

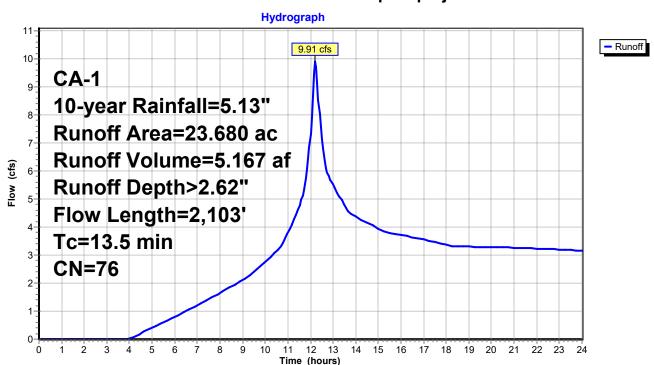
	Area	(ac)	CN	Desc	cription						
*	1.	530	75	Vine	yard, Good	d HSG C					
*	7.	360	79	Vine	yard, Fair,	HSG C					
	1.	650	79	Past	Pasture/grassland/range, Fair, HSG C						
	0.	670	86		Pasture/grassland/range, Poor, HSG C						
	11.	720	74	Past	ure/grassla	and/range,	Good, HSG C				
	0.	750	70	Woo	ds, Good,	HSG C					
	23.	680	76	Wei	ghted Aver	age					
	23.	680		•	00% Pervi	•					
	Tc	Lengt	th	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	·				
	5.0	10	0	0.080.0	0.33	, ,	Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	3.9	1,12	0.	0.0900	4.83		Shallow Concentrated Flow,				
		,	-				Unpaved Kv= 16.1 fps				
	4.6	88	3	0.0400	3.22		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	13.5	2,10	3	Total			· · · · · · · · · · · · · · · · · · ·				



Runoff = 9.91 cfs @ 12.21 hrs, Volume= 5.167 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac)	CN	Desc	cription						
*	1.	530	75	Vine	yard, Good	d HSG C					
*	7.	360	79	Vine	Vineyard, Fair, HSG C						
	1.650 79				Pasture/grassland/range, Fair, HSG C						
	0.	670	86		Pasture/grassland/range, Poor, HSG C						
	11.	720	74	Past	Pasture/grassland/range, Good, HSG C						
	0.	750	70		ds, Good,						
23.680 76 Weighted Average											
	23.680			00% Pervi							
	Tc	Lengt	h	Slope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	•				
	5.0	10	0 0	.0800	0.33	, ,	Sheet Flow,				
	0.0			.0000	0.00		Range n= 0.130 P2= 3.21"				
	3.9	1,12	ი ი	.0900	4.83		Shallow Concentrated Flow,				
	0.0	1,12	0 0	.0000	1.00		Unpaved Kv= 16.1 fps				
	4.6	88	3 0	.0400	3.22		Shallow Concentrated Flow,				
		00		.0.00	J.LL		Unpaved Kv= 16.1 fps				
_	13.5	2,10	3 Т	otal							
	10.0	۷, ۱۵	J 1	Otal							



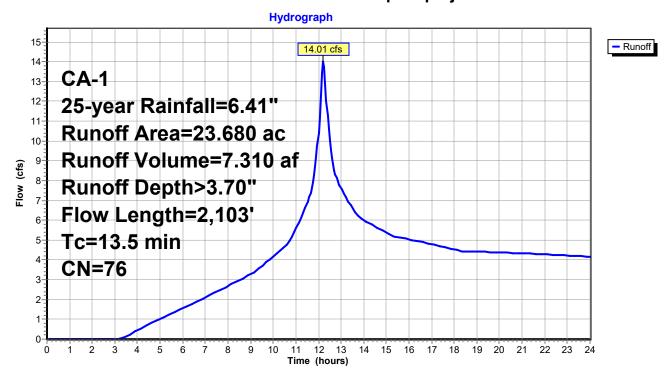
Summary for Subcatchment 1S: WS2 - post project

Runoff = 14.01 cfs @ 12.21 hrs, Volume= 7.310 af, Depth> 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area	(ac)	CN	Desc	ription						
*	1.	530	75	Vine	yard, Good	d HSG C					
*	7.	360	79	Vine	Vineyard, Fair, HSG C						
	1.	650	79	Past	Pasture/grassland/range, Fair, HSG C						
	0.670 86				Pasture/grassland/range, Poor, HSG C						
	11.720 74				Pasture/grassland/range, Good, HSG C						
	0.	750	•								
	23.										
	23.680 76 23.680			ghted Aver 00% Pervi	0						
	Tc	Lengtl	h S	Slope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	'				
	5.0	100	$\hat{0}$.0800	0.33	, ,	Sheet Flow,				
	0.0	10	J 0.	.0000	0.00		Range n= 0.130 P2= 3.21"				
	3.9	1,12	ე ი	.0900	4.83		Shallow Concentrated Flow,				
	0.0	1,12	J 0.	.0000	4.00		Unpaved Kv= 16.1 fps				
	4.6	88	3 N	.0400	3.22		Shallow Concentrated Flow,				
	7.0	00.	<i>.</i>	.0-100	J.ZZ		Unpaved Kv= 16.1 fps				
_	13.5	2,10	2 T	otal			Onparoa Itt 10.11po				
	13.5	∠, 10.) I	otal							

Subcatchment 1S: WS2 - post project



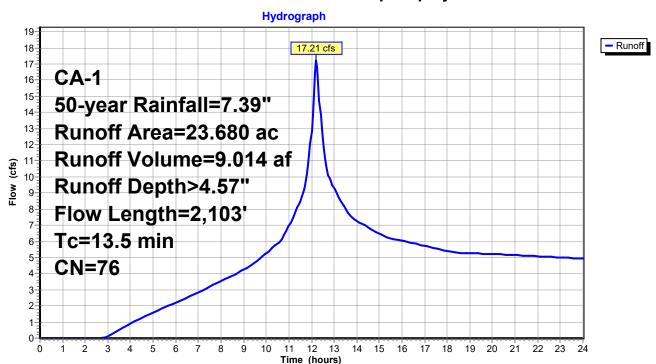
Summary for Subcatchment 1S: WS2 - post project

Runoff = 17.21 cfs @ 12.21 hrs, Volume= 9.014 af, Depth> 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(ac)	CN	Desc	cription						
*	1.	530	75	Vine	yard, Good	d HSG C					
*	7.	360	79	Vine	yard, Fair,	HSG C					
	1.	650	79		Pasture/grassland/range, Fair, HSG C						
	0.	670	86		Pasture/grassland/range, Poor, HSG C						
	11.	720	74	Past	Pasture/grassland/range, Good, HSG C						
	0.	750	70		ds, Good,						
23.680 76 Weighted Average											
	23.680			00% Pervi							
	Tc	Lengt	h .	Slope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	•				
	5.0	10	0 0	.0800	0.33	, ,	Sheet Flow,				
	0.0			.0000	0.00		Range n= 0.130 P2= 3.21"				
	3.9	1,12	ი ი	.0900	4.83		Shallow Concentrated Flow,				
	0.0	.,		.0000	1.00		Unpaved Kv= 16.1 fps				
	4.6	88	3 0	.0400	3.22		Shallow Concentrated Flow,				
	0	00		.0.00	3.22		Unpaved Kv= 16.1 fps				
_	13.5	2,10	3 Т	otal							
	13.3	۷, ۱۵	J 1	Ulai							

Subcatchment 1S: WS2 - post project



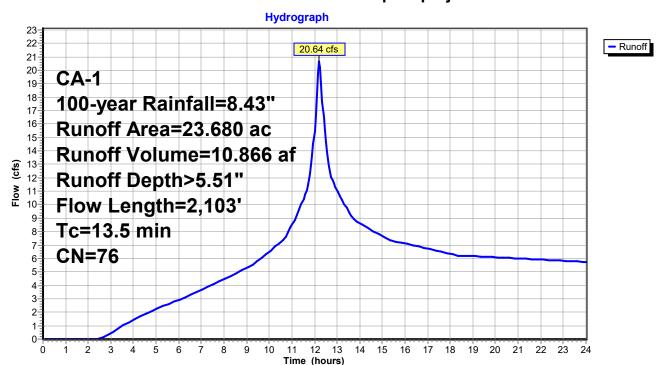
Summary for Subcatchment 1S: WS2 - post project

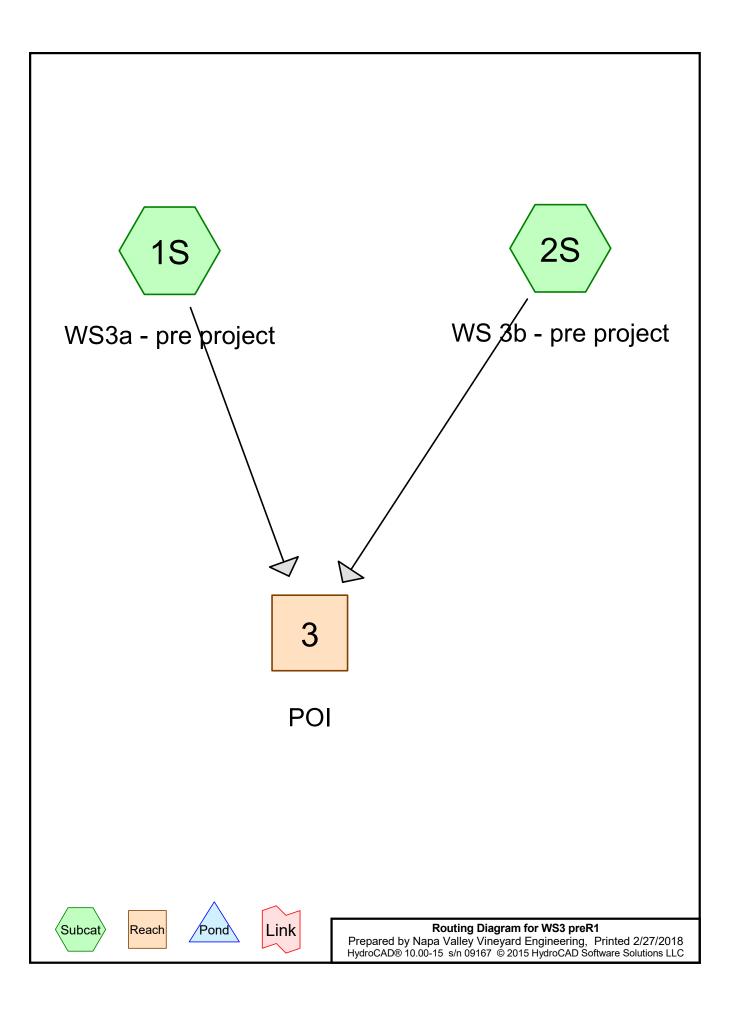
Runoff = 20.64 cfs @ 12.21 hrs, Volume= 10.866 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac)	CN	Desc	ription						
*	1.	530	75	Vine	yard, Good	d HSG C					
*	7.	360	79	Vine	Vineyard, Fair, HSG C						
	1.	650	79	Past	Pasture/grassland/range, Fair, HSG C						
	0.670 86				Pasture/grassland/range, Poor, HSG C						
	11.720 74				Pasture/grassland/range, Good, HSG C						
	0.	750	•								
	23.										
	23.680 76 23.680			ghted Aver 00% Pervi	0						
	Tc	Lengtl	h S	Slope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	'				
	5.0	100	$\hat{0}$.0800	0.33	, ,	Sheet Flow,				
	0.0	10	J 0.	.0000	0.00		Range n= 0.130 P2= 3.21"				
	3.9	1,12	ე ი	.0900	4.83		Shallow Concentrated Flow,				
	0.0	1,12	J 0.	.0000	4.00		Unpaved Kv= 16.1 fps				
	4.6	88	3 N	.0400	3.22		Shallow Concentrated Flow,				
	7.0	00.	<i>.</i>	.0-100	J.ZZ		Unpaved Kv= 16.1 fps				
_	13.5	2,10	2 T	otal			Onparoa Itt 10.11po				
	13.5	∠, 10.) I	otal							

Subcatchment 1S: WS2 - post project





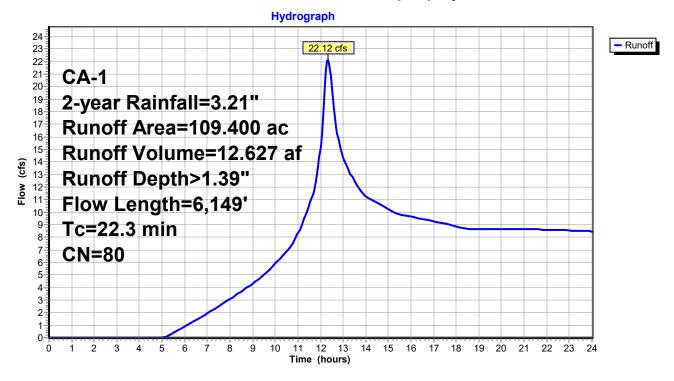
Summary for Subcatchment 1S: WS3a - pre project

Runoff = 22.12 cfs @ 12.33 hrs, Volume= 12.627 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac)	CN Des	cription						
*	15.	690	79 Vine	eyard, Fair,	HSG C					
*	6.	470	84 Vine	Vineyard, Fair, HSG D						
	62.	240		Pasture/grassland/range, Fair, HSG C						
	22.980 84			Pasture/grassland/range, Fair, HSG D						
		290		Pasture/grassland/range, Good, HSG C						
		810				Good, HSG D				
		920		ods, Good,						
	109.			ighted Ave						
	109.	400	100	.00% Pervi	ious Area					
	_	1	01	M. L !6 .	0	Description				
	Tc	Length	•	•	Capacity	Description				
	(min)	(feet)		(ft/sec)	(cfs)					
	3.8	100	0.1600	0.44		Sheet Flow,				
	7.0	0.004	0.4000	0.00		Range n= 0.130 P2= 3.21"				
	7.2	2,934	0.1800	6.83		Shallow Concentrated Flow,				
	1.1	1,150	0.1100	18.03	540.80	Unpaved Kv= 16.1 fps Channel Flow,				
	1.1	1,150	0.1100	10.03	340.60	Area= 30.0 sf Perim= 26.1' r= 1.15'				
						n= 0.030 Earth, grassed & winding				
	10.2	1,965	0.0400	3.22		Shallow Concentrated Flow,				
	10.2	1,000	0.0-100	0.22		Unpaved Kv= 16.1 fps				
	22.3	6.149	Total							

Subcatchment 1S: WS3a - pre project



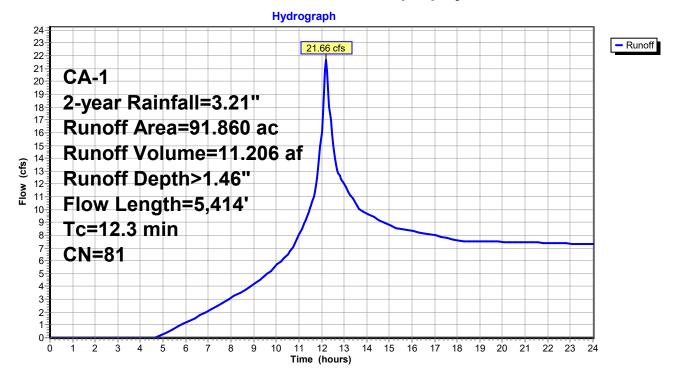
Summary for Subcatchment 2S: WS 3b - pre project

Runoff = 21.66 cfs @ 12.20 hrs, Volume= 11.206 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac)	CN	Desc	cription						
	3.	040	98	Pave	ed parking,	, HSG C					
*	2.	490	79	Vine	yard, Fair,	HSG C					
*	4.	730	84	Vine	Vineyard, Fair, HSG D						
	46.	080	79	Past	Pasture/grassland/range, Fair, HSG C						
	27.	920	84	Past	Pasture/grassland/range, Fair, HSG D						
	4.	370	74	Past	Pasture/grassland/range, Good, HSG C						
	0.	260	80	Past	Pasture/grassland/range, Good, HSG D						
_	2.	970	77	Woo	ds, Good,	HSG D					
91.860 81 Weighted Average											
	88.	820		96.6	96.69% Pervious Area						
	3.040		3.31	% Impervi	ous Area						
	Тс	Lengt	:h	Slope	Velocity	Capacity	Description				
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)					
	2.5	10	0 (0.4400	0.66		Sheet Flow,				
							Range n= 0.130 P2= 3.21"				
	3.7	1,73	2 (0.2300	7.72		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	1.1	1,44	2 (0.1500	21.05	631.52	Channel Flow,				
							Area= 30.0 sf Perim= 26.1' r= 1.15'				
							n= 0.030 Earth, grassed & winding				
	5.0	2,14	0 (0.0500	7.10	42.58	Channel Flow,				
							Area= 6.0 sf Perim= 11.7' r= 0.51'				
_							n= 0.030 Earth, grassed & winding				
	12.3	5,41	4 7	Γotal							

Subcatchment 2S: WS 3b - pre project



Summary for Reach 3: POI

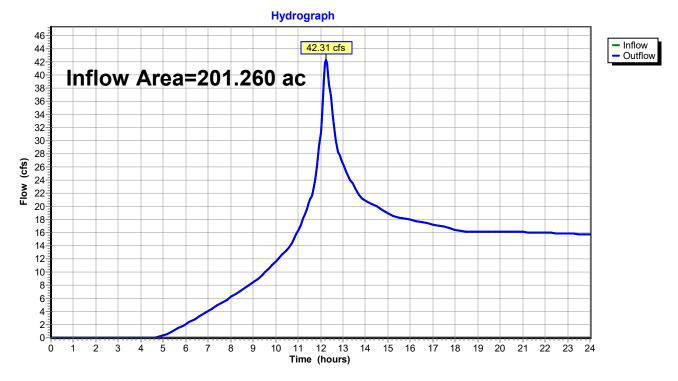
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 1.42" for 2-year event

Inflow = 42.31 cfs @ 12.24 hrs, Volume= 23.833 af

Outflow = 42.31 cfs @ 12.24 hrs, Volume= 23.833 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



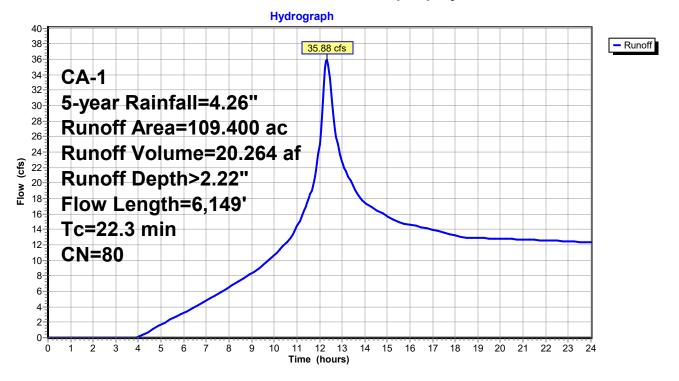
Summary for Subcatchment 1S: WS3a - pre project

Runoff = 35.88 cfs @ 12.32 hrs, Volume= 20.264 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac) C	CN Description								
*	15.	690	79 Vine	yard, Fair,	HSG C						
*	6.	470	34 Vine	neyard, Fair, HSG D							
	62.	240	79 Past	ure/grassl	and/range,	Fair, HSG C					
	22.	980	34 Past	ture/grassl	and/range,	Fair, HSG D					
	0.	290	74 Past	Pasture/grassland/range, Good, HSG C							
	0.	810	30 Past	ture/grassl	and/range,	Good, HSG D					
	0.	920	77 Woo	ods, Good,	HSG D						
	109.	400	30 Wei	ghted Aver	age						
	109.400			00% Pervi	ous Area						
	Tc	Length	Slope	Velocity	Capacity	Description					
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	3.8	100	0.1600	0.44		Sheet Flow,					
						Range n= 0.130 P2= 3.21"					
	7.2	2,934	0.1800	6.83		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	1.1	1,150	0.1100	18.03	540.80	Channel Flow,					
						Area= 30.0 sf Perim= 26.1' r= 1.15'					
						n= 0.030 Earth, grassed & winding					
	10.2	1,965	0.0400	3.22		Shallow Concentrated Flow,					
_						Unpaved Kv= 16.1 fps					
	22.3	6 149	Total								

Subcatchment 1S: WS3a - pre project



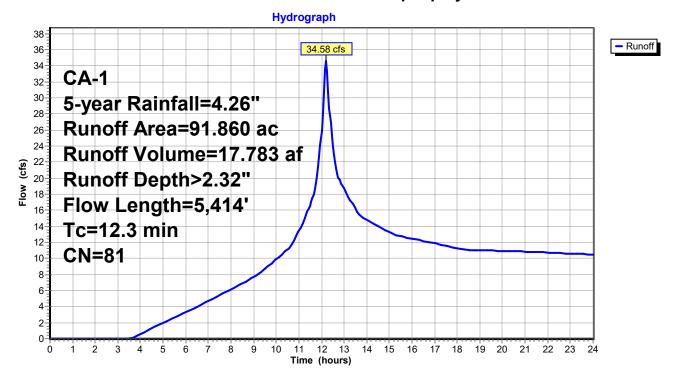
Summary for Subcatchment 2S: WS 3b - pre project

Runoff = 34.58 cfs @ 12.20 hrs, Volume= 17.783 af, Depth> 2.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac)	CN I	Des	cription							
	3.	040	98 I	av	ed parking	, HSG C						
*	2.	490	79 \	/ine	neyard, Fair, HSG C							
*	4.	730			neyard, Fair, HSG D							
46.080 79 Pasture/grassland/range, Fair, HSG C												
	27.	920					Fair, HSG D					
	4.	370					Good, HSG C					
		260			•	•	Good, HSG D					
_	2.	970	77 \	Noc	ds, Good,	HSG D						
	91.	860			ghted Aver							
88.820 96.69% Pervious Area						us Area						
3.040 3.31% Impervious						ous Area						
	Тс	Length		ре	Velocity		Description					
_	(min)	(feet) (f	/ft)	(ft/sec)	(cfs)						
	2.5	100	0.44	-00	0.66		Sheet Flow,					
							Range n= 0.130 P2= 3.21"					
	3.7	1,732	0.23	800	7.72		Shallow Concentrated Flow,					
							Unpaved Kv= 16.1 fps					
	1.1	1,442	0.15	00	21.05	631.52	Channel Flow,					
							Area= 30.0 sf Perim= 26.1' r= 1.15'					
							n= 0.030 Earth, grassed & winding					
	5.0	2,140	0.05	00	7.10	42.58	Channel Flow,					
							Area= 6.0 sf Perim= 11.7' r= 0.51'					
_							n= 0.030 Earth, grassed & winding					
	12.3	5,414	l Tota	al								

Subcatchment 2S: WS 3b - pre project



Prepared by Napa Valley Vineyard Engineering
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Summary for Reach 3: POI

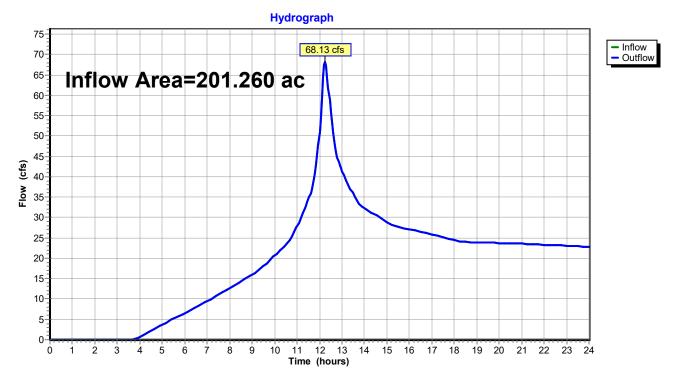
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 2.27" for 5-year event

Inflow = 68.13 cfs @ 12.24 hrs, Volume= 38.047 af

Outflow = 68.13 cfs @ 12.24 hrs, Volume= 38.047 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



Summary for Subcatchment 1S: WS3a - pre project

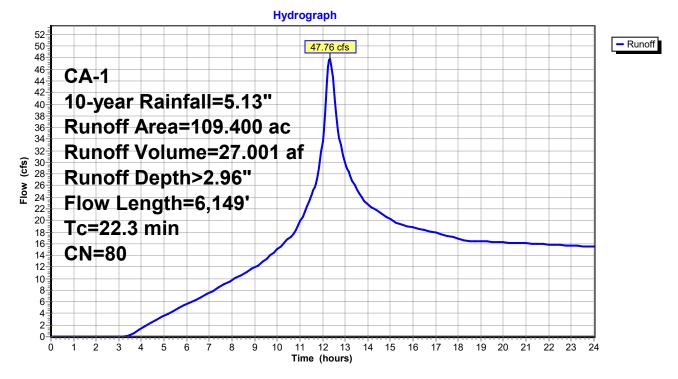
Runoff = 47.76 cfs @ 12.32 hrs, Volume= 27.001 af, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac) C	N Des	cription						
*	15.	690	79 Vine	yard, Fair,	HSG C					
*	6.	470	84 Vine	yard, Fair,	HSG D					
62.240 79 Pasture/grassland/range, Fair, HSG C										
	22.	980	84 Past	Pasture/grassland/range, Fair, HSG D						
	0.	290		Pasture/grassland/range, Good, HSG C						
	0.	810		Pasture/grassland/range, Good, HSG D						
_	0.	920	77 Woo	ods, Good,	HSG D					
	109.	400		ghted Aver						
	109.	400	100.	00% Pervi	ous Area					
	Тс	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	3.8	100	0.1600	0.44		Sheet Flow,				
						Range n= 0.130 P2= 3.21"				
	7.2	2,934	0.1800	6.83		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	1.1	1,150	0.1100	18.03	540.80	Channel Flow,				
						Area= 30.0 sf Perim= 26.1' r= 1.15'				
						n= 0.030 Earth, grassed & winding				
	10.2	1,965	0.0400	3.22		Shallow Concentrated Flow,				
_						Unpaved Kv= 16.1 fps				
	22.3	6.149	Total							

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Subcatchment 1S: WS3a - pre project



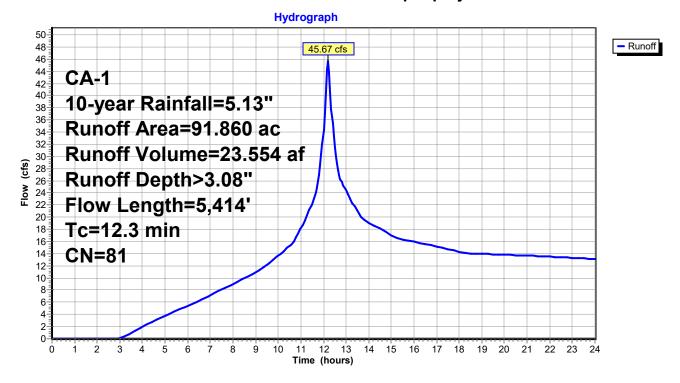
Summary for Subcatchment 2S: WS 3b - pre project

Runoff = 45.67 cfs @ 12.20 hrs, Volume= 23.554 af, Depth> 3.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac)	CN	Desc	cription							
	3.	040	98	Pave	ed parking,	, HSG C						
*	2.	490	79	Vine	neyard, Fair, HSG C							
*	4.	730	84 Vineyard, Fair, HSG D									
46.080 79 Pasture/grassland/range, Fair, HSG C												
		920	84				Fair, HSG D					
		370	74				Good, HSG C					
		260	80				Good, HSG D					
	2.	970	77	Woo	ds, Good,	HSG D						
	91.860 81 Weighted Average											
		820			9% Pervio							
	3.	040		3.31	% Impervi	ous Area						
	_		_									
	Tc	Lengtl		Slope	Velocity	Capacity	Description					
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)						
	2.5	10	0.	4400	0.66		Sheet Flow,					
	a =	4 70					Range n= 0.130 P2= 3.21"					
	3.7	1,73	2 0.	.2300	7.72		Shallow Concentrated Flow,					
	4.4	4 4 4		4500	04.05	004.50	Unpaved Kv= 16.1 fps					
	1.1	1,442	2 0.	1500	21.05	631.52	Channel Flow,					
							Area= 30.0 sf Perim= 26.1' r= 1.15'					
	5 O	2 14	n 0	0500	7 10	10 50	n= 0.030 Earth, grassed & winding					
	5.0	2,14	J U.	.0500	7.10	42.58	Channel Flow, Area= 6.0 sf Perim= 11.7' r= 0.51'					
							n= 0.030 Earth, grassed & winding					
_	10.0	E 11	<u>, т</u> ,	otol .			11- 0.000 Latti, grassed & willding					
	12.3	5,41	+ 10	otal								

Subcatchment 2S: WS 3b - pre project



Summary for Reach 3: POI

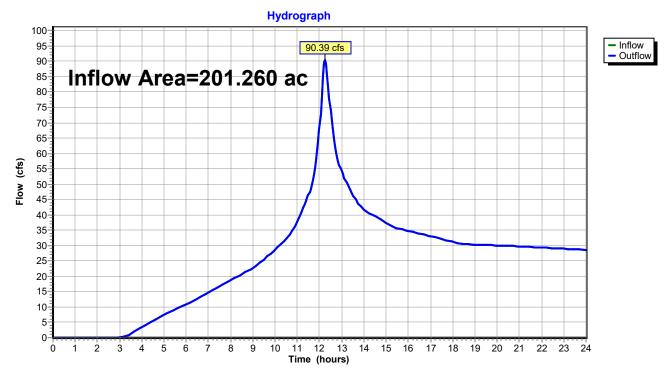
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 3.01" for 10-year event

Inflow = 90.39 cfs @ 12.24 hrs, Volume= 50.555 af

Outflow = 90.39 cfs @ 12.24 hrs, Volume= 50.555 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



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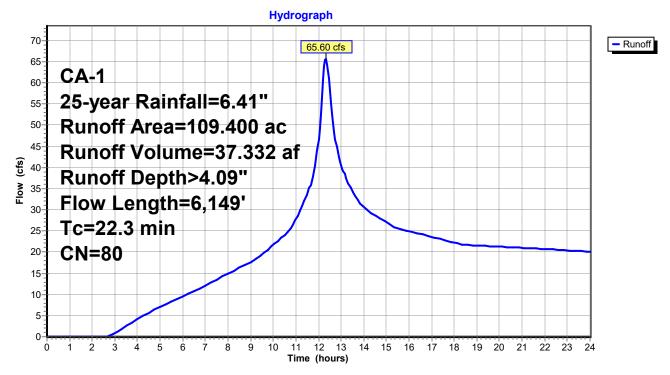
Summary for Subcatchment 1S: WS3a - pre project

Runoff = 65.60 cfs @ 12.32 hrs, Volume= 37.332 af, Depth> 4.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area	(ac)	CN Des	cription						
*	15.	690	79 Vine	eyard, Fair,	HSG C					
*	6.	470	84 Vine	Vineyard, Fair, HSG D						
	62.	240		Pasture/grassland/range, Fair, HSG C						
	22.980 84			Pasture/grassland/range, Fair, HSG D						
		290		Pasture/grassland/range, Good, HSG C						
		810				Good, HSG D				
		920		ods, Good,						
	109.			ighted Ave						
	109.	400	100	.00% Pervi	ious Area					
	_	1	01	M. L !6 .	0	Description				
	Tc	Length	•	•	Capacity	Description				
	(min)	(feet)		(ft/sec)	(cfs)					
	3.8	100	0.1600	0.44		Sheet Flow,				
	7.0	0.004	0.4000	0.00		Range n= 0.130 P2= 3.21"				
	7.2	2,934	0.1800	6.83		Shallow Concentrated Flow,				
	1.1	1,150	0.1100	18.03	540.80	Unpaved Kv= 16.1 fps Channel Flow,				
	1.1	1,150	0.1100	10.03	340.60	Area= 30.0 sf Perim= 26.1' r= 1.15'				
						n= 0.030 Earth, grassed & winding				
	10.2	1,965	0.0400	3.22		Shallow Concentrated Flow,				
	10.2	1,000	0.0-100	0.22		Unpaved Kv= 16.1 fps				
	22.3	6.149	Total							

Subcatchment 1S: WS3a - pre project



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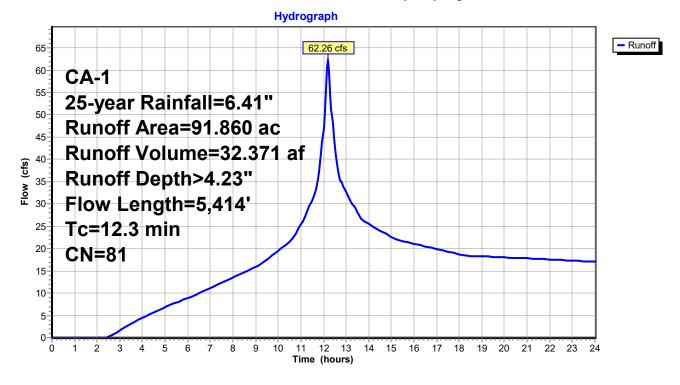
Summary for Subcatchment 2S: WS 3b - pre project

Runoff = 62.26 cfs @ 12.20 hrs, Volume= 32.371 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area	(ac)	CN I	Des	cription							
	3.	040	98 I	av	ed parking	, HSG C						
*	2.	490	79 \	/ine	neyard, Fair, HSG C							
*	4.	730			neyard, Fair, HSG D							
46.080 79 Pasture/grassland/range, Fair, HSG C												
	27.	920					Fair, HSG D					
	4.	370					Good, HSG C					
		260			•	•	Good, HSG D					
_	2.	970	77 \	Noc	ds, Good,	HSG D						
	91.	860			ghted Aver							
88.820 96.69% Pervious Area						us Area						
3.040 3.31% Impervious						ous Area						
	Тс	Length		ре	Velocity		Description					
_	(min)	(feet) (f	/ft)	(ft/sec)	(cfs)						
	2.5	100	0.44	-00	0.66		Sheet Flow,					
							Range n= 0.130 P2= 3.21"					
	3.7	1,732	0.23	800	7.72		Shallow Concentrated Flow,					
							Unpaved Kv= 16.1 fps					
	1.1	1,442	0.15	00	21.05	631.52	Channel Flow,					
							Area= 30.0 sf Perim= 26.1' r= 1.15'					
							n= 0.030 Earth, grassed & winding					
	5.0	2,140	0.05	00	7.10	42.58	Channel Flow,					
							Area= 6.0 sf Perim= 11.7' r= 0.51'					
_							n= 0.030 Earth, grassed & winding					
	12.3	5,414	l Tota	al								

Subcatchment 2S: WS 3b - pre project



Summary for Reach 3: POI

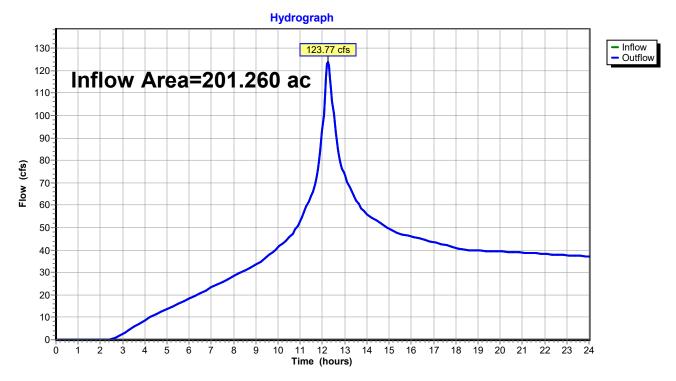
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 4.16" for 25-year event

Inflow = 123.77 cfs @ 12.23 hrs, Volume= 69.703 af

Outflow = 123.77 cfs @ 12.23 hrs, Volume= 69.703 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



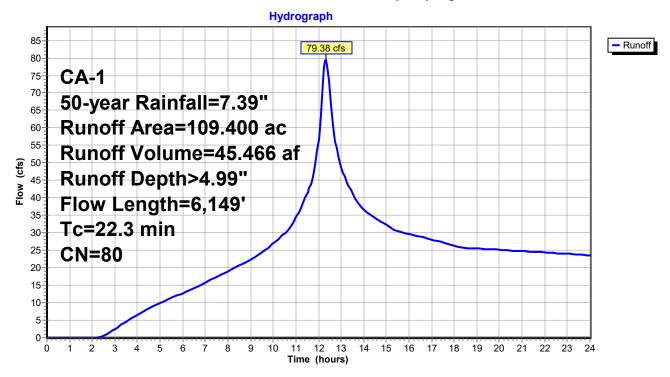
Summary for Subcatchment 1S: WS3a - pre project

