Appendix E

Hydrology Study

HYDROLOGY STUDY

FOR

West Village

Vesting Tentative Tract No. 71546

Calabasas, CA

June 19, 2017

Prepared by:
United Civil, Inc.
30141 Agoura Road, Suite 215
Agoura Hills, CA 91301-4311
Tel: (818) 707-8648
Fax: (818) 707-864

TABLE OF CONTENTS

1. Introduction 1
1.1 – Project Description 1
1.2 – Study Objectives 1
2. Objectives 1
3. Regularity Jurisdiction 1
4. Methodology 1
5. Hydrology Analysis 1
5.1. Hydrologic Data 1
5.2. Existing Drainage 1
5.3. Proposed Drainage 1
6. Stormwater Treatment (LID) 2
7. References 2

TABLES

Table 1 - Hydrology Summary (Existing Condition)
Table 2 - Debris Production Summary (Existing Condition)
Table 3 - Hydrology Summary (Proposed Condition)
Table 4 - Debris Production Summary (Proposed Condition)
Table 5 - Outflow Comparison (Existing vs. Proposed)
Table 6 - Catch Basin Flow Summary
Table 7 - LID Calculation Summary (Proposed Condition)
Table 8 - LID Treatment Device Sizing

APPENDICES

Appendix A - Site Map and Hydrology Data
Appendix B – Hydrology Calculations (Existing Condition)
Appendix C – Hydrology Calculations (Proposed Condition)
Appendix D – LID Calculations

Appendix E – Existing Storm Drain Capacity Verification

MAPS

MAP 1. Existing Hydrology

MAP 2. Proposed Hydrology

1. Project Description

The project site is an undeveloped lot of approximately 77 acres located east of Las Virgenes Road and south of Agoura Road in the City of Calabasas. The property consists of a northern descending hillside, tributary canyon to Las Virgenes Creek, and a portion of the southern descending slope north of the tributary canyon. Most of the site consists of the northern descending slope. The western boundary of the property is Las Virgenes Road in the northern portion and in the southern portion is the adjacent Tract 53534. The northern, eastern, and southern properties are presently undeveloped.

2. Objectives

The purpose of this study is to provide flow rate, debris productions, and stormwater management volume for the design of storm drain, flood control, and Low Impact Development (LID) management facilities. The study also evaluated the capacity of the existing storm drain, debris basins, and stormwater treatment device to ensure adequate capacity for the proposed development.

3. Regularity Jurisdiction

The area of the study site is under the jurisdiction of the Los Angeles County Department of Public Works. All values are calculated in accordance with the Los Angeles County Department of Public Works standards [1] [2] [3].

4. Methodology

The hydrology methodology used is the new modified rational method by the Los Angeles County Department of Public Works (LACDPW), Land Development Division. Time of concentration (Tc) is calculated using hydrologic calculator (HydroCalc) of LACDPW [4].

5. Hydrology Analysis

5.1 Hydrologic Data

The project is located in the Calabasas quadrant of Isohyetal Map 1-H1.25. The 24-hour 50-year storm is 7.5 inch and the soil classification is Type 034. The fire factor is 0.83. The debris factor is 1.6, and debris production zone is zone 6. The 24-hour 85th percentile rainfall is 1.0 inch [5] (Appendix A).

5.2 Existing Drainage

The site sits in a natural drainage valley and is the collection point for many smaller natural mountain drainage channels from the northern, eastern and southern mountains.

There are two existing onsite debris basins built as part of the Tract 53534 development. The larger of the two basins (Basin “A”) located at the northeast of Tract 53534 development, with a capacity of 10,776 cubic yards, which collects the majority of the water and debris flowing out of the natural mountain drainage. Storm flow is discharged from the basin through a 96’’ RCP which directs flow westerly and transitions into an existing box culvert under Las Virgenes Road and ultimately outlets into Las Virgenes Creek.

The smaller of the two basins (Basin “”B”) is located to the east of Tract 53534 and has a capacity of 1,527 cubic yards. This basin collects flow from the hillside area south and east of the basin. The collected runoff is discharged via a 48’’ RCP and conveyed under Las Virgenes Road to Las Virgenes Creek.

The existing hydrology calculations are provided in Appendix B and summarized in Table 1 and Table 2.

5.3 Proposed Drainage

In the proposed condition (Tentative Site Plan), a multifamily residential complex of approximately 9.5 ac with 180 units is proposed along with the Agoura Road extended easterly to the end of the complex. At the northwest boundary of the property, a commercial complex is proposed. Stormwater runoff from the proposed pads and streets will surface flow down the streets, be collected by catch basins or inlets, and conveyed to the proposed storm drain system. The proposed storm drain system directs upper portion of the flow westerly and ties with the existing 96’’ RCP under the Las Virgenes Road. Flow from the lower portion of site is routed through the proposed storm drain westerly along the extended Agoura Road, and then southerly in the pipes along the Las Virgenes Road. This flow joins the existing 5’ x 5.5’ culvert box downstream of the existing 96’’ RCP. The combined flow eventually discharges into the Las Virgenes Creek. The proposed hydrology calculations are provided in Appendix C and summarized in Table 3.

The existing larger debris basin (Basin “A”) will be removed and essentially be relocated upstream to the eastern property boundary of the proposed site. This debris basin will collect the runoff from tributary areas north-eastern to south-eastern of the basin. Flow from the basin is outlet via a 60’’ RCP to the proposed storm drain system. The basin has a design capacity of 14,376 cubic yards, which is larger than the debris production of 9,377 cubic yards (Table 4).

A new smaller debris basin is proposed to collect runoff from the northern and northwestern hillside. Stormwater runoff from this area will drain to a V-ditch and be directed into the basin. Flow from the basin is outlet via two 36'' RCP to the proposed storm drain system and joins the flow from Basin "A". This basin, with a design capacity of 504 cubic yards, is adequate for the debris production of 200 cubic yards (Table 4).

The natural hillside tributary area to the southeast of the proposed residential pad will be converted to manufactured grades. Runoff from the slopes will be captured by terrace drain and conveyed through down drain into the proposed storm drain system.

The existing debris basin (Basin "B") will remain to collect hillside runoff from the southern tributary area diverted from the manufactured grades through a V-ditch. The basin, with a capacity of 1,527 yd^3, is adequate for the debris flow of 1,333 yd^3 produced (Table 4).

The proposed outflow leaving the site at four exit locations are compared with those of the existing condition (Table 5). It shows that the onsite outflow to the existing storm drain is decreased by 1.9 cfs. The offisite outflow to the Las Virgenes Road and to the existing storm drain ties with the existing condition. Overall, the total outflow is reduced by 1.9 cfs. Since the total outflow under the proposed condition is less than the existing condition, no detention is needed for the development.

The capacity of the downstream storm drain receiving the discharge from the project site is verified (Appendix E). The flow for the proposed catch basins are summarized in Table 6.

6. Stormwater Management (LID)

The Los Angeles County LID requirements for the proposed project will be satisfied as defined by the County of Los Angeles LID Manual (2014) [3]. According to the LID manual, design storm is the greater of 0.75 inch storm and the 85th percentile storm [4]. For this site, the 85th percentile storm of 1.0 inch is used. The treatment flows (Q_{pm}) and volumes (V_m) calculations are provide in Appendix D and summarized in Table 7.

Per the Geotechnical Investigation, the soil property of the site is not applicable for onsite retention. So infiltration is not feasible for stormwater treatment. Therefore, Stormwater Planter (VEG-2) [3] is considered. The first flush of the stormwater runoff collected by the catch basins with be treated via a modular wetland basin before being discharged to the storm drain pipes. The excess flow will bypass the treatment device and flows into the storm drain pipes directly. The LID devices are sized based on the manufacture sizing table (Table 8).

7. References

1. Hydrology Manual, County of Los Angeles Department of Public Works, 2006
2. Sedimentation Manual, 2nd edition, Los Angeles County Department of Public Works, March 2006
3. Low Impact Development Standards Manual, County of Los Angeles Department of Public Works, 2014
4. Hydrologic Calculator, LACDPW, http://dpw.lacounty.gov/wrd/publication/.
5. 85th percentile 24-hour rainfall depth, http://dpw.lacounty.gov/wrd/hydrologygis/

Table 1 – Hydrology Summary (Existing Condition)

Tributary Area	Area	Length	Elevation		Slope	24-hr Isohyet	Soil Type	Frequency	Fire Factor	Impervious	Tc	Q_{50}	Q_{50B}	Q_{50BB}
	(ac)	(ft)	High (ft)	Low (ft)		(inch)		(yr)			(min)	(cfs)	(cfs)	(cfs)
1A	96.75	2804	1460	918	0.193	7.5	34	50	0.83	0.01	11	252.50	267.70	428.32
2B	22.72	1958	1340	918	0.216	7.5	34	50	0.83	0.01	8	70.40	74.20	118.72
3AB														
4A	12.51	1309	1440	890	0.420	7.5	34	50	0.83	0.01	6	45.40	47.46	75.94
5B	15.98	1394	1140	890	0.179	7.5	34	50	0.83	0.01	7	53.30	59.90	95.84
6AB														
7A	7.51	1311	1300	833	0.356	7.5	34	50	0.83	0.01	6	27.30	28.50	45.60
8B	7.03	1043	1198	833	0.350	7.5	34	50	0.83	0.0.1	5	28.15	29.30	46.88
9AB														
10A	18.17	2264	1440	816	0.276	7.5	34	50	0.83	0.01	9	52.84	55.80	89.28
11B	18.91	1655	1160	816	0.208	7.5	34	50	0.83	0.01	8	58.60	61.70	98.72
12AB														
13A	9.40	1379	1084	780	0.220	7.5	34	50	0.83	0.04	7	31.36	32.91	52.66
14B	7.80	1149	1120	780	0.296	7.5	34	50	0.83	0.04	5	31.24	32.50	52.00
15AB														
16A	0.21	278	820	800	0.072	7.5	34	50	0.83	0.10	5	0.84	0.88	0.88
17AB														
18A	18.77	1544	1182	814	0.238	7.5	34	50	0.83	0.05	7	62.67	65.76	105.22
19B	2.63	540	920	780	0.259	7.5	34	50	0.83	0.10	5	10.54	10.97	17.55

Table 2 – Debris Production Summary (Existing Condition)

Tributary Area	Area	DP Area	DP Area	Impervious	DPA Zone	DPR	DPR	DPV	Node DPV
	(ac)	(ft^2)	(ac)			(yd^3/SM)	(yd^3/ac)	(yd^3)	(yd^3)
1A	96.75	4214371	96.75	0.01	6	35000	55	5291	
2B	22.72	989650	22.72	0.01	6	35000	55	1242	
3AB									6533
4A	12.51	544749	12.51	0.01	6	35000	55	684	
5B	15.98	696158	15.98	0.01	6	35000	55	874	
6AB									8091
7A	7.51	327160	7.51	0.01	6	35000	55	411	
8B	7.03	306084	7.03	0.0.1	6	35000	55	384	
9AB									8886
10A	18.17	792333	18.19	0.01	6	35000	55	994	
11B	18.91	810763	18.61	0.01	6	35000	55	1018	
12AB									10898
13A	9.40	347919	7.99	0.04	6	35000	55	425	
14B	7.80	269912	6.20	0.04	6	35000	55	339	
15AB									11662
16A	0.21	0	0.00	0.10	6	35000	55	0	
17AB									11662
18A	18.53	772062	17.72	0.05	6	35000	55	982	
19B	2.63	85578	1.96	0.10	6	35000	55	107	

Table 3 – Hydrology Summary (Proposed Condition)

Tributary Area	Area	Length	Elevation		Slope	24-hr Isohyet	Soil Type	Frequency	Fire Factor	Impervious	Tc	Q_{50}	Q_{50B}	Q_{50BB}
	(ac)	(ft)	High (ft)	Low (ft)		(inch)		(yr)			(min)	(cfs)	(cfs)	(cfs)
1A	96.75	2804	1460	918	0.193	7.5	34	50	0.83	0.01	11	252.5	267.7	428.3
2B	22.72	1958	1340	918	0.216	7.5	34	50	0.83	0.01	8	70.4	74.2	118.7
3AB														
4A	12.51	1309	1440	890	0.420	7.5	34	50	0.83	0.01	6	45.4	47.5	75.9
5B	15.98	1394	1140	890	0.179	7.5	34	50	0.83	0.01	7	53.3	59.9	95.8
6AB														
7A	3.37	1721	1440	845	0.346	7.5	34	50	0.83	0.02	7	11.2	11.8	-
8AB														
9A	8.41	1164	1200	845	0.305	7.5	34	50	0.83	0.10	6	30.6	31.9	-
10B	6.67	993	1198	835	0.366	7.5	34	50	0.83	0.01	5	26.7	27.8	44.5
11AB														
12A	1.53	280	840	825	0.054	7.5	34	50	0.83	0.61	5	6.2	6.4	-
13B	14.01	1493	1160	840	0.214	7.5	34	50	0.83	0.01	7	46.7	49.0	78.4
14AB														
15A	6.19	1421	1195	860	0.236	7.5	34	50	0.83	0.10	7	20.7	21.7	-
16A	1.75	346	839	838	0.004	8	34	50	0	0.58	5	7.0	-	-
17AB														
18B	0.295	200	840	836	0.020	7.5	34	50	0	0.56	5	1.2	-	-
19AB														
20B	2.07	610	1120	835	0.467	7.5	34	50	0.83	0.01	5	8.3	8.6	13.8
21B	0.33	326	835	825	0.031	7.5	34	50	0.83	0.21	5	1.3	1.4	-
22AB														

23A	1.85	333	826	825	0.004	7.5	34	50	0	0.63	5	7.4	-	-
24B	0.42	314	835	820	0.048	7.5	34	50	0.83	0.56	5	1.7	1.8	-
25AB														
26B	1.41	561	1120	845	0.490	7.5	34	50	0.83	0.01	5	5.7	5.9	9.4
27B	0.42	94	835	825	0.106	7.5	34	50	0.83	0.21	5	1.7	1.8	-
28AB														
29C	4.57	909	1037	823	0.235	7.5	34	50	0.83	0.10	5	18.3	19.1	-
30D	2.03	564	917	825	0.163	7.5	34	50	0.83	0.05	5	8.1	8.5	13.5
31CD														
32C	1.57	220	804	803	0.006	7.5	34	50	0.83	0.56	5	6.3	6.6	-
33D	0.42	325	820	800	0.062	7.5	34	50	0	0.41	5	1.7	-	-
34CD														
36A	1.69	303	801	800	0.006	7.5	34	50	0	0.67	5	6.8	-	-
37AC														
38A	0.207	278	820	800	0.072	7.5	34	50	0.83	0.1	5	0.8	0.9	-
39AC														
41E	1.01	277	800	795	0.019	7.5	34	50	0	0.41	5	4.1	-	-
42F	0.48	420	802	799	0.006	7.5	34	50	0.83	0.57	6	1.8	1.8	-
43EF														
44E	0.99	290	822	796	0.090	7.5	34	50	0.83	0.35	5	4.0	4.1	-
45F	1.21	277	795	794	0.004	7.5	34	50	0.83	0.48	5	4.9	5.1	-
46EF														
47E	0.75	268	800	780	0.075	7.5	34	50	0.83	0.56	5	3.0	3.1	-
48E	0.61	60	781	779	0.033	7.5	34	50	0.83	0.56	5	2.5	2.6	-
49G	0.55	180	792	776	0.091	7.5	34	50	0.83	0.48	5	2.2	2.3	-
50H	1.15	538	910	795	0.214	7.5	34	50	0.83	0.01	5	4.6	4.8	7.7
51I	24.38	2544	1440	810	0.248	7.5	34	50	0.83	0.02	10	67.0	70.9	113.4

Table 4 – Debris Production Summary (Proposed Condition)

Tributary Area	Area	DP Area	DPA Zone	DPR	DPR	DPV	Node DPV
	(ac)	(ac)		(yd^3/SM)	(yd^3/ac)	(yd^3)	(yd^3)
1A	96.75	96.75	6	35000	55	5291	
2B	22.72	22.72	6	35000	55	1242	
3AB							6533
4A	12.51	12.51	6	35000	55	684	
5B	15.98	15.98	6	35000	55	874	
6AB							8091
7A	3.37	2.82	6	35000	55	154	
8AB							8246
9A	8.41	0.00	6	35000	55	0	
10B	6.67	6.67	6	35000	55	365	
11AB							8611
12A	1.53	0.00	6	35000	55	0	
13B	14.01	14.01	6	35000	55	766	
14AB							9377
15A	6.19	0.00	6	35000	55	0	
16A	1.75	0.00	6	35000	55	0	
17AB							
18B	0.295	0.00	6	35000	55	0	
19AB							
20B	2.07	2.07	6	35000	55	113	
21B	0.33	0.13	6	35000	55	7	
22AB							
23A	1.85	0.00	6	35000	55	0	
24B	0.42	0.00	6	35000	55	0	
25AB							
26B	1.41	1.41	6	35000	55	77	
27B	0.42	0.05	6	35000	55	3	
28AB							
29C	4.57	0.00	6	35000	55	0	
30D	2.03	1.30	6	35000	55	71	
31CD							
32C	1.57	0.00	6	35000	55	0	
33D	0.42	0.00	6	35000	55	0	
34CD							
36A	1.69	0.00	6	35000	55	0	
37AC							
38A	0.207	0.00	6	35000	55	0	

39AC							
41E	1.01	0.00	6	35000	55	0	
42F	0.48	0.00	6	35000	55	0	
43EF							
44E	0.99	0.00	6	35000	55	0	
45F	1.21	0.00	6	35000	55	0	
46EF							
47E	0.75	0.00	6	35000	55	0	
48E	0.61	0.00	6	35000	55	0	
49G	0.55	0.00	6	35000	55	0	
50H	1.15	1.15	6	35000	55	63	
51I	24.38	24.38	6	35000	55	1333	

Table 5 – Outflow Comparison (Existing vs. Proposed)

	Existing		Proposed		Difference
	Area	Q	Area	Q	Q
	(ac)	(cfs)	(ac)	(cfs)	(cfs)
onsite tie-in with SD (north)			4.5	16.95	
onsite tie-in with SD (south)	217	572.63	207.3	553.78	
Total	217	572.63	211.8	570.73	1.9
offsite to Las Virgenes RD (north)	2.63	17.6	2.32	12.5	
offsite through Basin B to SD (south)	18.77	65.76	24.38	70.9	
Total	21.4	83.4	26.7	83.4	0
Overall	238.4	656.0	238.5	654.1	1.9

Table 6 – Catch Basin Flow Summary

CB No.	Tributary Area	Q	Total Q
1	16A	7.030	8.21
	18B	1.180	
2	23A	7.430	9.18
	24B	1.750	
3	44E 30%	1.239	1.24
4	44E 70%	2.891	2.89
5	41E 50%	2.025	2.03
6	41E 50%	2.025	3.86
	42F	1.830	
7	32C	6.560	8.25
	33D	1.690	
8	36A	6.790	6.79
9	47E 50%	1.565	1.57
10	47E 50%	1.565	1.57
11	45F 30%	1.515	1.52
12	45F 70%	3.535	3.54
13	49G 30%	0.690	0.69
14	49G 70%	1.610	1.61
15	48E	2.550	2.55

Table 7 – LID Calculation Summary (Proposed Condition)

Tributary Area	Area	Length	Elevation		Slope	85th percentile rainfall	Soil Type	Impervious	Tc	Q_{pm}	V_m
	(ac)	(ft)	High (ft)	Low (ft)		(inch)			(min)	(cfs)	(cfs)
1A	96.75	2804	1460	918	0.193	1.0	34	0.01	-	-	-
2B	22.72	1958	1340	918	0.216	1.0	34	0.01	-	-	-
3AB											
4A	12.51	1309	1440	890	0.420	1.0	34	0.01	-	-	-
5B	15.98	1394	1140	890	0.179	1.0	34	0.01	-	-	-
6AB											
7A	3.24	1721	1440	845	0.346	1.0	34	0.02	-	-	-
8AB											
9A	8.41	1164	1200	845	0.305	1.0	34	0.10	-	-	-
10B	6.67	993	1198	835	0.366	1.0	34	0.01	-	-	-
11AB											
12A	1.53	280	840	825	0.054	1.0	34	0.61	-	-	-
13B	14.01	1493	1160	840	0.214	1.0	34	0.01	-	-	-
14AB											
15A	6.19	1421	1195	860	0.236	1.0	34	0.10	-	-	-
16A	1.75	346	839	838	0.004	1.0	34	0.58	29	0.27	3567
17AB											
18B	0.295	200	840	836	0.020	1.0	34	0.56	15	0.07	587
19AB											
20B	2.07	610	1120	835	0.467	1.0	34	0.01	-	-	-
21B	0.33	326	835	825	0.031	1.0	34	0.21	-	-	-
22AB											

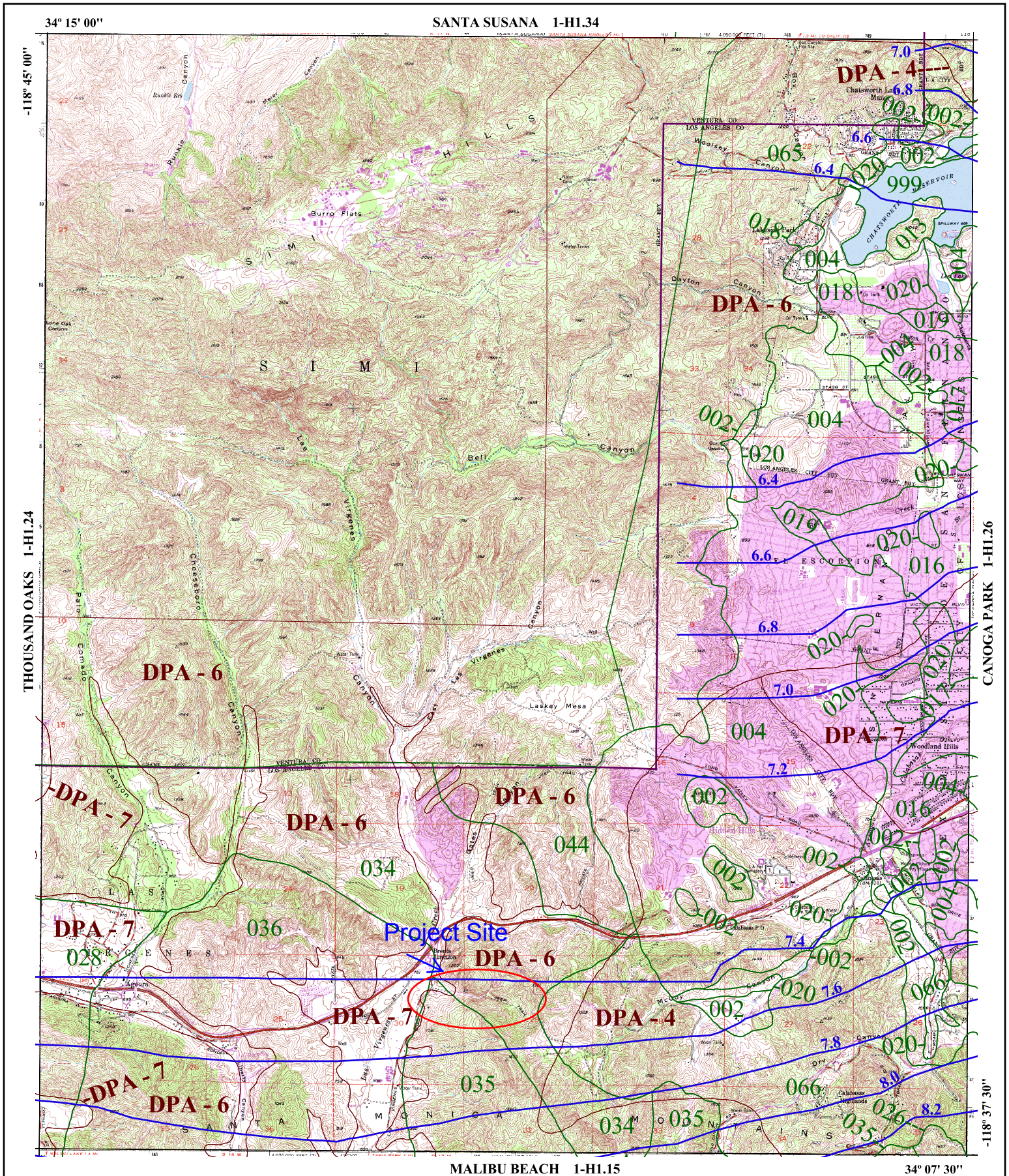
23A	1.85	333	826	825	0.004	1.0	34	0.63	27	0.32	4037
24B	0.42	314	835	820	0.048	1.0	34	0.56	17	0.09	835
25AB											
26B	1.41	561	1120	845	0.490	1.0	34	0.01	-	-	-
27B	0.42	94	835	825	0.106	1.0	34	0.21	-	-	-
28AB											
29C	4.57	909	1037	823	0.235	1.0	34	0.10	-	-	-
30D	2.03	564	917	825	0.163	1.0	34	0.05	-	-	-
31CD											
32C	1.57	220	804	803	0.006	1.0	34	0.56	20	0.29	3119
33D	0.42	325	820	800	0.062	1.0	34	0.41	19	0.07	655
34CD											
36A	1.69	303	801	800	0.006	1.0	34	0.67			
37AC									23	0.33	3884
38A	0.207	278	820	800	0.072	1.0	34	0.1			
39AC									-	-	-
41E	1.01	277	800	795	0.019	1.0	34	0.41	22	0.15	1573
42F	0.48	420	802	799	0.006	1.0	34	0.57	31	0.07	964
43EF											
44E	0.99	290	822	796	0.090	1.0	34	0.35	17	0.16	1378
45F	1.21	277	795	794	0.004	1.0	34	0.48	27	0.17	2121
46EF											
47E	0.75	268	800	780	0.075	1.0	34	0.56	14	0.17	1494
48E	0.61	60	781	779	0.033	1.0	34	0.56	6	0.23	1221
49G	0.55	180	792	776	0.091	1.0	34	0.48	11	0.14	973
50H	1.15	538	910	795	0.214	1.0	34	0.01	-	-	-
51I	24.38	2544	1440	810	0.248	1.0	34	0.02	-	-	-

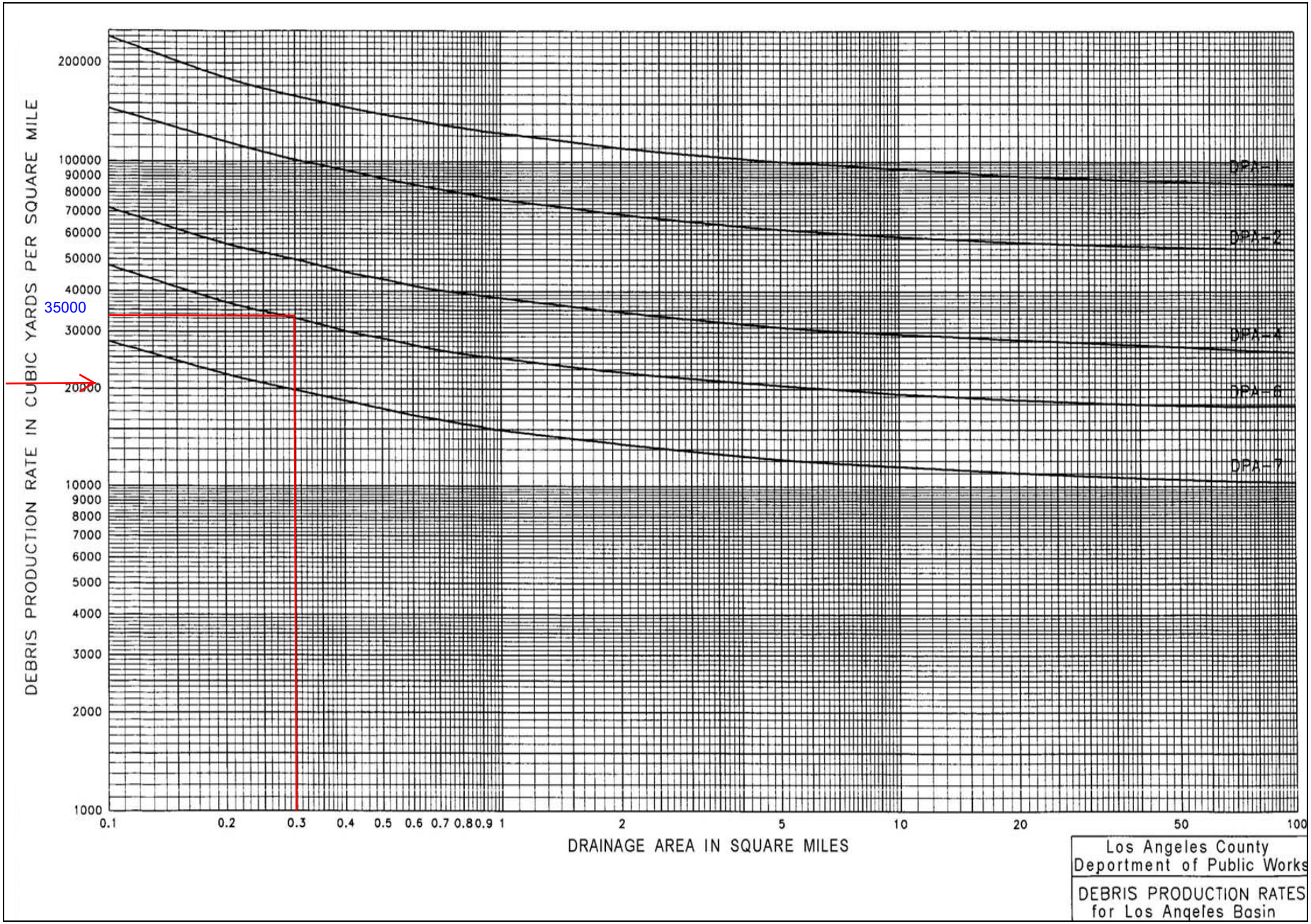
Table 8 – LID Treatment Device Sizing

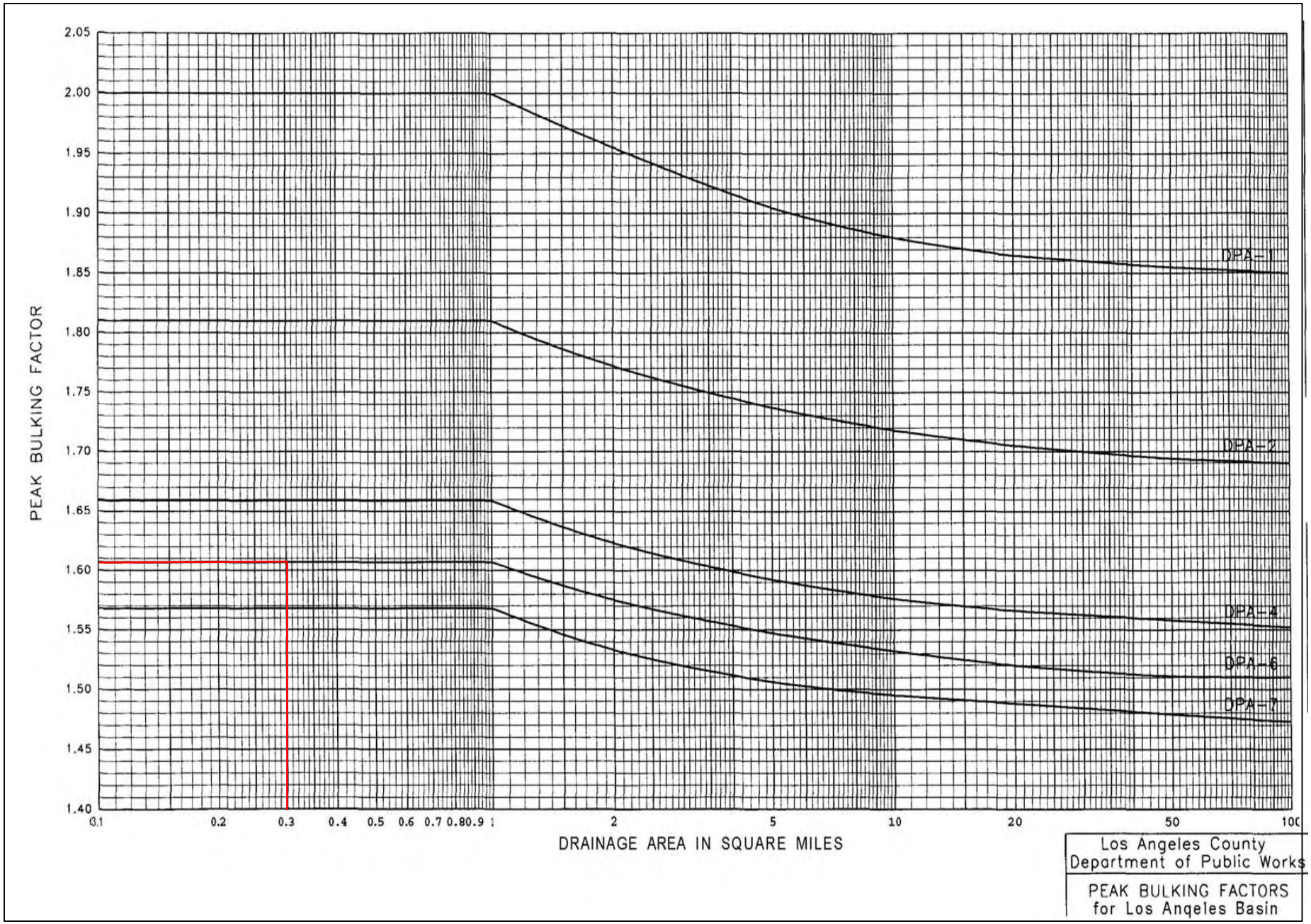
Device No.	Tributary Area	Qpm	Total Qpm	Size
1	16A	0.270	0.335	8'*12'
	18B	0.065		
2	23A	0.320	0.410	8'*16'
	24B	0.090		
3	44E 50%	0.079	0.079	4'X8'
4	44E 50%	0.079	0.079	4'X8'
5	41E 50%	0.074	0.074	4'x7'
6	41E 50%	0.074	0.144	4'x13'
	42F	0.070		
7	32C	0.293	0.360	8'X13'
	33D	0.067		
8	36A	0.329	0.329	8'X12'
9	47E 50%	0.087	0.087	4'x7'
10	47E 50%	0.087	0.087	4'x7'
11	45F 30%	0.051	0.051	4'x4'
12	45F 70%	0.119	0.119	4'x9'
13	49G 50%	0.069	0.069	4'x6'
14	49G 50%	0.069	0.069	4'x6'
15	48E	0.234	0.234	4'x17'

