COMG-00001 May 27, 2022

Stormwater Management Statement

CareOne at Lawrence: Proposed Skilled Nursing, Assisted Living, and Memory Care Facility

Prepared for:

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Table of Contents

APPENDICES

WATER QUANTITY TABLES

To address water quantity, 2 applicable best management practices (BMPs) have been identified from Table 5-1 of N.J.A.C. 7:8. They include bio-infiltration basins and pervious pavement systems. An underground storage chamber is also proposed to reduce runoff from the site. The tables below detail the flow reductions for each BMP, from existing to proposed conditions:

Table 1: Overall Site Runoff Quantity: Existing Conditions vs. Proposed Conditions

	2-Year (cfs)	10-Year (cfs)	100-Year (cfs)
Existing Conditions	11.36	21.31	41.12
Required Reductions	50%	75%	80%
Required Runoff (cfs)	5.68	15.98	32.90
Proposed Conditions	4.44	11.47	20.64

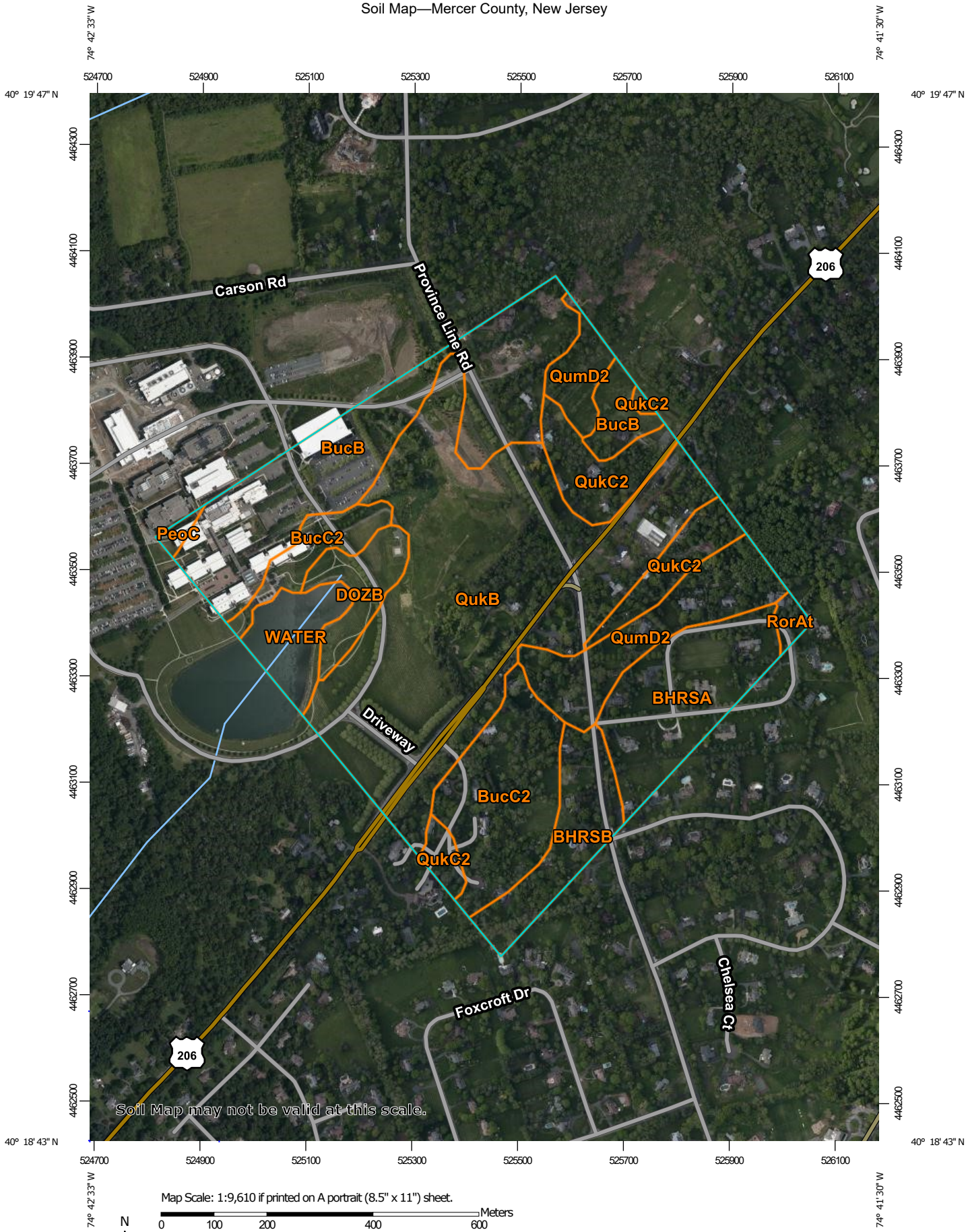
Table 2: Point of Analysis (NORTH) Runoff Quantity: Existing Conditions vs. Proposed Conditions

	2-Year (cfs)	10-Year (cfs)	100-Year (cfs)
Existing Conditions	7.09	13.31	25.72
Required Reductions	50%	75%	80%
Required Runoff (cfs)	3.54	9.98	20.58
Proposed Conditions	3.10	5.56	8.36

Table 3: Point of Analysis (SOUTH) Runoff Quantity: Existing Conditions vs. Proposed Conditions

	2-Year (cfs)	10-Year (cfs)	100-Year (cfs)
Existing Conditions	4.27	8.00	15.40
Required Reductions	50%	75%	80%
Required Runoff (cfs)	2.14	6.00	12.32
Proposed Conditions	1.34	5.91	12.28

Appendix A – Soil Map



Map Scale: 1:9,610 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mercer County, New Jersey
Survey Area Data: Version 17, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 2, 2019—Jul 9, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BHRSA	Birdsboro sandy subsoil variant soils, 0 to 2 percent slopes	16.9	8.5%
BHRSB	Birdsboro sandy subsoil variant soils, 2 to 6 percent slopes	10.4	5.2%
BucB	Bucks silt loam, 2 to 6 percent slopes	35.7	17.9%
BucC2	Bucks silt loam, 6 to 12 percent slopes, eroded	22.1	11.1%
DOZB	Doylestown and Reaville variant silt loams, 2 to 6 percent slopes	6.0	3.0%
PeoC	Penn channery silt loam, 6 to 12 percent slopes	0.7	0.4%
QukB	Quakertown silt loam, 2 to 6 percent slopes	67.6	34.0%
QukC2	Quakertown silt loam, 6 to 12 percent slopes, eroded	14.3	7.2%
QumD2	Quakertown channery silt loam, 12 to 18 percent slopes, eroded	17.2	8.7%
RorAt	Rowland silt loam, 0 to 2 percent slopes, frequently flooded	1.1	0.6%
WATER	Water	6.7	3.4%
Totals for Area of Interest		**199.0**	**100.0%**

Appendix B – Drainage Area Maps

EX-SITE-1
IMPERVIOUS = 0.036 Ac
PERVIOUS = 1.312 Ac
TOTAL AREA = 1.348 Ac
Tc = 8.1 Min

89 LF SHALLOW CONCENTRATED FLOW @ 2.91%

74 LF SHALLOW CONCENTRATED FLOW @ 2.41%

77 LF SHEET FLOW @ 3.48%

EX-SITE-3
IMPERVIOUS = 0.036 Ac
PERVIOUS = 1.422 Ac
TOTAL AREA = 1.458 Ac
Tc = 12.7 Min

77 LF SHEET FLOW @ 3.47%

421 LF SHALLOW CONCENTRATED FLOW @ 2.16%

EX-SITE-2
IMPERVIOUS = 0.070 Ac
PERVIOUS = 2.434 Ac
TOTAL AREA = 2.504 Ac
Tc = 10 Min

138 LF SHALLOW CONCENTRATED FLOW @ 3.14%

77 LF SHEET FLOW @ 1.39%

77 LF SHEET FLOW @ 3.04%

15 LF SHALLOW CONCENTRATED FLOW @ 8.33%

18 LF SHALLOW CONCENTRATED FLOW @ 6.90%

EX-SITE-4
IMPERVIOUS = 0.038 Ac
PERVIOUS = 0.962 Ac
TOTAL AREA = 1.00 Ac
Tc = 6.7 Min

90 LF SHALLOW CONCENTRATED FLOW @ 1.95%

U.S. ROUTE 206
(A.K.A. LAWRENCEVILLE ROAD)
(VARIABLE WIDTH R.O.W.)

PROVINCE LINE ROAD
(VARIABLE WIDTH R.O.W.)

BM 1

40' 20' 0 40' 80'
1" = 40'

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LAST SAVE BY: VBarry

NO.	DATE	REVISIONS	BY	CHKD

MICHAEL R. THOMAS, P.E.
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05/27/2022
LICENSED PROFESSIONAL ENGINEER
STATE OF NJ LICENSE No. GE48086

CAREONE MANAGEMENT, LLC

CAREONE AT LAWRENCE
LAWRENCE TOWNSHIP, MERCER COUNTY, NEW JERSEY

EXISTING DRAINAGE AREA MAPS

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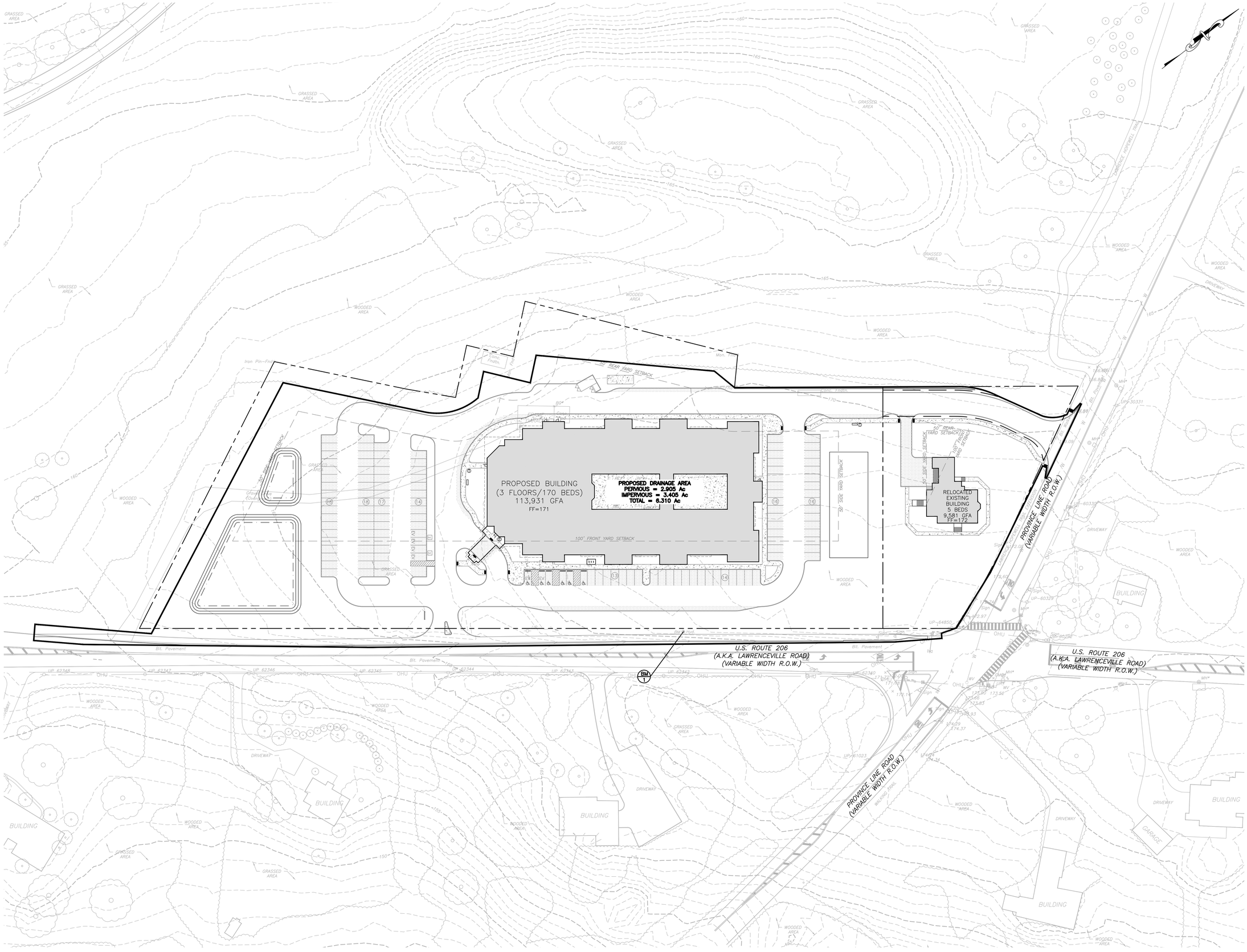
SHEET	1 OF 4



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CAREONE AT LAWRENCE

LAWRENCE TOWNSHIP, MERCER COUNTY, NEW JERSEY

PROPOSED DRAINAGE AREA MAP

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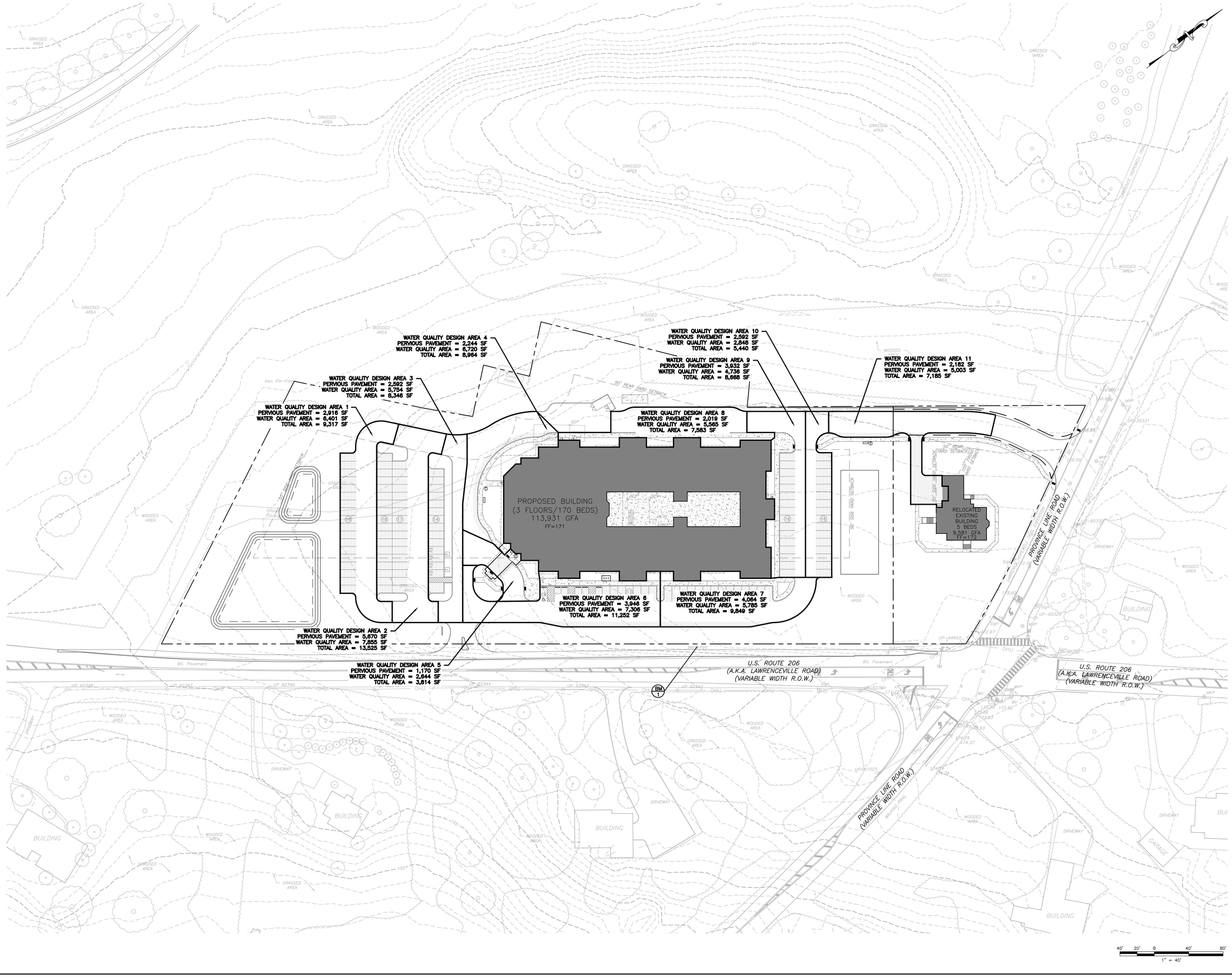
PROJ. NO. COMG00001	



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CAREONE AT LAWRENCE

LAWRENCE TOWNSHIP MERCER COUNTY, NEW JERSEY

WATER QUALITY DRAINAGE AREA MAP

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DRAWN BY	VLB
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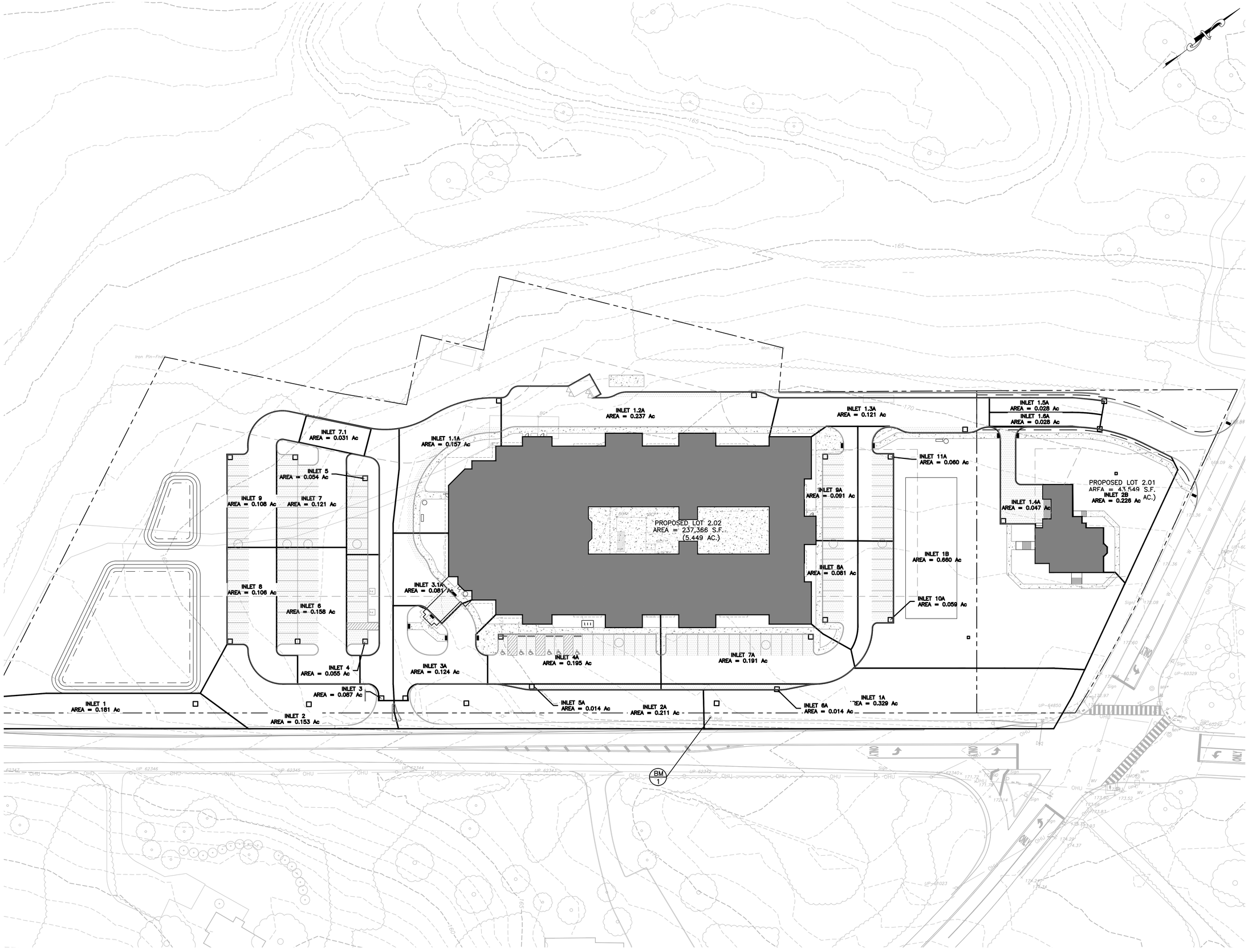
PROJ. NO.	COMG00001
DRAWING	WQA-1
SHEET	3 OF 4



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CAREONE AT LAWRENCE

LAWRENCE TOWNSHIP, MERCER COUNTY, NEW JERSEY

INLET DRAINAGE AREA MAP

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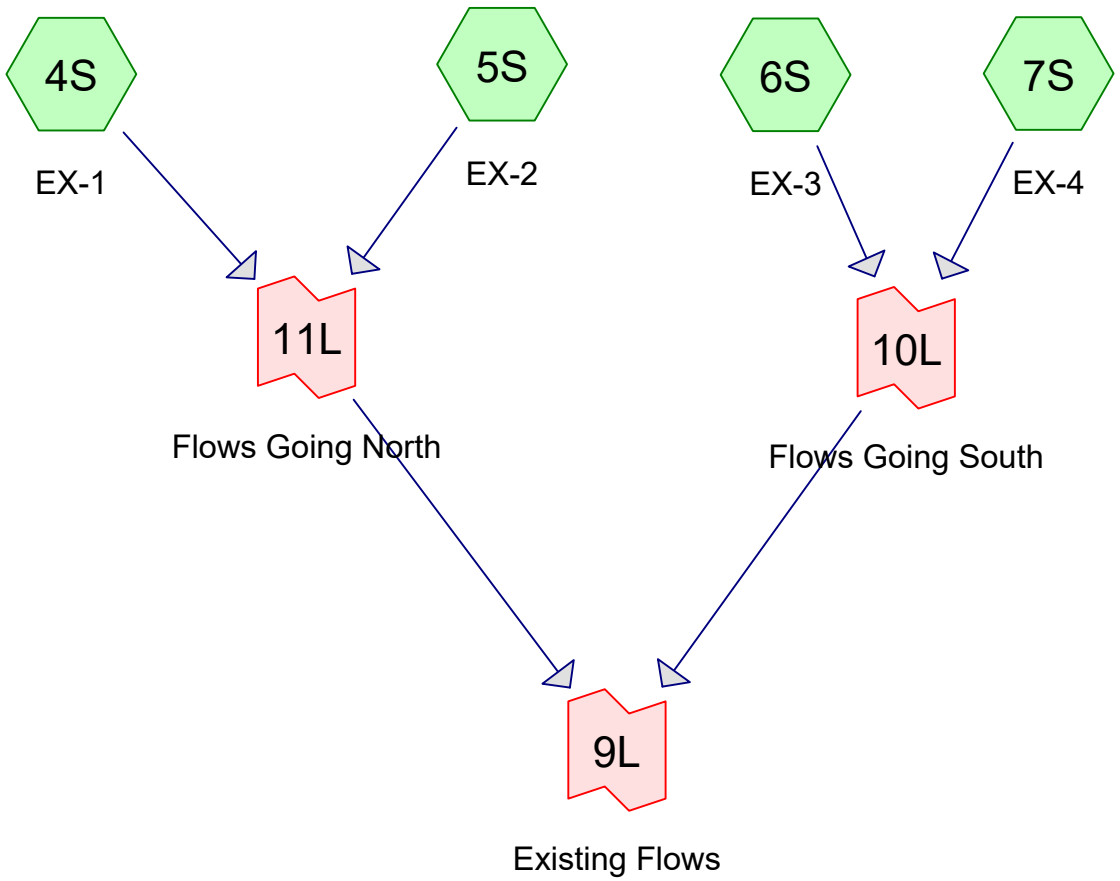
SHEET	4 OF 4

Appendix C – Existing HydroCAD Calculations



Subcat Reach Pond Link

Routing Diagram for COMG00001_EXC

Prepared by {enter your company name here}, Printed 5/27/2022

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year Storm	NOAA 24-hr	C	Default	24.00	1	3.31	2
2	10-Year Storm	NOAA 24-hr	C	Default	24.00	1	5.00	2
3	100-Year Storm	NOAA 24-hr	C	Default	24.00	1	8.27	2
4	WQDS	NJ DEP 2-hr		Default	2.00	1	1.25	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.180	98	(4S, 5S, 6S, 7S)
6.130	82	Woods/grass comb., Poor, HSG C (4S, 5S, 6S, 7S)
6.310	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
6.130	HSG C	4S, 5S, 6S, 7S
0.000	HSG D	
0.180	Other	4S, 5S, 6S, 7S
6.310		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.180	0.180		4S, 5S, 6S, 7S
0.000	0.000	6.130	0.000	0.000	6.130	Woods/grass comb., Poor	4S, 5S, 6S, 7S
0.000	**0.000**	**6.130**	**0.000**	**0.180**	**6.310**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment4S: EX-1 Runoff Area=1.348 ac 2.67% Impervious Runoff Depth>1.62"
Flow Length=239' Tc=8.1 min CN=82 Runoff=2.62 cfs 0.182 af

Subcatchment5S: EX-2 Runoff Area=2.504 ac 2.80% Impervious Runoff Depth>1.62"
Flow Length=215' Tc=10.0 min CN=82 Runoff=4.50 cfs 0.339 af

Subcatchment6S: EX-3 Runoff Area=1.458 ac 2.47% Impervious Runoff Depth>1.62"
Flow Length=498' Tc=12.7 min CN=82 Runoff=2.43 cfs 0.197 af

Subcatchment7S: EX-4 Runoff Area=1.000 ac 3.80% Impervious Runoff Depth>1.70"
Flow Length=200' Tc=6.7 min CN=83 Runoff=2.14 cfs 0.141 af

Link 9L: Existing Flows Inflow=11.36 cfs 0.859 af
Primary=11.36 cfs 0.859 af

Link 10L: Flows Going South Inflow=4.27 cfs 0.338 af
Primary=4.27 cfs 0.338 af

Link 11L: Flows Going North Inflow=7.09 cfs 0.521 af
Primary=7.09 cfs 0.521 af

Total Runoff Area = 6.310 ac Runoff Volume = 0.859 af Average Runoff Depth = 1.63"
97.15% Pervious = 6.130 ac 2.85% Impervious = 0.180 ac

Summary for Subcatchment 4S: EX-1

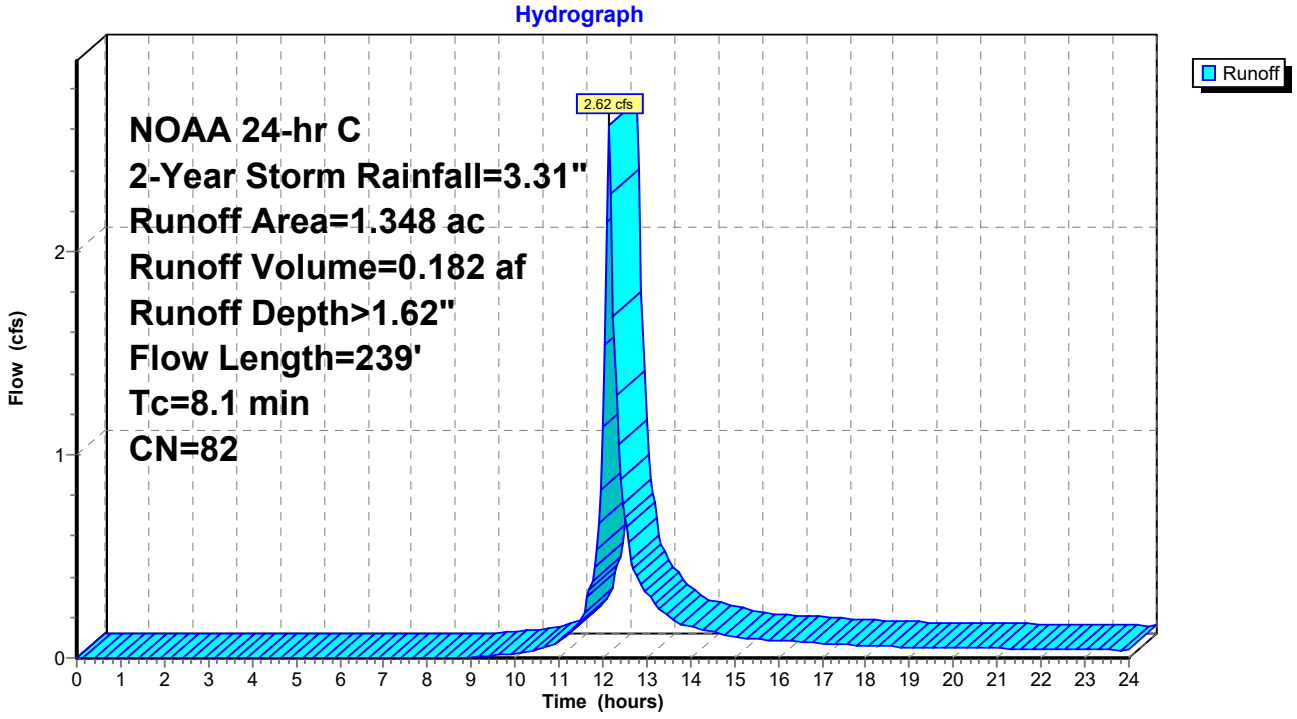
Runoff = 2.62 cfs @ 12.15 hrs, Volume= 0.182 af, Depth> 1.62"
Routed to Link 11L : Flows Going North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
	1.312	82	Woods/grass comb., Poor, HSG C
*	0.036	98	
	1.348	82	Weighted Average
	1.312		97.33% Pervious Area
	0.036		2.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	77	0.0350	0.23		**Sheet Flow, Range Sheet Flow** Range n= 0.130 P2= 3.31"
1.1	74	0.0240	1.08		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0230	1.06		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
8.1	239	Total			