Runoff = 79.38 cfs @ 12.32 hrs, Volume= 45.466 af, Depth> 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(20)	N Des	cription						
*		`—/——			1100.0					
	* 15.690 79 Vineyard, Fair, HSC D									
0.470 64 Villeyard, Fall, FISG D										
				Pasture/grassland/range, Fair, HSG C						
				Pasture/grassland/range, Fair, HSG D						
				Pasture/grassland/range, Good, HSG C						
	_					Good, HSG D				
	0.	920	77 Woo	ds, Good,	HSG D					
	109.	400	80 Wei	ghted Avei	rage					
	109.400		100.	00% Pervi	ous Area					
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	3.8	100	0.1600	0.44		Sheet Flow,				
						Range n= 0.130 P2= 3.21"				
	7.2	2,934	0.1800	6.83		Shallow Concentrated Flow,				
		_, -,				Unpaved Kv= 16.1 fps				
	1.1	1,150	0.1100	18.03	540.80	Channel Flow,				
		.,	0.1.00	.0.00	0.0.00	Area= 30.0 sf Perim= 26.1' r= 1.15'				
						n= 0.030 Earth, grassed & winding				
	10.2	1,965	0.0400	3.22		Shallow Concentrated Flow,				
	10.2	1,300	0.0+00	0.22		Unpaved Kv= 16.1 fps				
_	22.2	C 440	Tatal			Olipaved IV- 10.1 lps				
	22.3	6,149	Total							

Subcatchment 1S: WS3a - pre project



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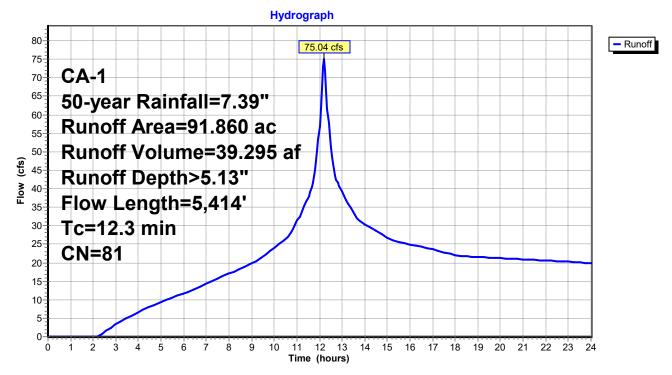
Summary for Subcatchment 2S: WS 3b - pre project

Runoff = 75.04 cfs @ 12.20 hrs, Volume= 39.295 af, Depth> 5.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(ac)	CN Des	cription					
	3.	040	98 Pav	Paved parking, HSG C					
*	2.	490	79 Vine	Vineyard, Fair, HSG C					
*	4.	730) 84 Vineyard, Fair, HSG D						
	46.080 79			Pasture/grassland/range, Fair, HSG C					
	27.	920		Pasture/grassland/range, Fair, HSG D					
	4.370			Pasture/grassland/range, Good, HSG C					
	0.260		80 Pas	Pasture/grassland/range, Good, HSG D					
	2.	970	77 Wo	ods, Good,	HSG D				
	91.860 81 Weighted Average								
	88.820			96.69% Pervious Area					
	3.040		3.31	I% Impervi	ous Area				
	Тс	Length		Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	2.5	100	0.4400	0.66		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	3.7	1,732	0.2300	7.72		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	1.1	1,442	0.1500	21.05	631.52	Channel Flow,			
						Area= 30.0 sf Perim= 26.1' r= 1.15'			
						n= 0.030 Earth, grassed & winding			
	5.0	2,140	0.0500	7.10	42.58	Channel Flow,			
						Area= 6.0 sf Perim= 11.7' r= 0.51'			
_						n= 0.030 Earth, grassed & winding			
	12.3	5,414	Total						

Subcatchment 2S: WS 3b - pre project



Summary for Reach 3: POI

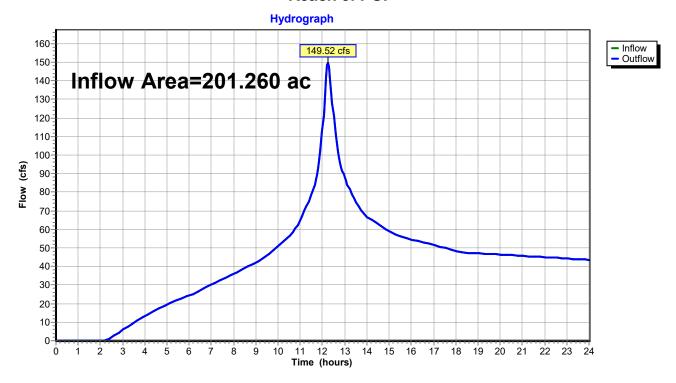
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 5.05" for 50-year event

Inflow = 149.52 cfs @ 12.23 hrs, Volume= 84.761 af

Outflow = 149.52 cfs @ 12.23 hrs, Volume= 84.761 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



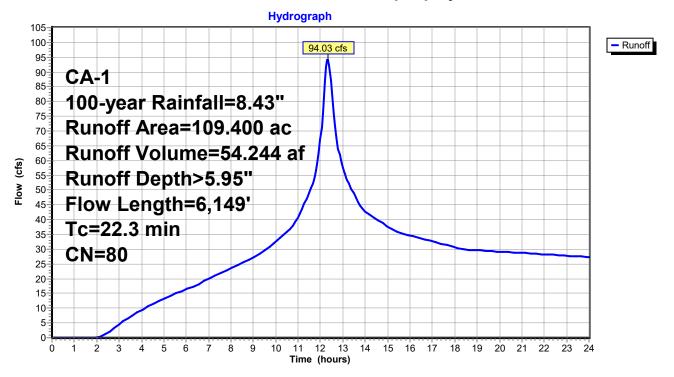
Summary for Subcatchment 1S: WS3a - pre project

Runoff = 94.03 cfs @ 12.32 hrs, Volume= 54.244 af, Depth> 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac)	CN De	scription					
*				Vineyard, Fair, HSG C					
*	6.470			Vineyard, Fair, HSG D					
	62.240			Pasture/grassland/range, Fair, HSG C					
	22.980			Pasture/grassland/range, Fair, HSG D					
		290							
	0.810			Pasture/grassland/range, Good, HSG C Pasture/grassland/range, Good, HSG D					
						C004, 1100 D			
_	<u>0.920</u> 77 Woods, Good, HSG D 109.400 80 Weighted Average								
				0.00% Perv					
	109.400		100	0.00% Perv	ious Area				
	Тс	Length	Slope	Velocity	Capacity	Description			
	(min)	Length (feet)	•		(cfs)	Description			
_					(013)	Chaot Flaur			
	3.8	100	0.1600	0.44		Sheet Flow,			
	7.0	0.004	0.4000	0.00		Range n= 0.130 P2= 3.21"			
	7.2	2,934	0.1800	6.83		Shallow Concentrated Flow,			
		4 4 = 6	0.4406	10.00	5 40.00	Unpaved Kv= 16.1 fps			
	1.1	1,150	0.1100	18.03	540.80	Channel Flow,			
						Area= 30.0 sf Perim= 26.1' r= 1.15'			
						n= 0.030 Earth, grassed & winding			
	10.2	1,965	0.0400	3.22		Shallow Concentrated Flow,			
_						Unpaved Kv= 16.1 fps			
	22.3	6,149	Total						

Subcatchment 1S: WS3a - pre project



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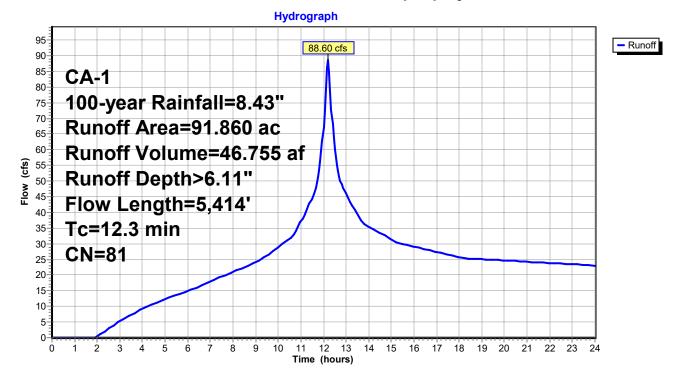
Summary for Subcatchment 2S: WS 3b - pre project

Runoff = 88.60 cfs @ 12.19 hrs, Volume= 46.755 af, Depth> 6.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac)	CN Des	cription					
	3.	040	98 Pav	Paved parking, HSG C					
*	2.	490	79 Vine	Vineyard, Fair, HSG C					
*	4.	730) 84 Vineyard, Fair, HSG D						
	46.080 79			Pasture/grassland/range, Fair, HSG C					
	27.	920		Pasture/grassland/range, Fair, HSG D					
	4.370			Pasture/grassland/range, Good, HSG C					
	0.260		80 Pas	Pasture/grassland/range, Good, HSG D					
	2.	970	77 Wo	ods, Good,	HSG D				
	91.860 81 Weighted Average								
	88.820			96.69% Pervious Area					
	3.040		3.31	I% Impervi	ous Area				
	Тс	Length		Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	2.5	100	0.4400	0.66		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	3.7	1,732	0.2300	7.72		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	1.1	1,442	0.1500	21.05	631.52	Channel Flow,			
						Area= 30.0 sf Perim= 26.1' r= 1.15'			
						n= 0.030 Earth, grassed & winding			
	5.0	2,140	0.0500	7.10	42.58	Channel Flow,			
						Area= 6.0 sf Perim= 11.7' r= 0.51'			
_						n= 0.030 Earth, grassed & winding			
	12.3	5,414	Total						

Subcatchment 2S: WS 3b - pre project



Summary for Reach 3: POI

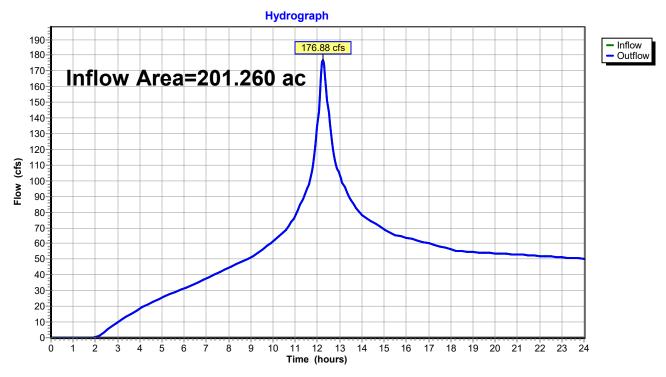
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 6.02" for 100-year event

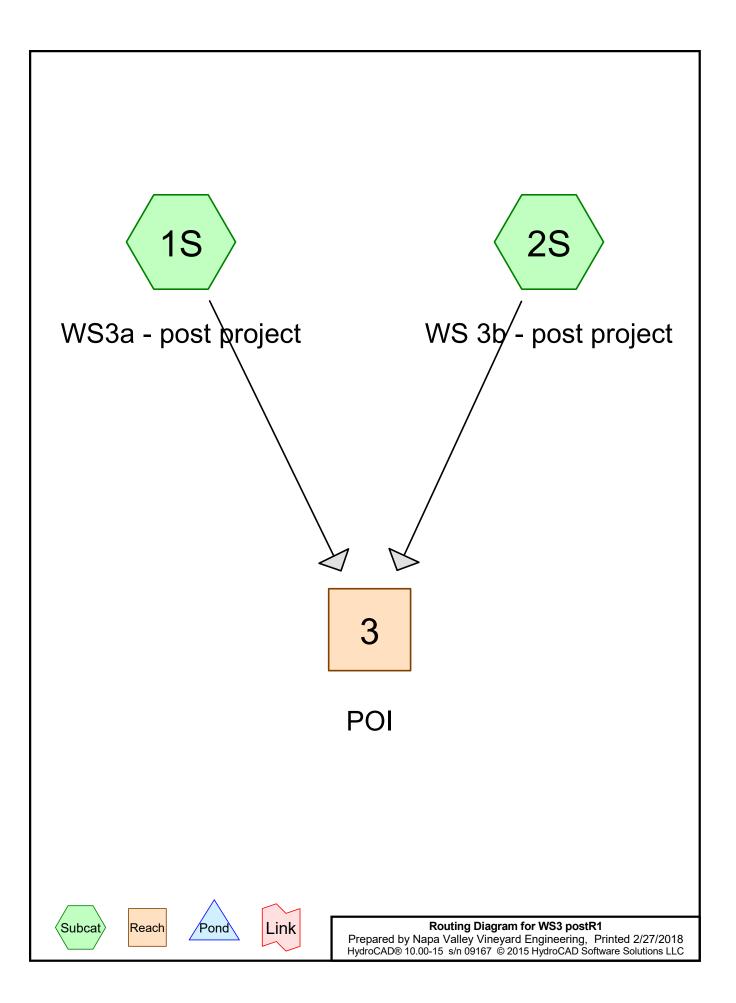
Inflow = 176.88 cfs @ 12.23 hrs, Volume= 100.999 af

Outflow = 176.88 cfs @ 12.23 hrs, Volume= 100.999 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI





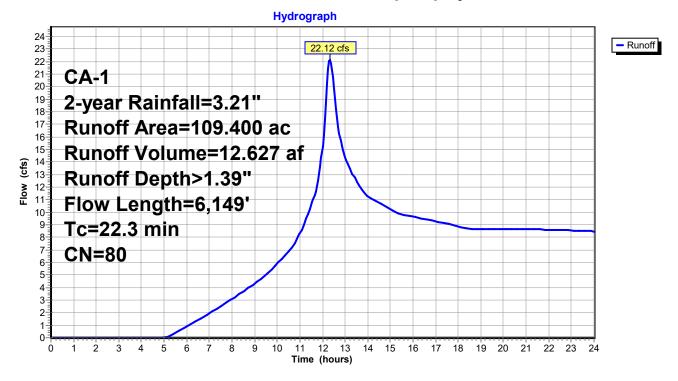
Summary for Subcatchment 1S: WS3a - post project

Runoff = 22.12 cfs @ 12.33 hrs, Volume= 12.627 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(20)	CN	l Dosc	crintion						
*		•			Description Vineyard Fair HSC C						
*		690 470	79 84		Vineyard, Fair, HSC D						
*		990	75		Vineyard, Fair, HSG D Vineyard, Good, HSG C						
*											
		2.740 81 45.390 79			Vineyard, Good, HSG D Pasture/grassland/range, Fair, HSG C						
					Pasture/grassland/range, Fair, HSG D						
		20.250 84 0.150 74			Pasture/grassland/range, Fall, HSG D Pasture/grassland/range, Good, HSG C						
	0.150 74 0.800 80						Good, HSG D				
		920	77		ds, Good,		C004, 1100 <i>B</i>				
_			80		ghted Ave						
	109.400 109.400		00		00% Pervi						
	103.	700		100.	00 /0 T CIVI	ous Arca					
	Tc	Lengt	th	Slope	Velocity	Capacity	Description				
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	2				
	3.8	10		0.1600	0.44		Sheet Flow,				
	0.0			0000	0		Range n= 0.130 P2= 3.21"				
	7.2	2,93	34	0.1800	6.83		Shallow Concentrated Flow,				
		_,-,-	-				Unpaved Kv= 16.1 fps				
	1.1	1,15	0	0.1100	18.03	540.80	Channel Flow,				
		, -					Area= 30.0 sf Perim= 26.1' r= 1.15'				
							n= 0.030 Earth, grassed & winding				
	10.2	1,96	55	0.0400	3.22		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	22.3	6,14	9	Total							

Subcatchment 1S: WS3a - post project



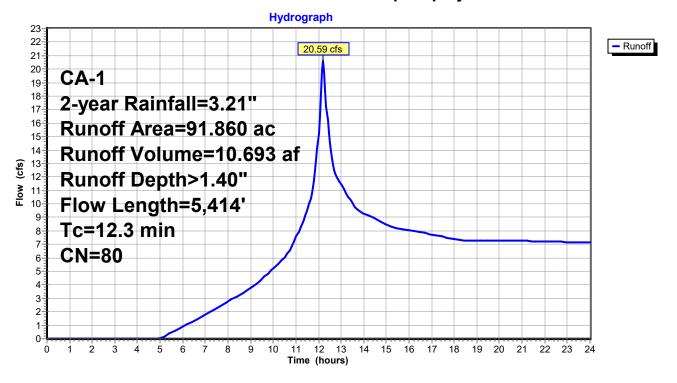
Summary for Subcatchment 2S: WS 3b - post project

Runoff = 20.59 cfs @ 12.20 hrs, Volume= 10.693 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac) (CN Desc	cription						
	3.	040	98 Pave	ed parking	, HSG C					
*	2.	490	79 Vine	yard, Fair,	HSG C					
*				yard, Fair,						
*		330		Vineyard, Good, HSG C						
*				Vineyard, Good, HSG D						
		320				Fair, HSG C				
						Fair, HSG D				
						Good, HSG C				
						Good, HSG D				
_		970		ds, Good,						
				ghted Ave						
		820		9% Pervio						
	3.	040	3.31	% Impervi	ous Area					
	То	Longth	Clone	Volocity	Conneity	Description				
	Tc	Length	Slope	Velocity	Capacity	Description				
		(foot)		(ft/coc)	(cfc)					
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Chart Flour				
	2.5	(feet) 100	(ft/ft)	(ft/sec) 0.66	(cfs)	Sheet Flow,				
	2.5	100	(ft/ft) 0.4400	0.66	(cfs)	Range n= 0.130 P2= 3.21"				
			(ft/ft) 0.4400		(cfs)	Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,				
	2.5 3.7	100 1,732	(ft/ft) 0.4400 0.2300	0.66 7.72		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps				
	2.5	100 1,732	(ft/ft) 0.4400	0.66	(cfs) 631.52	Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow,				
	2.5 3.7	100 1,732	(ft/ft) 0.4400 0.2300	0.66 7.72		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15'				
	2.5 3.7 1.1	1,732 1,442	(ft/ft) 0.4400 0.2300 0.1500	0.66 7.72 21.05	631.52	Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding				
	2.5 3.7	100 1,732	(ft/ft) 0.4400 0.2300 0.1500	0.66 7.72		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15'				
	2.5 3.7 1.1	1,732 1,442	(ft/ft) 0.4400 0.2300 0.1500	0.66 7.72 21.05	631.52	Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding Channel Flow, Area= 6.0 sf Perim= 11.7' r= 0.51'				
	2.5 3.7 1.1	1,732 1,442	(ft/ft) 0.4400 0.2300 0.1500 0.0500	0.66 7.72 21.05	631.52	Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding Channel Flow,				

Subcatchment 2S: WS 3b - post project



Summary for Reach 3: POI

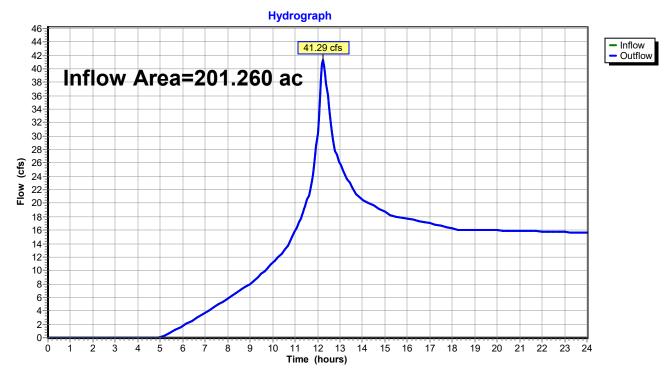
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 1.39" for 2-year event

Inflow = 41.29 cfs @ 12.24 hrs, Volume= 23.320 af

Outflow = 41.29 cfs @ 12.24 hrs, Volume= 23.320 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



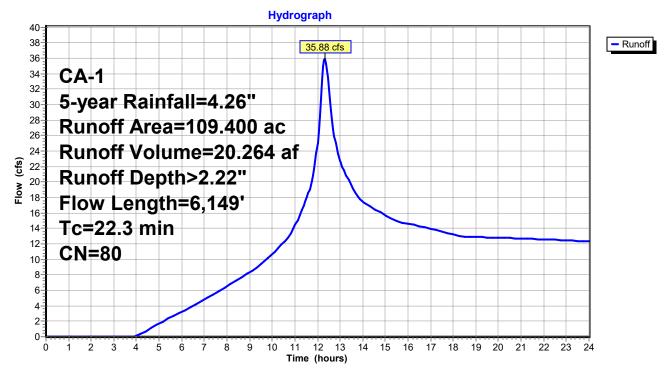
Summary for Subcatchment 1S: WS3a - post project

Runoff = 35.88 cfs @ 12.32 hrs, Volume= 20.264 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac)	CN	Desc	cription						
*	15.	690	79	Vine	yard, Fair,	HSG C					
*	6.	470	84	Vine							
*	16.	990	75		Vineyard, Good, HSG C						
*		740	81		Vineyard, Good, HSG D						
		390	79		Pasture/grassland/range, Fair, HSG C						
		250	84		Pasture/grassland/range, Fair, HSG D						
		150	74				Good, HSG C				
		800	80		Pasture/grassland/range, Good, HSG D						
_		920	77		ds, Good,						
	109.		80		ghted Aver						
	109.	400		100.0	00% Pervi	ous Area					
	Тс	Lengtl	h s	Slope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	Boompton				
	3.8	10		1600	0.44	(212)	Sheet Flow,				
	0.0	10	0 0.	. 1000	0.11		Range n= 0.130 P2= 3.21"				
	7.2	2,93	4 0.	.1800	6.83		Shallow Concentrated Flow,				
		,					Unpaved Kv= 16.1 fps				
	1.1	1,15	0.0	.1100	18.03	540.80	Channel Flow,				
							Area= 30.0 sf Perim= 26.1' r= 1.15'				
							n= 0.030 Earth, grassed & winding				
	10.2	1,96	5 0.	.0400	3.22		Shallow Concentrated Flow,				
							Unpaved Kv= 16.1 fps				
	22.3	6,149	9 To	otal							

Subcatchment 1S: WS3a - post project



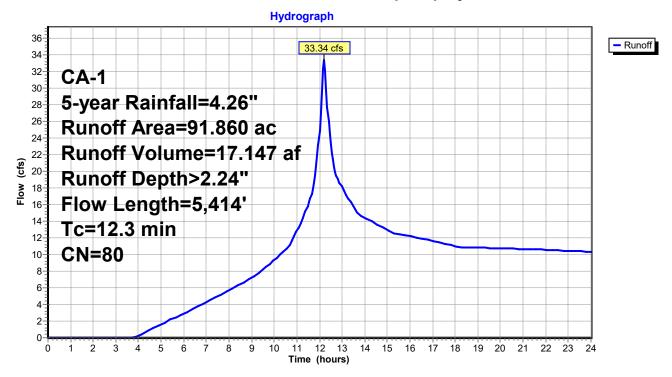
Summary for Subcatchment 2S: WS 3b - post project

Runoff = 33.34 cfs @ 12.20 hrs, Volume= 17.147 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac)	CN	Desc	ription							
	3.	040	98		d parking							
*	2.	490	79	Vine	yard, Fair,	HSG C						
*	4.	730	84	Vine	neyard, Fair, HSG D							
*	21.	330	, ,									
*	0.	070	81		yard, Goo							
	26.	320	79				Fair, HSG C					
	_	180	84				Fair, HSG D					
		540	74				Good, HSG C					
		190	80				Good, HSG D					
_		970	77	Woo	ds, Good,	HSG D						
	_	860	80		jhted Aver							
		820			9% Pervio							
	3.	040		3.31°	% Impervi	ous Area						
	т.	1	L	01	\/-l: /	0	Description					
	Tc	Lengt		Slope Velocity Capacity			Description					
_	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)						
	2.5	10	0 0	.4400	0.66		Sheet Flow,					
	0.7	4 70		0000	7 70		Range n= 0.130 P2= 3.21"					
	3.7	1,73	2 0	.2300	7.72		Shallow Concentrated Flow,					
	1 1	1 11	2 0	1500	21.05	631.52	Unpaved Kv= 16.1 fps					
	1.1	1,44	2 0	.1500	21.05	031.52	Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15'					
							n= 0.030 Earth, grassed & winding					
	5.0	2,14	n n	.0500	7.10	42.58	Channel Flow,					
	5.0	۷, ۱4	0 0	.0000	7.10	42.30	Area= 6.0 sf Perim= 11.7' r= 0.51'					
							n= 0.030 Earth, grassed & winding					
_	12.3	5,41		otal			11- 0.000 Latti, grassed & wiriding					
	12.3	5,41	' 1	otai								

Subcatchment 2S: WS 3b - post project



Summary for Reach 3: POI

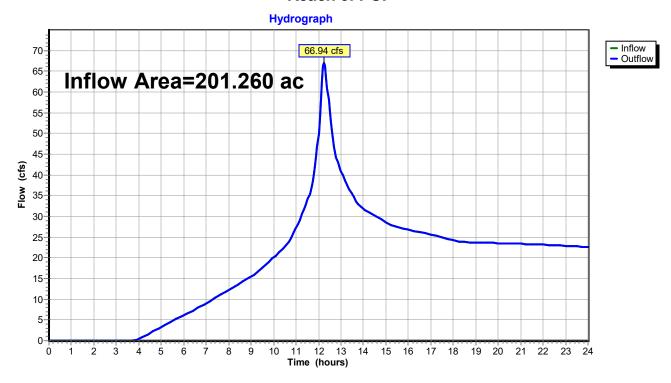
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 2.23" for 5-year event

Inflow = 66.94 cfs @ 12.24 hrs, Volume= 37.410 af

Outflow = 66.94 cfs @ 12.24 hrs, Volume= 37.410 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



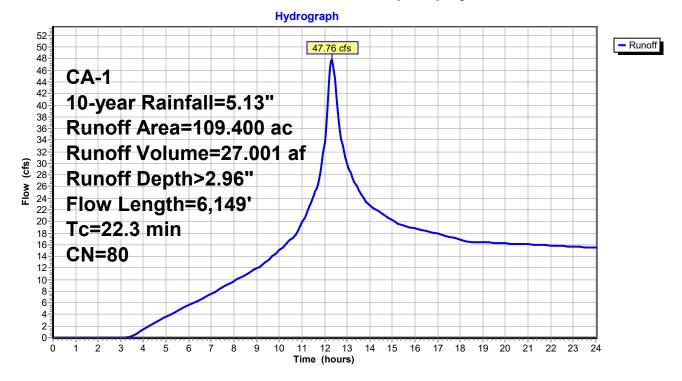
Summary for Subcatchment 1S: WS3a - post project

Runoff = 47.76 cfs @ 12.32 hrs, Volume= 27.001 af, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac)	CN	Desc	cription					
*	15.	690	79	Vine	yard, Fair,	HSG C				
*	6.	470	84	Vine	yard, Fair,	HSG D				
*	16.	990	75	Vine	Vineyard, Good, HSG C					
*	2.	740	81	Vine	Vineyard, Good, HSG D					
	45.	390	79	Past	ure/grassl	and/range,	Fair, HSG C			
	20.	250	84				Fair, HSG D			
	0.	150	74				Good, HSG C			
		800	80		Pasture/grassland/range, Good, HSG D					
	0.	920	77	Woo	ds, Good,	HSG D				
	109.	400	80	Weig	ghted Avei	age				
	109.	400		100.	00% Pervi	ous Area				
	Тс	Lengt		Slope	Velocity	Capacity	Description			
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	10	0 (0.1600	0.44		Sheet Flow,			
							Range n= 0.130 P2= 3.21"			
	7.2	2,93	4 (0.1800	6.83		Shallow Concentrated Flow,			
							Unpaved Kv= 16.1 fps			
	1.1	1,15	0 (0.1100	18.03	540.80	Channel Flow,			
							Area= 30.0 sf Perim= 26.1' r= 1.15'			
							n= 0.030 Earth, grassed & winding			
	10.2	1,96	5 (0.0400	3.22		Shallow Concentrated Flow,			
_							Unpaved Kv= 16.1 fps			
	22.3	6,14	9 -	Total						

Subcatchment 1S: WS3a - post project



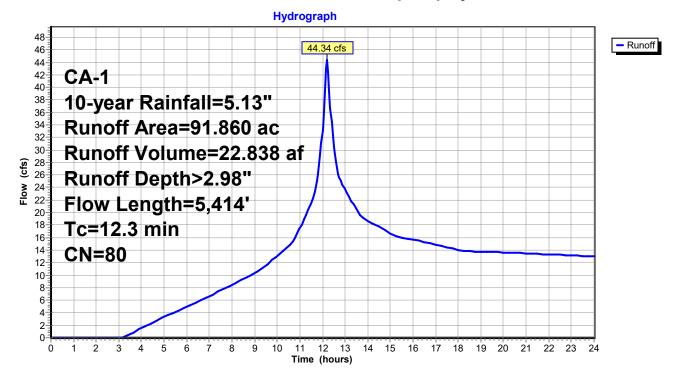
Summary for Subcatchment 2S: WS 3b - post project

Runoff = 44.34 cfs @ 12.20 hrs, Volume= 22.838 af, Depth> 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac) (CN E	escrip	otion					
	3.	040	98 F	aved	parking,	, HSG C				
*	2.	490	79 V	'ineyai	rd, Fair,	HSG C				
*		730		Vineyard, Fair, HSG D						
*		330		Vineyard, Good, HSG C						
*		070		Vineyard, Good, HSG D						
	_	320		Pasture/grassland/range, Fair, HSG C						
		180					Fair, HSG D			
		540					Good, HSG C			
		190			_	•	Good, HSG D			
_		970			·	HSG D				
		860			ted Aver					
		820	_			us Area				
	3.	040	3	.31%	impervi	ous Area				
	Тс	Length	Slo	ne V	elocity	Capacity	Description			
	(min)	(feet)			(ft/sec)	(cfs)	Description			
_	2.5	(.001)								
		100				(0.0)	Sheet Flow			
		100			0.66	(0.0)	Sheet Flow, Range n= 0.130 P2= 3.21"			
			0.44	00	0.66	(0.0)	Range n= 0.130 P2= 3.21"			
	3.7	100 1,732	0.44	00		(0.0)	Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,			
	3.7	1,732	0.44	00	0.66 7.72		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps			
			0.44	00	0.66	631.52	Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,			
	3.7	1,732	0.44	00	0.66 7.72		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15'			
	3.7	1,732	0.44 0.23 0.15	00 00 00	0.66 7.72		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow,			
	3.7 1.1	1,732 1,442	0.44 0.23 0.15	00 00 00	0.66 7.72 21.05	631.52	Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding			
	3.7 1.1	1,732 1,442	0.44 0.23 0.15	00 00 00	0.66 7.72 21.05	631.52	Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding Channel Flow,			

Subcatchment 2S: WS 3b - post project



Summary for Reach 3: POI

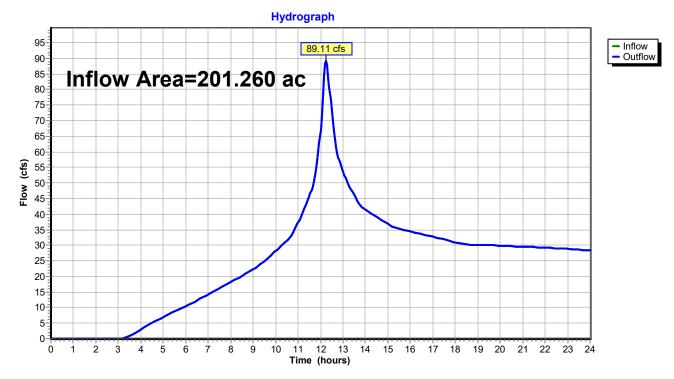
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 2.97" for 10-year event

Inflow = 89.11 cfs @ 12.24 hrs, Volume= 49.839 af

Outflow = 89.11 cfs @ 12.24 hrs, Volume= 49.839 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



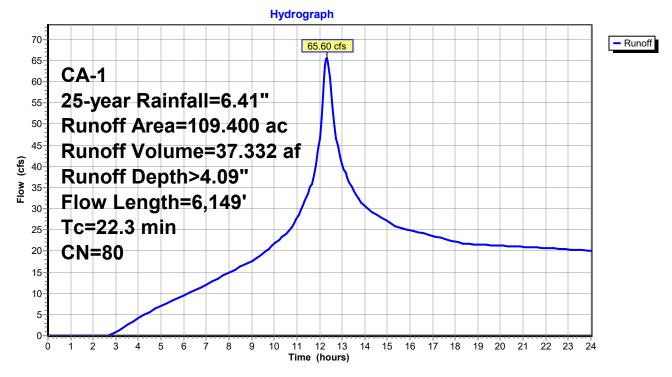
Summary for Subcatchment 1S: WS3a - post project

Runoff = 65.60 cfs @ 12.32 hrs, Volume= 37.332 af, Depth> 4.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area	(ac)	CN	Desc	cription					
*	15.	690	79	Vine	yard, Fair,	HSG C				
*	6.	470	84	Vine	yard, Fair,	HSG D				
*	16.	990	75	Vine	Vineyard, Good, HSG C					
*	2.	740	81	Vine	Vineyard, Good, HSG D					
	45.	390	79	Past	ure/grassl	and/range,	Fair, HSG C			
	20.	250	84				Fair, HSG D			
	0.	150	74				Good, HSG C			
		800	80		Pasture/grassland/range, Good, HSG D					
	0.	920	77	Woo	ds, Good,	HSG D				
	109.	400	80	Weig	ghted Avei	age				
	109.	400		100.	00% Pervi	ous Area				
	Тс	Lengt		Slope	Velocity	Capacity	Description			
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	10	0 (0.1600	0.44		Sheet Flow,			
							Range n= 0.130 P2= 3.21"			
	7.2	2,93	4 (0.1800	6.83		Shallow Concentrated Flow,			
							Unpaved Kv= 16.1 fps			
	1.1	1,15	0 (0.1100	18.03	540.80	Channel Flow,			
							Area= 30.0 sf Perim= 26.1' r= 1.15'			
							n= 0.030 Earth, grassed & winding			
	10.2	1,96	5 (0.0400	3.22		Shallow Concentrated Flow,			
_							Unpaved Kv= 16.1 fps			
	22.3	6,14	9 -	Total						

Subcatchment 1S: WS3a - post project



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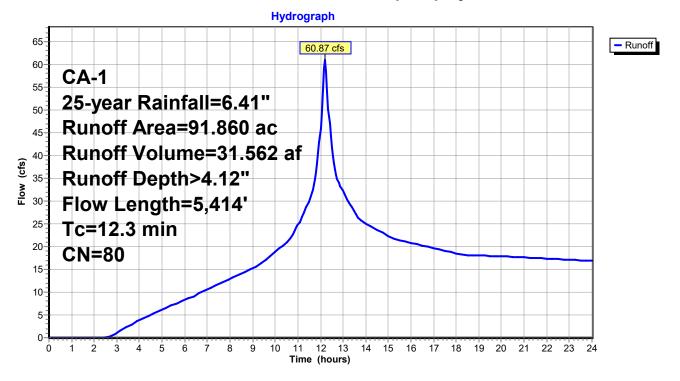
Summary for Subcatchment 2S: WS 3b - post project

Runoff = 60.87 cfs @ 12.20 hrs, Volume= 31.562 af, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area	(ac)	CN	Desc	ription							
	3.	040	98		d parking							
*	2.	490	79	Vine	yard, Fair,	HSG C						
*	4.	730	84	Vine	neyard, Fair, HSG D							
*	21.	330	, ,									
*	0.	070	81		yard, Goo							
	26.	320	79				Fair, HSG C					
	_	180	84				Fair, HSG D					
		540	74				Good, HSG C					
		190	80				Good, HSG D					
_		970	77	Woo	ds, Good,	HSG D						
	_	860	80		jhted Aver							
		820			9% Pervio							
	3.	040		3.31 ^o	% Impervi	ous Area						
	т.	1	L	01	\/-l: /	0	Description					
	Tc	Lengt		Slope Velocity Capacity			Description					
_	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)						
	2.5	10	0 0	.4400	0.66		Sheet Flow,					
	0.7	4 70		0000	7 70		Range n= 0.130 P2= 3.21"					
	3.7	1,73	2 0	.2300	7.72		Shallow Concentrated Flow,					
	1 1	1 11	2 0	1500	21.05	631.52	Unpaved Kv= 16.1 fps					
	1.1	1,44	2 0	.1500	21.05	031.52	Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15'					
							n= 0.030 Earth, grassed & winding					
	5.0	2,14	n n	.0500	7.10	42.58	Channel Flow,					
	5.0	۷, ۱4	0 0	.0000	7.10	42.30	Area= 6.0 sf Perim= 11.7' r= 0.51'					
							n= 0.030 Earth, grassed & winding					
_	12.3	5,41		otal			11- 0.000 Latti, grassed & wiriding					
	12.3	5,41	' 1	otai								