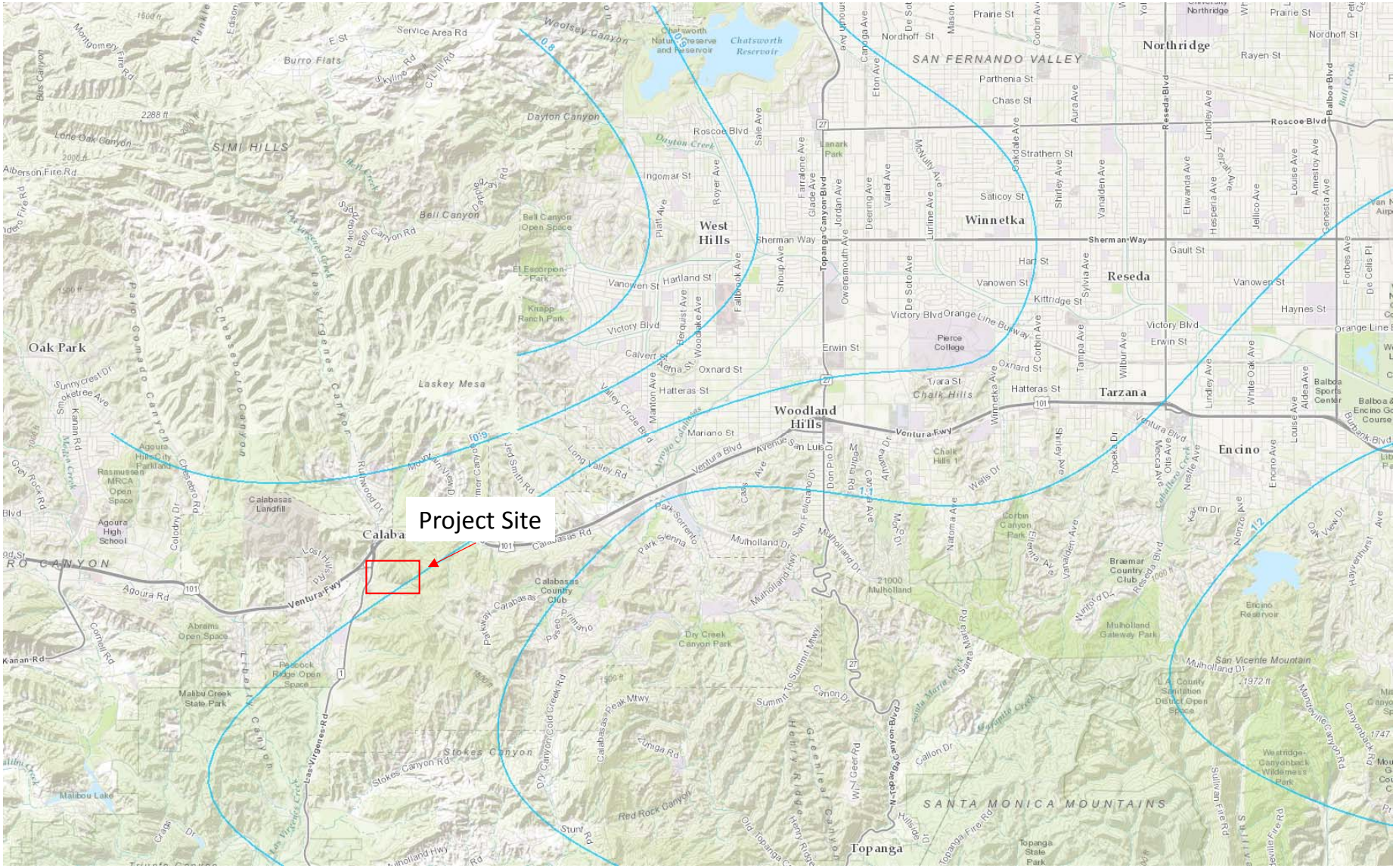
APPENDIX A

Site Map and Hydrology Data


34° 15' 00"
SANTA SUSANA 1-H1.34
-118° 45' 00"
THOUSAND OAKS 1-H1.24
CANOGA PARK 1-H1.26
-118° 37' 30"
MALIBU BEACH 1-H1.15
34° 07' 30"
Project Site
DPA - 4
DPA - 6
DPA - 7
016
7.2
INCHES OF RAINFALL
SOIL CLASSIFICATION AREA
DEBRIS POTENTIAL AREA
N
S
E
W
1 0 1 2 Miles
25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714
C A L A B A S A S
50-YEAR 24-HOUR ISOHYET
1-H1.25
LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works


DEBRIS PRODUCTION RATE IN CUBIC YARDS PER SQUARE MILE
200000
100000
90000
80000
70000
60000
50000
40000
35000
30000
20000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
2
5
10
20
50
100
DRAINAGE AREA IN SQUARE MILES
DPA-1
DPA-2
DPA-4
DPA-6
DPA-7
Los Angeles County
Department of Public Works
DEBRIS PRODUCTION RATES
for Los Angeles Basin


PEAK BULKING FACTOR
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
2
5
10
20
50
100
DRAINAGE AREA IN SQUARE MILES
DPA-1
DPA-2
DPA-4
DPA-6
DPA-7
Los Angeles County
Department of Public Works
PEAK BULKING FACTORS
for Los Angeles Basin


Project Site
Calabasas
Agoura Rd
Ventura Fwy
Calabasas Rd
Las Virgenes Rd
Mulholland Dr
Mulholland Hwy
Topanga
SANTA MONICA MOUNTAINS
SAN FERNANDO VALLEY
Northridge
Reseda
Tarzana
Encino
Winnetka
West Hills
Woodland Hills
Oak Park
SIMI HILLS
Laskey Mesa
Chalk Hills
Burro Flats
Dayton Canyon
Bell Canyon
Stokes Canyon
Las Virgenes Canyon
Lost Hills Rd
Roscoe Blvd
Sherman Way
Victory Blvd
Ventura Blvd
Topanga Canyon Blvd
Reseda Blvd
Balboa Blvd
Lindley Ave
Encino Reservoir
Chatsworth Reservoir
Malibou Lake
Malibu Creek State Park
Calabasas Landfill
Calabasas Country Club
Pierce College
Agoura High School
Abrams Open Space
Rasmussen MRCA Open Space
Peacock Ridge Open Space
Dry Creek Canyon Park
Corbin Canyon Park
Knapp Ranch Park
El Escorpion Park
Bell Canyon Open Space
Lanark Park
Braemar Country Club
Mulholland Gateway Park
LA County Sanitation District Open Space
Westridge-Canyonback Wilderness Park
Topanga State Park
Agoura Hills City Parkland
Encino Reservoir
San Vicente Mountain
1972 ft
2288 ft
2000 ft
1500 ft
1000 ft
Service Area Rd
Woolsey Canyon
Chatsworth Nature Preserve and Reservoir
Lone Oak Canyon
Alberson Fire Rd
Montgomery Fire Rd
Runkle
Edison
E St
Skyline Ridge
Cr Hill Rd
Bell Canyon Rd
Dayton Creek
Ingomar St
Royer Ave
Sale Ave
Farralone Ave
Glade Ave
Jordan Ave
Deering Ave
Varial Ave
Lurline Ave
McNulty Ave
Oakdale Ave
Aura Ave
Shirley Ave
Vanalden Ave
Etiwanda Ave
Hesperia Ave
Zelzah Ave
Jellico Ave
Louise Ave
Amestoy Ave
Genesta Ave
Forbes Ave
De Celis Pl
Prairie St
Nordhoff St
Rayen St
Parthenia St
Chase St
Strathern St
Saticoy St
Gault St
Haynes St
Hart St
Vanowen St
Kittridge St
Sylvia Ave
De Soto Ave
Owensmouth Ave
Corbin Ave
Tampa Ave
Wilbur Ave
Erwin St
Hatteras St
Oxnard St
Tiara St
Calvert St
Aetna St
Woodlake Ave
Fallbrook Ave
Shoup Ave
Manton Ave
Valley Circle Blvd
Mariano St
Long Valley Rd
Jed Smith Rd
Mount Lindero
Rockwood Dr
Colodny Dr
Chesebro Rd
Kanan Rd
Cornell Rd
Liberty Canyon
Agoura Rd
Park Sorrento
Park Sienna
Las Virgenes Creek
Malibu Creek
Medea Creek
Triunfo Canyon
Sunnycrest Dr
Smoketree Ave
Orel Rock Rd
Blvd
Craags Dr
Stokes Canyon Rd
Las Virgenes Creek
Dry Canyon Cold Creek Rd
Calabasas Peak Mtwy
Summit To Summit Mtwy
Zuma Ridge
Zuma Rd
Red Rock Canyon
Stunt Rd
Callon Dr
Hillside Dr
Old Topanga Canyon
Topanga Fire Rd
Saddle Peak Rd
Las Virgenes Canyon
Las Virgenes Creek
Cheseboro Canyon
Palo Comado Canyon
Lindero Canyon
Lindero Creek
Triunfo Canyon
Cheseboro Creek
Las Virgenes Canyon
Las Virgenes Creek
Dry Canyon Cold Creek
Hidden Creek
Hidden Ridge
Hidden Canyon
Medea Creek
Malibu Creek
Liberty Canyon
Las Virgenes Creek
Las Virgenes Canyon
Las Virgenes Creek
Las Virgenes Canyon
Las Virgenes Creek
Las Virgenes

APPENDIX B

Hydrology Calculations
(Existing Condition)

Program Package Serial Number: 2021

06/18/17 FILE: ex50 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: c:\civild\1267\lar_soilx_71.dat

EXISTING CONDITION - 50 YEAR CLEAR & BURNED FLOW

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
0	1A	96.8	261.03	96.8	261.03	0	0.	.00000	.00	.00	0.	234	11	A37	.01
0	2B	22.7	71.59	22.7	71.59	0	0.	.00000	.00	.00	0.	234	8	A37	.01
0	3AB	22.7	71.59	119.5	332.10	1	286.	.08400	.00	.00	0.	234	0	A37	.00
0	4A	12.5	45.87	132.0	375.25	0	0.	.00000	.00	.00	0.	234	6	A37	.01
0	5B	16.0	54.07	16.0	54.07	0	0.	.00000	.00	.00	0.	234	7	A37	.01
0	6AB	16.0	54.07	148.0	429.18	1	887.	.06800	.00	.00	0.	234	0	A37	.00
0	7A	7.5	27.52	155.5	439.41	0	0.	.00000	.00	.00	0.	234	6	A37	.01
0	8B	7.0	28.61	7.0	28.61	0	0.	.00000	.00	.00	0.	234	5	A37	.01
0	9AB	7.0	28.61	162.5	456.13	1	265.	.06000	.00	.00	0.	234	0	A37	.00
0	10A	18.2	54.33	180.7	503.95	0	0.	.00000	.00	.00	0.	234	9	A37	.01
0	11B	18.9	59.61	18.9	59.61	0	0.	.00000	.00	.00	0.	234	8	A37	.01
0	12AB	18.9	59.61	199.6	560.86	1	831.	.04100	.00	.00	0.	234	0	A37	.00
0	13A	9.4	31.75	209.0	566.19	0	0.	.00000	.00	.00	0.	234	7	A37	.04
0	14B	7.8	31.85	7.8	31.85	0	0.	.00000	.00	.00	0.	234	5	A37	.04
0	15AB	7.8	31.85	216.8	574.83	1	100.	.01000	.00	.00	0.	234	0	A37	.00
0	16A	.2	.82	217.0	572.63	0	0.	.00000	.00	.00	0.	234	5	A37	.10
0	17AB	.0	31.85	217.0	572.63	1	40.	.01000	.00	.00	0.	234	0	A37	.00

Peak Flow Hydrologic Analysis

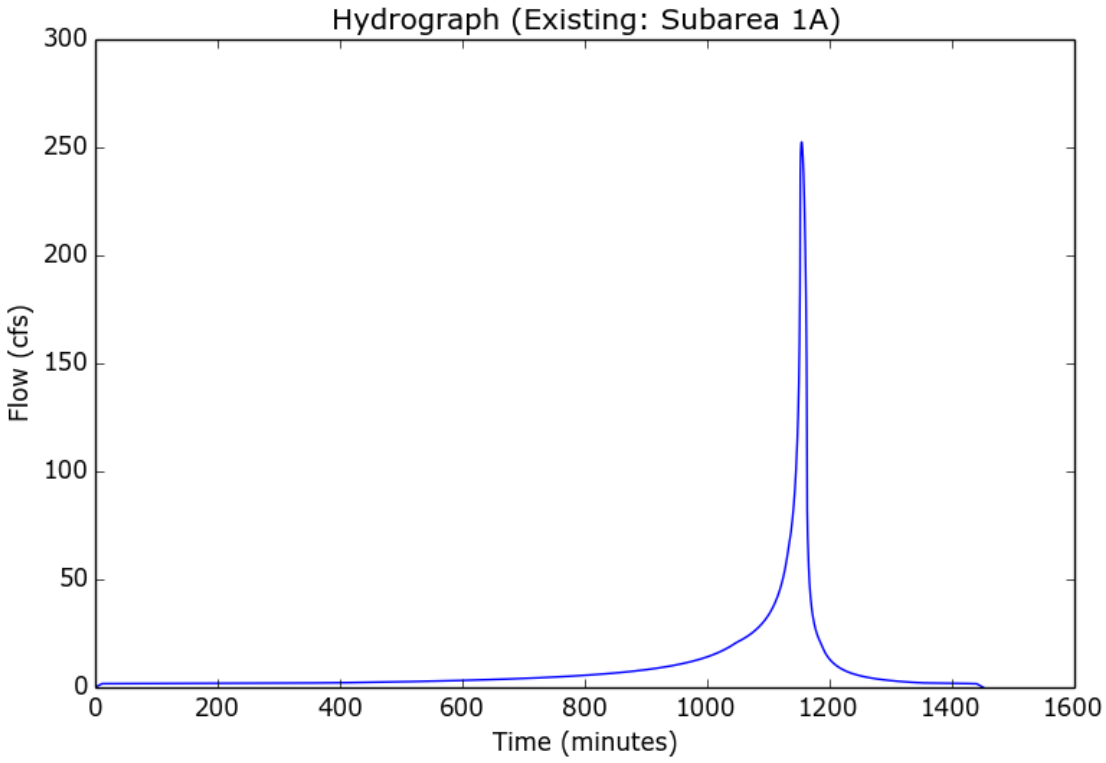
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 1A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 1A
Area (ac)	96.75
Flow Path Length (ft)	2804.0
Flow Path Slope (vft/hft)	0.193
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.0891
Undeveloped Runoff Coefficient (Cu)	0.8442
Developed Runoff Coefficient (Cd)	0.8447
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	252.4671
Burned Peak Flow Rate (cfs)	267.7395
24-Hr Clear Runoff Volume (ac-ft)	19.0216
24-Hr Clear Runoff Volume (cu-ft)	828583.0524



Peak Flow Hydrologic Analysis

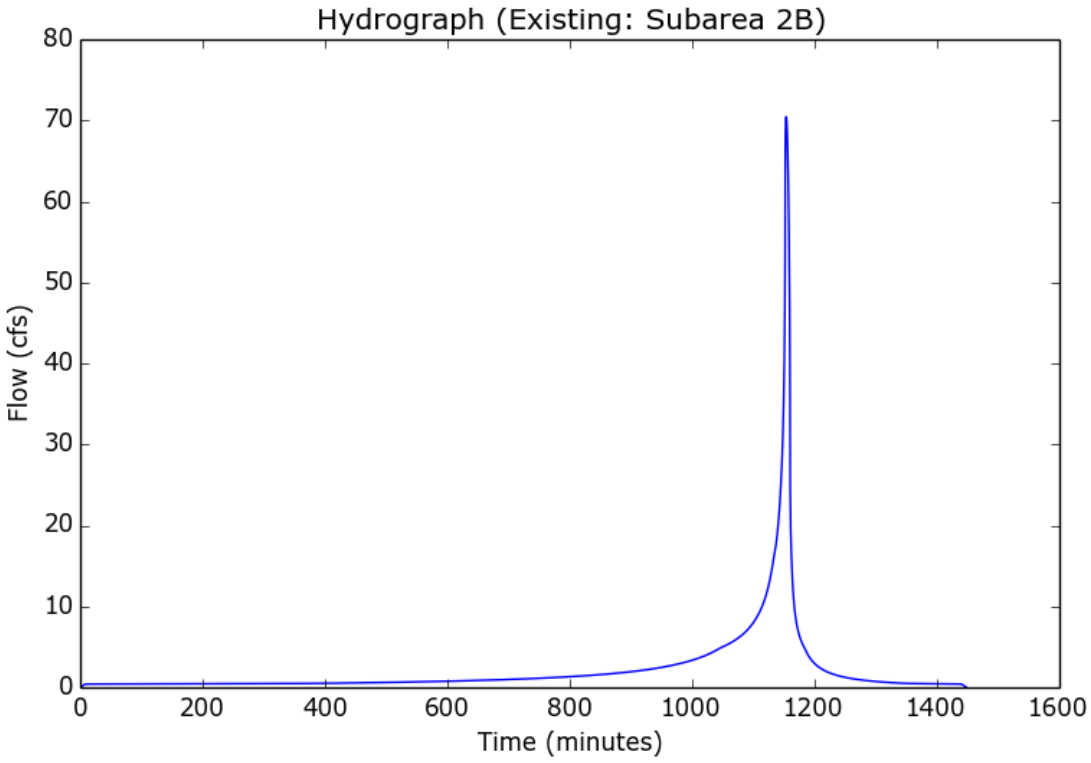
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 2B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 2B
Area (ac)	22.72
Flow Path Length (ft)	1958.0
Flow Path Slope (vft/hft)	0.216
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.5878
Undeveloped Runoff Coefficient (Cu)	0.8638
Developed Runoff Coefficient (Cd)	0.8642
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	70.4457
Burned Peak Flow Rate (cfs)	74.1731
24-Hr Clear Runoff Volume (ac-ft)	4.4712
24-Hr Clear Runoff Volume (cu-ft)	194764.8031



Peak Flow Hydrologic Analysis

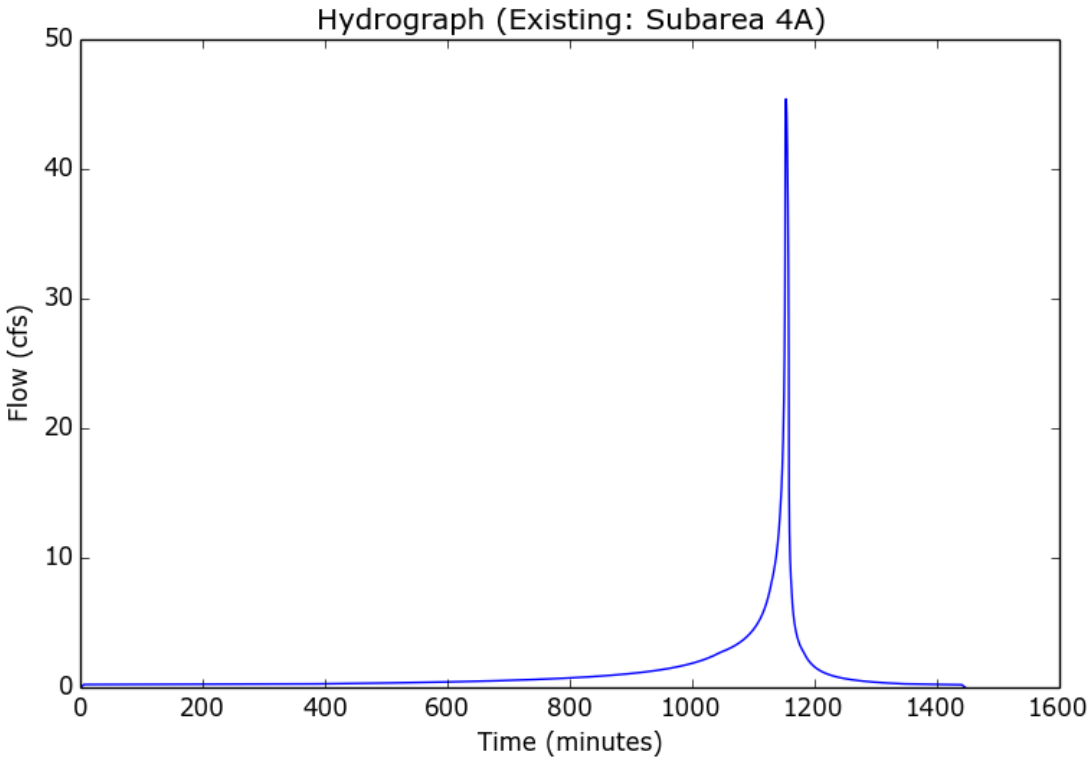
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 4A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 4A
Area (ac)	12.51
Flow Path Length (ft)	1309.0
Flow Path Slope (vft/hft)	0.42
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.1072
Undeveloped Runoff Coefficient (Cu)	0.8834
Developed Runoff Coefficient (Cd)	0.8836
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	45.4008
Burned Peak Flow Rate (cfs)	47.4552
24-Hr Clear Runoff Volume (ac-ft)	2.4645
24-Hr Clear Runoff Volume (cu-ft)	107353.2658



Peak Flow Hydrologic Analysis

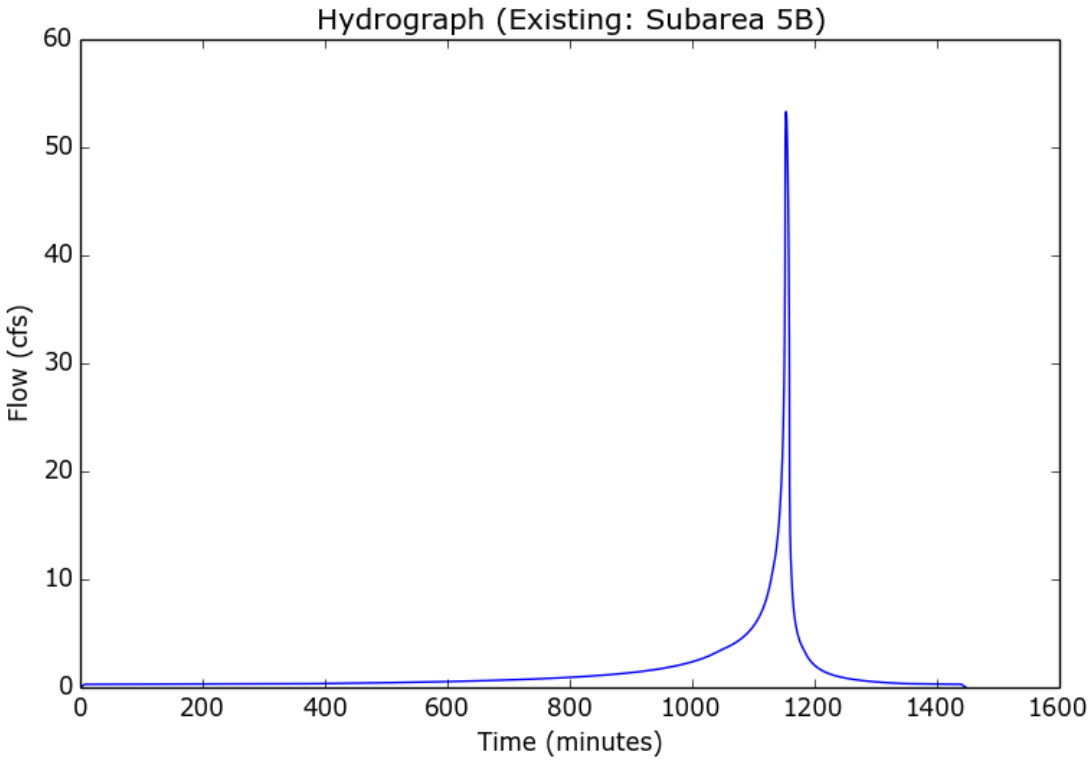
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 5B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 5B
Area (ac)	15.98
Flow Path Length (ft)	1394.0
Flow Path Slope (vft/hft)	0.179
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.8202
Undeveloped Runoff Coefficient (Cu)	0.873
Developed Runoff Coefficient (Cd)	0.8733
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	53.3103
Burned Peak Flow Rate (cfs)	55.9398
24-Hr Clear Runoff Volume (ac-ft)	3.1463
24-Hr Clear Runoff Volume (cu-ft)	137051.7855



Peak Flow Hydrologic Analysis

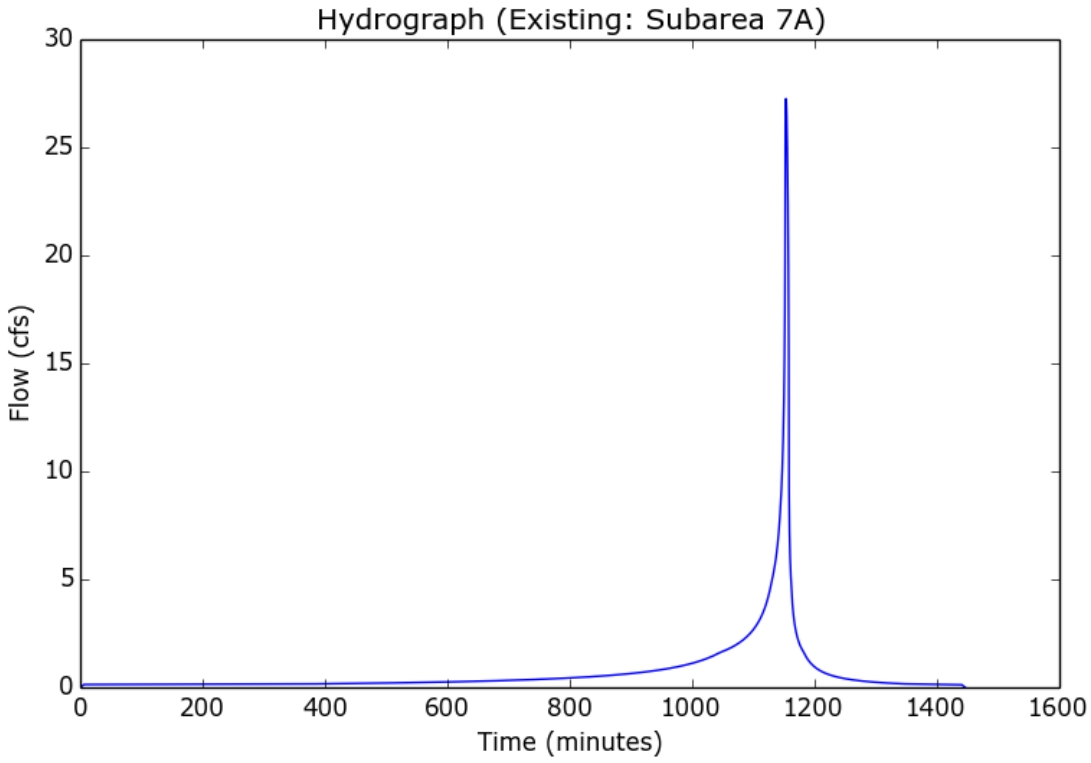
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 7A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 7A
Area (ac)	7.51
Flow Path Length (ft)	1306.0
Flow Path Slope (vft/hft)	0.356
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.1072
Undeveloped Runoff Coefficient (Cu)	0.8834
Developed Runoff Coefficient (Cd)	0.8836
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	27.255
Burned Peak Flow Rate (cfs)	28.4883
24-Hr Clear Runoff Volume (ac-ft)	1.4795
24-Hr Clear Runoff Volume (cu-ft)	64446.2851



Peak Flow Hydrologic Analysis

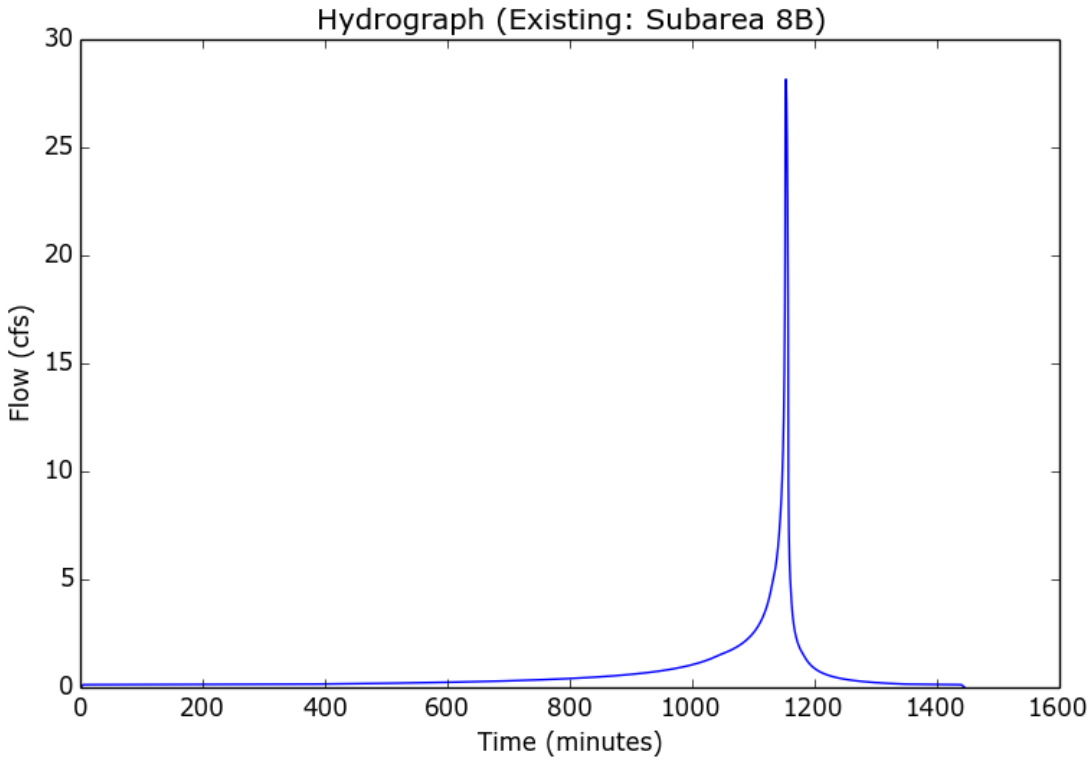
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 8B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 8B
Area (ac)	7.03
Flow Path Length (ft)	1043.0
Flow Path Slope (vft/hft)	0.35
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	28.153
Burned Peak Flow Rate (cfs)	29.302
24-Hr Clear Runoff Volume (ac-ft)	1.3857
24-Hr Clear Runoff Volume (cu-ft)	60361.3452



Peak Flow Hydrologic Analysis

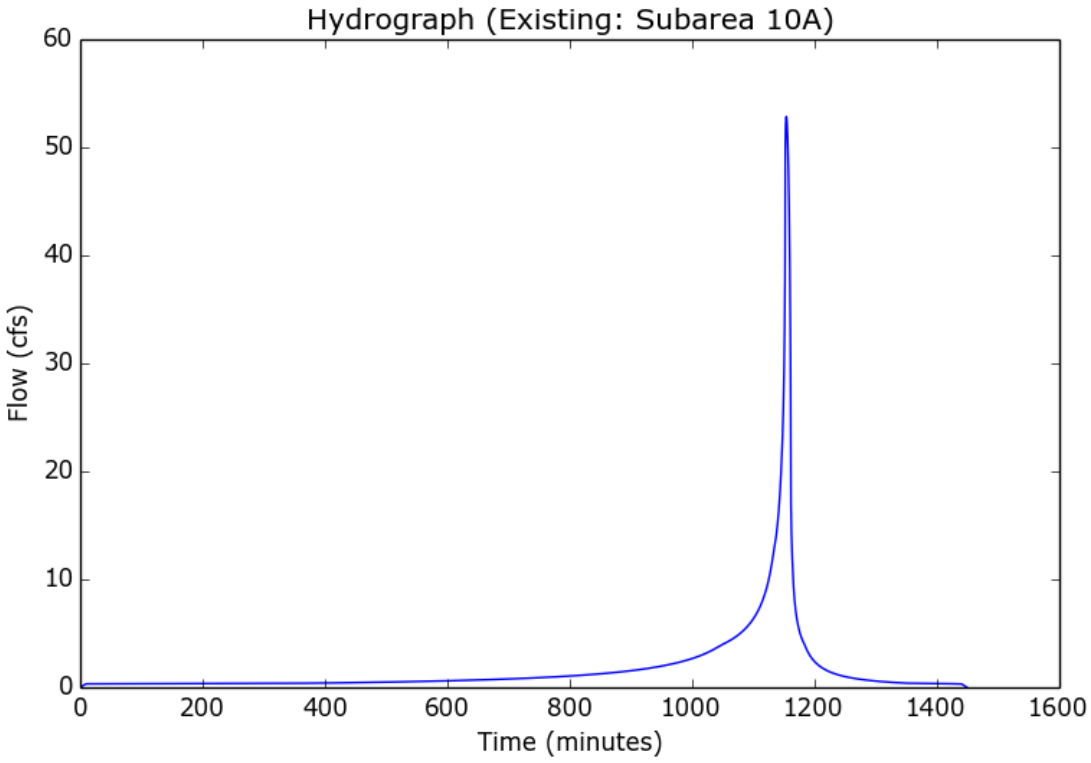
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 10A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 10A
Area (ac)	18.17
Flow Path Length (ft)	2264.0
Flow Path Slope (vft/hft)	0.276
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.3946
Undeveloped Runoff Coefficient (Cu)	0.8562
Developed Runoff Coefficient (Cd)	0.8567
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	52.839
Burned Peak Flow Rate (cfs)	55.7913
24-Hr Clear Runoff Volume (ac-ft)	3.5744
24-Hr Clear Runoff Volume (cu-ft)	155702.8575



Peak Flow Hydrologic Analysis

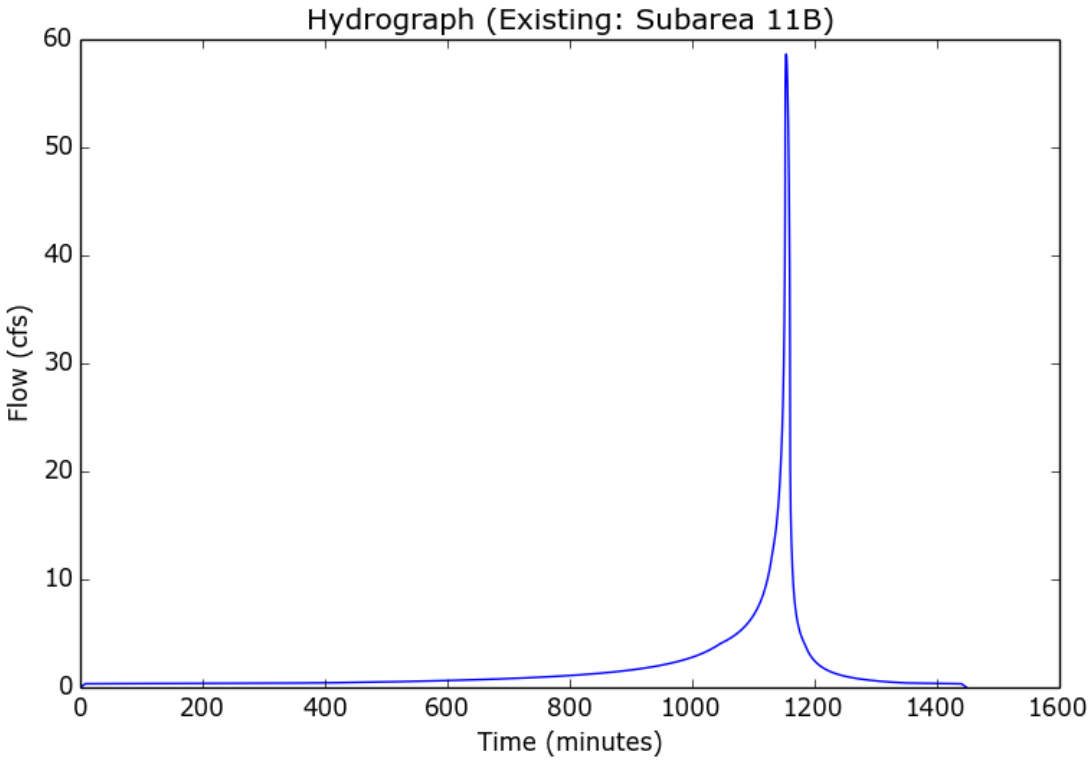
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 11B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 11B
Area (ac)	18.91
Flow Path Length (ft)	1655.0
Flow Path Slope (vft/hft)	0.208
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.5878
Undeveloped Runoff Coefficient (Cu)	0.8638
Developed Runoff Coefficient (Cd)	0.8642
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	58.6324
Burned Peak Flow Rate (cfs)	61.7347
24-Hr Clear Runoff Volume (ac-ft)	3.7214
24-Hr Clear Runoff Volume (cu-ft)	162103.9801