Subcatchment 4S: EX-1



Hydrograph for Subcatchment 4S: EX-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.01	0.00	0.00
0.50	0.02	0.00	0.00
0.75	0.03	0.00	0.00
1.00	0.04	0.00	0.00
1.25	0.05	0.00	0.00
1.50	0.06	0.00	0.00
1.75	0.06	0.00	0.00
2.00	0.07	0.00	0.00
2.25	0.09	0.00	0.00
2.50	0.10	0.00	0.00
2.75	0.11	0.00	0.00
3.00	0.12	0.00	0.00
3.25	0.13	0.00	0.00
3.50	0.14	0.00	0.00
3.75	0.15	0.00	0.00
4.00	0.16	0.00	0.00
4.25	0.17	0.00	0.00
4.50	0.19	0.00	0.00
4.75	0.20	0.00	0.00
5.00	0.21	0.00	0.00
5.25	0.22	0.00	0.00
5.50	0.24	0.00	0.00
5.75	0.25	0.00	0.00
6.00	0.26	0.00	0.00
6.25	0.28	0.00	0.00
6.50	0.29	0.00	0.00
6.75	0.31	0.00	0.00
7.00	0.32	0.00	0.00
7.25	0.34	0.00	0.00
7.50	0.36	0.00	0.00
7.75	0.38	0.00	0.00
8.00	0.40	0.00	0.00
8.25	0.42	0.00	0.00
8.50	0.44	0.00	0.00
8.75	0.46	0.00	0.00
9.00	0.48	0.00	0.00
9.25	0.51	0.00	0.01
9.50	0.54	0.00	0.01
9.75	0.57	0.01	0.02
10.00	0.60	0.01	0.02
10.25	0.64	0.02	0.03
10.50	0.68	0.02	0.04
10.75	0.73	0.03	0.06
11.00	0.79	0.05	0.08
11.25	0.88	0.07	0.12
11.50	0.98	0.11	0.18
11.75	1.16	0.18	0.38
12.00	1.58	0.39	**1.13**
12.25	2.15	0.75	**1.68**
12.50	2.33	0.88	0.69
12.75	2.43	0.95	0.41
13.00	2.52	1.01	0.32
13.25	2.58	1.06	0.25
13.50	2.63	1.09	0.20
13.75	2.67	1.12	0.17
14.00	2.71	1.15	0.16
14.25	2.74	1.18	0.14
14.50	2.77	1.20	0.13
14.75	2.80	1.22	0.12
15.00	2.83	1.24	0.11
15.25	2.85	1.26	0.10
15.50	2.87	1.28	0.09
15.75	2.89	1.30	0.09
16.00	2.91	1.31	0.09
16.25	2.93	1.33	0.08
16.50	2.95	1.34	0.08
16.75	2.97	1.36	0.08
17.00	2.99	1.37	0.07
17.25	3.00	1.38	0.07
17.50	3.02	1.39	0.07
17.75	3.03	1.41	0.06
18.00	3.05	1.42	0.06
18.25	3.06	1.43	0.06
18.50	3.07	1.44	0.06
18.75	3.09	1.45	0.06
19.00	3.10	1.46	0.05
19.25	3.11	1.47	0.05
19.50	3.12	1.48	0.05
19.75	3.14	1.49	0.05
20.00	3.15	1.50	0.05
20.25	3.16	1.51	0.05
20.50	3.17	1.51	0.05
20.75	3.18	1.52	0.05
21.00	3.19	1.53	0.05
21.25	3.20	1.54	0.05
21.50	3.21	1.55	0.05
21.75	3.22	1.56	0.05
22.00	3.24	1.57	0.04
22.25	3.25	1.57	0.04
22.50	3.25	1.58	0.04
22.75	3.26	1.59	0.04
23.00	3.27	1.60	0.04
23.25	3.28	1.61	0.04
23.50	3.29	1.61	0.04
23.75	3.30	1.62	0.04
24.00	**3.31**	**1.63**	0.04

Summary for Subcatchment 5S: EX-2

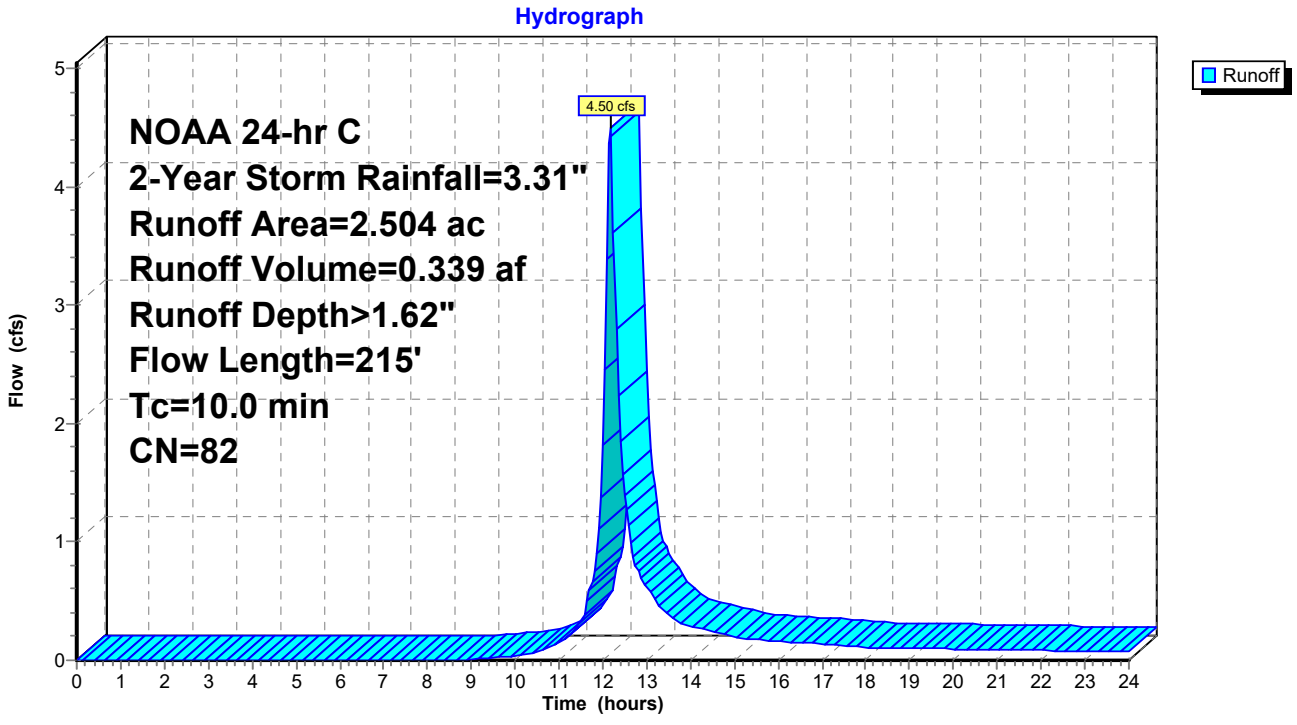
Runoff = 4.50 cfs @ 12.18 hrs, Volume= 0.339 af, Depth> 1.62"
Routed to Link 11L : Flows Going North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
	2.434	82	Woods/grass comb., Poor, HSG C
*	0.070	98	
	2.504	82	Weighted Average
	2.434		97.20% Pervious Area
	0.070		2.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	77	0.0140	0.16		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
2.0	138	0.0260	1.13		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
10.0	215	Total			

Subcatchment 5S: EX-2



Hydrograph for Subcatchment 5S: EX-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.01	0.00	0.00
0.50	0.02	0.00	0.00
0.75	0.03	0.00	0.00
1.00	0.04	0.00	0.00
1.25	0.05	0.00	0.00
1.50	0.06	0.00	0.00
1.75	0.06	0.00	0.00
2.00	0.07	0.00	0.00
2.25	0.09	0.00	0.00
2.50	0.10	0.00	0.00
2.75	0.11	0.00	0.00
3.00	0.12	0.00	0.00
3.25	0.13	0.00	0.00
3.50	0.14	0.00	0.00
3.75	0.15	0.00	0.00
4.00	0.16	0.00	0.00
4.25	0.17	0.00	0.00
4.50	0.19	0.00	0.00
4.75	0.20	0.00	0.00
5.00	0.21	0.00	0.00
5.25	0.22	0.00	0.00
5.50	0.24	0.00	0.00
5.75	0.25	0.00	0.00
6.00	0.26	0.00	0.00
6.25	0.28	0.00	0.00
6.50	0.29	0.00	0.00
6.75	0.31	0.00	0.00
7.00	0.32	0.00	0.00
7.25	0.34	0.00	0.00
7.50	0.36	0.00	0.00
7.75	0.38	0.00	0.00
8.00	0.40	0.00	0.00
8.25	0.42	0.00	0.00
8.50	0.44	0.00	0.00
8.75	0.46	0.00	0.00
9.00	0.48	0.00	0.01
9.25	0.51	0.00	0.01
9.50	0.54	0.00	0.02
9.75	0.57	0.01	0.03
10.00	0.60	0.01	0.04
10.25	0.64	0.02	0.05
10.50	0.68	0.02	0.07
10.75	0.73	0.03	0.10
11.00	0.79	0.05	0.14
11.25	0.88	0.07	0.22
11.50	0.98	0.11	0.33
11.75	1.16	0.18	0.66
12.00	1.58	0.39	**1.82**
12.25	2.15	0.75	**3.61**
12.50	2.33	0.88	1.39
12.75	2.43	0.95	0.80
13.00	2.52	1.01	0.62
13.25	2.58	1.06	0.48
13.50	2.63	1.09	0.39
13.75	2.67	1.12	0.32
14.00	2.71	1.15	0.29
14.25	2.74	1.18	0.27
14.50	2.77	1.20	0.25
14.75	2.80	1.22	0.22
15.00	2.83	1.24	0.20
15.25	2.85	1.26	0.18
15.50	2.87	1.28	0.17
15.75	2.89	1.30	0.17
16.00	2.91	1.31	0.16
16.25	2.93	1.33	0.16
16.50	2.95	1.34	0.15
16.75	2.97	1.36	0.14
17.00	2.99	1.37	0.14
17.25	3.00	1.38	0.13
17.50	3.02	1.39	0.12
17.75	3.03	1.41	0.12
18.00	3.05	1.42	0.11
18.25	3.06	1.43	0.11
18.50	3.07	1.44	0.10
18.75	3.09	1.45	0.10
19.00	3.10	1.46	0.10
19.25	3.11	1.47	0.10
19.50	3.12	1.48	0.10
19.75	3.14	1.49	0.10
20.00	3.15	1.50	0.10
20.25	3.16	1.51	0.09
20.50	3.17	1.51	0.09
20.75	3.18	1.52	0.09
21.00	3.19	1.53	0.09
21.25	3.20	1.54	0.09
21.50	3.21	1.55	0.09
21.75	3.22	1.56	0.08
22.00	3.24	1.57	0.08
22.25	3.25	1.57	0.08
22.50	3.25	1.58	0.08
22.75	3.26	1.59	0.08
23.00	3.27	1.60	0.08
23.25	3.28	1.61	0.07
23.50	3.29	1.61	0.07
23.75	3.30	1.62	0.07
24.00	**3.31**	**1.63**	0.07

Summary for Subcatchment 6S: EX-3

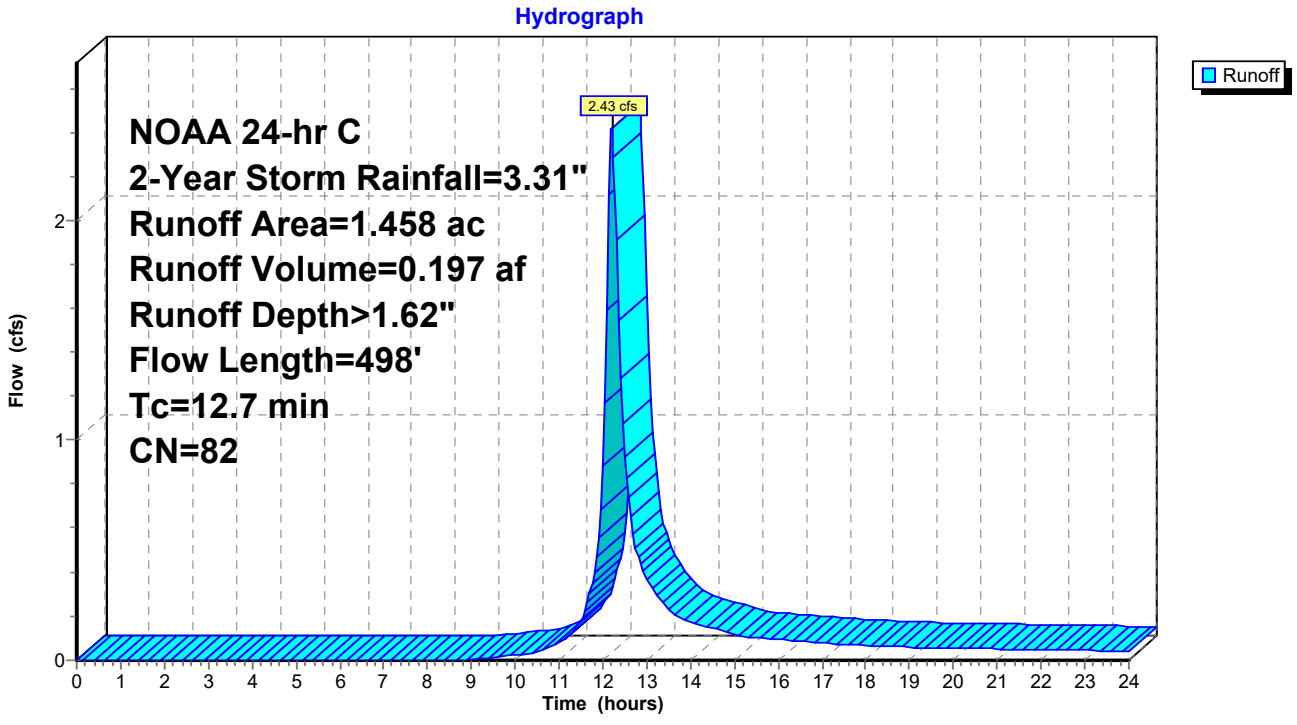
Runoff = 2.43 cfs @ 12.21 hrs, Volume= 0.197 af, Depth> 1.62"
Routed to Link 10L : Flows Going South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
	1.422	82	Woods/grass comb., Poor, HSG C
*	0.036	98	
	1.458	82	Weighted Average
	1.422		97.53% Pervious Area
	0.036		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	77	0.0350	0.23		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
7.1	421	0.0200	0.99		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
12.7	498	Total			

Subcatchment 6S: EX-3



Hydrograph for Subcatchment 6S: EX-3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.01	0.00	0.00
0.50	0.02	0.00	0.00
0.75	0.03	0.00	0.00
1.00	0.04	0.00	0.00
1.25	0.05	0.00	0.00
1.50	0.06	0.00	0.00
1.75	0.06	0.00	0.00
2.00	0.07	0.00	0.00
2.25	0.09	0.00	0.00
2.50	0.10	0.00	0.00
2.75	0.11	0.00	0.00
3.00	0.12	0.00	0.00
3.25	0.13	0.00	0.00
3.50	0.14	0.00	0.00
3.75	0.15	0.00	0.00
4.00	0.16	0.00	0.00
4.25	0.17	0.00	0.00
4.50	0.19	0.00	0.00
4.75	0.20	0.00	0.00
5.00	0.21	0.00	0.00
5.25	0.22	0.00	0.00
5.50	0.24	0.00	0.00
5.75	0.25	0.00	0.00
6.00	0.26	0.00	0.00
6.25	0.28	0.00	0.00
6.50	0.29	0.00	0.00
6.75	0.31	0.00	0.00
7.00	0.32	0.00	0.00
7.25	0.34	0.00	0.00
7.50	0.36	0.00	0.00
7.75	0.38	0.00	0.00
8.00	0.40	0.00	0.00
8.25	0.42	0.00	0.00
8.50	0.44	0.00	0.00
8.75	0.46	0.00	0.00
9.00	0.48	0.00	0.00
9.25	0.51	0.00	0.01
9.50	0.54	0.00	0.01
9.75	0.57	0.01	0.02
10.00	0.60	0.01	0.02
10.25	0.64	0.02	0.03
10.50	0.68	0.02	0.04
10.75	0.73	0.03	0.05
11.00	0.79	0.05	0.08
11.25	0.88	0.07	0.12
11.50	0.98	0.11	0.18
11.75	1.16	0.18	0.35
12.00	1.58	0.39	**0.88**
12.25	2.15	0.75	**2.28**
12.50	2.33	0.88	0.93
12.75	2.43	0.95	0.51
13.00	2.52	1.01	0.38
13.25	2.58	1.06	0.29
13.50	2.63	1.09	0.23
13.75	2.67	1.12	0.19
14.00	2.71	1.15	0.17
14.25	2.74	1.18	0.16
14.50	2.77	1.20	0.15
14.75	2.80	1.22	0.13
15.00	2.83	1.24	0.12
15.25	2.85	1.26	0.11
15.50	2.87	1.28	0.10
15.75	2.89	1.30	0.10
16.00	2.91	1.31	0.09
16.25	2.93	1.33	0.09
16.50	2.95	1.34	0.09
16.75	2.97	1.36	0.08
17.00	2.99	1.37	0.08
17.25	3.00	1.38	0.08
17.50	3.02	1.39	0.07
17.75	3.03	1.41	0.07
18.00	3.05	1.42	0.07
18.25	3.06	1.43	0.06
18.50	3.07	1.44	0.06
18.75	3.09	1.45	0.06
19.00	3.10	1.46	0.06
19.25	3.11	1.47	0.06
19.50	3.12	1.48	0.06
19.75	3.14	1.49	0.06
20.00	3.15	1.50	0.06
20.25	3.16	1.51	0.05
20.50	3.17	1.51	0.05
20.75	3.18	1.52	0.05
21.00	3.19	1.53	0.05
21.25	3.20	1.54	0.05
21.50	3.21	1.55	0.05
21.75	3.22	1.56	0.05
22.00	3.24	1.57	0.05
22.25	3.25	1.57	0.05
22.50	3.25	1.58	0.05
22.75	3.26	1.59	0.05
23.00	3.27	1.60	0.04
23.25	3.28	1.61	0.04
23.50	3.29	1.61	0.04
23.75	3.30	1.62	0.04
24.00	**3.31**	**1.63**	0.04

Summary for Subcatchment 7S: EX-4

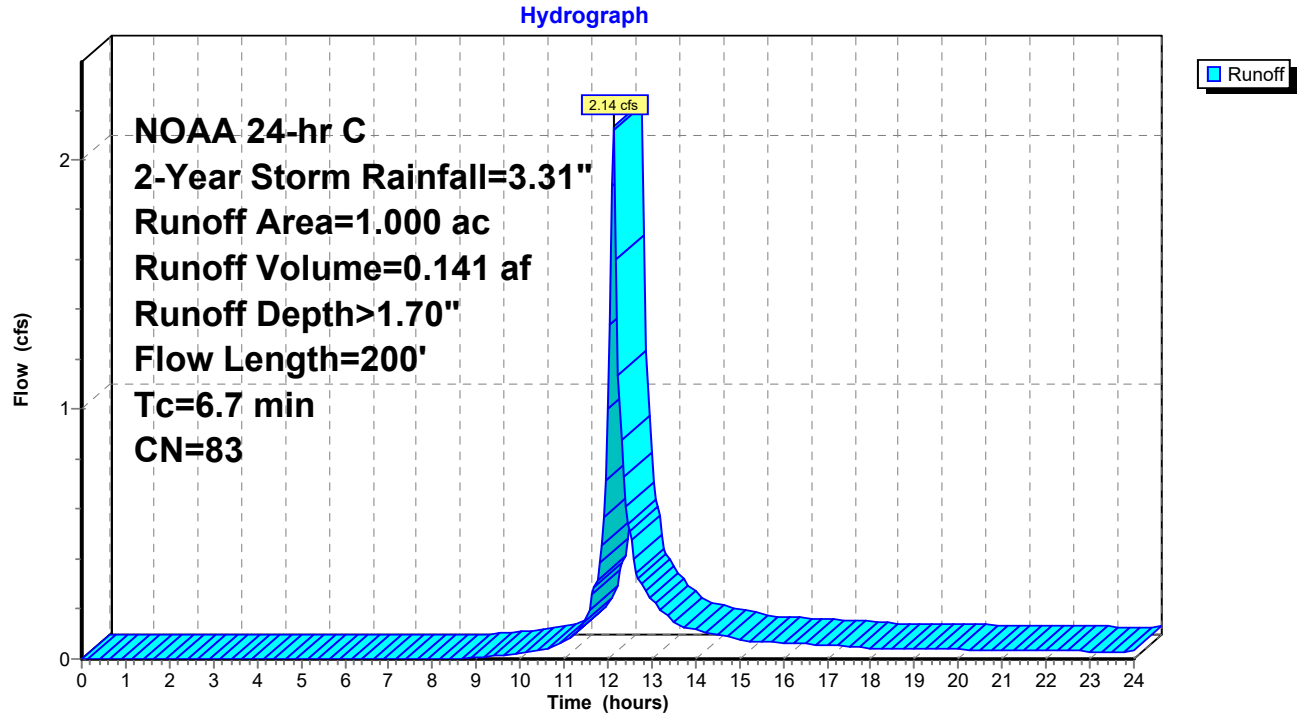
Runoff = 2.14 cfs @ 12.14 hrs, Volume= 0.141 af, Depth> 1.70"
Routed to Link 10L : Flows Going South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.038	98	
	0.962	82	Woods/grass comb., Poor, HSG C
	1.000	83	Weighted Average
	0.962		96.20% Pervious Area
	0.038		3.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	77	0.0300	0.22		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
0.1	15	0.0830	2.02		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
0.2	18	0.0690	1.84		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
0.5	90	0.0200	2.87		**Shallow Concentrated Flow, Paved SCF** Paved Kv= 20.3 fps
6.7	200	Total			

Subcatchment 7S: EX-4



Hydrograph for Subcatchment 7S: EX-4

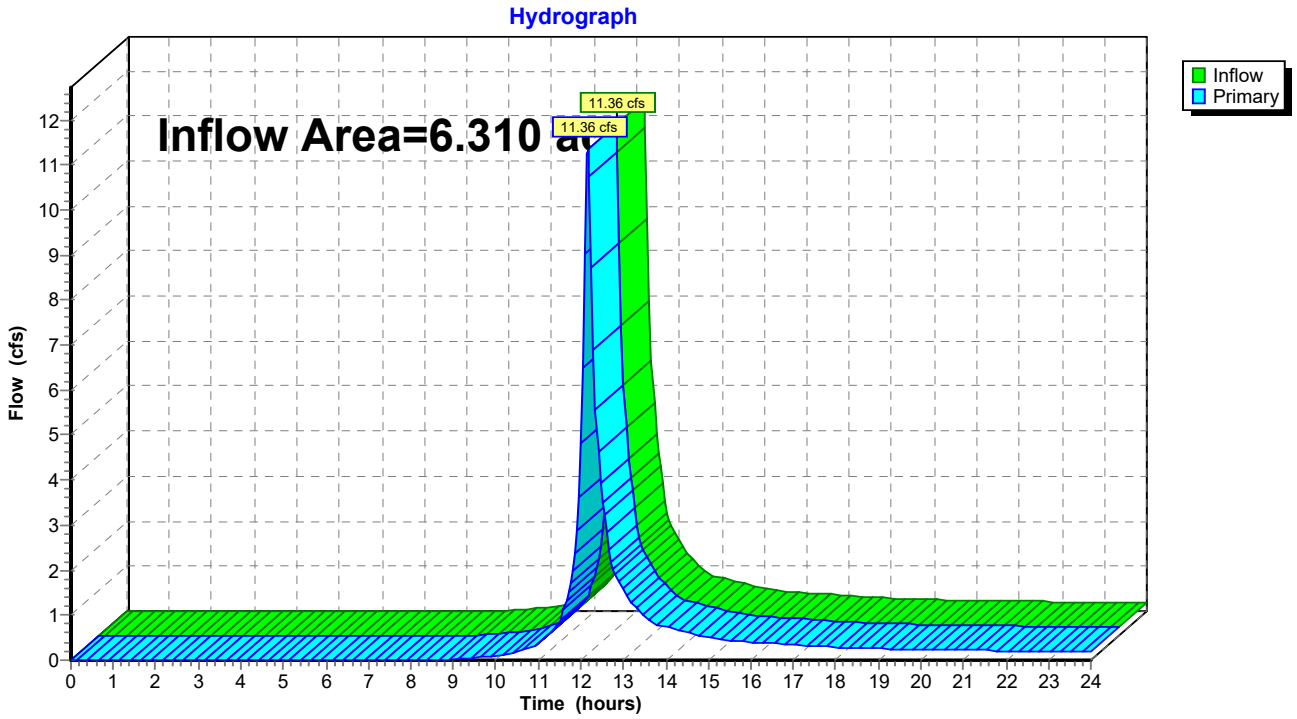
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.01	0.00	0.00
0.50	0.02	0.00	0.00
0.75	0.03	0.00	0.00
1.00	0.04	0.00	0.00
1.25	0.05	0.00	0.00
1.50	0.06	0.00	0.00
1.75	0.06	0.00	0.00
2.00	0.07	0.00	0.00
2.25	0.09	0.00	0.00
2.50	0.10	0.00	0.00
2.75	0.11	0.00	0.00
3.00	0.12	0.00	0.00
3.25	0.13	0.00	0.00
3.50	0.14	0.00	0.00
3.75	0.15	0.00	0.00
4.00	0.16	0.00	0.00
4.25	0.17	0.00	0.00
4.50	0.19	0.00	0.00
4.75	0.20	0.00	0.00
5.00	0.21	0.00	0.00
5.25	0.22	0.00	0.00
5.50	0.24	0.00	0.00
5.75	0.25	0.00	0.00
6.00	0.26	0.00	0.00
6.25	0.28	0.00	0.00
6.50	0.29	0.00	0.00
6.75	0.31	0.00	0.00
7.00	0.32	0.00	0.00
7.25	0.34	0.00	0.00
7.50	0.36	0.00	0.00
7.75	0.38	0.00	0.00
8.00	0.40	0.00	0.00
8.25	0.42	0.00	0.00
8.50	0.44	0.00	0.00
8.75	0.46	0.00	0.00
9.00	0.48	0.00	0.01
9.25	0.51	0.00	0.01
9.50	0.54	0.01	0.01
9.75	0.57	0.01	0.02
10.00	0.60	0.02	0.02
10.25	0.64	0.02	0.03
10.50	0.68	0.03	0.03
10.75	0.73	0.04	0.05
11.00	0.79	0.06	0.07
11.25	0.88	0.09	0.11
11.50	0.98	0.12	0.15
11.75	1.16	0.20	0.32
12.00	1.58	0.42	**1.00**
12.25	2.15	0.80	**1.14**
12.50	2.33	0.93	0.51
12.75	2.43	1.01	0.31
13.00	2.52	1.07	0.24
13.25	2.58	1.11	0.19
13.50	2.63	1.15	0.15
13.75	2.67	1.18	0.13
14.00	2.71	1.21	0.12
14.25	2.74	1.24	0.11
14.50	2.77	1.27	0.10
14.75	2.80	1.29	0.09
15.00	2.83	1.31	0.08
15.25	2.85	1.33	0.07
15.50	2.87	1.34	0.07
15.75	2.89	1.36	0.07
16.00	2.91	1.38	0.07
16.25	2.93	1.39	0.06
16.50	2.95	1.41	0.06
16.75	2.97	1.42	0.06
17.00	2.99	1.44	0.06
17.25	3.00	1.45	0.05
17.50	3.02	1.46	0.05
17.75	3.03	1.47	0.05
18.00	3.05	1.49	0.05
18.25	3.06	1.50	0.04
18.50	3.07	1.51	0.04
18.75	3.09	1.52	0.04
19.00	3.10	1.53	0.04
19.25	3.11	1.54	0.04
19.50	3.12	1.55	0.04
19.75	3.14	1.56	0.04
20.00	3.15	1.57	0.04
20.25	3.16	1.58	0.04
20.50	3.17	1.59	0.04
20.75	3.18	1.59	0.04
21.00	3.19	1.60	0.04
21.25	3.20	1.61	0.04
21.50	3.21	1.62	0.03
21.75	3.22	1.63	0.03
22.00	3.24	1.64	0.03
22.25	3.25	1.65	0.03
22.50	3.25	1.65	0.03
22.75	3.26	1.66	0.03
23.00	3.27	1.67	0.03
23.25	3.28	1.68	0.03
23.50	3.29	1.68	0.03
23.75	3.30	1.69	0.03
24.00	**3.31**	**1.70**	0.03

Summary for Link 9L: Existing Flows

Inflow Area = 6.310 ac, 2.85% Impervious, Inflow Depth > 1.63" for 2-Year Storm event
Inflow = 11.36 cfs @ 12.17 hrs, Volume= 0.859 af
Primary = 11.36 cfs @ 12.17 hrs, Volume= 0.859 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 9L: Existing Flows