Subcatchment 2S: WS 3b - post project



Summary for Reach 3: POI

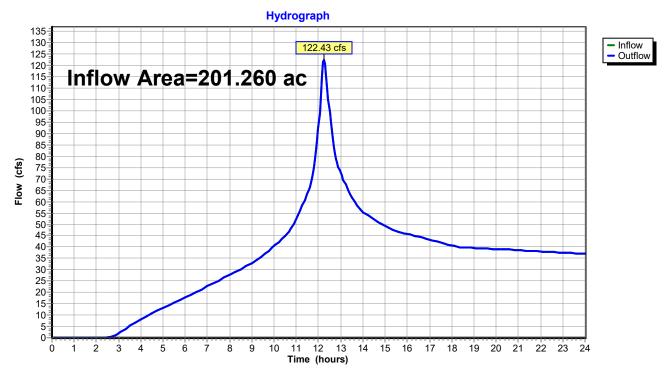
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 4.11" for 25-year event

Inflow = 122.43 cfs @ 12.24 hrs, Volume= 68.893 af

Outflow = 122.43 cfs @ 12.24 hrs, Volume= 68.893 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



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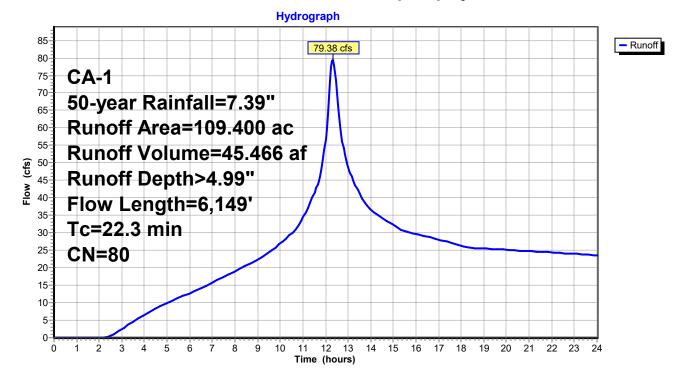
Summary for Subcatchment 1S: WS3a - post project

Runoff = 79.38 cfs @ 12.32 hrs, Volume= 45.466 af, Depth> 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(ac)	CN	Desc	cription					
*	15.	690	79	Vine	yard, Fair,	HSG C				
*	6.	470	84	Vine	yard, Fair,	HSG D				
*	16.	990	75	Vine	Vineyard, Good, HSG C					
*	2.	740	81	Vine	Vineyard, Good, HSG D					
	45.	390	79	Past	ure/grassl	and/range,	Fair, HSG C			
	20.	250	84				Fair, HSG D			
	0.	150	74				Good, HSG C			
		800	80		Pasture/grassland/range, Good, HSG D					
	0.	920	77	Woo	ds, Good,	HSG D				
	109.	400	80	Weig	ghted Avei	age				
	109.	400		100.	00% Pervi	ous Area				
	Тс	Lengt		Slope	Velocity	Capacity	Description			
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	10	0 (0.1600	0.44		Sheet Flow,			
							Range n= 0.130 P2= 3.21"			
	7.2	2,93	4 (0.1800	6.83		Shallow Concentrated Flow,			
							Unpaved Kv= 16.1 fps			
	1.1	1,15	0 (0.1100	18.03	540.80	Channel Flow,			
							Area= 30.0 sf Perim= 26.1' r= 1.15'			
							n= 0.030 Earth, grassed & winding			
	10.2	1,96	5 (0.0400	3.22		Shallow Concentrated Flow,			
_							Unpaved Kv= 16.1 fps			
	22.3	6,14	9 -	Total						

Subcatchment 1S: WS3a - post project



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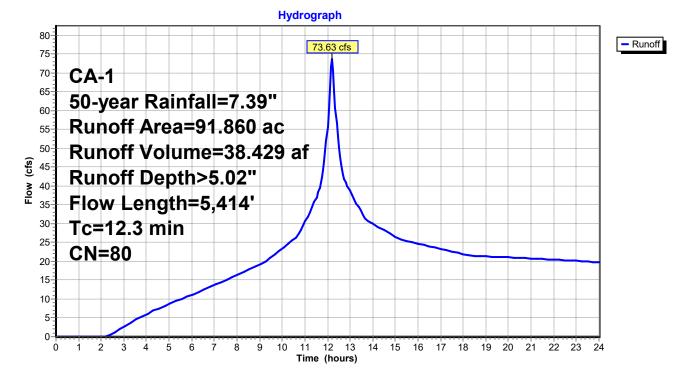
Summary for Subcatchment 2S: WS 3b - post project

Runoff = 73.63 cfs @ 12.20 hrs, Volume= 38.429 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(ac)	CN Des	cription						
	3.	040	98 Pav	ed parking	, HSG C					
*	2.	490		eyard, Fair,						
*	4.	730		eyard, Fair,						
*		330		Vineyard, Good, HSG C						
*		070		Vineyard, Good, HSG D						
	_	320				Fair, HSG C				
		180				Fair, HSG D				
		540				Good, HSG C				
		190		asture/grassland/range, Good, HSG D						
		970		ods, Good,						
		860		Weighted Average						
		820		69% Pervic						
	3.	040	3.3	1% Impervi	ous Area					
	To	Longth	Slope	Volocity	Capacity	Description				
	Tc (min)	Length (feet		Velocity (ft/sec)	Capacity (cfs)	Description				
_	2.5	_ ` _			(013)	Shoot Flow				
	2.5	100	0.4400	0.66		Sheet Flow,				
	3.7	1,732	0.2300	7.72		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,				
	3.7	1,732	0.2300	1.12		Unpaved Kv= 16.1 fps				
	1.1	1,442	0.1500	21.05	631.52	Channel Flow,				
	1.1	1,772	. 0.1500	21.00	031.32	Area= 30.0 sf Perim= 26.1' r= 1.15'				
						n= 0.030 Earth, grassed & winding				
	5.0	2,140	0.0500	7.10	42.58	Channel Flow,				
	0.0	۷, ۱۳۰	0.0000	0	12.00	Area= 6.0 sf Perim= 11.7' r= 0.51'				
						n= 0.030 Earth, grassed & winding				
_	12.3	5,414	l Total							
	. 2.0	∪,¬ ı¬	· IOIGI							

Subcatchment 2S: WS 3b - post project



Summary for Reach 3: POI

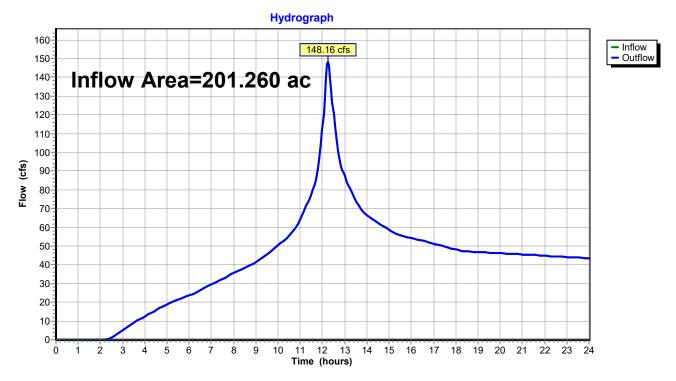
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 5.00" for 50-year event

Inflow = 148.16 cfs @ 12.24 hrs, Volume= 83.895 af

Outflow = 148.16 cfs @ 12.24 hrs, Volume= 83.895 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI



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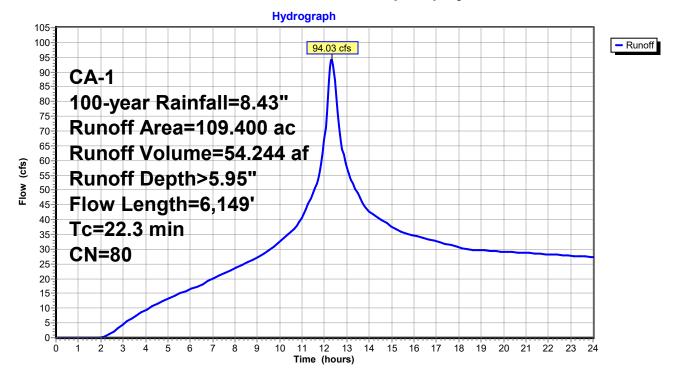
Summary for Subcatchment 1S: WS3a - post project

Runoff = 94.03 cfs @ 12.32 hrs, Volume= 54.244 af, Depth> 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac) C	N Desc	cription					
*	15.	690	79 Vine	yard, Fair,	HSG C				
*	6.	470 8	34 Vine	yard, Fair,	HSG D				
*	16.	990	75 Vine	Vineyard, Good, HSG C					
*	2.	740 8	31 Vine	Vineyard, Good, HSG D					
	45.	390	79 Past	Pasture/grassland/range, Fair, HSG C					
				Pasture/grassland/range, Fair, HSG D					
						Good, HSG C			
						Good, HSG D			
	0.	920	77 Woo	ds, Good,	HSG D				
	109.			ghted Aver					
	109.	400	100.	00% Pervi	ous Area				
	Tc	Length	Slope	Velocity	Capacity	Description			
_	(min)					•			
			(ft/ft)	(ft/sec)	(cfs)	<u> </u>			
	3.8	(feet) 100	(ft/ft) 0.1600	(ft/sec) 0.44		Sheet Flow,			
	3.8	100	0.1600	0.44		Sheet Flow, Range n= 0.130 P2= 3.21"			
						Sheet Flow, Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,			
	3.8 7.2	100 2,934	0.1600 0.1800	0.44 6.83	(cfs)	Sheet Flow, Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps			
	3.8	100	0.1600	0.44		Sheet Flow, Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow,			
	3.8 7.2	100 2,934	0.1600 0.1800	0.44 6.83	(cfs)	Sheet Flow, Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15'			
	3.8 7.2 1.1	100 2,934 1,150	0.1600 0.1800 0.1100	0.44 6.83 18.03	(cfs)	Sheet Flow, Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding			
	3.8 7.2	100 2,934	0.1600 0.1800	0.44 6.83	(cfs)	Sheet Flow, Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding Shallow Concentrated Flow,			
	3.8 7.2 1.1	100 2,934 1,150	0.1600 0.1800 0.1100	0.44 6.83 18.03	(cfs)	Sheet Flow, Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding			

Subcatchment 1S: WS3a - post project



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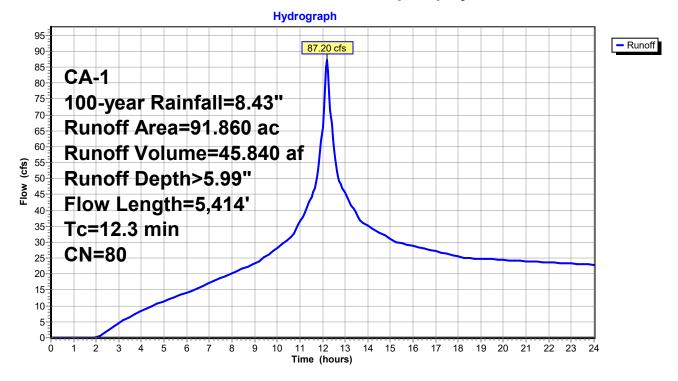
Summary for Subcatchment 2S: WS 3b - post project

Runoff = 87.20 cfs @ 12.20 hrs, Volume= 45.840 af, Depth> 5.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac)	CN	Desc	cription							
	_	040	98		ed parking							
*		490	79		Vineyard, Fair, HSG C							
*		730	84	Vineyard, Fair, HSG D								
*		330	75		Vineyard, Good, HSG C							
*	_	070	81		ineyard, Good, HSG D							
		320	79				Fair, HSG C					
	_	180	84				Fair, HSG D					
		540	74				Good, HSG C					
		190	80				Good, HSG D					
		970	77		ds, Good,							
		860	80		ghted Aver							
		820			9% Pervio							
	3.	040		3.31	% Impervi	ous Area						
	Тс	Longt	h C	Slope	Volocity	Canacity	Description					
	(min)	Lengt (feet		Slope Velocity Capacity (ft/ft) (ft/sec) (cfs)			Description					
						(013)	Chast Flour					
	2.5	10	0 0.4	4400	0.66		Sheet Flow,					
	3.7	1,73	2 0	2300	7.72		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,					
	3.1	1,73	Z U	2300	1.12		Unpaved Kv= 16.1 fps					
	1.1	1,44	2 0	1500	21.05	631.52	Channel Flow,					
	1.1	1,44	۷ .	1300	21.00	031.32	Area= 30.0 sf Perim= 26.1' r= 1.15'					
							n= 0.030 Earth, grassed & winding					
	5.0	2,14	0 0	0500	7.10	42.58	Channel Flow,					
	0.0	۲, ۱٦	0.	5500	7.10	42.00	Area= 6.0 sf Perim= 11.7' r= 0.51'					
							n= 0.030 Earth, grassed & winding					
_	12.3	5,41	4 To	otal			, g					
		٠, ، ،										

Subcatchment 2S: WS 3b - post project



Summary for Reach 3: POI

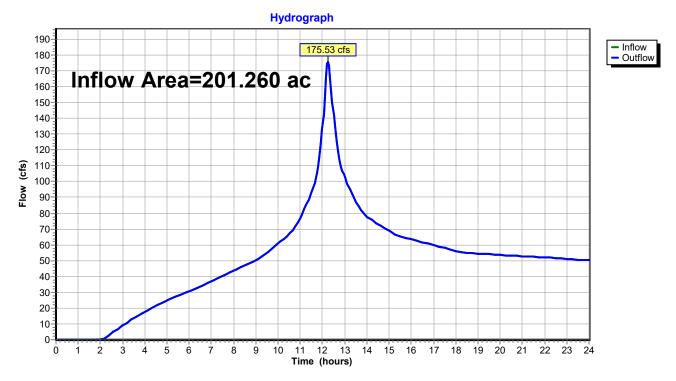
Inflow Area = 201.260 ac, 1.51% Impervious, Inflow Depth > 5.97" for 100-year event

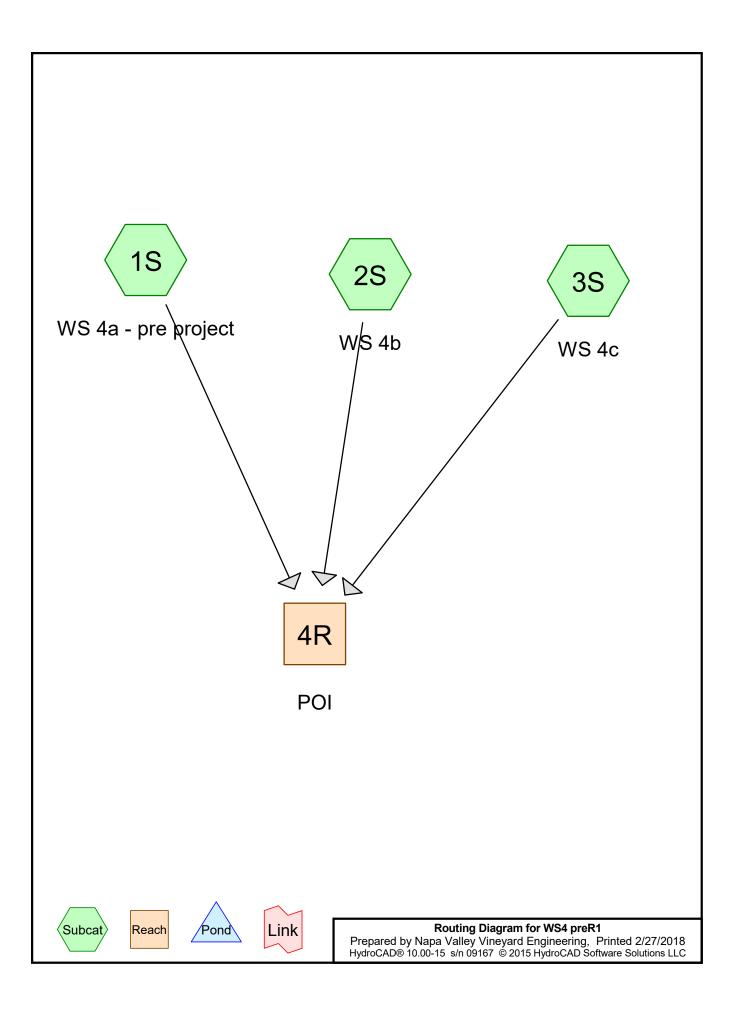
Inflow = 175.53 cfs @ 12.23 hrs, Volume= 100.084 af

Outflow = 175.53 cfs @ 12.23 hrs, Volume= 100.084 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3: POI





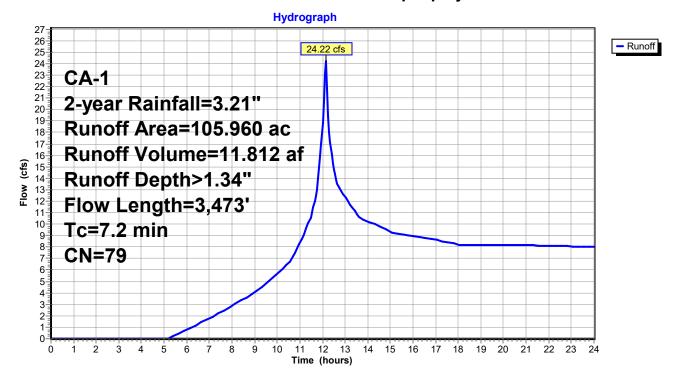
Summary for Subcatchment 1S: WS 4a - pre project

Runoff = 24.22 cfs @ 12.14 hrs, Volume= 11.812 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac) (N Des	cription				
*	10.	880	79 Vine	yard, Fair,	HSG C			
	93.	280		asture/grassland/range, Fair, HSG C				
	1.	490				Fair, HSG D		
				ods, Ğood,	•	,		
	105.960		79 Wei	ghted Avei	age			
	105.			.00% Pervi	•			
	Tc	Length	Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•		
	3.5	100	0.2000	0.48		Sheet Flow,		
						Range n= 0.130 P2= 3.21"		
	8.0	485	0.4100	10.31		Shallow Concentrated Flow,		
						Unpaved Kv= 16.1 fps		
	1.1	390	0.1300	5.80		Shallow Concentrated Flow,		
						Unpaved Kv= 16.1 fps		
	1.8	2,498	0.1800	23.06	691.79	Channel Flow,		
		•				Area= 30.0 sf Perim= 26.1' r= 1.15'		
						n= 0.030 Earth, grassed & winding		
	7.2	3,473	Total					

Subcatchment 1S: WS 4a - pre project



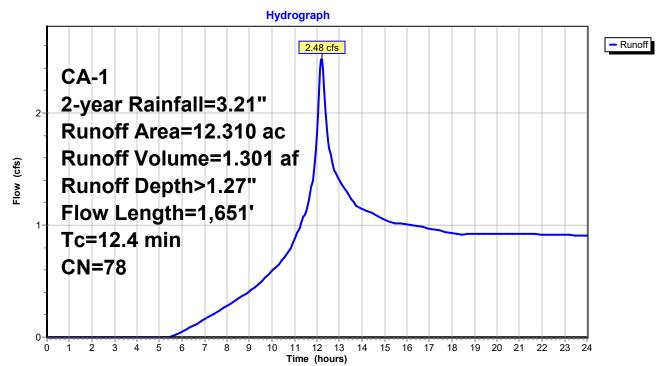
Summary for Subcatchment 2S: WS 4b

Runoff = 2.48 cfs @ 12.20 hrs, Volume= 1.301 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

Area (ac) CN			N Desc	Description					
10.350 79 Pasture/grassland/range,									
1.960 74 Pasture/grassland/range, Good, HSG C									
12.310 78 Weighted Average									
	12.310 100.00% Pervious Area								
	Tc	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,			
_						Unpaved Kv= 16.1 fps			
	12.4	1,651	Total	•					

Subcatchment 2S: WS 4b



Summary for Subcatchment 3S: WS 4c

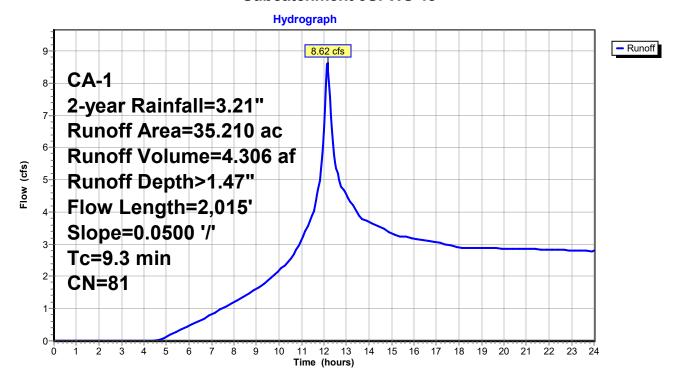
Runoff = 8.62 cfs @ 12.16 hrs, Volume= 4.306 af, Depth> 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

Area (ac) CN Description					ription						
	4.510 98			8 Wate	Water Surface, HSG C						
*	0.	940	79	9 Vine	Vineyard, Fair, HSG C						
24.020 79 Pasture/grassland/range, F			ure/grassla	and/range,	Fair, HSG C						
	5.	280	74	4 Past	ure/grassla	and/range,	Good, HSG C				
	0.	460	86	6 Past	ure/grassla	and/range,	Poor, HSG C				
	35.	210	8	1 Weig	hted Aver	age					
30.700				87.1	9% Pervio	us Area					
	4.510			12.81% Impervious Ar							
	Тс	Leng	th	Slope	Velocity	Capacity	Description				
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	9.3	2,01	15	0.0500	3.60		Shallow Concentrated Flow,				

Subcatchment 3S: WS 4c

Unpaved Kv= 16.1 fps



Summary for Reach 4R: POI

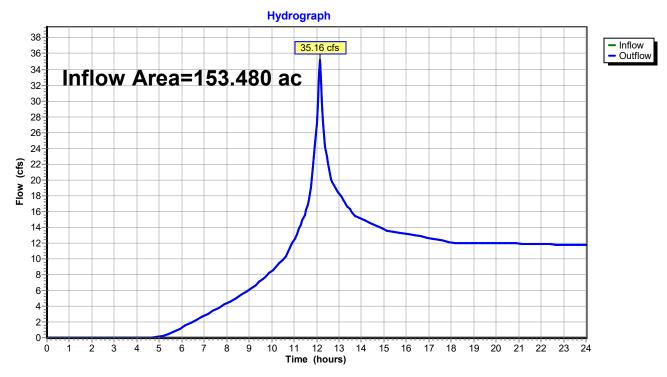
Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 1.36" for 2-year event

Inflow = 35.16 cfs @ 12.15 hrs, Volume= 17.419 af

Outflow = 35.16 cfs @ 12.15 hrs, Volume= 17.419 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 4R: POI



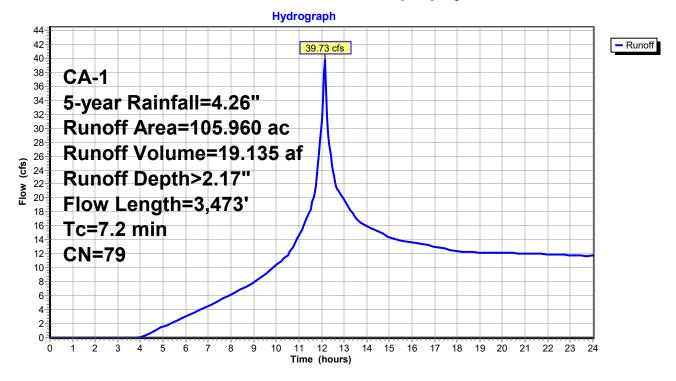
Summary for Subcatchment 1S: WS 4a - pre project

Runoff = 39.73 cfs @ 12.14 hrs, Volume= 19.135 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area (ac)		N Des	Description					
*	10.	880	79 Vine	Vineyard, Fair, HSG C					
	93.	280		Pasture/grassland/range, Fair, HSG C					
	1.			Pasture/grassland/range, Fair, HSG D					
	0.			ods, Ğood,	•	,			
_				Weighted Average					
	105.960			00% Pervi	•				
				00701 0111	040704				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	'			
	3.5	100	0.2000	0.48	, ,	Sheet Flow,			
	0.0		0.200	00		Range n= 0.130 P2= 3.21"			
	0.8	485	0.4100	10.31		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	1.1	390	0.1300	5.80		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	1.8	2,498	0.1800	23.06	691.79	Channel Flow,			
		, , , , ,				Area= 30.0 sf Perim= 26.1' r= 1.15'			
						n= 0.030 Earth, grassed & winding			
	7.2	3,473	Total						

Subcatchment 1S: WS 4a - pre project



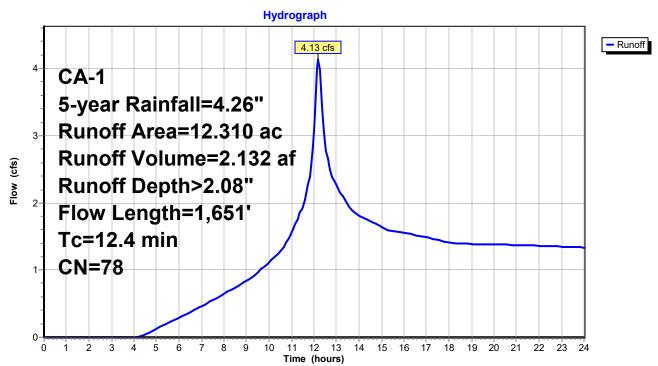
Summary for Subcatchment 2S: WS 4b

Runoff = 4.13 cfs @ 12.20 hrs, Volume= 2.132 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac) C	N Desc	cription				
	10.	350 7	79 Past	ure/grassla	and/range,	Fair, HSG C		
1.960 74 Pasture/grassland/range, Good, HSG C								
	12.	310 7	78 Weig	ghted Aver	age			
	12.	310	100.	00% Pervi	ous Area			
	Tc	Length	Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	3.8	100	0.1600	0.44		Sheet Flow,		
						Range n= 0.130 P2= 3.21"		
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,		
						Unpaved Kv= 16.1 fps		
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,		
						Unpaved Kv= 16.1 fps		
	12.4	1,651	Total					

Subcatchment 2S: WS 4b



Summary for Subcatchment 3S: WS 4c

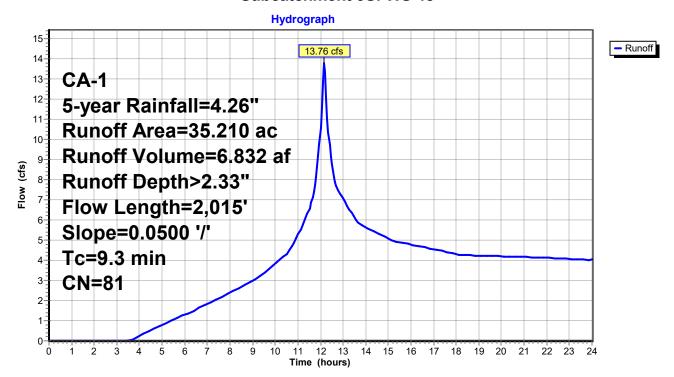
Runoff = 13.76 cfs @ 12.16 hrs, Volume= 6.832 af, Depth> 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac)	C1	N Desc	ription				
	4.	510	98	8 Wate	er Surface	HSG C			
*	0.	940	79	9 Vine					
24.020 79 Pasture/grassland/range, F					ure/grassla	and/range,	Fair, HSG C		
5.280 74 Pasture/grassland/range, 0					ure/grassla	and/range,	Good, HSG C		
	0.	460	86	6 Past	ure/grassla	and/range,	Poor, HSG C		
35.210 81 Weighted Average									
	30.	700		87.1	9% Pervio	us Area			
	4.	510		12.8	1% Imperv	ious Area			
	Тс	Leng	th	Slope	Velocity	Capacity	Description		
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	9.3	2,0	15	0.0500	3.60		Shallow Concentrated Flow,		

Subcatchment 3S: WS 4c

Unpaved Kv= 16.1 fps



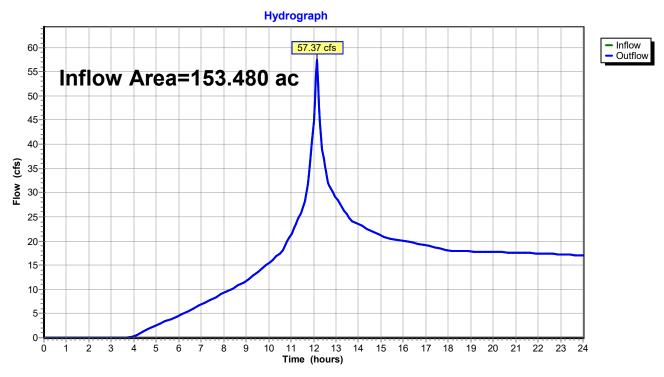
Summary for Reach 4R: POI

Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 2.20" for 5-year event

Inflow = 57.37 cfs @ 12.15 hrs, Volume= 28.098 af

Outflow = 57.37 cfs @ 12.15 hrs, Volume= 28.098 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



Summary for Subcatchment 1S: WS 4a - pre project

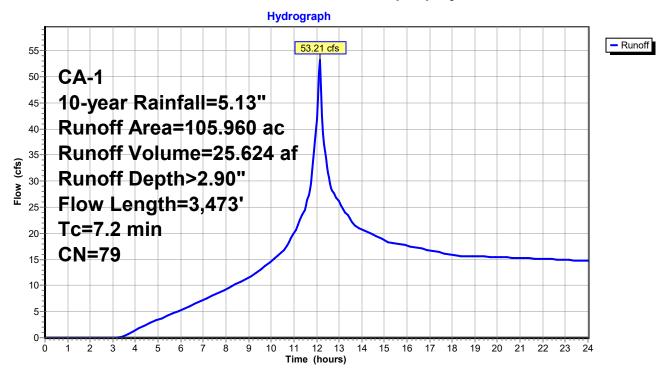
Runoff = 53.21 cfs @ 12.14 hrs, Volume= 25.624 af, Depth> 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac)	CN De	escription						
*	10.880 79		79 Vi	Vineyard, Fair, HSG C						
	93.	280		Pasture/grassland/range, Fair, HSG C						
	1.	490	84 Pa	Pasture/grassland/range, Fair, HSG D						
	0.	310	77 W	oods, Good						
	105.	960	79 W	eighted Ave	rage					
	105.	960		0.00% Perv						
	Тс	Length	Slop	e Velocity	Capacity	Description				
_	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)					
	3.5	100	0.200	0 0.48		Sheet Flow,				
						Range n= 0.130 P2= 3.21"				
	8.0	485	0.410	0 10.31		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	1.1	390	0.130	0 5.80		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	1.8	2,498	0.180	0 23.06	691.79	Channel Flow,				
						Area= 30.0 sf Perim= 26.1' r= 1.15'				
						n= 0.030 Earth, grassed & winding				
	70	2 472	Tatal							

7.2 3,473 Total

Subcatchment 1S: WS 4a - pre project



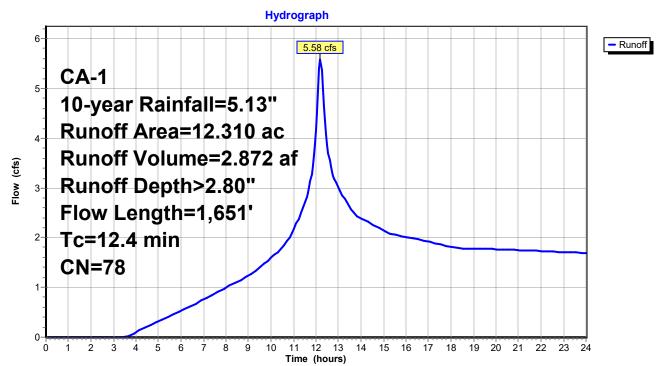
Summary for Subcatchment 2S: WS 4b

Runoff = 5.58 cfs @ 12.20 hrs, Volume= 2.872 af, Depth> 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

_	Area	(ac) C	N Desc	cription				
						Fair, HSG C		
_	1.	Good, HSG C						
	12.	310 7	'8 Weig	ghted Aver	age			
	12.	310	100.	100.00% Pervious Area				
	Tc	Length	Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	3.8	100	0.1600	0.44		Sheet Flow,		
						Range n= 0.130 P2= 3.21"		
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,		
						Unpaved Kv= 16.1 fps		
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,		
		,				Unpaved Kv= 16.1 fps		
_	12.4	1,651	Total					

Subcatchment 2S: WS 4b



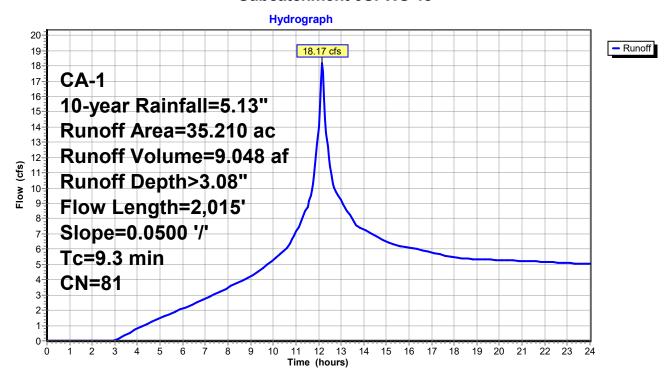
Summary for Subcatchment 3S: WS 4c

Runoff = 18.17 cfs @ 12.16 hrs, Volume= 9.048 af, Depth> 3.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac)	CN	Desc	ription				
	4.510 98 Water Surface, HSG C								
*	0.	940	79	Vine	yard, Fair,	HSG C			
	24.	020	79	Past	ure/grassl	and/range,	Fair, HSG C		
	5.	280	74	Past	ure/grassl	and/range,	Good, HSG C		
	0.	460	86	Past	ure/grassl	and/range,	Poor, HSG C		
	35.210 81 Weighted Average								
	30.	700		87.19	9% Pervio	us Area			
	4.	510		12.8	12.81% Impervious Area				
	_					_			
	Тс	Leng		Slope	Velocity	Capacity	Description		
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	9.3	2,01	5	0.0500	3.60		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		

Subcatchment 3S: WS 4c



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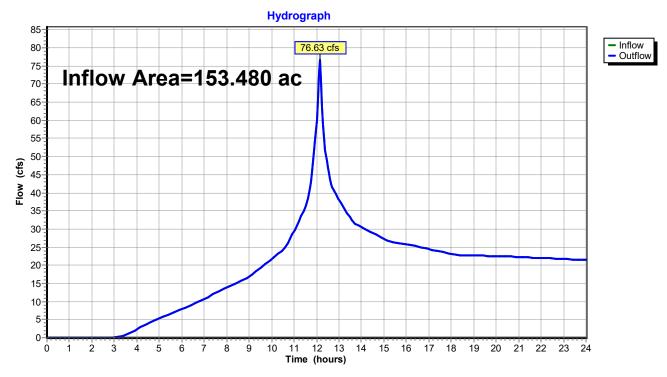
Summary for Reach 4R: POI

Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 2.94" for 10-year event

Inflow = 76.63 cfs @ 12.15 hrs, Volume= 37.543 af

Outflow = 76.63 cfs @ 12.15 hrs, Volume= 37.543 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



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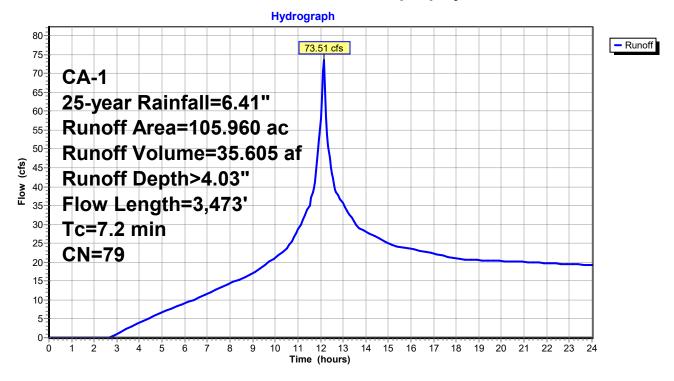
Summary for Subcatchment 1S: WS 4a - pre project

Runoff = 73.51 cfs @ 12.14 hrs, Volume= 35.605 af, Depth> 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area (ac)		N Desc	I Description						
*	10.	880	79 Vine	yard, Fair,	HSG C					
	93.280 79			Pasture/grassland/range, Fair, HSG C						
	1.			Pasture/grassland/range, Fair, HSG D						
	0.			ds, Good,	•	, -				
_	105.	960		ghted Aver						
	105.		•	00% Pervi	0					
				00701 0111	040704					
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	2 - 2 - 2 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 ·				
	3.5	100	0.2000	0.48	,	Sheet Flow,				
	0.0		0.2000	0.10		Range n= 0.130 P2= 3.21"				
	0.8	485	0.4100	10.31		Shallow Concentrated Flow,				
	0.0					Unpaved Kv= 16.1 fps				
	1.1	390	0.1300	5.80		Shallow Concentrated Flow,				
				0.00		Unpaved Kv= 16.1 fps				
	1.8	2,498	0.1800	23.06	691.79	Channel Flow,				
		_,		_0.00		Area= 30.0 sf Perim= 26.1' r= 1.15'				
						n= 0.030 Earth, grassed & winding				
	7.2	3,473	Total			,,,				