Peak Flow Hydrologic Analysis

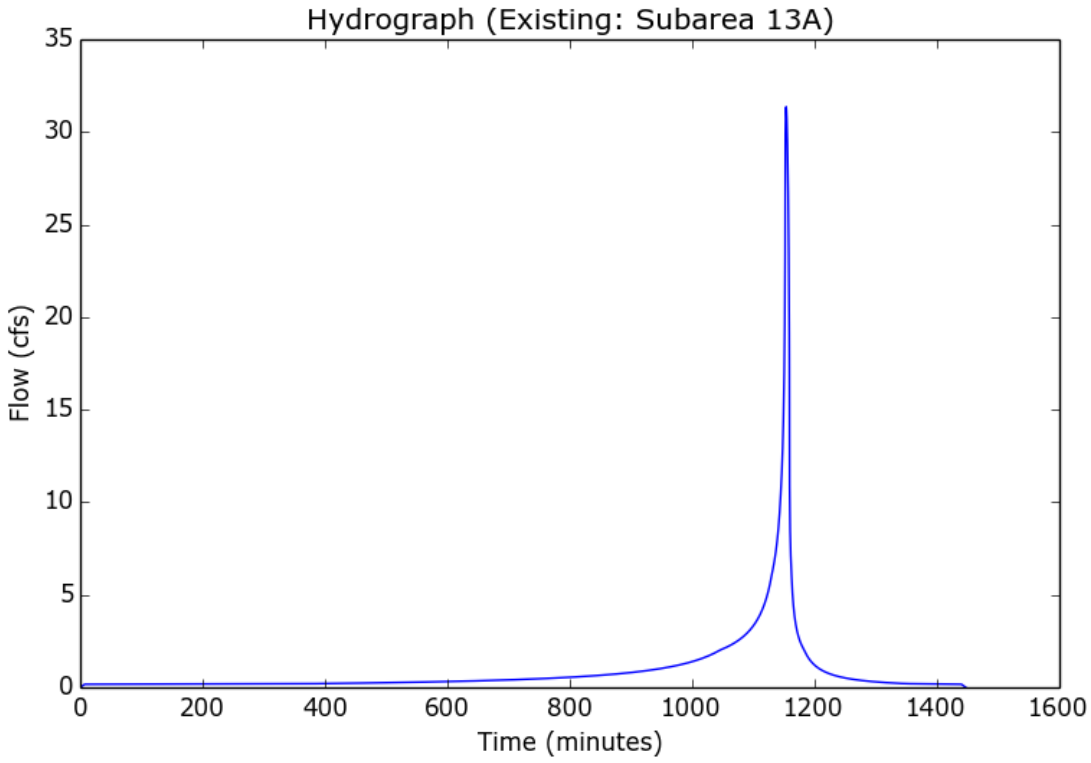
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 13A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 13A
Area (ac)	9.4
Flow Path Length (ft)	1379.0
Flow Path Slope (vft/hft)	0.22
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.8202
Undeveloped Runoff Coefficient (Cu)	0.873
Developed Runoff Coefficient (Cd)	0.8733
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	31.359
Burned Peak Flow Rate (cfs)	32.9057
24-Hr Clear Runoff Volume (ac-ft)	1.8508
24-Hr Clear Runoff Volume (cu-ft)	80618.6973



Peak Flow Hydrologic Analysis

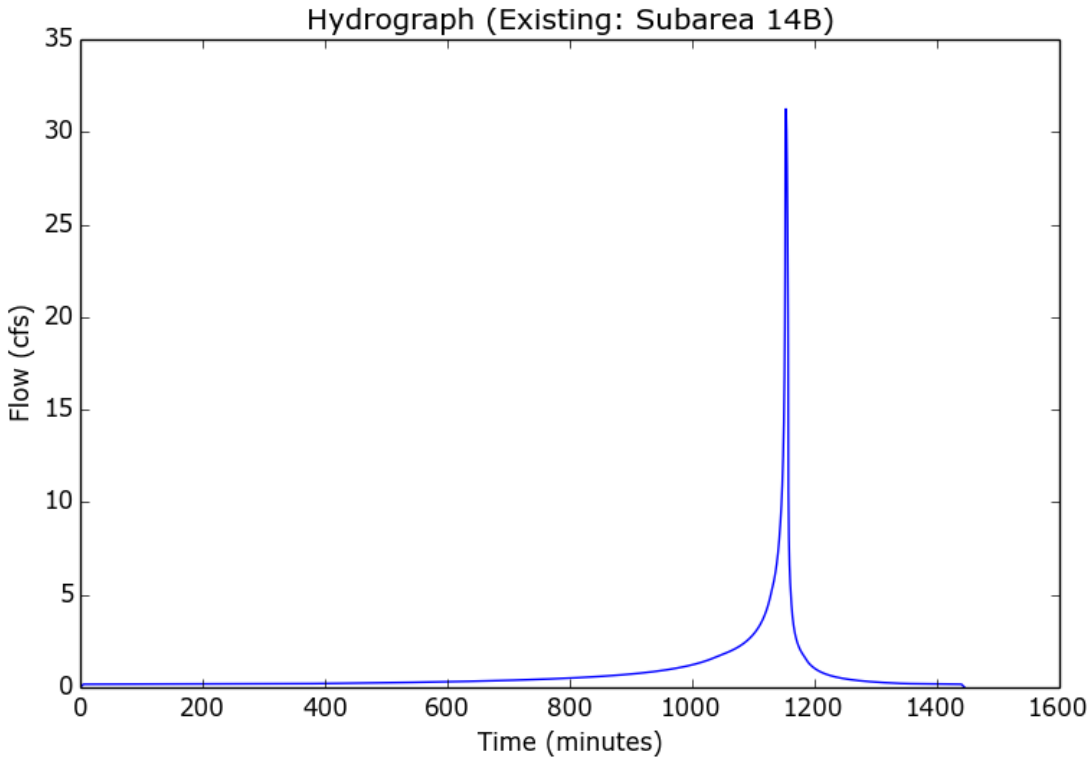
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 14B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 14B
Area (ac)	7.8
Flow Path Length (ft)	1149.0
Flow Path Slope (vft/hft)	0.296
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.04
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8951
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	31.2419
Burned Peak Flow Rate (cfs)	32.5149
24-Hr Clear Runoff Volume (ac-ft)	1.6227
24-Hr Clear Runoff Volume (cu-ft)	70686.9191



Peak Flow Hydrologic Analysis

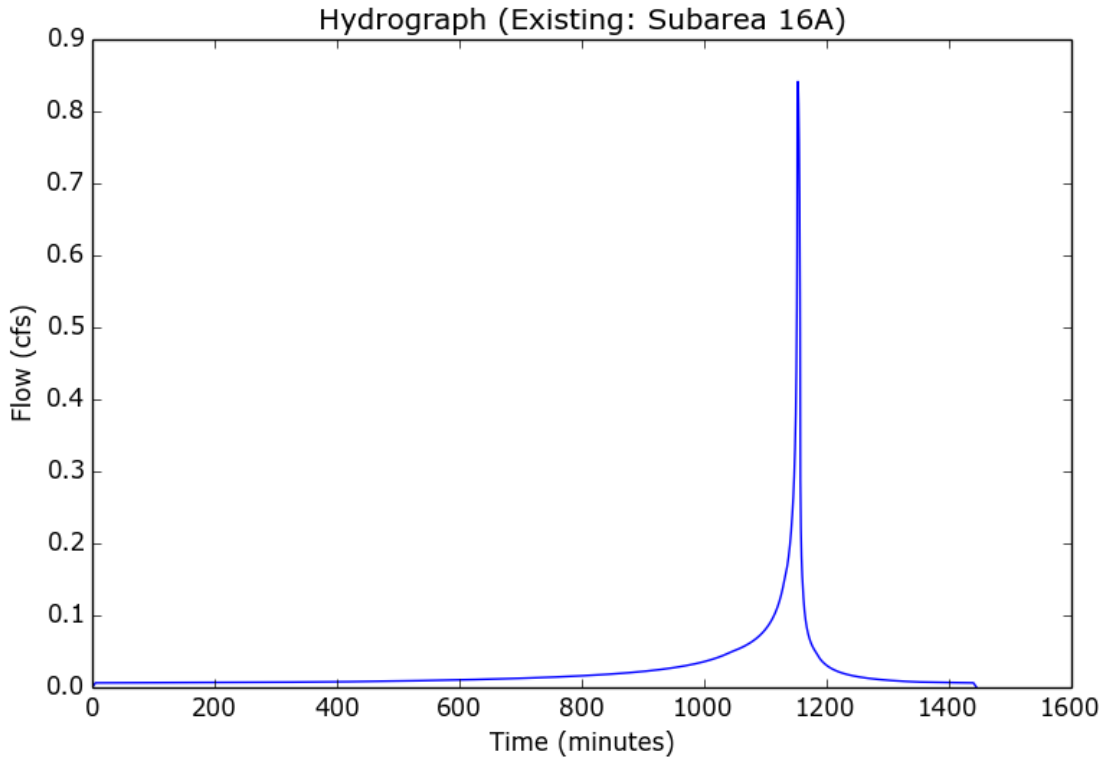
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 16A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 16A
Area (ac)	0.21
Flow Path Length (ft)	278.0
Flow Path Slope (vft/hft)	0.072
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.1
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8954
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8414
Burned Peak Flow Rate (cfs)	0.8756
24-Hr Clear Runoff Volume (ac-ft)	0.0483
24-Hr Clear Runoff Volume (cu-ft)	2103.1026



Peak Flow Hydrologic Analysis

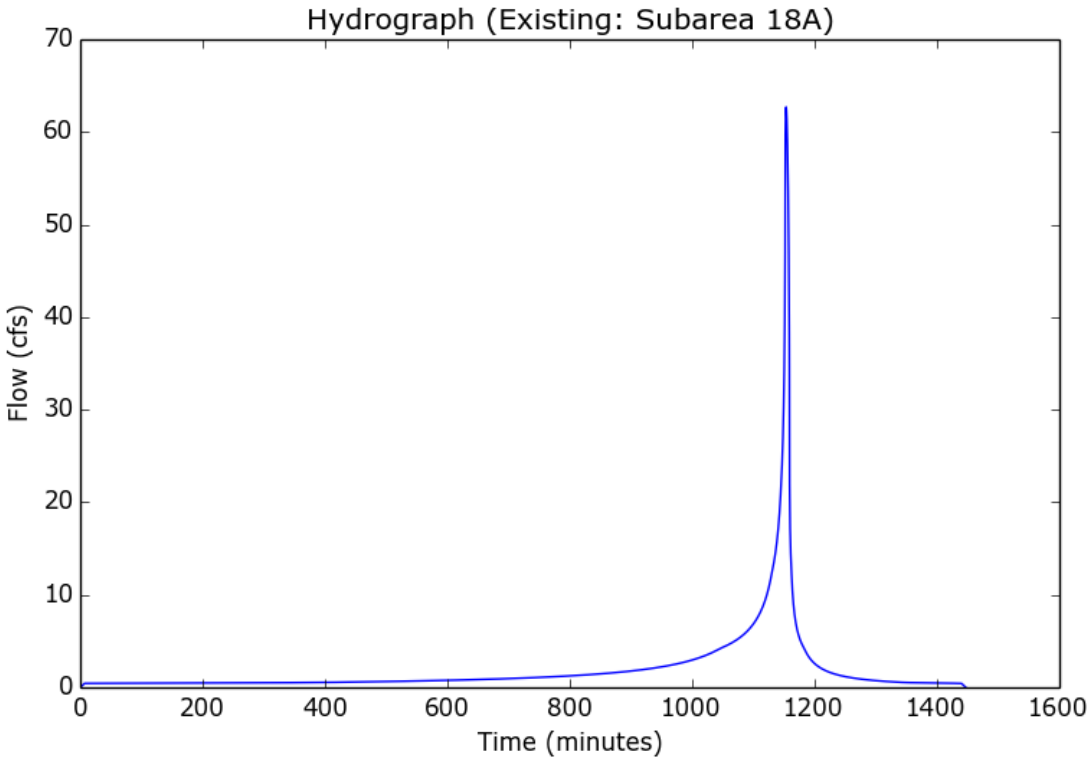
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 18A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 18A
Area (ac)	18.77
Flow Path Length (ft)	1544.0
Flow Path Slope (vft/hft)	0.238
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.05
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.8202
Undeveloped Runoff Coefficient (Cu)	0.873
Developed Runoff Coefficient (Cd)	0.8744
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	62.6953
Burned Peak Flow Rate (cfs)	65.7576
24-Hr Clear Runoff Volume (ac-ft)	3.9693
24-Hr Clear Runoff Volume (cu-ft)	172904.593



Peak Flow Hydrologic Analysis

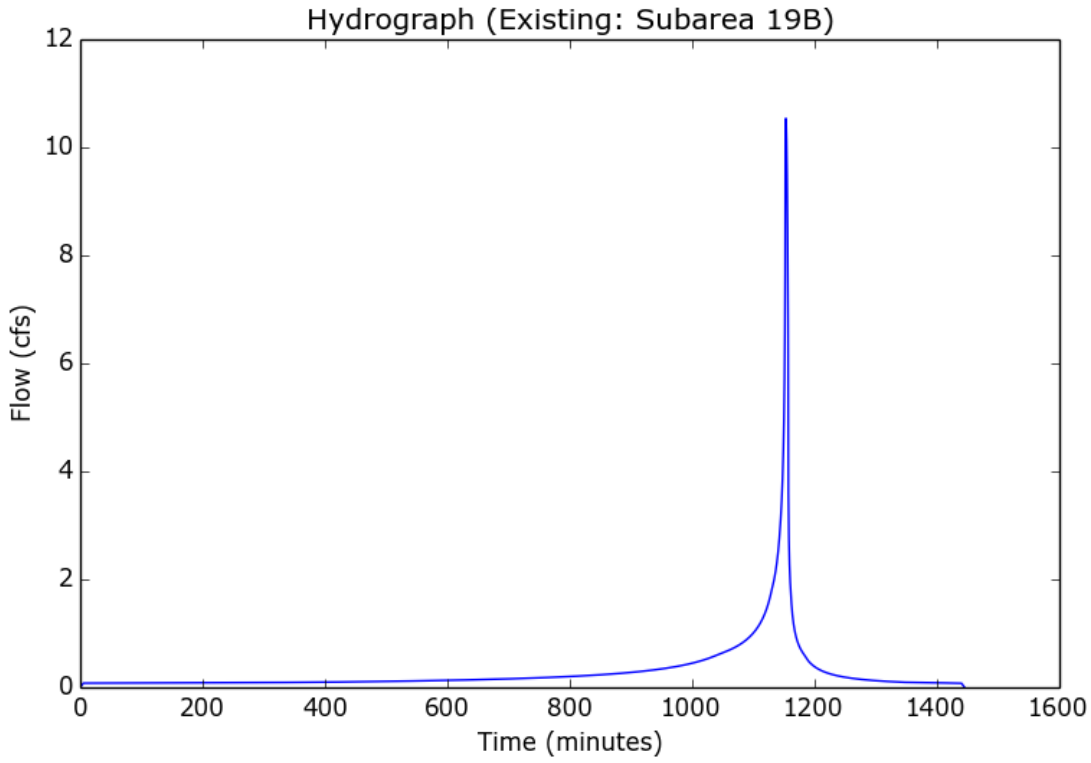
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Existing/Existing - Subarea 19B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Existing
Subarea ID	Subarea 19B
Area (ac)	2.63
Flow Path Length (ft)	540.0
Flow Path Slope (vft/hft)	0.263
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.1
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8954
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	10.5377
Burned Peak Flow Rate (cfs)	10.9657
24-Hr Clear Runoff Volume (ac-ft)	0.6047
24-Hr Clear Runoff Volume (cu-ft)	26338.8567



APPENDIX C

Hydrology Calculations
(Proposed Condition)

Program Package Serial Number: 2021

06/20/17 FILE: pro50 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: c:\civild\1267\lar_soilx_71.dat

PROPOSED CONDITION - 50 YEAR CLEAR & BURNED FLOW

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
0	1A	96.8	261.03	96.8	261.03	0	0.	.00000	.00	.00	0.	234	11	A37	.01
0	2B	22.7	71.59	22.7	71.59	0	0.	.00000	.00	.00	0.	234	8	A37	.01
0	3AB	22.7	71.59	119.5	332.10	1	286.	.08400	.00	.00	0.	234	0	A37	.00
0	4A	12.5	45.87	132.0	375.25	0	0.	.00000	.00	.00	0.	234	6	A37	.01
0	5B	16.0	54.07	16.0	54.07	0	0.	.00000	.00	.00	0.	234	7	A37	.01
0	6AB	16.0	54.07	148.0	429.18	1	847.	.06700	.00	.00	0.	234	0	A37	.00
0	7A	3.4	11.49	151.4	429.89	0	0.	.00000	.00	.00	0.	234	7	A37	.02
0	8AB	.0	54.07	151.4	429.89	2	118.	.04200	.00	.00	0.	234	0	A37	.00
0	9A	8.4	30.78	159.8	450.97	0	0.	.00000	.00	.00	0.	234	6	A37	.10
0	10B	6.7	27.39	6.7	27.39	0	0.	.00000	.00	.00	0.	234	5	A37	.01
0	11AB	6.7	27.39	166.5	466.98	2	157.	.03200	.00	.00	0.	234	0	A37	.00
0	12A	1.5	6.03	168.0	469.47	0	0.	.00000	.00	.00	0.	234	5	A37	.61
0	13B	14.0	47.31	14.0	47.31	0	0.	.00000	.00	.00	0.	234	7	A37	.01
0	14AB	14.0	47.31	182.0	509.57	4	240.	.00500	7.25	.00	0.	234	0	A37	.00
0	15A	6.2	20.93	188.2	522.39	4	327.	.09500	4.25	.00	0.	234	7	A37	.10
0	16A	1.8	7.14	190.0	522.94	0	0.	.00000	.00	.00	0.	34	5	A37	.58
0	17AB	.0	47.31	190.0	522.94	4	61.	.01000	6.50	.00	0.	234	0	A37	.00
0	18B	.3	1.19	.3	1.19	0	0.	.00000	.00	.00	0.	34	5	A37	.56
0	19AB	.3	1.19	190.3	523.33	4	90.	.00800	6.75	.00	0.	234	0	A37	.00
0	20B	2.1	8.58	2.1	8.58	4	65.	.03800	2.00	.00	0.	234	5	A37	.01
0	21B	.3	1.22	2.4	9.63	0	0.	.00000	.00	.00	0.	234	5	A37	.21
0	22AB	2.4	9.63	192.7	527.60	4	147.	.05100	4.75	.00	0.	234	0	A37	.00
0	23A	1.9	7.53	194.6	530.72	4	65.	.03800	5.00	.00	0.	34	5	A37	.63
0	24B	.4	1.61	.4	1.61	0	0.	.00000	.00	.00	0.	234	5	A37	.56
0	25AB	.4	1.61	195.0	531.24	4	43.	.09300	4.25	.00	0.	234	0	A37	.00
0	26B	1.4	5.72	1.4	5.72	4	114.	.12300	2.00	.00	0.	234	5	A37	.01
0	27B	.4	1.63	1.8	7.22	0	0.	.00000	.00	.00	0.	234	5	A37	.21
0	28AB	1.8	7.22	196.8	534.48	4	350.	.04400	5.00	.00	0.	234	0	A37	.00
0	29C	4.6	18.75	4.6	18.75	0	0.	.00000	.00	.00	0.	234	5	A37	.10
0	30D	2.0	8.17	2.0	8.17	0	0.	.00000	.00	.00	0.	234	5	A37	.05
0	31CD	2.0	8.17	6.6	26.92	4	174.	.01100	2.25	.00	0.	234	0	A37	.00
0	32C	1.6	6.44	8.2	31.64	0	0.	.00000	.00	.00	0.	234	5	A37	.56
0	33D	.4	1.58	.4	1.58	0	0.	.00000	.00	.00	0.	34	5	A37	.41
0	34CD	.4	1.58	8.6	33.22	0	0.	.00000	.00	.00	0.	234	0	A37	.00
0	35C	.0	.00	8.6	33.22	4	20.	.10000	2.00	.00	0.	34	5	A37	.41
0	36A	1.7	6.74	198.5	535.88	0	0.	.00000	.00	.00	0.	34	5	A37	.67
0	37AC	8.6	33.11	207.1	553.51	4	33.	.15200	4.00	.00	0.	234	0	A37	.00
0	38A	.2	.82	207.3	553.78	0	0.	.00000	.00	.00	0.	234	5	A37	.10
0	39AC	.0	33.11	207.3	553.78	0	0.	.00000	.00	.00	0.	234	0	A37	.00

Program Package Serial Number: 2021

06/17/17 FILE: pro50 INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: c:\civild\1267\lar_soilx_71.dat

PROPOSED CONDITION - 50 YEAR CLEAR & BURNED FLOW

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
0	41E	1.0	3.96	1.0	3.96	0	0.	.00000	.00	.00	0.	34	5	A37	.41
0	42F	.5	1.82	.5	1.82	0	0.	.00000	.00	.00	0.	234	6	A37	.57
0	43EF	.5	1.82	1.5	5.78	4	40.	.02500	2.00	.00	0.	234	0	A37	.00
0	44E	1.0	4.05	2.5	9.74	4	46.	.02000	2.00	.00	0.	234	5	A37	.35
0	45F	1.2	4.84	1.2	4.84	4	45.	.02000	2.00	.00	0.	234	5	A37	.48
0	46EF	1.2	4.75	3.7	14.34	4	222.	.05900	2.00	.00	0.	234	0	A37	.00
0	47E	.8	3.22	4.5	16.95	0	0.	.00000	.00	.00	0.	234	5	A37	.56

Peak Flow Hydrologic Analysis

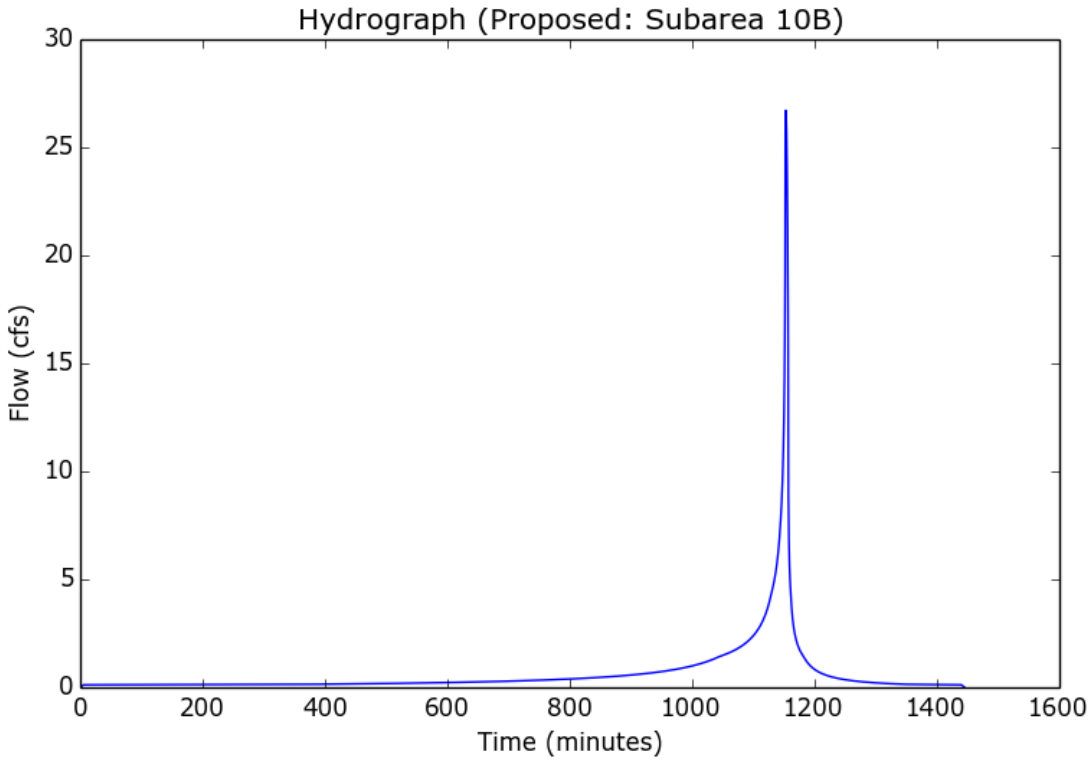
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 10B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 10B
Area (ac)	6.67
Flow Path Length (ft)	993.0
Flow Path Slope (vft/hft)	0.36
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	26.7113
Burned Peak Flow Rate (cfs)	27.8014
24-Hr Clear Runoff Volume (ac-ft)	1.3147
24-Hr Clear Runoff Volume (cu-ft)	57270.2948



Peak Flow Hydrologic Analysis

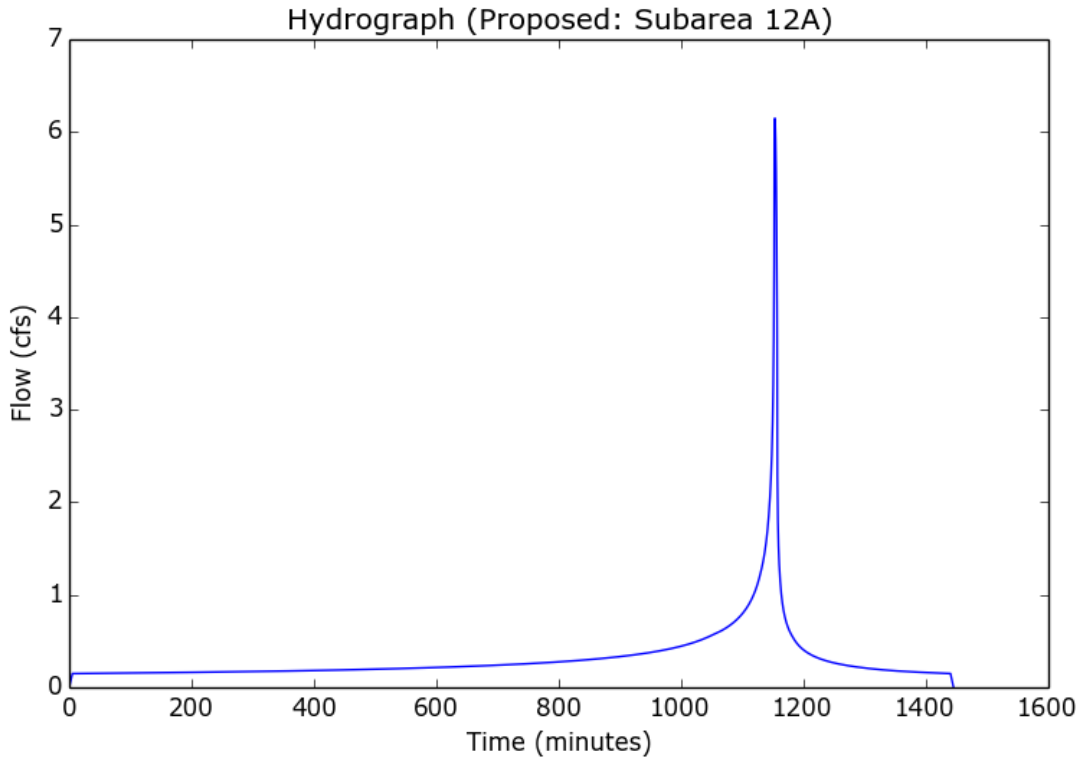
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 12A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 12A
Area (ac)	1.53
Flow Path Length (ft)	280.0
Flow Path Slope (vft/hft)	0.054
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.61
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.898
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	6.1481
Burned Peak Flow Rate (cfs)	6.3909
24-Hr Clear Runoff Volume (ac-ft)	0.6361
24-Hr Clear Runoff Volume (cu-ft)	27707.902



Peak Flow Hydrologic Analysis

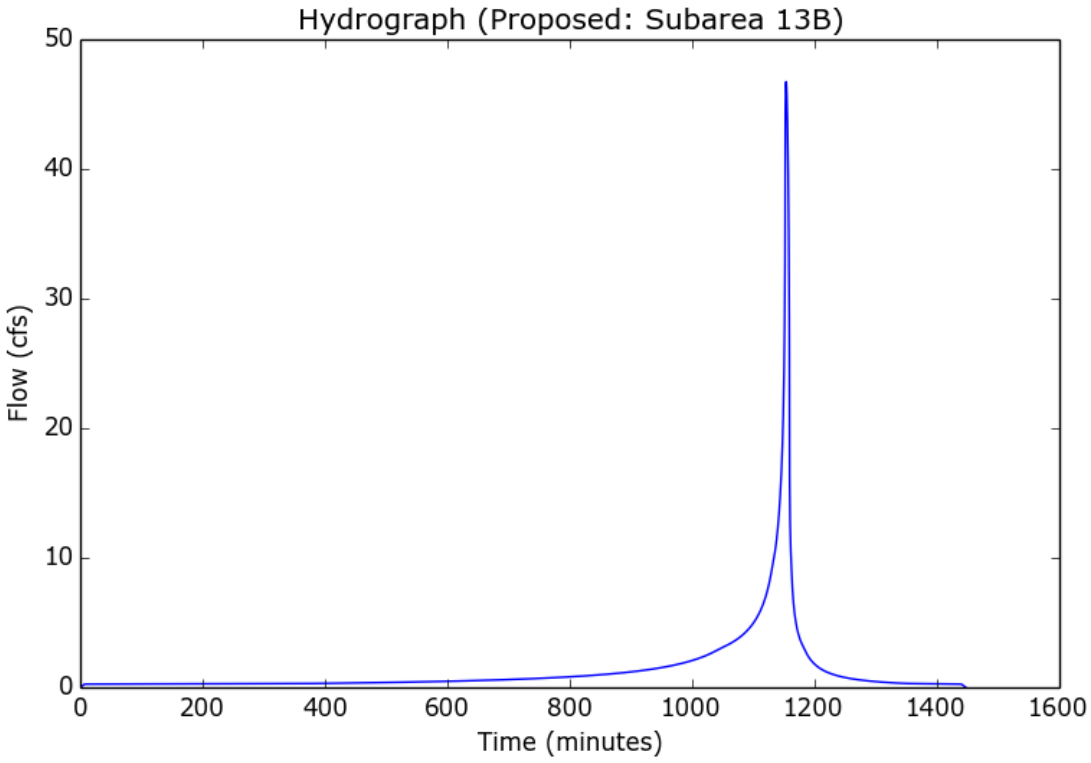
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/offsite/Proposed - Subarea 13B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 13B
Area (ac)	14.01
Flow Path Length (ft)	1493.0
Flow Path Slope (vft/hft)	0.214
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.8202
Undeveloped Runoff Coefficient (Cu)	0.873
Developed Runoff Coefficient (Cd)	0.8733
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	46.7383
Burned Peak Flow Rate (cfs)	49.0436
24-Hr Clear Runoff Volume (ac-ft)	2.7584
24-Hr Clear Runoff Volume (cu-ft)	120156.1648



Peak Flow Hydrologic Analysis

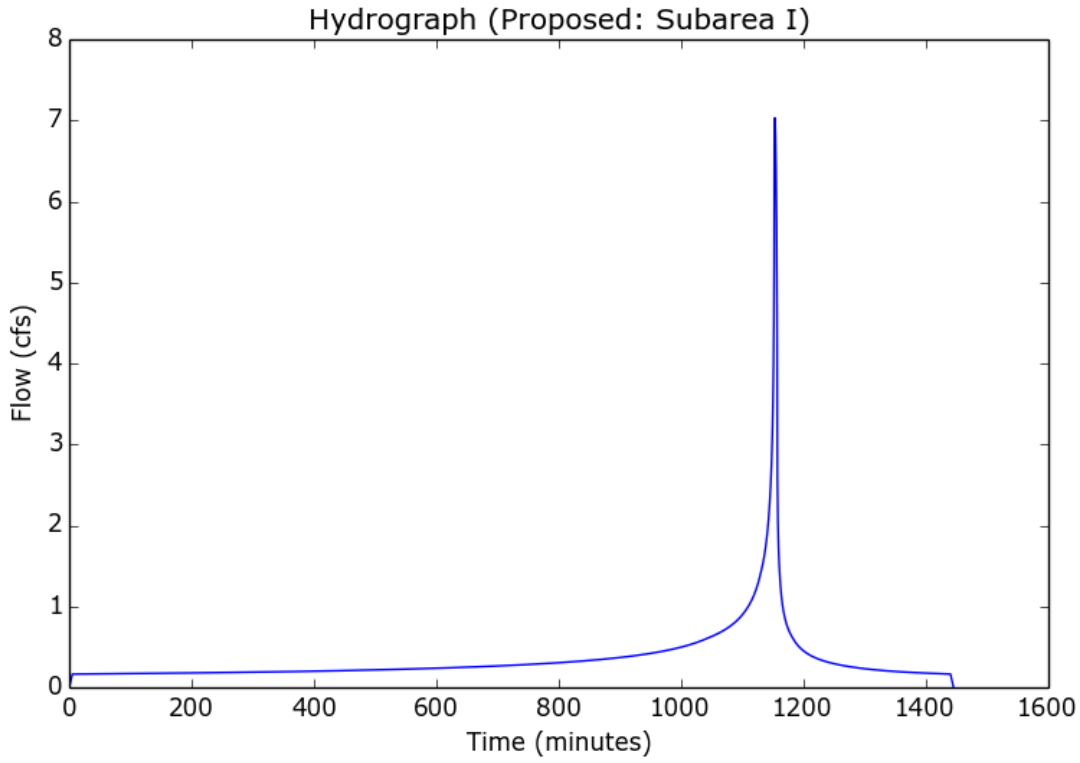
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea I.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 16A
Area (ac)	1.75
Flow Path Length (ft)	346.0
Flow Path Slope (vft/hft)	0.004
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.58
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8979
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	7.0309
Burned Peak Flow Rate (cfs)	7.0309
24-Hr Clear Runoff Volume (ac-ft)	0.7084
24-Hr Clear Runoff Volume (cu-ft)	30858.7395