Hydrograph for Link 9L: Existing Flows

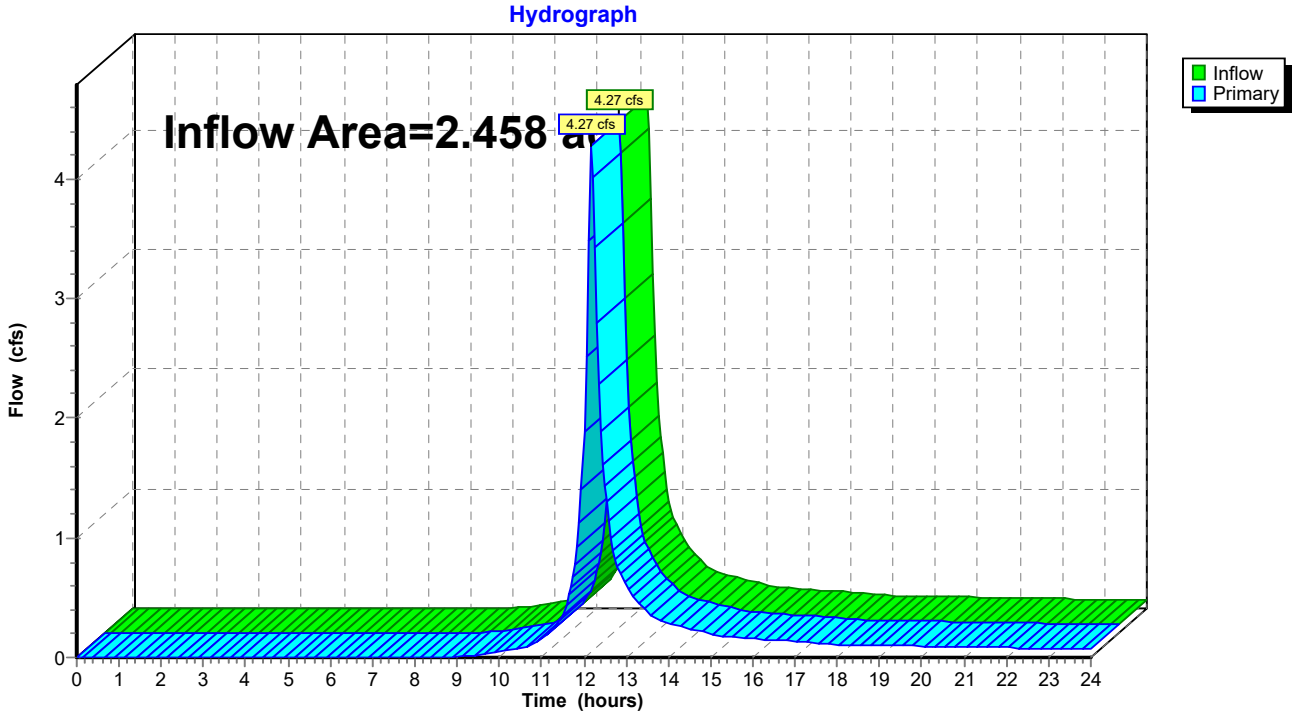
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	1.56	0.00	1.56
0.25	0.00	0.00	0.00	13.25	1.20	0.00	1.20
0.50	0.00	0.00	0.00	13.50	0.98	0.00	0.98
0.75	0.00	0.00	0.00	13.75	0.80	0.00	0.80
1.00	0.00	0.00	0.00	14.00	0.74	0.00	0.74
1.25	0.00	0.00	0.00	14.25	0.68	0.00	0.68
1.50	0.00	0.00	0.00	14.50	0.62	0.00	0.62
1.75	0.00	0.00	0.00	14.75	0.56	0.00	0.56
2.00	0.00	0.00	0.00	15.00	0.50	0.00	0.50
2.25	0.00	0.00	0.00	15.25	0.46	0.00	0.46
2.50	0.00	0.00	0.00	15.50	0.44	0.00	0.44
2.75	0.00	0.00	0.00	15.75	0.42	0.00	0.42
3.00	0.00	0.00	0.00	16.00	0.41	0.00	0.41
3.25	0.00	0.00	0.00	16.25	0.39	0.00	0.39
3.50	0.00	0.00	0.00	16.50	0.38	0.00	0.38
3.75	0.00	0.00	0.00	16.75	0.36	0.00	0.36
4.00	0.00	0.00	0.00	17.00	0.35	0.00	0.35
4.25	0.00	0.00	0.00	17.25	0.33	0.00	0.33
4.50	0.00	0.00	0.00	17.50	0.31	0.00	0.31
4.75	0.00	0.00	0.00	17.75	0.30	0.00	0.30
5.00	0.00	0.00	0.00	18.00	0.28	0.00	0.28
5.25	0.00	0.00	0.00	18.25	0.27	0.00	0.27
5.50	0.00	0.00	0.00	18.50	0.26	0.00	0.26
5.75	0.00	0.00	0.00	18.75	0.26	0.00	0.26
6.00	0.00	0.00	0.00	19.00	0.26	0.00	0.26
6.25	0.00	0.00	0.00	19.25	0.25	0.00	0.25
6.50	0.00	0.00	0.00	19.50	0.25	0.00	0.25
6.75	0.00	0.00	0.00	19.75	0.25	0.00	0.25
7.00	0.00	0.00	0.00	20.00	0.24	0.00	0.24
7.25	0.00	0.00	0.00	20.25	0.24	0.00	0.24
7.50	0.00	0.00	0.00	20.50	0.23	0.00	0.23
7.75	0.00	0.00	0.00	20.75	0.23	0.00	0.23
8.00	0.00	0.00	0.00	21.00	0.23	0.00	0.23
8.25	0.00	0.00	0.00	21.25	0.22	0.00	0.22
8.50	0.00	0.00	0.00	21.50	0.22	0.00	0.22
8.75	0.01	0.00	0.01	21.75	0.21	0.00	0.21
9.00	0.02	0.00	0.02	22.00	0.21	0.00	0.21
9.25	0.03	0.00	0.03	22.25	0.21	0.00	0.21
9.50	0.05	0.00	0.05	22.50	0.20	0.00	0.20
9.75	0.08	0.00	0.08	22.75	0.20	0.00	0.20
10.00	0.11	0.00	0.11	23.00	0.19	0.00	0.19
10.25	0.14	0.00	0.14	23.25	0.19	0.00	0.19
10.50	0.18	0.00	0.18	23.50	0.19	0.00	0.19
10.75	0.26	0.00	0.26	23.75	0.18	0.00	0.18
11.00	0.38	0.00	0.38	24.00	0.19	0.00	0.19
11.25	0.57	0.00	0.57				
11.50	0.85	0.00	0.85				
11.75	1.70	0.00	1.70				
12.00	**4.83**	0.00	**4.83**				
12.25	**8.71**	0.00	**8.71**				
12.50	3.52	0.00	3.52				
12.75	2.03	0.00	2.03				

Summary for Link 10L: Flows Going South

Inflow Area = 2.458 ac, 3.01% Impervious, Inflow Depth > 1.65" for 2-Year Storm event
Inflow = 4.27 cfs @ 12.16 hrs, Volume= 0.338 af
Primary = 4.27 cfs @ 12.16 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min
Routed to Link 9L : Existing Flows

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 10L: Flows Going South



Hydrograph for Link 10L: Flows Going South

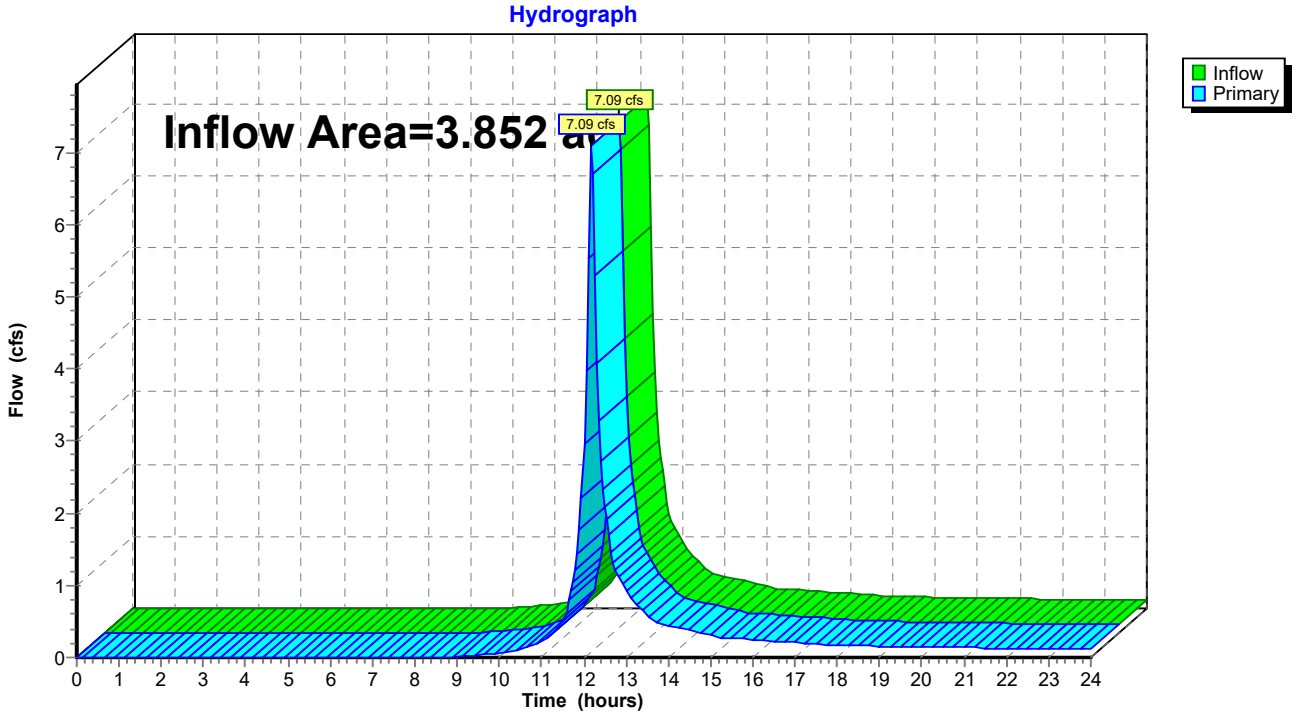
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.25	0.00	0.00	0.00
0.50	0.00	0.00	0.00
0.75	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.25	0.00	0.00	0.00
1.50	0.00	0.00	0.00
1.75	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.25	0.00	0.00	0.00
2.50	0.00	0.00	0.00
2.75	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.25	0.00	0.00	0.00
3.50	0.00	0.00	0.00
3.75	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.25	0.00	0.00	0.00
4.50	0.00	0.00	0.00
4.75	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.25	0.00	0.00	0.00
5.50	0.00	0.00	0.00
5.75	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.25	0.00	0.00	0.00
6.50	0.00	0.00	0.00
6.75	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.25	0.00	0.00	0.00
7.50	0.00	0.00	0.00
7.75	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.25	0.00	0.00	0.00
8.50	0.00	0.00	0.00
8.75	0.00	0.00	0.00
9.00	0.01	0.00	0.01
9.25	0.01	0.00	0.01
9.50	0.02	0.00	0.02
9.75	0.03	0.00	0.03
10.00	0.04	0.00	0.04
10.25	0.06	0.00	0.06
10.50	0.07	0.00	0.07
10.75	0.10	0.00	0.10
11.00	0.15	0.00	0.15
11.25	0.23	0.00	0.23
11.50	0.33	0.00	0.33
11.75	0.67	0.00	0.67
12.00	**1.88**	0.00	**1.88**
12.25	**3.42**	0.00	**3.42**
12.50	1.44	0.00	1.44
12.75	0.82	0.00	0.82
13.00	0.62	0.00	0.62
13.25	0.48	0.00	0.48
13.50	0.39	0.00	0.39
13.75	0.32	0.00	0.32
14.00	0.29	0.00	0.29
14.25	0.27	0.00	0.27
14.50	0.24	0.00	0.24
14.75	0.22	0.00	0.22
15.00	0.20	0.00	0.20
15.25	0.18	0.00	0.18
15.50	0.17	0.00	0.17
15.75	0.17	0.00	0.17
16.00	0.16	0.00	0.16
16.25	0.15	0.00	0.15
16.50	0.15	0.00	0.15
16.75	0.14	0.00	0.14
17.00	0.14	0.00	0.14
17.25	0.13	0.00	0.13
17.50	0.12	0.00	0.12
17.75	0.12	0.00	0.12
18.00	0.11	0.00	0.11
18.25	0.11	0.00	0.11
18.50	0.10	0.00	0.10
18.75	0.10	0.00	0.10
19.00	0.10	0.00	0.10
19.25	0.10	0.00	0.10
19.50	0.10	0.00	0.10
19.75	0.10	0.00	0.10
20.00	0.09	0.00	0.09
20.25	0.09	0.00	0.09
20.50	0.09	0.00	0.09
20.75	0.09	0.00	0.09
21.00	0.09	0.00	0.09
21.25	0.09	0.00	0.09
21.50	0.09	0.00	0.09
21.75	0.08	0.00	0.08
22.00	0.08	0.00	0.08
22.25	0.08	0.00	0.08
22.50	0.08	0.00	0.08
22.75	0.08	0.00	0.08
23.00	0.08	0.00	0.08
23.25	0.07	0.00	0.07
23.50	0.07	0.00	0.07
23.75	0.07	0.00	0.07
24.00	0.07	0.00	0.07

Summary for Link 11L: Flows Going North

Inflow Area = 3.852 ac, 2.75% Impervious, Inflow Depth > 1.62" for 2-Year Storm event
Inflow = 7.09 cfs @ 12.17 hrs, Volume= 0.521 af
Primary = 7.09 cfs @ 12.17 hrs, Volume= 0.521 af, Atten= 0%, Lag= 0.0 min
Routed to Link 9L : Existing Flows

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 11L: Flows Going North



Hydrograph for Link 11L: Flows Going North

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.25	0.00	0.00	0.00
0.50	0.00	0.00	0.00
0.75	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.25	0.00	0.00	0.00
1.50	0.00	0.00	0.00
1.75	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.25	0.00	0.00	0.00
2.50	0.00	0.00	0.00
2.75	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.25	0.00	0.00	0.00
3.50	0.00	0.00	0.00
3.75	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.25	0.00	0.00	0.00
4.50	0.00	0.00	0.00
4.75	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.25	0.00	0.00	0.00
5.50	0.00	0.00	0.00
5.75	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.25	0.00	0.00	0.00
6.50	0.00	0.00	0.00
6.75	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.25	0.00	0.00	0.00
7.50	0.00	0.00	0.00
7.75	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.25	0.00	0.00	0.00
8.50	0.00	0.00	0.00
8.75	0.00	0.00	0.00
9.00	0.01	0.00	0.01
9.25	0.02	0.00	0.02
9.50	0.03	0.00	0.03
9.75	0.05	0.00	0.05
10.00	0.06	0.00	0.06
10.25	0.09	0.00	0.09
10.50	0.11	0.00	0.11
10.75	0.16	0.00	0.16
11.00	0.23	0.00	0.23
11.25	0.34	0.00	0.34
11.50	0.51	0.00	0.51
11.75	1.04	0.00	1.04
12.00	**2.95**	0.00	**2.95**
12.25	**5.29**	0.00	**5.29**
12.50	2.08	0.00	2.08
12.75	1.21	0.00	1.21
13.00	0.94	0.00	0.94
13.25	0.73	0.00	0.73
13.50	0.59	0.00	0.59
13.75	0.48	0.00	0.48
14.00	0.45	0.00	0.45
14.25	0.41	0.00	0.41
14.50	0.38	0.00	0.38
14.75	0.34	0.00	0.34
15.00	0.31	0.00	0.31
15.25	0.28	0.00	0.28
15.50	0.27	0.00	0.27
15.75	0.26	0.00	0.26
16.00	0.25	0.00	0.25
16.25	0.24	0.00	0.24
16.50	0.23	0.00	0.23
16.75	0.22	0.00	0.22
17.00	0.21	0.00	0.21
17.25	0.20	0.00	0.20
17.50	0.19	0.00	0.19
17.75	0.18	0.00	0.18
18.00	0.17	0.00	0.17
18.25	0.16	0.00	0.16
18.50	0.16	0.00	0.16
18.75	0.16	0.00	0.16
19.00	0.16	0.00	0.16
19.25	0.15	0.00	0.15
19.50	0.15	0.00	0.15
19.75	0.15	0.00	0.15
20.00	0.15	0.00	0.15
20.25	0.14	0.00	0.14
20.50	0.14	0.00	0.14
20.75	0.14	0.00	0.14
21.00	0.14	0.00	0.14
21.25	0.13	0.00	0.13
21.50	0.13	0.00	0.13
21.75	0.13	0.00	0.13
22.00	0.13	0.00	0.13
22.25	0.13	0.00	0.13
22.50	0.12	0.00	0.12
22.75	0.12	0.00	0.12
23.00	0.12	0.00	0.12
23.25	0.12	0.00	0.12
23.50	0.11	0.00	0.11
23.75	0.11	0.00	0.11
24.00	0.12	0.00	0.12

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment4S: EX-1 Runoff Area=1.348 ac 2.67% Impervious Runoff Depth>3.07"
Flow Length=239' Tc=8.1 min CN=82 Runoff=4.92 cfs 0.345 af

Subcatchment5S: EX-2 Runoff Area=2.504 ac 2.80% Impervious Runoff Depth>3.07"
Flow Length=215' Tc=10.0 min CN=82 Runoff=8.48 cfs 0.641 af

Subcatchment6S: EX-3 Runoff Area=1.458 ac 2.47% Impervious Runoff Depth>3.07"
Flow Length=498' Tc=12.7 min CN=82 Runoff=4.57 cfs 0.373 af

Subcatchment7S: EX-4 Runoff Area=1.000 ac 3.80% Impervious Runoff Depth>3.17"
Flow Length=200' Tc=6.7 min CN=83 Runoff=3.93 cfs 0.264 af

Link 9L: Existing Flows Inflow=21.31 cfs 1.623 af
Primary=21.31 cfs 1.623 af

Link 10L: Flows Going South Inflow=8.00 cfs 0.637 af
Primary=8.00 cfs 0.637 af

Link 11L: Flows Going North Inflow=13.31 cfs 0.986 af
Primary=13.31 cfs 0.986 af

Total Runoff Area = 6.310 ac Runoff Volume = 1.623 af Average Runoff Depth = 3.09"
97.15% Pervious = 6.130 ac 2.85% Impervious = 0.180 ac

Summary for Subcatchment 4S: EX-1

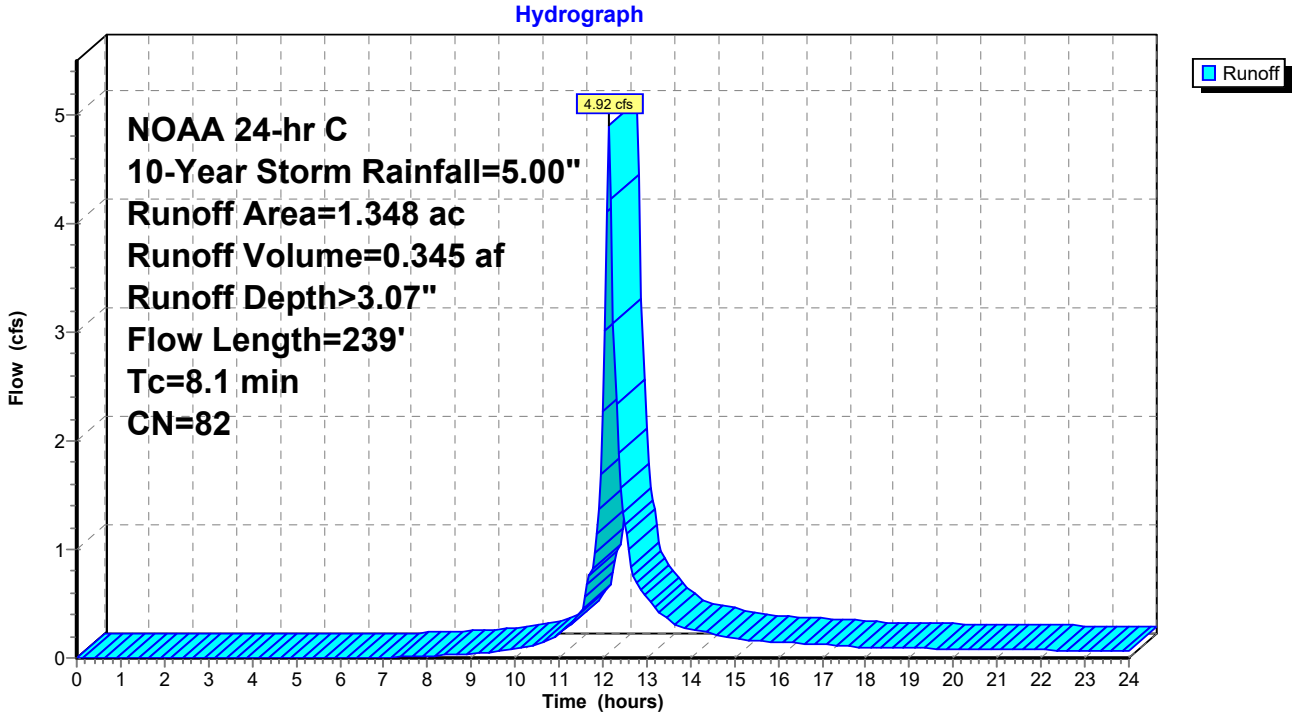
Runoff = 4.92 cfs @ 12.15 hrs, Volume= 0.345 af, Depth> 3.07"
Routed to Link 11L : Flows Going North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
	1.312	82	Woods/grass comb., Poor, HSG C
*	0.036	98	
	1.348	82	Weighted Average
	1.312		97.33% Pervious Area
	0.036		2.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	77	0.0350	0.23		**Sheet Flow, Range Sheet Flow** Range n= 0.130 P2= 3.31"
1.1	74	0.0240	1.08		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0230	1.06		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
8.1	239	Total			

Subcatchment 4S: EX-1



Hydrograph for Subcatchment 4S: EX-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.01	0.00	0.00
0.50	0.03	0.00	0.00
0.75	0.04	0.00	0.00
1.00	0.05	0.00	0.00
1.25	0.07	0.00	0.00
1.50	0.08	0.00	0.00
1.75	0.10	0.00	0.00
2.00	0.11	0.00	0.00
2.25	0.13	0.00	0.00
2.50	0.14	0.00	0.00
2.75	0.16	0.00	0.00
3.00	0.18	0.00	0.00
3.25	0.19	0.00	0.00
3.50	0.21	0.00	0.00
3.75	0.23	0.00	0.00
4.00	0.24	0.00	0.00
4.25	0.26	0.00	0.00
4.50	0.28	0.00	0.00
4.75	0.30	0.00	0.00
5.00	0.32	0.00	0.00
5.25	0.34	0.00	0.00
5.50	0.36	0.00	0.00
5.75	0.38	0.00	0.00
6.00	0.40	0.00	0.00
6.25	0.42	0.00	0.00
6.50	0.44	0.00	0.00
6.75	0.46	0.00	0.00
7.00	0.49	0.00	0.00
7.25	0.51	0.00	0.01
7.50	0.54	0.00	0.01
7.75	0.57	0.01	0.02
8.00	0.60	0.01	0.02
8.25	0.63	0.02	0.02
8.50	0.66	0.02	0.03
8.75	0.70	0.03	0.03
9.00	0.73	0.03	0.04
9.25	0.77	0.04	0.05
9.50	0.81	0.05	0.06
9.75	0.86	0.07	0.07
10.00	0.91	0.08	0.09
10.25	0.97	0.10	0.10
10.50	1.03	0.13	0.12
10.75	1.11	0.16	0.16
11.00	1.20	0.20	0.22
11.25	1.32	0.25	0.31
11.50	1.48	0.33	0.44
11.75	1.76	0.50	0.83
12.00	2.38	0.91	**2.28**
12.25	3.24	1.57	**3.08**
12.50	3.52	1.80	1.23
12.75	3.68	1.93	0.72
13.00	3.80	2.03	0.56
13.25	3.89	2.11	0.43
13.50	3.97	2.18	0.35
13.75	4.03	2.23	0.29
14.00	4.09	2.28	0.27
14.25	4.14	2.32	0.25
14.50	4.19	2.36	0.22
14.75	4.23	2.40	0.20
15.00	4.27	2.44	0.18
15.25	4.30	2.47	0.16
15.50	4.34	2.49	0.16
15.75	4.37	2.52	0.15
16.00	4.40	2.55	0.15
16.25	4.43	2.58	0.14
16.50	4.46	2.60	0.14
16.75	4.49	2.62	0.13
17.00	4.51	2.65	0.12
17.25	4.54	2.67	0.12
17.50	4.56	2.69	0.11
17.75	4.58	2.71	0.11
18.00	4.60	2.73	0.10
18.25	4.62	2.74	0.10
18.50	4.64	2.76	0.09
18.75	4.66	2.78	0.09
19.00	4.68	2.80	0.09
19.25	4.70	2.81	0.09
19.50	4.72	2.83	0.09
19.75	4.74	2.85	0.09
20.00	4.76	2.86	0.09
20.25	4.77	2.88	0.08
20.50	4.79	2.89	0.08
20.75	4.81	2.91	0.08
21.00	4.82	2.92	0.08
21.25	4.84	2.94	0.08
21.50	4.86	2.95	0.08
21.75	4.87	2.96	0.08
22.00	4.89	2.98	0.07
22.25	4.90	2.99	0.07
22.50	4.92	3.00	0.07
22.75	4.93	3.02	0.07
23.00	4.95	3.03	0.07
23.25	4.96	3.04	0.07
23.50	4.97	3.05	0.07
23.75	4.99	3.07	0.06
24.00	**5.00**	**3.08**	0.07

Summary for Subcatchment 5S: EX-2

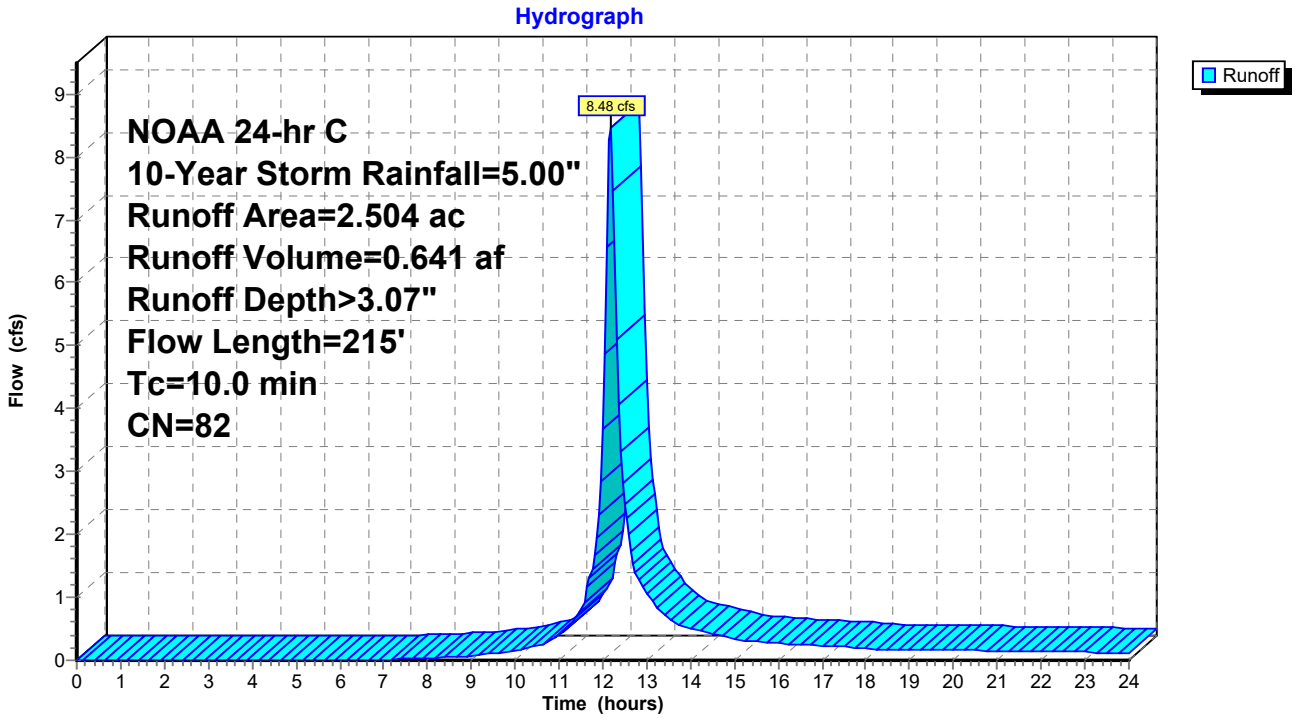
Runoff = 8.48 cfs @ 12.17 hrs, Volume= 0.641 af, Depth> 3.07"
Routed to Link 11L : Flows Going North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
	2.434	82	Woods/grass comb., Poor, HSG C
*	0.070	98	
	2.504	82	Weighted Average
	2.434		97.20% Pervious Area
	0.070		2.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	77	0.0140	0.16		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
2.0	138	0.0260	1.13		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
10.0	215	Total			