Subcatchment 1S: WS 4a - pre project



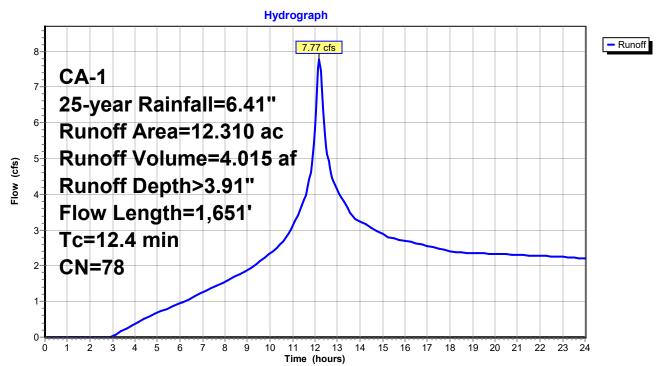
Summary for Subcatchment 2S: WS 4b

Runoff = 7.77 cfs @ 12.20 hrs, Volume= 4.015 af, Depth> 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

_	Area (ac) CN Description							
	_					Fair, HSG C		
1.960 74 Pasture/grassland/range, Good, HSG C								
	12.	310 7	'8 Weig	ghted Aver	age			
	12.	310	100.	00% Pervi	ous Area			
	_				_			
	Tc	Length	Slope	Velocity	Capacity	Description		
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	3.8	100	0.1600	0.44		Sheet Flow,		
						Range n= 0.130 P2= 3.21"		
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,		
						Unpaved Kv= 16.1 fps		
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,		
						Unpaved Kv= 16.1 fps		
	12.4	1,651	Total					

Subcatchment 2S: WS 4b



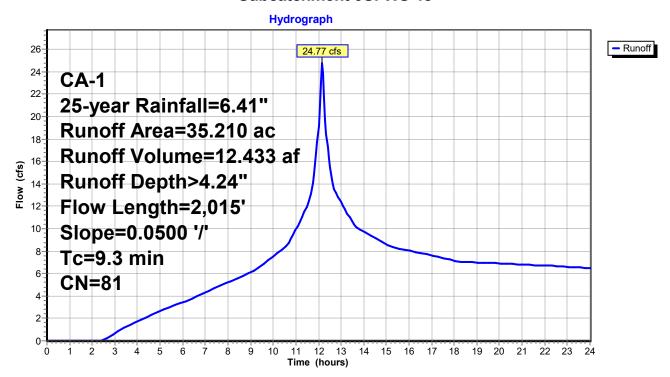
Summary for Subcatchment 3S: WS 4c

Runoff = 24.77 cfs @ 12.16 hrs, Volume= 12.433 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area	(ac)	CN	Desc	ription				
	4.510 98 Water Surface, HSG C								
*	0.	940	79	Vine	yard, Fair,	HSG C			
	24.	020	79	Past	ure/grassl	and/range,	Fair, HSG C		
	5.	280	74	Past	ure/grassl	and/range,	Good, HSG C		
	0.	460	86	Past	ure/grassl	and/range,	Poor, HSG C		
	35.210 81 Weighted Average								
	30.	700		87.19	9% Pervio	us Area			
	4.	510		12.8	12.81% Impervious Area				
	_					_			
	Тс	Leng		Slope	Velocity	Capacity	Description		
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	9.3	2,01	5	0.0500	3.60		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		

Subcatchment 3S: WS 4c



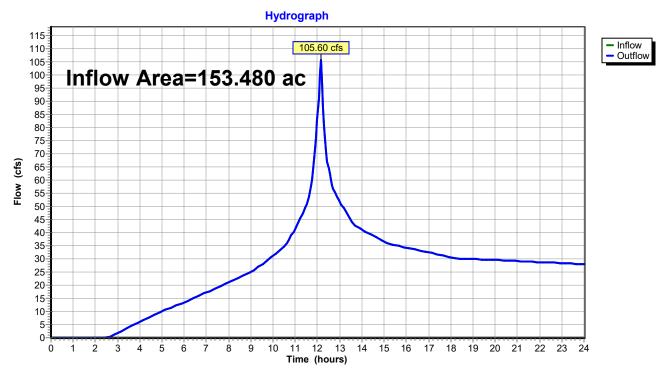
Summary for Reach 4R: POI

Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 4.07" for 25-year event

Inflow = 105.60 cfs @ 12.14 hrs, Volume= 52.052 af

Outflow = 105.60 cfs @ 12.14 hrs, Volume= 52.052 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



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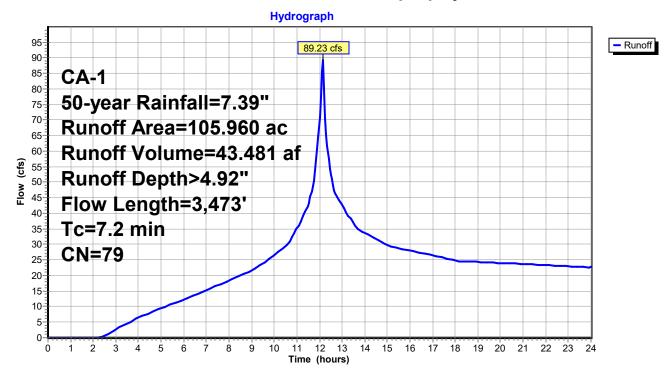
Summary for Subcatchment 1S: WS 4a - pre project

Runoff = 89.23 cfs @ 12.14 hrs, Volume= 43.481 af, Depth> 4.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area (ac)		N Des	cription						
*	10.	880	79 Vine	yard, Fair,	HSG C					
	93.280			Pasture/grassland/range, Fair, HSG C						
	1.	490		Pasture/grassland/range, Fair, HSG D						
	0.	310		Woods, Good, HSG D						
	105.	960	79 Wei	ghted Avei	age					
	105.			.00% Pervi	•					
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•				
	3.5	100	0.2000	0.48		Sheet Flow,				
						Range n= 0.130 P2= 3.21"				
	8.0	485	0.4100	10.31		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	1.1	390	0.1300	5.80		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	1.8	2,498	0.1800	23.06	691.79	Channel Flow,				
		•				Area= 30.0 sf Perim= 26.1' r= 1.15'				
						n= 0.030 Earth, grassed & winding				
	7.2	3,473	Total							

Subcatchment 1S: WS 4a - pre project



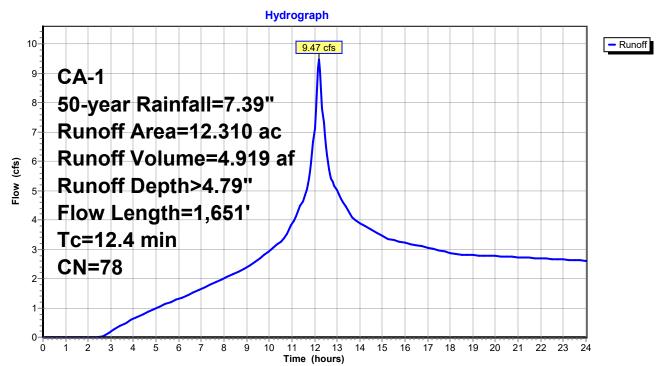
Summary for Subcatchment 2S: WS 4b

Runoff = 9.47 cfs @ 12.20 hrs, Volume= 4.919 af, Depth> 4.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

_	Area (ac) CN		N Desc	cription					
						Fair, HSG C			
_	1.960 74 Pasture/grassland/range, Good, HSG C								
	12.	310 7	'8 Weig	ghted Aver	age				
	12.	310	100.	00% Pervi	ous Area				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·			
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,			
		•				Unpaved Kv= 16.1 fps			
	12.4	1,651	Total						

Subcatchment 2S: WS 4b



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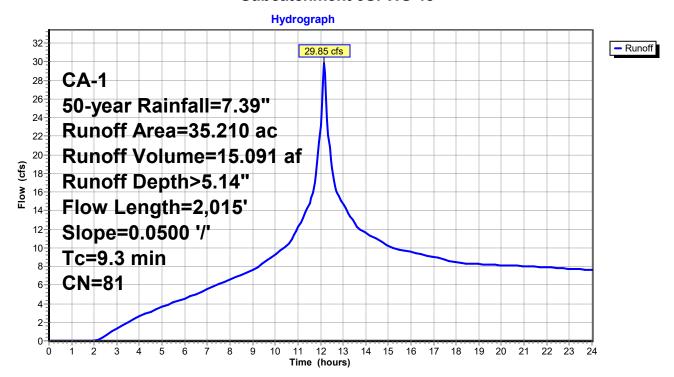
Summary for Subcatchment 3S: WS 4c

Runoff = 29.85 cfs @ 12.16 hrs, Volume= 15.091 af, Depth> 5.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

_	Area	(ac)	CN	l Desc	Description					
	4.510 98 Water Surface, HSG C									
*	0.	.940	79) Vine	yard, Fair,	HSG C				
	24.	.020	79	9 Past	ure/grassla	and/range,	Fair, HSG C			
	5.	.280	74	l Past	ure/grassla	and/range,	Good, HSG C			
	0.	.460	86	S Past	ure/grassla	and/range,	Poor, HSG C			
	35.210 81 Weighted Average									
	30.	700		87.19	9% Pervio	us Area				
	4.	.510		12.8	1% Imperv	ious Area				
	т.	1	41_	01	\	0	Description			
	Tc	Leng		Slope	Velocity	Capacity	Description			
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)				
	9.3	2,01	15	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps			

Subcatchment 3S: WS 4c



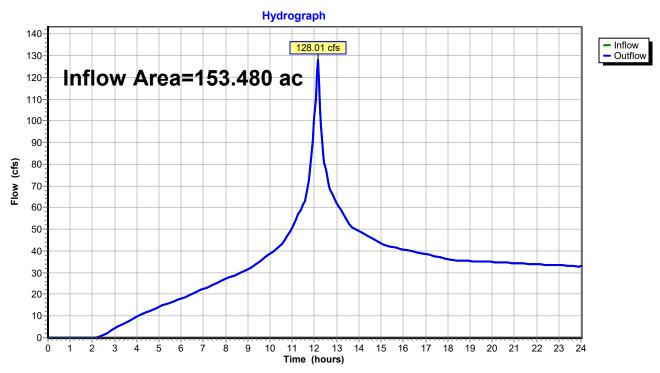
Summary for Reach 4R: POI

Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 4.96" for 50-year event

Inflow = 128.01 cfs @ 12.14 hrs, Volume= 63.491 af

Outflow = 128.01 cfs @ 12.14 hrs, Volume= 63.491 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



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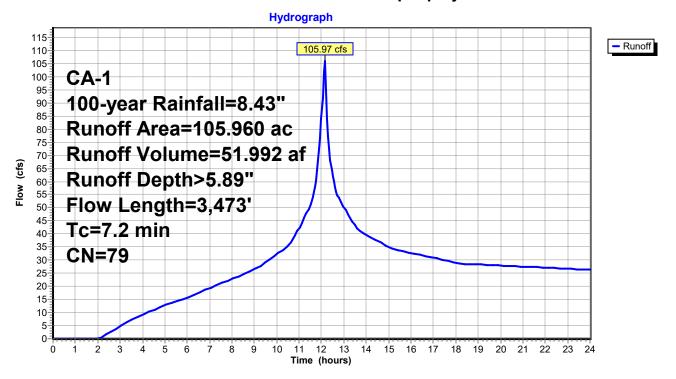
Summary for Subcatchment 1S: WS 4a - pre project

Runoff = 105.97 cfs @ 12.14 hrs, Volume= 51.992 af, Depth> 5.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area (ac)		N Des	cription						
*	10.	880	79 Vine	yard, Fair,	HSG C					
	93.280			Pasture/grassland/range, Fair, HSG C						
	1.	490		Pasture/grassland/range, Fair, HSG D						
	0.	310		Woods, Good, HSG D						
	105.	960	79 Wei	ghted Avei	age					
	105.			.00% Pervi	•					
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•				
	3.5	100	0.2000	0.48		Sheet Flow,				
						Range n= 0.130 P2= 3.21"				
	8.0	485	0.4100	10.31		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	1.1	390	0.1300	5.80		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	1.8	2,498	0.1800	23.06	691.79	Channel Flow,				
		•				Area= 30.0 sf Perim= 26.1' r= 1.15'				
						n= 0.030 Earth, grassed & winding				
	7.2	3,473	Total							

Subcatchment 1S: WS 4a - pre project



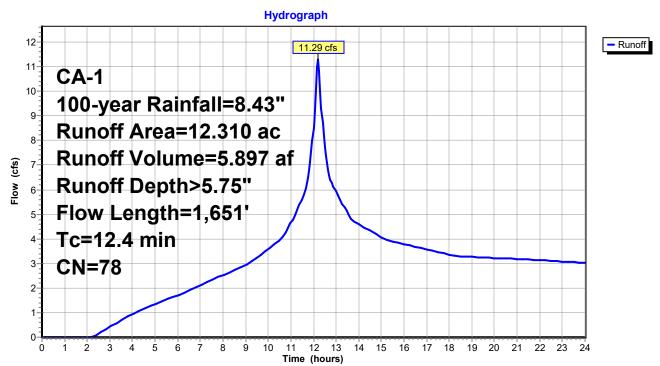
Summary for Subcatchment 2S: WS 4b

Runoff = 11.29 cfs @ 12.20 hrs, Volume= 5.897 af, Depth> 5.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

_	Area	(ac) C	N Desc	cription		
						Fair, HSG C
_	1.	<u>960 7</u>	<u>'4 Past</u>	ure/grassi	and/range,	Good, HSG C
	12.	310 7	'8 Weig	ghted Aver	age	
	12.	310	100.	00% Pervi	ous Area	
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·
	3.8	100	0.1600	0.44		Sheet Flow,
						Range n= 0.130 P2= 3.21"
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,
		•				Unpaved Kv= 16.1 fps
	12.4	1,651	Total			

Subcatchment 2S: WS 4b



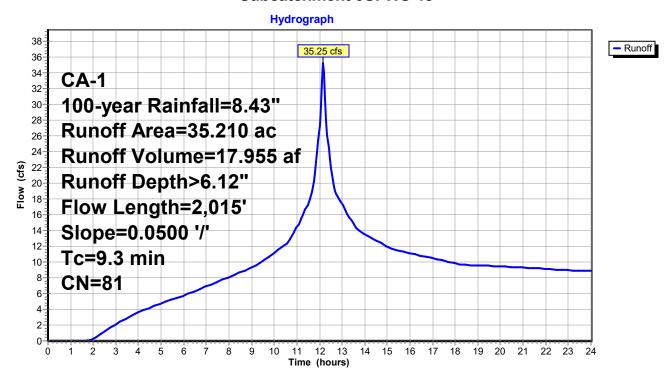
Summary for Subcatchment 3S: WS 4c

Runoff = 35.25 cfs @ 12.16 hrs, Volume= 17.955 af, Depth> 6.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac)	CN	l Desc	ription		
	4.	510	98	3 Wate	er Surface	, HSG C	
* 0.940 79 Vineyard, Fair, HSG C							
	24.	020	79	Past	ure/grassla	and/range,	Fair, HSG C
	5.	280	74	Past	ure/grassla	and/range,	Good, HSG C
	0.	460	86	S Past	ure/grassla	and/range,	Poor, HSG C
35.210 81 Weighted Average							
	30.	700		87.19	9% Pervio	us Area	
	4.	510		12.8	1% Imperv	ious Area	
	Тс	Lengt		Slope	Velocity	Capacity	Description
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)	
	9.3	2,01	5	0.0500	3.60		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps

Subcatchment 3S: WS 4c



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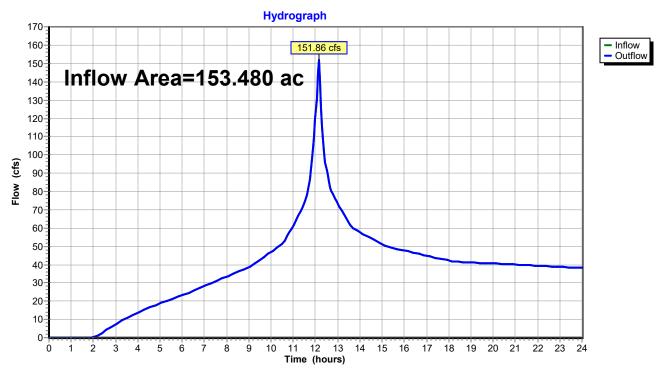
Summary for Reach 4R: POI

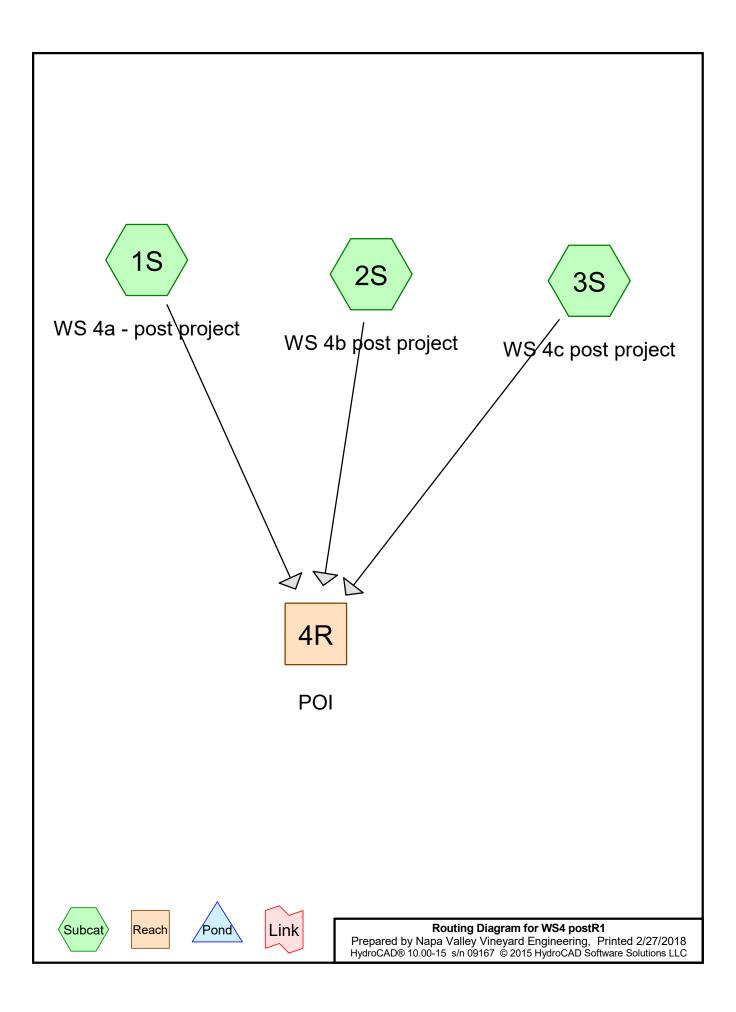
Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 5.93" for 100-year event

Inflow = 151.86 cfs @ 12.14 hrs, Volume= 75.845 af

Outflow = 151.86 cfs @ 12.14 hrs, Volume= 75.845 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs





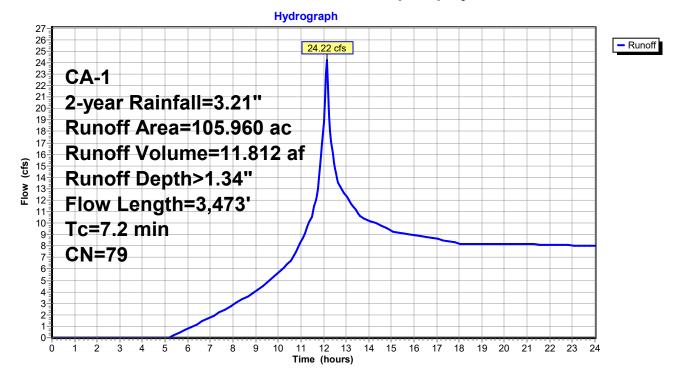
Summary for Subcatchment 1S: WS 4a - post project

Runoff = 24.22 cfs @ 12.14 hrs, Volume= 11.812 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

_	Area	(ac)	CN	Desc	cription			
*	10.880 79		Vineyard, Fair, HSG C					
*	2.	720	75	Vine	yard, Good	d, HSG C		
	90.	560	79	Past	ure/grassla	and/range,	Fair, HSG C	
	1.	490	84	Past	ure/grassla	and/range,	Fair, HSG D	
	0.	310	77	Woo	ds, Good,	HSG D		
	105.	960	79	Weig	hted Aver	age		
	105.	960		100.0	00% Pervi	ous Area		
	Тс	Length	ո Տ	Slope	Velocity	Capacity	Description	
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
	3.5	100	0.	2000	0.48		Sheet Flow,	
							Range n= 0.130 P2= 3.21"	
	8.0	485	5 0.	4100	10.31		Shallow Concentrated Flow,	
							Unpaved Kv= 16.1 fps	
	1.1	390	0.	1300	5.80		Shallow Concentrated Flow,	
							Unpaved Kv= 16.1 fps	
	1.8	2,498	3 0.	1800	23.06	691.79	Channel Flow,	
							Area= 30.0 sf Perim= 26.1' r= 1.15'	
_							n= 0.030 Earth, grassed & winding	
	7.2	3,473	3 To	otal				

Subcatchment 1S: WS 4a - post project



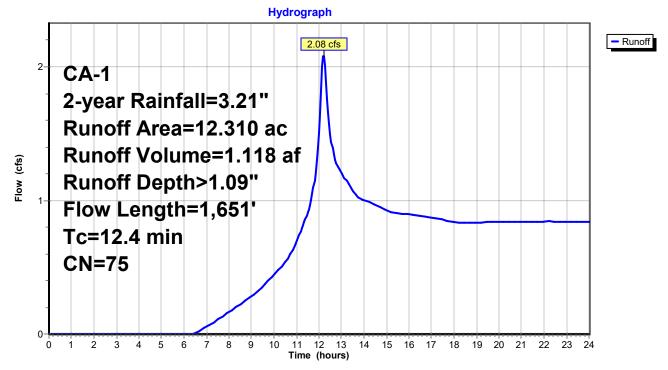
Summary for Subcatchment 2S: WS 4b post project

Runoff = 2.08 cfs @ 12.20 hrs, Volume= 1.118 af, Depth> 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

_	Area (ac)		N Desc	cription					
*	10.	410 7	75 Vine	yard, Good	d, HSG C				
	1.	470 7	'9 Past	Pasture/grassland/range, Fair, HSG C					
	0.	430 7	'4 Past	Pasture/grassland/range, Good, HSG C					
	12.	310 7	75 Weig	ghted Aver		_			
	12.	310	100.	00% Pervi	ous Area				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	12.4	1,651	Total						

Subcatchment 2S: WS 4b post project



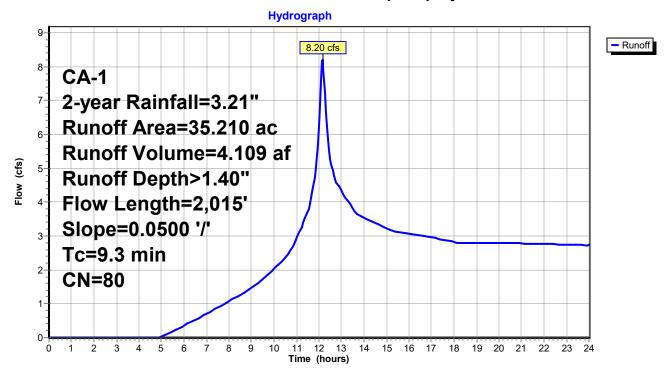
Summary for Subcatchment 3S: WS 4c post project

Runoff = 8.20 cfs @ 12.16 hrs, Volume= 4.109 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac)	CN	N Desc	cription				
	4.	510							
*	13.	920	75	5 Vine	yard, Good	d, HSG C			
*	0.	940	79	9 Vine	yard, Fair,	HSG C			
	15.	780	79				Fair, HSG C		
	0.010 74 Pasture/grassland/range, Good, HSG C								
_	0.050 86 Pasture/grassland/range, Poor, HSG C								
	35.210 80 Weighted Average								
	30.	700		87.1	9% Pervio	us Area			
	4.	510		12.8	1% Imperv	ious Area			
	Tc	Leng		Slope	Velocity	Capacity	Description		
_	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	9.3	2,01	15	0.0500	3.60		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		

Subcatchment 3S: WS 4c post project



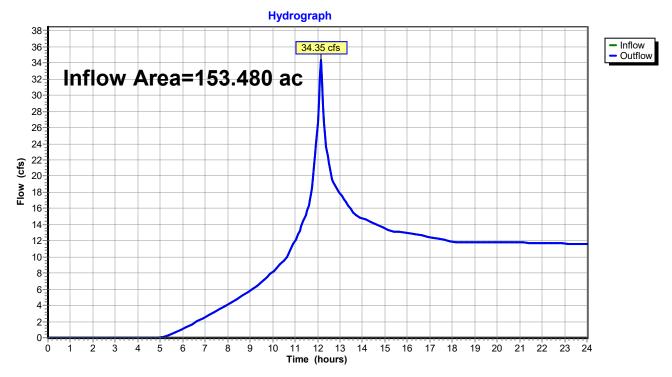
Summary for Reach 4R: POI

Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 1.33" for 2-year event

Inflow = 34.35 cfs @ 12.15 hrs, Volume= 17.039 af

Outflow = 34.35 cfs @ 12.15 hrs, Volume= 17.039 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



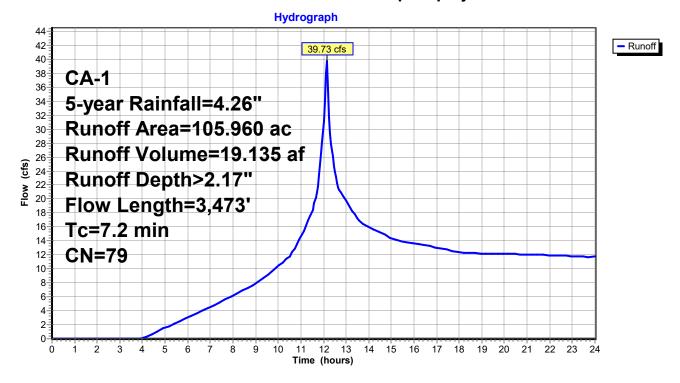
Summary for Subcatchment 1S: WS 4a - post project

Runoff = 39.73 cfs @ 12.14 hrs, Volume= 19.135 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

_	Area	(ac)	CN	Desc	cription				
*	10.880 79		Vineyard, Fair, HSG C						
*	2.	720	75	Vine	yard, Goo	d, HSG C			
	90.	560	79	Pasture/grassland/range, Fair, HSG C					
	1.	490	84	Past	ure/grassla	and/range,	Fair, HSG D		
_	0.	310	77	Woods, Good, HSG D					
	105.	960	79	Weig	ghted Aver	age			
	105.	960		100.	00% Pervi	ous Area			
	Тс	Length		Slope	Velocity	Capacity	Description		
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	3.5	100	0.	2000	0.48		Sheet Flow,		
							Range n= 0.130 P2= 3.21"		
	8.0	48	5 0.	4100	10.31		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		
	1.1	390	0.	1300	5.80		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		
	1.8	2,498	3 0.	1800	23.06	691.79	Channel Flow,		
							Area= 30.0 sf Perim= 26.1' r= 1.15'		
_							n= 0.030 Earth, grassed & winding		
	7.2	3,473	3 To	otal					

Subcatchment 1S: WS 4a - post project



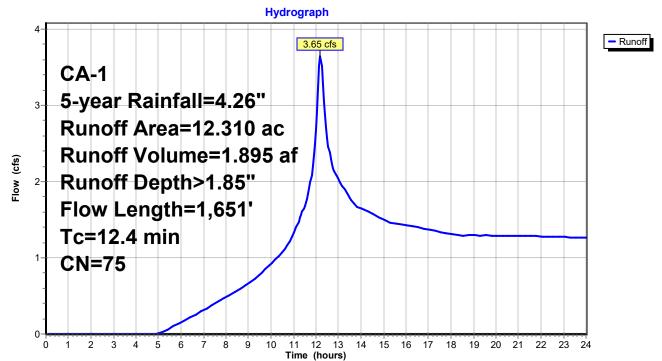
Summary for Subcatchment 2S: WS 4b post project

Runoff = 3.65 cfs @ 12.20 hrs, Volume= 1.895 af, Depth> 1.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area (ac)		N Desc	cription					
*	10.	410	75 Vine	/ineyard, Good, HSG C					
	1.	470	79 Past	•					
	0.	430		Pasture/grassland/range, Good, HSG C					
	12.	310	75 Weig	ghted Aver	age				
	12.	310	100.	00% Pervi	ous Area				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	12.4	1,651	Total						

Subcatchment 2S: WS 4b post project



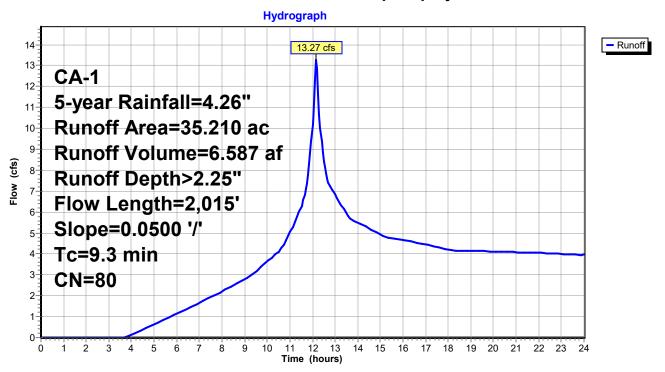
Summary for Subcatchment 3S: WS 4c post project

Runoff = 13.27 cfs @ 12.16 hrs, Volume= 6.587 af, Depth> 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac)	(1)	N Desc	cription		
	4.	510	9	8 Wate	er Surface	, HSG C	
*	13.	920	7	5 Vine	yard, Good	d, HSG C	
*	0.	940	7	9 Vine	yard, Fair,	HSG C	
	15.	780	7	9 Past	ure/grassla	and/range,	Fair, HSG C
	0.	010	7	4 Past	ure/grassla	and/range,	Good, HSG C
	Poor, HSG C						
	35.210 80 Weighted Average						
	30.	700		87.1	9% Pervio	us Area	
	4.	510		12.8	1% Imperv	ious Area	
	Тс	Leng	th	Slope	Velocity	Capacity	Description
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
	9.3	2,01	15	0.0500	3.60		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps

Subcatchment 3S: WS 4c post project



Prepared by Napa Valley Vineyard Engineering
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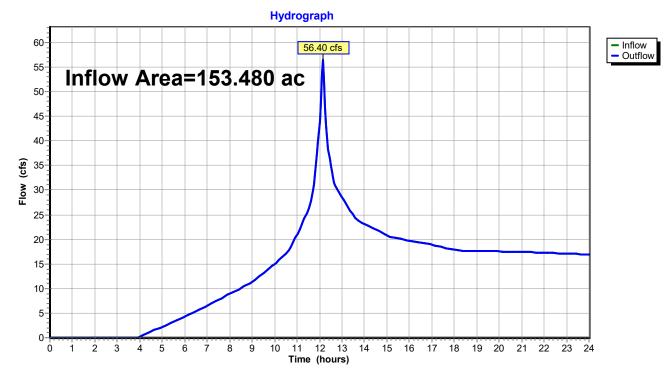
Summary for Reach 4R: POI

Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 2.16" for 5-year event

Inflow = 56.40 cfs @ 12.15 hrs, Volume= 27.617 af

Outflow = 56.40 cfs @ 12.15 hrs, Volume= 27.617 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



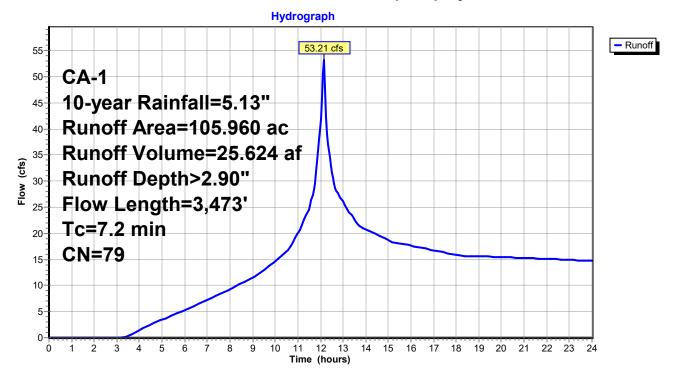
Summary for Subcatchment 1S: WS 4a - post project

Runoff = 53.21 cfs @ 12.14 hrs, Volume= 25.624 af, Depth> 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac)	CN	Desc	cription		
*	10.	10.880 79		Vine	yard, Fair,		
*	2.	720	75	Vine	yard, Good	d, HSG C	
	90.	560	79	Past	ure/grassla	and/range,	Fair, HSG C
	1.	490	84	Past	ure/grassla	and/range,	Fair, HSG D
	0.	310	77	Woo	ds, Good,	HSG D	
	105.	960	79	Weig	ghted Aver	age	
	105.	960		100.	00% Pervi	ous Area	
	Тс	Lengtl		Slope	Velocity	Capacity	Description
_	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)	
	3.5	10	0.0	.2000	0.48		Sheet Flow,
							Range n= 0.130 P2= 3.21"
	8.0	48	5 0.	.4100	10.31		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	1.1	39	O .	.1300	5.80		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	1.8	2,49	B 0.	.1800	23.06	691.79	Channel Flow,
							Area= 30.0 sf Perim= 26.1' r= 1.15'
_							n= 0.030 Earth, grassed & winding
	7.2	3,47	3 T	otal			

Subcatchment 1S: WS 4a - post project



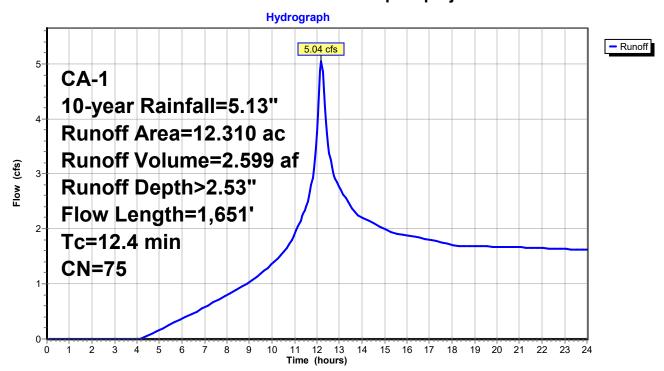
Summary for Subcatchment 2S: WS 4b post project

Runoff = 5.04 cfs @ 12.20 hrs, Volume= 2.599 af, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

_	Area	(ac) C	N Desc	cription					
*	10.	410 7	75 Vine	Vineyard, Good, HSG C					
	1.470 79			Pasture/grassland/range, Fair, HSG C					
	0.	430 7	'4 Past	ure/grassla	and/range,	Good, HSG C			
	12.								
	12.	310	100.	00% Pervi	ous Area				
	Тс	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,			
_						Unpaved Kv= 16.1 fps			
	12.4	1,651	Total						

Subcatchment 2S: WS 4b post project



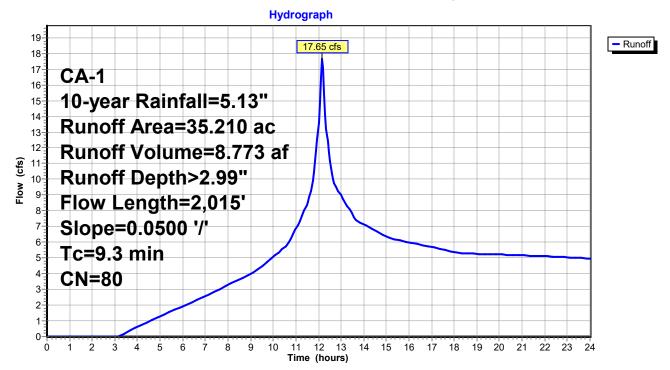
Summary for Subcatchment 3S: WS 4c post project

Runoff = 17.65 cfs @ 12.16 hrs, Volume= 8.773 af, Depth> 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

_	Area	(ac)	CI	N Desc	Description					
	4.	510	98	8 Wate	er Surface	, HSG C				
*	13.	920	7	5 Vine	yard, Good	d, HSG C				
*	0.	940	79	9 Vine	yard, Fair,	HSG C				
	15.	780	79	9 Past	ure/grassla	and/range,	Fair, HSG C			
	0.	010	74	4 Past	ure/grassla	and/range,	Good, HSG C			
	0.050 86 Pasture/grassland/range, F						Poor, HSG C			
	35.210 80 Weighted Average									
	30.	700		87.1	9% Pervio	us Area				
	4.	510		12.8	1% Imperv	ious Area				
	Tc	Leng	th	Slope	Velocity	Capacity	Description			
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)				
	9.3	2,01	15	0.0500	3.60		Shallow Concentrated Flow,			
							Unpaved Kv= 16.1 fps			