Peak Flow Hydrologic Analysis

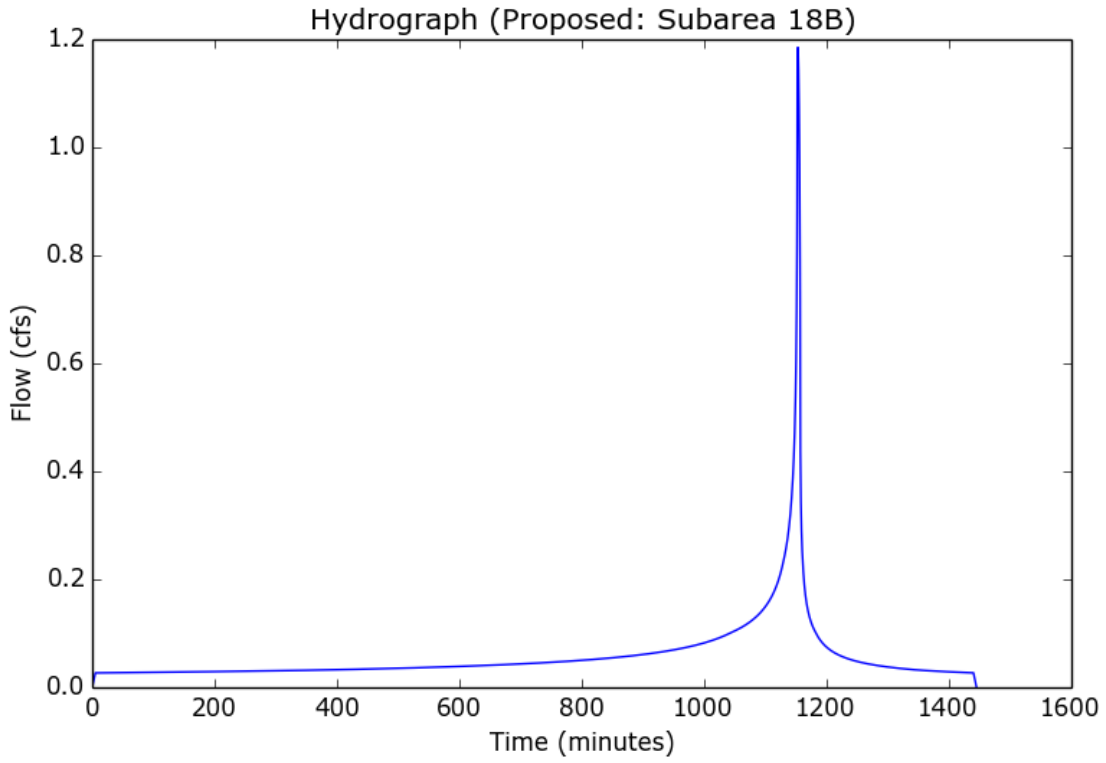
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 18B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 18B
Area (ac)	0.295
Flow Path Length (ft)	200.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8978
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.1851
Burned Peak Flow Rate (cfs)	1.232
24-Hr Clear Runoff Volume (ac-ft)	0.1173
24-Hr Clear Runoff Volume (cu-ft)	5108.2542



Peak Flow Hydrologic Analysis

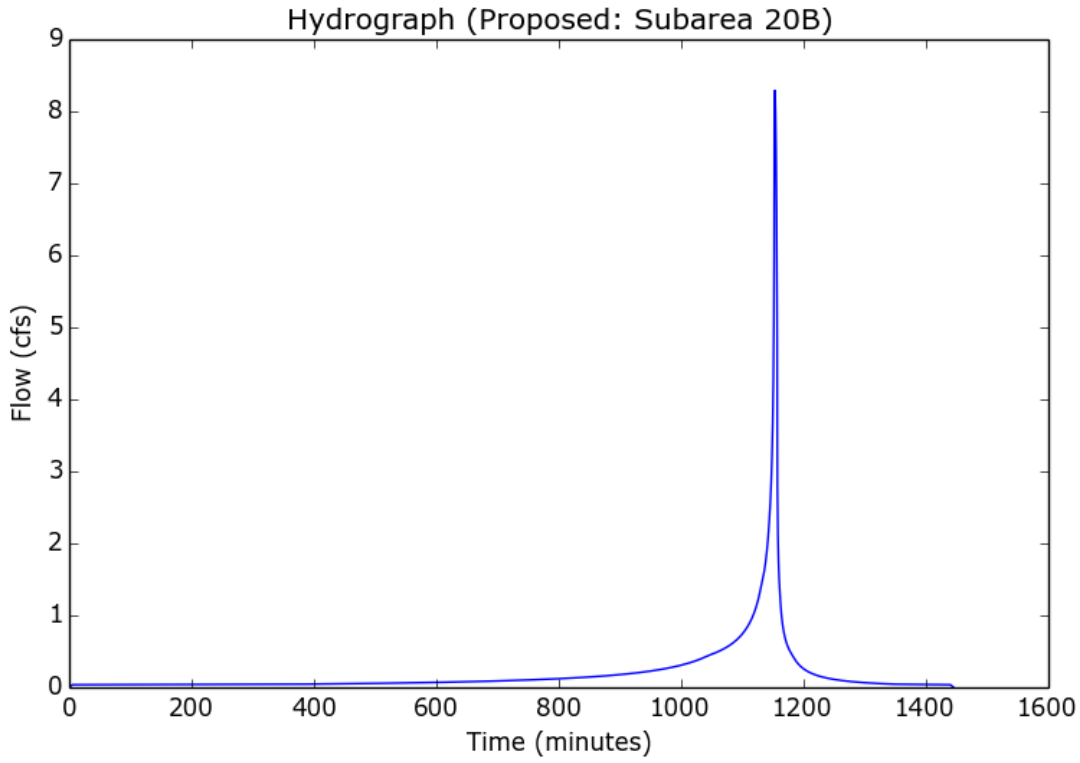
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/offsite/Proposed - Subarea 20B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 20B
Area (ac)	2.07
Flow Path Length (ft)	610.0
Flow Path Slope (vft/hft)	0.467
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	8.2897
Burned Peak Flow Rate (cfs)	8.628
24-Hr Clear Runoff Volume (ac-ft)	0.408
24-Hr Clear Runoff Volume (cu-ft)	17773.5398



Peak Flow Hydrologic Analysis

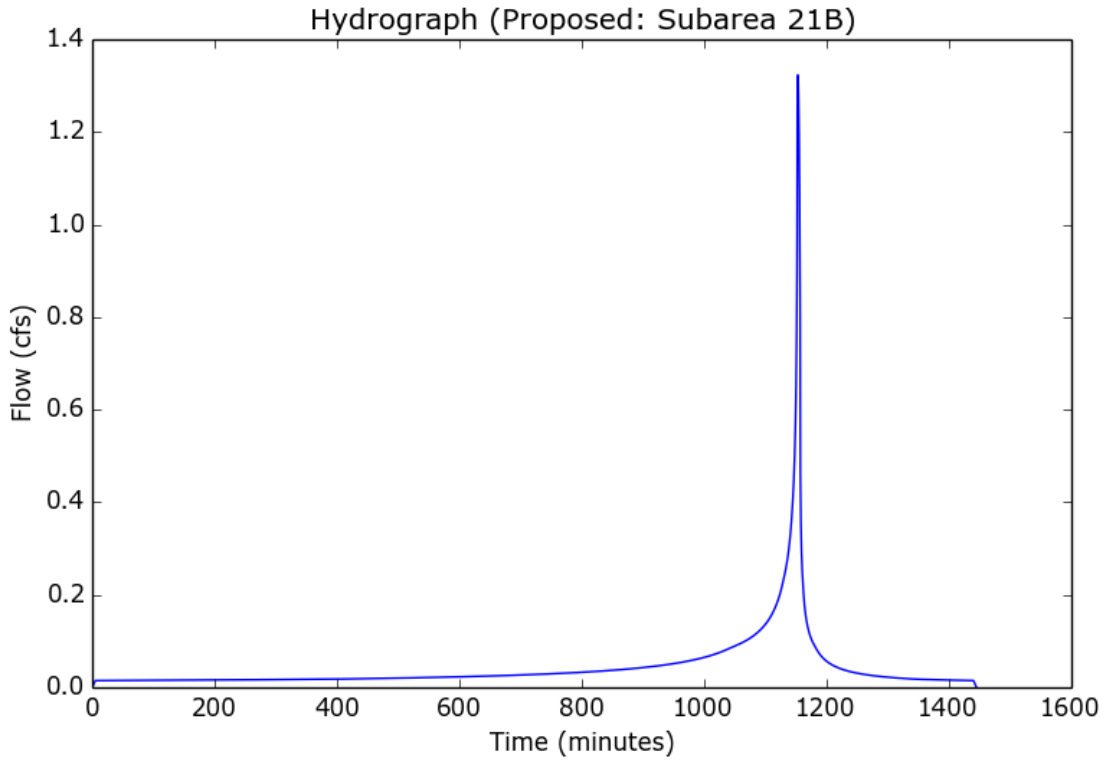
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 21B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 21B
Area (ac)	0.33
Flow Path Length (ft)	326.0
Flow Path Slope (vft/hft)	0.031
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.21
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.896
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.3231
Burned Peak Flow Rate (cfs)	1.3765
24-Hr Clear Runoff Volume (ac-ft)	0.0891
24-Hr Clear Runoff Volume (cu-ft)	3881.0466



Peak Flow Hydrologic Analysis

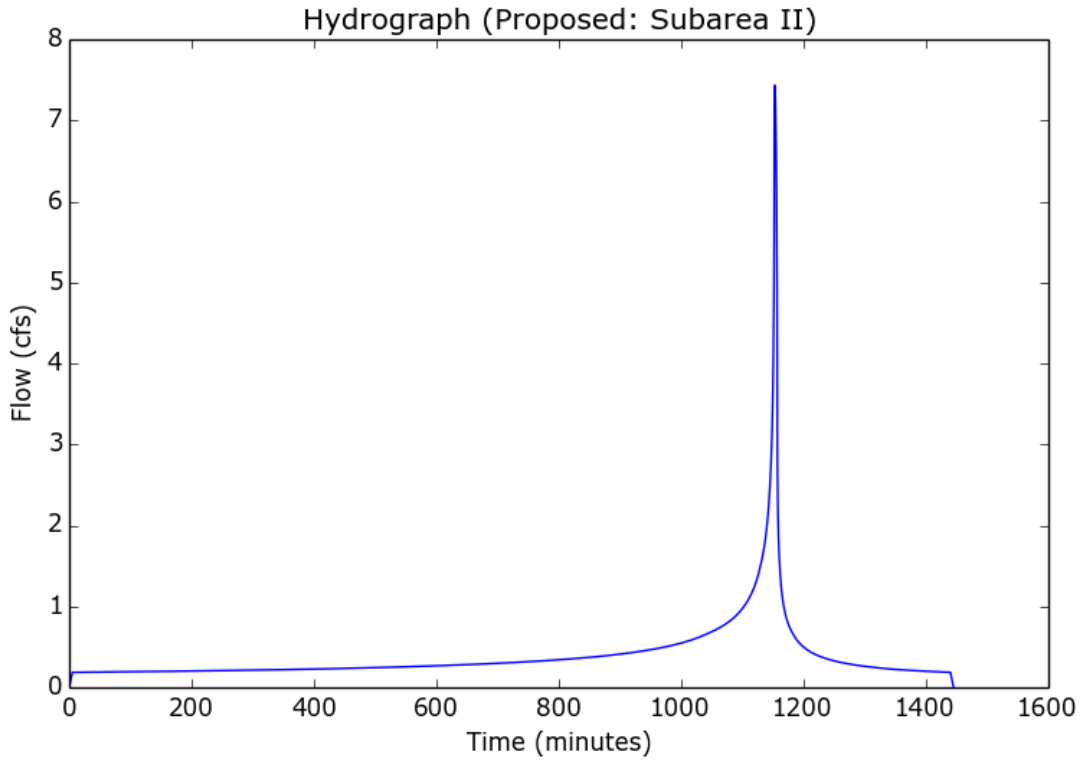
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea II.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 23A
Area (ac)	1.85
Flow Path Length (ft)	333.0
Flow Path Slope (vft/hft)	0.004
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.63
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8981
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	7.4348
Burned Peak Flow Rate (cfs)	7.4348
24-Hr Clear Runoff Volume (ac-ft)	0.7826
24-Hr Clear Runoff Volume (cu-ft)	34090.3006



Peak Flow Hydrologic Analysis

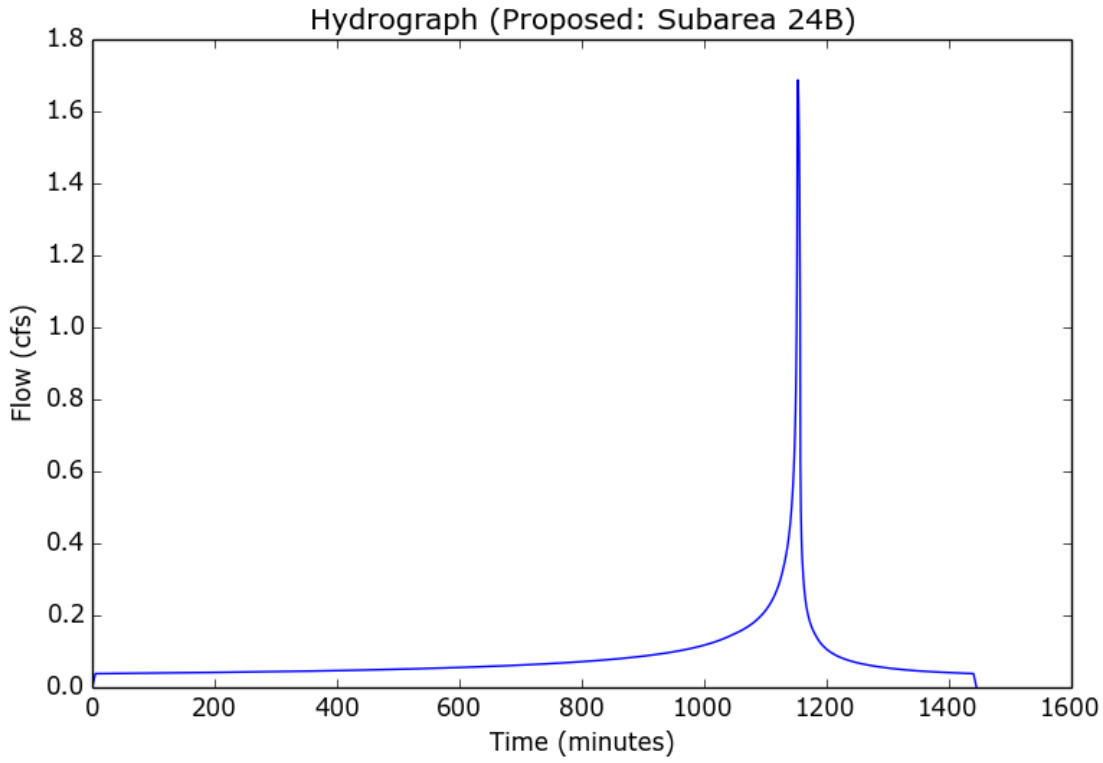
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 24B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 24B
Area (ac)	0.42
Flow Path Length (ft)	314.0
Flow Path Slope (vft/hft)	0.048
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8978
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.6872
Burned Peak Flow Rate (cfs)	1.754
24-Hr Clear Runoff Volume (ac-ft)	0.167
24-Hr Clear Runoff Volume (cu-ft)	7272.7686



Peak Flow Hydrologic Analysis

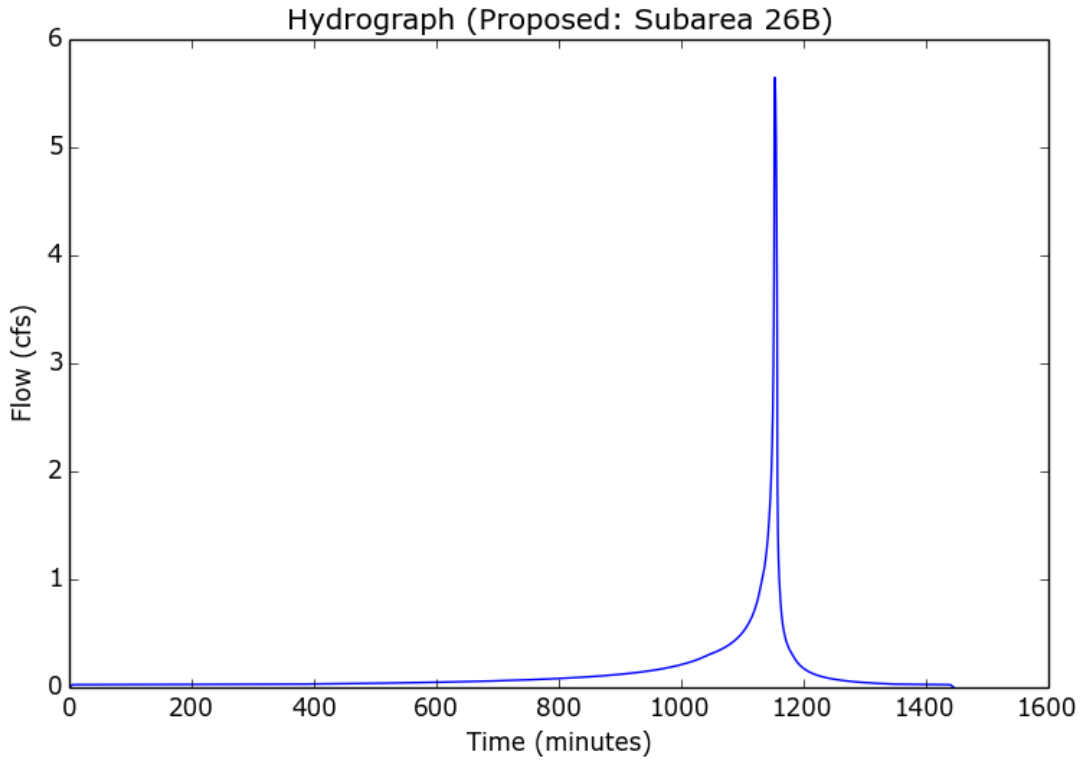
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/offsite/Proposed - Subarea 26B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 26B
Area (ac)	1.41
Flow Path Length (ft)	561.0
Flow Path Slope (vft/hft)	0.49
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	5.6466
Burned Peak Flow Rate (cfs)	5.8771
24-Hr Clear Runoff Volume (ac-ft)	0.2779
24-Hr Clear Runoff Volume (cu-ft)	12106.614



Peak Flow Hydrologic Analysis

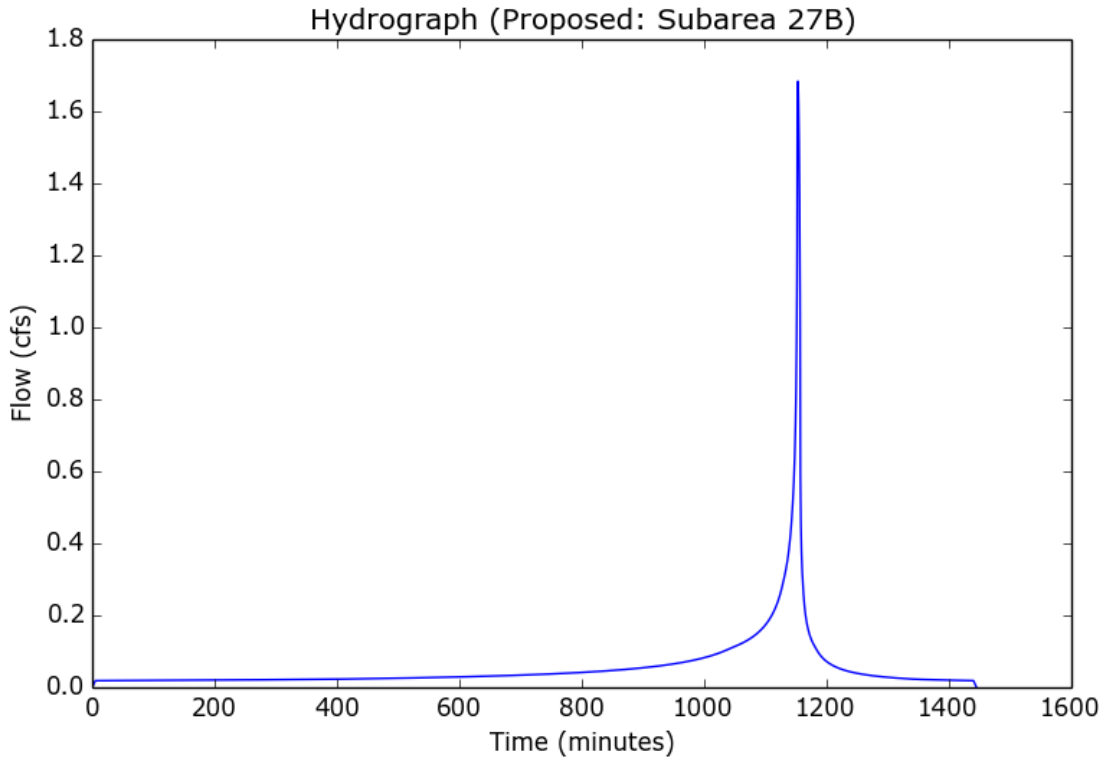
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 27B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 27B
Area (ac)	0.42
Flow Path Length (ft)	94.0
Flow Path Slope (vft/hft)	0.106
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.21
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.896
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.6839
Burned Peak Flow Rate (cfs)	1.7519
24-Hr Clear Runoff Volume (ac-ft)	0.1134
24-Hr Clear Runoff Volume (cu-ft)	4939.5139



Peak Flow Hydrologic Analysis

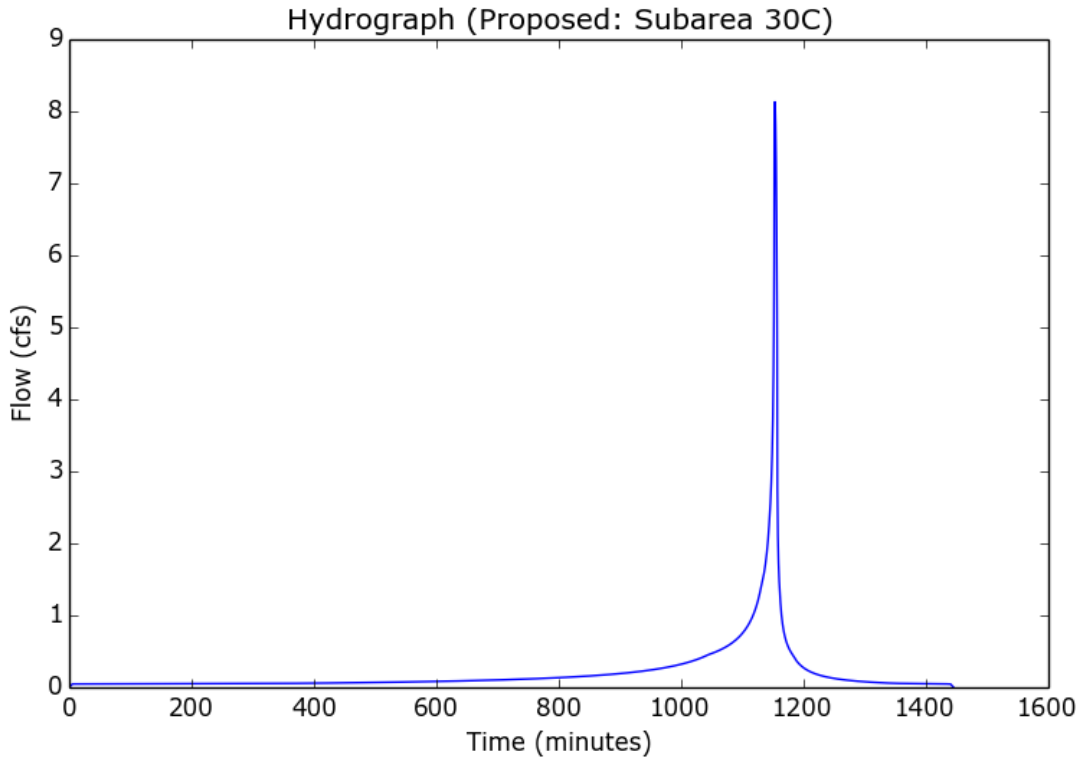
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/offsite/Proposed - Subarea 30C.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 30D
Area (ac)	2.03
Flow Path Length (ft)	564.0
Flow Path Slope (vft/hft)	0.163
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.05
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8952
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	8.1314
Burned Peak Flow Rate (cfs)	8.4625
24-Hr Clear Runoff Volume (ac-ft)	0.4297
24-Hr Clear Runoff Volume (cu-ft)	18718.9352



Peak Flow Hydrologic Analysis

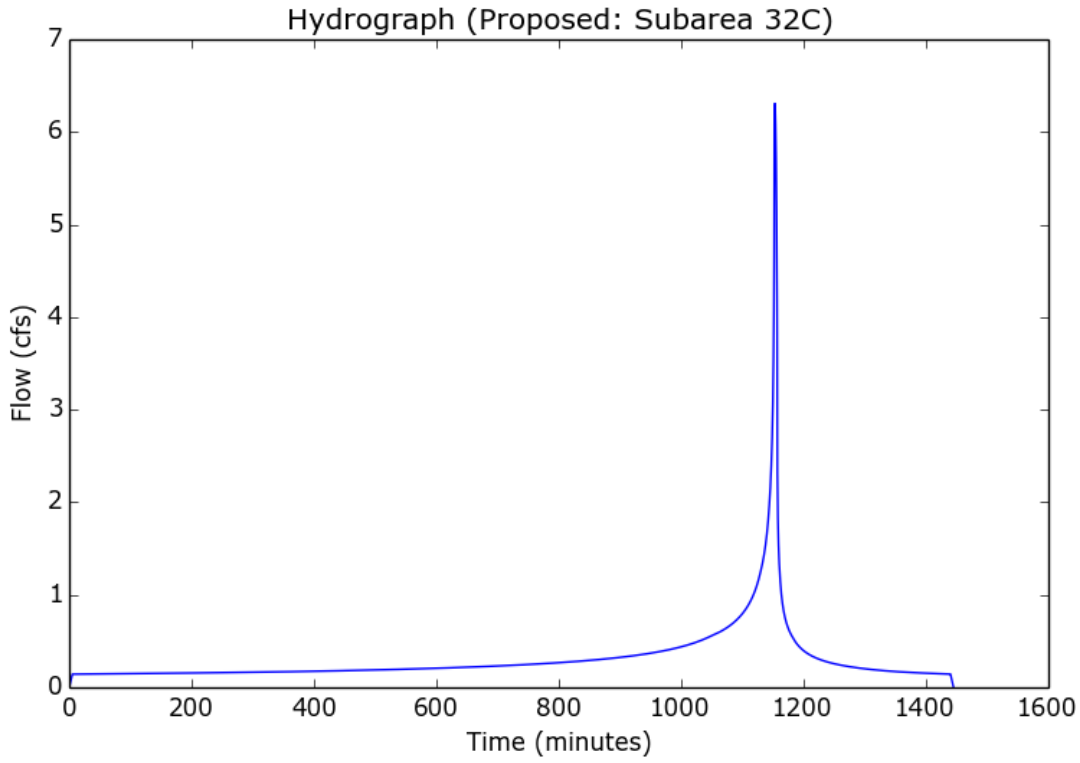
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 32C.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 32C
Area (ac)	1.57
Flow Path Length (ft)	220.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8978
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	6.307
Burned Peak Flow Rate (cfs)	6.5568
24-Hr Clear Runoff Volume (ac-ft)	0.6241
24-Hr Clear Runoff Volume (cu-ft)	27186.3018



Peak Flow Hydrologic Analysis

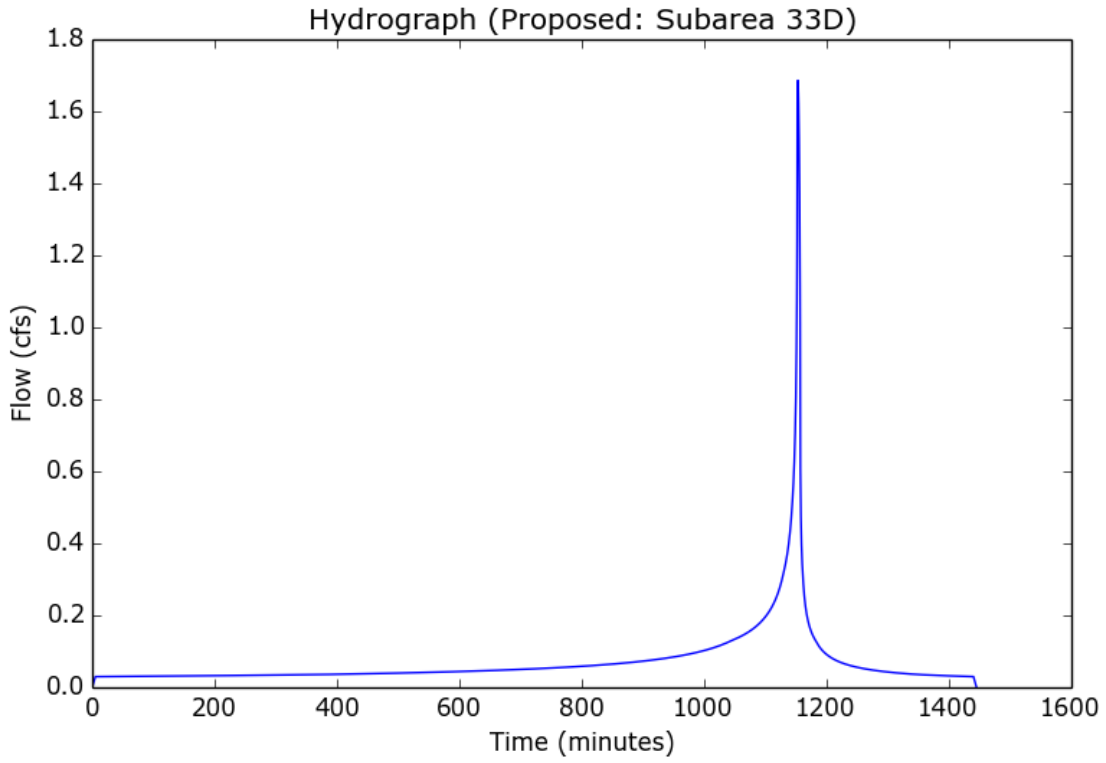
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 33D.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 33D
Area (ac)	0.42
Flow Path Length (ft)	325.0
Flow Path Slope (vft/hft)	0.062
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.41
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.897
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.6858
Burned Peak Flow Rate (cfs)	1.7531
24-Hr Clear Runoff Volume (ac-ft)	0.144
24-Hr Clear Runoff Volume (cu-ft)	6272.8023



Peak Flow Hydrologic Analysis

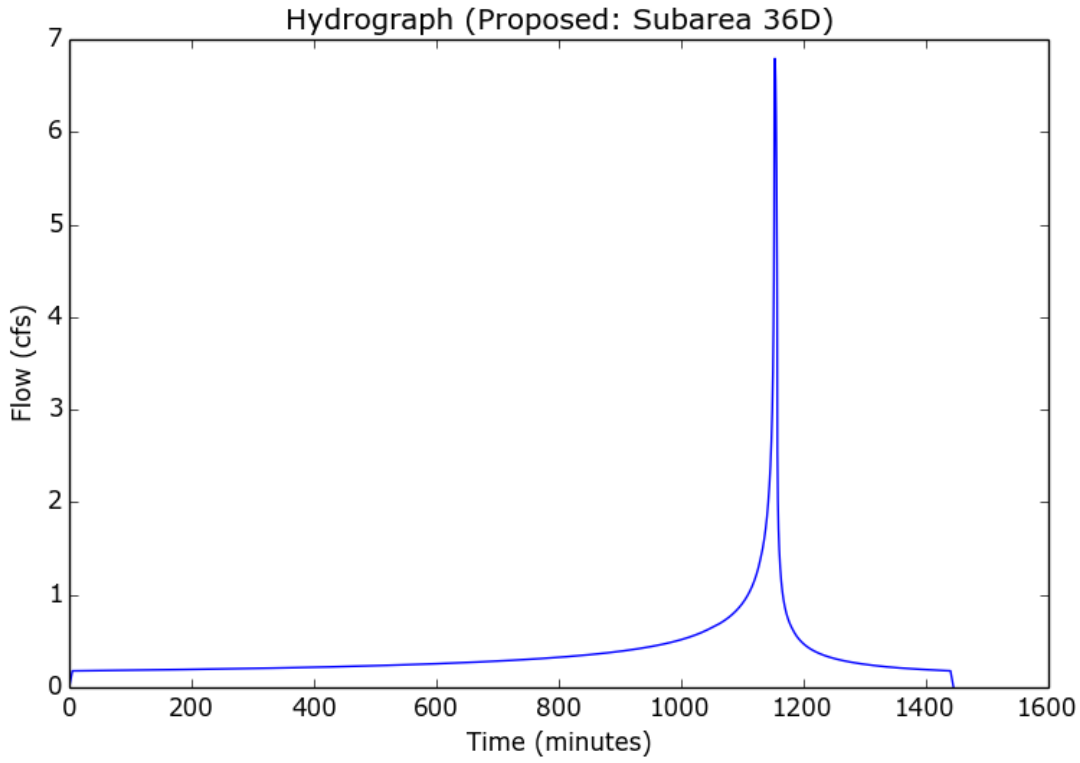
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 36D.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 36A
Area (ac)	1.69
Flow Path Length (ft)	303.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.67
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8983
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	6.7933
Burned Peak Flow Rate (cfs)	7.0607
24-Hr Clear Runoff Volume (ac-ft)	0.7396
24-Hr Clear Runoff Volume (cu-ft)	32214.93