Subcatchment 5S: EX-2



Hydrograph for Subcatchment 5S: EX-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.01	0.00	0.00
0.50	0.03	0.00	0.00
0.75	0.04	0.00	0.00
1.00	0.05	0.00	0.00
1.25	0.07	0.00	0.00
1.50	0.08	0.00	0.00
1.75	0.10	0.00	0.00
2.00	0.11	0.00	0.00
2.25	0.13	0.00	0.00
2.50	0.14	0.00	0.00
2.75	0.16	0.00	0.00
3.00	0.18	0.00	0.00
3.25	0.19	0.00	0.00
3.50	0.21	0.00	0.00
3.75	0.23	0.00	0.00
4.00	0.24	0.00	0.00
4.25	0.26	0.00	0.00
4.50	0.28	0.00	0.00
4.75	0.30	0.00	0.00
5.00	0.32	0.00	0.00
5.25	0.34	0.00	0.00
5.50	0.36	0.00	0.00
5.75	0.38	0.00	0.00
6.00	0.40	0.00	0.00
6.25	0.42	0.00	0.00
6.50	0.44	0.00	0.00
6.75	0.46	0.00	0.00
7.00	0.49	0.00	0.01
7.25	0.51	0.00	0.01
7.50	0.54	0.00	0.02
7.75	0.57	0.01	0.03
8.00	0.60	0.01	0.04
8.25	0.63	0.02	0.04
8.50	0.66	0.02	0.05
8.75	0.70	0.03	0.06
9.00	0.73	0.03	0.07
9.25	0.77	0.04	0.09
9.50	0.81	0.05	0.11
9.75	0.86	0.07	0.13
10.00	0.91	0.08	0.16
10.25	0.97	0.10	0.19
10.50	1.03	0.13	0.22
10.75	1.11	0.16	0.29
11.00	1.20	0.20	0.39
11.25	1.32	0.25	0.56
11.50	1.48	0.33	0.78
11.75	1.76	0.50	1.46
12.00	2.38	0.91	**3.68**
12.25	3.24	1.57	**6.65**
12.50	3.52	1.80	2.46
12.75	3.68	1.93	1.40
13.00	3.80	2.03	1.07
13.25	3.89	2.11	0.83
13.50	3.97	2.18	0.67
13.75	4.03	2.23	0.54
14.00	4.09	2.28	0.50
14.25	4.14	2.32	0.46
14.50	4.19	2.36	0.42
14.75	4.23	2.40	0.38
15.00	4.27	2.44	0.34
15.25	4.30	2.47	0.31
15.50	4.34	2.49	0.29
15.75	4.37	2.52	0.28
16.00	4.40	2.55	0.27
16.25	4.43	2.58	0.26
16.50	4.46	2.60	0.25
16.75	4.49	2.62	0.24
17.00	4.51	2.65	0.23
17.25	4.54	2.67	0.22
17.50	4.56	2.69	0.21
17.75	4.58	2.71	0.20
18.00	4.60	2.73	0.19
18.25	4.62	2.74	0.18
18.50	4.64	2.76	0.18
18.75	4.66	2.78	0.17
19.00	4.68	2.80	0.17
19.25	4.70	2.81	0.17
19.50	4.72	2.83	0.17
19.75	4.74	2.85	0.16
20.00	4.76	2.86	0.16
20.25	4.77	2.88	0.16
20.50	4.79	2.89	0.15
20.75	4.81	2.91	0.15
21.00	4.82	2.92	0.15
21.25	4.84	2.94	0.15
21.50	4.86	2.95	0.14
21.75	4.87	2.96	0.14
22.00	4.89	2.98	0.14
22.25	4.90	2.99	0.14
22.50	4.92	3.00	0.13
22.75	4.93	3.02	0.13
23.00	4.95	3.03	0.13
23.25	4.96	3.04	0.12
23.50	4.97	3.05	0.12
23.75	4.99	3.07	0.12
24.00	**5.00**	**3.08**	0.12

Summary for Subcatchment 6S: EX-3

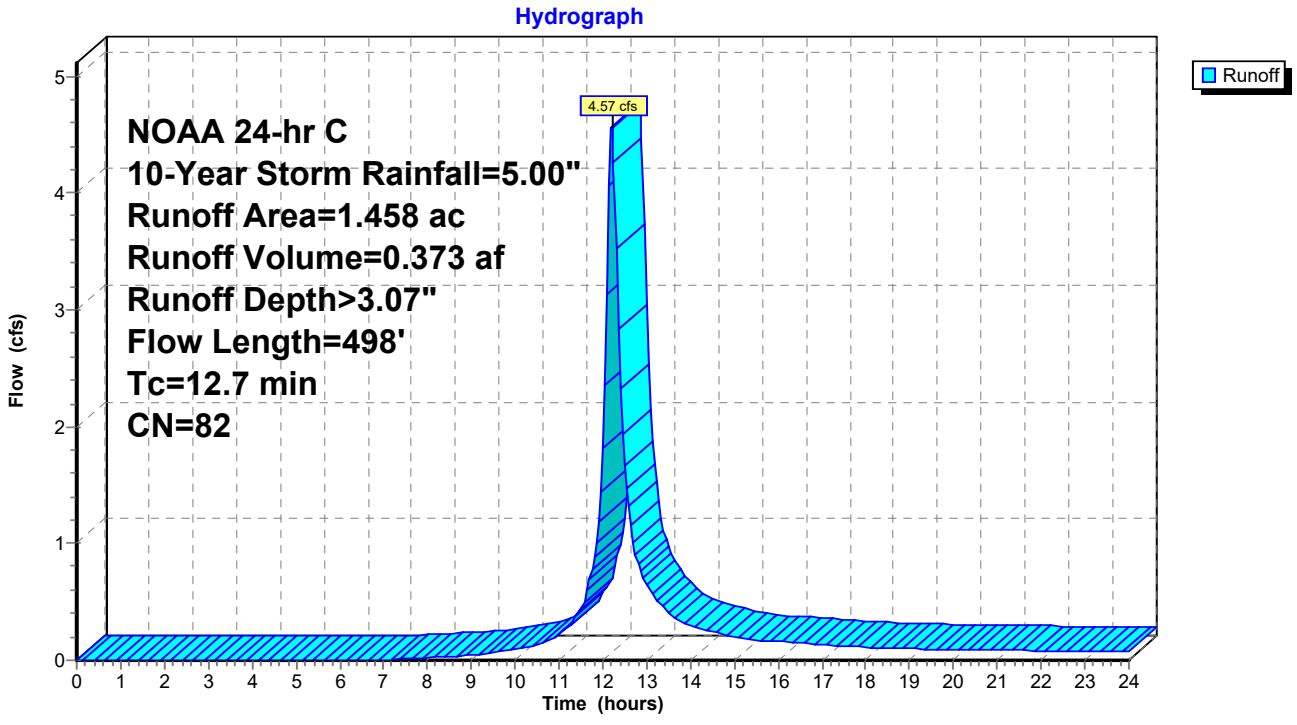
Runoff = 4.57 cfs @ 12.21 hrs, Volume= 0.373 af, Depth> 3.07"
Routed to Link 10L : Flows Going South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
	1.422	82	Woods/grass comb., Poor, HSG C
*	0.036	98	
	1.458	82	Weighted Average
	1.422		97.53% Pervious Area
	0.036		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	77	0.0350	0.23		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
7.1	421	0.0200	0.99		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
12.7	498	Total			

Subcatchment 6S: EX-3



Hydrograph for Subcatchment 6S: EX-3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.01	0.00	0.00
0.50	0.03	0.00	0.00
0.75	0.04	0.00	0.00
1.00	0.05	0.00	0.00
1.25	0.07	0.00	0.00
1.50	0.08	0.00	0.00
1.75	0.10	0.00	0.00
2.00	0.11	0.00	0.00
2.25	0.13	0.00	0.00
2.50	0.14	0.00	0.00
2.75	0.16	0.00	0.00
3.00	0.18	0.00	0.00
3.25	0.19	0.00	0.00
3.50	0.21	0.00	0.00
3.75	0.23	0.00	0.00
4.00	0.24	0.00	0.00
4.25	0.26	0.00	0.00
4.50	0.28	0.00	0.00
4.75	0.30	0.00	0.00
5.00	0.32	0.00	0.00
5.25	0.34	0.00	0.00
5.50	0.36	0.00	0.00
5.75	0.38	0.00	0.00
6.00	0.40	0.00	0.00
6.25	0.42	0.00	0.00
6.50	0.44	0.00	0.00
6.75	0.46	0.00	0.00
7.00	0.49	0.00	0.00
7.25	0.51	0.00	0.01
7.50	0.54	0.00	0.01
7.75	0.57	0.01	0.02
8.00	0.60	0.01	0.02
8.25	0.63	0.02	0.02
8.50	0.66	0.02	0.03
8.75	0.70	0.03	0.04
9.00	0.73	0.03	0.04
9.25	0.77	0.04	0.05
9.50	0.81	0.05	0.06
9.75	0.86	0.07	0.08
10.00	0.91	0.08	0.09
10.25	0.97	0.10	0.11
10.50	1.03	0.13	0.13
10.75	1.11	0.16	0.16
11.00	1.20	0.20	0.22
11.25	1.32	0.25	0.31
11.50	1.48	0.33	0.43
11.75	1.76	0.50	0.78
12.00	2.38	0.91	**1.81**
12.25	3.24	1.57	**4.26**
12.50	3.52	1.80	1.66
12.75	3.68	1.93	0.90
13.00	3.80	2.03	0.66
13.25	3.89	2.11	0.50
13.50	3.97	2.18	0.40
13.75	4.03	2.23	0.33
14.00	4.09	2.28	0.29
14.25	4.14	2.32	0.27
14.50	4.19	2.36	0.25
14.75	4.23	2.40	0.23
15.00	4.27	2.44	0.20
15.25	4.30	2.47	0.18
15.50	4.34	2.49	0.17
15.75	4.37	2.52	0.17
16.00	4.40	2.55	0.16
16.25	4.43	2.58	0.15
16.50	4.46	2.60	0.15
16.75	4.49	2.62	0.14
17.00	4.51	2.65	0.14
17.25	4.54	2.67	0.13
17.50	4.56	2.69	0.12
17.75	4.58	2.71	0.12
18.00	4.60	2.73	0.11
18.25	4.62	2.74	0.10
18.50	4.64	2.76	0.10
18.75	4.66	2.78	0.10
19.00	4.68	2.80	0.10
19.25	4.70	2.81	0.10
19.50	4.72	2.83	0.10
19.75	4.74	2.85	0.09
20.00	4.76	2.86	0.09
20.25	4.77	2.88	0.09
20.50	4.79	2.89	0.09
20.75	4.81	2.91	0.09
21.00	4.82	2.92	0.09
21.25	4.84	2.94	0.09
21.50	4.86	2.95	0.08
21.75	4.87	2.96	0.08
22.00	4.89	2.98	0.08
22.25	4.90	2.99	0.08
22.50	4.92	3.00	0.08
22.75	4.93	3.02	0.08
23.00	4.95	3.03	0.07
23.25	4.96	3.04	0.07
23.50	4.97	3.05	0.07
23.75	4.99	3.07	0.07
24.00	**5.00**	**3.08**	0.07

Summary for Subcatchment 7S: EX-4

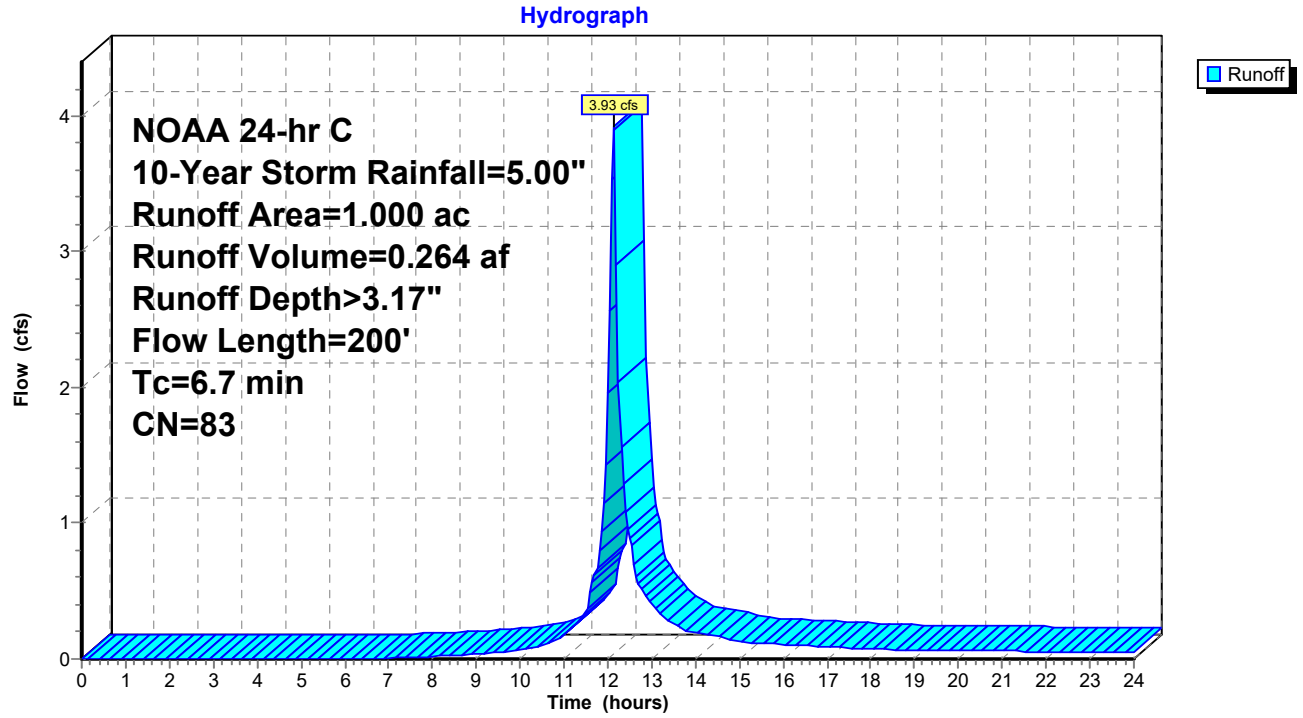
Runoff = 3.93 cfs @ 12.14 hrs, Volume= 0.264 af, Depth> 3.17"
Routed to Link 10L : Flows Going South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.038	98	
	0.962	82	Woods/grass comb., Poor, HSG C
	1.000	83	Weighted Average
	0.962		96.20% Pervious Area
	0.038		3.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	77	0.0300	0.22		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
0.1	15	0.0830	2.02		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
0.2	18	0.0690	1.84		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
0.5	90	0.0200	2.87		**Shallow Concentrated Flow, Paved SCF** Paved Kv= 20.3 fps
6.7	200	Total			

Subcatchment 7S: EX-4



Hydrograph for Subcatchment 7S: EX-4

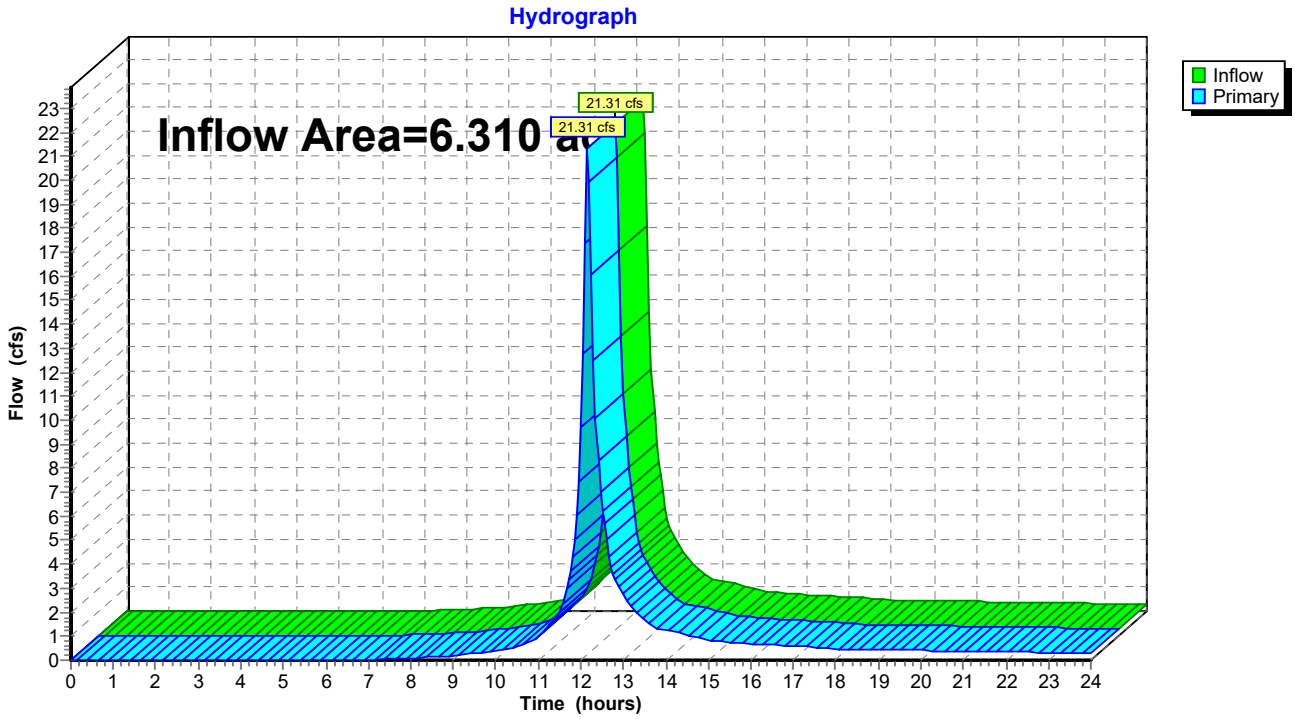
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.01	0.00	0.00
0.50	0.03	0.00	0.00
0.75	0.04	0.00	0.00
1.00	0.05	0.00	0.00
1.25	0.07	0.00	0.00
1.50	0.08	0.00	0.00
1.75	0.10	0.00	0.00
2.00	0.11	0.00	0.00
2.25	0.13	0.00	0.00
2.50	0.14	0.00	0.00
2.75	0.16	0.00	0.00
3.00	0.18	0.00	0.00
3.25	0.19	0.00	0.00
3.50	0.21	0.00	0.00
3.75	0.23	0.00	0.00
4.00	0.24	0.00	0.00
4.25	0.26	0.00	0.00
4.50	0.28	0.00	0.00
4.75	0.30	0.00	0.00
5.00	0.32	0.00	0.00
5.25	0.34	0.00	0.00
5.50	0.36	0.00	0.00
5.75	0.38	0.00	0.00
6.00	0.40	0.00	0.00
6.25	0.42	0.00	0.00
6.50	0.44	0.00	0.00
6.75	0.46	0.00	0.00
7.00	0.49	0.00	0.01
7.25	0.51	0.01	0.01
7.50	0.54	0.01	0.01
7.75	0.57	0.01	0.01
8.00	0.60	0.02	0.02
8.25	0.63	0.02	0.02
8.50	0.66	0.03	0.03
8.75	0.70	0.04	0.03
9.00	0.73	0.04	0.03
9.25	0.77	0.05	0.04
9.50	0.81	0.07	0.05
9.75	0.86	0.08	0.06
10.00	0.91	0.10	0.07
10.25	0.97	0.12	0.09
10.50	1.03	0.14	0.10
10.75	1.11	0.18	0.13
11.00	1.20	0.22	0.18
11.25	1.32	0.28	0.25
11.50	1.48	0.37	0.35
11.75	1.76	0.54	0.67
12.00	2.38	0.97	**1.96**
12.25	3.24	1.64	**2.03**
12.50	3.52	1.88	0.89
12.75	3.68	2.01	0.53
13.00	3.80	2.11	0.41
13.25	3.89	2.19	0.32
13.50	3.97	2.26	0.26
13.75	4.03	2.31	0.22
14.00	4.09	2.36	0.20
14.25	4.14	2.41	0.18
14.50	4.19	2.45	0.17
14.75	4.23	2.49	0.15
15.00	4.27	2.52	0.13
15.25	4.30	2.55	0.12
15.50	4.34	2.58	0.12
15.75	4.37	2.61	0.11
16.00	4.40	2.64	0.11
16.25	4.43	2.66	0.11
16.50	4.46	2.69	0.10
16.75	4.49	2.71	0.10
17.00	4.51	2.74	0.09
17.25	4.54	2.76	0.09
17.50	4.56	2.78	0.08
17.75	4.58	2.80	0.08
18.00	4.60	2.82	0.08
18.25	4.62	2.84	0.07
18.50	4.64	2.85	0.07
18.75	4.66	2.87	0.07
19.00	4.68	2.89	0.07
19.25	4.70	2.90	0.07
19.50	4.72	2.92	0.07
19.75	4.74	2.94	0.07
20.00	4.76	2.95	0.06
20.25	4.77	2.97	0.06
20.50	4.79	2.98	0.06
20.75	4.81	3.00	0.06
21.00	4.82	3.01	0.06
21.25	4.84	3.03	0.06
21.50	4.86	3.04	0.06
21.75	4.87	3.06	0.06
22.00	4.89	3.07	0.06
22.25	4.90	3.09	0.05
22.50	4.92	3.10	0.05
22.75	4.93	3.11	0.05
23.00	4.95	3.12	0.05
23.25	4.96	3.14	0.05
23.50	4.97	3.15	0.05
23.75	4.99	3.16	0.05
24.00	**5.00**	**3.17**	0.05

Summary for Link 9L: Existing Flows

Inflow Area = 6.310 ac, 2.85% Impervious, Inflow Depth > 3.09" for 10-Year Storm event
Inflow = 21.31 cfs @ 12.16 hrs, Volume= 1.623 af
Primary = 21.31 cfs @ 12.16 hrs, Volume= 1.623 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 9L: Existing Flows



Hydrograph for Link 9L: Existing Flows

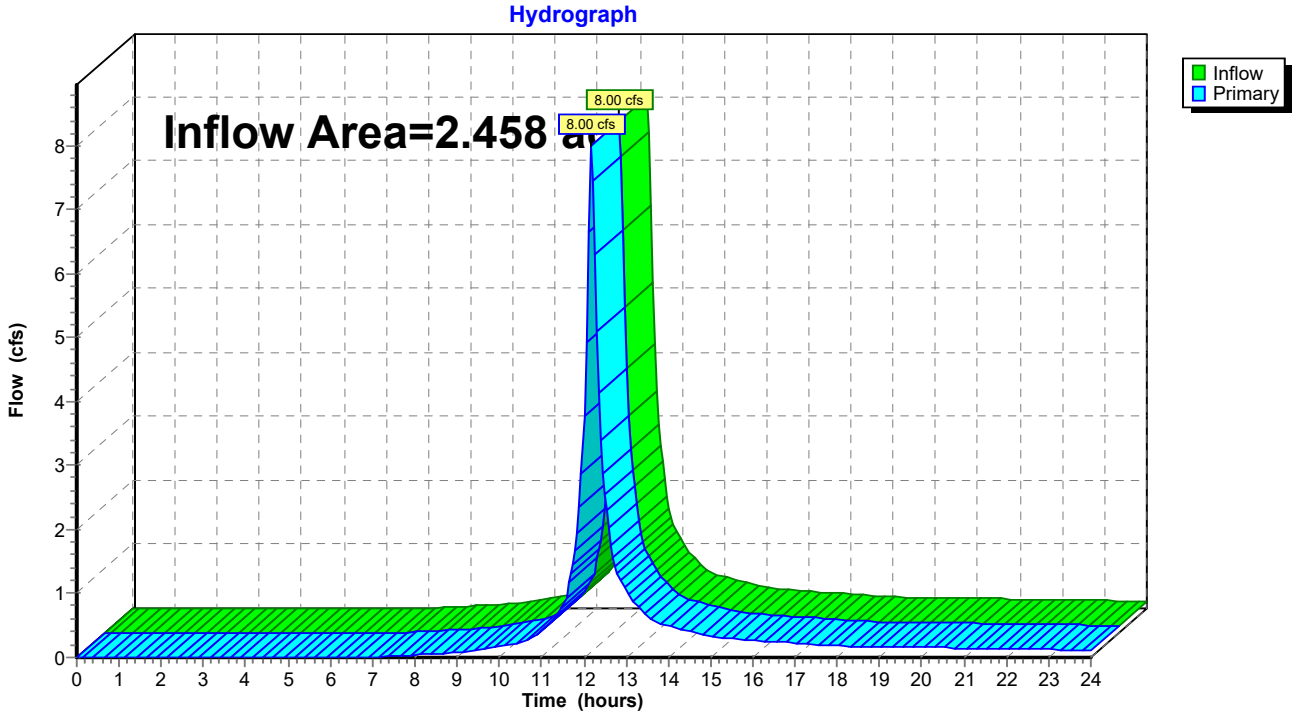
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	2.70	0.00	2.70
0.25	0.00	0.00	0.00	13.25	2.08	0.00	2.08
0.50	0.00	0.00	0.00	13.50	1.68	0.00	1.68
0.75	0.00	0.00	0.00	13.75	1.37	0.00	1.37
1.00	0.00	0.00	0.00	14.00	1.26	0.00	1.26
1.25	0.00	0.00	0.00	14.25	1.16	0.00	1.16
1.50	0.00	0.00	0.00	14.50	1.06	0.00	1.06
1.75	0.00	0.00	0.00	14.75	0.96	0.00	0.96
2.00	0.00	0.00	0.00	15.00	0.86	0.00	0.86
2.25	0.00	0.00	0.00	15.25	0.77	0.00	0.77
2.50	0.00	0.00	0.00	15.50	0.74	0.00	0.74
2.75	0.00	0.00	0.00	15.75	0.72	0.00	0.72
3.00	0.00	0.00	0.00	16.00	0.69	0.00	0.69
3.25	0.00	0.00	0.00	16.25	0.67	0.00	0.67
3.50	0.00	0.00	0.00	16.50	0.64	0.00	0.64
3.75	0.00	0.00	0.00	16.75	0.61	0.00	0.61
4.00	0.00	0.00	0.00	17.00	0.58	0.00	0.58
4.25	0.00	0.00	0.00	17.25	0.56	0.00	0.56
4.50	0.00	0.00	0.00	17.50	0.53	0.00	0.53
4.75	0.00	0.00	0.00	17.75	0.50	0.00	0.50
5.00	0.00	0.00	0.00	18.00	0.47	0.00	0.47
5.25	0.00	0.00	0.00	18.25	0.45	0.00	0.45
5.50	0.00	0.00	0.00	18.50	0.44	0.00	0.44
5.75	0.00	0.00	0.00	18.75	0.44	0.00	0.44
6.00	0.00	0.00	0.00	19.00	0.43	0.00	0.43
6.25	0.00	0.00	0.00	19.25	0.42	0.00	0.42
6.50	0.00	0.00	0.00	19.50	0.42	0.00	0.42
6.75	0.01	0.00	0.01	19.75	0.41	0.00	0.41
7.00	0.02	0.00	0.02	20.00	0.40	0.00	0.40
7.25	0.04	0.00	0.04	20.25	0.40	0.00	0.40
7.50	0.05	0.00	0.05	20.50	0.39	0.00	0.39
7.75	0.07	0.00	0.07	20.75	0.38	0.00	0.38
8.00	0.09	0.00	0.09	21.00	0.38	0.00	0.38
8.25	0.11	0.00	0.11	21.25	0.37	0.00	0.37
8.50	0.14	0.00	0.14	21.50	0.36	0.00	0.36
8.75	0.16	0.00	0.16	21.75	0.36	0.00	0.36
9.00	0.19	0.00	0.19	22.00	0.35	0.00	0.35
9.25	0.23	0.00	0.23	22.25	0.34	0.00	0.34
9.50	0.28	0.00	0.28	22.50	0.34	0.00	0.34
9.75	0.34	0.00	0.34	22.75	0.33	0.00	0.33
10.00	0.41	0.00	0.41	23.00	0.32	0.00	0.32
10.25	0.49	0.00	0.49	23.25	0.31	0.00	0.31
10.50	0.57	0.00	0.57	23.50	0.31	0.00	0.31
10.75	0.75	0.00	0.75	23.75	0.30	0.00	0.30
11.00	1.01	0.00	1.01	24.00	0.31	0.00	0.31
11.25	1.43	0.00	1.43				
11.50	2.00	0.00	2.00				
11.75	3.74	0.00	3.74				
12.00	**9.73**	0.00	**9.73**				
12.25	**16.02**	0.00	**16.02**				
12.50	6.24	0.00	6.24				
12.75	3.54	0.00	3.54				

Summary for Link 10L: Flows Going South

Inflow Area = 2.458 ac, 3.01% Impervious, Inflow Depth > 3.11" for 10-Year Storm event
Inflow = 8.00 cfs @ 12.16 hrs, Volume= 0.637 af
Primary = 8.00 cfs @ 12.16 hrs, Volume= 0.637 af, Atten= 0%, Lag= 0.0 min
Routed to Link 9L : Existing Flows