Subcatchment 3S: WS 4c post project



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Summary for Reach 4R: POI

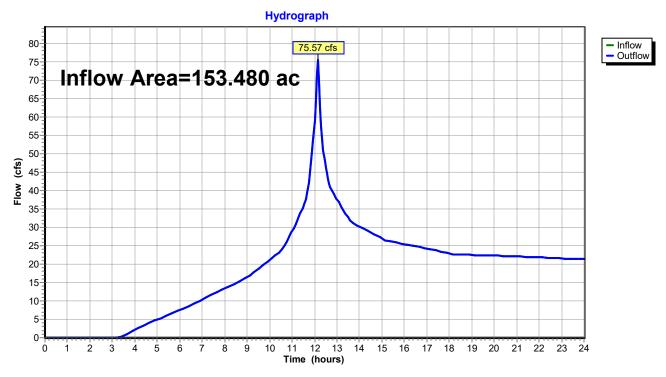
Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 2.89" for 10-year event

Inflow = 75.57 cfs @ 12.14 hrs, Volume= 36.995 af

Outflow = 75.57 cfs @ 12.14 hrs, Volume= 36.995 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 4R: POI



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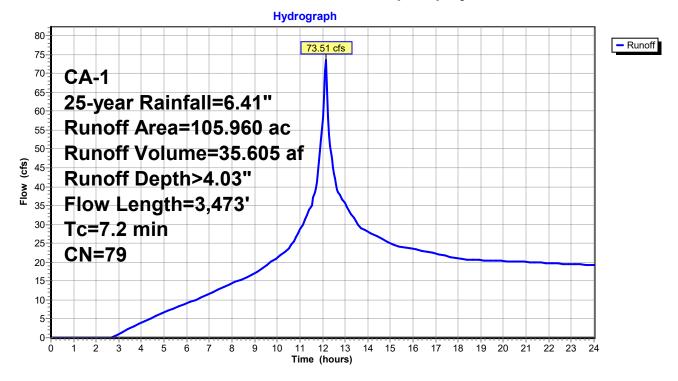
Summary for Subcatchment 1S: WS 4a - post project

Runoff 73.51 cfs @ 12.14 hrs, Volume= 35.605 af, Depth> 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area	(ac) (CN Des	cription					
*	10.	880	79 Vine	eyard, Fair,	HSG C				
*	2.720 75			Vineyard, Good, HSG C					
	90.	560		•	,	Fair, HSG C			
				Pasture/grassland/range, Fair, HSG D					
		310		ods, Good,	•	, -			
	105.	960	79 Wei	Weighted Average					
	105.	960	100	.00% Pervi	ous Area				
	Тс	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.5	100	0.2000	0.48		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	8.0	485	0.4100	10.31		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	1.1	390	0.1300	5.80		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	1.8	2,498	0.1800	23.06	691.79	Channel Flow,			
						Area= 30.0 sf Perim= 26.1' r= 1.15'			
						n= 0.030 Earth, grassed & winding			
	7.2	3,473	Total						

Subcatchment 1S: WS 4a - post project



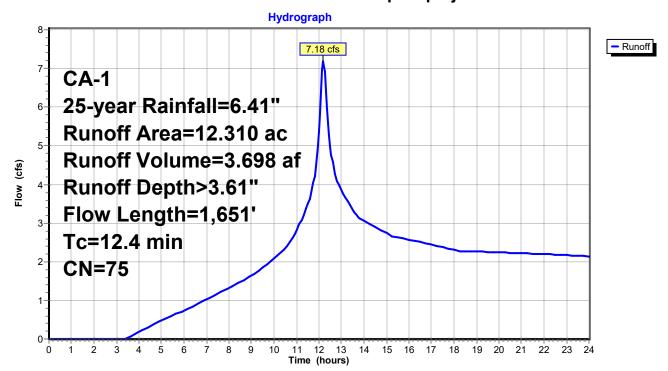
Summary for Subcatchment 2S: WS 4b post project

Runoff = 7.18 cfs @ 12.20 hrs, Volume= 3.698 af, Depth> 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

	Area (ac)		CN Des	cription					
*	* 10.410 75		75 Vine	Vineyard, Good, HSG C					
	1.	470	79 Past	Pasture/grassland/range, Fair, HSG C					
	0.	430	74 Past	Pasture/grassland/range, Good, HSG C					
	12.	310	75 Wei	Weighted Average					
	12.	310	100.	00% Pervi	ous Area				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	12.4	1,651	Total						

Subcatchment 2S: WS 4b post project



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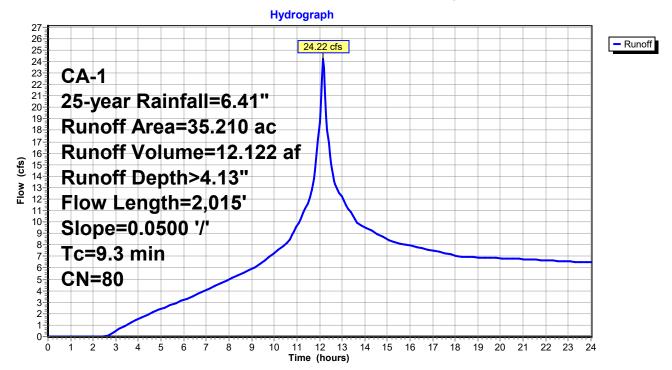
Summary for Subcatchment 3S: WS 4c post project

Runoff = 24.22 cfs @ 12.16 hrs, Volume= 12.122 af, Depth> 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

_	Area	(ac)	CI	N Desc	Description					
	4.	510	98	8 Wate	er Surface	, HSG C				
*	13.	920	7	5 Vine	yard, Good	d, HSG C				
*	0.	940	79	9 Vine	yard, Fair,	HSG C				
	15.	780	79	9 Past	ure/grassla	and/range,	Fair, HSG C			
	0.	010	74	4 Past	ure/grassla	and/range,	Good, HSG C			
	0.050 86 Pasture/grassland/range, F						Poor, HSG C			
	35.210 80 Weighted Average									
	30.	700		87.1	9% Pervio	us Area				
	4.	510		12.8	1% Imperv	ious Area				
	Tc	Leng	th	Slope	Velocity	Capacity	Description			
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)				
	9.3	2,01	15	0.0500	3.60		Shallow Concentrated Flow,			
							Unpaved Kv= 16.1 fps			

Subcatchment 3S: WS 4c post project



Summary for Reach 4R: POI

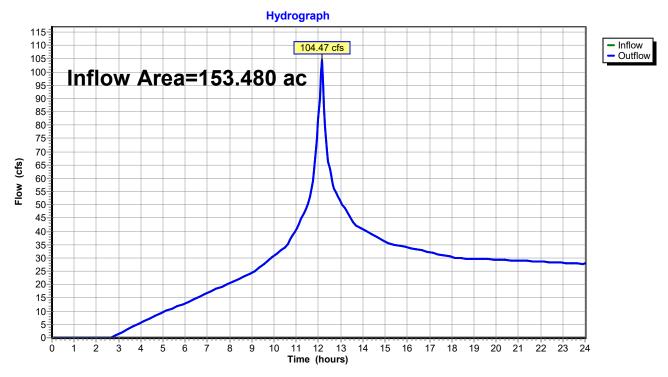
Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 4.02" for 25-year event

Inflow = 104.47 cfs @ 12.14 hrs, Volume= 51.425 af

Outflow = 104.47 cfs @ 12.14 hrs, Volume= 51.425 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 4R: POI



7.2

3,473 Total

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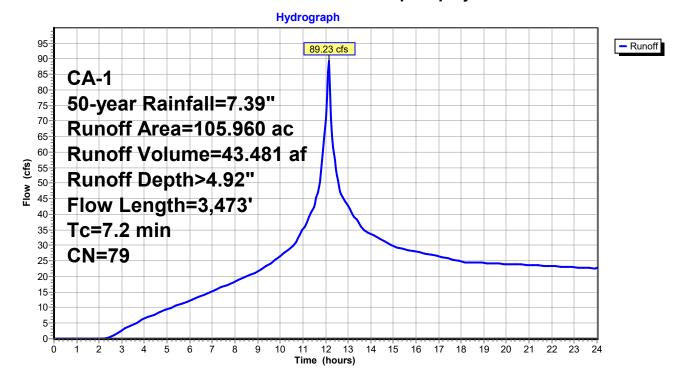
Summary for Subcatchment 1S: WS 4a - post project

Runoff = 89.23 cfs @ 12.14 hrs, Volume= 43.481 af, Depth> 4.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(ac)	CN	Desc	cription					
*	10.	880	79	Vine	yard, Fair,	HSG C				
*	2.	720	75	Vine	Vineyard, Good, HSG C					
	90.560 79			Pasture/grassland/range, Fair, HSG C						
	1.	490	84	Past	Pasture/grassland/range, Fair, HSG D					
	0.	310	77	Woods, Good, HSG D						
	105.960 79		Weig	ghted Aver	age					
	105.	960		100.	00% Pervi	ous Area				
	Тс	Length	n S	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.5	100	0.:	2000	0.48		Sheet Flow,			
							Range n= 0.130 P2= 3.21"			
	8.0	485	5 0.4	4100	10.31		Shallow Concentrated Flow,			
							Unpaved Kv= 16.1 fps			
	1.1	390	0.	1300	5.80		Shallow Concentrated Flow,			
							Unpaved Kv= 16.1 fps			
	1.8	2,498	3 0.	1800	23.06	691.79	Channel Flow,			
							Area= 30.0 sf Perim= 26.1' r= 1.15'			
_							n= 0.030 Earth, grassed & winding			

Subcatchment 1S: WS 4a - post project



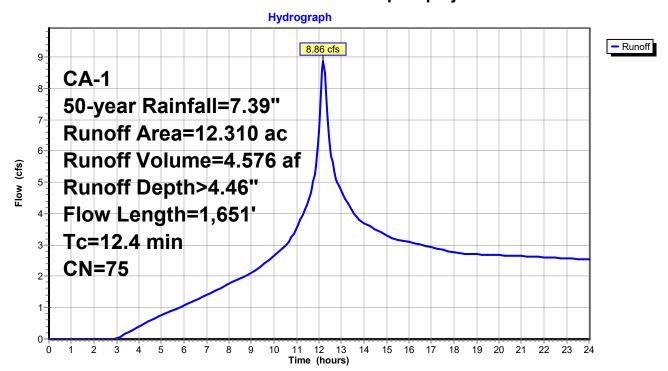
Summary for Subcatchment 2S: WS 4b post project

Runoff = 8.86 cfs @ 12.20 hrs, Volume= 4.576 af, Depth> 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

_	Area	(ac) C	N Desc	cription					
*	10.	410 7	75 Vine	Vineyard, Good, HSG C					
	1.470 79			Pasture/grassland/range, Fair, HSG C					
	0.	430 7	'4 Past	ure/grassla	and/range,	Good, HSG C			
	12.								
	12.	310	100.	00% Pervi	ous Area				
	Тс	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,			
_						Unpaved Kv= 16.1 fps			
	12.4	1,651	Total						

Subcatchment 2S: WS 4b post project



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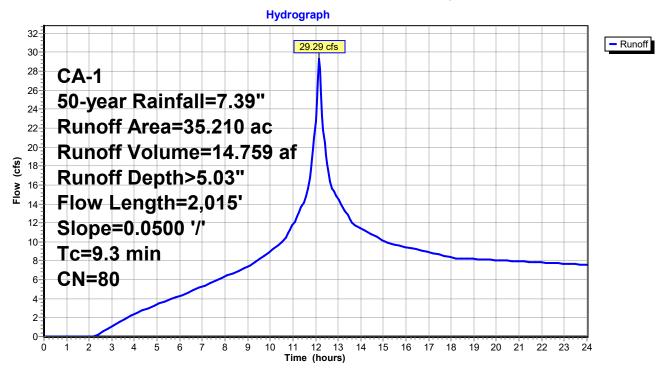
Summary for Subcatchment 3S: WS 4c post project

Runoff = 29.29 cfs @ 12.16 hrs, Volume= 14.759 af, Depth> 5.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(ac)	CN	l Desc	ription				
	4.	510	98	3 Wate	er Surface	, HSG C			
*	13.	920	75	5 Vine	yard, Good	d, HSG C			
*	0.	940	79) Vine	yard, Fair,	HSG C			
	15.	780	79	Past	ure/grassla	and/range,	Fair, HSG C		
	0.	010	74	l Past	ure/grassla	and/range,	Good, HSG C		
0.050 86 Pasture/grassland/range, Po							Poor, HSG C		
35.210 80 Weighted Average						age			
	30.	700		87.1	9% Pervio	us Area			
	4.	510		12.8	12.81% Impervious Area				
	Тс	Leng	th	Slope	Velocity	Capacity	Description		
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)			
	9.3	2,01	15	0.0500	3.60		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		

Subcatchment 3S: WS 4c post project



Summary for Reach 4R: POI

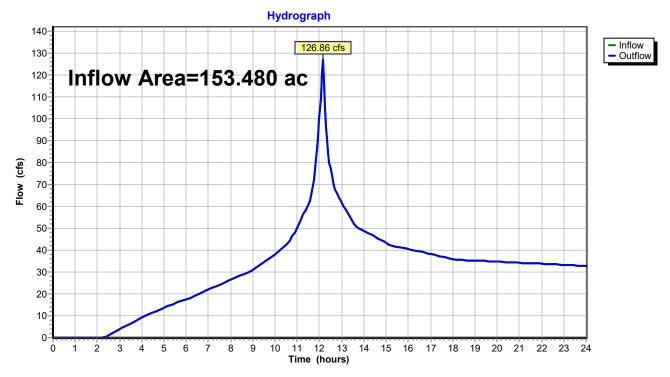
Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 4.91" for 50-year event

Inflow = 126.86 cfs @ 12.14 hrs, Volume= 62.816 af

Outflow = 126.86 cfs @ 12.14 hrs, Volume= 62.816 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 4R: POI



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Summary for Subcatchment 1S: WS 4a - post project

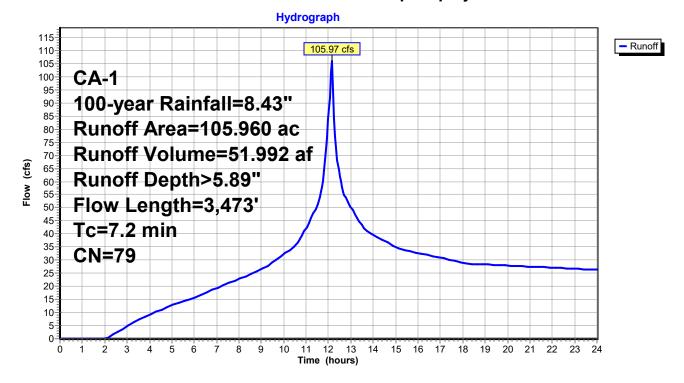
Runoff = 105.97 cfs @ 12.14 hrs, Volume= 51.992 af, Depth> 5.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

Area	(ac)	CN Des	cription					
10.	880	79 Vine	eyard, Fair,	HSG C				
2.	720		Vineyard, Good, HSG C					
90.	560	79 Pas	Pasture/grassland/range, Fair, HSG C					
1.490 84		84 Pas	Pasture/grassland/range, Fair, HSG D					
0.	310	77 Wo	ods, Good,	HSG D				
105.960 79		79 Wei	ighted Avei					
105.	960							
Тс	Length	Slope	Velocity	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
3.5	100	0.2000	0.48		Sheet Flow,			
					Range n= 0.130 P2= 3.21"			
8.0	485	0.4100	10.31		Shallow Concentrated Flow,			
					Unpaved Kv= 16.1 fps			
1.1	390	0.1300	5.80		Shallow Concentrated Flow,			
					Unpaved Kv= 16.1 fps			
1.8	2,498	0.1800	23.06	691.79	Channel Flow,			
					Area= 30.0 sf Perim= 26.1' r= 1.15'			
					n= 0.030 Earth, grassed & winding			
	10. 2. 90. 1. 0. 105. 105. Tc (min) 3.5	10.880 2.720 90.560 1.490 0.310 105.960 105.960 Tc Length (min) (feet) 3.5 100 0.8 485 1.1 390	10.880 79 Vine 2.720 75 Vine 90.560 79 Pas 1.490 84 Pas 0.310 77 Wo 105.960 79 We 105.960 100 Tc Length Slope (min) (feet) (ft/ft) 3.5 100 0.2000 0.8 485 0.4100 1.1 390 0.1300	10.880 79 Vineyard, Fair, 2.720 75 Vineyard, Goo 90.560 79 Pasture/grassl 1.490 84 Pasture/grassl 0.310 77 Woods, Good, 105.960 79 Weighted Average 105.960 100.00% Pervious Tc Length Slope Velocity (min) (feet) (ft/ft) (ft/sec) 3.5 100 0.2000 0.48 0.8 485 0.4100 10.31 1.1 390 0.1300 5.80	10.880 79 Vineyard, Fair, HSG C 2.720 75 Vineyard, Good, HSG C 90.560 79 Pasture/grassland/range, 1.490 84 Pasture/grassland/range, 0.310 77 Woods, Good, HSG D 105.960 79 Weighted Average 105.960 100.00% Pervious Area Tc Length Slope Velocity Capacity (min) (feet) (ft/ft) (ft/sec) (cfs) 3.5 100 0.2000 0.48 0.8 485 0.4100 10.31 1.1 390 0.1300 5.80			

7.2 3,473 Total

Subcatchment 1S: WS 4a - post project



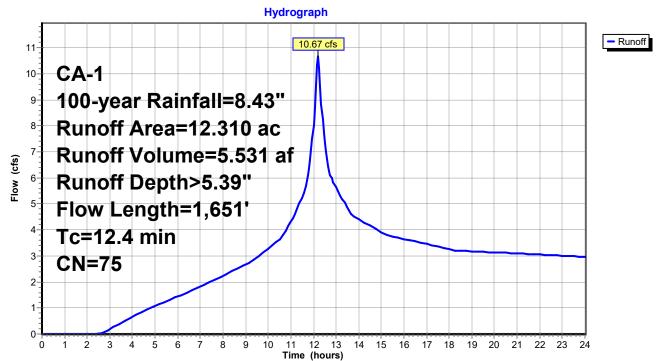
Summary for Subcatchment 2S: WS 4b post project

Runoff = 10.67 cfs @ 12.20 hrs, Volume= 5.531 af, Depth> 5.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area (ac)		N Des	cription						
*	* 10.410 ·		75 Vine	Vineyard, Good, HSG C						
	1.	470				Fair, HSG C				
	0.	430		Pasture/grassland/range, Good, HSG C						
	12.	310	75 Wei	Weighted Average						
		310	,	00% Pervi						
		0.0		00701 0111	040704					
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	2 333. IP 1137.				
	3.8	100	0.1600	0.44	, ,	Sheet Flow,				
	0.0		000	• • • • • • • • • • • • • • • • • • • •		Range n= 0.130 P2= 3.21"				
	0.4	186	0.2200	7.55		Shallow Concentrated Flow,				
	• • •		00			Unpaved Kv= 16.1 fps				
	8.2	1,365	0.0300	2.79		Shallow Concentrated Flow,				
	3.2	.,000	2.2000	2 0		Unpaved Kv= 16.1 fps				
_	12.4	1,651	Total			- 1				

Subcatchment 2S: WS 4b post project



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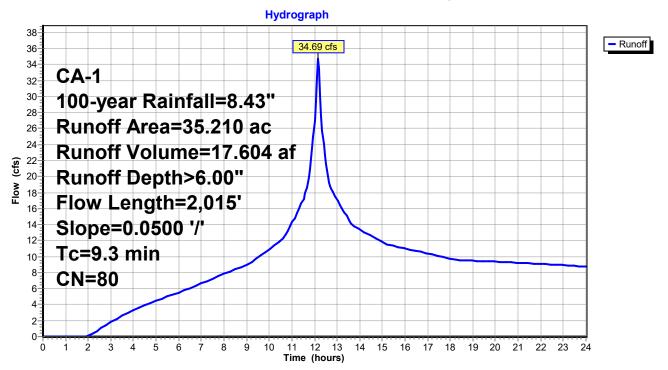
Summary for Subcatchment 3S: WS 4c post project

34.69 cfs @ 12.16 hrs, Volume= Runoff 17.604 af, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

Area	(ac)	CI	N Desc	ription		
4.	510	9	8 Wate	er Surface	HSG C	
13.	920	7	5 Vine	yard, Good	d, HSG C	
0.	940	79	9 Vine	yard, Fair,	HSG C	
15.	780	79	9 Past	ure/grassla	and/range,	Fair, HSG C
0.	010	7	4 Past	ure/grassla	and/range,	Good, HSG C
0.	050	8	6 Past	ure/grassla	and/range,	Poor, HSG C
35.210 80 Weighted Average						
30.	700		87.1	9% Pervio	us Area	
4.	510		12.8	1% Imperv	ious Area	
Tc	Leng	th	Slope	Velocity	Capacity	Description
(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)	
9.3	2,0	15	0.0500	3.60	•	Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
	4. 13. 0. 15. 0. 35. 30. 4. Tc (min)	30.700 4.510 Tc Leng (min) (fee	4.510 96 13.920 76 0.940 76 15.780 76 0.010 76 0.050 86 35.210 86 30.700 4.510 Tc Length (min) (feet)	4.510 98 Wate 13.920 75 Vine 0.940 79 Vine 15.780 79 Past 0.010 74 Past 0.050 86 Past 35.210 80 Weig 30.700 87.19 4.510 12.8	4.510 98 Water Surface, 13.920 75 Vineyard, Good 0.940 79 Vineyard, Fair, 15.780 79 Pasture/grassla 0.010 74 Pasture/grassla 0.050 86 Pasture/grassla 35.210 80 Weighted Aver 30.700 87.19% Pervious 4.510 12.81% Impervious Tc Length Slope Velocity (min) (feet) (ft/ft) (ft/sec)	4.510 98 Water Surface, HSG C 13.920 75 Vineyard, Good, HSG C 0.940 79 Vineyard, Fair, HSG C 15.780 79 Pasture/grassland/range, 0.010 74 Pasture/grassland/range, 0.050 86 Pasture/grassland/range, 35.210 80 Weighted Average 30.700 87.19% Pervious Area 4.510 12.81% Impervious Area Tc Length Slope Velocity Capacity (min) (feet) (ft/ft) (ft/sec) (cfs)

Subcatchment 3S: WS 4c post project



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Summary for Reach 4R: POI

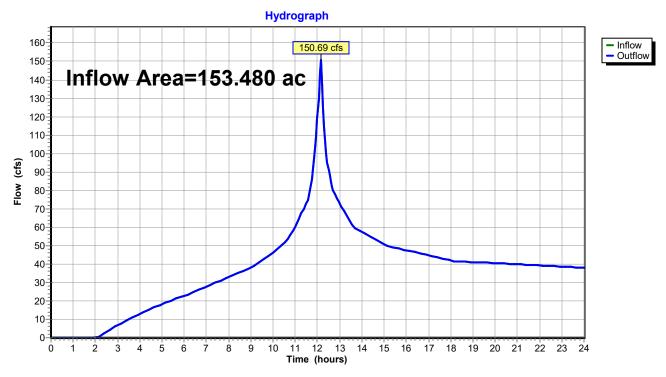
Inflow Area = 153.480 ac, 2.94% Impervious, Inflow Depth > 5.87" for 100-year event

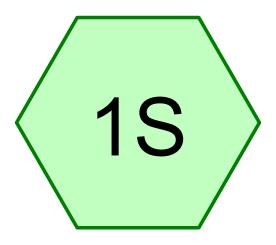
Inflow = 150.69 cfs @ 12.14 hrs, Volume= 75.127 af

Outflow = 150.69 cfs @ 12.14 hrs, Volume= 75.127 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 4R: POI





WS 5 - pre project









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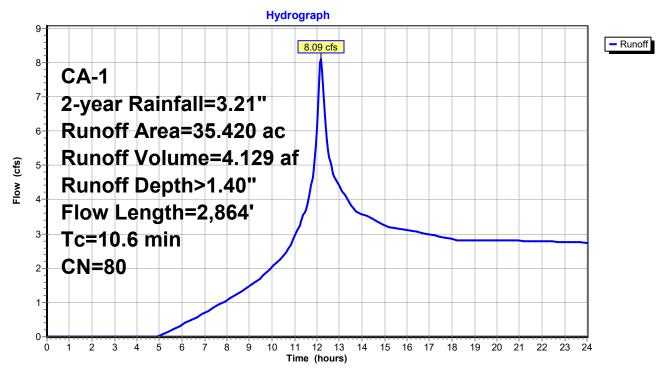
Summary for Subcatchment 1S: WS 5 - pre project

Runoff = 8.09 cfs @ 12.18 hrs, Volume= 4.129 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac) C	N Des	cription		
_		· – / – – –		ed parking	HSG C	
*				yard, Fair,		
				• •		Fair, HSG C
	_					Good, HSG C
_						Poor, HSG C
			,	ghted Aver	•	
		840		9% Pervio		
	3.	580	10.1	1% Imperv	/ious Area	
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	3.8	100	0.1600	0.44		Sheet Flow,
						Range n= 0.130 P2= 3.21"
	1.5	661	0.2100	7.38		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	2.2	648	0.0900	4.83		Shallow Concentrated Flow,
		• • •	0.0000			Unpaved Kv= 16.1 fps
	3.1	1,455	0.0600	7.77	46.64	Channel Flow,
	3.1	., 100	5.5000		.0.01	Area= 6.0 sf Perim= 11.7' r= 0.51'
						n= 0.030 Earth, grassed & winding
_	10.6	2.064	Total			11 0.000 Earth, gradood & Winding
	10.6	2,864	Total			

Subcatchment 1S: WS 5 - pre project



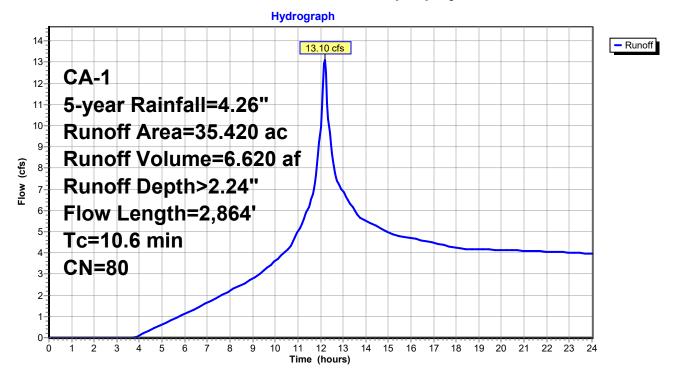
Summary for Subcatchment 1S: WS 5 - pre project

Runoff = 13.10 cfs @ 12.18 hrs, Volume= 6.620 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac) C	N Des	cription					
_	3.580 98 Paved parking, HSG C								
*	1 0,								
	20.010 79 Pasture/grassland/range, Fair, HSG C								
	_								
_						Poor, HSG C			
			,	ghted Aver	•				
		840		9% Pervio					
	3.	580	10.1	1% Imperv	/ious Area				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	1.5	661	0.2100	7.38		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	2.2	648	0.0900	4.83		Shallow Concentrated Flow,			
		• • •	0.0000			Unpaved Kv= 16.1 fps			
	3.1	1,455	0.0600	7.77	46.64	Channel Flow,			
	3.1	., 100	5.5000		.0.01	Area= 6.0 sf Perim= 11.7' r= 0.51'			
						n= 0.030 Earth, grassed & winding			
_	10.6	2.064	Total			11 0.000 Earth, gradood & Winding			
	10.6	2,864	Total						

Subcatchment 1S: WS 5 - pre project



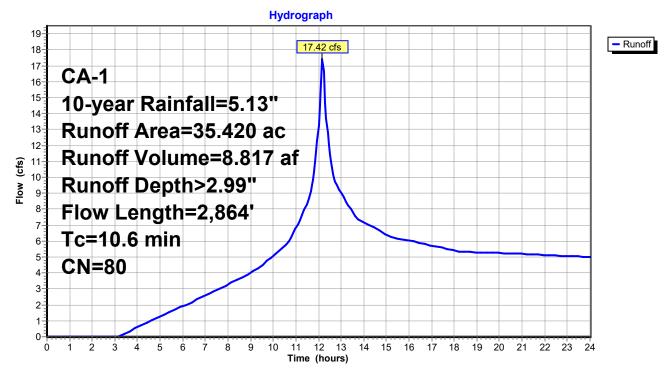
Summary for Subcatchment 1S: WS 5 - pre project

Runoff = 17.42 cfs @ 12.18 hrs, Volume= 8.817 af, Depth> 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac) C	N Des	cription					
_	3.580 98 Paved parking, HSG C								
*	1 0,								
	20.010 79 Pasture/grassland/range, Fair, HSG C								
	_								
_						Poor, HSG C			
			,	ghted Aver	•				
		840		9% Pervio					
	3.	580	10.1	1% Imperv	/ious Area				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	1.5	661	0.2100	7.38		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	2.2	648	0.0900	4.83		Shallow Concentrated Flow,			
		• • •	0.0000			Unpaved Kv= 16.1 fps			
	3.1	1,455	0.0600	7.77	46.64	Channel Flow,			
	3.1	., 100	5.5000		.0.01	Area= 6.0 sf Perim= 11.7' r= 0.51'			
						n= 0.030 Earth, grassed & winding			
_	10.6	2.064	Total			11 0.000 Earth, gradood & Winding			
	10.6	2,864	Total						

Subcatchment 1S: WS 5 - pre project



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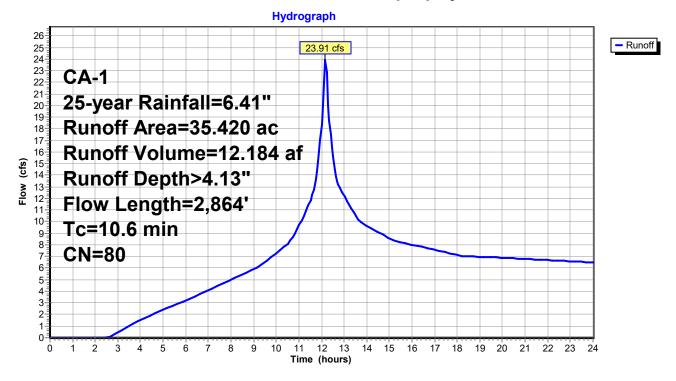
Summary for Subcatchment 1S: WS 5 - pre project

Runoff 23.91 cfs @ 12.18 hrs, Volume= 12.184 af, Depth> 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

_	Area (ac) CN Description									
	3.	580	98 Pave	ed parking	, HSG C					
*	* 3.950 79			Vineyard, Fair, HSG C						
	20.010 79			Pasture/grassland/range, Fair, HSG C						
	5.	990	74 Past	Pasture/grassland/range, Good, HSG C						
	1.	890	86 Past	Pasture/grassland/range, Poor, HSG C						
	35.	420	80 Wei	ghted Aver	age					
	31.	840	89.8	9% Pervio	us Area					
	3.	580	10.1	1% Imperv	ious Area					
	Тс	Length		Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	3.8	100	0.1600	0.44		Sheet Flow,				
						Range n= 0.130 P2= 3.21"				
	1.5	661	0.2100	7.38		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	2.2	648	0.0900	4.83		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	3.1	1,455	0.0600	7.77	46.64	Channel Flow,				
						Area= 6.0 sf Perim= 11.7' r= 0.51'				
						n= 0.030 Earth, grassed & winding				
	10.6	2,864	Total							

Subcatchment 1S: WS 5 - pre project



10.6

2,864 Total

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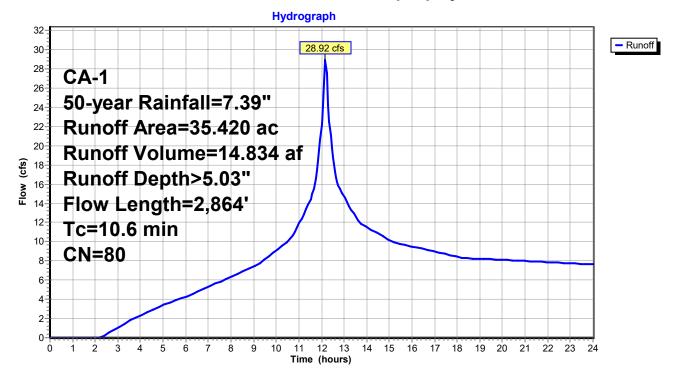
Summary for Subcatchment 1S: WS 5 - pre project

Runoff = 28.92 cfs @ 12.18 hrs, Volume= 14.834 af, Depth> 5.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

_	Area	(ac) C	N Des	cription					
	3.	580 9	98 Pave	ed parking	, HSG C				
*	* 3.950 79			Vineyard, Fair, HSG C					
	20.010 79			Pasture/grassland/range, Fair, HSG C					
						Good, HSG C			
_	1.	890 8	36 Past	ure/grassl	and/range,	Poor, HSG C			
	35.	420	30 Wei	ghted Aver	age				
		840		9% Pervio					
	3.	580	10.1	1% Imperv	/ious Area				
	_		01			B			
	Tc	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
	4 =	201	0.0400	7.00		Range n= 0.130 P2= 3.21"			
	1.5	661	0.2100	7.38		Shallow Concentrated Flow,			
	0.0	0.40	0.0000	4.00		Unpaved Kv= 16.1 fps			
	2.2	648	0.0900	4.83		Shallow Concentrated Flow,			
	2.1	1 155	0.0600	7 77	16.61	Unpaved Kv= 16.1 fps			
	3.1	1,455	0.0600	7.77	46.64	Channel Flow,			
						Area= 6.0 sf Perim= 11.7' r= 0.51'			
						n= 0.030 Earth, grassed & winding			

Subcatchment 1S: WS 5 - pre project



10.6

2,864 Total

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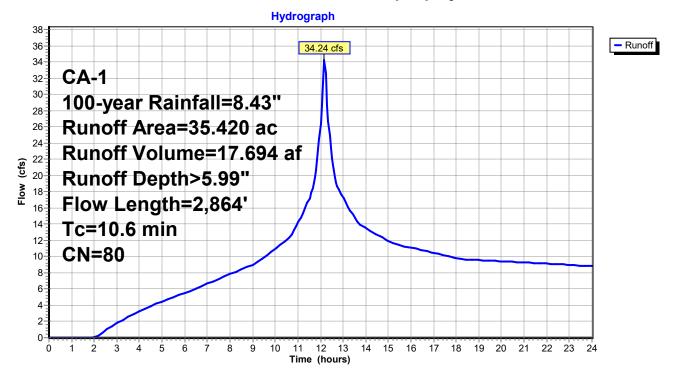
Summary for Subcatchment 1S: WS 5 - pre project

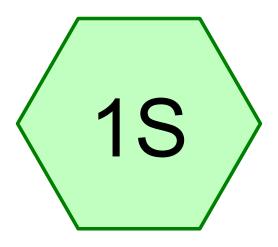
Runoff = 34.24 cfs @ 12.17 hrs, Volume= 17.694 af, Depth> 5.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

_	Area	(ac) C	N Des	cription					
	3.	580 9	98 Pave	ed parking	, HSG C				
*	* 3.950 79			Vineyard, Fair, HSG C					
	20.010 79			Pasture/grassland/range, Fair, HSG C					
						Good, HSG C			
_	1.	890 8	36 Past	ure/grassl	and/range,	Poor, HSG C			
	35.	420	30 Wei	ghted Aver	age				
		840		9% Pervio					
	3.	580	10.1	1% Imperv	/ious Area				
	_		01			B			
	Tc	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
	4 =	201	0.0400	7.00		Range n= 0.130 P2= 3.21"			
	1.5	661	0.2100	7.38		Shallow Concentrated Flow,			
	0.0	0.40	0.0000	4.00		Unpaved Kv= 16.1 fps			
	2.2	648	0.0900	4.83		Shallow Concentrated Flow,			
	2.1	1 155	0.0600	7 77	16.61	Unpaved Kv= 16.1 fps			
	3.1	1,455	0.0600	7.77	46.64	Channel Flow,			
						Area= 6.0 sf Perim= 11.7' r= 0.51'			
						n= 0.030 Earth, grassed & winding			