Peak Flow Hydrologic Analysis

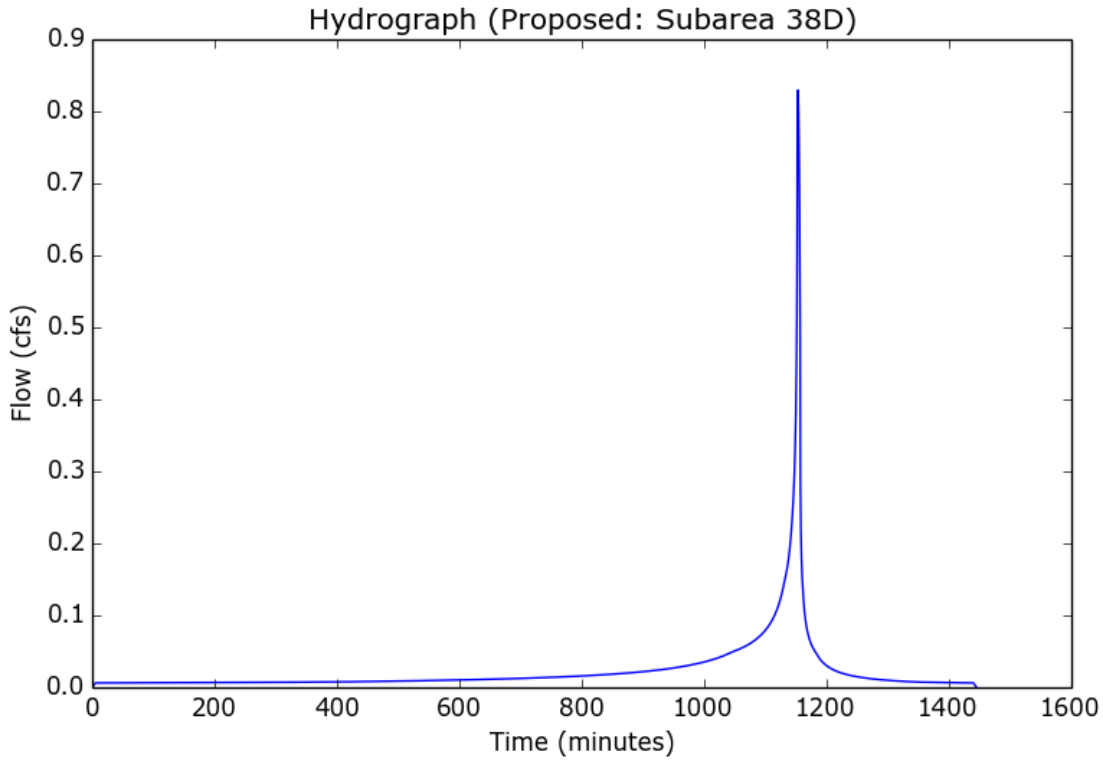
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 38D.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 38A
Area (ac)	0.207
Flow Path Length (ft)	278.0
Flow Path Slope (vft/hft)	0.072
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.1
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8954
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.8294
Burned Peak Flow Rate (cfs)	0.8631
24-Hr Clear Runoff Volume (ac-ft)	0.0476
24-Hr Clear Runoff Volume (cu-ft)	2073.0583



Peak Flow Hydrologic Analysis

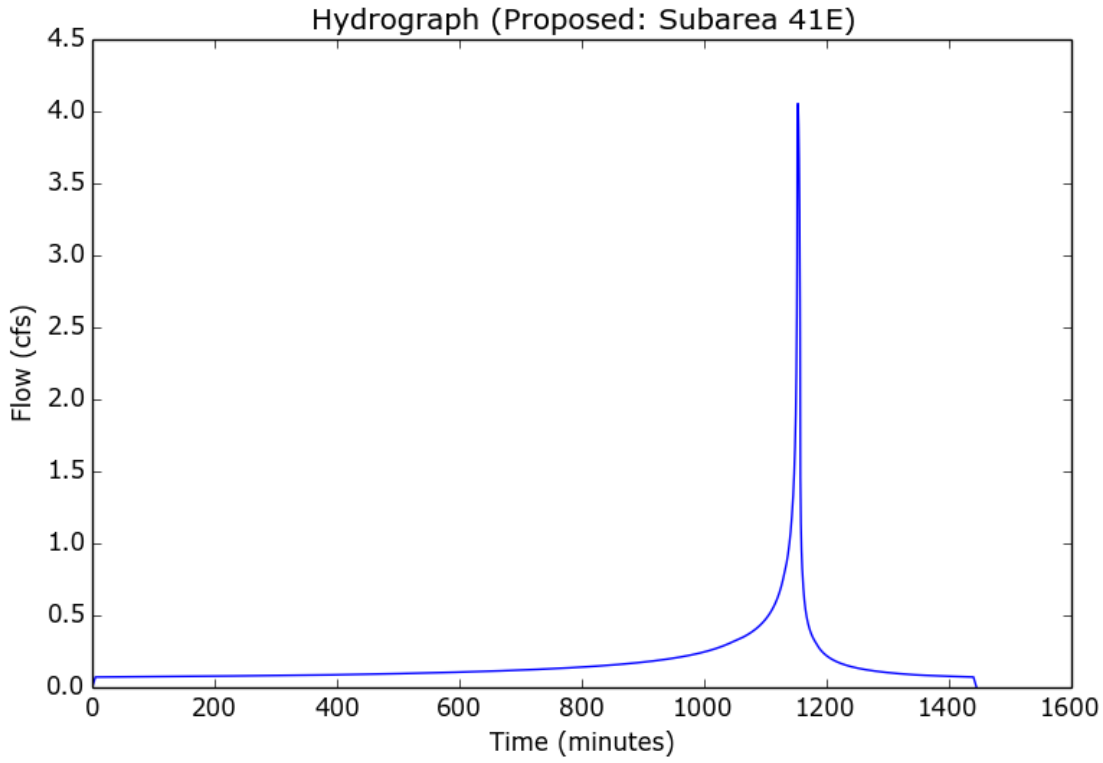
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 41E.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 41E
Area (ac)	1.01
Flow Path Length (ft)	277.0
Flow Path Slope (vft/hft)	0.019
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.41
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.897
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	4.0539
Burned Peak Flow Rate (cfs)	4.2158
24-Hr Clear Runoff Volume (ac-ft)	0.3463
24-Hr Clear Runoff Volume (cu-ft)	15084.5961



Peak Flow Hydrologic Analysis

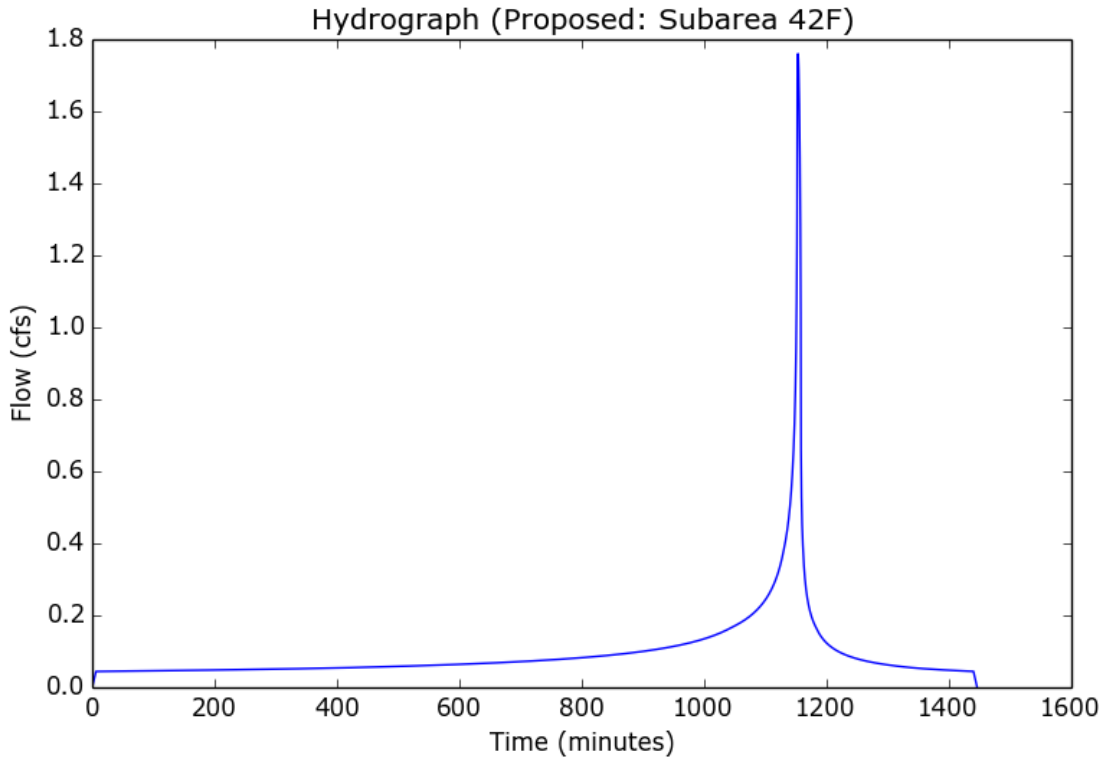
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 42F.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 42F
Area (ac)	0.48
Flow Path Length (ft)	420.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.57
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.1072
Undeveloped Runoff Coefficient (Cu)	0.8834
Developed Runoff Coefficient (Cd)	0.8929
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	1.7603
Burned Peak Flow Rate (cfs)	1.8328
24-Hr Clear Runoff Volume (ac-ft)	0.1925
24-Hr Clear Runoff Volume (cu-ft)	8386.9122



Peak Flow Hydrologic Analysis

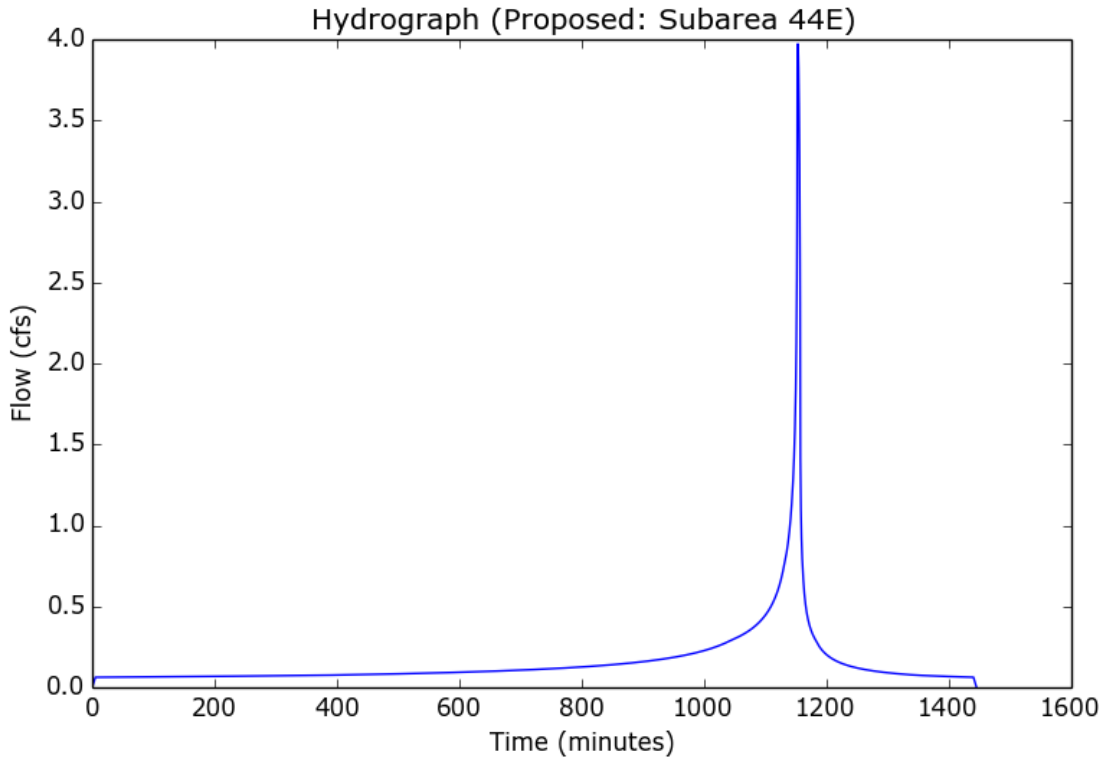
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 44E.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 44E
Area (ac)	0.99
Flow Path Length (ft)	290.0
Flow Path Slope (vft/hft)	0.09
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.35
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8967
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.9723
Burned Peak Flow Rate (cfs)	4.1314
24-Hr Clear Runoff Volume (ac-ft)	0.3178
24-Hr Clear Runoff Volume (cu-ft)	13843.0658



Peak Flow Hydrologic Analysis

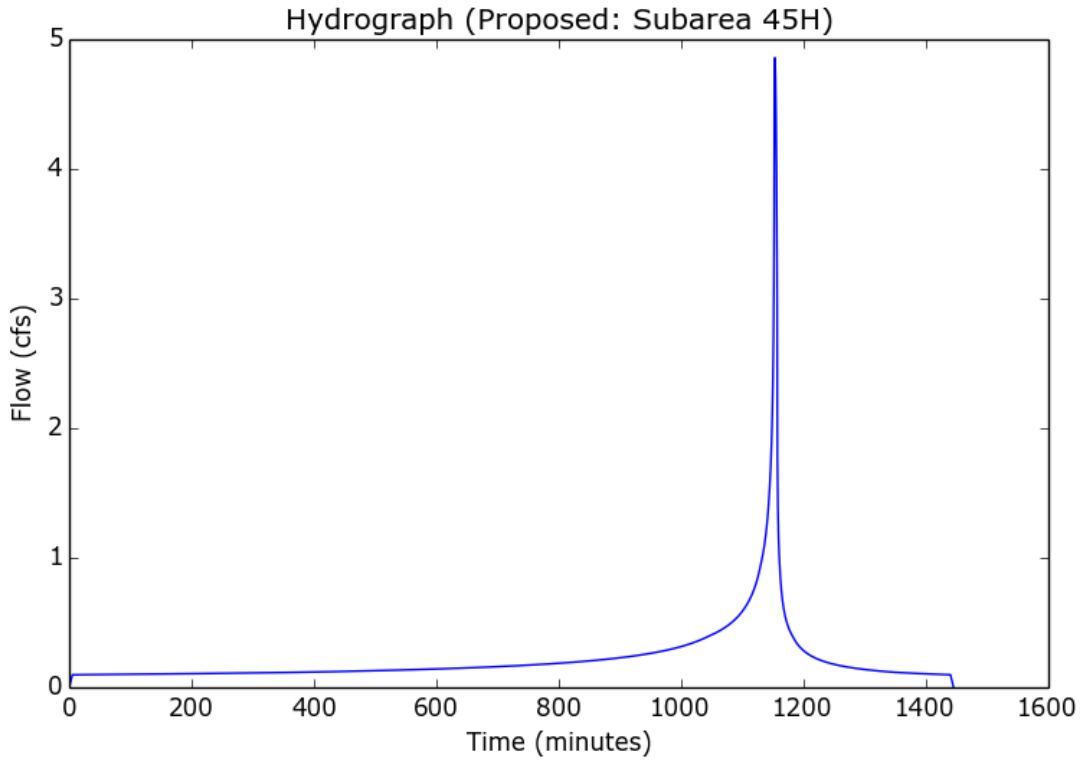
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 45H.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 45F
Area (ac)	1.21
Flow Path Length (ft)	277.0
Flow Path Slope (vft/hft)	0.004
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.48
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8974
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	4.8586
Burned Peak Flow Rate (cfs)	5.0519
24-Hr Clear Runoff Volume (ac-ft)	0.4457
24-Hr Clear Runoff Volume (cu-ft)	19416.044



Peak Flow Hydrologic Analysis

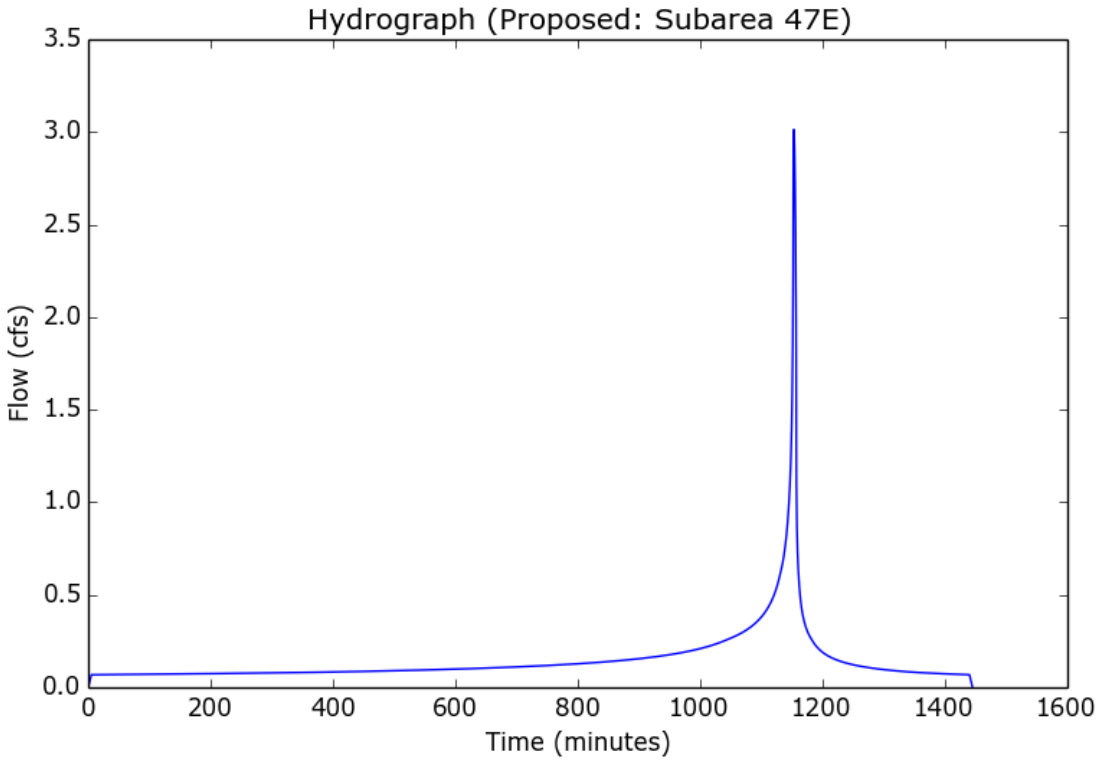
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 47E.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 47E
Area (ac)	0.75
Flow Path Length (ft)	268.0
Flow Path Slope (vft/hft)	0.075
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8978
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.0129
Burned Peak Flow Rate (cfs)	3.1322
24-Hr Clear Runoff Volume (ac-ft)	0.2981
24-Hr Clear Runoff Volume (cu-ft)	12987.0869



Peak Flow Hydrologic Analysis

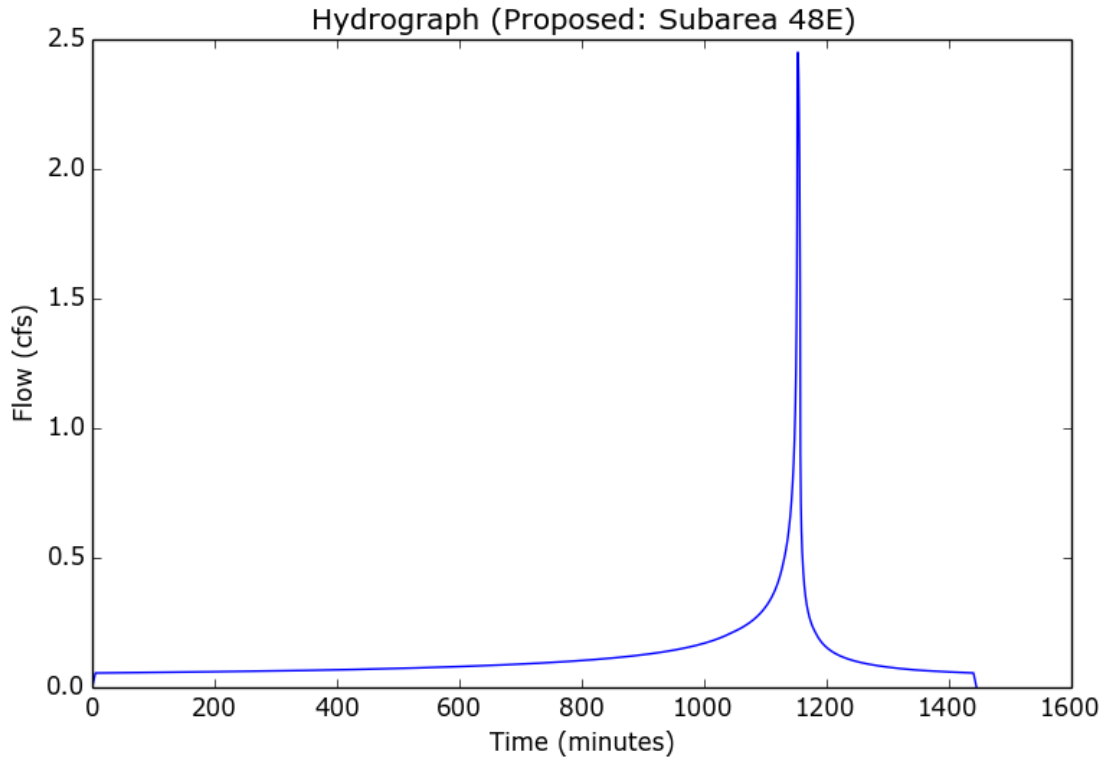
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 48E.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 48E
Area (ac)	0.61
Flow Path Length (ft)	60.0
Flow Path Slope (vft/hft)	0.033
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8978
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.4505
Burned Peak Flow Rate (cfs)	2.5475
24-Hr Clear Runoff Volume (ac-ft)	0.2425
24-Hr Clear Runoff Volume (cu-ft)	10562.8307



Peak Flow Hydrologic Analysis

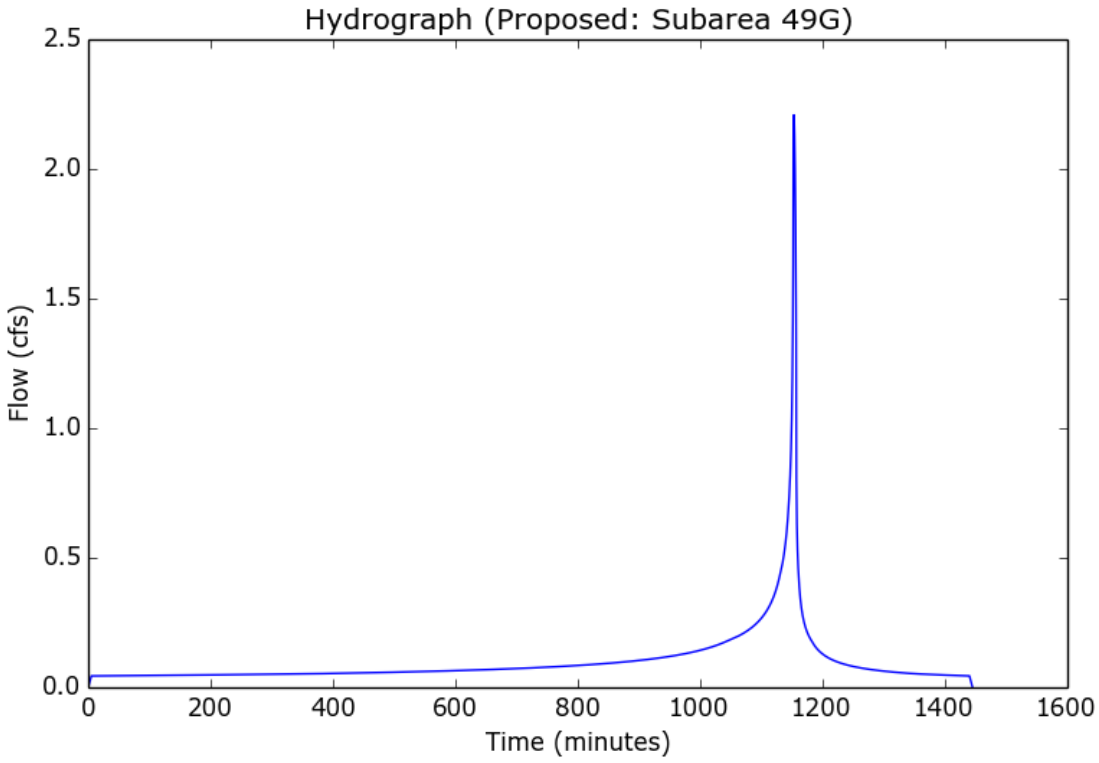
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 49G.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 49G
Area (ac)	0.55
Flow Path Length (ft)	180.0
Flow Path Slope (vft/hft)	0.091
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.48
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8974
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.2085
Burned Peak Flow Rate (cfs)	2.2963
24-Hr Clear Runoff Volume (ac-ft)	0.2026
24-Hr Clear Runoff Volume (cu-ft)	8825.4745



Peak Flow Hydrologic Analysis

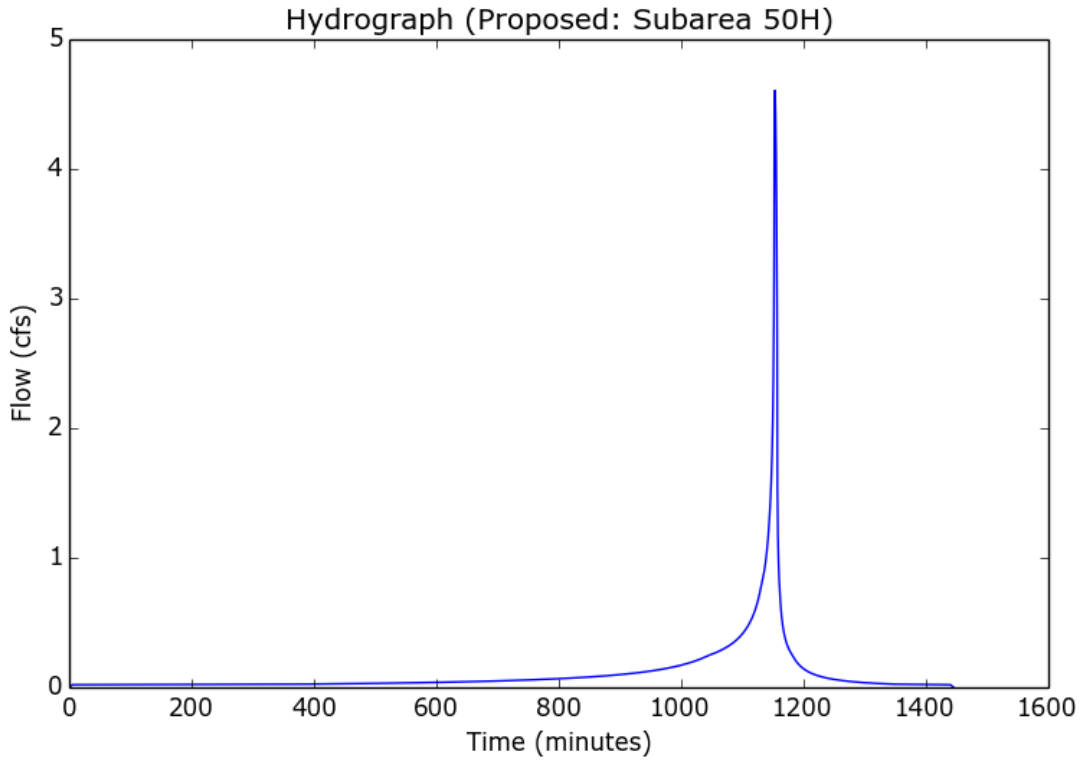
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 50H.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 50H
Area (ac)	1.15
Flow Path Length (ft)	538.0
Flow Path Slope (vft/hft)	0.214
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.01
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	4.6054
Burned Peak Flow Rate (cfs)	4.7934
24-Hr Clear Runoff Volume (ac-ft)	0.2267
24-Hr Clear Runoff Volume (cu-ft)	9874.1888



Peak Flow Hydrologic Analysis

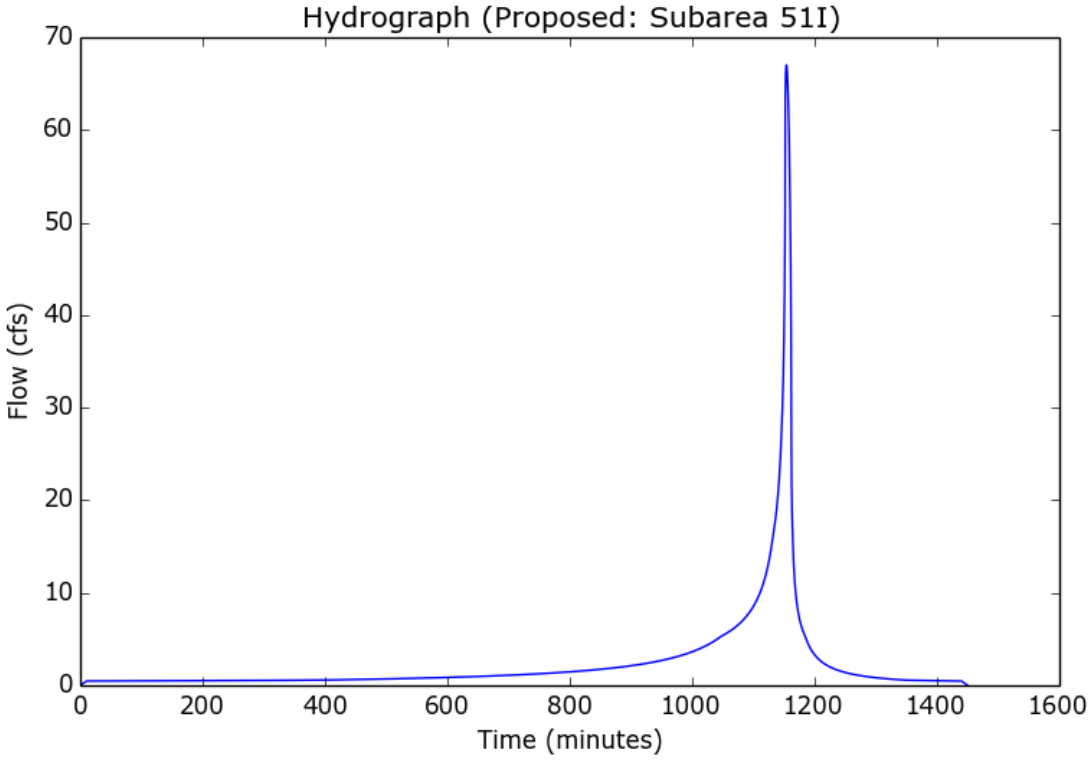
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed - Subarea 51I.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed
Subarea ID	Subarea 51I
Area (ac)	24.38
Flow Path Length (ft)	2544.0
Flow Path Slope (vft/hft)	0.248
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.02
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.2306
Undeveloped Runoff Coefficient (Cu)	0.8498
Developed Runoff Coefficient (Cd)	0.8508
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	67.0082
Burned Peak Flow Rate (cfs)	70.9037
24-Hr Clear Runoff Volume (ac-ft)	4.8836
24-Hr Clear Runoff Volume (cu-ft)	212728.2489



Peak Flow Hydrologic Analysis

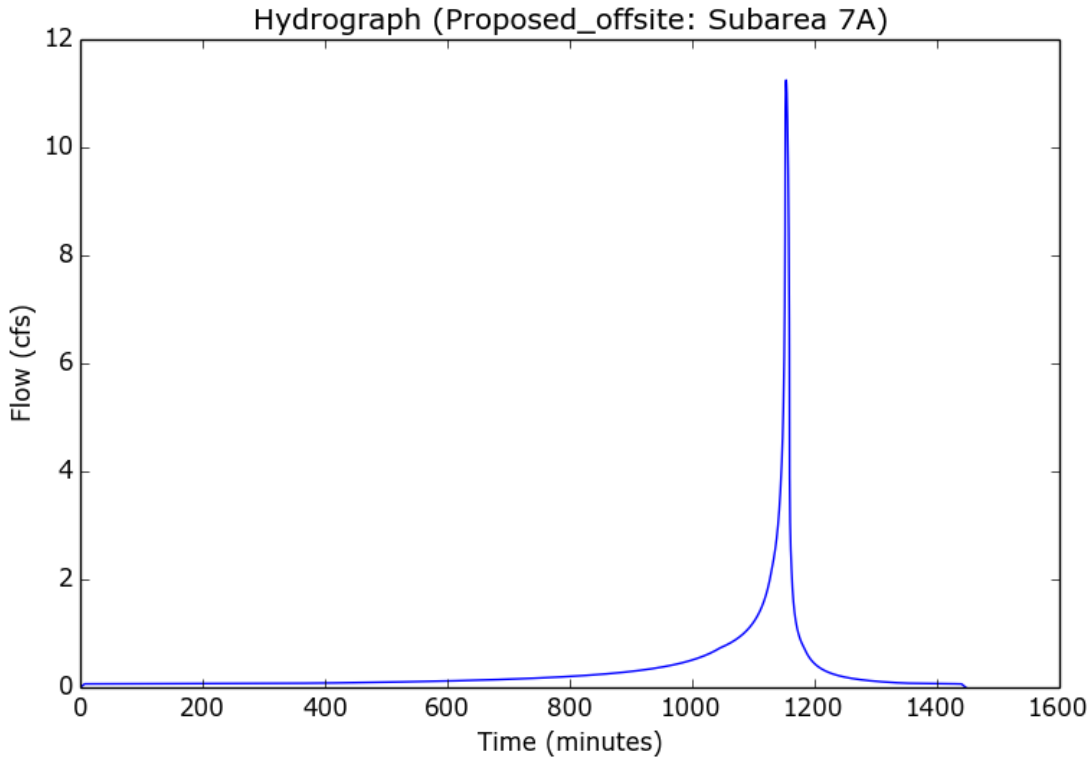
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/Proposed_offsite - Subarea 7A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed_offsite
Subarea ID	Subarea 7A
Area (ac)	3.37
Flow Path Length (ft)	1721.0
Flow Path Slope (vft/hft)	0.346
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.02
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.8202
Undeveloped Runoff Coefficient (Cu)	0.873
Developed Runoff Coefficient (Cd)	0.8735
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	11.246
Burned Peak Flow Rate (cfs)	11.7994
24-Hr Clear Runoff Volume (ac-ft)	0.6758
24-Hr Clear Runoff Volume (cu-ft)	29437.8969



Peak Flow Hydrologic Analysis

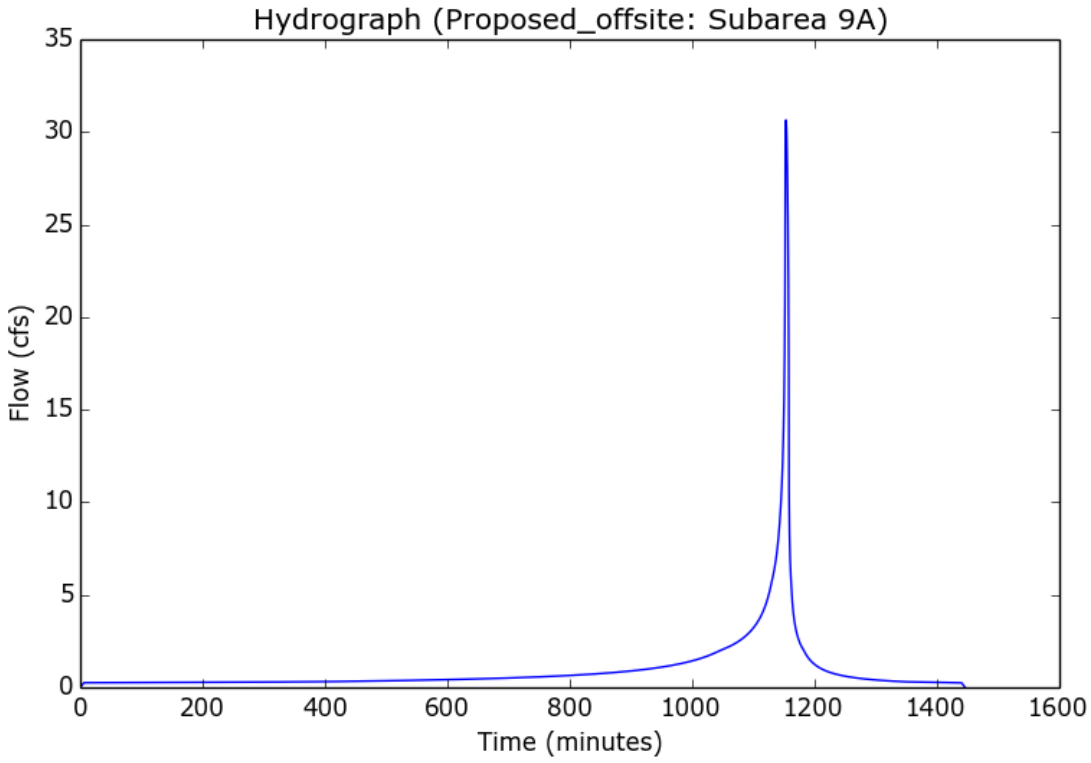
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/offsite/Proposed_offsite - Subarea 9A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed_offsite
Subarea ID	Subarea 9A
Area (ac)	8.43
Flow Path Length (ft)	1164.0
Flow Path Slope (vft/hft)	0.305
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.1
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.1072
Undeveloped Runoff Coefficient (Cu)	0.8834
Developed Runoff Coefficient (Cd)	0.8851
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	30.6455
Burned Peak Flow Rate (cfs)	32.0121
24-Hr Clear Runoff Volume (ac-ft)	1.9373
24-Hr Clear Runoff Volume (cu-ft)	84387.3444