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 10L: Flows Going South



Hydrograph for Link 10L: Flows Going South

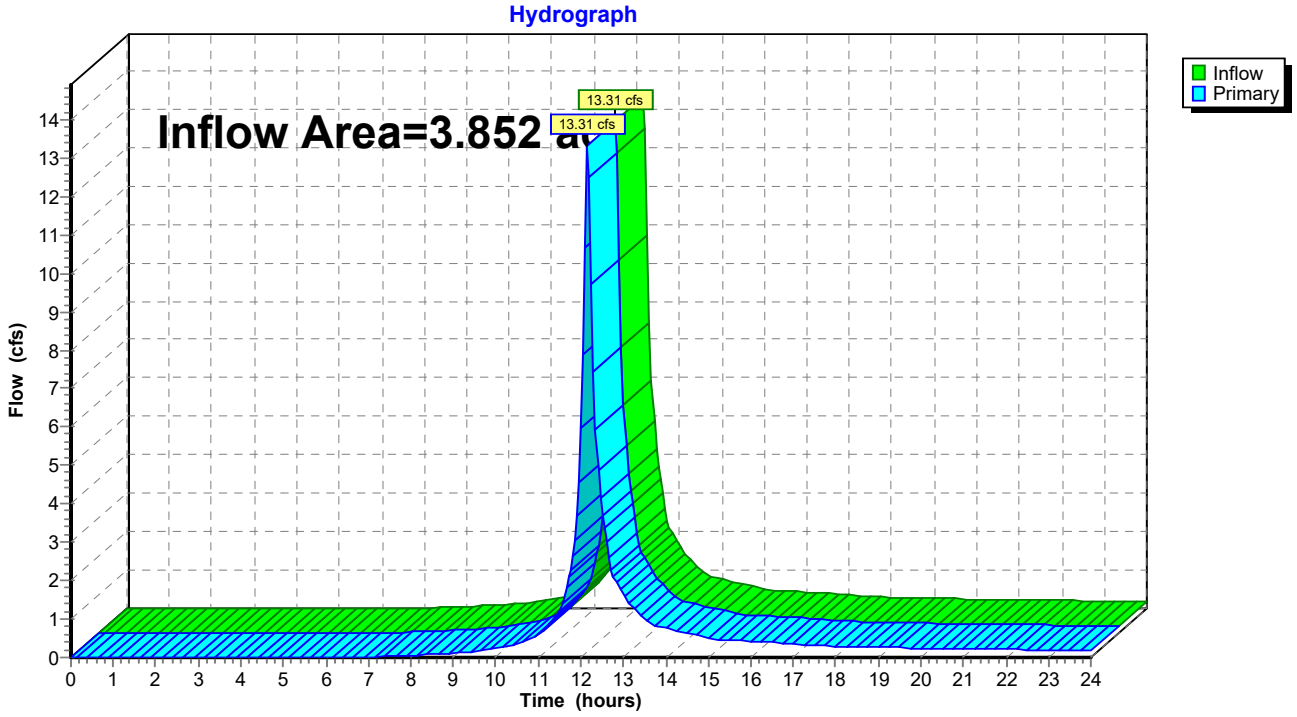
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	1.07	0.00	1.07
0.25	0.00	0.00	0.00	13.25	0.82	0.00	0.82
0.50	0.00	0.00	0.00	13.50	0.66	0.00	0.66
0.75	0.00	0.00	0.00	13.75	0.54	0.00	0.54
1.00	0.00	0.00	0.00	14.00	0.49	0.00	0.49
1.25	0.00	0.00	0.00	14.25	0.45	0.00	0.45
1.50	0.00	0.00	0.00	14.50	0.42	0.00	0.42
1.75	0.00	0.00	0.00	14.75	0.38	0.00	0.38
2.00	0.00	0.00	0.00	15.00	0.34	0.00	0.34
2.25	0.00	0.00	0.00	15.25	0.30	0.00	0.30
2.50	0.00	0.00	0.00	15.50	0.29	0.00	0.29
2.75	0.00	0.00	0.00	15.75	0.28	0.00	0.28
3.00	0.00	0.00	0.00	16.00	0.27	0.00	0.27
3.25	0.00	0.00	0.00	16.25	0.26	0.00	0.26
3.50	0.00	0.00	0.00	16.50	0.25	0.00	0.25
3.75	0.00	0.00	0.00	16.75	0.24	0.00	0.24
4.00	0.00	0.00	0.00	17.00	0.23	0.00	0.23
4.25	0.00	0.00	0.00	17.25	0.22	0.00	0.22
4.50	0.00	0.00	0.00	17.50	0.21	0.00	0.21
4.75	0.00	0.00	0.00	17.75	0.20	0.00	0.20
5.00	0.00	0.00	0.00	18.00	0.19	0.00	0.19
5.25	0.00	0.00	0.00	18.25	0.18	0.00	0.18
5.50	0.00	0.00	0.00	18.50	0.17	0.00	0.17
5.75	0.00	0.00	0.00	18.75	0.17	0.00	0.17
6.00	0.00	0.00	0.00	19.00	0.17	0.00	0.17
6.25	0.00	0.00	0.00	19.25	0.17	0.00	0.17
6.50	0.00	0.00	0.00	19.50	0.16	0.00	0.16
6.75	0.00	0.00	0.00	19.75	0.16	0.00	0.16
7.00	0.01	0.00	0.01	20.00	0.16	0.00	0.16
7.25	0.02	0.00	0.02	20.25	0.16	0.00	0.16
7.50	0.02	0.00	0.02	20.50	0.15	0.00	0.15
7.75	0.03	0.00	0.03	20.75	0.15	0.00	0.15
8.00	0.04	0.00	0.04	21.00	0.15	0.00	0.15
8.25	0.05	0.00	0.05	21.25	0.14	0.00	0.14
8.50	0.06	0.00	0.06	21.50	0.14	0.00	0.14
8.75	0.07	0.00	0.07	21.75	0.14	0.00	0.14
9.00	0.08	0.00	0.08	22.00	0.14	0.00	0.14
9.25	0.09	0.00	0.09	22.25	0.13	0.00	0.13
9.50	0.11	0.00	0.11	22.50	0.13	0.00	0.13
9.75	0.14	0.00	0.14	22.75	0.13	0.00	0.13
10.00	0.16	0.00	0.16	23.00	0.13	0.00	0.13
10.25	0.19	0.00	0.19	23.25	0.12	0.00	0.12
10.50	0.23	0.00	0.23	23.50	0.12	0.00	0.12
10.75	0.30	0.00	0.30	23.75	0.12	0.00	0.12
11.00	0.40	0.00	0.40	24.00	0.12	0.00	0.12
11.25	0.56	0.00	0.56				
11.50	0.78	0.00	0.78				
11.75	1.45	0.00	1.45				
12.00	**3.77**	0.00	**3.77**				
12.25	**6.29**	0.00	**6.29**				
12.50	2.55	0.00	2.55				
12.75	1.42	0.00	1.42				

Summary for Link 11L: Flows Going North

Inflow Area = 3.852 ac, 2.75% Impervious, Inflow Depth > 3.07" for 10-Year Storm event
Inflow = 13.31 cfs @ 12.16 hrs, Volume= 0.986 af
Primary = 13.31 cfs @ 12.16 hrs, Volume= 0.986 af, Atten= 0%, Lag= 0.0 min
Routed to Link 9L : Existing Flows

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 11L: Flows Going North



Hydrograph for Link 11L: Flows Going North

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	1.63	0.00	1.63
0.25	0.00	0.00	0.00	13.25	1.26	0.00	1.26
0.50	0.00	0.00	0.00	13.50	1.02	0.00	1.02
0.75	0.00	0.00	0.00	13.75	0.83	0.00	0.83
1.00	0.00	0.00	0.00	14.00	0.77	0.00	0.77
1.25	0.00	0.00	0.00	14.25	0.71	0.00	0.71
1.50	0.00	0.00	0.00	14.50	0.64	0.00	0.64
1.75	0.00	0.00	0.00	14.75	0.58	0.00	0.58
2.00	0.00	0.00	0.00	15.00	0.52	0.00	0.52
2.25	0.00	0.00	0.00	15.25	0.47	0.00	0.47
2.50	0.00	0.00	0.00	15.50	0.45	0.00	0.45
2.75	0.00	0.00	0.00	15.75	0.44	0.00	0.44
3.00	0.00	0.00	0.00	16.00	0.42	0.00	0.42
3.25	0.00	0.00	0.00	16.25	0.40	0.00	0.40
3.50	0.00	0.00	0.00	16.50	0.39	0.00	0.39
3.75	0.00	0.00	0.00	16.75	0.37	0.00	0.37
4.00	0.00	0.00	0.00	17.00	0.36	0.00	0.36
4.25	0.00	0.00	0.00	17.25	0.34	0.00	0.34
4.50	0.00	0.00	0.00	17.50	0.32	0.00	0.32
4.75	0.00	0.00	0.00	17.75	0.31	0.00	0.31
5.00	0.00	0.00	0.00	18.00	0.29	0.00	0.29
5.25	0.00	0.00	0.00	18.25	0.28	0.00	0.28
5.50	0.00	0.00	0.00	18.50	0.27	0.00	0.27
5.75	0.00	0.00	0.00	18.75	0.27	0.00	0.27
6.00	0.00	0.00	0.00	19.00	0.26	0.00	0.26
6.25	0.00	0.00	0.00	19.25	0.26	0.00	0.26
6.50	0.00	0.00	0.00	19.50	0.25	0.00	0.25
6.75	0.00	0.00	0.00	19.75	0.25	0.00	0.25
7.00	0.01	0.00	0.01	20.00	0.25	0.00	0.25
7.25	0.02	0.00	0.02	20.25	0.24	0.00	0.24
7.50	0.03	0.00	0.03	20.50	0.24	0.00	0.24
7.75	0.04	0.00	0.04	20.75	0.23	0.00	0.23
8.00	0.05	0.00	0.05	21.00	0.23	0.00	0.23
8.25	0.07	0.00	0.07	21.25	0.23	0.00	0.23
8.50	0.08	0.00	0.08	21.50	0.22	0.00	0.22
8.75	0.10	0.00	0.10	21.75	0.22	0.00	0.22
9.00	0.11	0.00	0.11	22.00	0.21	0.00	0.21
9.25	0.14	0.00	0.14	22.25	0.21	0.00	0.21
9.50	0.17	0.00	0.17	22.50	0.20	0.00	0.20
9.75	0.21	0.00	0.21	22.75	0.20	0.00	0.20
10.00	0.25	0.00	0.25	23.00	0.20	0.00	0.20
10.25	0.30	0.00	0.30	23.25	0.19	0.00	0.19
10.50	0.35	0.00	0.35	23.50	0.19	0.00	0.19
10.75	0.46	0.00	0.46	23.75	0.18	0.00	0.18
11.00	0.61	0.00	0.61	24.00	0.19	0.00	0.19
11.25	0.87	0.00	0.87				
11.50	1.22	0.00	1.22				
11.75	2.28	0.00	2.28				
12.00	**5.96**	0.00	**5.96**				
12.25	**9.73**	0.00	**9.73**				
12.50	3.69	0.00	3.69				
12.75	2.12	0.00	2.12				

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment4S: EX-1 Runoff Area=1.348 ac 2.67% Impervious Runoff Depth>6.11"
Flow Length=239' Tc=8.1 min CN=82 Runoff=9.48 cfs 0.686 af

Subcatchment5S: EX-2 Runoff Area=2.504 ac 2.80% Impervious Runoff Depth>6.10"
Flow Length=215' Tc=10.0 min CN=82 Runoff=16.38 cfs 1.274 af

Subcatchment6S: EX-3 Runoff Area=1.458 ac 2.47% Impervious Runoff Depth>6.10"
Flow Length=498' Tc=12.7 min CN=82 Runoff=8.84 cfs 0.741 af

Subcatchment7S: EX-4 Runoff Area=1.000 ac 3.80% Impervious Runoff Depth>6.23"
Flow Length=200' Tc=6.7 min CN=83 Runoff=7.46 cfs 0.519 af

Link 9L: Existing Flows Inflow=41.12 cfs 3.220 af
Primary=41.12 cfs 3.220 af

Link 10L: Flows Going South Inflow=15.40 cfs 1.260 af
Primary=15.40 cfs 1.260 af

Link 11L: Flows Going North Inflow=25.72 cfs 1.960 af
Primary=25.72 cfs 1.960 af

Total Runoff Area = 6.310 ac Runoff Volume = 3.220 af Average Runoff Depth = 6.12"
97.15% Pervious = 6.130 ac 2.85% Impervious = 0.180 ac

Summary for Subcatchment 4S: EX-1

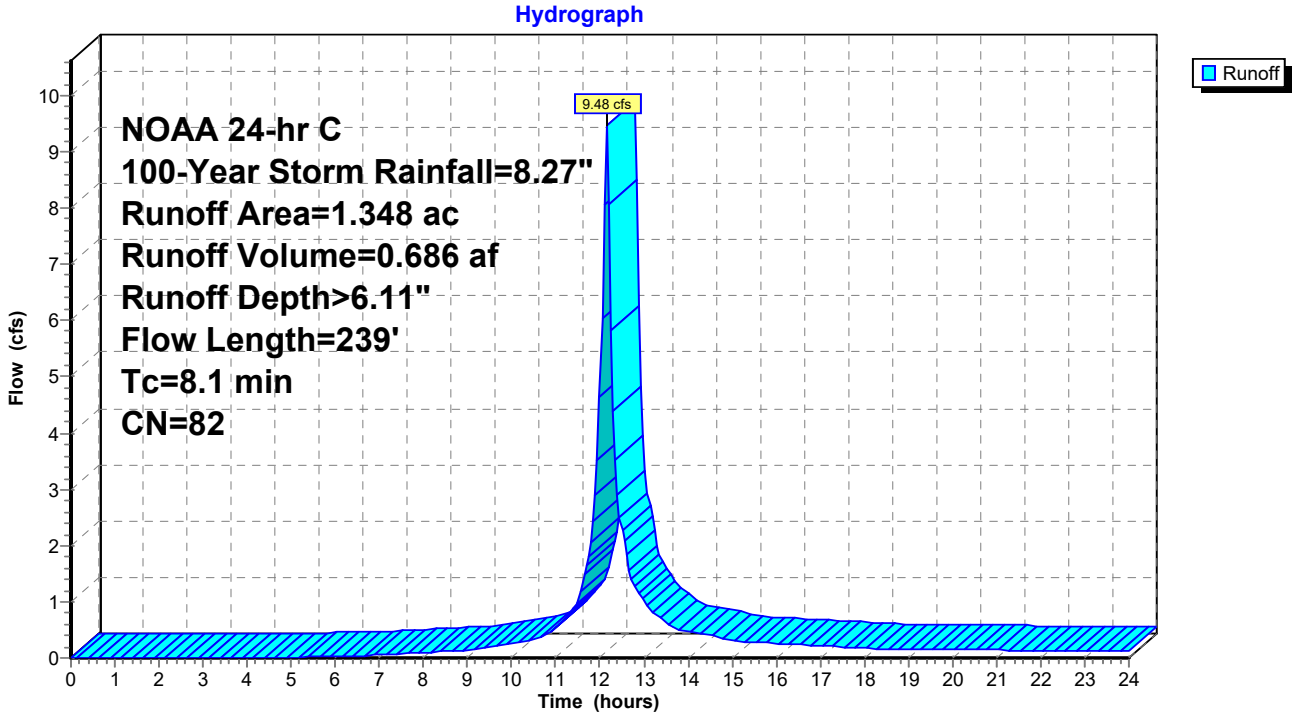
Runoff = 9.48 cfs @ 12.15 hrs, Volume= 0.686 af, Depth> 6.11"
Routed to Link 11L : Flows Going North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
	1.312	82	Woods/grass comb., Poor, HSG C
*	0.036	98	
	1.348	82	Weighted Average
	1.312		97.33% Pervious Area
	0.036		2.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	77	0.0350	0.23		**Sheet Flow, Range Sheet Flow** Range n= 0.130 P2= 3.31"
1.1	74	0.0240	1.08		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0230	1.06		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
8.1	239	Total			

Subcatchment 4S: EX-1



Hydrograph for Subcatchment 4S: EX-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.02	0.00	0.00
0.50	0.05	0.00	0.00
0.75	0.07	0.00	0.00
1.00	0.09	0.00	0.00
1.25	0.11	0.00	0.00
1.50	0.14	0.00	0.00
1.75	0.16	0.00	0.00
2.00	0.19	0.00	0.00
2.25	0.21	0.00	0.00
2.50	0.24	0.00	0.00
2.75	0.26	0.00	0.00
3.00	0.29	0.00	0.00
3.25	0.32	0.00	0.00
3.50	0.35	0.00	0.00
3.75	0.38	0.00	0.00
4.00	0.40	0.00	0.00
4.25	0.43	0.00	0.00
4.50	0.46	0.00	0.00
4.75	0.49	0.00	0.01
5.00	0.53	0.00	0.01
5.25	0.56	0.01	0.01
5.50	0.59	0.01	0.02
5.75	0.62	0.01	0.02
6.00	0.66	0.02	0.03
6.25	0.69	0.03	0.03
6.50	0.73	0.03	0.04
6.75	0.77	0.04	0.05
7.00	0.81	0.05	0.06
7.25	0.85	0.06	0.07
7.50	0.89	0.08	0.07
7.75	0.94	0.09	0.08
8.00	0.99	0.11	0.09
8.25	1.04	0.13	0.10
8.50	1.10	0.15	0.11
8.75	1.15	0.17	0.13
9.00	1.21	0.20	0.14
9.25	1.27	0.23	0.16
9.50	1.34	0.26	0.19
9.75	1.42	0.30	0.22
10.00	1.51	0.35	0.25
10.25	1.60	0.40	0.29
10.50	1.70	0.46	0.33
10.75	1.83	0.54	0.42
11.00	1.98	0.64	0.54
11.25	2.19	0.78	0.74
11.50	2.44	0.96	0.99
11.75	2.91	1.31	1.79
12.00	3.94	2.15	**4.62**
12.25	5.36	3.41	**5.82**
12.50	5.83	3.83	2.26
12.75	6.08	4.06	1.31
13.00	6.29	4.25	1.02
13.25	6.44	4.39	0.78
13.50	6.57	4.51	0.63
13.75	6.67	4.61	0.52
14.00	6.76	4.69	0.48
14.25	6.85	4.77	0.44
14.50	6.93	4.85	0.40
14.75	7.00	4.91	0.36
15.00	7.06	4.97	0.32
15.25	7.12	5.03	0.29
15.50	7.17	5.08	0.28
15.75	7.23	5.13	0.27
16.00	7.28	5.18	0.26
16.25	7.33	5.22	0.25
16.50	7.38	5.27	0.24
16.75	7.42	5.31	0.23
17.00	7.46	5.35	0.22
17.25	7.50	5.39	0.21
17.50	7.54	5.43	0.20
17.75	7.58	5.46	0.19
18.00	7.61	5.49	0.18
18.25	7.65	5.53	0.17
18.50	7.68	5.56	0.17
18.75	7.71	5.59	0.17
19.00	7.74	5.62	0.16
19.25	7.78	5.65	0.16
19.50	7.81	5.68	0.16
19.75	7.84	5.70	0.15
20.00	7.87	5.73	0.15
20.25	7.89	5.76	0.15
20.50	7.92	5.79	0.15
20.75	7.95	5.81	0.14
21.00	7.98	5.84	0.14
21.25	8.01	5.86	0.14
21.50	8.03	5.89	0.14
21.75	8.06	5.91	0.13
22.00	8.08	5.94	0.13
22.25	8.11	5.96	0.13
22.50	8.13	5.99	0.13
22.75	8.16	6.01	0.12
23.00	8.18	6.03	0.12
23.25	8.20	6.05	0.12
23.50	8.22	6.07	0.12
23.75	8.25	6.09	0.11
24.00	**8.27**	**6.12**	0.12

Summary for Subcatchment 5S: EX-2

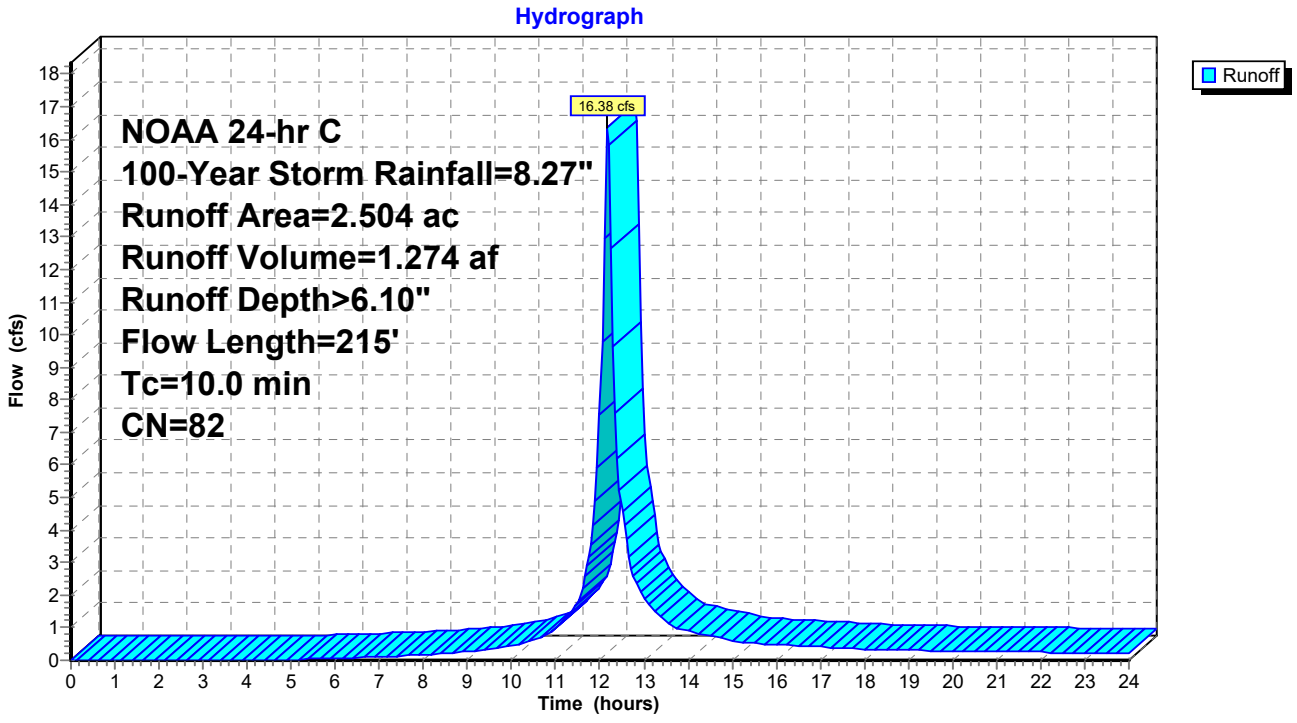
Runoff = 16.38 cfs @ 12.17 hrs, Volume= 1.274 af, Depth> 6.10"
Routed to Link 11L : Flows Going North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
	2.434	82	Woods/grass comb., Poor, HSG C
*	0.070	98	
	2.504	82	Weighted Average
	2.434		97.20% Pervious Area
	0.070		2.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	77	0.0140	0.16		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
2.0	138	0.0260	1.13		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
10.0	215	Total			

Subcatchment 5S: EX-2



Hydrograph for Subcatchment 5S: EX-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.02	0.00	0.00
0.50	0.05	0.00	0.00
0.75	0.07	0.00	0.00
1.00	0.09	0.00	0.00
1.25	0.11	0.00	0.00
1.50	0.14	0.00	0.00
1.75	0.16	0.00	0.00
2.00	0.19	0.00	0.00
2.25	0.21	0.00	0.00
2.50	0.24	0.00	0.00
2.75	0.26	0.00	0.00
3.00	0.29	0.00	0.00
3.25	0.32	0.00	0.00
3.50	0.35	0.00	0.00
3.75	0.38	0.00	0.00
4.00	0.40	0.00	0.00
4.25	0.43	0.00	0.00
4.50	0.46	0.00	0.00
4.75	0.49	0.00	0.01
5.00	0.53	0.00	0.02
5.25	0.56	0.01	0.03
5.50	0.59	0.01	0.04
5.75	0.62	0.01	0.04
6.00	0.66	0.02	0.05
6.25	0.69	0.03	0.06
6.50	0.73	0.03	0.08
6.75	0.77	0.04	0.09
7.00	0.81	0.05	0.10
7.25	0.85	0.06	0.12
7.50	0.89	0.08	0.14
7.75	0.94	0.09	0.15
8.00	0.99	0.11	0.17
8.25	1.04	0.13	0.19
8.50	1.10	0.15	0.21
8.75	1.15	0.17	0.23
9.00	1.21	0.20	0.25
9.25	1.27	0.23	0.29
9.50	1.34	0.26	0.34
9.75	1.42	0.30	0.40
10.00	1.51	0.35	0.46
10.25	1.60	0.40	0.53
10.50	1.70	0.46	0.60
10.75	1.83	0.54	0.75
11.00	1.98	0.64	0.98
11.25	2.19	0.78	1.33
11.50	2.44	0.96	1.78
11.75	2.91	1.31	3.17
12.00	3.94	2.15	**7.53**
12.25	5.36	3.41	**12.66**
12.50	5.83	3.83	4.56
12.75	6.08	4.06	2.56
13.00	6.29	4.25	1.95
13.25	6.44	4.39	1.50
13.50	6.57	4.51	1.21
13.75	6.67	4.61	0.98
14.00	6.76	4.69	0.90
14.25	6.85	4.77	0.83
14.50	6.93	4.85	0.75
14.75	7.00	4.91	0.68
15.00	7.06	4.97	0.61
15.25	7.12	5.03	0.55
15.50	7.17	5.08	0.53
15.75	7.23	5.13	0.51
16.00	7.28	5.18	0.49
16.25	7.33	5.22	0.47
16.50	7.38	5.27	0.45
16.75	7.42	5.31	0.43
17.00	7.46	5.35	0.41
17.25	7.50	5.39	0.39
17.50	7.54	5.43	0.37
17.75	7.58	5.46	0.35
18.00	7.61	5.49	0.33
18.25	7.65	5.53	0.32
18.50	7.68	5.56	0.31
18.75	7.71	5.59	0.31
19.00	7.74	5.62	0.30
19.25	7.78	5.65	0.30
19.50	7.81	5.68	0.29
19.75	7.84	5.70	0.29
20.00	7.87	5.73	0.28
20.25	7.89	5.76	0.28
20.50	7.92	5.79	0.27
20.75	7.95	5.81	0.27
21.00	7.98	5.84	0.26
21.25	8.01	5.86	0.26
21.50	8.03	5.89	0.25
21.75	8.06	5.91	0.25
22.00	8.08	5.94	0.24
22.25	8.11	5.96	0.24
22.50	8.13	5.99	0.23
22.75	8.16	6.01	0.23
23.00	8.18	6.03	0.22
23.25	8.20	6.05	0.22
23.50	8.22	6.07	0.22
23.75	8.25	6.09	0.21
24.00	**8.27**	**6.12**	0.22

Summary for Subcatchment 6S: EX-3

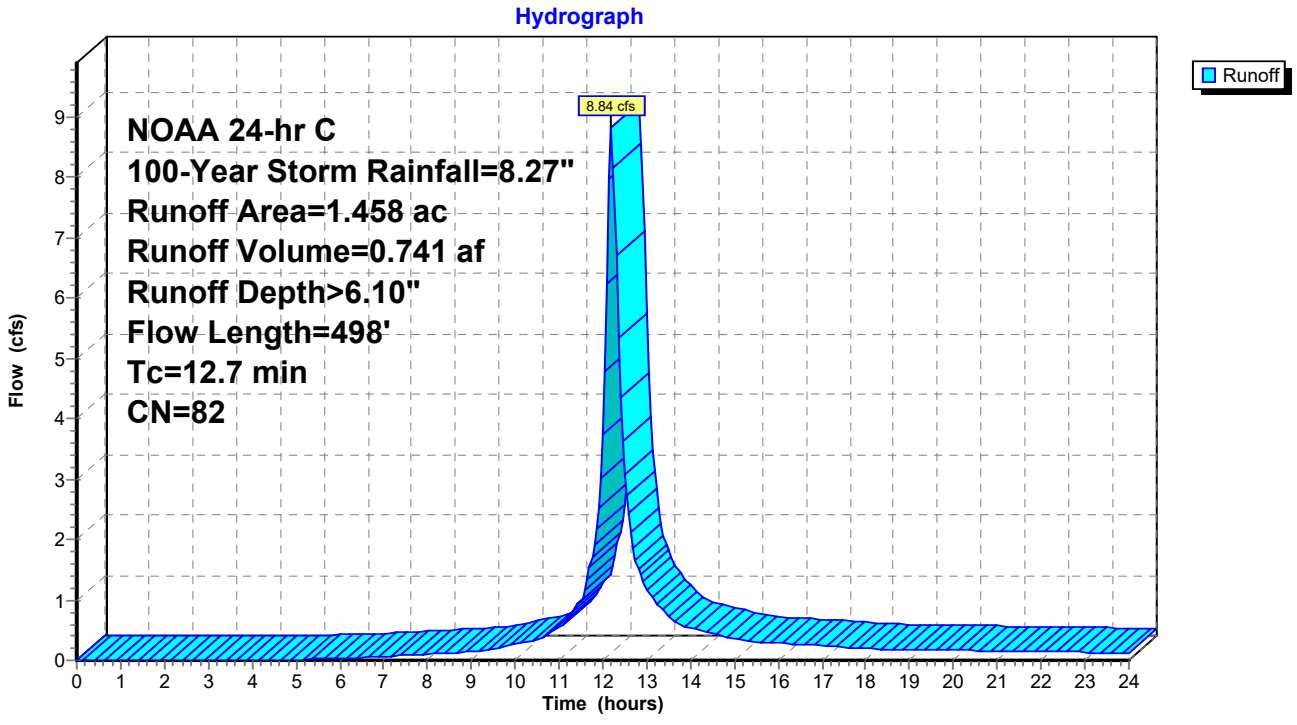
Runoff = 8.84 cfs @ 12.20 hrs, Volume= 0.741 af, Depth> 6.10"
Routed to Link 10L : Flows Going South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
	1.422	82	Woods/grass comb., Poor, HSG C
*	0.036	98	
	1.458	82	Weighted Average
	1.422		97.53% Pervious Area
	0.036		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	77	0.0350	0.23		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
7.1	421	0.0200	0.99		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
12.7	498	Total			