Subcatchment 1S: WS 5 - pre project





WS 5 - post project









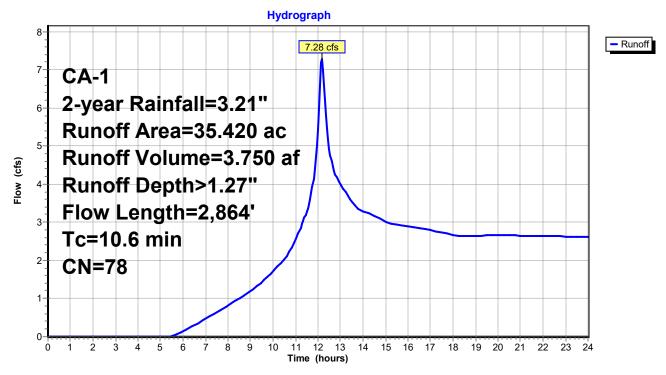
Summary for Subcatchment 1S: WS 5 - post project

Runoff = 7.28 cfs @ 12.18 hrs, Volume= 3.750 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac) (N Des	cription			
_		· - /		ed parking	HSG C		
*	i V						
*							
	3.920 79 Pasture/grassland/range, Fair, HSG C						
						Good, HSG C	
						Poor, HSG C	
	35.	420		ghted Aver		<u> </u>	
		840	,	9% Pervio	•		
	3.	580	10.1	1% Imperv	∕ious Area		
	'						
	Тс	Length	Slope	Velocity	Capacity	Description	
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
	3.8	100	0.1600	0.44		Sheet Flow,	
						Range n= 0.130 P2= 3.21"	
	1.5	661	0.2100	7.38		Shallow Concentrated Flow,	
						Unpaved Kv= 16.1 fps	
	2.2	648	0.0900	4.83		Shallow Concentrated Flow,	
						Unpaved Kv= 16.1 fps	
	3.1	1,455	0.0600	7.77	46.64	Channel Flow,	
						Area= 6.0 sf Perim= 11.7' r= 0.51'	
_						n= 0.030 Earth, grassed & winding	
	10.6	2,864	Total				

Subcatchment 1S: WS 5 - post project



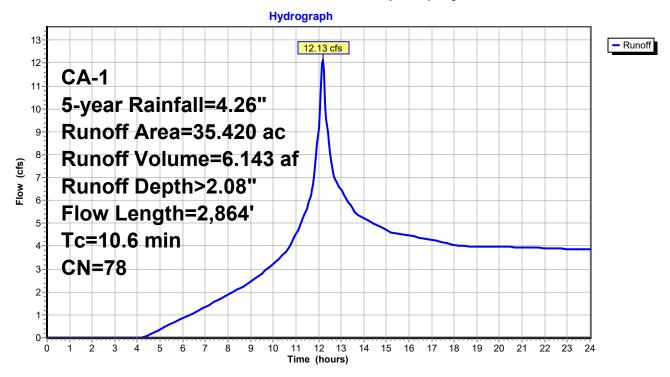
Summary for Subcatchment 1S: WS 5 - post project

Runoff = 12.13 cfs @ 12.18 hrs, Volume= 6.143 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac)	CN	Desc	ription		
	3.	580	98	Pave	ed parking,	, HSG C	
*	3.	950	79	Vine	yard, Fair,	HSG C	
*	16.950 75 Vineyard, Good, HSG C						
	3.920 79 Pasture/grassland/range, Fair, HSG C						
	5.	980	74	Past	ure/grassla	and/range,	Good, HSG C
	1.	040	86	Past	ure/grassla	and/range,	Poor, HSG C
	35.	420	78	Weig	ghted Aver	age	
	31.	840		89.8	9% Pervio	us Area	
	3.	580		10.1	1% Imperv	∕ious Area	
	Тс	Lengtl	h S	Slope	Velocity	Capacity	Description
	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)	
	3.8	100	0.	1600	0.44		Sheet Flow,
							Range n= 0.130 P2= 3.21"
	1.5	66	1 0.	2100	7.38		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	2.2	648	B 0.	0900	4.83		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	3.1	1,45	5 0.	0600	7.77	46.64	Channel Flow,
							Area= 6.0 sf Perim= 11.7' r= 0.51'
_							n= 0.030 Earth, grassed & winding
	10.6	2,864	4 To	otal			

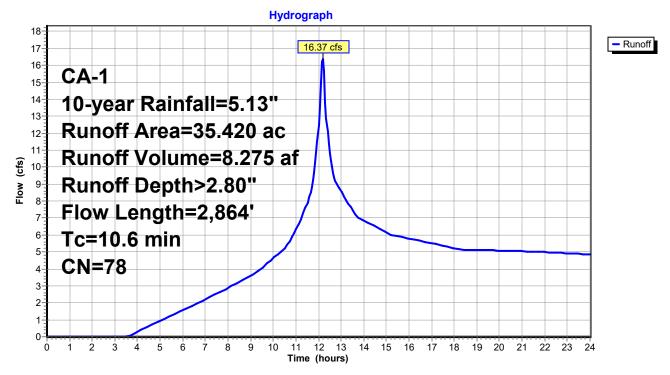
Page 5



Runoff = 16.37 cfs @ 12.18 hrs, Volume= 8.275 af, Depth> 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

	Area	(ac) (N Des	cription					
		· - /		ed parking	HSG C				
*	_			yard, Fair,					
*	_			yard, Goo					
3.920 79 Pasture/grassland/range, Fair, HSG C									
5.980 74 Pasture/grassland/range, Good, HSG C									
	1.040 86 Pasture/grassland/range, Poor, HSG C								
	35.420 78 Weighted Average								
		840	,	9% Pervio	•				
	3.	580	10.1	1% Imperv	∕ious Area				
·									
	Тс	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	1.5	661	0.2100	7.38		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	2.2	648	0.0900	4.83		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	3.1	1,455	0.0600	7.77	46.64	Channel Flow,			
						Area= 6.0 sf Perim= 11.7' r= 0.51'			
_						n= 0.030 Earth, grassed & winding			
	10.6	2,864	Total						



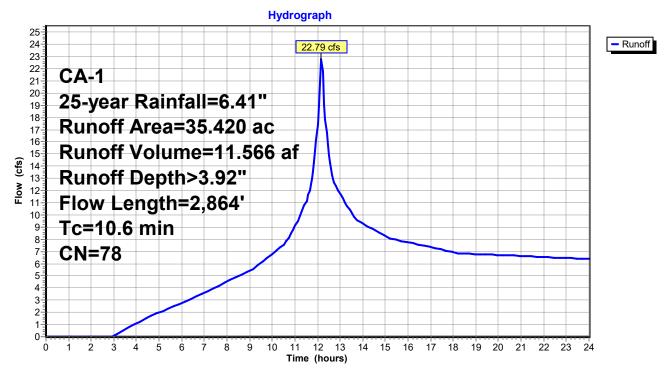
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Summary for Subcatchment 1S: WS 5 - post project

Runoff = 22.79 cfs @ 12.18 hrs, Volume= 11.566 af, Depth> 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

_	Area	(ac)	CN	Desc	cription			
	3.	580	98	Pave	ed parking	, HSG C		
*	3.	950	79	Vine	yard, Fair,			
*	16.	950	75	Vine	yard, Goo			
	3.920 79 Pasture/grassland/range, Fair, HSG C							
	5.980 74 Pasture/grassland/range, G							
_	1.040 86 Pasture/grassland/range, Poor, HSG C							
	35.420 78 Weighted Average							
	31.840			89.8	9% Pervio	us Area		
	3.580			10.1	1% Imperv	/ious Area		
	Tc	Length		ope	Velocity	Capacity	Description	
_	(min)	(feet		ft/ft)	(ft/sec)	(cfs)		
	3.8	100	0.1	600	0.44		Sheet Flow,	
							Range n= 0.130 P2= 3.21"	
	1.5	661	0.2	100	7.38		Shallow Concentrated Flow,	
							Unpaved Kv= 16.1 fps	
	2.2	648	3 0.0	900	4.83		Shallow Concentrated Flow,	
	0.4	4 455	- 00			10.01	Unpaved Kv= 16.1 fps	
	3.1	1,455	0.0	600	7.77	46.64	Channel Flow,	
							Area= 6.0 sf Perim= 11.7' r= 0.51'	
_							n= 0.030 Earth, grassed & winding	
	10.6	2,864	l Tot	al				



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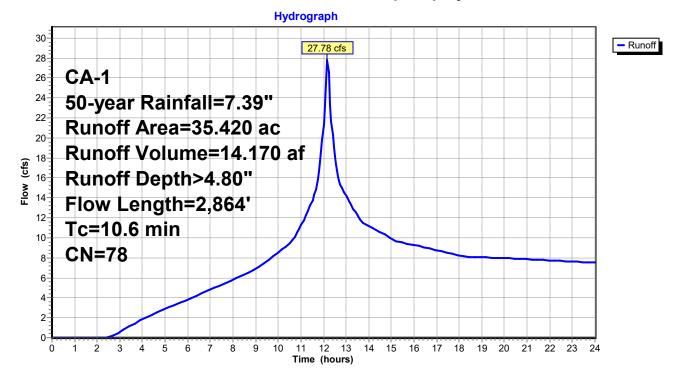
Summary for Subcatchment 1S: WS 5 - post project

Runoff = 27.78 cfs @ 12.18 hrs, Volume= 14.170 af, Depth> 4.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

_	Area	(ac)	CN	Desc	cription			
	3.	580	98	Pave	ed parking	, HSG C		
*	3.	950	79	Vine	yard, Fair,			
*	16.	950	75	Vine	yard, Goo			
	3.920 79 Pasture/grassland/range, Fair, HSG C							
	5.980 74 Pasture/grassland/range, G							
_	1.040 86 Pasture/grassland/range, Poor, HSG C							
	35.420 78 Weighted Average							
	31.840			89.8	9% Pervio	us Area		
	3.580			10.1	1% Imperv	/ious Area		
	Tc	Length		ope	Velocity	Capacity	Description	
_	(min)	(feet		ft/ft)	(ft/sec)	(cfs)		
	3.8	100	0.1	600	0.44		Sheet Flow,	
							Range n= 0.130 P2= 3.21"	
	1.5	661	0.2	100	7.38		Shallow Concentrated Flow,	
							Unpaved Kv= 16.1 fps	
	2.2	648	3 0.0	900	4.83		Shallow Concentrated Flow,	
	0.4	4 455	- 00			10.01	Unpaved Kv= 16.1 fps	
	3.1	1,455	0.0	600	7.77	46.64	Channel Flow,	
							Area= 6.0 sf Perim= 11.7' r= 0.51'	
_							n= 0.030 Earth, grassed & winding	
	10.6	2,864	l Tot	al				

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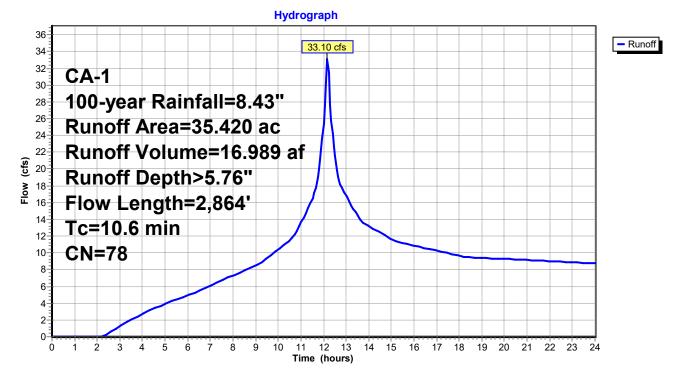


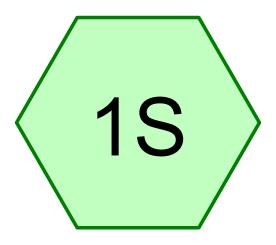
Runoff = 33.10 cfs @ 12.18 hrs, Volume= 16.989 af, Depth> 5.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac) (N Des	cription					
		· - /		ed parking	HSG C				
*	_			yard, Fair,					
*	_			yard, Goo					
3.920 79 Pasture/grassland/range, Fair, HSG C									
5.980 74 Pasture/grassland/range, Good, HSG C									
	1.040 86 Pasture/grassland/range, Poor, HSG C								
	35.420 78 Weighted Average								
		840	,	9% Pervio	•				
	3.	580	10.1	1% Imperv	∕ious Area				
·									
	Тс	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.8	100	0.1600	0.44		Sheet Flow,			
						Range n= 0.130 P2= 3.21"			
	1.5	661	0.2100	7.38		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	2.2	648	0.0900	4.83		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	3.1	1,455	0.0600	7.77	46.64	Channel Flow,			
						Area= 6.0 sf Perim= 11.7' r= 0.51'			
_						n= 0.030 Earth, grassed & winding			
	10.6	2,864	Total						

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WS 6 - pre project





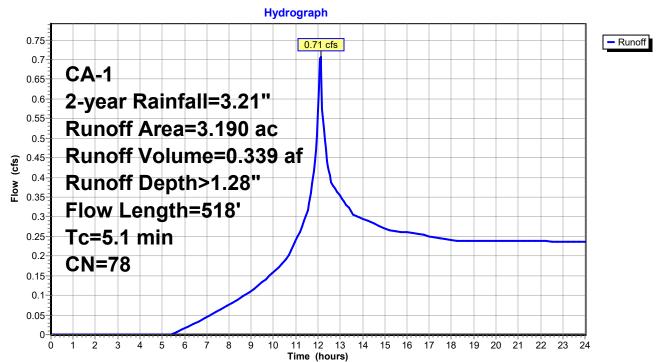




Runoff = 0.71 cfs @ 12.11 hrs, Volume= 0.339 af, Depth> 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

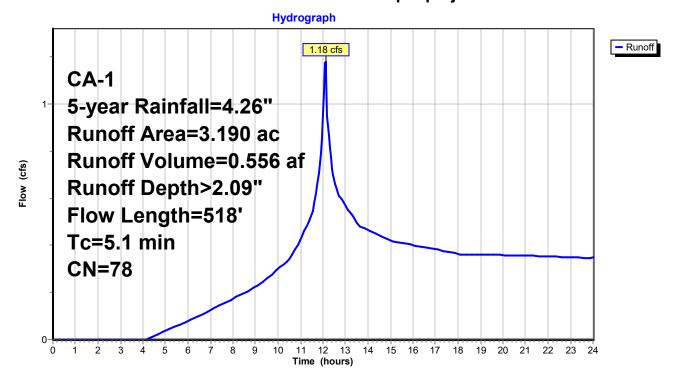
Area	Area (ac) CN Description										
1.	.840 7	'9 Past	ure/grassla	and/range,	Fair, HSG C						
0.	.490 8		•	O '	Poor, HSG C						
0.	.860 7	<u>'0 Woo</u>	ds, Good,	HSG C							
_	3.190 78 Weighted Average										
3.	.190	100.	00% Pervi	ous Area							
Tc	Length	Slope	Velocity	Capacity	Description						
<u>(min)</u>	(feet)	(ft/ft)	(ft/sec)	(cfs)							
4.3	100	0.1200	0.39		Sheet Flow,						
0.4	207	0.2600	8.21		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,						
					Unpaved Kv= 16.1 fps						
0.4	211	0.0300	9.41	282.42	Channel Flow,						
					Area= 30.0 sf Perim= 26.1' r= 1.15'						
	540	T.4.1			n= 0.030 Earth, grassed & winding						
5.1	518	Total									



Runoff = 1.18 cfs @ 12.11 hrs, Volume= 0.556 af, Depth> 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

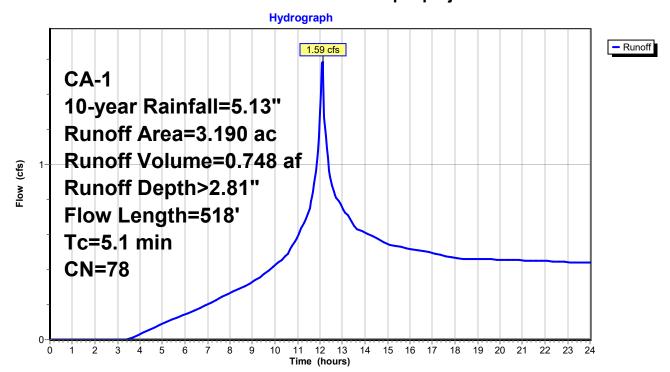
Area (ac) CN Description									
1	.840 7	'9 Past	Pasture/grassland/range, Fair, HSG C						
0	.490 8	36 Past	Pasture/grassland/range, Poor, HSG C						
0.860 70 Woods, Good, HSG C									
3.190 78 Weighted Average									
3	.190	100.	00% Pervi	ous Area					
Tc	Length	Slope	Velocity	Capacity	Description				
<u>(min)</u>	(feet)	(ft/ft)	(ft/sec)	(cfs)					
4.3	100	0.1200	0.39		Sheet Flow,				
					Range n= 0.130 P2= 3.21"				
0.4	207	0.2600	8.21		Shallow Concentrated Flow,				
					Unpaved Kv= 16.1 fps				
0.4	211	0.0300	9.41	282.42	Channel Flow,				
					Area= 30.0 sf Perim= 26.1' r= 1.15'				
					n= 0.030 Earth, grassed & winding				
5.1	518	Total							



Runoff = 1.59 cfs @ 12.11 hrs, Volume= 0.748 af, Depth> 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

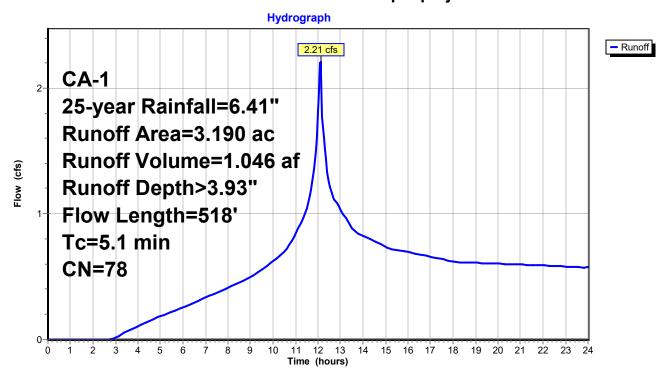
Area	(ac) C	N Desc	cription								
1.	.840 7	'9 Past	ure/grassla	and/range,	Fair, HSG C						
0.490 86 Pasture/grassland/range, Poor, HSG C											
0.860 70 Woods, Good, HSG C											
_	3.190 78 Weighted Average										
3.	.190	100.	00% Pervi	ous Area							
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description						
4.3	100	0.1200	0.39	()	Sheet Flow,						
					Range n= 0.130 P2= 3.21"						
0.4	207	0.2600	8.21		Shallow Concentrated Flow,						
2.4	044		0.44	000.40	Unpaved Kv= 16.1 fps						
0.4	211	0.0300	9.41	282.42	Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15'						
					n= 0.030 Earth, grassed & winding						
5.1	518	Total			11- 0.000 Earth, grassed & Winding						



Runoff = 2.21 cfs @ 12.11 hrs, Volume= 1.046 af, Depth> 3.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

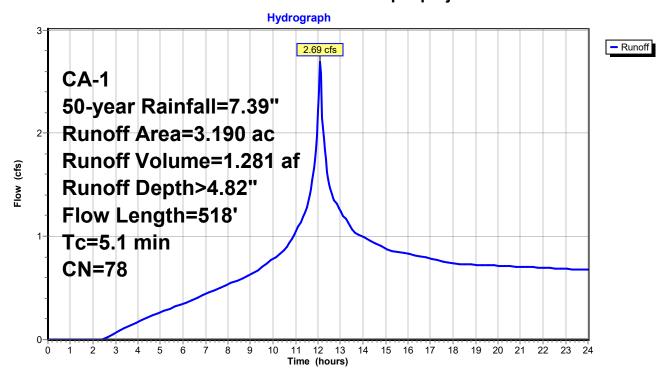
Area	(ac) C	N Desc	cription							
1.	.840 7	'9 Past	ure/grassl	and/range,	Fair, HSG C					
0.	.490 8		Pasture/grassland/range, Poor, HSG C							
0.	0.860 70 Woods, Good, HSG C									
_	3.190 78 Weighted Average									
3.	.190	100.	00% Pervi	ous Area						
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
4.3	100	0.1200	0.39	, ,	Sheet Flow,					
0.4	207	0.2600	8.21		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,					
0.4	211	0.0300	9.41	282.42	Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding					
5.1	518	Total								



Runoff = 2.69 cfs @ 12.11 hrs, Volume= 1.281 af, Depth> 4.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

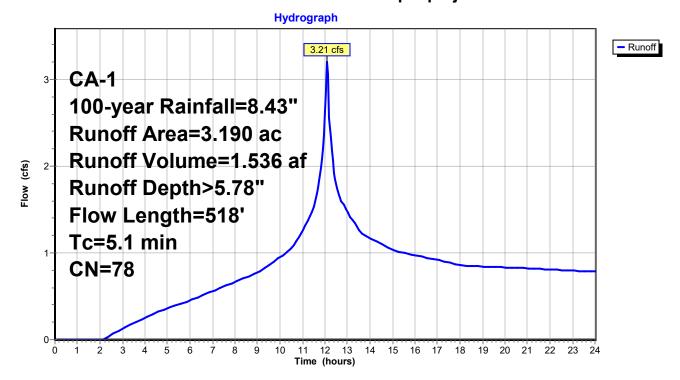
Area	(ac) C	N Desc	cription							
1.	.840 7	'9 Past	ure/grassl	and/range,	Fair, HSG C					
0.	.490 8		Pasture/grassland/range, Poor, HSG C							
0.	0.860 70 Woods, Good, HSG C									
_	3.190 78 Weighted Average									
3.	.190	100.	00% Pervi	ous Area						
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
4.3	100	0.1200	0.39	, ,	Sheet Flow,					
0.4	207	0.2600	8.21		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,					
0.4	211	0.0300	9.41	282.42	Unpaved Kv= 16.1 fps Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding					
5.1	518	Total								

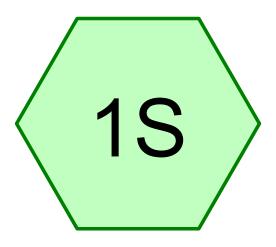


Runoff = 3.21 cfs @ 12.11 hrs, Volume= 1.536 af, Depth> 5.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

Area	Area (ac) CN Description										
1.	.840 7	'9 Past	ure/grassla	and/range,	Fair, HSG C						
0.	.490 8		•	O '	Poor, HSG C						
0.	.860 7	<u>'0 Woo</u>	ds, Good,	HSG C							
_	3.190 78 Weighted Average										
3.	.190	100.	00% Pervi	ous Area							
Tc	Length	Slope	Velocity	Capacity	Description						
<u>(min)</u>	(feet)	(ft/ft)	(ft/sec)	(cfs)							
4.3	100	0.1200	0.39		Sheet Flow,						
0.4	207	0.2600	8.21		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow,						
					Unpaved Kv= 16.1 fps						
0.4	211	0.0300	9.41	282.42	Channel Flow,						
					Area= 30.0 sf Perim= 26.1' r= 1.15'						
	540	T.4.1			n= 0.030 Earth, grassed & winding						
5.1	518	Total									





WS 6 - post project





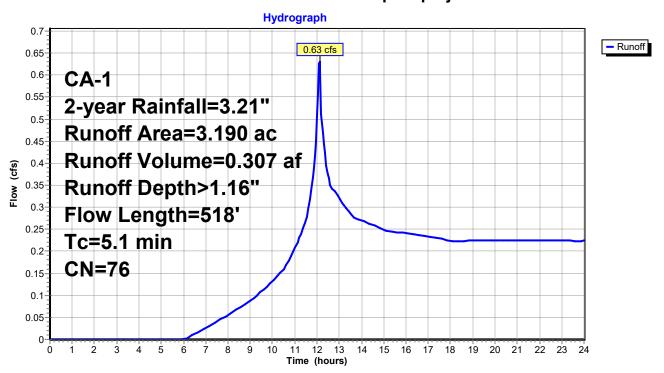




Runoff = 0.63 cfs @ 12.11 hrs, Volume= 0.307 af, Depth> 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac)	CN	Desc	cription					
*	1.	030	75	Vine	Vineyard, Good, HSG C					
	0.	810	79	Pasture/grassland/range, Fair, HSG C						
	0.	490	86	Past	ure/grassla	and/range,	Poor, HSG C			
	0.	860	70		ds, Good,					
	3.190 76 Weighted Average									
	3.	190		•	00% Pervi	0				
	Tc	Length	ո Տ	Slope	Velocity	Capacity	Description			
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	·			
	4.3	100	0.	1200	0.39	,	Sheet Flow,			
							Range n= 0.130 P2= 3.21"			
	0.4	207	7 0.:	2600	8.21		Shallow Concentrated Flow,			
	• • •						Unpaved Kv= 16.1 fps			
	0.4	21	1 0.	0300	9.41	282.42	•			
							Area= 30.0 sf Perim= 26.1' r= 1.15'			
							n= 0.030 Earth, grassed & winding			
	5.1	518	3 То	otal						



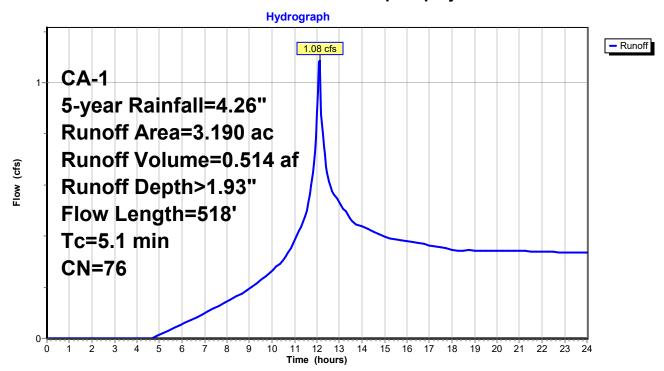
Page 3

Summary for Subcatchment 1S: WS 6 - post project

Runoff = 1.08 cfs @ 12.11 hrs, Volume= 0.514 af, Depth> 1.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

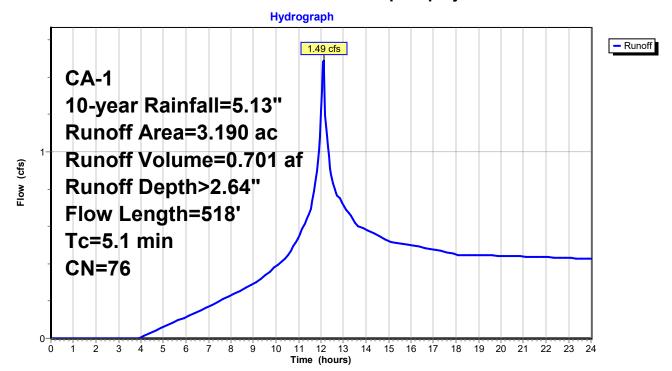
	Area	(ac)	CN	Desc	cription					
*	1.	030	75	Vineyard, Good, HSG C						
	0.	810	79	Pasture/grassland/range, Fair, HSG C						
	0.	490	86				Poor, HSG C			
	0.	860	70		ds, Good,	•				
	3.190 76 Weighted Average									
	3.	190		•	00% Pervi	0				
	Tc	Lengtl	ո Տ	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·			
	4.3	10	0.	1200	0.39		Sheet Flow,			
							Range n= 0.130 P2= 3.21"			
	0.4	20	7 0.	2600	8.21		Shallow Concentrated Flow,			
							Unpaved Kv= 16.1 fps			
	0.4	21	1 0.	0300	9.41	282.42	Channel Flow,			
							Area= 30.0 sf Perim= 26.1' r= 1.15'			
							n= 0.030 Earth, grassed & winding			
	5.1	518	3 To	otal						



Runoff = 1.49 cfs @ 12.11 hrs, Volume= 0.701 af, Depth> 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

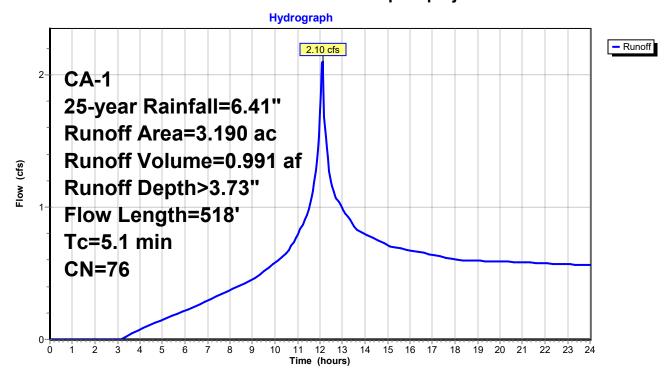
	Area	(ac)	CN	Desc	cription					
*	1.	030	75	Vine	yard, Good	d, HSG C				
	0.	810	79	Past	ure/grassla	and/range,	Fair, HSG C			
	0.	490	86	Past	ure/grassla	and/range,	Poor, HSG C			
	0.	860	70	Woo	ds, Good,	HSG C				
	3.	190	76	Weig	ghted Aver	age				
	3.	190		100.	100.00% Pervious Area					
	Тс	Length	ո Տ	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	4.3	100	0.	1200	0.39		Sheet Flow,			
							Range n= 0.130 P2= 3.21"			
	0.4	207	7 0.	2600	8.21		Shallow Concentrated Flow,			
							Unpaved Kv= 16.1 fps			
	0.4	21	1 0.	0300	9.41	282.42	Channel Flow,			
							Area= 30.0 sf Perim= 26.1' r= 1.15'			
							n= 0.030 Earth, grassed & winding			
	5.1	518	3 To	otal						



Runoff = 2.10 cfs @ 12.11 hrs, Volume= 0.991 af, Depth> 3.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

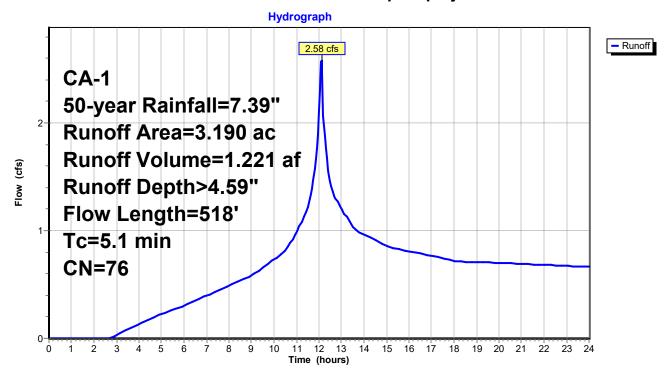
	Area	(ac)	CN	Desc	cription					
*	1.030 75			Vine	Vineyard, Good, HSG C					
	0.	810	79	Past	ure/grassla	and/range,	Fair, HSG C			
	0.	490	86	Past	ure/grassla	and/range,	Poor, HSG C			
	0.	860	70		ds, Good,					
3.190 76 Weighted Average										
	3.	190		•	00% Pervi	0				
	Tc	Length	ո Տ	Slope	Velocity	Capacity	Description			
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	·			
	4.3	100	0.	1200	0.39	,	Sheet Flow,			
							Range n= 0.130 P2= 3.21"			
	0.4	207	7 0.:	2600	8.21		Shallow Concentrated Flow,			
	• • •						Unpaved Kv= 16.1 fps			
	0.4	21	1 0.	0300	9.41	282.42	•			
							Area= 30.0 sf Perim= 26.1' r= 1.15'			
							n= 0.030 Earth, grassed & winding			
	5.1	518	3 То	otal						



Runoff = 2.58 cfs @ 12.11 hrs, Volume= 1.221 af, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

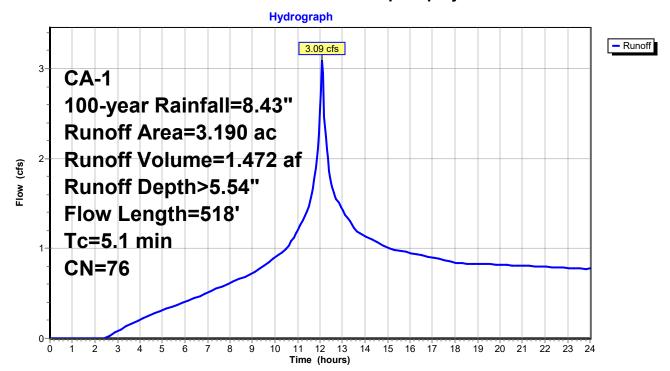
	Area	(ac)	CN	Desc	cription				
*	1.	030	75	Vine	yard, Good	d, HSG C			
	0.	810	79	Past	ure/grassla	and/range,	Fair, HSG C		
	0.	490	86	Past	ure/grassla	and/range,	Poor, HSG C		
	0.860 70 Woods, Good, HSG C								
3.190 76 Weighted Average									
	3.	190		100.	00% Pervi	ous Area			
	Тс	Lengt	h .	Slope	Velocity	Capacity	Description		
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)			
	4.3	10	0 0	.1200	0.39		Sheet Flow,		
							Range n= 0.130 P2= 3.21"		
	0.4	20	7 0	.2600	8.21		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		
	0.4	21	1 0	.0300	9.41	282.42	Channel Flow,		
							Area= 30.0 sf Perim= 26.1' r= 1.15'		
							n= 0.030 Earth, grassed & winding		
	5.1	51	8 T	otal					

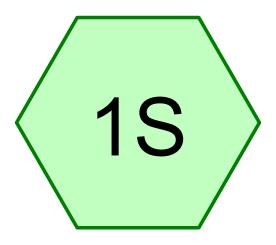


Runoff = 3.09 cfs @ 12.11 hrs, Volume= 1.472 af, Depth> 5.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac)	CN	Desc	cription				
*	1.	030	75	Vine	yard, Good	d, HSG C			
	0.	810	79	Past	ure/grassla	and/range,	Fair, HSG C		
	0.	490	86	Past	ure/grassla	and/range,	Poor, HSG C		
	0.860 70 Woods, Good, HSG C								
3.190 76 Weighted Average									
	3.	190		100.	00% Pervi	ous Area			
	Тс	Lengt	h .	Slope	Velocity	Capacity	Description		
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)			
	4.3	10	0 0	.1200	0.39		Sheet Flow,		
							Range n= 0.130 P2= 3.21"		
	0.4	20	7 0	.2600	8.21		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		
	0.4	21	1 0	.0300	9.41	282.42	Channel Flow,		
							Area= 30.0 sf Perim= 26.1' r= 1.15'		
							n= 0.030 Earth, grassed & winding		
	5.1	51	8 T	otal					





WS 7 - pre project





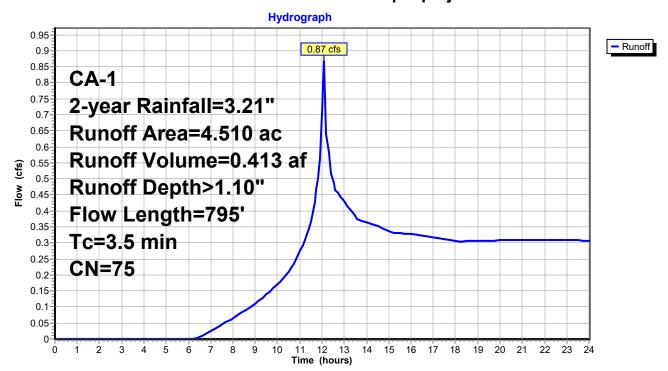




Runoff = 0.87 cfs @ 12.10 hrs, Volume= 0.413 af, Depth> 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

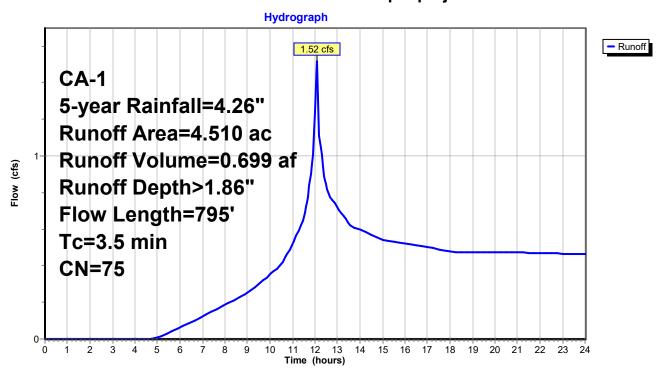
_	Area	(ac) C	N Desc	cription		
				ure/grasslads, Good,		Fair, HSG C
_	2.					
	4.	510 7	'5 Weig	ghted Aver	age	
	4.	510	100.	00% Pervi	ous Area	
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·
	2.7	100	0.3800	0.62		Sheet Flow,
						Range n= 0.130 P2= 3.21"
	0.2	171	0.6000	12.47		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	0.6	524	0.0700	14.38	431.41	Channel Flow,
						Area= 30.0 sf Perim= 26.1' r= 1.15'
						n= 0.030 Earth, grassed & winding
_	3.5	795	Total			, , , , , , , , , , , , , , , , , , , ,



Runoff = 1.52 cfs @ 12.09 hrs, Volume= 0.699 af, Depth> 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