Peak Flow Hydrologic Analysis

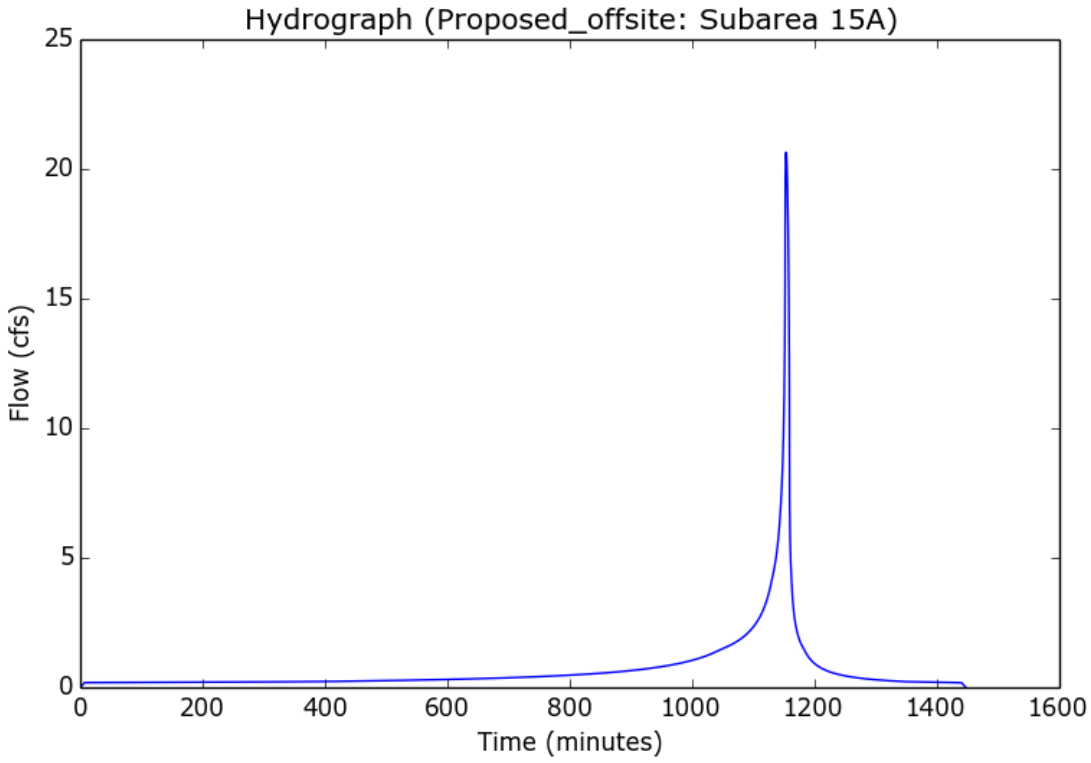
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/offsite/Proposed_offsite - Subarea 15A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed_offsite
Subarea ID	Subarea 15A
Area (ac)	6.17
Flow Path Length (ft)	1421.0
Flow Path Slope (vft/hft)	0.236
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.1
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	3.8202
Undeveloped Runoff Coefficient (Cu)	0.873
Developed Runoff Coefficient (Cd)	0.8757
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	20.6408
Burned Peak Flow Rate (cfs)	21.6366
24-Hr Clear Runoff Volume (ac-ft)	1.4173
24-Hr Clear Runoff Volume (cu-ft)	61736.2272



Peak Flow Hydrologic Analysis

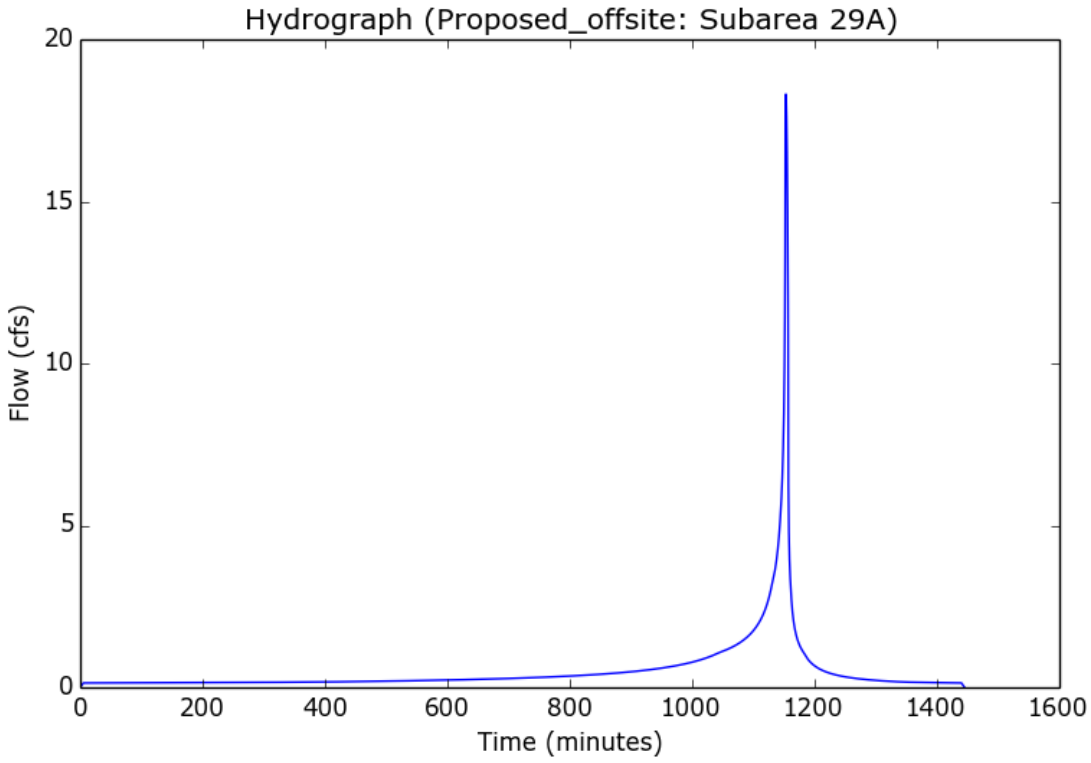
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/offsite/Proposed_offsite - Subarea 29C.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	Proposed_offsite
Subarea ID	Subarea 29C
Area (ac)	4.57
Flow Path Length (ft)	909.0
Flow Path Slope (vft/hft)	0.235
50-yr Rainfall Depth (in)	7.5
Percent Impervious	0.1
Soil Type	34
Design Storm Frequency	50-yr
Fire Factor	0.83
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	7.5
Peak Intensity (in/hr)	4.4747
Undeveloped Runoff Coefficient (Cu)	0.8949
Developed Runoff Coefficient (Cd)	0.8954
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	18.3108
Burned Peak Flow Rate (cfs)	19.0545
24-Hr Clear Runoff Volume (ac-ft)	1.0507
24-Hr Clear Runoff Volume (cu-ft)	45767.5191



APPENDIX D

LID Calculations

Peak Flow Hydrologic Analysis

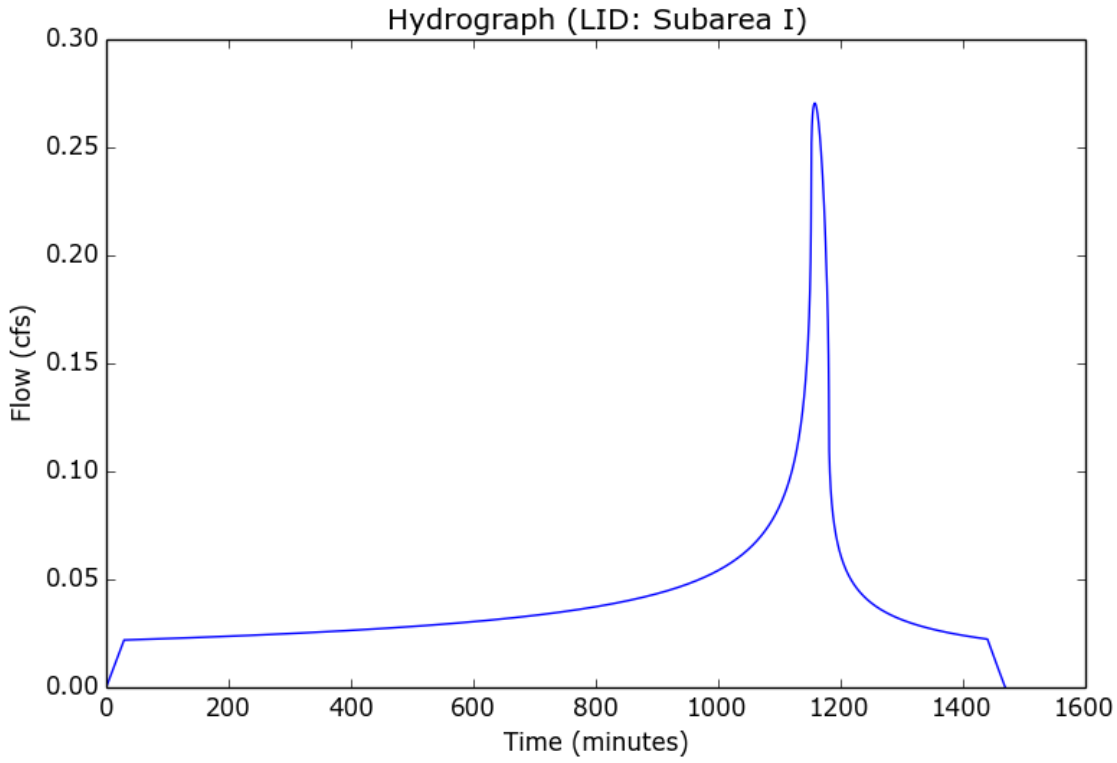
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea I.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 16A
Area (ac)	1.75
Flow Path Length (ft)	346.0
Flow Path Slope (vft/hft)	0.004
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.58
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2612
Undeveloped Runoff Coefficient (Cu)	0.1663
Developed Runoff Coefficient (Cd)	0.5918
Time of Concentration (min)	29.0
Clear Peak Flow Rate (cfs)	0.2705
Burned Peak Flow Rate (cfs)	0.2705
24-Hr Clear Runoff Volume (ac-ft)	0.0819
24-Hr Clear Runoff Volume (cu-ft)	3566.4951



Peak Flow Hydrologic Analysis

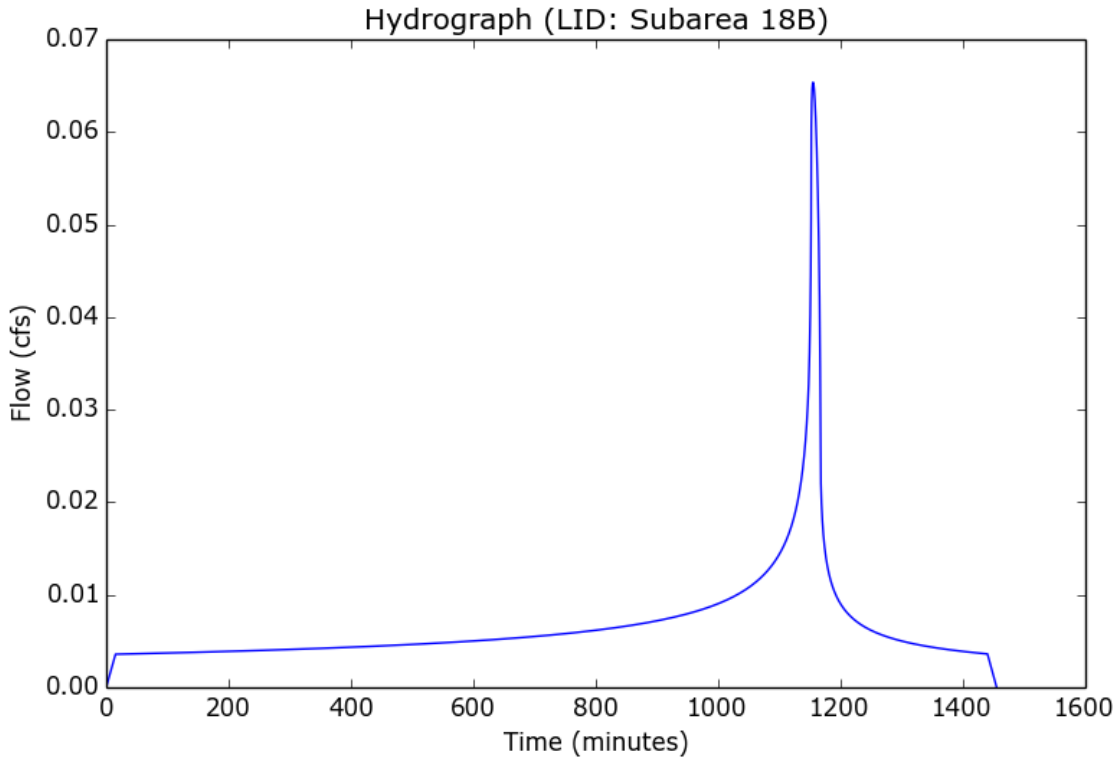
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 18B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 18B
Area (ac)	0.295
Flow Path Length (ft)	200.0
Flow Path Slope (vft/hft)	0.02
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.356
Undeveloped Runoff Coefficient (Cu)	0.2691
Developed Runoff Coefficient (Cd)	0.6224
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	0.0654
Burned Peak Flow Rate (cfs)	0.0654
24-Hr Clear Runoff Volume (ac-ft)	0.0135
24-Hr Clear Runoff Volume (cu-ft)	587.3277



Peak Flow Hydrologic Analysis

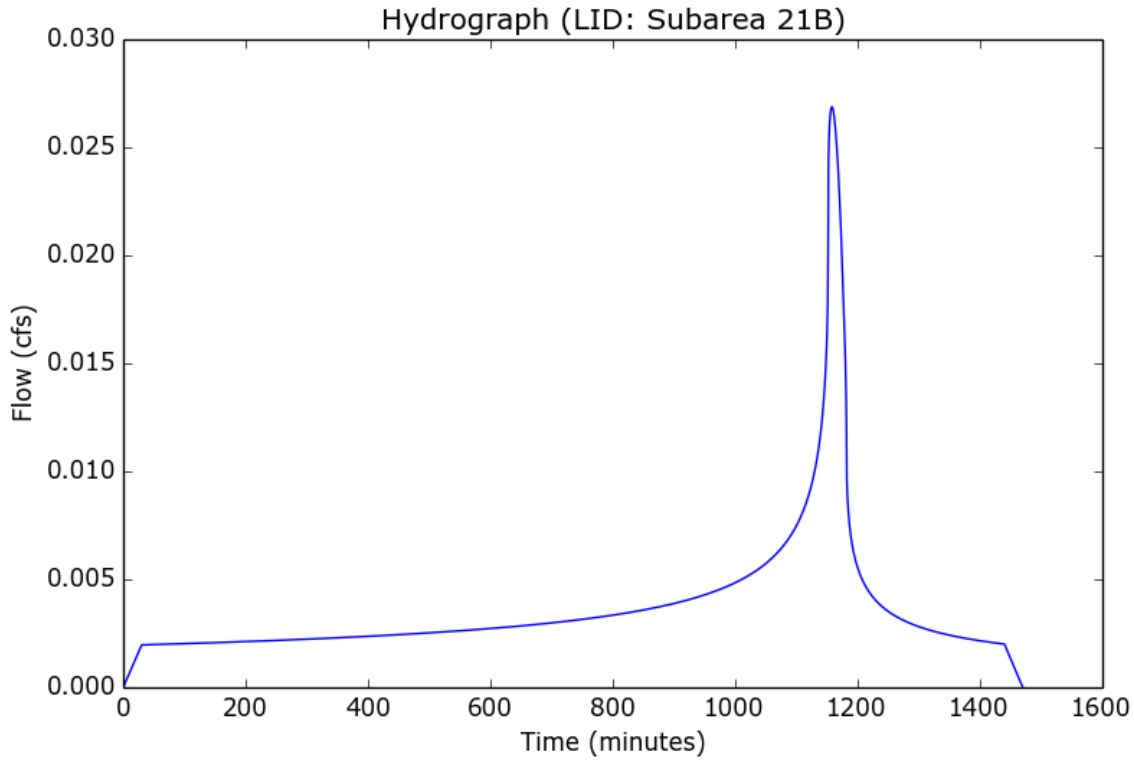
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 21B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 21B
Area (ac)	0.33
Flow Path Length (ft)	326.0
Flow Path Slope (vft/hft)	0.031
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.21
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.257
Undeveloped Runoff Coefficient (Cu)	0.1618
Developed Runoff Coefficient (Cd)	0.3168
Time of Concentration (min)	30.0
Clear Peak Flow Rate (cfs)	0.0269
Burned Peak Flow Rate (cfs)	0.0269
24-Hr Clear Runoff Volume (ac-ft)	0.0074
24-Hr Clear Runoff Volume (cu-ft)	322.7647



Peak Flow Hydrologic Analysis

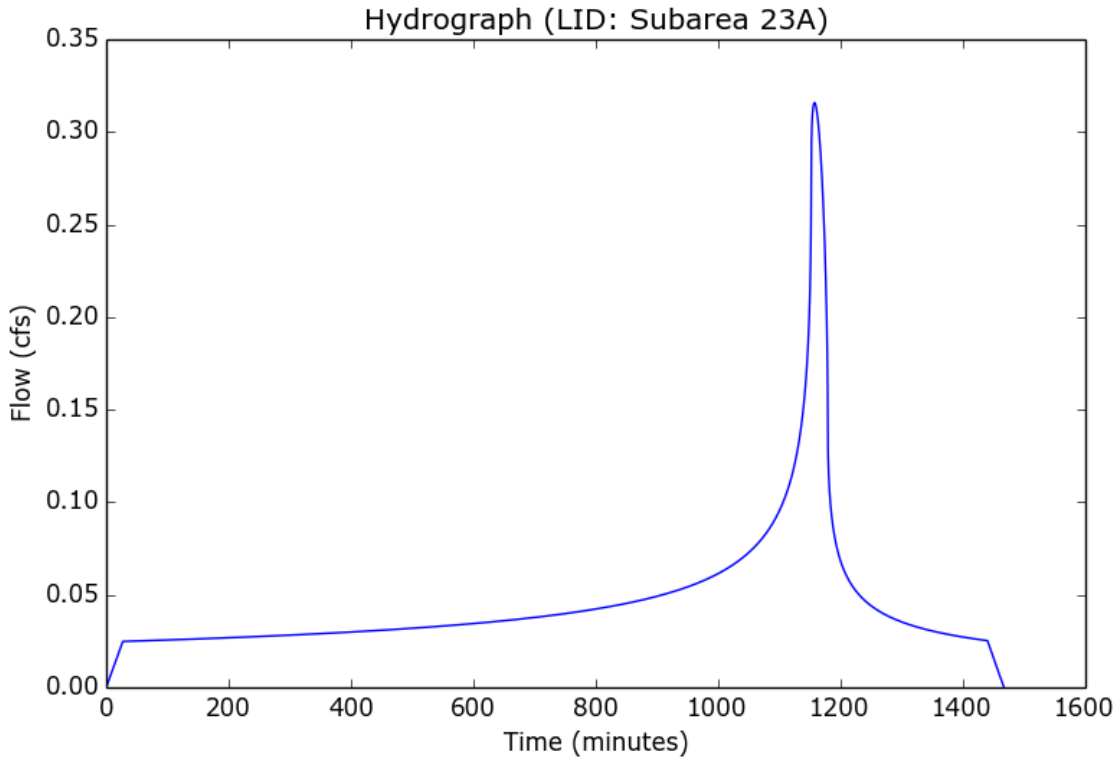
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 23A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 23A
Area (ac)	1.85
Flow Path Length (ft)	333.0
Flow Path Slope (vft/hft)	0.004
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.63
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2701
Undeveloped Runoff Coefficient (Cu)	0.1759
Developed Runoff Coefficient (Cd)	0.6321
Time of Concentration (min)	27.0
Clear Peak Flow Rate (cfs)	0.3158
Burned Peak Flow Rate (cfs)	0.3158
24-Hr Clear Runoff Volume (ac-ft)	0.0927
24-Hr Clear Runoff Volume (cu-ft)	4036.8216



Peak Flow Hydrologic Analysis

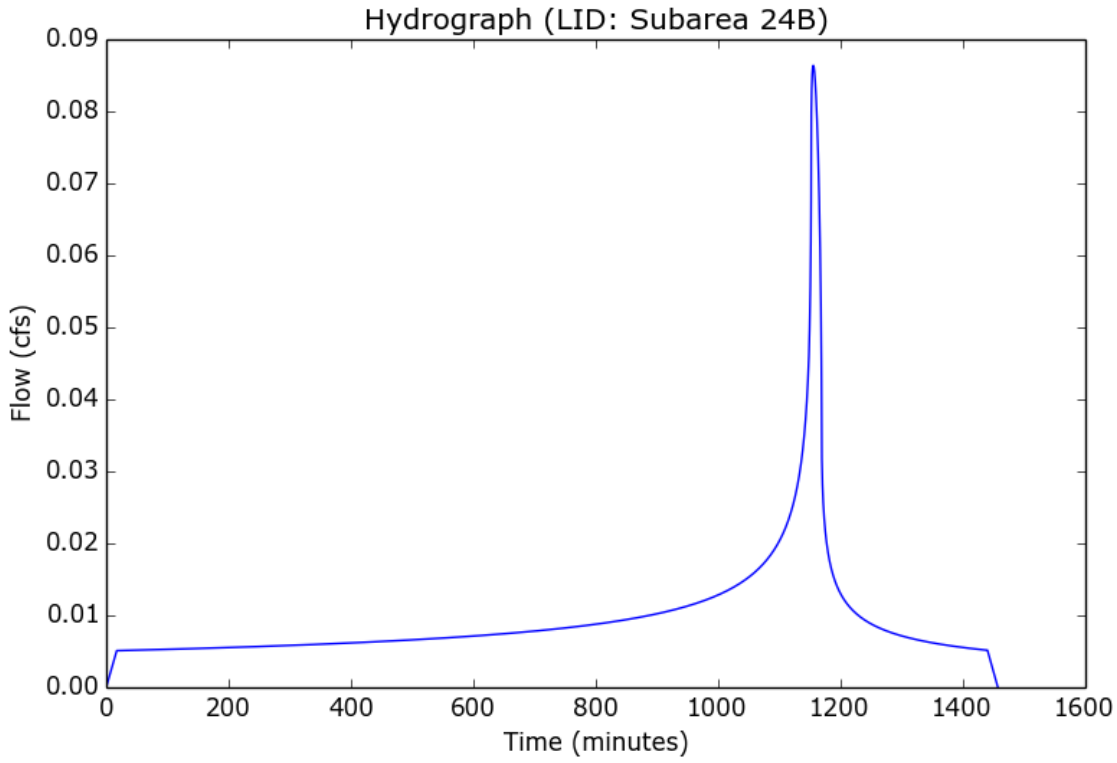
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 24B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 24B
Area (ac)	0.42
Flow Path Length (ft)	314.0
Flow Path Slope (vft/hft)	0.048
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.3357
Undeveloped Runoff Coefficient (Cu)	0.247
Developed Runoff Coefficient (Cd)	0.6127
Time of Concentration (min)	17.0
Clear Peak Flow Rate (cfs)	0.0864
Burned Peak Flow Rate (cfs)	0.0864
24-Hr Clear Runoff Volume (ac-ft)	0.0192
24-Hr Clear Runoff Volume (cu-ft)	835.4255



Peak Flow Hydrologic Analysis

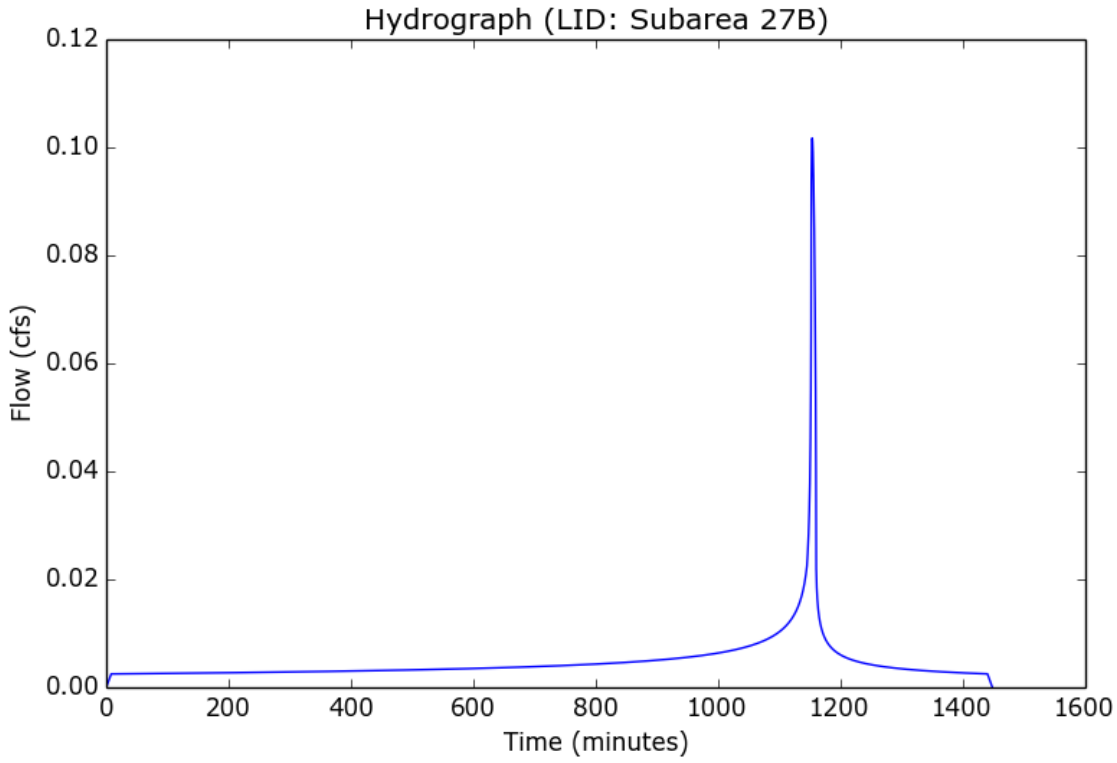
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 27B.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 27B
Area (ac)	0.42
Flow Path Length (ft)	94.0
Flow Path Slope (vft/hft)	0.106
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.21
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.4784
Undeveloped Runoff Coefficient (Cu)	0.4017
Developed Runoff Coefficient (Cd)	0.5063
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	0.1017
Burned Peak Flow Rate (cfs)	0.1017
24-Hr Clear Runoff Volume (ac-ft)	0.0098
24-Hr Clear Runoff Volume (cu-ft)	425.2563



Peak Flow Hydrologic Analysis

File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 32C.pdf

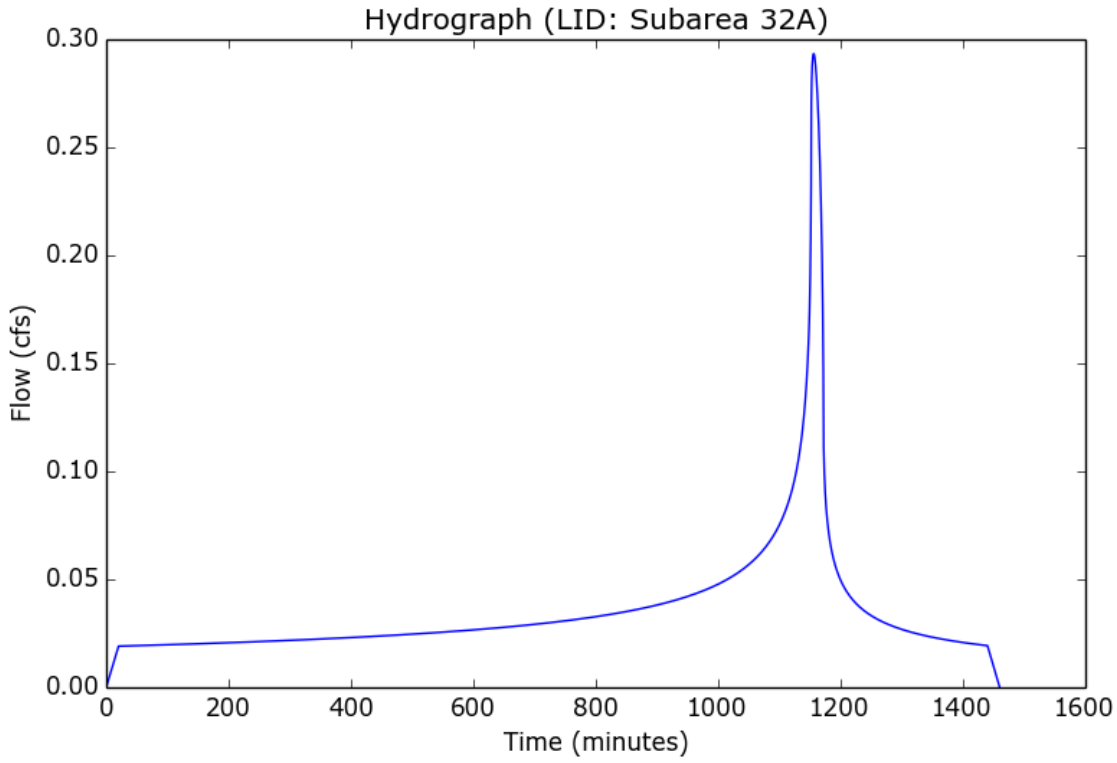
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 32C
Area (ac)	1.57
Flow Path Length (ft)	220.0
Flow Path Slope (vft/hft)	0.006
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.311
Undeveloped Runoff Coefficient (Cu)	0.2203
Developed Runoff Coefficient (Cd)	0.6009
Time of Concentration (min)	20.0
Clear Peak Flow Rate (cfs)	0.2934
Burned Peak Flow Rate (cfs)	0.2934
24-Hr Clear Runoff Volume (ac-ft)	0.0716
24-Hr Clear Runoff Volume (cu-ft)	3119.0389



Peak Flow Hydrologic Analysis

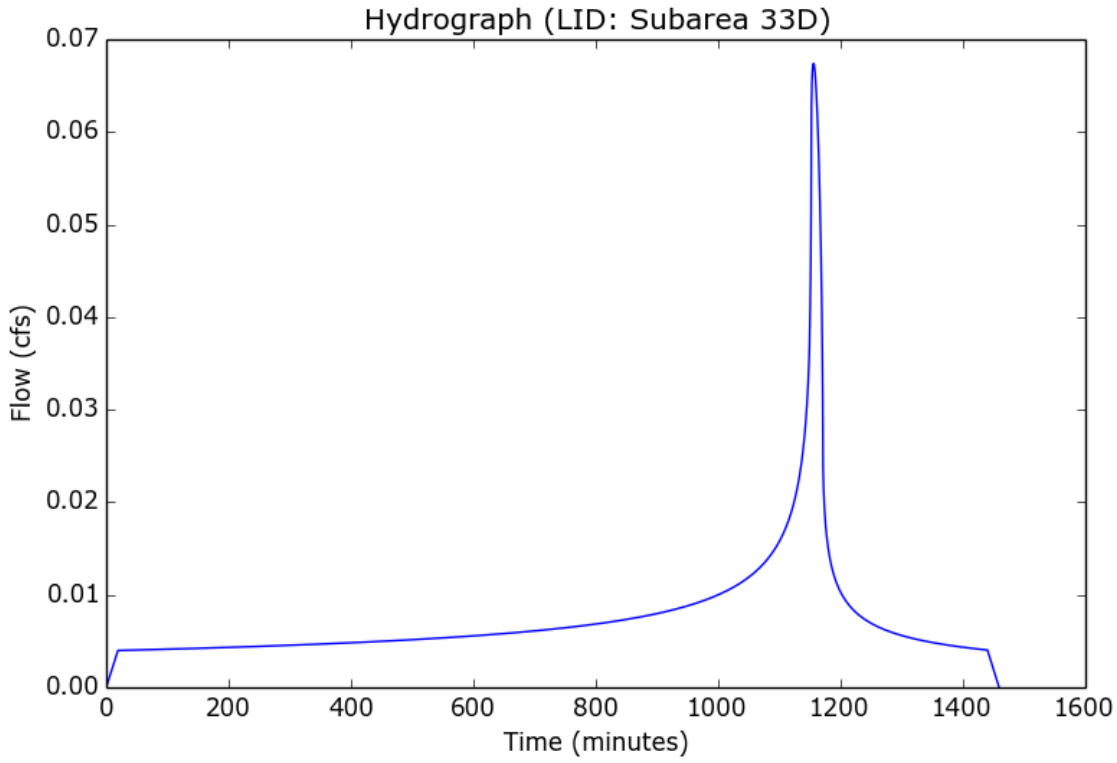
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 33D.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 33D
Area (ac)	0.42
Flow Path Length (ft)	325.0
Flow Path Slope (vft/hft)	0.062
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.41
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.3186
Undeveloped Runoff Coefficient (Cu)	0.2285
Developed Runoff Coefficient (Cd)	0.5038
Time of Concentration (min)	19.0
Clear Peak Flow Rate (cfs)	0.0674
Burned Peak Flow Rate (cfs)	0.0674
24-Hr Clear Runoff Volume (ac-ft)	0.015
24-Hr Clear Runoff Volume (cu-ft)	655.3754