Subcatchment 6S: EX-3



Hydrograph for Subcatchment 6S: EX-3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.02	0.00	0.00
0.50	0.05	0.00	0.00
0.75	0.07	0.00	0.00
1.00	0.09	0.00	0.00
1.25	0.11	0.00	0.00
1.50	0.14	0.00	0.00
1.75	0.16	0.00	0.00
2.00	0.19	0.00	0.00
2.25	0.21	0.00	0.00
2.50	0.24	0.00	0.00
2.75	0.26	0.00	0.00
3.00	0.29	0.00	0.00
3.25	0.32	0.00	0.00
3.50	0.35	0.00	0.00
3.75	0.38	0.00	0.00
4.00	0.40	0.00	0.00
4.25	0.43	0.00	0.00
4.50	0.46	0.00	0.00
4.75	0.49	0.00	0.01
5.00	0.53	0.00	0.01
5.25	0.56	0.01	0.01
5.50	0.59	0.01	0.02
5.75	0.62	0.01	0.02
6.00	0.66	0.02	0.03
6.25	0.69	0.03	0.04
6.50	0.73	0.03	0.04
6.75	0.77	0.04	0.05
7.00	0.81	0.05	0.06
7.25	0.85	0.06	0.07
7.50	0.89	0.08	0.08
7.75	0.94	0.09	0.09
8.00	0.99	0.11	0.10
8.25	1.04	0.13	0.11
8.50	1.10	0.15	0.12
8.75	1.15	0.17	0.13
9.00	1.21	0.20	0.14
9.25	1.27	0.23	0.16
9.50	1.34	0.26	0.19
9.75	1.42	0.30	0.23
10.00	1.51	0.35	0.26
10.25	1.60	0.40	0.30
10.50	1.70	0.46	0.34
10.75	1.83	0.54	0.42
11.00	1.98	0.64	0.55
11.25	2.19	0.78	0.73
11.50	2.44	0.96	0.99
11.75	2.91	1.31	1.71
12.00	3.94	2.15	**3.73**
12.25	5.36	3.41	**8.17**
12.50	5.83	3.83	3.09
12.75	6.08	4.06	1.64
13.00	6.29	4.25	1.19
13.25	6.44	4.39	0.91
13.50	6.57	4.51	0.73
13.75	6.67	4.61	0.59
14.00	6.76	4.69	0.53
14.25	6.85	4.77	0.49
14.50	6.93	4.85	0.45
14.75	7.00	4.91	0.40
15.00	7.06	4.97	0.36
15.25	7.12	5.03	0.32
15.50	7.17	5.08	0.31
15.75	7.23	5.13	0.30
16.00	7.28	5.18	0.29
16.25	7.33	5.22	0.28
16.50	7.38	5.27	0.26
16.75	7.42	5.31	0.25
17.00	7.46	5.35	0.24
17.25	7.50	5.39	0.23
17.50	7.54	5.43	0.22
17.75	7.58	5.46	0.21
18.00	7.61	5.49	0.20
18.25	7.65	5.53	0.19
18.50	7.68	5.56	0.18
18.75	7.71	5.59	0.18
19.00	7.74	5.62	0.18
19.25	7.78	5.65	0.17
19.50	7.81	5.68	0.17
19.75	7.84	5.70	0.17
20.00	7.87	5.73	0.17
20.25	7.89	5.76	0.16
20.50	7.92	5.79	0.16
20.75	7.95	5.81	0.16
21.00	7.98	5.84	0.15
21.25	8.01	5.86	0.15
21.50	8.03	5.89	0.15
21.75	8.06	5.91	0.15
22.00	8.08	5.94	0.14
22.25	8.11	5.96	0.14
22.50	8.13	5.99	0.14
22.75	8.16	6.01	0.13
23.00	8.18	6.03	0.13
23.25	8.20	6.05	0.13
23.50	8.22	6.07	0.13
23.75	8.25	6.09	0.12
24.00	**8.27**	**6.12**	0.12

Summary for Subcatchment 7S: EX-4

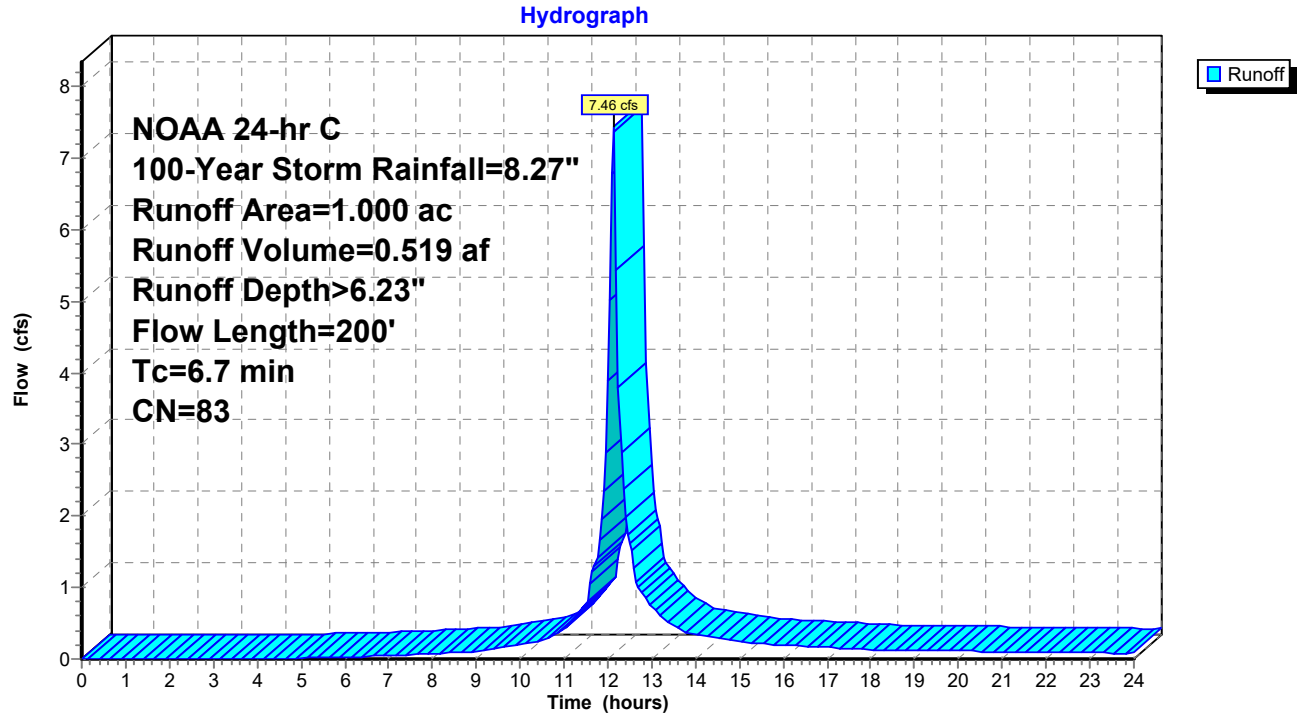
Runoff = 7.46 cfs @ 12.14 hrs, Volume= 0.519 af, Depth> 6.23"
Routed to Link 10L : Flows Going South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.038	98	
	0.962	82	Woods/grass comb., Poor, HSG C
	1.000	83	Weighted Average
	0.962		96.20% Pervious Area
	0.038		3.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	77	0.0300	0.22		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
0.1	15	0.0830	2.02		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
0.2	18	0.0690	1.84		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
0.5	90	0.0200	2.87		**Shallow Concentrated Flow, Paved SCF** Paved Kv= 20.3 fps
6.7	200	Total			

Subcatchment 7S: EX-4



Hydrograph for Subcatchment 7S: EX-4

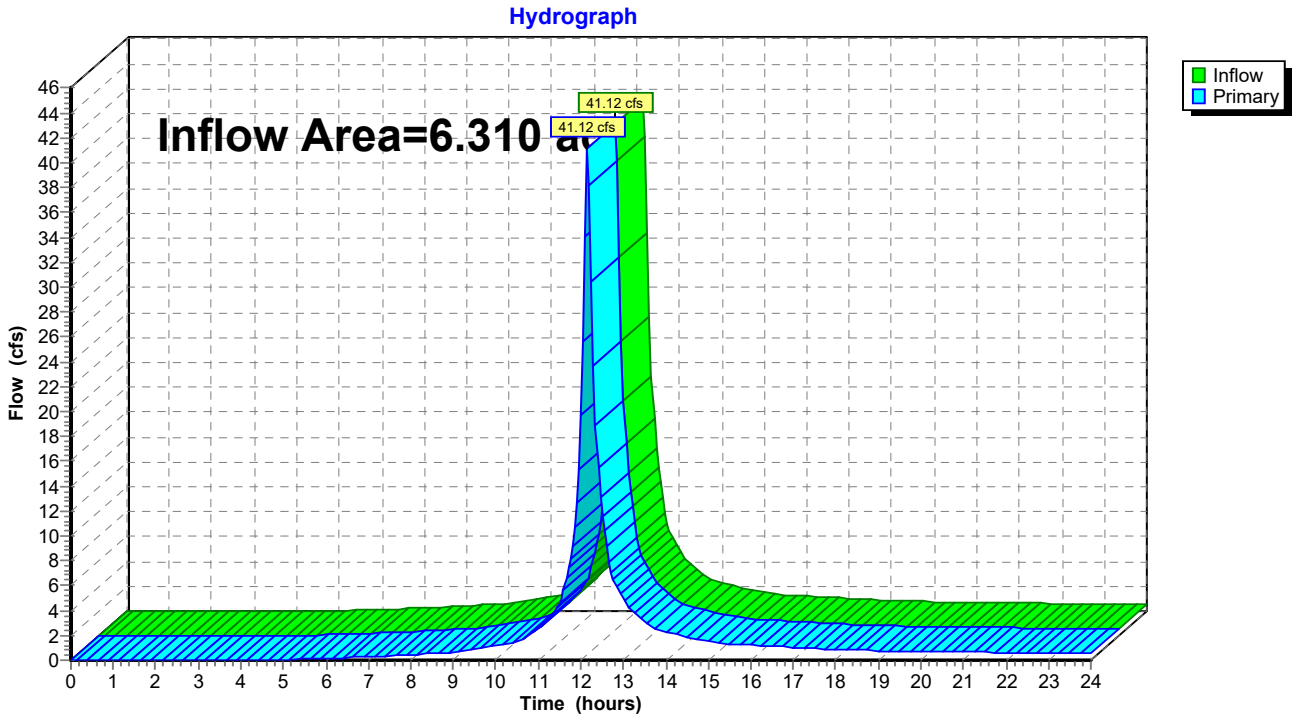
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.02	0.00	0.00
0.50	0.05	0.00	0.00
0.75	0.07	0.00	0.00
1.00	0.09	0.00	0.00
1.25	0.11	0.00	0.00
1.50	0.14	0.00	0.00
1.75	0.16	0.00	0.00
2.00	0.19	0.00	0.00
2.25	0.21	0.00	0.00
2.50	0.24	0.00	0.00
2.75	0.26	0.00	0.00
3.00	0.29	0.00	0.00
3.25	0.32	0.00	0.00
3.50	0.35	0.00	0.00
3.75	0.38	0.00	0.00
4.00	0.40	0.00	0.00
4.25	0.43	0.00	0.00
4.50	0.46	0.00	0.00
4.75	0.49	0.00	0.01
5.00	0.53	0.01	0.01
5.25	0.56	0.01	0.02
5.50	0.59	0.01	0.02
5.75	0.62	0.02	0.02
6.00	0.66	0.03	0.03
6.25	0.69	0.03	0.03
6.50	0.73	0.04	0.04
6.75	0.77	0.05	0.04
7.00	0.81	0.06	0.05
7.25	0.85	0.08	0.05
7.50	0.89	0.09	0.06
7.75	0.94	0.11	0.07
8.00	0.99	0.13	0.08
8.25	1.04	0.15	0.08
8.50	1.10	0.17	0.09
8.75	1.15	0.20	0.10
9.00	1.21	0.22	0.11
9.25	1.27	0.26	0.13
9.50	1.34	0.29	0.15
9.75	1.42	0.33	0.17
10.00	1.51	0.38	0.20
10.25	1.60	0.44	0.23
10.50	1.70	0.50	0.26
10.75	1.83	0.58	0.33
11.00	1.98	0.68	0.43
11.25	2.19	0.83	0.58
11.50	2.44	1.01	0.77
11.75	2.91	1.37	1.42
12.00	3.94	2.24	**3.90**
12.25	5.36	3.50	**3.78**
12.50	5.83	3.93	1.62
12.75	6.08	4.17	0.96
13.00	6.29	4.36	0.74
13.25	6.44	4.50	0.58
13.50	6.57	4.62	0.46
13.75	6.67	4.71	0.38
14.00	6.76	4.80	0.36
14.25	6.85	4.89	0.33
14.50	6.93	4.96	0.30
14.75	7.00	5.03	0.27
15.00	7.06	5.09	0.24
15.25	7.12	5.14	0.22
15.50	7.17	5.19	0.21
15.75	7.23	5.24	0.20
16.00	7.28	5.29	0.19
16.25	7.33	5.34	0.19
16.50	7.38	5.38	0.18
16.75	7.42	5.43	0.17
17.00	7.46	5.47	0.16
17.25	7.50	5.51	0.16
17.50	7.54	5.54	0.15
17.75	7.58	5.58	0.14
18.00	7.61	5.61	0.13
18.25	7.65	5.64	0.13
18.50	7.68	5.67	0.12
18.75	7.71	5.70	0.12
19.00	7.74	5.73	0.12
19.25	7.78	5.76	0.12
19.50	7.81	5.79	0.12
19.75	7.84	5.82	0.12
20.00	7.87	5.85	0.11
20.25	7.89	5.88	0.11
20.50	7.92	5.90	0.11
20.75	7.95	5.93	0.11
21.00	7.98	5.96	0.11
21.25	8.01	5.98	0.10
21.50	8.03	6.01	0.10
21.75	8.06	6.03	0.10
22.00	8.08	6.06	0.10
22.25	8.11	6.08	0.10
22.50	8.13	6.10	0.09
22.75	8.16	6.13	0.09
23.00	8.18	6.15	0.09
23.25	8.20	6.17	0.09
23.50	8.22	6.19	0.09
23.75	8.25	6.21	0.08
24.00	**8.27**	**6.24**	0.09

Summary for Link 9L: Existing Flows

Inflow Area = 6.310 ac, 2.85% Impervious, Inflow Depth > 6.12" for 100-Year Storm event
Inflow = 41.12 cfs @ 12.16 hrs, Volume= 3.220 af
Primary = 41.12 cfs @ 12.16 hrs, Volume= 3.220 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 9L: Existing Flows



Hydrograph for Link 9L: Existing Flows

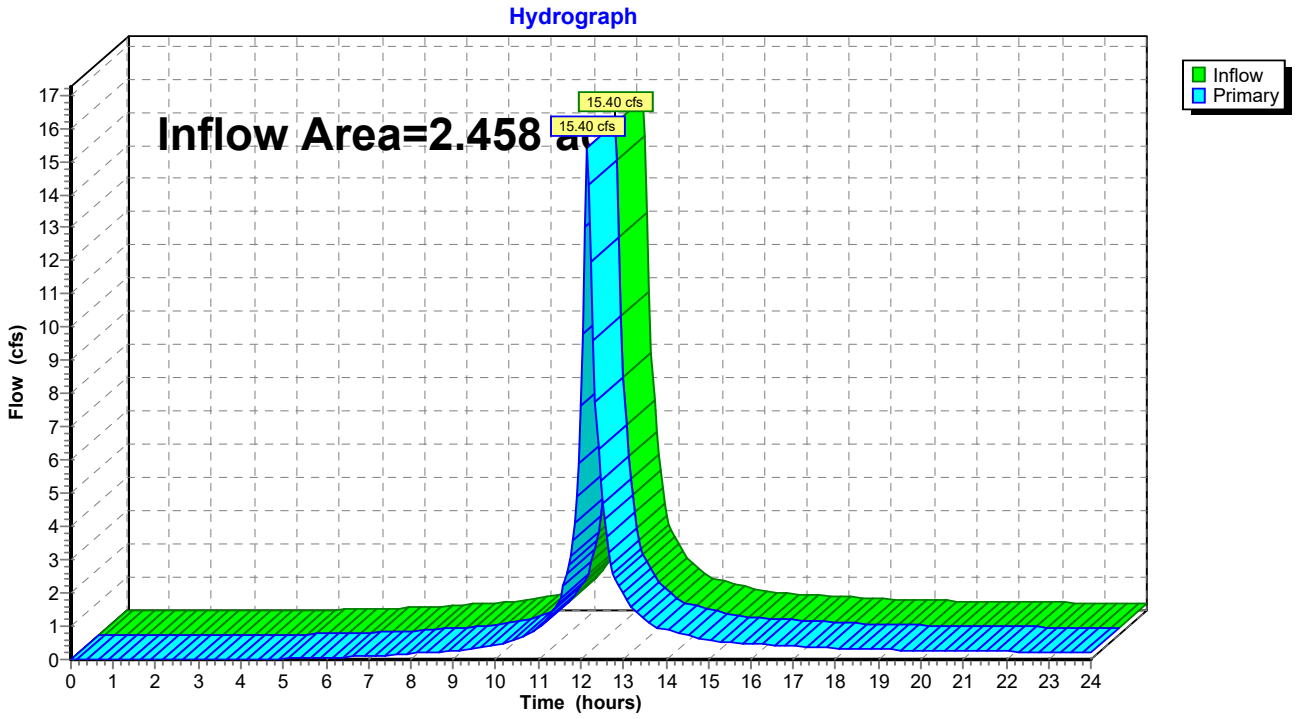
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	4.91	0.00	4.91
0.25	0.00	0.00	0.00	13.25	3.76	0.00	3.76
0.50	0.00	0.00	0.00	13.50	3.04	0.00	3.04
0.75	0.00	0.00	0.00	13.75	2.47	0.00	2.47
1.00	0.00	0.00	0.00	14.00	2.26	0.00	2.26
1.25	0.00	0.00	0.00	14.25	2.08	0.00	2.08
1.50	0.00	0.00	0.00	14.50	1.90	0.00	1.90
1.75	0.00	0.00	0.00	14.75	1.72	0.00	1.72
2.00	0.00	0.00	0.00	15.00	1.53	0.00	1.53
2.25	0.00	0.00	0.00	15.25	1.38	0.00	1.38
2.50	0.00	0.00	0.00	15.50	1.33	0.00	1.33
2.75	0.00	0.00	0.00	15.75	1.28	0.00	1.28
3.00	0.00	0.00	0.00	16.00	1.23	0.00	1.23
3.25	0.00	0.00	0.00	16.25	1.18	0.00	1.18
3.50	0.00	0.00	0.00	16.50	1.13	0.00	1.13
3.75	0.00	0.00	0.00	16.75	1.09	0.00	1.09
4.00	0.00	0.00	0.00	17.00	1.04	0.00	1.04
4.25	0.00	0.00	0.00	17.25	0.99	0.00	0.99
4.50	0.01	0.00	0.01	17.50	0.94	0.00	0.94
4.75	0.03	0.00	0.03	17.75	0.89	0.00	0.89
5.00	0.05	0.00	0.05	18.00	0.84	0.00	0.84
5.25	0.07	0.00	0.07	18.25	0.80	0.00	0.80
5.50	0.09	0.00	0.09	18.50	0.79	0.00	0.79
5.75	0.12	0.00	0.12	18.75	0.77	0.00	0.77
6.00	0.14	0.00	0.14	19.00	0.76	0.00	0.76
6.25	0.16	0.00	0.16	19.25	0.75	0.00	0.75
6.50	0.20	0.00	0.20	19.50	0.74	0.00	0.74
6.75	0.23	0.00	0.23	19.75	0.73	0.00	0.73
7.00	0.27	0.00	0.27	20.00	0.71	0.00	0.71
7.25	0.31	0.00	0.31	20.25	0.70	0.00	0.70
7.50	0.35	0.00	0.35	20.50	0.69	0.00	0.69
7.75	0.39	0.00	0.39	20.75	0.68	0.00	0.68
8.00	0.44	0.00	0.44	21.00	0.66	0.00	0.66
8.25	0.49	0.00	0.49	21.25	0.65	0.00	0.65
8.50	0.54	0.00	0.54	21.50	0.64	0.00	0.64
8.75	0.59	0.00	0.59	21.75	0.63	0.00	0.63
9.00	0.64	0.00	0.64	22.00	0.62	0.00	0.62
9.25	0.74	0.00	0.74	22.25	0.61	0.00	0.61
9.50	0.88	0.00	0.88	22.50	0.59	0.00	0.59
9.75	1.02	0.00	1.02	22.75	0.58	0.00	0.58
10.00	1.18	0.00	1.18	23.00	0.57	0.00	0.57
10.25	1.34	0.00	1.34	23.25	0.55	0.00	0.55
10.50	1.52	0.00	1.52	23.50	0.54	0.00	0.54
10.75	1.91	0.00	1.91	23.75	0.53	0.00	0.53
11.00	2.49	0.00	2.49	24.00	0.55	0.00	0.55
11.25	3.39	0.00	3.39				
11.50	4.54	0.00	4.54				
11.75	8.10	0.00	8.10				
12.00	**19.78**	0.00	**19.78**				
12.25	**30.44**	0.00	**30.44**				
12.50	11.53	0.00	11.53				
12.75	6.47	0.00	6.47				

Summary for Link 10L: Flows Going South

Inflow Area = 2.458 ac, 3.01% Impervious, Inflow Depth > 6.15" for 100-Year Storm event
Inflow = 15.40 cfs @ 12.16 hrs, Volume= 1.260 af
Primary = 15.40 cfs @ 12.16 hrs, Volume= 1.260 af, Atten= 0%, Lag= 0.0 min
Routed to Link 9L : Existing Flows

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 10L: Flows Going South



Hydrograph for Link 10L: Flows Going South

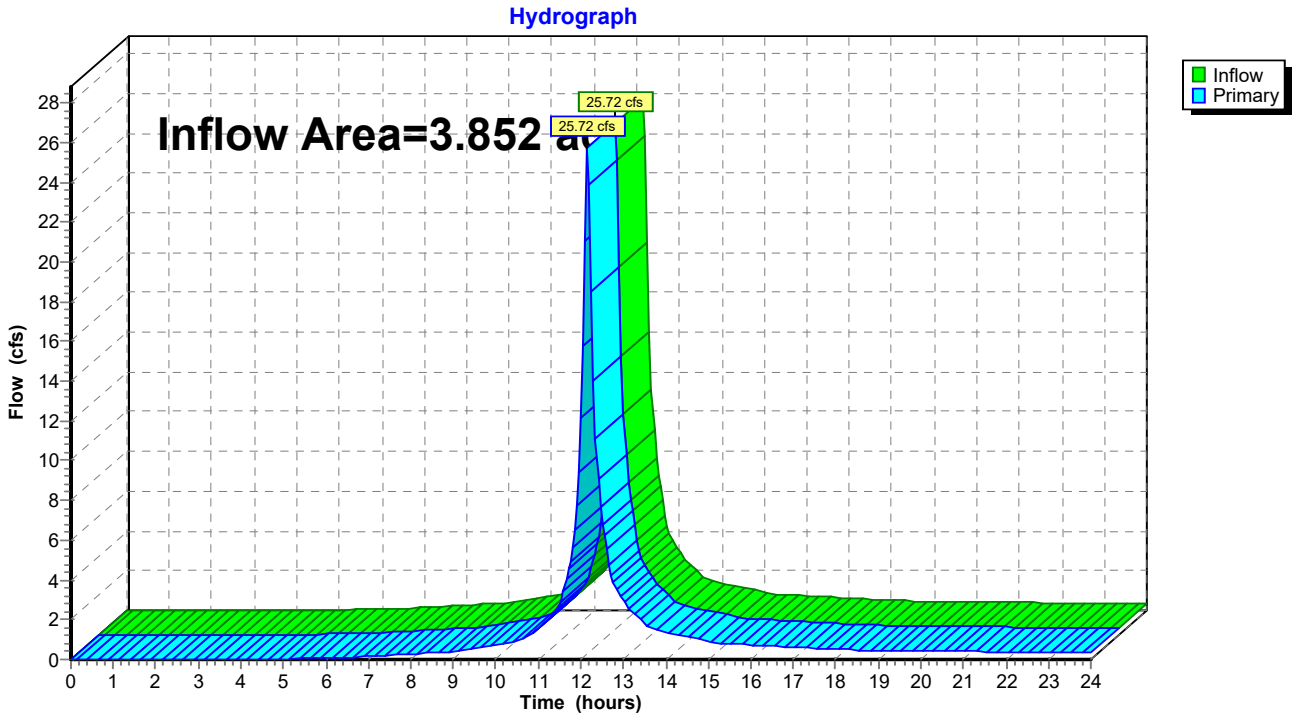
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	1.94	0.00	1.94
0.25	0.00	0.00	0.00	13.25	1.48	0.00	1.48
0.50	0.00	0.00	0.00	13.50	1.19	0.00	1.19
0.75	0.00	0.00	0.00	13.75	0.97	0.00	0.97
1.00	0.00	0.00	0.00	14.00	0.89	0.00	0.89
1.25	0.00	0.00	0.00	14.25	0.81	0.00	0.81
1.50	0.00	0.00	0.00	14.50	0.74	0.00	0.74
1.75	0.00	0.00	0.00	14.75	0.67	0.00	0.67
2.00	0.00	0.00	0.00	15.00	0.60	0.00	0.60
2.25	0.00	0.00	0.00	15.25	0.54	0.00	0.54
2.50	0.00	0.00	0.00	15.50	0.52	0.00	0.52
2.75	0.00	0.00	0.00	15.75	0.50	0.00	0.50
3.00	0.00	0.00	0.00	16.00	0.48	0.00	0.48
3.25	0.00	0.00	0.00	16.25	0.46	0.00	0.46
3.50	0.00	0.00	0.00	16.50	0.44	0.00	0.44
3.75	0.00	0.00	0.00	16.75	0.42	0.00	0.42
4.00	0.00	0.00	0.00	17.00	0.41	0.00	0.41
4.25	0.00	0.00	0.00	17.25	0.39	0.00	0.39
4.50	0.01	0.00	0.01	17.50	0.37	0.00	0.37
4.75	0.01	0.00	0.01	17.75	0.35	0.00	0.35
5.00	0.02	0.00	0.02	18.00	0.33	0.00	0.33
5.25	0.03	0.00	0.03	18.25	0.31	0.00	0.31
5.50	0.04	0.00	0.04	18.50	0.31	0.00	0.31
5.75	0.05	0.00	0.05	18.75	0.30	0.00	0.30
6.00	0.06	0.00	0.06	19.00	0.30	0.00	0.30
6.25	0.07	0.00	0.07	19.25	0.29	0.00	0.29
6.50	0.08	0.00	0.08	19.50	0.29	0.00	0.29
6.75	0.09	0.00	0.09	19.75	0.28	0.00	0.28
7.00	0.11	0.00	0.11	20.00	0.28	0.00	0.28
7.25	0.12	0.00	0.12	20.25	0.27	0.00	0.27
7.50	0.14	0.00	0.14	20.50	0.27	0.00	0.27
7.75	0.16	0.00	0.16	20.75	0.26	0.00	0.26
8.00	0.17	0.00	0.17	21.00	0.26	0.00	0.26
8.25	0.19	0.00	0.19	21.25	0.25	0.00	0.25
8.50	0.21	0.00	0.21	21.50	0.25	0.00	0.25
8.75	0.23	0.00	0.23	21.75	0.25	0.00	0.25
9.00	0.25	0.00	0.25	22.00	0.24	0.00	0.24
9.25	0.29	0.00	0.29	22.25	0.24	0.00	0.24
9.50	0.34	0.00	0.34	22.50	0.23	0.00	0.23
9.75	0.40	0.00	0.40	22.75	0.23	0.00	0.23
10.00	0.46	0.00	0.46	23.00	0.22	0.00	0.22
10.25	0.53	0.00	0.53	23.25	0.22	0.00	0.22
10.50	0.60	0.00	0.60	23.50	0.21	0.00	0.21
10.75	0.75	0.00	0.75	23.75	0.21	0.00	0.21
11.00	0.97	0.00	0.97	24.00	0.22	0.00	0.22
11.25	1.32	0.00	1.32				
11.50	1.77	0.00	1.77				
11.75	3.13	0.00	3.13				
12.00	**7.63**	0.00	**7.63**				
12.25	**11.95**	0.00	**11.95**				
12.50	4.71	0.00	4.71				
12.75	2.60	0.00	2.60				

Summary for Link 11L: Flows Going North

Inflow Area = 3.852 ac, 2.75% Impervious, Inflow Depth > 6.11" for 100-Year Storm event
Inflow = 25.72 cfs @ 12.16 hrs, Volume= 1.960 af
Primary = 25.72 cfs @ 12.16 hrs, Volume= 1.960 af, Atten= 0%, Lag= 0.0 min
Routed to Link 9L : Existing Flows