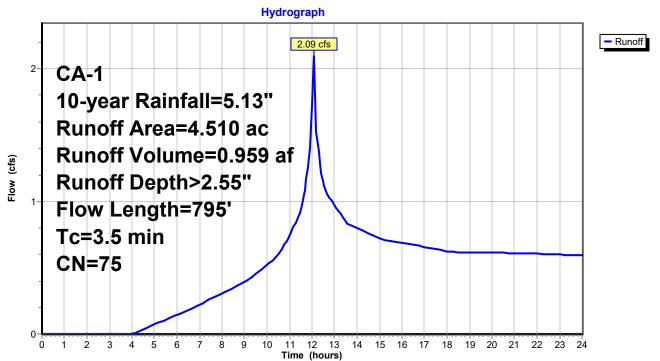
_	Area	(ac) C	N Desc	cription		
				ure/grassl ds, Good,		Fair, HSG C
_	4.		75 Weig	ghted Aver 00% Pervi	age	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	2.7	100	0.3800	0.62	, ,	Sheet Flow,
	0.2	171	0.6000	12.47		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
	0.6	524	0.0700	14.38	431.41	Channel Flow,
						Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding
_	3.5	795	Total			



Runoff = 2.09 cfs @ 12.09 hrs, Volume= 0.959 af, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

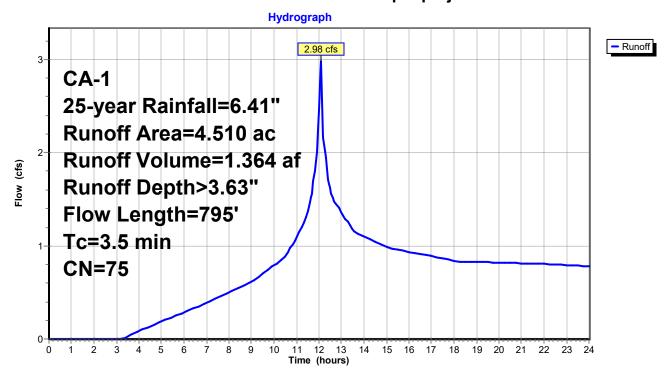
	Area	(ac) C	N Desc	cription		
				•	•	Fair, HSG C
_	2.	040 7	<u>70 Woo</u>	ds, Good,	HSG C	
	4.	510 7	75 Weig	ghted Aver	age	
	4.	510	100.	00% Pervi	ous Area	
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·
	2.7	100	0.3800	0.62		Sheet Flow,
						Range n= 0.130 P2= 3.21"
	0.2	171	0.6000	12.47		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	0.6	524	0.0700	14.38	431.41	Channel Flow,
						Area= 30.0 sf Perim= 26.1' r= 1.15'
						n= 0.030 Earth, grassed & winding
_	3.5	795	Total			, ,



Runoff = 2.98 cfs @ 12.09 hrs, Volume= 1.364 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

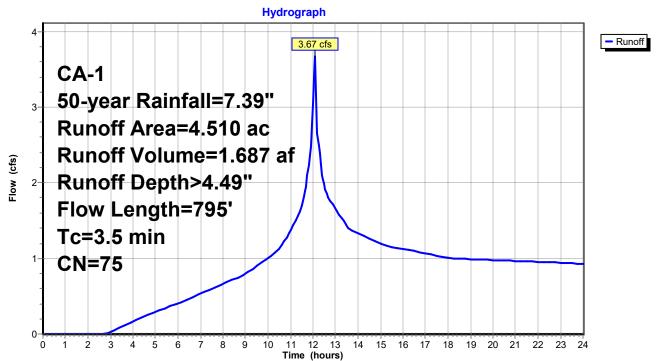
Area	(ac) C	N Desc	cription		
			ure/grasslads, Good,		Fair, HSG C
			ghted Aver		
	.510	,	00% Pervi		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	100	0.3800	0.62		Sheet Flow,
0.2	171	0.6000	12.47		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.6	524	0.0700	14.38	431.41	Channel Flow,
					Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding
3.5	795	Total			



Runoff = 3.67 cfs @ 12.09 hrs, Volume= 1.687 af, Depth> 4.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

Area	(ac) C	N Desc	cription		
					Fair, HSG C
2.	.040 7	<u>'0 Woo</u>	ds, Good,		
4.	.510 7	'5 Weig	ghted Aver	age	
4.	.510	100.	00% Pervi	ous Area	
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
2.7	100	0.3800	0.62		Sheet Flow,
					Range n= 0.130 P2= 3.21"
0.2	171	0.6000	12.47		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
0.6	524	0.0700	14.38	431.41	Channel Flow,
					Area= 30.0 sf Perim= 26.1' r= 1.15'
					n= 0.030 Earth, grassed & winding
3.5	795	Total			



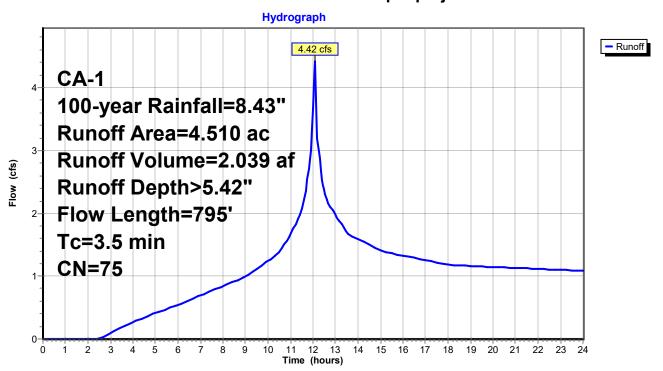
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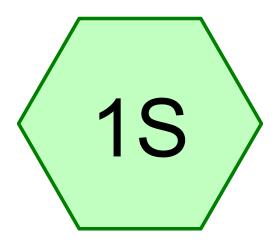
Summary for Subcatchment 1S: WS 7 - pre project

Runoff = 4.42 cfs @ 12.09 hrs, Volume= 2.039 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac) C	N Desc	cription		
				ure/grassl		Fair, HSG C
_	4.		75 Wei	ghted Aver 00% Pervi	age	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	2.7	100	0.3800	0.62	, ,	Sheet Flow,
	0.2	171	0.6000	12.47		Range n= 0.130 P2= 3.21" Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
	0.6	524	0.0700	14.38	431.41	Channel Flow,
_						Area= 30.0 sf Perim= 26.1' r= 1.15' n= 0.030 Earth, grassed & winding
	3.5	795	Total			





WS 7 - post project





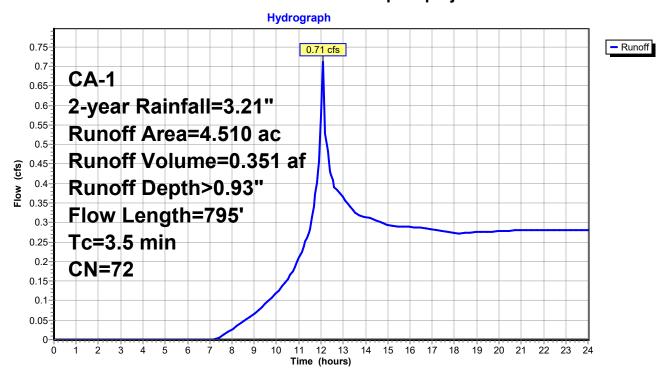




Runoff = 0.71 cfs @ 12.10 hrs, Volume= 0.351 af, Depth> 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac) C	N Desc	cription			
*	0.	520 7	'5 Vine	yard, Goo	d, HSG C		
1.950 74 Pasture/grassland/range, Good, HSG C							
	2.	040 7		ds, Good,	0 '		
	4	510 7	'2 Wei	ghted Aver	ade		
		510	•	00% Pervi	•		
	•	0.10	100.	00701 0111	04071104		
	Tc	Length	Slope	Velocity	Capacity	Description	
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description	
_	2.7	100	0.3800	0.62	(0.0)	Sheet Flow,	
	2.1	100	0.0000	0.02		Range n= 0.130 P2= 3.21"	
	0.2	171	0.6000	12.47		Shallow Concentrated Flow,	
	0.2	17.1	0.0000	12.41		Unpaved Kv= 16.1 fps	
	0.6	524	0.0700	14.38	431.41	Channel Flow,	
	0.0	324	0.0700	14.30	431.41	Area= 30.0 sf Perim= 26.1' r= 1.15'	
						7	
						n= 0.030 Earth, grassed & winding	
	3.5	795	Total				



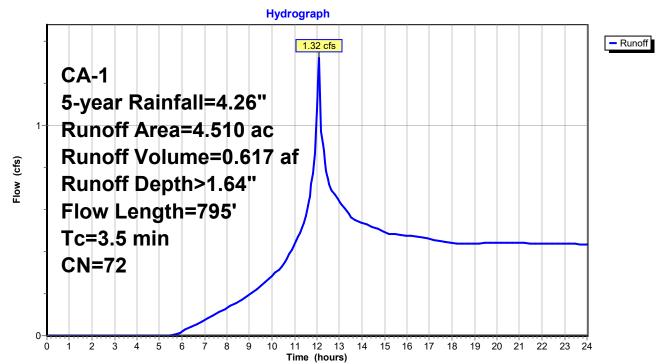
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Summary for Subcatchment 1S: WS 7 - post project

Runoff = 1.32 cfs @ 12.09 hrs, Volume= 0.617 af, Depth> 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

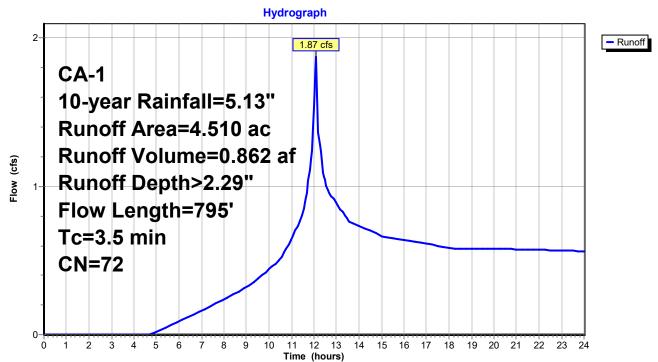
	Area	(ac) C	N Desc	cription			
*	0.	520 7	'5 Vine	yard, Goo	d, HSG C		
1.950 74 Pasture/grassland/range, Good, HSG C							
	2.	040 7		ds, Good,	0 '		
	4	510 7	'2 Wei	ghted Aver	ade		
		510	•	00% Pervi	•		
	•	0.10	100.	00701 0111	04071104		
	Tc	Length	Slope	Velocity	Capacity	Description	
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description	
_	2.7	100	0.3800	0.62	(0.0)	Sheet Flow,	
	2.1	100	0.0000	0.02		Range n= 0.130 P2= 3.21"	
	0.2	171	0.6000	12.47		Shallow Concentrated Flow,	
	0.2	17.1	0.0000	12.41		Unpaved Kv= 16.1 fps	
	0.6	524	0.0700	14.38	431.41	Channel Flow,	
	0.0	324	0.0700	14.30	431.41	Area= 30.0 sf Perim= 26.1' r= 1.15'	
						7	
						n= 0.030 Earth, grassed & winding	
	3.5	795	Total				



Runoff = 1.87 cfs @ 12.09 hrs, Volume= 0.862 af, Depth> 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

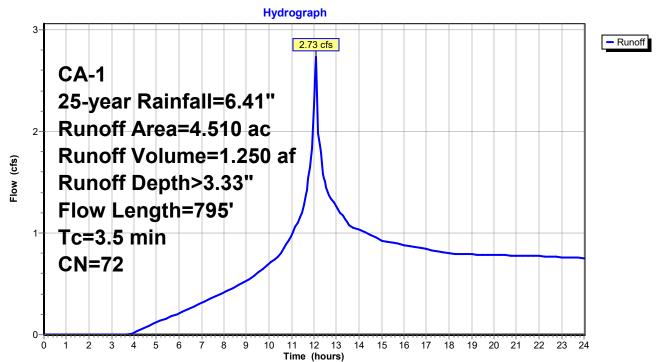
	Area	(ac) C	N Desc	cription				
* 0.520 75 Vineyard, Good, HSG C					d, HSG C			
	1.	Good, HSG C						
	2.040 70 Woods, Good, HSG C							
	4.510 72 Weighted Average							
	4.510 100.00% Pervious Area							
	Тс	Length	Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	2.7	100	0.3800	0.62		Sheet Flow,		
						Range n= 0.130 P2= 3.21"		
	0.2	171	0.6000	12.47		Shallow Concentrated Flow,		
						Unpaved Kv= 16.1 fps		
	0.6	524	0.0700	14.38	431.41	Channel Flow,		
						Area= 30.0 sf Perim= 26.1' r= 1.15'		
						n= 0.030 Earth, grassed & winding		
	3.5	795	Total					



Runoff = 2.73 cfs @ 12.09 hrs, Volume= 1.250 af, Depth> 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

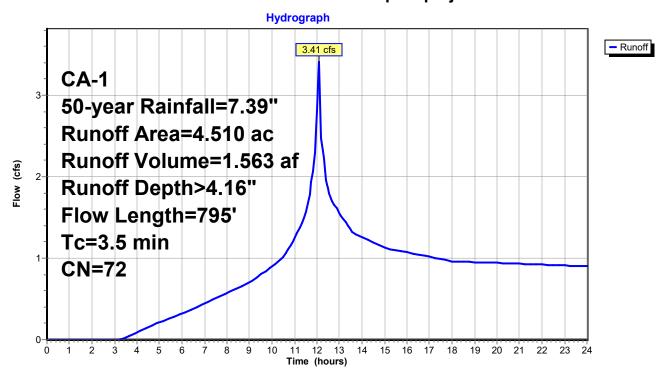
	Area	(ac) C	N Desc	cription				
* 0.520 75 Vineyard, Good, HSG C					d, HSG C			
	1.	Good, HSG C						
	2.040 70 Woods, Good, HSG C							
	4.510 72 Weighted Average							
	4.510 100.00% Pervious Area							
	Тс	Length	Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	2.7	100	0.3800	0.62		Sheet Flow,		
						Range n= 0.130 P2= 3.21"		
	0.2	171	0.6000	12.47		Shallow Concentrated Flow,		
						Unpaved Kv= 16.1 fps		
	0.6	524	0.0700	14.38	431.41	Channel Flow,		
						Area= 30.0 sf Perim= 26.1' r= 1.15'		
						n= 0.030 Earth, grassed & winding		
	3.5	795	Total					



Runoff = 3.41 cfs @ 12.09 hrs, Volume= 1.563 af, Depth> 4.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(ac) C	N Des	cription				
*	* 0.520 75 Vineyard, Good, HSG C							
	1.950 74 Pasture/grassland/range, Good, HSG C							
	2.040 70 Woods, Good, HSG C							
	4.510 72 Weighted Average							
	4.510 100.00% Pervious Area							
	Tc	Length	Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•		
	2.7	100	0.3800	0.62	, ,	Sheet Flow,		
						Range n= 0.130 P2= 3.21"		
	0.2	171	0.6000	12.47		Shallow Concentrated Flow,		
	-					Unpaved Kv= 16.1 fps		
	0.6	524	0.0700	14.38	431.41	Channel Flow,		
						Area= 30.0 sf Perim= 26.1' r= 1.15'		
						n= 0.030 Earth, grassed & winding		
	3.5	795	Total					

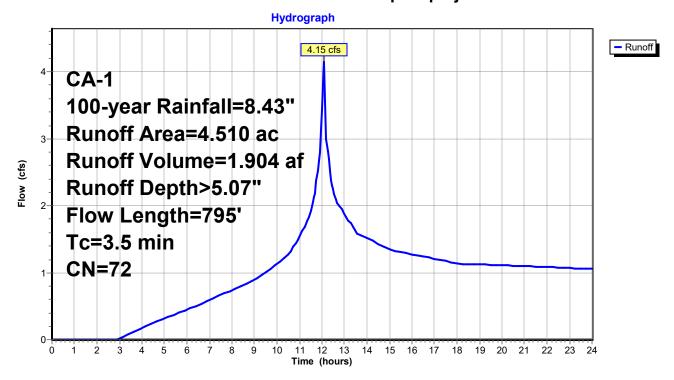


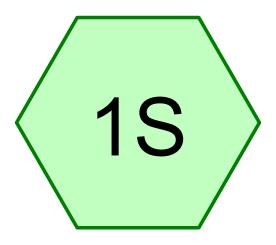
Summary for Subcatchment 1S: WS 7 - post project

Runoff = 4.15 cfs @ 12.09 hrs, Volume= 1.904 af, Depth> 5.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

	Area	(ac) C	N Desc	cription					
*	* 0.520 75 Vineyard, Good, HSG C								
	1.950 74 Pasture/grassland/range, Good, HSG C								
	2.040 70 Woods, Good, HSG C								
	4.510 72 Weighted Average								
		510	•	00% Pervi	•				
	•	0.10	100.	00701 0111	04071104				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description			
_	2.7	100	0.3800	0.62	(0.0)	Sheet Flow,			
	2.1	100	0.0000	0.02		Range n= 0.130 P2= 3.21"			
	0.2	171	0.6000	12.47		Shallow Concentrated Flow,			
	0.2	17.1	0.0000	12.41		Unpaved Kv= 16.1 fps			
	0.6	524	0.0700	14.38	431.41	Channel Flow,			
	0.0	324	0.0700	14.30	431.41	Area= 30.0 sf Perim= 26.1' r= 1.15'			
						7			
						n= 0.030 Earth, grassed & winding			
	3.5	795	Total						





WS 8 - pre project







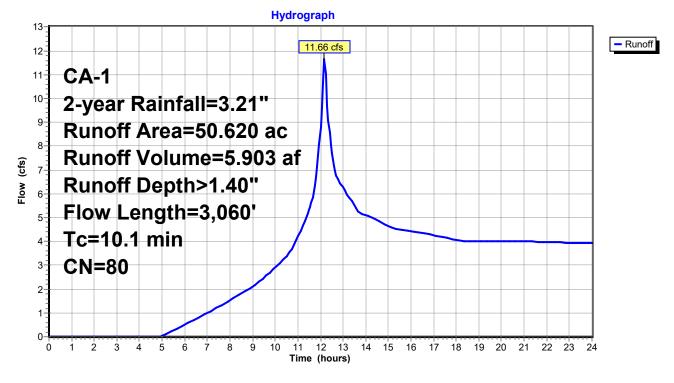


Summary for Subcatchment 1S: WS 8 - pre project

Runoff = 11.66 cfs @ 12.17 hrs, Volume= 5.903 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

Area	(ac) C	N Desc	cription						
0.	490 9	8 Pave	ed parking	HSG C					
26.	26.560 79 Pasture/grassland/range, Fair, HSG C								
					Fair, HSG D				
					Good, HSG D				
4.	4.130 77 Woods, Good, HSG D								
			ghted Aver						
	130		3% Pervio						
0.	490	0.97	% Impervi	ous Area					
Tc	Length	Slope	Velocity	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description				
4.0	100	0.1400	0.42	(010)	Sheet Flow,				
7.0	100	0.1700	0.72		Range n= 0.130 P2= 3.21"				
0.5	173	0.1500	6.24		Shallow Concentrated Flow,				
0.0	170	0.1000	0.24		Unpaved Kv= 16.1 fps				
0.3	171	0.2900	8.67		Shallow Concentrated Flow,				
					Unpaved Kv= 16.1 fps				
1.0	840	0.2100	14.54	87.26	·				
					Area= 6.0 sf Perim= 11.7' r= 0.51'				
					n= 0.030 Earth, grassed & winding				
1.3	598	0.0600	7.77	46.64	•				
					Area= 6.0 sf Perim= 11.7' r= 0.51'				
					n= 0.030 Earth, grassed & winding				
0.0	50	0.2000	16.75	52.61	•				
					24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'				
					n= 0.025 Corrugated metal				
1.3	556	0.0500	7.10	42.58	,				
					Area= 6.0 sf Perim= 11.7' r= 0.51'				
					n= 0.030 Earth, grassed & winding				
1.7	572	0.0200	5.76	172.95	,				
					Area= 30.0 sf Perim= 26.1' r= 1.15'				
					n= 0.040 Winding stream, pools & shoals				
10.1	3,060	Total							

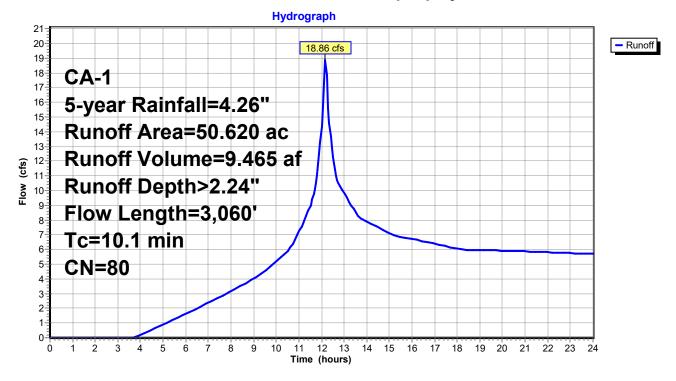


Summary for Subcatchment 1S: WS 8 - pre project

Runoff = 18.86 cfs @ 12.17 hrs, Volume= 9.465 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

Area	(ac) C	N Desc	cription						
			ed parking,						
				Fair, HSG C					
5.620 84 Pasture/grassland/range, Fair, HSG D									
					Good, HSG D				
	4.130 77 Woods, Good, HSG D								
			ghted Aver						
	130		3% Pervio						
0.	490	0.97	% Impervi	ous Area					
Тс	Length	Slope	Velocity	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	'				
4.0	100	0.1400	0.42		Sheet Flow,				
					Range n= 0.130 P2= 3.21"				
0.5	173	0.1500	6.24		Shallow Concentrated Flow,				
					Unpaved Kv= 16.1 fps				
0.3	171	0.2900	8.67		Shallow Concentrated Flow,				
4.0	0.40	0.0400	4454	07.00	Unpaved Kv= 16.1 fps				
1.0	840	0.2100	14.54	87.26	•				
					Area= 6.0 sf Perim= 11.7' r= 0.51'				
1.3	598	0.0600	7.77	46.64	n= 0.030 Earth, grassed & winding Channel Flow,				
1.3	590	0.0000	1.11	40.04	Area= 6.0 sf Perim= 11.7' r= 0.51'				
					n= 0.030 Earth, grassed & winding				
0.0	50	0.2000	16.75	52.61	Pipe Channel,				
0.0	00	0.2000	10.70	02.01	24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'				
					n= 0.025 Corrugated metal				
1.3	556	0.0500	7.10	42.58					
					Area= 6.0 sf Perim= 11.7' r= 0.51'				
					n= 0.030 Earth, grassed & winding				
1.7	572	0.0200	5.76	172.95	Channel Flow,				
					Area= 30.0 sf Perim= 26.1' r= 1.15'				
					n= 0.040 Winding stream, pools & shoals				
10.1	3,060	Total							

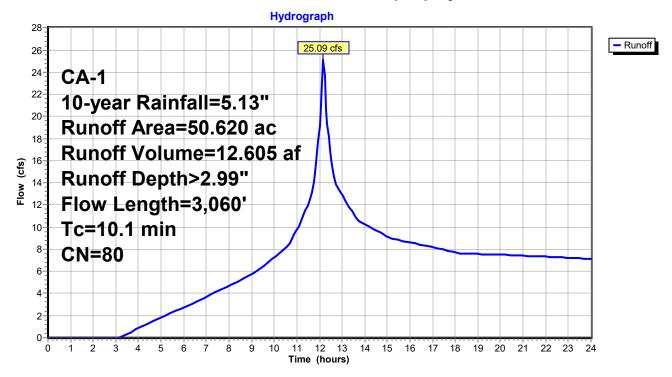


Summary for Subcatchment 1S: WS 8 - pre project

Runoff = 25.09 cfs @ 12.17 hrs, Volume= 12.605 af, Depth> 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

Area	(ac) C	N Desc	cription							
0.	490 9		ed parking,							
		'9 Past	ure/grassla	and/range,	Fair, HSG C					
	5.620 84 Pasture/grassland/range, Fair, HSG D									
	13.820 80 Pasture/grassland/range, Good, HSG D									
	4.130 77 Woods, Good, HSG D									
	50.620 80 Weighted Average									
	130		3% Pervio							
0.	490	0.97	% Impervi	ous Area						
Tc	Length	Slope	Velocity	Capacity	Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Boompton					
4.0	100	0.1400	0.42		Sheet Flow,					
					Range n= 0.130 P2= 3.21"					
0.5	173	0.1500	6.24		Shallow Concentrated Flow,					
					Unpaved Kv= 16.1 fps					
0.3	171	0.2900	8.67		Shallow Concentrated Flow,					
					Unpaved Kv= 16.1 fps					
1.0	840	0.2100	14.54	87.26	•					
					Area= 6.0 sf Perim= 11.7' r= 0.51'					
4.0	500	0.0000	-	10.04	n= 0.030 Earth, grassed & winding					
1.3	598	0.0600	7.77	46.64	Channel Flow,					
					Area= 6.0 sf Perim= 11.7' r= 0.51'					
0.0	50	0.2000	16.75	52.61	n= 0.030 Earth, grassed & winding					
0.0	50	0.2000	10.75	52.61	Pipe Channel, 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'					
					n= 0.025 Corrugated metal					
1.3	556	0.0500	7.10	42.58	Channel Flow,					
1.0	000	0.0000	7.10	72.00	Area= 6.0 sf Perim= 11.7' r= 0.51'					
					n= 0.030 Earth, grassed & winding					
1.7	572	0.0200	5.76	172.95	Channel Flow,					
• • •	- · -	2.0200	J 0	=.50	Area= 30.0 sf Perim= 26.1' r= 1.15'					
					n= 0.040 Winding stream, pools & shoals					
10.1	3,060	Total			<u> </u>					

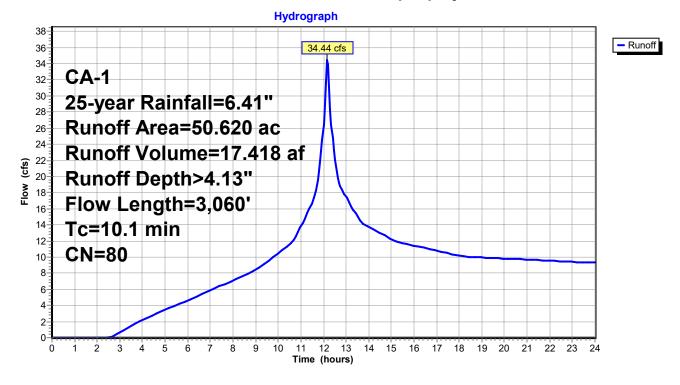


Summary for Subcatchment 1S: WS 8 - pre project

Runoff = 34.44 cfs @ 12.17 hrs, Volume= 17.418 af, Depth> 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

Area	(ac) C	N Desc	cription							
0.	0.490 98 Paved parking, HSG C									
26.	26.560 79 Pasture/grassland/range, Fair, HSG C									
	5.620 84 Pasture/grassland/range, Fair, HSG D									
	13.820 80 Pasture/grassland/range, Good, HSG D									
4.	4.130 77 Woods, Good, HSG D									
50.	50.620 80 Weighted Average									
	130		3% Pervio							
0.	490	0.97	% Impervi	ous Area						
Tc	Length	Slope	Velocity	Capacity	Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·					
4.0	100	0.1400	0.42		Sheet Flow,					
					Range n= 0.130 P2= 3.21"					
0.5	173	0.1500	6.24		Shallow Concentrated Flow,					
					Unpaved Kv= 16.1 fps					
0.3	171	0.2900	8.67		Shallow Concentrated Flow,					
					Unpaved Kv= 16.1 fps					
1.0	840	0.2100	14.54	87.26	•					
					Area= 6.0 sf Perim= 11.7' r= 0.51'					
					n= 0.030 Earth, grassed & winding					
1.3	598	0.0600	7.77	46.64	to the state of th					
					Area= 6.0 sf Perim= 11.7' r= 0.51'					
			40.75	50.04	n= 0.030 Earth, grassed & winding					
0.0	50	0.2000	16.75	52.61						
					24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'					
4.0	550	0.0500	7.40	40.50	n= 0.025 Corrugated metal					
1.3	556	0.0500	7.10	42.58	•					
					Area= 6.0 sf Perim= 11.7' r= 0.51'					
17	570	0.0200	E 76	172.05	n= 0.030 Earth, grassed & winding					
1.7	572	0.0200	5.76	172.95	Channel Flow, Area= 30.0 sf Perim= 26.1' r= 1.15'					
					n= 0.040 Winding stream, pools & shoals					
40.4	2.000	Tatal			11- 0.040 Willuling Siteatil, pools & Stidals					
10.1	3,060	Total								

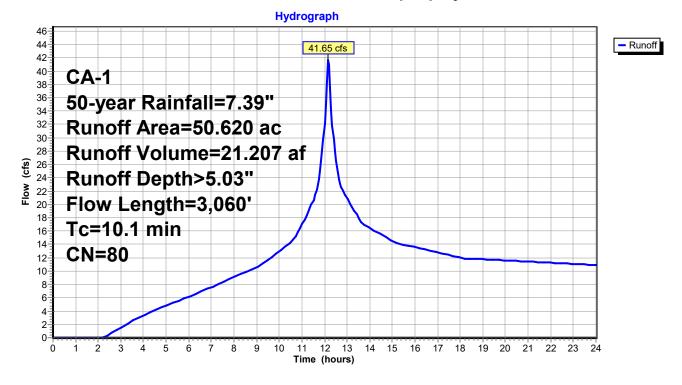


Summary for Subcatchment 1S: WS 8 - pre project

Runoff = 41.65 cfs @ 12.17 hrs, Volume= 21.207 af, Depth> 5.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

Area	(ac) C	N Desc	cription								
0.	490 9	8 Pave	ed parking	, HSG C							
	26.560 79 Pasture/grassland/range, Fair, HSG C										
	5.620 84 Pasture/grassland/range, Fair, HSG D										
	13.820 80 Pasture/grassland/range, Good, HSG D										
4.	4.130 77 Woods, Good, HSG D										
	50.620 80 Weighted Average										
	130		3% Pervio								
0.	490	0.97	% Impervi	ous Area							
Тс	Length	Slope	Velocity	Capacity	Description						
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Bookiption						
4.0	100	0.1400	0.42	(0.0)	Sheet Flow,						
1.0	.00	0.1.00	0.12		Range n= 0.130 P2= 3.21"						
0.5	173	0.1500	6.24		Shallow Concentrated Flow,						
					Unpaved Kv= 16.1 fps						
0.3	171	0.2900	8.67		Shallow Concentrated Flow,						
					Unpaved Kv= 16.1 fps						
1.0	840	0.2100	14.54	87.26	Channel Flow,						
					Area= 6.0 sf Perim= 11.7' r= 0.51'						
					n= 0.030 Earth, grassed & winding						
1.3	598	0.0600	7.77	46.64	Channel Flow,						
					Area= 6.0 sf Perim= 11.7' r= 0.51'						
					n= 0.030 Earth, grassed & winding						
0.0	50	0.2000	16.75	52.61	Pipe Channel,						
					24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'						
					n= 0.025 Corrugated metal						
1.3	556	0.0500	7.10	42.58	Channel Flow,						
					Area= 6.0 sf Perim= 11.7' r= 0.51'						
					n= 0.030 Earth, grassed & winding						
1.7	572	0.0200	5.76	172.95	Channel Flow,						
					Area= 30.0 sf Perim= 26.1' r= 1.15'						
					n= 0.040 Winding stream, pools & shoals						
10.1	3,060	Total									



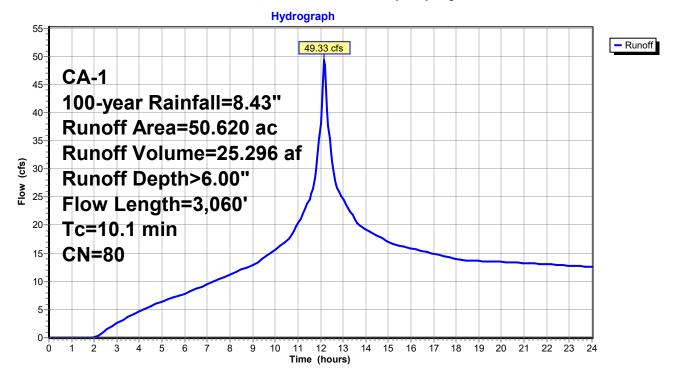
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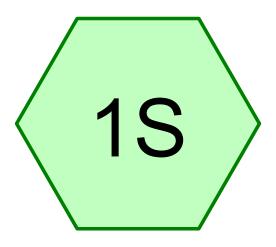
Summary for Subcatchment 1S: WS 8 - pre project

Runoff = 49.33 cfs @ 12.17 hrs, Volume= 25.296 af, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

Area	(ac) C	N Desc	cription							
	0.490 98 Paved parking, HSG C									
	26.560 79 Pasture/grassland/range, Fair, HSG C									
	5.620 84 Pasture/grassland/range, Fair, HSG D									
_	13.820 80 Pasture/grassland/range, Good, HSG D									
-	4.130 77 Woods, Good, HSG D									
	50.620 80 Weighted Average 50.130 99.03% Pervious Area									
	490		% Impervi							
0.	430	0.51	70 IIIIpei vii	ous Alea						
Tc	Length	Slope	Velocity	Capacity	Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•					
4.0	100	0.1400	0.42		Sheet Flow,					
					Range n= 0.130 P2= 3.21"					
0.5	173	0.1500	6.24		Shallow Concentrated Flow,					
					Unpaved Kv= 16.1 fps					
0.3	171	0.2900	8.67		Shallow Concentrated Flow,					
4.0	0.40	0.0400	44.54	07.00	Unpaved Kv= 16.1 fps					
1.0	840	0.2100	14.54	87.26	Channel Flow, Area= 6.0 sf Perim= 11.7' r= 0.51'					
					n= 0.030 Earth, grassed & winding					
1.3	598	0.0600	7.77	46.64						
1.0	000	0.0000		40.04	Area= 6.0 sf Perim= 11.7' r= 0.51'					
					n= 0.030 Earth, grassed & winding					
0.0	50	0.2000	16.75	52.61						
					24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'					
					n= 0.025 Corrugated metal					
1.3	556	0.0500	7.10	42.58	•					
					Area= 6.0 sf Perim= 11.7' r= 0.51'					
4 -	53 0	0.0000	- -	470.05	n= 0.030 Earth, grassed & winding					
1.7	572	0.0200	5.76	172.95	Channel Flow,					
					Area= 30.0 sf Perim= 26.1' r= 1.15'					
40.4	2.000	Total			n= 0.040 Winding stream, pools & shoals					
10.1	3,060	Total								





WS 8 - post project







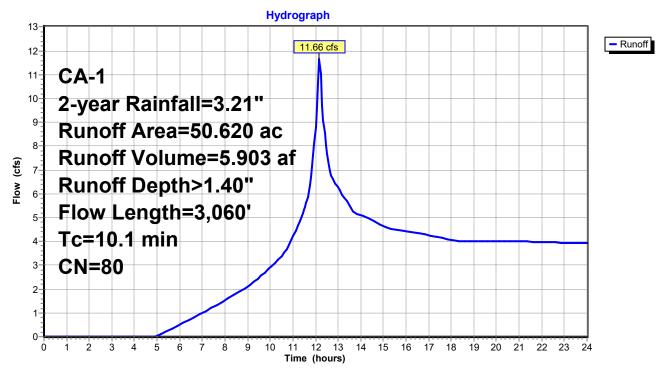


Summary for Subcatchment 1S: WS 8 - post project

Runoff = 11.66 cfs @ 12.17 hrs, Volume= 5.903 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 2-year Rainfall=3.21"

	Area	(ac) C	N Desc	cription							
	0.	490 9	8 Pave	ed parking,	, HSG C						
*				yard, Goo							
	26.560 79 Pasture/grassland/range, Fair, HSG C										
	5.620 80 Pasture/grassland/range, Good, HSG D										
	3.330 80 Pasture/grassland/range, Good, HSG D										
	4.130 77 Woods, Good, HSG D										
				ghted Aver							
		130		3% Pervio							
	0.	490	0.97	% Impervi	ous Area						
	Тс	Length	Slope	Velocity	Capacity	Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Boompton					
	4.0	100	0.1400	0.42	(0.0)	Sheet Flow,					
		.00	000	0.12		Range n= 0.130 P2= 3.21"					
	0.5	173	0.1500	6.24		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	0.3	171	0.2900	8.67		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	1.0	840	0.2100	14.54	87.26						
						Area= 6.0 sf Perim= 11.7' r= 0.51'					
	4.0	500	0.0000	-	10.04	n= 0.030 Earth, grassed & winding					
	1.3	598	0.0600	7.77	46.64	•					
						Area= 6.0 sf Perim= 11.7' r= 0.51'					
	0.0	50	0.2000	16.75	52.61	n= 0.030 Earth, grassed & winding Pipe Channel.					
	0.0	30	0.2000	10.73	32.01	24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'					
						n= 0.025 Corrugated metal					
	1.3	556	0.0500	7.10	42.58	Channel Flow,					
			0.000			Area= 6.0 sf Perim= 11.7' r= 0.51'					
						n= 0.030 Earth, grassed & winding					
	1.7	572	0.0200	5.76	172.95	Channel Flow,					
						Area= 30.0 sf Perim= 26.1' r= 1.15'					
						n= 0.040 Winding stream, pools & shoals					
	10.1	3,060	Total								