Peak Flow Hydrologic Analysis

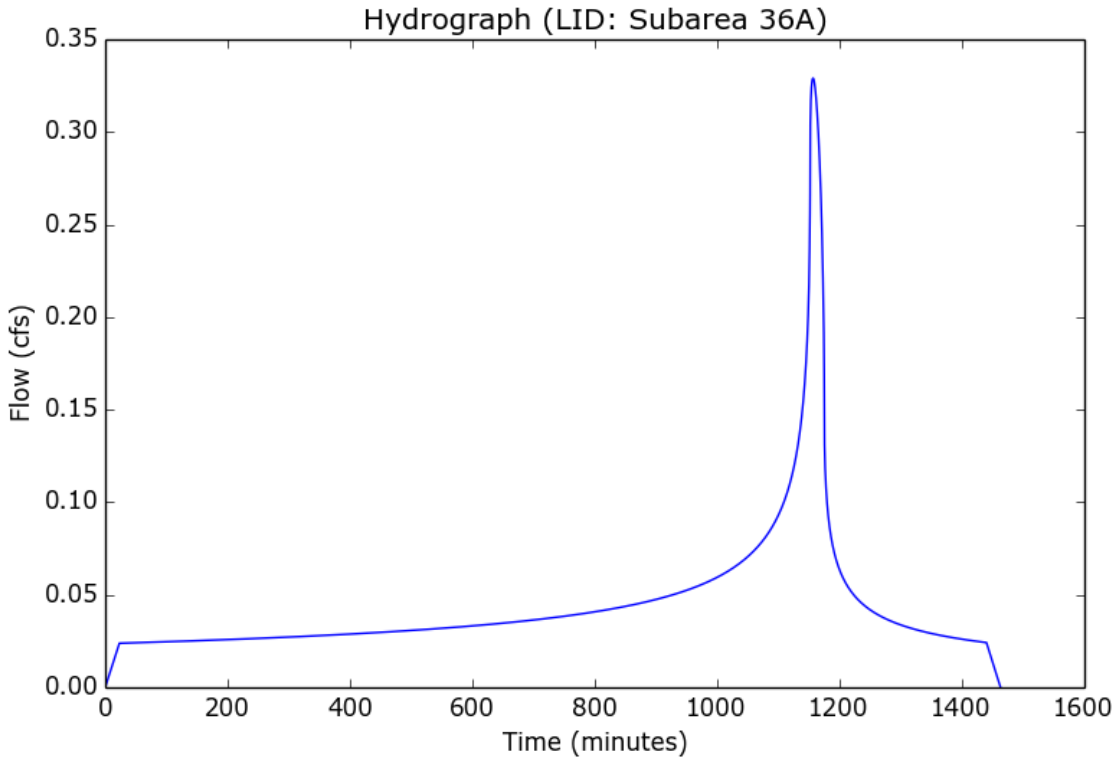
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 36A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 36A
Area (ac)	1.69
Flow Path Length (ft)	303.0
Flow Path Slope (vft/hft)	0.006
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.67
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2912
Undeveloped Runoff Coefficient (Cu)	0.1988
Developed Runoff Coefficient (Cd)	0.6686
Time of Concentration (min)	23.0
Clear Peak Flow Rate (cfs)	0.3291
Burned Peak Flow Rate (cfs)	0.3291
24-Hr Clear Runoff Volume (ac-ft)	0.0892
24-Hr Clear Runoff Volume (cu-ft)	3884.224



Peak Flow Hydrologic Analysis

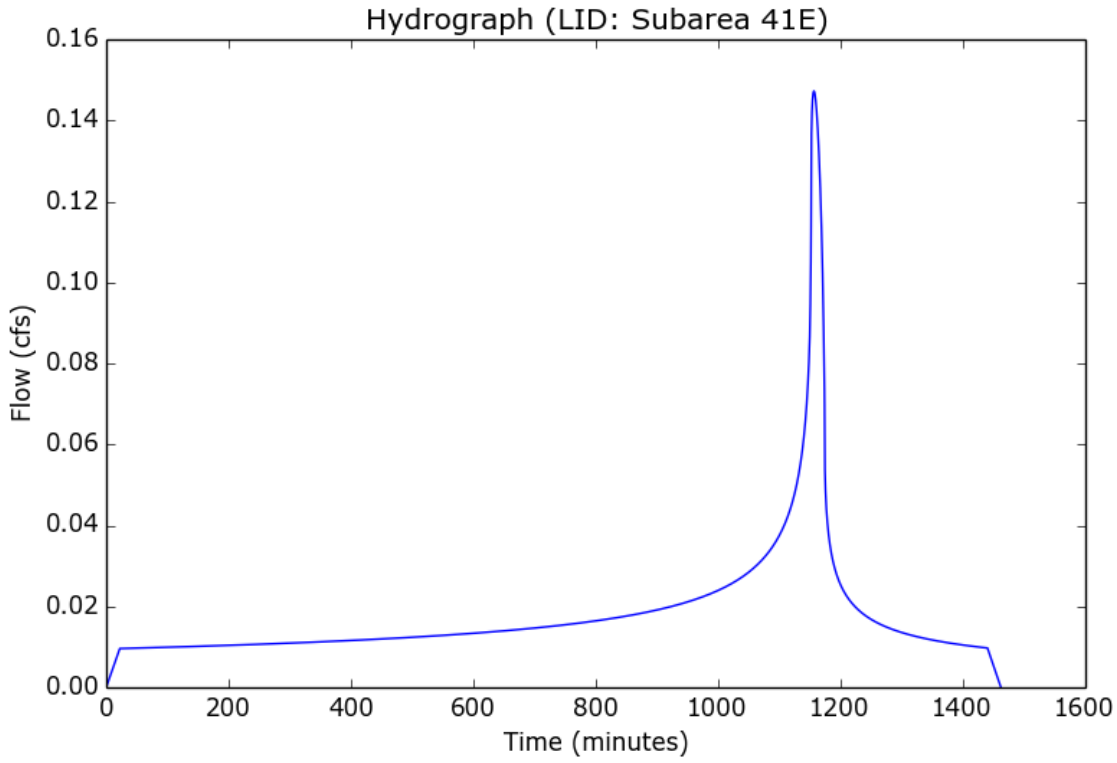
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 41E.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 41E
Area (ac)	1.01
Flow Path Length (ft)	277.0
Flow Path Slope (vft/hft)	0.019
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.41
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2974
Undeveloped Runoff Coefficient (Cu)	0.2055
Developed Runoff Coefficient (Cd)	0.4902
Time of Concentration (min)	22.0
Clear Peak Flow Rate (cfs)	0.1472
Burned Peak Flow Rate (cfs)	0.1472
24-Hr Clear Runoff Volume (ac-ft)	0.0361
24-Hr Clear Runoff Volume (cu-ft)	1572.9518



Peak Flow Hydrologic Analysis

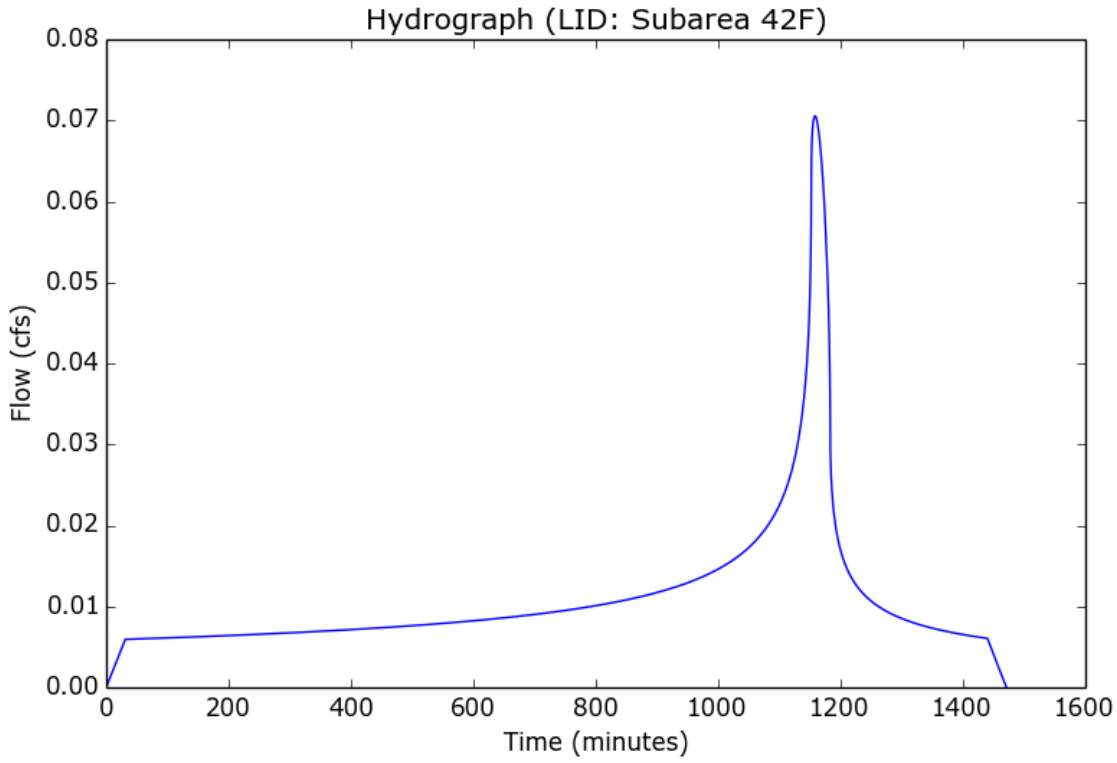
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 42F.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 42F
Area (ac)	0.48
Flow Path Length (ft)	420.0
Flow Path Slope (vft/hft)	0.006
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.57
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2531
Undeveloped Runoff Coefficient (Cu)	0.1575
Developed Runoff Coefficient (Cd)	0.5807
Time of Concentration (min)	31.0
Clear Peak Flow Rate (cfs)	0.0706
Burned Peak Flow Rate (cfs)	0.0706
24-Hr Clear Runoff Volume (ac-ft)	0.0221
24-Hr Clear Runoff Volume (cu-ft)	963.9962



Peak Flow Hydrologic Analysis

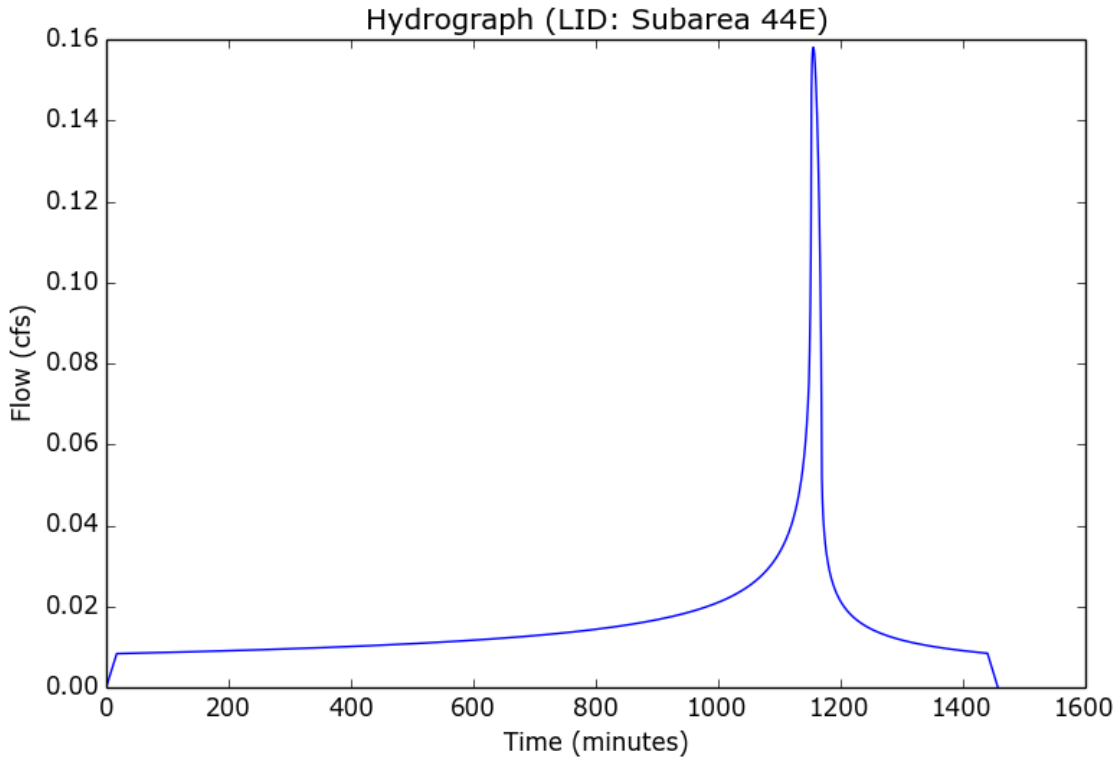
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 44E.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 44E
Area (ac)	0.99
Flow Path Length (ft)	290.0
Flow Path Slope (vft/hft)	0.09
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.35
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.3357
Undeveloped Runoff Coefficient (Cu)	0.247
Developed Runoff Coefficient (Cd)	0.4756
Time of Concentration (min)	17.0
Clear Peak Flow Rate (cfs)	0.158
Burned Peak Flow Rate (cfs)	0.158
24-Hr Clear Runoff Volume (ac-ft)	0.0316
24-Hr Clear Runoff Volume (cu-ft)	1378.1655



Peak Flow Hydrologic Analysis

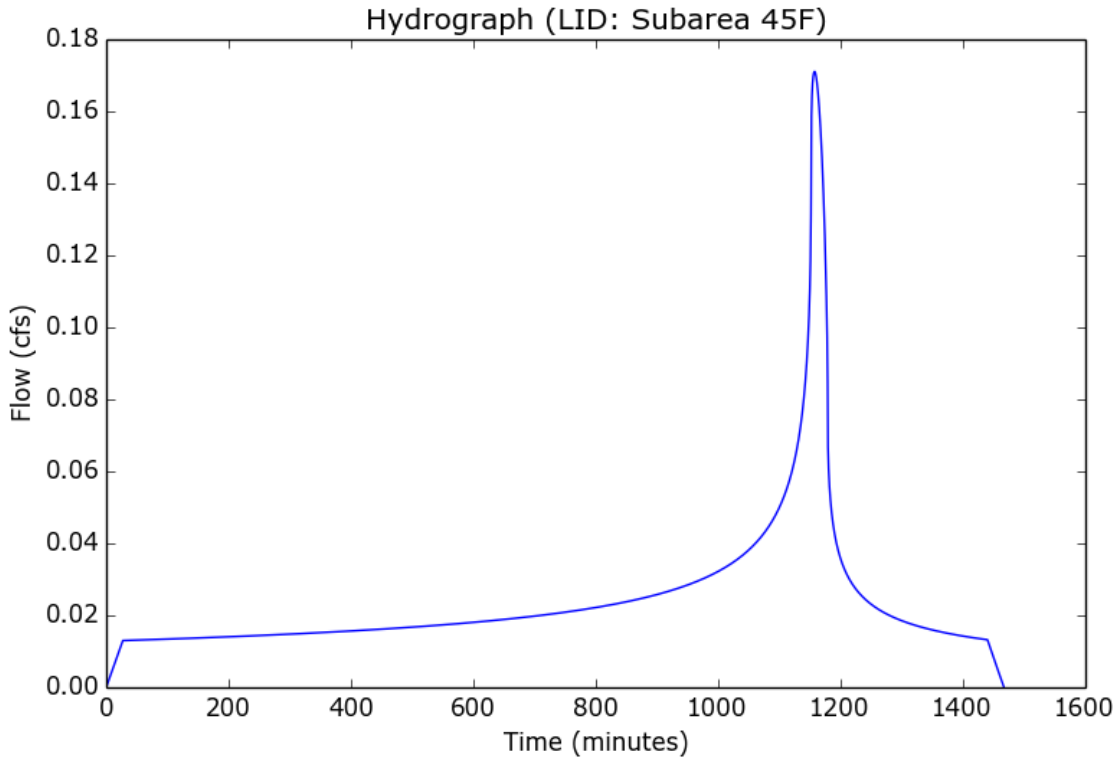
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 45F.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 45F
Area (ac)	1.21
Flow Path Length (ft)	277.0
Flow Path Slope (vft/hft)	0.004
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.48
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2701
Undeveloped Runoff Coefficient (Cu)	0.1759
Developed Runoff Coefficient (Cd)	0.5235
Time of Concentration (min)	27.0
Clear Peak Flow Rate (cfs)	0.1711
Burned Peak Flow Rate (cfs)	0.1711
24-Hr Clear Runoff Volume (ac-ft)	0.0487
24-Hr Clear Runoff Volume (cu-ft)	2121.3252



Peak Flow Hydrologic Analysis

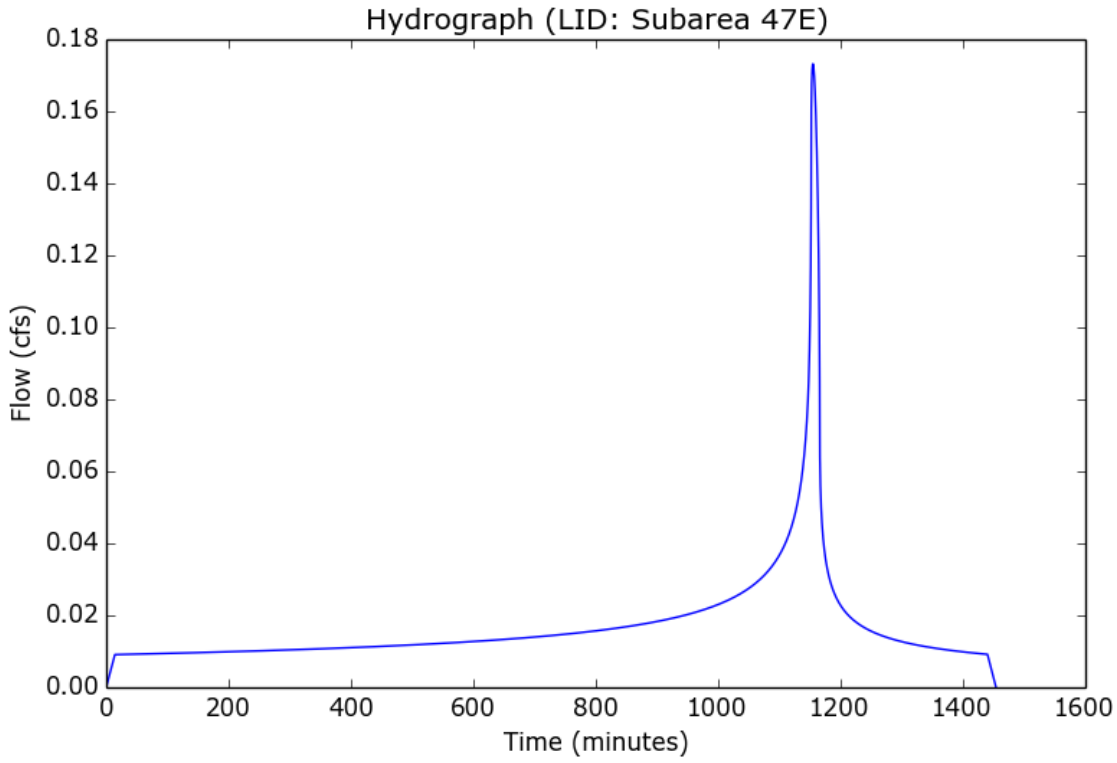
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 47E.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 47E
Area (ac)	0.75
Flow Path Length (ft)	268.0
Flow Path Slope (vft/hft)	0.075
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.3677
Undeveloped Runoff Coefficient (Cu)	0.2818
Developed Runoff Coefficient (Cd)	0.628
Time of Concentration (min)	14.0
Clear Peak Flow Rate (cfs)	0.1732
Burned Peak Flow Rate (cfs)	0.1732
24-Hr Clear Runoff Volume (ac-ft)	0.0343
24-Hr Clear Runoff Volume (cu-ft)	1493.9484



Peak Flow Hydrologic Analysis

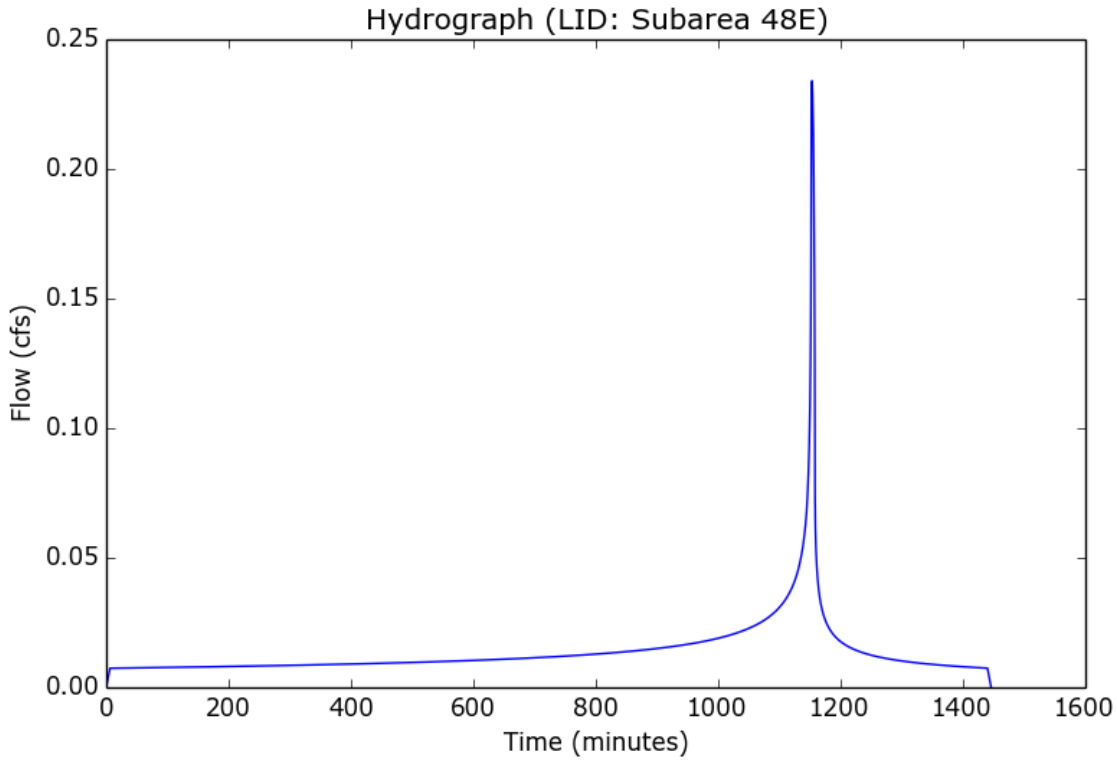
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 48E.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 48E
Area (ac)	0.61
Flow Path Length (ft)	60.0
Flow Path Slope (vft/hft)	0.033
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.56
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.5476
Undeveloped Runoff Coefficient (Cu)	0.4466
Developed Runoff Coefficient (Cd)	0.7005
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	0.234
Burned Peak Flow Rate (cfs)	0.234
24-Hr Clear Runoff Volume (ac-ft)	0.028
24-Hr Clear Runoff Volume (cu-ft)	1221.1245



Peak Flow Hydrologic Analysis

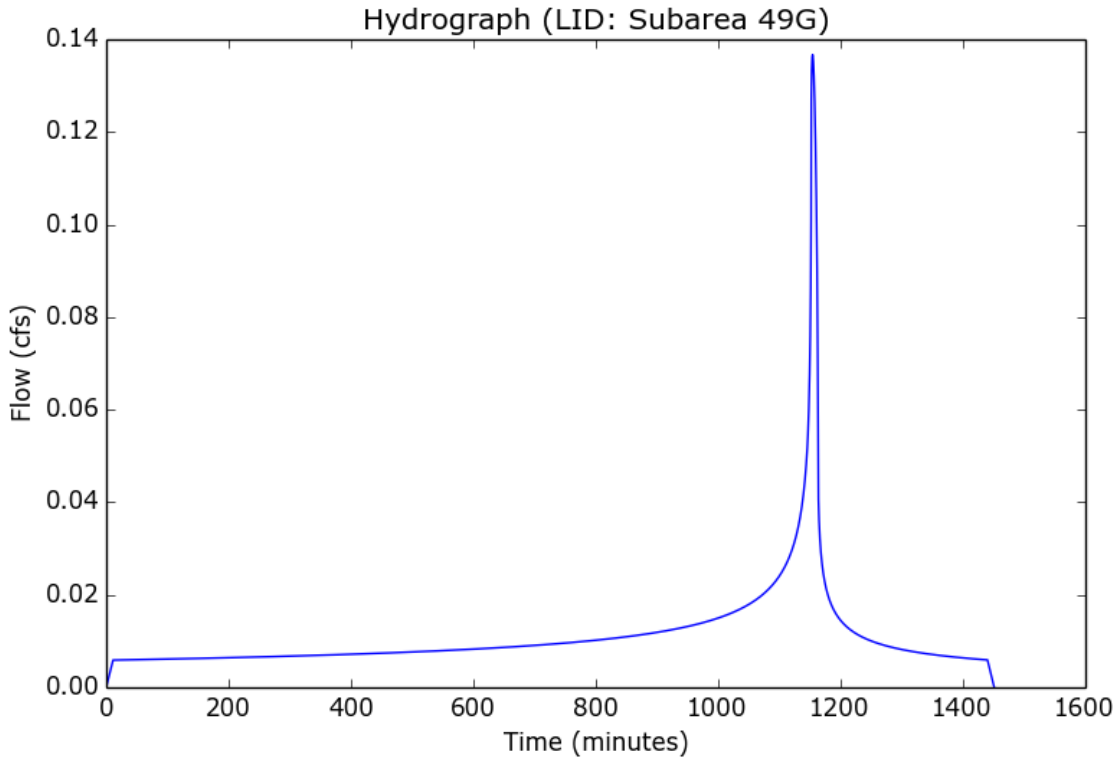
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/LID - Subarea 49G.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID
Subarea ID	Subarea 49G
Area (ac)	0.55
Flow Path Length (ft)	180.0
Flow Path Slope (vft/hft)	0.091
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.48
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.4119
Undeveloped Runoff Coefficient (Cu)	0.3296
Developed Runoff Coefficient (Cd)	0.6034
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	0.1367
Burned Peak Flow Rate (cfs)	0.1367
24-Hr Clear Runoff Volume (ac-ft)	0.0223
24-Hr Clear Runoff Volume (cu-ft)	972.9143



Peak Flow Hydrologic Analysis

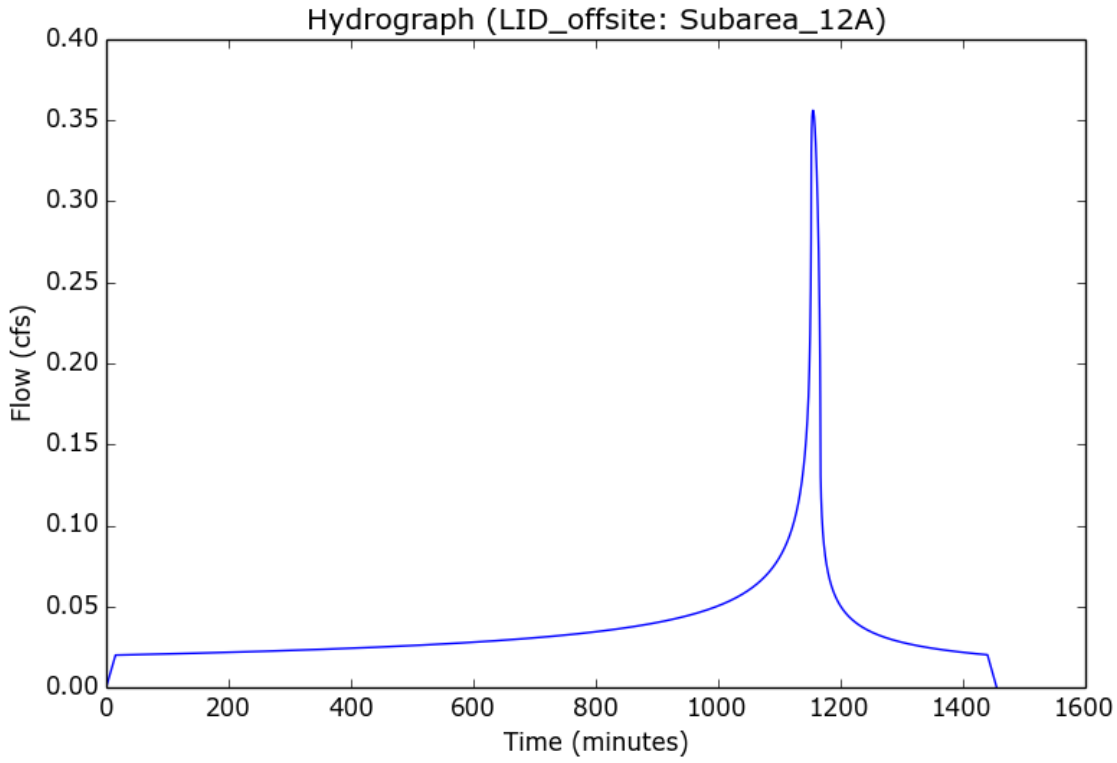
File location: Q:/Calabasas/Canyon Oaks/UCI/Hydrology/Tc/Proposed/offsite/LID_offsite - Subarea_12A.pdf
Version: HydroCalc 0.3.1

Input Parameters

Project Name	LID_offsite
Subarea ID	Subarea_12A
Area (ac)	1.53
Flow Path Length (ft)	280.0
Flow Path Slope (vft/hft)	0.054
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.61
Soil Type	34
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

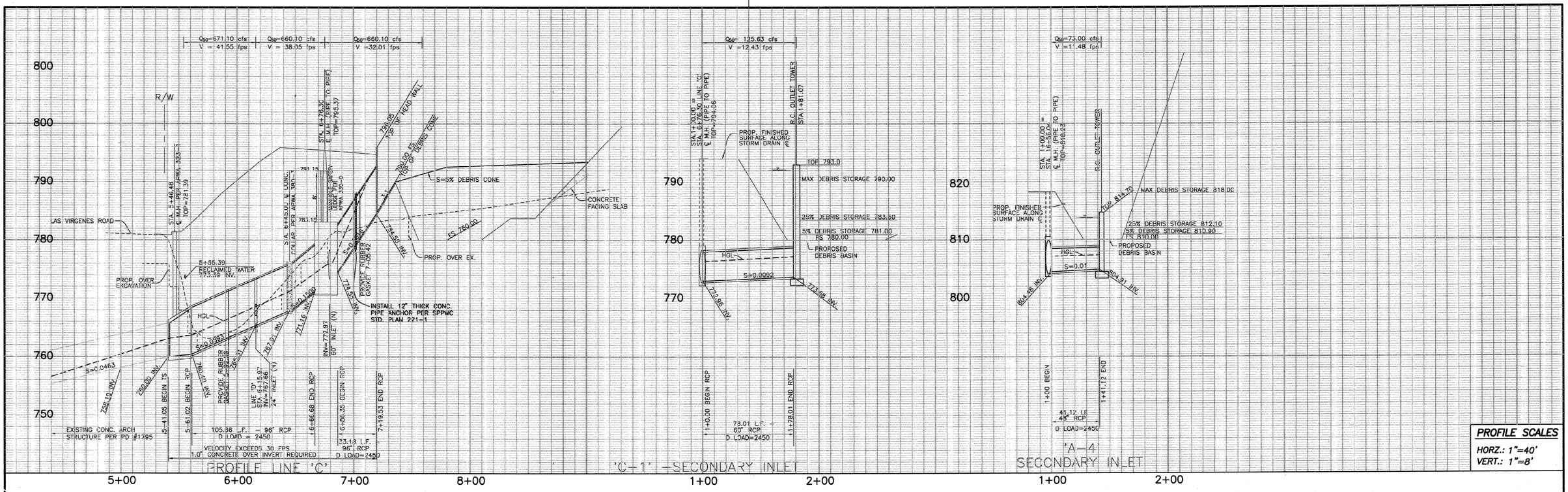
Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.356
Undeveloped Runoff Coefficient (Cu)	0.2691
Developed Runoff Coefficient (Cd)	0.6539
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	0.3562
Burned Peak Flow Rate (cfs)	0.3562
24-Hr Clear Runoff Volume (ac-ft)	0.0749
24-Hr Clear Runoff Volume (cu-ft)	3263.3078



APPENDIX E

Existing Storm Drain Capacity Verification



LEGEND

- [A] EASEMENT TO CITY OF CALABASAS FOR STORM DRAIN PURPOSES PER TR 53534.
- [B] EASEMENT TO CITY OF CALABASAS FOR FLOOD CONTROL PURPOSES PER INSTRUMENT NO. _____
- [C] EASEMENT TO THE CITY OF CALABASAS FOR INGRESS AND EGRESS FOR ALL GOVERNMENT VEHICLES. PER TR 53534.
- [D] EASEMENT TO CITY OF CALABAS FOR INGRESS AND EGRESS PURPOSES PER INSTRUMENT NO. _____

STORM DRAIN CURVE DATA				
NO.	R	Δ	L	T
(A)	60.00'	32°54'40"	34.46'	17.72'

CONSTRUCTION NOTES:

1. COMMERCIAL DRIVEWAY TO BE CONSTRUCTED ACCORDING TO APWA STANDARD PLAN 110-1, TYPE A.
2. CUTOFF WALL PER DETAIL (B/11)
6. 5' DEEP, 8" THICK SLOPE PROTECTION CUTOFF WALL AT TOE OF SLOPE OF BASIN, PER DETAIL (C/11)
8. CONSTRUCT ACCESS ROAD PER DETAIL (A/11)
9. INSTALL PERMANENT MARKER POSTS TO INDICATE LACFCD EASEMENT.
10. INSTALL 5' HIGH CHAIN LINK FENCE 6" INSIDE OF THE EASEMENT BOUNDARY PER APWA STANDARD PLAN 600-1.
11. CONSTRUCT PAVED ACCESS PER DETAIL (F/11), W = AS SHOWN ON PLAN.
14. CONSTRUCT ACCESS ROAD PER DETAIL (H/11)

LINE 'C' (96" RCP)

APPROVED BY _____ CITY ENGINEER 2/21/13 DATE

NO.	REVISION	REVISED BY	APPROVED BY	DATE

REGISTERED PROFESSIONAL ENGINEER JASON H. FUKUMITSU No. 40695 Exp. 3-31-13 CIVIL STATE OF CALIFORNIA

STORM DRAIN PLANS IN TRACT No. 53534 M.T.D. No. 1723

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

PREPARED BY:

HUNSAKER & ASSOCIATES LOS ANGELES, INC.