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 11L: Flows Going North



Hydrograph for Link 11L: Flows Going North

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	2.97	0.00	2.97
0.25	0.00	0.00	0.00	13.25	2.28	0.00	2.28
0.50	0.00	0.00	0.00	13.50	1.84	0.00	1.84
0.75	0.00	0.00	0.00	13.75	1.50	0.00	1.50
1.00	0.00	0.00	0.00	14.00	1.38	0.00	1.38
1.25	0.00	0.00	0.00	14.25	1.27	0.00	1.27
1.50	0.00	0.00	0.00	14.50	1.16	0.00	1.16
1.75	0.00	0.00	0.00	14.75	1.04	0.00	1.04
2.00	0.00	0.00	0.00	15.00	0.93	0.00	0.93
2.25	0.00	0.00	0.00	15.25	0.84	0.00	0.84
2.50	0.00	0.00	0.00	15.50	0.81	0.00	0.81
2.75	0.00	0.00	0.00	15.75	0.78	0.00	0.78
3.00	0.00	0.00	0.00	16.00	0.75	0.00	0.75
3.25	0.00	0.00	0.00	16.25	0.72	0.00	0.72
3.50	0.00	0.00	0.00	16.50	0.69	0.00	0.69
3.75	0.00	0.00	0.00	16.75	0.66	0.00	0.66
4.00	0.00	0.00	0.00	17.00	0.63	0.00	0.63
4.25	0.00	0.00	0.00	17.25	0.60	0.00	0.60
4.50	0.00	0.00	0.00	17.50	0.57	0.00	0.57
4.75	0.02	0.00	0.02	17.75	0.54	0.00	0.54
5.00	0.03	0.00	0.03	18.00	0.51	0.00	0.51
5.25	0.04	0.00	0.04	18.25	0.49	0.00	0.49
5.50	0.05	0.00	0.05	18.50	0.48	0.00	0.48
5.75	0.07	0.00	0.07	18.75	0.47	0.00	0.47
6.00	0.08	0.00	0.08	19.00	0.46	0.00	0.46
6.25	0.10	0.00	0.10	19.25	0.46	0.00	0.46
6.50	0.12	0.00	0.12	19.50	0.45	0.00	0.45
6.75	0.14	0.00	0.14	19.75	0.44	0.00	0.44
7.00	0.16	0.00	0.16	20.00	0.44	0.00	0.44
7.25	0.18	0.00	0.18	20.25	0.43	0.00	0.43
7.50	0.21	0.00	0.21	20.50	0.42	0.00	0.42
7.75	0.24	0.00	0.24	20.75	0.41	0.00	0.41
8.00	0.27	0.00	0.27	21.00	0.41	0.00	0.41
8.25	0.29	0.00	0.29	21.25	0.40	0.00	0.40
8.50	0.32	0.00	0.32	21.50	0.39	0.00	0.39
8.75	0.36	0.00	0.36	21.75	0.38	0.00	0.38
9.00	0.39	0.00	0.39	22.00	0.38	0.00	0.38
9.25	0.45	0.00	0.45	22.25	0.37	0.00	0.37
9.50	0.53	0.00	0.53	22.50	0.36	0.00	0.36
9.75	0.62	0.00	0.62	22.75	0.35	0.00	0.35
10.00	0.71	0.00	0.71	23.00	0.35	0.00	0.35
10.25	0.81	0.00	0.81	23.25	0.34	0.00	0.34
10.50	0.92	0.00	0.92	23.50	0.33	0.00	0.33
10.75	1.17	0.00	1.17	23.75	0.32	0.00	0.32
11.00	1.52	0.00	1.52	24.00	0.34	0.00	0.34
11.25	2.07	0.00	2.07				
11.50	2.77	0.00	2.77				
11.75	4.97	0.00	4.97				
12.00	**12.15**	0.00	**12.15**				
12.25	**18.48**	0.00	**18.48**				
12.50	6.82	0.00	6.82				
12.75	3.87	0.00	3.87				

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment4S: EX-1 Runoff Area=1.348 ac 2.67% Impervious Runoff Depth=0.22"
Flow Length=239' Tc=8.1 min CN=82 Runoff=0.77 cfs 0.025 af

Subcatchment5S: EX-2 Runoff Area=2.504 ac 2.80% Impervious Runoff Depth=0.22"
Flow Length=215' Tc=10.0 min CN=82 Runoff=1.30 cfs 0.046 af

Subcatchment6S: EX-3 Runoff Area=1.458 ac 2.47% Impervious Runoff Depth=0.22"
Flow Length=498' Tc=12.7 min CN=82 Runoff=0.68 cfs 0.027 af

Subcatchment7S: EX-4 Runoff Area=1.000 ac 3.80% Impervious Runoff Depth=0.24"
Flow Length=200' Tc=6.7 min CN=83 Runoff=0.69 cfs 0.020 af

Link 9L: Existing Flows Inflow=3.23 cfs 0.117 af
Primary=3.23 cfs 0.117 af

Link 10L: Flows Going South Inflow=1.21 cfs 0.047 af
Primary=1.21 cfs 0.047 af

Link 11L: Flows Going North Inflow=2.03 cfs 0.070 af
Primary=2.03 cfs 0.070 af

Total Runoff Area = 6.310 ac Runoff Volume = 0.117 af Average Runoff Depth = 0.22"
97.15% Pervious = 6.130 ac 2.85% Impervious = 0.180 ac

Summary for Subcatchment 4S: EX-1

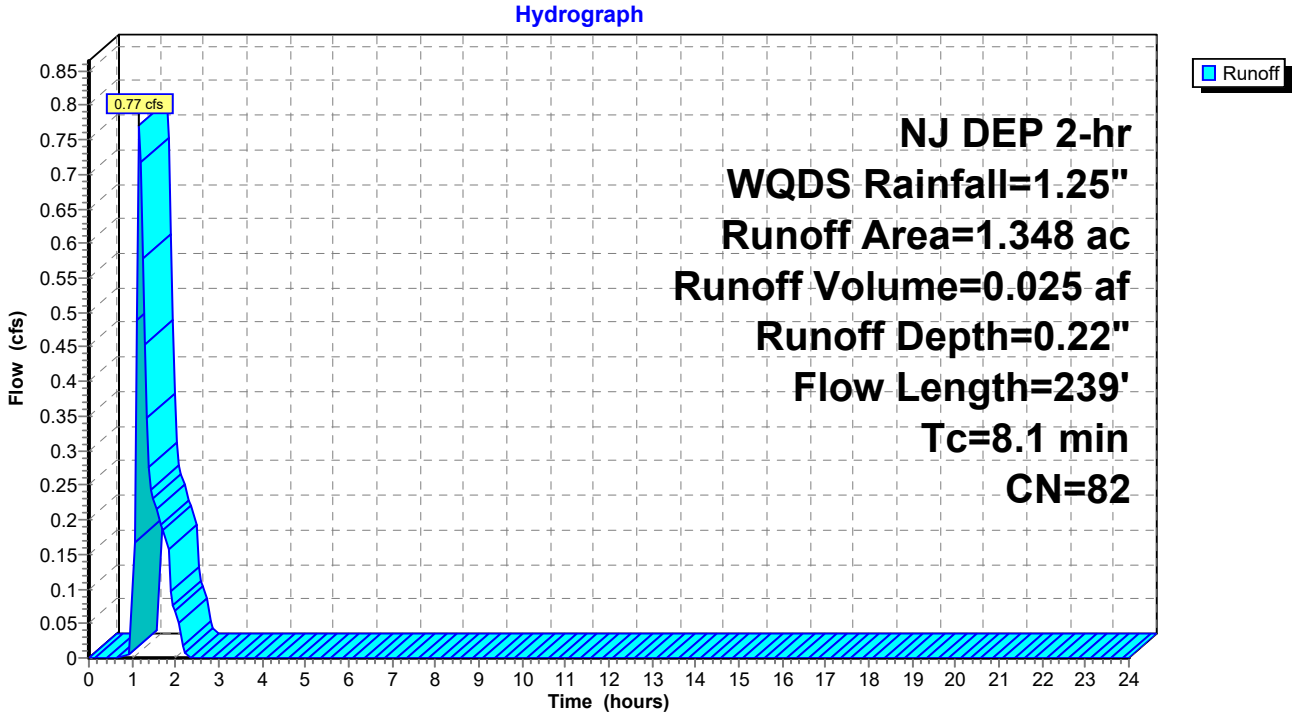
Runoff = 0.77 cfs @ 1.17 hrs, Volume= 0.025 af, Depth= 0.22"
Routed to Link 11L : Flows Going North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
	1.312	82	Woods/grass comb., Poor, HSG C
*	0.036	98	
	1.348	82	Weighted Average
	1.312		97.33% Pervious Area
	0.036		2.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	77	0.0350	0.23		**Sheet Flow, Range Sheet Flow** Range n= 0.130 P2= 3.31"
1.1	74	0.0240	1.08		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
1.4	88	0.0230	1.06		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
8.1	239	Total			

Subcatchment 4S: EX-1



Hydrograph for Subcatchment 4S: EX-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.03	0.00	0.00
0.50	0.10	0.00	0.00
0.75	0.20	0.00	0.00
1.00	0.63	0.01	**0.02**
1.25	1.05	0.13	**0.58**
1.50	1.15	0.17	0.23
1.75	1.23	0.21	0.18
2.00	**1.25**	**0.22**	0.07
2.25	1.25	0.22	0.00
2.50	1.25	0.22	0.00
2.75	1.25	0.22	0.00
3.00	1.25	0.22	0.00
3.25	1.25	0.22	0.00
3.50	1.25	0.22	0.00
3.75	1.25	0.22	0.00
4.00	1.25	0.22	0.00
4.25	1.25	0.22	0.00
4.50	1.25	0.22	0.00
4.75	1.25	0.22	0.00
5.00	1.25	0.22	0.00
5.25	1.25	0.22	0.00
5.50	1.25	0.22	0.00
5.75	1.25	0.22	0.00
6.00	1.25	0.22	0.00
6.25	1.25	0.22	0.00
6.50	1.25	0.22	0.00
6.75	1.25	0.22	0.00
7.00	1.25	0.22	0.00
7.25	1.25	0.22	0.00
7.50	1.25	0.22	0.00
7.75	1.25	0.22	0.00
8.00	1.25	0.22	0.00
8.25	1.25	0.22	0.00
8.50	1.25	0.22	0.00
8.75	1.25	0.22	0.00
9.00	1.25	0.22	0.00
9.25	1.25	0.22	0.00
9.50	1.25	0.22	0.00
9.75	1.25	0.22	0.00
10.00	1.25	0.22	0.00
10.25	1.25	0.22	0.00
10.50	1.25	0.22	0.00
10.75	1.25	0.22	0.00
11.00	1.25	0.22	0.00
11.25	1.25	0.22	0.00
11.50	1.25	0.22	0.00
11.75	1.25	0.22	0.00
12.00	1.25	0.22	0.00
12.25	1.25	0.22	0.00
12.50	1.25	0.22	0.00
12.75	1.25	0.22	0.00
13.00	1.25	0.22	0.00
13.25	1.25	0.22	0.00
13.50	1.25	0.22	0.00
13.75	1.25	0.22	0.00
14.00	1.25	0.22	0.00
14.25	1.25	0.22	0.00
14.50	1.25	0.22	0.00
14.75	1.25	0.22	0.00
15.00	1.25	0.22	0.00
15.25	1.25	0.22	0.00
15.50	1.25	0.22	0.00
15.75	1.25	0.22	0.00
16.00	1.25	0.22	0.00
16.25	1.25	0.22	0.00
16.50	1.25	0.22	0.00
16.75	1.25	0.22	0.00
17.00	1.25	0.22	0.00
17.25	1.25	0.22	0.00
17.50	1.25	0.22	0.00
17.75	1.25	0.22	0.00
18.00	1.25	0.22	0.00
18.25	1.25	0.22	0.00
18.50	1.25	0.22	0.00
18.75	1.25	0.22	0.00
19.00	1.25	0.22	0.00
19.25	1.25	0.22	0.00
19.50	1.25	0.22	0.00
19.75	1.25	0.22	0.00
20.00	1.25	0.22	0.00
20.25	1.25	0.22	0.00
20.50	1.25	0.22	0.00
20.75	1.25	0.22	0.00
21.00	1.25	0.22	0.00
21.25	1.25	0.22	0.00
21.50	1.25	0.22	0.00
21.75	1.25	0.22	0.00
22.00	1.25	0.22	0.00
22.25	1.25	0.22	0.00
22.50	1.25	0.22	0.00
22.75	1.25	0.22	0.00
23.00	1.25	0.22	0.00
23.25	1.25	0.22	0.00
23.50	1.25	0.22	0.00
23.75	1.25	0.22	0.00
24.00	1.25	0.22	0.00

Summary for Subcatchment 5S: EX-2

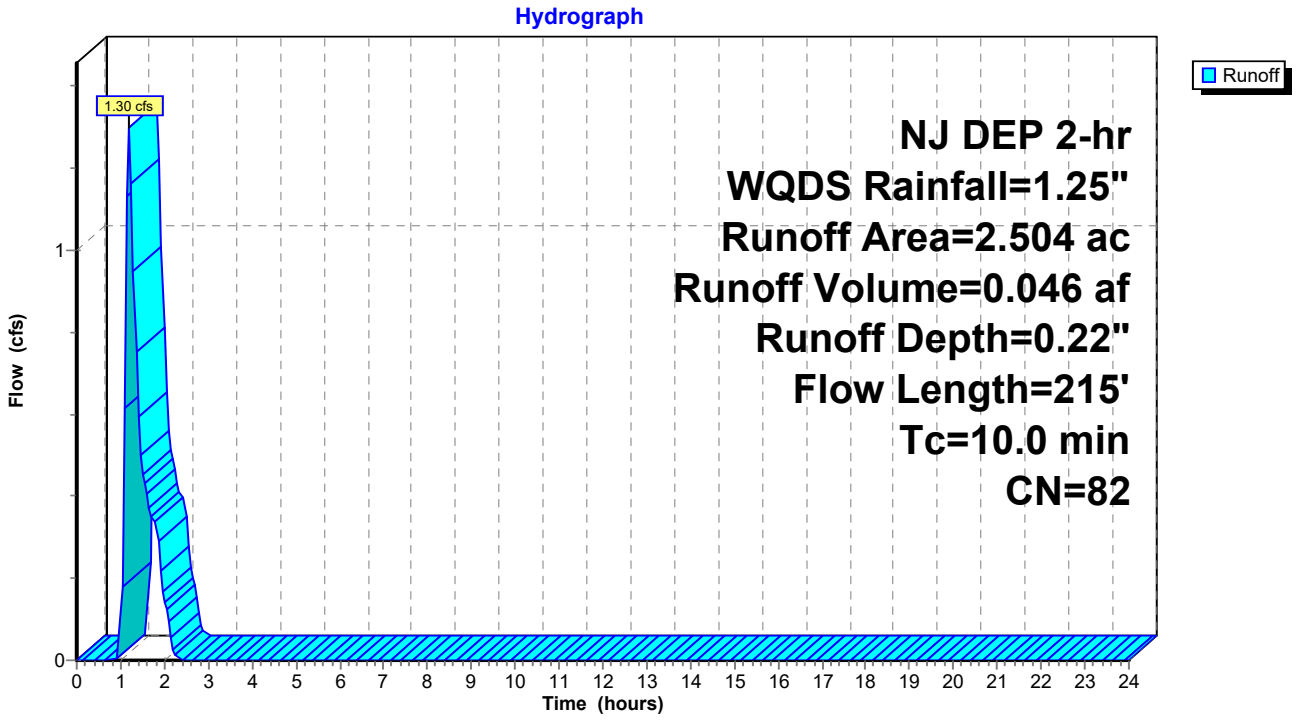
Runoff = 1.30 cfs @ 1.20 hrs, Volume= 0.046 af, Depth= 0.22"
Routed to Link 11L : Flows Going North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
	2.434	82	Woods/grass comb., Poor, HSG C
*	0.070	98	
	2.504	82	Weighted Average
	2.434		97.20% Pervious Area
	0.070		2.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	77	0.0140	0.16		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
2.0	138	0.0260	1.13		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
10.0	215	Total			

Subcatchment 5S: EX-2



Hydrograph for Subcatchment 5S: EX-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.03	0.00	0.00
0.50	0.10	0.00	0.00
0.75	0.20	0.00	0.00
1.00	0.63	0.01	**0.02**
1.25	1.05	0.13	**1.16**
1.50	1.15	0.17	0.45
1.75	1.23	0.21	0.34
2.00	**1.25**	**0.22**	0.14
2.25	1.25	0.22	0.01
2.50	1.25	0.22	0.00
2.75	1.25	0.22	0.00
3.00	1.25	0.22	0.00
3.25	1.25	0.22	0.00
3.50	1.25	0.22	0.00
3.75	1.25	0.22	0.00
4.00	1.25	0.22	0.00
4.25	1.25	0.22	0.00
4.50	1.25	0.22	0.00
4.75	1.25	0.22	0.00
5.00	1.25	0.22	0.00
5.25	1.25	0.22	0.00
5.50	1.25	0.22	0.00
5.75	1.25	0.22	0.00
6.00	1.25	0.22	0.00
6.25	1.25	0.22	0.00
6.50	1.25	0.22	0.00
6.75	1.25	0.22	0.00
7.00	1.25	0.22	0.00
7.25	1.25	0.22	0.00
7.50	1.25	0.22	0.00
7.75	1.25	0.22	0.00
8.00	1.25	0.22	0.00
8.25	1.25	0.22	0.00
8.50	1.25	0.22	0.00
8.75	1.25	0.22	0.00
9.00	1.25	0.22	0.00
9.25	1.25	0.22	0.00
9.50	1.25	0.22	0.00
9.75	1.25	0.22	0.00
10.00	1.25	0.22	0.00
10.25	1.25	0.22	0.00
10.50	1.25	0.22	0.00
10.75	1.25	0.22	0.00
11.00	1.25	0.22	0.00
11.25	1.25	0.22	0.00
11.50	1.25	0.22	0.00
11.75	1.25	0.22	0.00
12.00	1.25	0.22	0.00
12.25	1.25	0.22	0.00
12.50	1.25	0.22	0.00
12.75	1.25	0.22	0.00
13.00	1.25	0.22	0.00
13.25	1.25	0.22	0.00
13.50	1.25	0.22	0.00
13.75	1.25	0.22	0.00
14.00	1.25	0.22	0.00
14.25	1.25	0.22	0.00
14.50	1.25	0.22	0.00
14.75	1.25	0.22	0.00
15.00	1.25	0.22	0.00
15.25	1.25	0.22	0.00
15.50	1.25	0.22	0.00
15.75	1.25	0.22	0.00
16.00	1.25	0.22	0.00
16.25	1.25	0.22	0.00
16.50	1.25	0.22	0.00
16.75	1.25	0.22	0.00
17.00	1.25	0.22	0.00
17.25	1.25	0.22	0.00
17.50	1.25	0.22	0.00
17.75	1.25	0.22	0.00
18.00	1.25	0.22	0.00
18.25	1.25	0.22	0.00
18.50	1.25	0.22	0.00
18.75	1.25	0.22	0.00
19.00	1.25	0.22	0.00
19.25	1.25	0.22	0.00
19.50	1.25	0.22	0.00
19.75	1.25	0.22	0.00
20.00	1.25	0.22	0.00
20.25	1.25	0.22	0.00
20.50	1.25	0.22	0.00
20.75	1.25	0.22	0.00
21.00	1.25	0.22	0.00
21.25	1.25	0.22	0.00
21.50	1.25	0.22	0.00
21.75	1.25	0.22	0.00
22.00	1.25	0.22	0.00
22.25	1.25	0.22	0.00
22.50	1.25	0.22	0.00
22.75	1.25	0.22	0.00
23.00	1.25	0.22	0.00
23.25	1.25	0.22	0.00
23.50	1.25	0.22	0.00
23.75	1.25	0.22	0.00
24.00	1.25	0.22	0.00

Summary for Subcatchment 6S: EX-3

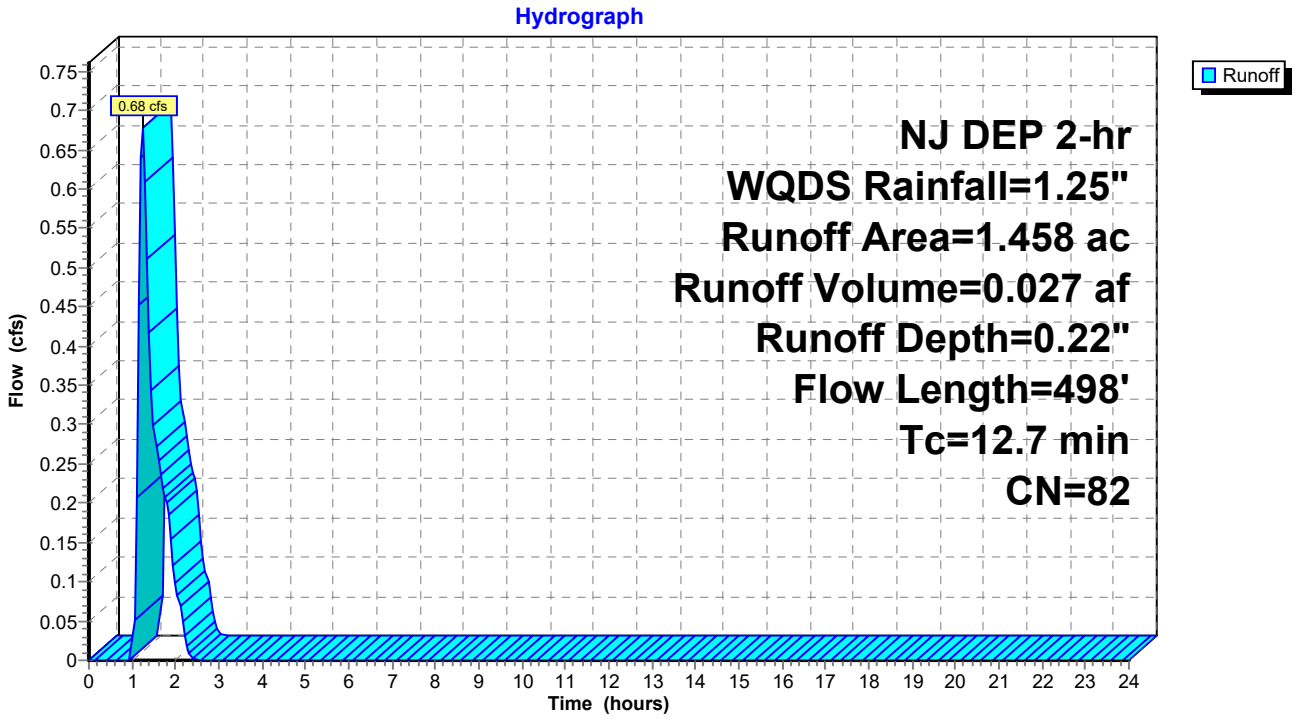
Runoff = 0.68 cfs @ 1.24 hrs, Volume= 0.027 af, Depth= 0.22"
Routed to Link 10L : Flows Going South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
	1.422	82	Woods/grass comb., Poor, HSG C
*	0.036	98	
	1.458	82	Weighted Average
	1.422		97.53% Pervious Area
	0.036		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	77	0.0350	0.23		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
7.1	421	0.0200	0.99		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
12.7	498	Total			

Subcatchment 6S: EX-3



Hydrograph for Subcatchment 6S: EX-3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.03	0.00	0.00
0.50	0.10	0.00	0.00
0.75	0.20	0.00	0.00
1.00	0.63	0.01	0.01
1.25	1.05	0.13	**0.68**
1.50	1.15	0.17	0.30
1.75	1.23	0.21	0.21
2.00	**1.25**	**0.22**	0.10
2.25	1.25	0.22	0.02
2.50	1.25	0.22	0.00
2.75	1.25	0.22	0.00
3.00	1.25	0.22	0.00
3.25	1.25	0.22	0.00
3.50	1.25	0.22	0.00
3.75	1.25	0.22	0.00
4.00	1.25	0.22	0.00
4.25	1.25	0.22	0.00
4.50	1.25	0.22	0.00
4.75	1.25	0.22	0.00
5.00	1.25	0.22	0.00
5.25	1.25	0.22	0.00
5.50	1.25	0.22	0.00
5.75	1.25	0.22	0.00
6.00	1.25	0.22	0.00
6.25	1.25	0.22	0.00
6.50	1.25	0.22	0.00
6.75	1.25	0.22	0.00
7.00	1.25	0.22	0.00
7.25	1.25	0.22	0.00
7.50	1.25	0.22	0.00
7.75	1.25	0.22	0.00
8.00	1.25	0.22	0.00
8.25	1.25	0.22	0.00
8.50	1.25	0.22	0.00
8.75	1.25	0.22	0.00
9.00	1.25	0.22	0.00
9.25	1.25	0.22	0.00
9.50	1.25	0.22	0.00
9.75	1.25	0.22	0.00
10.00	1.25	0.22	0.00
10.25	1.25	0.22	0.00
10.50	1.25	0.22	0.00
10.75	1.25	0.22	0.00
11.00	1.25	0.22	0.00
11.25	1.25	0.22	0.00
11.50	1.25	0.22	0.00
11.75	1.25	0.22	0.00
12.00	1.25	0.22	0.00
12.25	1.25	0.22	0.00
12.50	1.25	0.22	0.00
12.75	1.25	0.22	0.00
13.00	1.25	0.22	0.00
13.25	1.25	0.22	0.00
13.50	1.25	0.22	0.00
13.75	1.25	0.22	0.00
14.00	1.25	0.22	0.00
14.25	1.25	0.22	0.00
14.50	1.25	0.22	0.00
14.75	1.25	0.22	0.00
15.00	1.25	0.22	0.00
15.25	1.25	0.22	0.00
15.50	1.25	0.22	0.00
15.75	1.25	0.22	0.00
16.00	1.25	0.22	0.00
16.25	1.25	0.22	0.00
16.50	1.25	0.22	0.00
16.75	1.25	0.22	0.00
17.00	1.25	0.22	0.00
17.25	1.25	0.22	0.00
17.50	1.25	0.22	0.00
17.75	1.25	0.22	0.00
18.00	1.25	0.22	0.00
18.25	1.25	0.22	0.00
18.50	1.25	0.22	0.00
18.75	1.25	0.22	0.00
19.00	1.25	0.22	0.00
19.25	1.25	0.22	0.00
19.50	1.25	0.22	0.00
19.75	1.25	0.22	0.00
20.00	1.25	0.22	0.00
20.25	1.25	0.22	0.00
20.50	1.25	0.22	0.00
20.75	1.25	0.22	0.00
21.00	1.25	0.22	0.00
21.25	1.25	0.22	0.00
21.50	1.25	0.22	0.00
21.75	1.25	0.22	0.00
22.00	1.25	0.22	0.00
22.25	1.25	0.22	0.00
22.50	1.25	0.22	0.00
22.75	1.25	0.22	0.00
23.00	1.25	0.22	0.00
23.25	1.25	0.22	0.00
23.50	1.25	0.22	0.00
23.75	1.25	0.22	0.00
24.00	1.25	0.22	0.00

Summary for Subcatchment 7S: EX-4

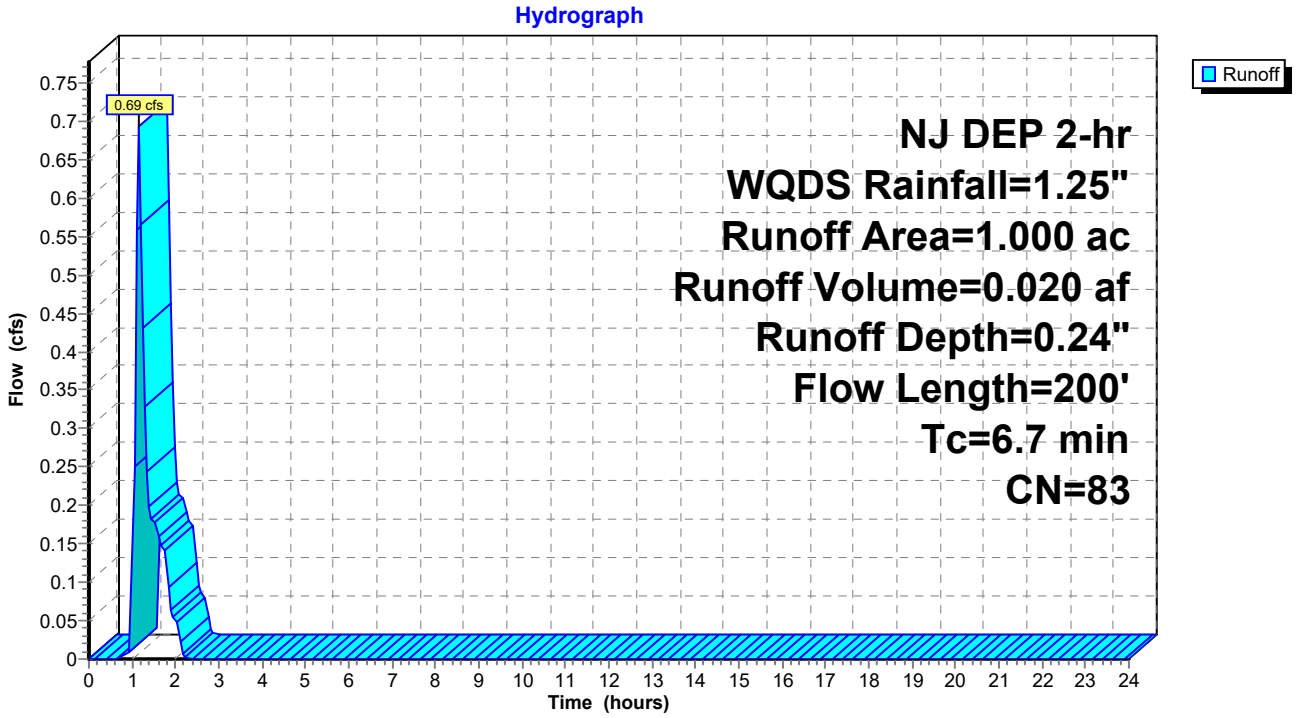
Runoff = 0.69 cfs @ 1.15 hrs, Volume= 0.020 af, Depth= 0.24"
Routed to Link 10L : Flows Going South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.038	98	
	0.962	82	Woods/grass comb., Poor, HSG C
	1.000	83	Weighted Average
	0.962		96.20% Pervious Area
	0.038		3.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	77	0.0300	0.22		**Sheet Flow, RANGE SHEET FLOW** Range n= 0.130 P2= 3.31"
0.1	15	0.0830	2.02		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
0.2	18	0.0690	1.84		**Shallow Concentrated Flow, SGP SCF** Short Grass Pasture Kv= 7.0 fps
0.5	90	0.0200	2.87		**Shallow Concentrated Flow, Paved SCF** Paved Kv= 20.3 fps
6.7	200	Total			