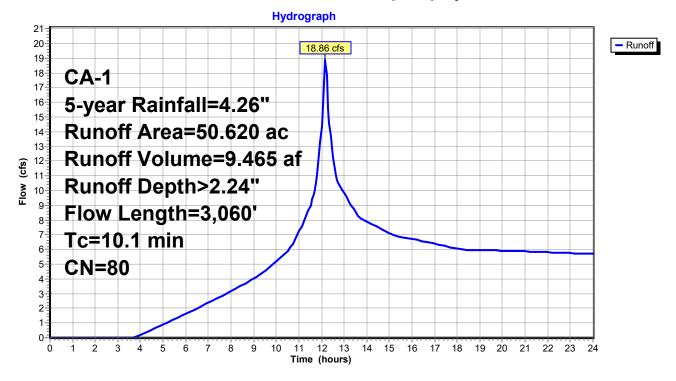


Summary for Subcatchment 1S: WS 8 - post project

Runoff = 18.86 cfs @ 12.17 hrs, Volume= 9.465 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 5-year Rainfall=4.26"

	Area	(ac) C	N Desc	cription						
	0.490 98 Paved parking, HSG C									
*	10.490 81 Vineyard, Good, HSG D									
	26.560 79 Pasture/grassland/range, Fair, HSG C 5.620 80 Pasture/grassland/range, Good, HSG D									
	3.330 80 Pasture/grassland/range, Good, HSG D									
_	4.130 77 Woods, Good, HSG D 50.620 80 Weighted Average									
		620 8 130		gnied Aver 3% Pervio						
		490		% Impervi						
	0.	430	0.31	70 IIIIpei vii	Jus Alea					
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	4.0	100	0.1400	0.42	, ,	Sheet Flow,				
						Range n= 0.130 P2= 3.21"				
	0.5	173	0.1500	6.24		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	0.3	171	0.2900	8.67		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				
	1.0	840	0.2100	14.54	87.26	•				
						Area= 6.0 sf Perim= 11.7' r= 0.51'				
	1.3	598	0.0600	7.77	46.64	n= 0.030 Earth, grassed & winding Channel Flow,				
	1.3	590	0.0000	1.11	40.04	Area= 6.0 sf Perim= 11.7' r= 0.51'				
						n= 0.030 Earth, grassed & winding				
	0.0	50	0.2000	16.75	52.61					
	0.0		0.2000		02.0.	24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'				
						n= 0.025 Corrugated metal				
	1.3	556	0.0500	7.10	42.58	Channel Flow,				
						Area= 6.0 sf Perim= 11.7' r= 0.51'				
						n= 0.030 Earth, grassed & winding				
	1.7	572	0.0200	5.76	172.95	Channel Flow,				
						Area= 30.0 sf Perim= 26.1' r= 1.15'				
	10.1	0.000				n= 0.040 Winding stream, pools & shoals				
	10.1	3,060	Total							

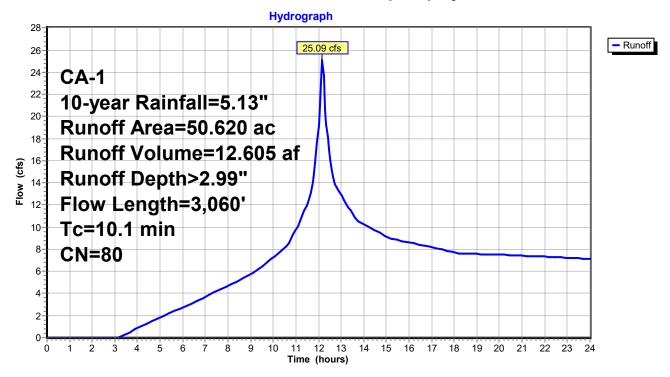


Summary for Subcatchment 1S: WS 8 - post project

Runoff = 25.09 cfs @ 12.17 hrs, Volume= 12.605 af, Depth> 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 10-year Rainfall=5.13"

Area	(ac) C	N Des	cription								
			ed parking								
	10.490 81 Vineyard, Good, HSG D										
	26.560 79 Pasture/grassland/range, Fair, HSG C										
	5.620 80 Pasture/grassland/range, Good, HSG D										
	3.330 80 Pasture/grassland/range, Good, HSG D										
	4.130 77 Woods, Good, HSG D 50.620 80 Weighted Average										
	0.620 c 0.130		gnied Aver 3% Pervio								
	.130		3% Pervio % Impervi								
U	.430	0.51	70 IIIIpei vii	ous Alca							
Tc	Length	Slope	Velocity	Capacity	Description						
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
4.0	100	0.1400	0.42	, ,	Sheet Flow,						
					Range n= 0.130 P2= 3.21"						
0.5	173	0.1500	6.24		Shallow Concentrated Flow,						
					Unpaved Kv= 16.1 fps						
0.3	171	0.2900	8.67		Shallow Concentrated Flow,						
					Unpaved Kv= 16.1 fps						
1.0	840	0.2100	14.54	87.26	•						
					Area= 6.0 sf Perim= 11.7' r= 0.51'						
1.3	E00	0.0600	7.77	46.64	n= 0.030 Earth, grassed & winding						
1.3	598	0.0000	1.11	46.64	Channel Flow, Area= 6.0 sf Perim= 11.7' r= 0.51'						
					n= 0.030 Earth, grassed & winding						
0.0	50	0.2000	16.75	52.61	Pipe Channel,						
0.0	00	0.2000	10.70	02.01	24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'						
					n= 0.025 Corrugated metal						
1.3	556	0.0500	7.10	42.58	Channel Flow,						
					Area= 6.0 sf Perim= 11.7' r= 0.51'						
					n= 0.030 Earth, grassed & winding						
1.7	572	0.0200	5.76	172.95	Channel Flow,						
					Area= 30.0 sf Perim= 26.1' r= 1.15'						
					n= 0.040 Winding stream, pools & shoals						
10.1	3,060	Total									

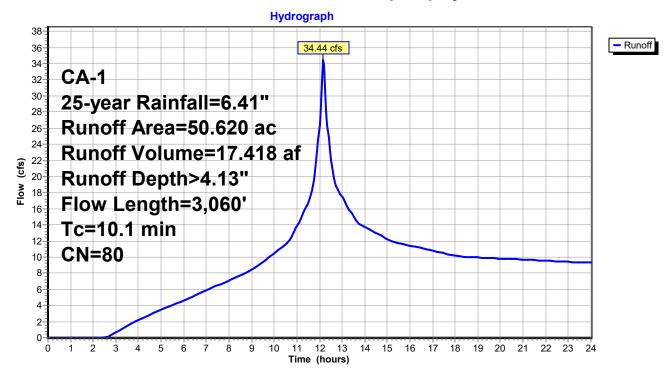


Summary for Subcatchment 1S: WS 8 - post project

Runoff = 34.44 cfs @ 12.17 hrs, Volume= 17.418 af, Depth> 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 25-year Rainfall=6.41"

0.490 98 Paved parking, HSG C										
1 0'										
* 10.490 81 Vineyard, Good, HSG D										
26.560 79 Pasture/grassland/range, Fair, HSG C										
5.620 80 Pasture/grassland/range, Good, HSG D										
3.330 80 Pasture/grassland/range, Good, HSG D										
4.130 77 Woods, Good, HSG D										
50.620 80 Weighted Average										
50.130 99.03% Pervious Area										
0.490 0.97% Impervious Area										
Tc Length Slope Velocity Capacity Description										
(min) (feet) (ft/ft) (ft/sec) (cfs)										
4.0 100 0.1400 0.42 Sheet Flow,										
Range n= 0.130 P2= 3.21"										
0.5 173 0.1500 6.24 Shallow Concentrated Flow,										
Unpaved Kv= 16.1 fps										
0.3 171 0.2900 8.67 Shallow Concentrated Flow,										
Unpaved Kv= 16.1 fps										
1.0 840 0.2100 14.54 87.26 Channel Flow ,										
Area= 6.0 sf Perim= 11.7' r= 0.5										
n= 0.030 Earth, grassed & windin	ng .									
1.3 598 0.0600 7.77 46.64 Channel Flow ,	41									
Area= 6.0 sf Perim= 11.7' r= 0.5										
n= 0.030 Earth, grassed & windin	ng									
0.0 50 0.2000 16.75 52.61 Pipe Channel , 24.0" Round Area= 3.1 sf Perim	- 6 3! r- 0 E0!									
n= 0.025 Corrugated metal	1- 0.5 1- 0.50									
1.3 556 0.0500 7.10 42.58 Channel Flow,										
Area= $6.0 \text{ sf Perim} = 11.7' \text{ r= } 0.5'$	1'									
n= 0.030 Earth, grassed & windin										
1.7 572 0.0200 5.76 172.95 Channel Flow,	·ع									
Area= 30.0 sf Perim= 26.1' r= 1.	15'									
n= 0.040 Winding stream, pools 8										
10.1 3,060 Total										



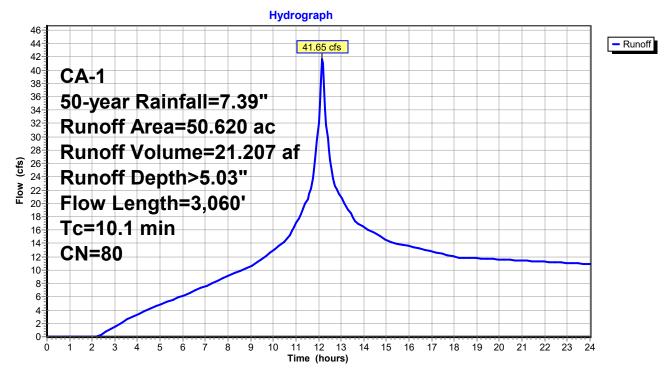
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Summary for Subcatchment 1S: WS 8 - post project

Runoff = 41.65 cfs @ 12.17 hrs, Volume= 21.207 af, Depth> 5.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 50-year Rainfall=7.39"

	Area	(ac) C	N Desc	cription							
	0.	490 9	8 Pave	ed parking,	, HSG C						
*				yard, Goo							
	26.560 79 Pasture/grassland/range, Fair, HSG C										
	5.620 80 Pasture/grassland/range, Good, HSG D										
	3.330 80 Pasture/grassland/range, Good, HSG D										
	4.130 77 Woods, Good, HSG D										
				ghted Aver							
		130		3% Pervio							
	0.	490	0.97	% Impervi	ous Area						
	Тс	Length	Slope	Velocity	Capacity	Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Boompton					
	4.0	100	0.1400	0.42	(0.0)	Sheet Flow,					
		.00	000	0.12		Range n= 0.130 P2= 3.21"					
	0.5	173	0.1500	6.24		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	0.3	171	0.2900	8.67		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	1.0	840	0.2100	14.54	87.26						
						Area= 6.0 sf Perim= 11.7' r= 0.51'					
	4.0	500	0.0000	-	10.04	n= 0.030 Earth, grassed & winding					
	1.3	598	0.0600	7.77	46.64	•					
						Area= 6.0 sf Perim= 11.7' r= 0.51'					
	0.0	50	0.2000	16.75	52.61	n= 0.030 Earth, grassed & winding Pipe Channel.					
	0.0	30	0.2000	10.73	32.01	24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'					
						n= 0.025 Corrugated metal					
	1.3	556	0.0500	7.10	42.58	Channel Flow,					
			0.000			Area= 6.0 sf Perim= 11.7' r= 0.51'					
						n= 0.030 Earth, grassed & winding					
	1.7	572	0.0200	5.76	172.95	Channel Flow,					
						Area= 30.0 sf Perim= 26.1' r= 1.15'					
						n= 0.040 Winding stream, pools & shoals					
	10.1	3,060	Total								

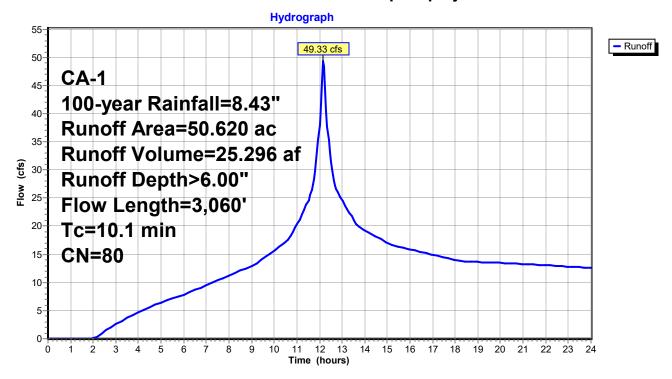


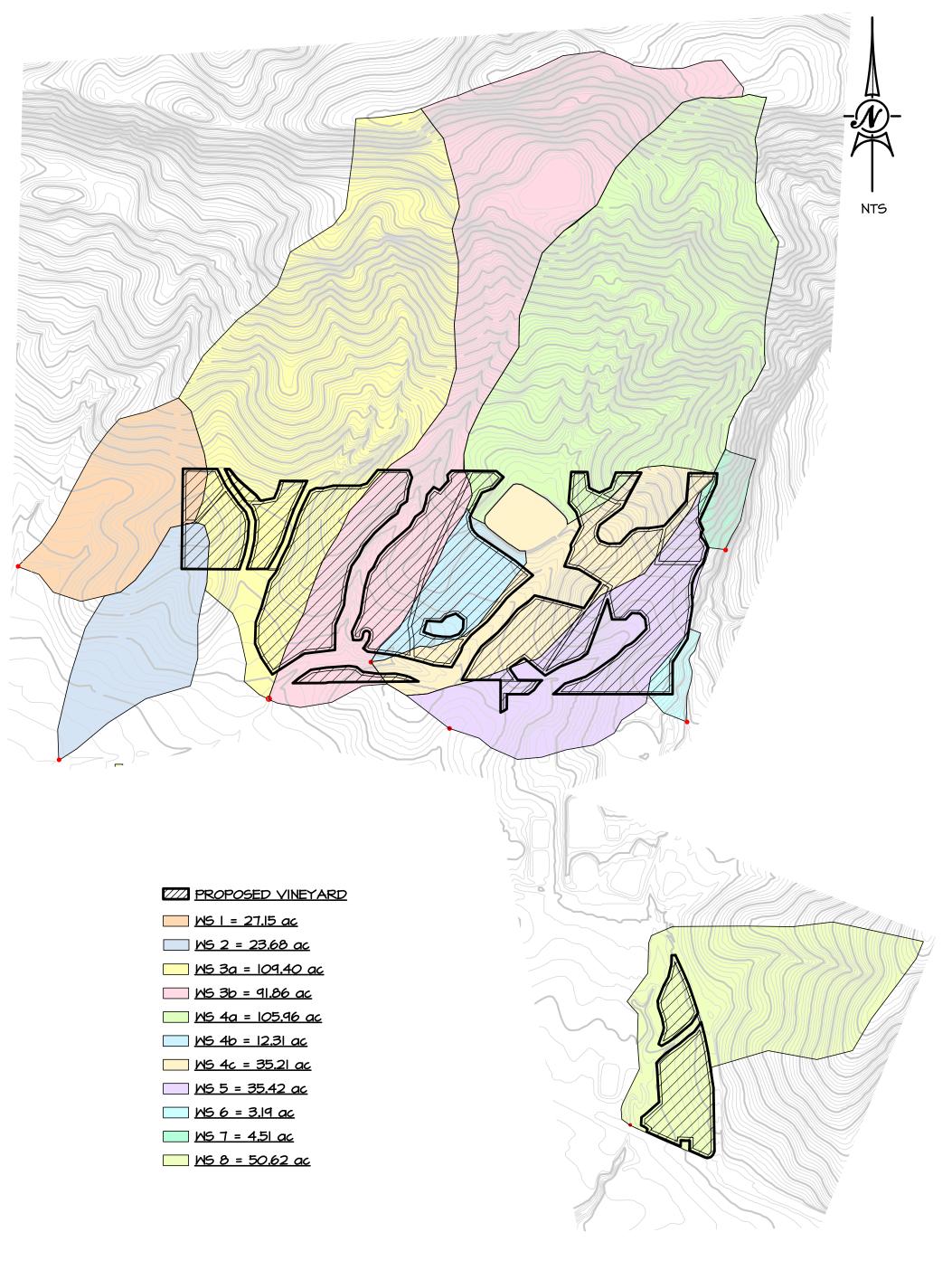
Summary for Subcatchment 1S: WS 8 - post project

Runoff = 49.33 cfs @ 12.17 hrs, Volume= 25.296 af, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs CA-1 100-year Rainfall=8.43"

Area	a (ac) C	N Desc	cription			
0.490		98 Pave	8 Paved parking, HSG C			
			yard, Goo			
26	6.560	79 Past	ure/grassl	and/range,	Fair, HSG C	
5.620 80 Pasture/grassland/range, Good, HSG D						
	3.330 80 Pasture/grassland/range, Good, HSG D					
4.130 77 Woods, Good, HSG D						
50.620 80 Weighted Average						
50.130 99.03% Pervious Area						
0.490 0.97% Impervious Area						
То	Longth	Clone	Volocity	Conneity	Description	
To (min)	-	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
4.0		0.1400	0.42	(015)	Sheet Flow,	
4.0	100	0.1400	0.42		Range n= 0.130 P2= 3.21"	
0.5	173	0.1500	6.24		Shallow Concentrated Flow,	
0.5	173	0.1300	0.24		Unpaved Kv= 16.1 fps	
0.3	171	0.2900	8.67		Shallow Concentrated Flow,	
0.0	17.1	0.2000	0.07		Unpaved Kv= 16.1 fps	
1.0	840	0.2100	14.54	87.26		
					Area= 6.0 sf Perim= 11.7' r= 0.51'	
					n= 0.030 Earth, grassed & winding	
1.3	598	0.0600	7.77	46.64		
					Area= 6.0 sf Perim= 11.7' r= 0.51'	
					n= 0.030 Earth, grassed & winding	
0.0	50	0.2000	16.75	52.61	Pipe Channel,	
					24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50'	
					n= 0.025 Corrugated metal	
1.3	556	0.0500	7.10	42.58	Channel Flow,	
					Area= 6.0 sf Perim= 11.7' r= 0.51'	
					n= 0.030 Earth, grassed & winding	
1.7	572	0.0200	5.76	172.95	Channel Flow,	
					Area= 30.0 sf Perim= 26.1' r= 1.15'	
					n= 0.040 Winding stream, pools & shoals	
10.1	3,060	Total				

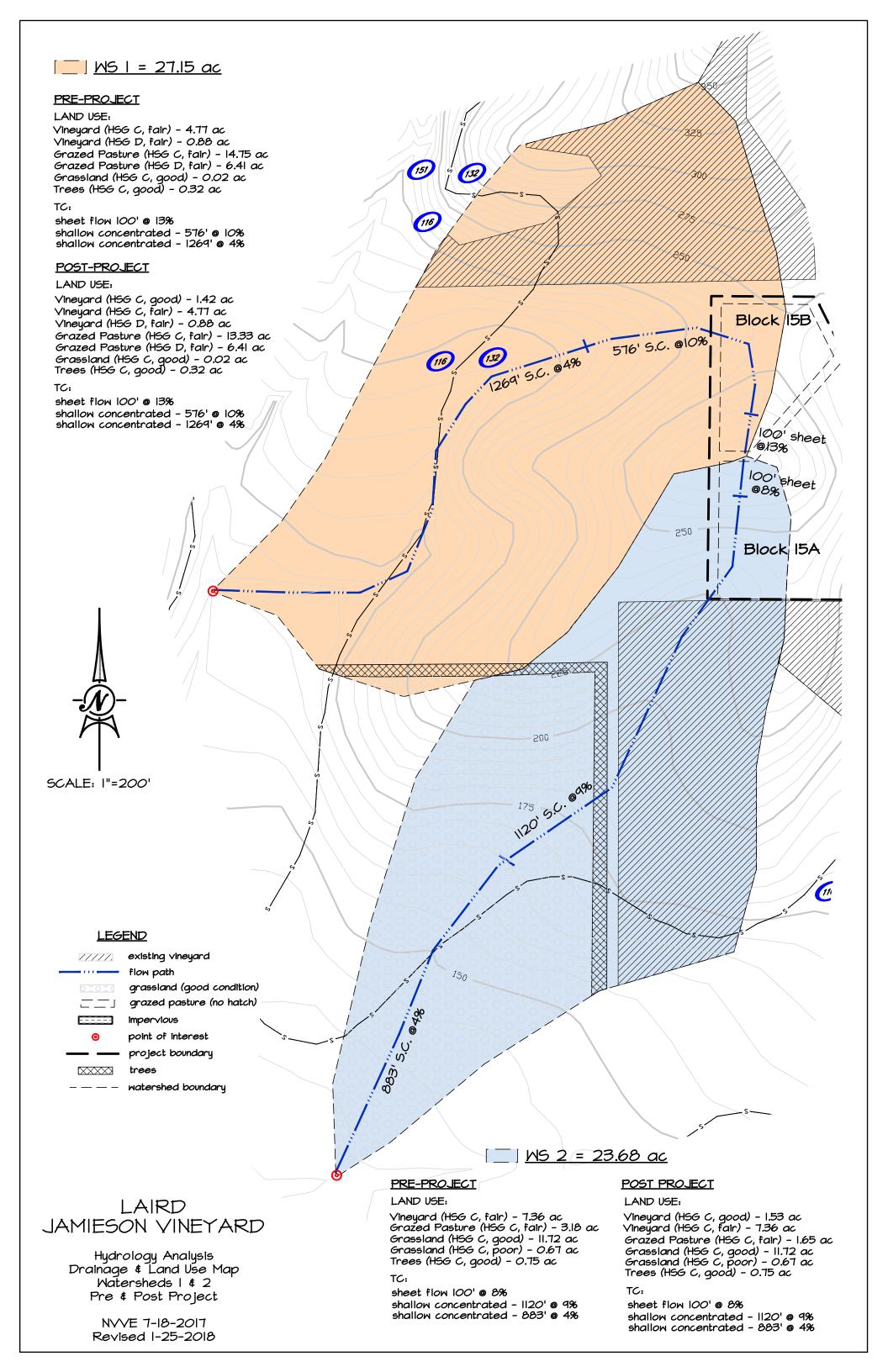


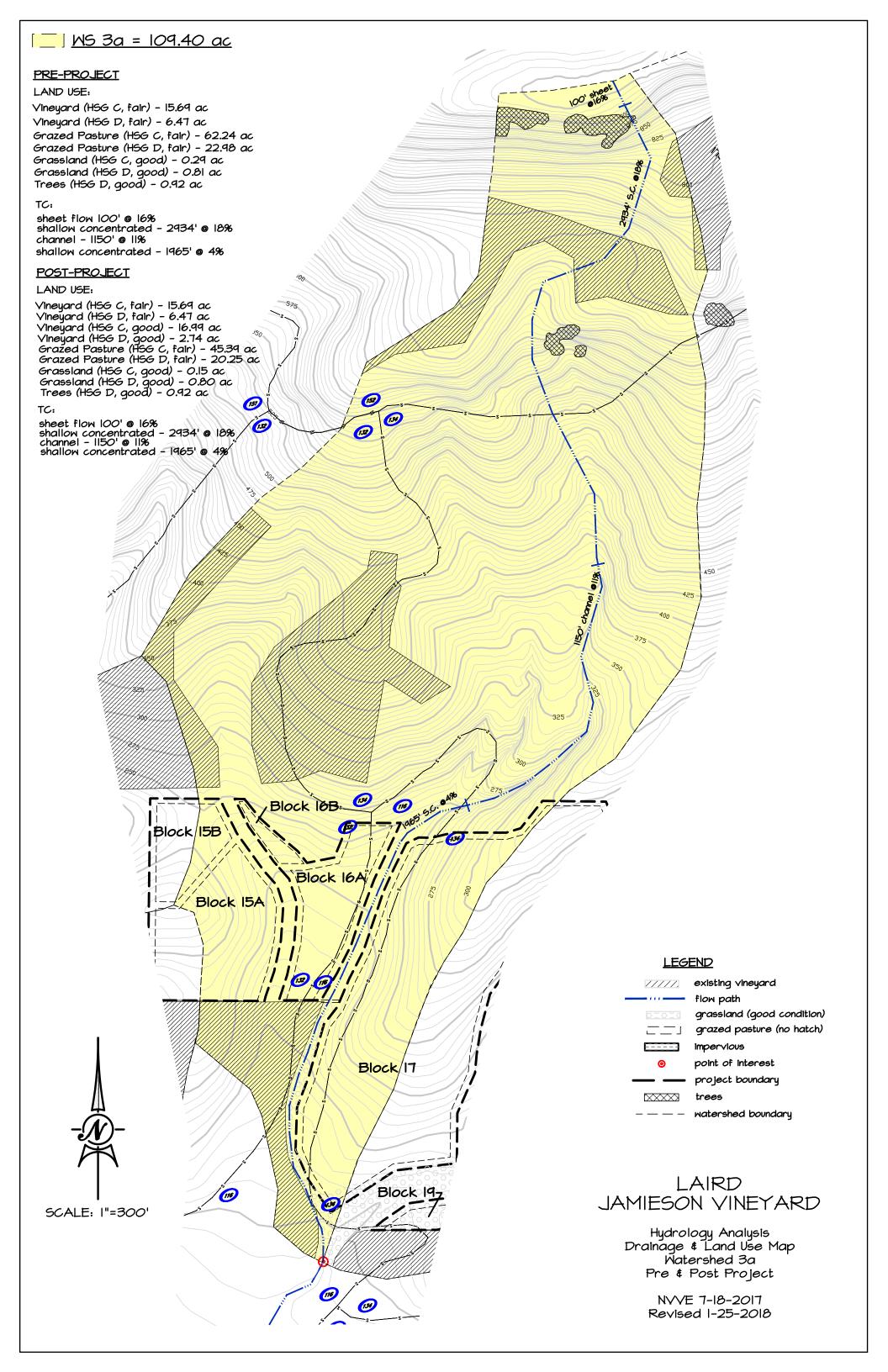


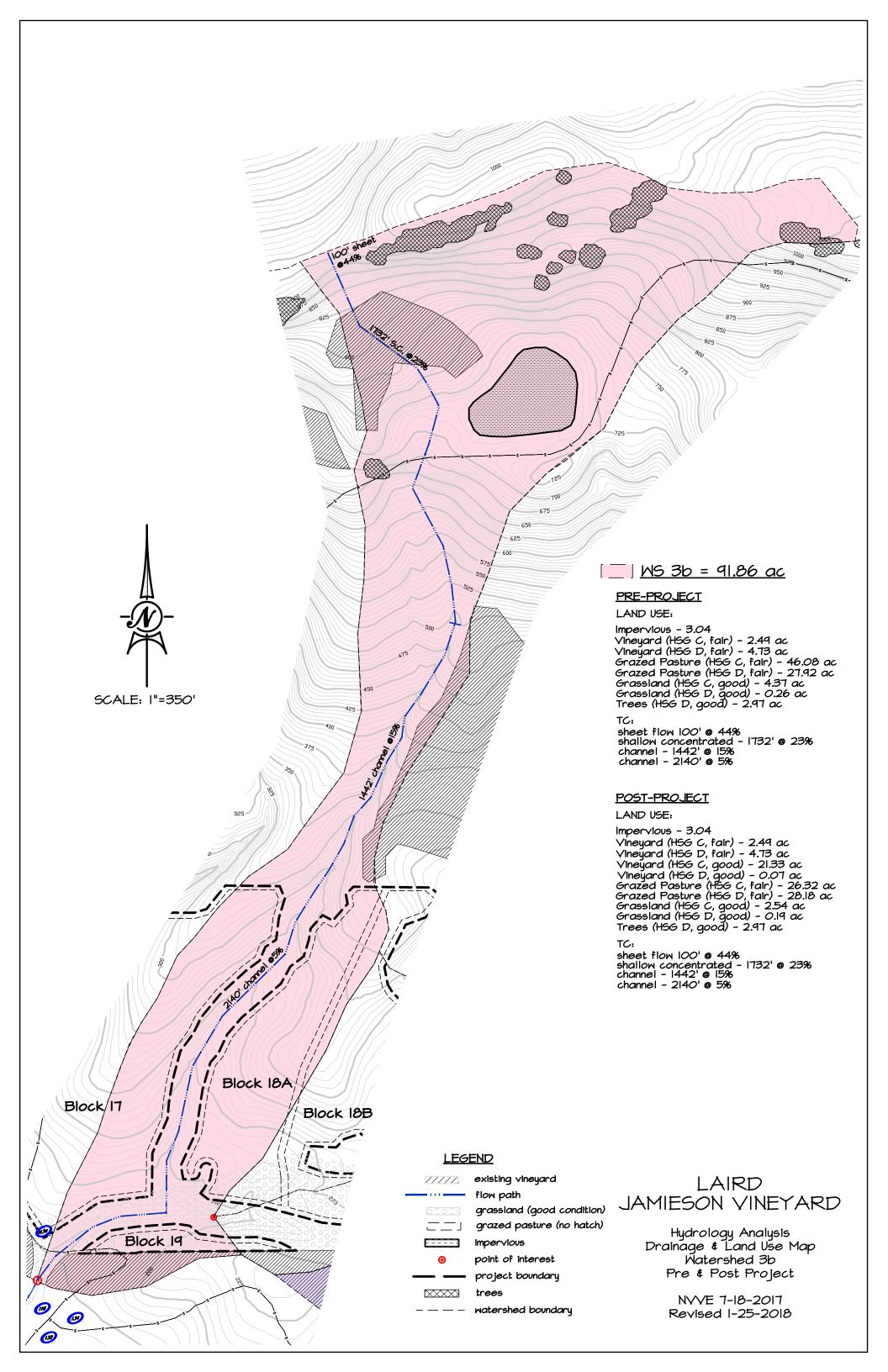
LAIRD JAMIESON VINEYARD

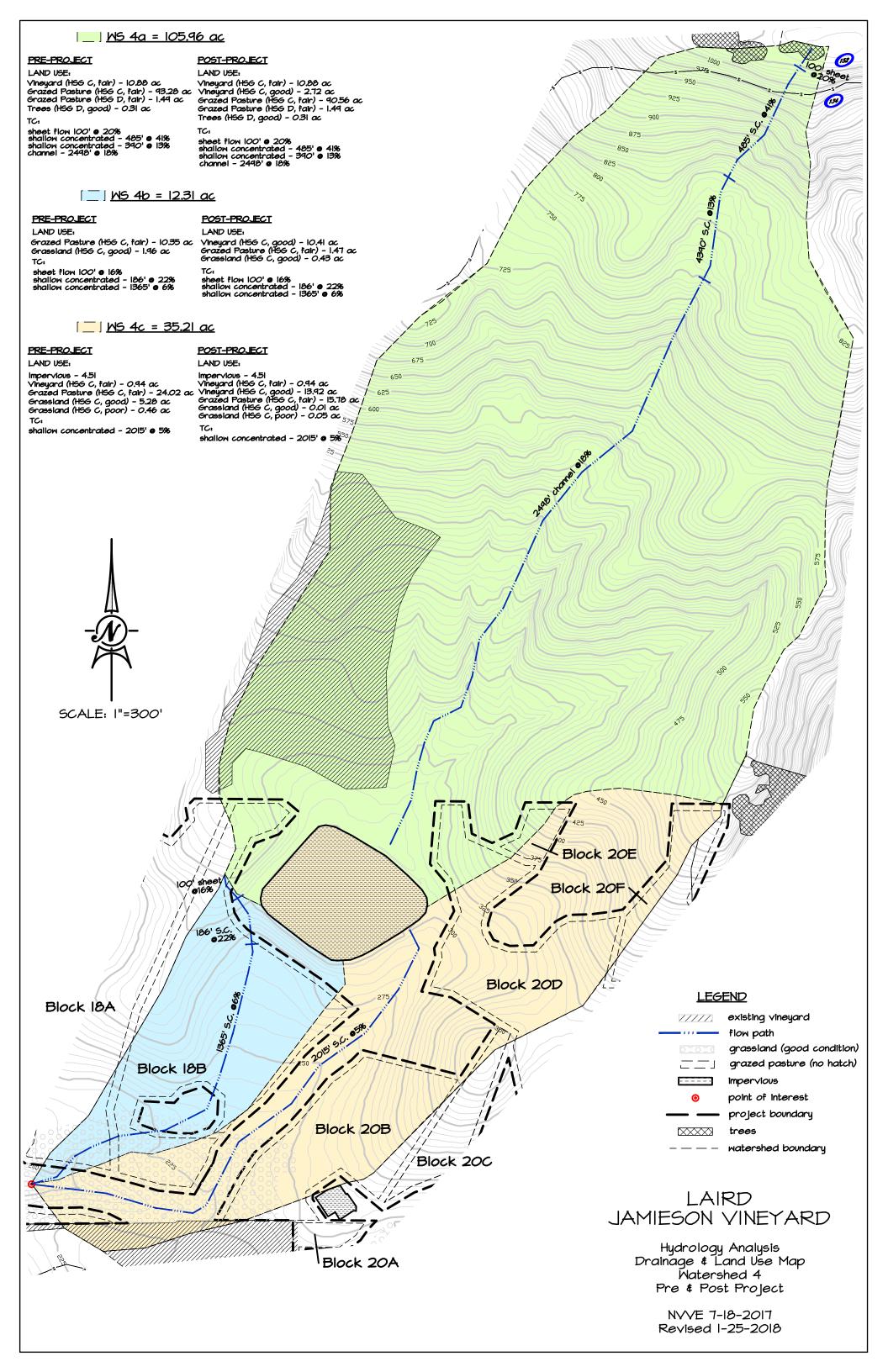
Hydrology Analysis Matershed Layout

NVVE 1-25-2018









MS 7 = 4.51 acPOST-PROJECT PRE-PROJECT LAND USE: LAND USE: Grazed Pasture (HSG C, fair) - 2.47 ac Vineyard (HSG C, good) - 0.45 ac Trees (HSG C, good) - 2.04 ac Grazed Pasture (HSG C, fair) - 2.02 ac Trees (HSG C, good) - 2.04 ac Trees (HSG C, good) - 2.04 ac TC: sheet flow 100' @ 38% shallow concentrated - 171' @ 60% sheet flow 100' @ 38% shallow concentrated - 171' @ 60% channel - 524' @ 7% channel - 524' @ 7% Block 20F 134 (132) SCALE: 1"=300" Block 200 Block 20B Block 18B Block 19 Block 20D Block 20A MS 6 = 3.19 acPRE-PROJECT POST-PROJECT LAND USE: LAND USE: Grazed Pasture (HSG C, fair) - 1.84 ac Vineyard (HSG C, good) - 1.03 ac Grassland (HSG C, poor) - 0.49 ac Grazed Pasture (HSG C, fair) - 0.81 ac Grassland (HSG C, poor) - 0.49 ac Grassland (HSG C, poor) - 0.49 ac Trees (HSG C, good) - 0.86 ac Trees (HSG C, good) - 0.86 ac TC: sheet flow 100' @ 12% shallow concentrated - 207' @ 26% channel - 211' @ 3% MS 5 = 35.42 acsheet flow 100' @ 12% shallow concentrated - 207' @ 26% channel - 211' @ 3% PRE-PROJECT POST-PROJECT LAND USE: LAND USE: Impervious - 3.58 Impervious - 3.58 Vineyard (HSG C, fair) - 3.95 ac Vineyard (HSG C, fair) - 3.95 ac Grazed Pasture (HSG C, fair) - 20.01 ac Vineyard (HSG C, good) - 16.95 ac Grazed Pasture (HSG C, fair) - 3.92 ac Grassland (HSG C, good) - 5.98 ac Grassland (HSG C, good) - 5.99 ac Grassland (HSG C, poor) - 1.89 ac Grassland (HSG C, poor) - 1.04 ac sheet flow 100' @ 16% shallow concentrated - 661 @ 21% shallow concentrated - 648 @ 9% sheet flow 100' @ 16% channel - 1455' @ 6% shallow concentrated - 661' @ 21% shallow concentrated - 648' @ 9% channel - 1455' @ 6% **LEGEND** //// existing vineyard LAIRD flow path

grassland (good condition) grazed pasture (no hatch)

impervious

— — — watershed boundary

trees

point of interest

project boundary

JAMIESON VINEYARD

Hydrology Analysis Drainage & Land Use Map Watersheds 5 thru 7 Pre & Post Project

> NVVE 7-18-2017 Revised 1-25-2018