PLANNING ▪ ENGINEERING ▪ SURVEYING

26074 Avenue Hall, Suite #1 • Valencia, CA 91355 • PH: (661) 294-2211 • FX: (661) 294-9890

JASON H. FUKUMITSU 2-20-2013 RCE NO 40695

DWG

SHEET 6 OF 23

G:\las virgenes\Storm\H\002-03-09.dwg Plotted on Jan 29, 2013-11:20am by wallan

96'' RCP

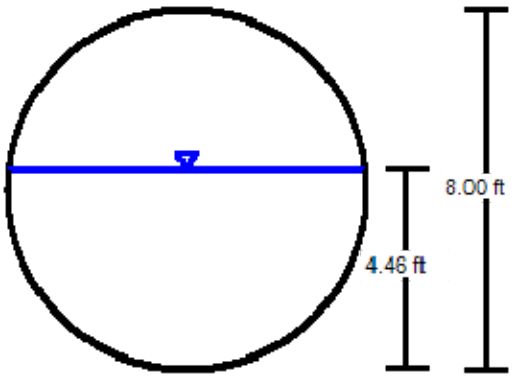
Project Description

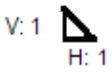
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01000	ft/ft
Normal Depth	4.46	ft
Diameter	8.00	ft
Discharge	546.63	ft³/s

Cross Section Image





5x5.5 Conc Arch

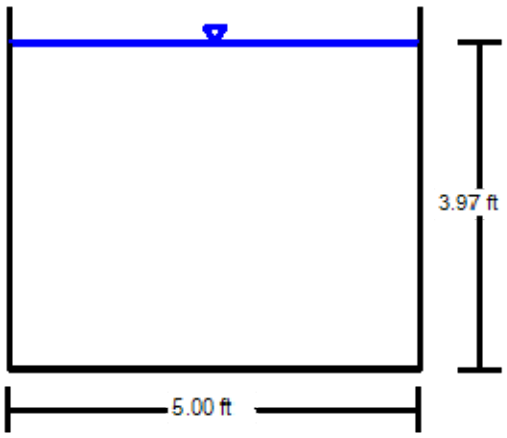
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

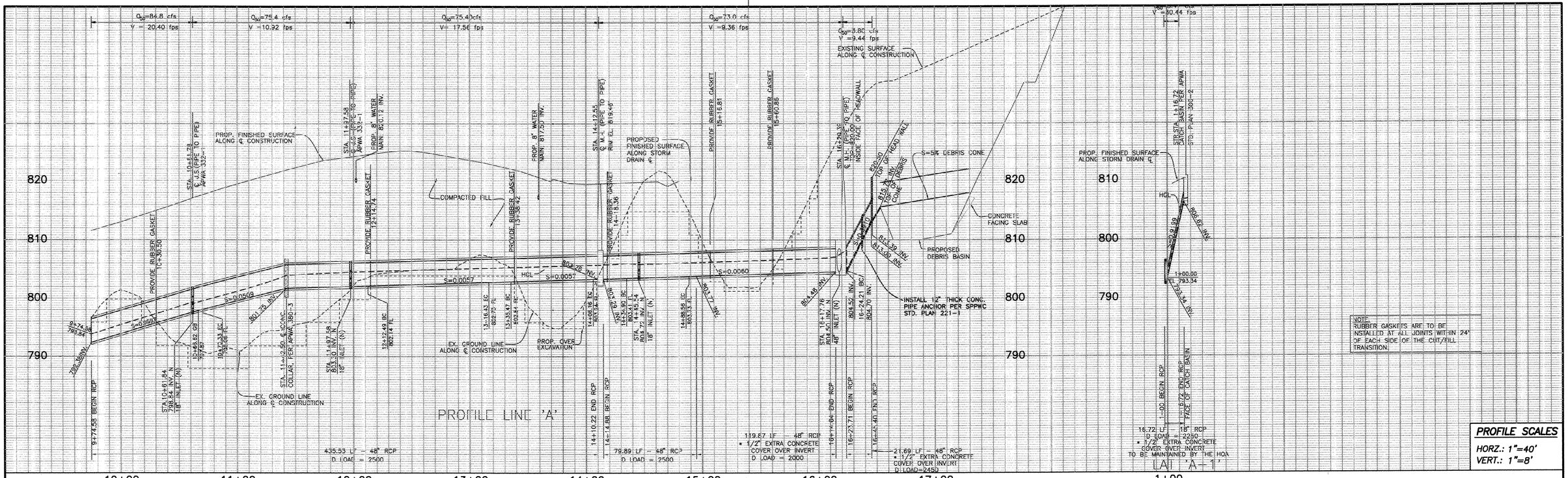
Input Data

Roughness Coefficient	0.015	
Channel Slope	0.04630	ft/ft
Normal Depth	3.97	ft
Bottom Width	5.00	ft
Discharge	563.58	ft³/s

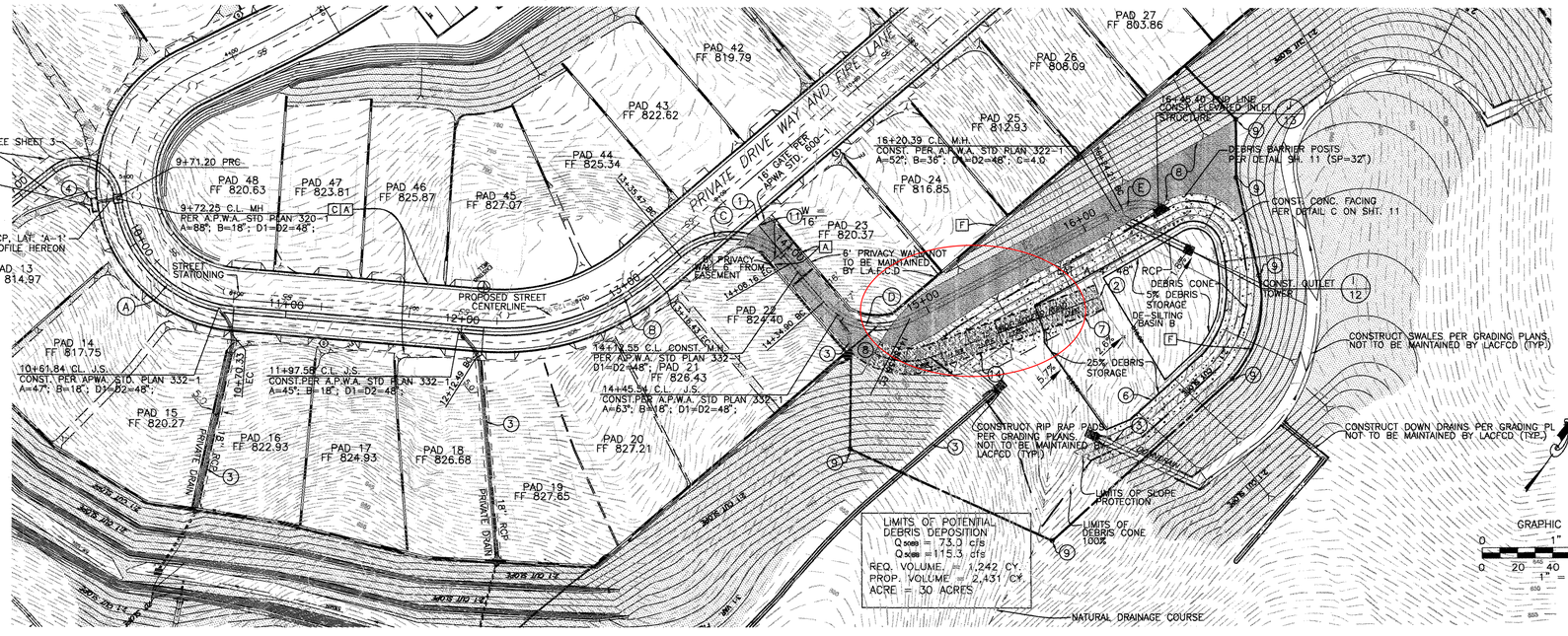
Cross Section Image



V: 1
H: 1



PROFILE SCALES
HORZ.: 1"=40'
VERT.: 1"=8'



LEGEND

- [A] EASEMENT TO CITY OF CALABASAS FOR STORM DRAIN PURPOSES PER TR 53534.
- [C] EASEMENT TO THE CITY OF CALABASAS FOR INGRESS AND EGRESS FOR ALL GOVERNMENT VEHICLES. PER TR 53534.
- [F] EASEMENT TO CITY OF CALABASAS FOR FLOOD CONTROL PURPOSES PER INSTRUMENT NO. _____

C/L STORM DRAIN CURVE DATA				
NO.	R	Δ	L	T
(A)	72.00'	78°52'59"	99.13'	59.23'
(B)	131.95'	45°07'56"	103.94'	54.83'
(C)	45.00'	90°00'00"	70.69'	45.00'
(D)	40.00'	76°52'01"	53.66'	31.74'
(E)	24.00'	50°35'45"	21.19'	11.34'

CONSTRUCTION NOTES:

1. COMMERCIAL DRIVEWAY TO BE CONSTRUCTED AT TIME OF FULL IMPROVEMENTS PER APWA 110-1 TYPE A.
2. CUTOFF WALL PER DETAIL (B/11)
3. PRIVATE DRAIN TO BE MAINTAINED BY HOA. NOT TO BE MAINTAINED BY LACFCD.
4. MODIFIED APWA 300-2 CATCH BASIN WITH TWO ABTECH FILTERS TO BE MAINTAINED BY HOA, PER DETAIL A ON SHEET 10.
5. 5' DEEP, 8" THICK SLOPE PROTECTION CUTOFF WALL AT TOE OF SLOPE OF BASIN, PER DETAIL (C/11)
7. PERIMETER OF ACCESS ROAD TO BE FENCED.
8. CONSTRUCT ACCESS ROAD PER DETAIL (A/11)
9. INSTALL PERMANENT MARKER POSTS TO INDICATE LACFCD EASEMENT.
11. CONSTRUCT PAVED ACCESS PER DETAIL (F/11), W = AS SHOWN ON PLAN.
14. CONSTRUCT ACCESS ROAD PER DETAIL (H/11)

LINE 'A' (48" RCP)

APPROVED BY _____ CITY ENGINEER 2/21/13 DATE

NO.	REVISION	REVISED BY	APPROVED BY	DATE

REGISTERED PROFESSIONAL ENGINEER JASON H. FUKUMITSU No. 40695 Exp. 3-31-13 CIVIL STATE OF CALIFORNIA

STORM DRAIN PLANS IN TRACT No. 53534 M.T.D. No. 1723

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

PREPARED BY:

HUNSAKER & ASSOCIATES LOS ANGELES, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
26074 Avenue Hall, Suite #1 • Valencia, CA 91355 • PH: (661) 294-2211 • FX: (661) 294-9890
JASON H. FUKUMITSU RCE NO 40695

2-20-2013

DWG SHEET 4 OF 23

G:\Los Virgenes\Storm\HLV002-03-09.dwg Plotted on Jan 29, 2013-11:20am by wellons

48'' RCP

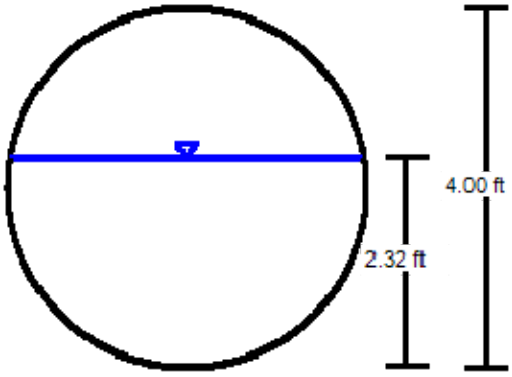
Project Description

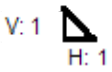
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00600	ft/ft
Normal Depth	2.32	ft
Diameter	4.00	ft
Discharge	70.90	ft³/s

Cross Section Image





1A
96.8
11
252.5/267.7/428.3
5,291 yd³

2B
22.7
8
70.4/74.2/118.7
1,242 yd³

5B
16.0
7
53.3/59.9/95.8
874 yd³

3AB
A=119.5 ac
Q_{50}=332.1 cfs
Q_{50B}=531.4 cfs
DP=6,533 yd³

4A
12.5
6
45.4/47.5/75.9
684 yd³

MATCHLINE

SEE SHEET 2

LEGEND.

- 1A / 9.2 — DRAINAGE SUBAREA / AREA IN ACRES
- 5 — SUBAREA TIME OF CONCENTRATION (MIN.)
- 0.27 — Q_{PM} CFS. GENERATED FROM SUBAREA
- 5.7/5.9/9.4 — Q_{50}/Q_{50B}/Q_{50BB} (CFS)
- 684 yd³ — DEBRIS PRODUCTION VOLUME IN CUBIC YARD
- SUBAREA DRAINAGE BOUNDARY
- Q_{50} -- COMBINED CLEAR, BURNED AND BULKED RUNOFF IN CFS
- Q_{50B} -- BURNED RUNOFF IN CFS
- Q_{50BB} -- BURNED AND BULKED RUNOFF IN CFS
- DP -- DEBRIS PRODUCTION IN CUBIC YARD
- DPVreq -- REQUIRED DEBRIS VOLUME IN CUBIC YARD
- DPVprov -- PROVIDED DEBRIS VOLUME IN CUBIC YARD
- DB — DEBRIS BASIN
- FLOW ARROW

SCALE 1"=80'

REGISTERED PROFESSIONAL ENGINEER
MATTHEW A. SANDLER
NO.72236
EXP.06-30-18
CIVIL
STATE OF CALIFORNIA

EXISTING HYDROLOGY

VESTING TENTATIVE TRACT NO. 71546

LOCATED IN THE CITY OF CALABASAS
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA
FOR MIXED-USE AND CONDOMINIUM PURPOSES

PREPARED BY:
UNITED CIVIL, INC.
30141 AGOURA ROAD, SUITE 215
AGOURA HILLS, CA 91301
PH: (818) 707-8648
FAX: (818) 707-8649

OWNER/SUBDIVIDER:
THE NEW HOME COMPANY
85 ENTERPRISE DRIVE, SUITE 450
ALISO VIEJO, CA 92656
CONTACT: RICK BIANCHI
PH: (949) 382-2809

DATE: 6/22/17

SCALE: 1"=80'

JN 15-1267

SHT. 1 OF 2 SHTS.

MATCHLINE SEE SHEET 1

Table 1 – Hydrology Summary (Existing Condition)

Tributary Area	Area	Length	Elevation		Slope	24-hr Isohyet	Soil Type	Frequency	Fire Factor	Impervious	Tc	Q_{50}	Q_{50B}	Q_{50BB}
	(ac)	(ft)	High (ft)	Low (ft)		(inch)		(yr)			(min)	(cfs)	(cfs)	(cfs)
1A	96.75	2804	1460	918	0.193	7.5	34	50	0.83	0.01	11	252.5	267.7	428.32
2B	22.72	1958	1340	918	0.216	7.5	34	50	0.83	0.01	8	70.4	74.2	118.72
3AB														
4A	12.51	1309	1440	890	0.42	7.5	34	50	0.83	0.01	6	45.4	47.46	75.94
5B	15.98	1394	1140	890	0.179	7.5	34	50	0.83	0.01	7	53.3	59.9	95.84
6AB														
7A	7.51	1311	1300	833	0.356	7.5	34	50	0.83	0.01	6	27.3	28.5	45.6
8B	7.03	1043	1198	833	0.35	7.5	34	50	0.83	0.0.1	5	28.15	29.3	46.88
9AB														
10A	18.17	2264	1440	816	0.276	7.5	34	50	0.83	0.01	9	52.84	55.8	89.28
11B	18.91	1655	1160	816	0.208	7.5	34	50	0.83	0.01	8	58.6	61.7	98.72
12AB														
13A	9.4	1379	1084	780	0.22	7.5	34	50	0.83	0.04	7	31.36	32.91	52.66
14B	7.8	1149	1120	780	0.296	7.5	34	50	0.83	0.04	5	31.24	32.5	52
15AB														
16A	0.21	278	820	800	0.072	7.5	34	50	0.83	0.1	5	0.84	0.88	0.88
17AB														
18A	18.77	1544	1182	814	0.238	7.5	34	50	0.83	0.05	7	62.67	65.76	105.22
19B	2.63	540	920	780	0.259	7.5	34	50	0.83	0.1	5	10.54	10.97	17.55

Table 2 – Debris Production Summary (Existing Condition)

Tributary Area	Area	DP Area	DP Area	Impervious	DPA Zone	DPR	DPR	DPV	Node DPV
	(ac)	(ft^2)	(ac)			(yd^3/SM)	(yd^3/ac)	(yd^3)	(yd^3)
1A	96.75	4214371	96.75	0.01	6	35000	55	5291	
2B	22.72	989650	22.72	0.01	6	35000	55	1242	
3AB									6533
4A	12.51	544749	12.51	0.01	6	35000	55	684	
5B	15.98	696158	15.98	0.01	6	35000	55	874	
6AB									8091
7A	7.51	327160	7.51	0.01	6	35000	55	411	
8B	7.03	306084	7.03	0.0.1	6	35000	55	384	
9AB									8886
10A	18.17	792333	18.19	0.01	6	35000	55	994	
11B	18.91	810763	18.61	0.01	6	35000	55	1018	
12AB									10898
13A	9.4	347919	7.99	0.04	6	35000	55	425	
14B	7.8	269912	6.2	0.04	6	35000	55	339	
15AB									11662
16A	0.21	0	0	0.1	6	35000	55	0	
17AB									11662
18A	18.53	772062	17.72	0.05	6	35000	55	982	
19B	2.63	85578	1.96	0.1	6	35000	55	107	

LEGEND.

- 1A / 9.2 — DRAINAGE SUBAREA / AREA IN ACRES
- 5 — SUBAREA TIME OF CONCENTRATION (MIN.)
- 0.27 — Q_{PM} CFS. GENERATED FROM SUBAREA
- 5.7/5.9/9.4 — $Q_{50}/Q_{50B}/Q_{50BB}$ (CFS)
- 684 yd^3 — DEBRIS PRODUCTION VOLUME IN CUBIC YARD
- SUBAREA DRAINAGE BOUNDARY
- Q_{50} -- COMBINED CLEAR, BURNED AND BULKED RUNOFF IN CFS
- Q_{50B} -- BURNED RUNOFF IN CFS
- Q_{50BB} -- BURNED AND BULKED RUNOFF IN CFS
- DP -- DEBRIS PRODUCTION IN CUBIC YARD
- DPVreq -- REQUIRED DEBRIS VOLUME IN CUBIC YARD
- DPVprov -- PROVIDED DEBRIS VOLUME IN CUBIC YARD
- DB — DEBRIS BASIN
- FLOW ARROW

SCALE 1"=80'

EXISTING HYDROLOGY

VESTING TENTATIVE TRACT NO. 71546

LOCATED IN THE CITY OF CALABASAS
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA
FOR MIXED-USE AND CONDOMINIUM PURPOSES

REGISTERED PROFESSIONAL ENGINEER MATTHEW A. SANNITE NO.72236 09-30-18 CIVIL STATE OF CALIFORNIA

PREPARED BY:
UNITED CIVIL, INC.
30141 AGOURA ROAD, SUITE 215
AGOURA HILLS, CA 91301
PH: (818) 707-8648
FAX: (818) 707-8649

OWNER/SUBDIVIDER:
THE NEW HOME COMPANY
85 ENTERPRISE DRIVE, SUITE 450
ALISO VIEJO, CA 92656
CONTACT: RICK BIANCHI
PH: (949) 382-2809

DATE: 6/22/17
SCALE: 1"=80'
JN 15-1267
SHT. 2 OF 2 SHTS.

1A
96.8
11
253/268/428
5,291 yd^3

2B
22.7
8
70/74/119
1,242 yd^3

5B
16.0
7
53.3/59.9/95.8
874 yd^3

3AB
A=119.5 ac
Q_{50B}=332.1 cfs
Q_{50BB}=531.4 cfs
DP=6,533 yd^3

4A
12.5
6
45.4/47.5/75.9
684 yd^3

MATCHLINE

SEE SHEET 2

LEGEND.

- 1A / 9.2 — DRAINAGE SUBAREA / AREA IN ACRES
- 5 — SUBAREA TIME OF CONCENTRATION (MIN.)
- 0.27 — Q_{PM} CFS. GENERATED FROM SUBAREA
- 5.7/5.9/9.4 — Q_{50}/Q_{50B}/Q_{50BB} (CFS) (–) NOT APPLICABLE
- 684 yd^3 — DEBRIS PRODUCTION VOLUME IN CUBIC YARD
- #7 , 8'X14' / Q_{pm}=0.419 — LID TREATMENT DEVICE NO. AND SIZE / TOTAL Q_{PM} CFS. TREATED BY THE DEVICE
- SUBAREA DRAINAGE BOUNDARY
- STORM DRAIN PIPE
- CATCH BASIN
- MODULAR WETLAND BASIN
- Q_{50} -- COMBINED CLEAR, BURNED AND BULKED RUNOFF IN CFS
- Q_{50B} -- BURNED RUNOFF IN CFS
- Q_{50BB} -- BURNED AND BULKED RUNOFF IN CFS
- Q_{PM} -- PEAK MITIGATED FLOW RATE IN CFS.
- DP -- DEBRIS PRODUCTION IN CUBIC YARD
- DPVreq -- REQUIRED DEBRIS VOLUME IN CUBIC YARD
- DPVprov -- PROVIDED DEBRIS VOLUME IN CUBIC YARD
- ID — INTERCEPTOR DRAIN, TO BE DESIGNED WITH SELF–CLEANING VELOCITY
- DB — DEBRIS BASIN
- FLOW ARROW

DATA.

HYDROLOGY MAP.....1–H1.35
SOIL NO.....034, 234(BURNED)
STUDY FREQUENCY.....50 YRS.
ISOHYET.....7.5"
D.P.A.....6
D.P.V.....55 C.Y./A.C.
BULK FACTOR.....1.66

SCALE 1"=80'

PROPOSED HYDROLOGY

VESTING TENTATIVE TRACT NO. 71546

LOCATED IN THE CITY OF CALABASAS
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA
FOR MIXED-USE AND CONDOMINIUM PURPOSES

REGISTERED PROFESSIONAL ENGINEER
MATTHEW A SANDLER
NO.72236
EXP.06-30-18
CIVIL
STATE OF CALIFORNIA

PREPARED BY:
UNITED CIVIL, INC.
30141 AGOURA ROAD, SUITE 215
AGOURA HILLS, CA 91301
PH: (818) 707-8648
FAX: (818) 707-8649

OWNER/SUBDIVIDER:
THE NEW HOME COMPANY
85 ENTERPRISE DRIVE, SUITE 450
ALISO VIEJO, CA 92656
CONTACT: RICK BIANCHI
PH: (949) 382–2809

DATE: 6/22/17

SCALE:	JN 15–1267	SHT. 1 OF 2 SHTS.
1"=80'		

MATCHLINE SEE SHEET 1

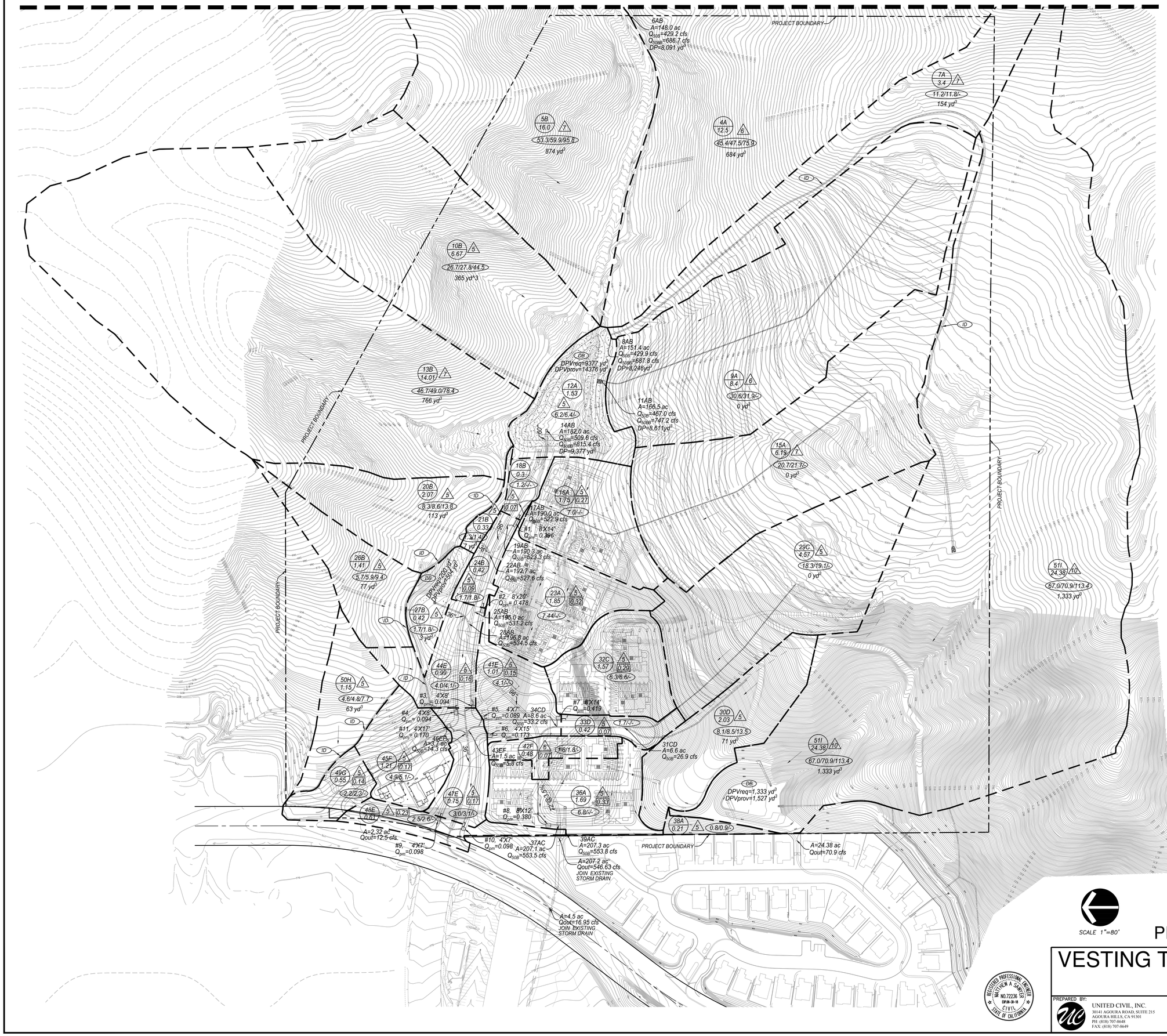


Table 3 – Hydrology Summary (Proposed Condition)

Tributary Area	Area	Length	Elevation		Slope	24-hr Isohyet	Soil Type	Frequency	Fire Factor	Impervious	Tc	Q_{50}	Q_{50B}	Q_{50BB}
	(ac)	(ft)	High (ft)	Low (ft)		(inch)		(yr)			(min)	(cfs)	(cfs)	(cfs)
1A	96.75	2804	1460	918	0.193	7.5	34	50	0.83	0.01	11	252.5	267.7	428.3
2B	22.72	1958	1340	918	0.216	7.5	34	50	0.83	0.01	8	70.4	74.2	118.7
3AB														
4A	12.51	1309	1440	890	0.42	7.5	34	50	0.83	0.01	6	45.4	47.5	75.9
5B	15.98	1394	1140	890	0.179	7.5	34	50	0.83	0.01	7	53.3	59.9	95.8
6AB														
7A	3.37	1721	1440	845	0.346	7.5	34	50	0.83	0.02	7	11.2	11.8	-
8AB														
9A	8.41	1164	1200	845	0.305	7.5	34	50	0.83	0.1	6	30.6	31.9	-
10B	6.67	993	1198	835	0.366	7.5	34	50	0.83	0.01	5	26.7	27.8	44.5
11AB														
12A	1.53	280	840	825	0.054	7.5	34	50	0.83	0.61	5	6.2	6.4	-
13B	14.01	1493	1160	840	0.214	7.5	34	50	0.83	0.01	7	46.7	49	78.4
14AB														
15A	6.19	1421	1195	860	0.236	7.5	34	50	0.83	0.1	7	20.7	21.7	-
16A	1.75	346	839	838	0.004	8	34	50	0	0.58	5	7	-	-
17AB														
18B	0.295	200	840	836	0.02	7.5	34	50	0	0.56	5	1.2	-	-
19AB														
20B	2.07	610	1120	835	0.467	7.5	34	50	0.83	0.01	5	8.3	8.6	13.8
21B	0.33	326	835	825	0.031	7.5	34	50	0.83	0.21	5	1.3	1.4	-
22AB														
23A	1.85	333	826	825	0.004	7.5	34	50	0	0.63	5	7.4	-	-
24B	0.42	314	835	820	0.048	7.5	34	50	0.83	0.56	5	1.7	1.8	-
25AB														
26B	1.41	561	1120	845	0.49	7.5	34	50	0.83	0.01	5	5.7	5.9	9.4
27B	0.42	94	835	825	0.106	7.5	34	50	0.83	0.21	5	1.7	1.8	-
28AB														
29C	4.57	909	1037	823	0.235	7.5	34	50	0.83	0.1	5	18.3	19.1	-
30D	2.03	564	917	825	0.163	7.5	34	50	0.83	0.05	5	8.1	8.5	13.5
31CD														
32C	1.57	220	804	803	0.006	7.5	34	50	0.83	0.56	5	6.3	6.6	-
33D	0.42	325	820	800	0.062	7.5	34	50	0	0.41	5	1.7	-	-
34CD														
36A	1.69	303	801	800	0.006	7.5	34	50	0	0.67	5	6.8	-	-
37AC														
38A	0.207	278	820	800	0.072	7.5	34	50	0.83	0.1	5	0.8	0.9	-
39AC														
41E	1.01	277	800	795	0.019	7.5	34	50	0	0.41	5	4.1	-	-
42F	0.48	420	802	799	0.006	7.5	34	50	0.83	0.57	6	1.8	1.8	-
43EF														
44E	0.99	290	822	796	0.09	7.5	34	50	0.83	0.35	5	4	4.1	-
45F	1.21	277	795	794	0.004	7.5	34	50	0.83	0.48	5	4.9	5.1	-
46EF														
47E	0.75	268	800	780	0.075	7.5	34	50	0.83	0.56	5	3	3.1	-
48E	0.61	60	781	779	0.033	7.5	34	50	0.83	0.56	5	2.5	2.6	-
49G	0.55	180	792	776	0.091	7.5	34	50	0.83	0.48	5	2.2	2.3	-
50H	1.15	538	910	795	0.214	7.5	34	50	0.83	0.01	5	4.6	4.8	7.7
51I	24.38	2544	1440	810	0.248	7.5	34	50	0.83	0.02	10	67	70.9	113.4

Table 4 – Debris Production Summary (Proposed Condition)

Tributary Area	Area	DP Area	DPA Zone	DPR	DPR	DPV	Node DPV
	(ac)	(ac)		(yd^3/SM)	(yd^3/ac)	(yd^3)	(yd^3)
1A	96.75	96.75	6	35000	55	5291	
2B	22.72	22.72	6	35000	55	1242	
3AB							6533
4A	12.51	12.51	6	35000	55	684	
5B	15.98	15.98	6	35000	55	874	
6AB							8091
7A	3.37	2.82	6	35000	55	154	
8AB							8246
9A	8.41	0	6	35000	55	0	
10B	6.67	6.67	6	35000	55	365	
11AB							8611
12A	1.53	0	6	35000	55	0	
13B	14.01	14.01	6	35000	55	766	
14AB							9377
15A	6.19	0	6	35000	55	0	
16A	1.75	0	6	35000	55	0	
17AB							
18B	0.295	0	6	35000	55	0	
19AB							
20B	2.07	2.07	6	35000	55	113	
21B	0.33	0.13	6	35000	55	7	
22AB							
23A	1.85	0	6	35000	55	0	
24B	0.42	0	6	35000	55	0	
25AB							
26B	1.41	1.41	6	35000	55	77	
27B	0.42	0.05	6	35000	55	3	
28AB							
29C	4.57	0	6	35000	55	0	
30D	2.03	1.3	6	35000	55	71	
31CD							
32C	1.57	0	6	35000	55	0	
33D	0.42	0	6	35000	55	0	
34CD							
36A	1.69	0	6	35000	55	0	
37AC							
38A	0.207	0	6	35000	55	0	
39AC							
41E	1.01	0	6	35000	55	0	
42F	0.48	0	6	35000	55	0	
43EF							
44E	0.99	0	6	35000	55	0	
45F	1.21	0	6	35000	55	0	
46EF							
47E	0.75	0	6	35000	55	0	
48E	0.61	0	6	35000	55	0	
49G	0.55	0	6	35000	55	0	
50H	1.15	1.15	6	35000	55	63	
51I	24.38	24.38	6	35000	55	1333	

LEGEND.

- 1A / 9.2 — DRAINAGE SUBAREA / AREA IN ACRES
- 5 — SUBAREA TIME OF CONCENTRATION (MIN.)
- 0.27 — Q_{PM} CFS. GENERATED FROM SUBAREA
- 5.7/5.9/9.4 — Q_{50}/Q_{50B}/Q_{50BB} (CFS) (–) NOT APPLICABLE
- 684 yd^3 — DEBRIS PRODUCTION VOLUME IN CUBIC YARD
- #7, 8'X14' / Q_{pm}=0.419 — LID TREATMENT DEVICE NO. AND SIZE / TOTAL Q_{PM} CFS. TREATED BY THE DEVICE
- SUBAREA DRAINAGE BOUNDARY
- STORM DRAIN PIPE
- CB — CATCH BASIN
- MODULAR WETLAND BASIN
- Q_{50} -- COMBINED CLEAR, BURNED AND BULKED RUNOFF IN CFS
- Q_{50B} -- BURNED RUNOFF IN CFS
- Q_{50BB} -- BURNED AND BULKED RUNOFF IN CFS
- Q_{PM} -- PEAK MITIGATED FLOW RATE IN CFS.
- DP -- DEBRIS PRODUCTION IN CUBIC YARD
- DPVreq -- REQUIRED DEBRIS VOLUME IN CUBIC YARD
- DPVprov -- PROVIDED DEBRIS VOLUME IN CUBIC YARD
- ID — INTERCEPTOR DRAIN, TO BE DESIGNED WITH SELF–CLEANING VELOCITY
- DB — DEBRIS BASIN
- FLOW ARROW

DATA.

HYDROLOGY MAP.....1–H1.35
SOIL NO.....034, 234(BURNED)
STUDY FREQUENCY.....50 YRS.
ISOHYET.....7.5"
D.P.A.....6
D.P.V.....55 C.Y./A.C.
BULK FACTOR.....1.66

SCALE 1"=80'

PROPOSED HYDROLOGY

VESTING TENTATIVE TRACT NO. 71546

LOCATED IN THE CITY OF CALABASAS
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA
FOR MIXED-USE AND CONDOMINIUM PURPOSES

REGISTERED PROFESSIONAL ENGINEER MATTHEW A. SANNITI NO. 72236 09-30-18 CIVIL STATE OF CALIFORNIA

PREPARED BY:
UNITED CIVIL, INC.
30141 AGOURA ROAD, SUITE 215
AGOURA HILLS, CA 91301
PH: (818) 707-8648
FAX: (818) 707-8649

OWNER/SUBDIVIDER:
THE NEW HOME COMPANY
85 ENTERPRISE DRIVE, SUITE 450
ALISO VIEJO, CA 92656
CONTACT: RICK BIANCHI
PH: (949) 382–2809

DATE: 6/22/17
SCALE: 1"=80'
JN 15–1267
SHT. 2 OF 2 SHTS.