Subcatchment 7S: EX-4



Hydrograph for Subcatchment 7S: EX-4

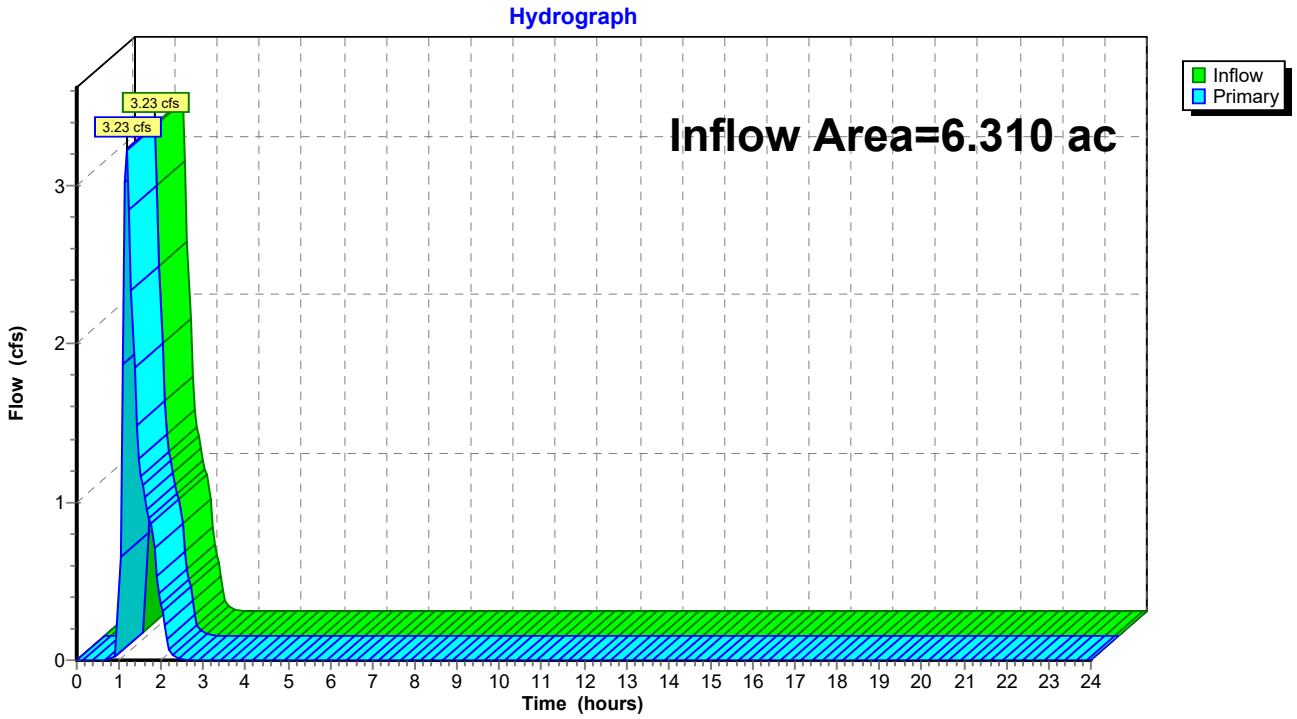
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.03	0.00	0.00
0.50	0.10	0.00	0.00
0.75	0.20	0.00	0.00
1.00	0.63	0.02	**0.05**
1.25	1.05	0.15	**0.43**
1.50	1.15	0.20	0.18
1.75	1.23	0.23	0.14
2.00	**1.25**	**0.24**	0.05
2.25	1.25	0.24	0.00
2.50	1.25	0.24	0.00
2.75	1.25	0.24	0.00
3.00	1.25	0.24	0.00
3.25	1.25	0.24	0.00
3.50	1.25	0.24	0.00
3.75	1.25	0.24	0.00
4.00	1.25	0.24	0.00
4.25	1.25	0.24	0.00
4.50	1.25	0.24	0.00
4.75	1.25	0.24	0.00
5.00	1.25	0.24	0.00
5.25	1.25	0.24	0.00
5.50	1.25	0.24	0.00
5.75	1.25	0.24	0.00
6.00	1.25	0.24	0.00
6.25	1.25	0.24	0.00
6.50	1.25	0.24	0.00
6.75	1.25	0.24	0.00
7.00	1.25	0.24	0.00
7.25	1.25	0.24	0.00
7.50	1.25	0.24	0.00
7.75	1.25	0.24	0.00
8.00	1.25	0.24	0.00
8.25	1.25	0.24	0.00
8.50	1.25	0.24	0.00
8.75	1.25	0.24	0.00
9.00	1.25	0.24	0.00
9.25	1.25	0.24	0.00
9.50	1.25	0.24	0.00
9.75	1.25	0.24	0.00
10.00	1.25	0.24	0.00
10.25	1.25	0.24	0.00
10.50	1.25	0.24	0.00
10.75	1.25	0.24	0.00
11.00	1.25	0.24	0.00
11.25	1.25	0.24	0.00
11.50	1.25	0.24	0.00
11.75	1.25	0.24	0.00
12.00	1.25	0.24	0.00
12.25	1.25	0.24	0.00
12.50	1.25	0.24	0.00
12.75	1.25	0.24	0.00
13.00	1.25	0.24	0.00
13.25	1.25	0.24	0.00
13.50	1.25	0.24	0.00
13.75	1.25	0.24	0.00
14.00	1.25	0.24	0.00
14.25	1.25	0.24	0.00
14.50	1.25	0.24	0.00
14.75	1.25	0.24	0.00
15.00	1.25	0.24	0.00
15.25	1.25	0.24	0.00
15.50	1.25	0.24	0.00
15.75	1.25	0.24	0.00
16.00	1.25	0.24	0.00
16.25	1.25	0.24	0.00
16.50	1.25	0.24	0.00
16.75	1.25	0.24	0.00
17.00	1.25	0.24	0.00
17.25	1.25	0.24	0.00
17.50	1.25	0.24	0.00
17.75	1.25	0.24	0.00
18.00	1.25	0.24	0.00
18.25	1.25	0.24	0.00
18.50	1.25	0.24	0.00
18.75	1.25	0.24	0.00
19.00	1.25	0.24	0.00
19.25	1.25	0.24	0.00
19.50	1.25	0.24	0.00
19.75	1.25	0.24	0.00
20.00	1.25	0.24	0.00
20.25	1.25	0.24	0.00
20.50	1.25	0.24	0.00
20.75	1.25	0.24	0.00
21.00	1.25	0.24	0.00
21.25	1.25	0.24	0.00
21.50	1.25	0.24	0.00
21.75	1.25	0.24	0.00
22.00	1.25	0.24	0.00
22.25	1.25	0.24	0.00
22.50	1.25	0.24	0.00
22.75	1.25	0.24	0.00
23.00	1.25	0.24	0.00
23.25	1.25	0.24	0.00
23.50	1.25	0.24	0.00
23.75	1.25	0.24	0.00
24.00	1.25	0.24	0.00

Summary for Link 9L: Existing Flows

Inflow Area = 6.310 ac, 2.85% Impervious, Inflow Depth = 0.22" for WQDS event
Inflow = 3.23 cfs @ 1.19 hrs, Volume= 0.117 af
Primary = 3.23 cfs @ 1.19 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 9L: Existing Flows



Hydrograph for Link 9L: Existing Flows

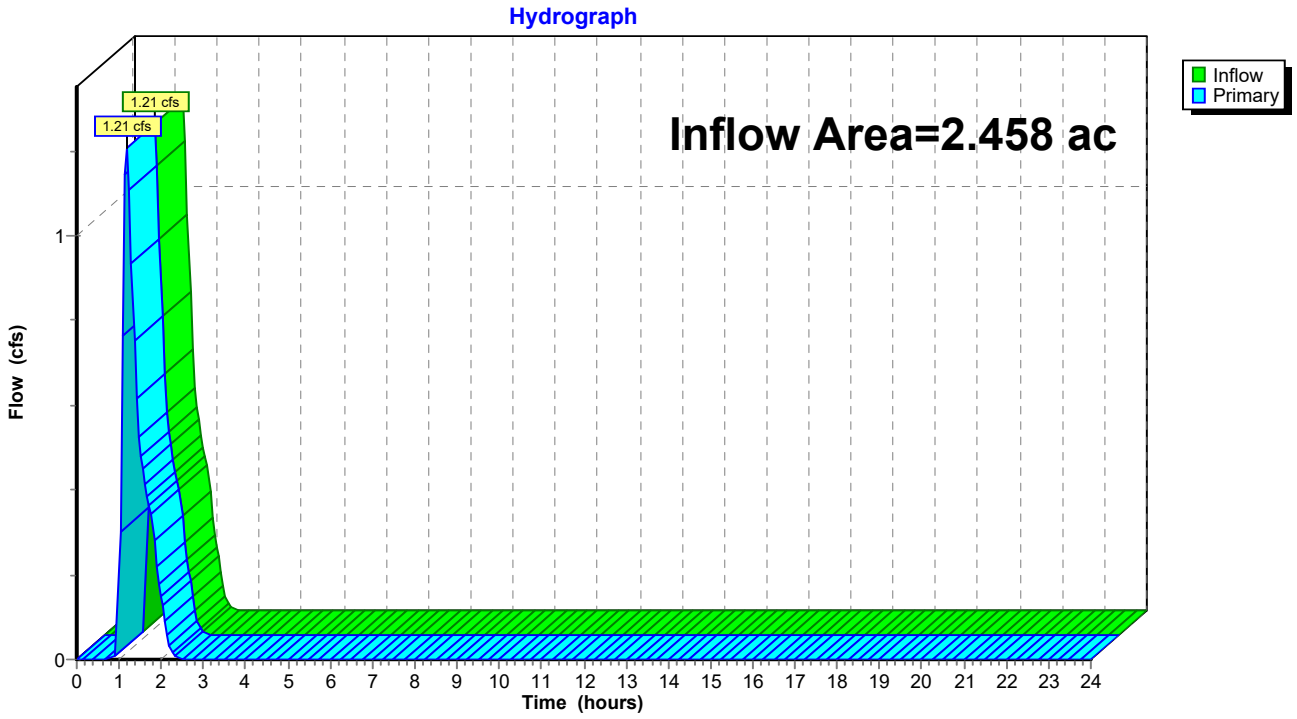
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	0.00	0.00	0.00
0.25	0.00	0.00	0.00	13.25	0.00	0.00	0.00
0.50	0.00	0.00	0.00	13.50	0.00	0.00	0.00
0.75	0.00	0.00	0.00	13.75	0.00	0.00	0.00
1.00	**0.09**	0.00	**0.09**	14.00	0.00	0.00	0.00
1.25	**2.85**	0.00	**2.85**	14.25	0.00	0.00	0.00
1.50	1.16	0.00	1.16	14.50	0.00	0.00	0.00
1.75	0.88	0.00	0.88	14.75	0.00	0.00	0.00
2.00	0.36	0.00	0.36	15.00	0.00	0.00	0.00
2.25	0.03	0.00	0.03	15.25	0.00	0.00	0.00
2.50	0.00	0.00	0.00	15.50	0.00	0.00	0.00
2.75	0.00	0.00	0.00	15.75	0.00	0.00	0.00
3.00	0.00	0.00	0.00	16.00	0.00	0.00	0.00
3.25	0.00	0.00	0.00	16.25	0.00	0.00	0.00
3.50	0.00	0.00	0.00	16.50	0.00	0.00	0.00
3.75	0.00	0.00	0.00	16.75	0.00	0.00	0.00
4.00	0.00	0.00	0.00	17.00	0.00	0.00	0.00
4.25	0.00	0.00	0.00	17.25	0.00	0.00	0.00
4.50	0.00	0.00	0.00	17.50	0.00	0.00	0.00
4.75	0.00	0.00	0.00	17.75	0.00	0.00	0.00
5.00	0.00	0.00	0.00	18.00	0.00	0.00	0.00
5.25	0.00	0.00	0.00	18.25	0.00	0.00	0.00
5.50	0.00	0.00	0.00	18.50	0.00	0.00	0.00
5.75	0.00	0.00	0.00	18.75	0.00	0.00	0.00
6.00	0.00	0.00	0.00	19.00	0.00	0.00	0.00
6.25	0.00	0.00	0.00	19.25	0.00	0.00	0.00
6.50	0.00	0.00	0.00	19.50	0.00	0.00	0.00
6.75	0.00	0.00	0.00	19.75	0.00	0.00	0.00
7.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00
7.25	0.00	0.00	0.00	20.25	0.00	0.00	0.00
7.50	0.00	0.00	0.00	20.50	0.00	0.00	0.00
7.75	0.00	0.00	0.00	20.75	0.00	0.00	0.00
8.00	0.00	0.00	0.00	21.00	0.00	0.00	0.00
8.25	0.00	0.00	0.00	21.25	0.00	0.00	0.00
8.50	0.00	0.00	0.00	21.50	0.00	0.00	0.00
8.75	0.00	0.00	0.00	21.75	0.00	0.00	0.00
9.00	0.00	0.00	0.00	22.00	0.00	0.00	0.00
9.25	0.00	0.00	0.00	22.25	0.00	0.00	0.00
9.50	0.00	0.00	0.00	22.50	0.00	0.00	0.00
9.75	0.00	0.00	0.00	22.75	0.00	0.00	0.00
10.00	0.00	0.00	0.00	23.00	0.00	0.00	0.00
10.25	0.00	0.00	0.00	23.25	0.00	0.00	0.00
10.50	0.00	0.00	0.00	23.50	0.00	0.00	0.00
10.75	0.00	0.00	0.00	23.75	0.00	0.00	0.00
11.00	0.00	0.00	0.00	24.00	0.00	0.00	0.00
11.25	0.00	0.00	0.00				
11.50	0.00	0.00	0.00				
11.75	0.00	0.00	0.00				
12.00	0.00	0.00	0.00				
12.25	0.00	0.00	0.00				
12.50	0.00	0.00	0.00				
12.75	0.00	0.00	0.00				

Summary for Link 10L: Flows Going South

Inflow Area = 2.458 ac, 3.01% Impervious, Inflow Depth = 0.23" for WQDS event
Inflow = 1.21 cfs @ 1.19 hrs, Volume= 0.047 af
Primary = 1.21 cfs @ 1.19 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min
Routed to Link 9L : Existing Flows

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 10L: Flows Going South



Hydrograph for Link 10L: Flows Going South

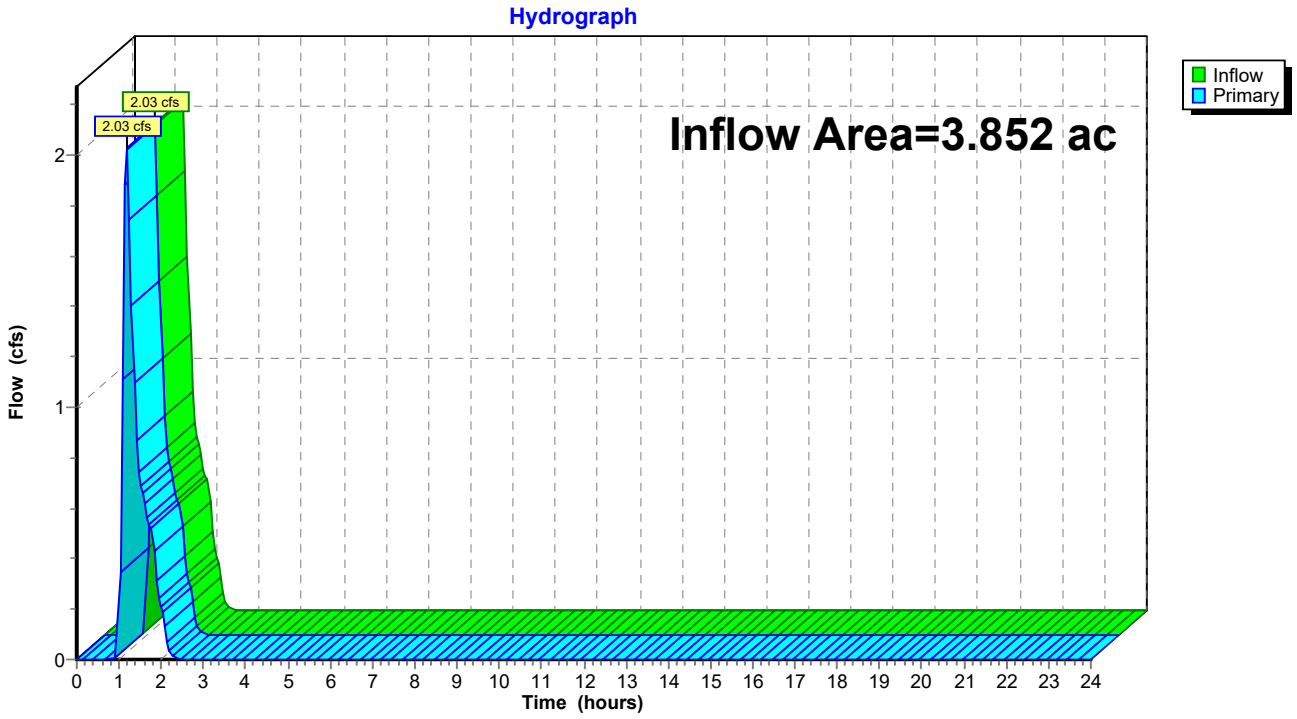
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	0.00	0.00	0.00
0.25	0.00	0.00	0.00	13.25	0.00	0.00	0.00
0.50	0.00	0.00	0.00	13.50	0.00	0.00	0.00
0.75	0.00	0.00	0.00	13.75	0.00	0.00	0.00
1.00	**0.05**	0.00	**0.05**	14.00	0.00	0.00	0.00
1.25	**1.11**	0.00	**1.11**	14.25	0.00	0.00	0.00
1.50	0.48	0.00	0.48	14.50	0.00	0.00	0.00
1.75	0.35	0.00	0.35	14.75	0.00	0.00	0.00
2.00	0.15	0.00	0.15	15.00	0.00	0.00	0.00
2.25	0.02	0.00	0.02	15.25	0.00	0.00	0.00
2.50	0.00	0.00	0.00	15.50	0.00	0.00	0.00
2.75	0.00	0.00	0.00	15.75	0.00	0.00	0.00
3.00	0.00	0.00	0.00	16.00	0.00	0.00	0.00
3.25	0.00	0.00	0.00	16.25	0.00	0.00	0.00
3.50	0.00	0.00	0.00	16.50	0.00	0.00	0.00
3.75	0.00	0.00	0.00	16.75	0.00	0.00	0.00
4.00	0.00	0.00	0.00	17.00	0.00	0.00	0.00
4.25	0.00	0.00	0.00	17.25	0.00	0.00	0.00
4.50	0.00	0.00	0.00	17.50	0.00	0.00	0.00
4.75	0.00	0.00	0.00	17.75	0.00	0.00	0.00
5.00	0.00	0.00	0.00	18.00	0.00	0.00	0.00
5.25	0.00	0.00	0.00	18.25	0.00	0.00	0.00
5.50	0.00	0.00	0.00	18.50	0.00	0.00	0.00
5.75	0.00	0.00	0.00	18.75	0.00	0.00	0.00
6.00	0.00	0.00	0.00	19.00	0.00	0.00	0.00
6.25	0.00	0.00	0.00	19.25	0.00	0.00	0.00
6.50	0.00	0.00	0.00	19.50	0.00	0.00	0.00
6.75	0.00	0.00	0.00	19.75	0.00	0.00	0.00
7.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00
7.25	0.00	0.00	0.00	20.25	0.00	0.00	0.00
7.50	0.00	0.00	0.00	20.50	0.00	0.00	0.00
7.75	0.00	0.00	0.00	20.75	0.00	0.00	0.00
8.00	0.00	0.00	0.00	21.00	0.00	0.00	0.00
8.25	0.00	0.00	0.00	21.25	0.00	0.00	0.00
8.50	0.00	0.00	0.00	21.50	0.00	0.00	0.00
8.75	0.00	0.00	0.00	21.75	0.00	0.00	0.00
9.00	0.00	0.00	0.00	22.00	0.00	0.00	0.00
9.25	0.00	0.00	0.00	22.25	0.00	0.00	0.00
9.50	0.00	0.00	0.00	22.50	0.00	0.00	0.00
9.75	0.00	0.00	0.00	22.75	0.00	0.00	0.00
10.00	0.00	0.00	0.00	23.00	0.00	0.00	0.00
10.25	0.00	0.00	0.00	23.25	0.00	0.00	0.00
10.50	0.00	0.00	0.00	23.50	0.00	0.00	0.00
10.75	0.00	0.00	0.00	23.75	0.00	0.00	0.00
11.00	0.00	0.00	0.00	24.00	0.00	0.00	0.00
11.25	0.00	0.00	0.00				
11.50	0.00	0.00	0.00				
11.75	0.00	0.00	0.00				
12.00	0.00	0.00	0.00				
12.25	0.00	0.00	0.00				
12.50	0.00	0.00	0.00				
12.75	0.00	0.00	0.00				

Summary for Link 11L: Flows Going North

Inflow Area = 3.852 ac, 2.75% Impervious, Inflow Depth = 0.22" for WQDS event
Inflow = 2.03 cfs @ 1.19 hrs, Volume= 0.070 af
Primary = 2.03 cfs @ 1.19 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
Routed to Link 9L : Existing Flows

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

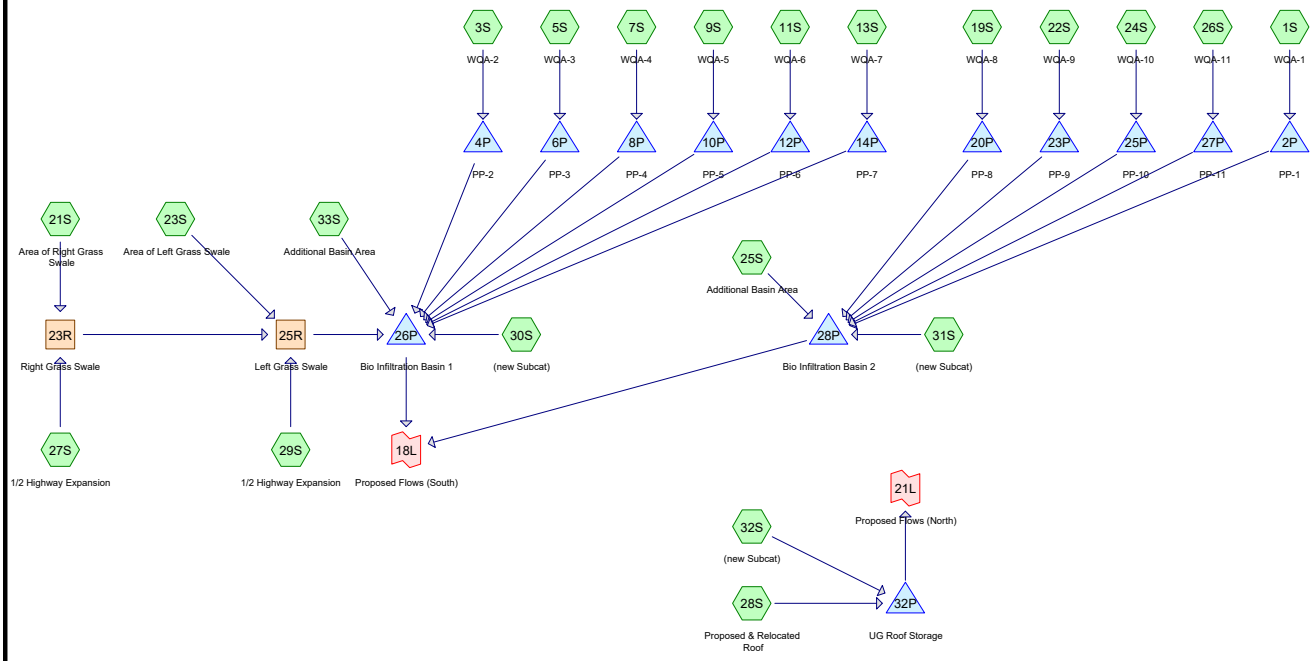
Link 11L: Flows Going North



Hydrograph for Link 11L: Flows Going North

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	13.00	0.00	0.00	0.00
0.25	0.00	0.00	0.00	13.25	0.00	0.00	0.00
0.50	0.00	0.00	0.00	13.50	0.00	0.00	0.00
0.75	0.00	0.00	0.00	13.75	0.00	0.00	0.00
1.00	**0.04**	0.00	**0.04**	14.00	0.00	0.00	0.00
1.25	**1.74**	0.00	**1.74**	14.25	0.00	0.00	0.00
1.50	0.69	0.00	0.69	14.50	0.00	0.00	0.00
1.75	0.53	0.00	0.53	14.75	0.00	0.00	0.00
2.00	0.21	0.00	0.21	15.00	0.00	0.00	0.00
2.25	0.02	0.00	0.02	15.25	0.00	0.00	0.00
2.50	0.00	0.00	0.00	15.50	0.00	0.00	0.00
2.75	0.00	0.00	0.00	15.75	0.00	0.00	0.00
3.00	0.00	0.00	0.00	16.00	0.00	0.00	0.00
3.25	0.00	0.00	0.00	16.25	0.00	0.00	0.00
3.50	0.00	0.00	0.00	16.50	0.00	0.00	0.00
3.75	0.00	0.00	0.00	16.75	0.00	0.00	0.00
4.00	0.00	0.00	0.00	17.00	0.00	0.00	0.00
4.25	0.00	0.00	0.00	17.25	0.00	0.00	0.00
4.50	0.00	0.00	0.00	17.50	0.00	0.00	0.00
4.75	0.00	0.00	0.00	17.75	0.00	0.00	0.00
5.00	0.00	0.00	0.00	18.00	0.00	0.00	0.00
5.25	0.00	0.00	0.00	18.25	0.00	0.00	0.00
5.50	0.00	0.00	0.00	18.50	0.00	0.00	0.00
5.75	0.00	0.00	0.00	18.75	0.00	0.00	0.00
6.00	0.00	0.00	0.00	19.00	0.00	0.00	0.00
6.25	0.00	0.00	0.00	19.25	0.00	0.00	0.00
6.50	0.00	0.00	0.00	19.50	0.00	0.00	0.00
6.75	0.00	0.00	0.00	19.75	0.00	0.00	0.00
7.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00
7.25	0.00	0.00	0.00	20.25	0.00	0.00	0.00
7.50	0.00	0.00	0.00	20.50	0.00	0.00	0.00
7.75	0.00	0.00	0.00	20.75	0.00	0.00	0.00
8.00	0.00	0.00	0.00	21.00	0.00	0.00	0.00
8.25	0.00	0.00	0.00	21.25	0.00	0.00	0.00
8.50	0.00	0.00	0.00	21.50	0.00	0.00	0.00
8.75	0.00	0.00	0.00	21.75	0.00	0.00	0.00
9.00	0.00	0.00	0.00	22.00	0.00	0.00	0.00
9.25	0.00	0.00	0.00	22.25	0.00	0.00	0.00
9.50	0.00	0.00	0.00	22.50	0.00	0.00	0.00
9.75	0.00	0.00	0.00	22.75	0.00	0.00	0.00
10.00	0.00	0.00	0.00	23.00	0.00	0.00	0.00
10.25	0.00	0.00	0.00	23.25	0.00	0.00	0.00
10.50	0.00	0.00	0.00	23.50	0.00	0.00	0.00
10.75	0.00	0.00	0.00	23.75	0.00	0.00	0.00
11.00	0.00	0.00	0.00	24.00	0.00	0.00	0.00
11.25	0.00	0.00	0.00				
11.50	0.00	0.00	0.00				
11.75	0.00	0.00	0.00				
12.00	0.00	0.00	0.00				
12.25	0.00	0.00	0.00				
12.50	0.00	0.00	0.00				
12.75	0.00	0.00	0.00				

Appendix D – Proposed HydroCAD Calculations



Subcat Reach Pond Link

Routing Diagram for COMG00001-PROP

Prepared by {enter your company name here}, Printed 5/27/2022

HydroCAD® 10.10-7a s/n 07213 © 2021 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "COMG00001_EXC.hcp"

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year Storm	NOAA 24-hr	C	Default	24.00	1	3.31	2
2	10-Year Storm	NOAA 24-hr	C	Default	24.00	1	5.00	2
3	100-Year Storm	NOAA 24-hr	C	Default	24.00	1	8.27	2
4	WQDS	NJ DEP 2-hr		Default	2.00	1	1.25	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.193	98	(1S, 3S, 5S, 7S, 9S, 11S, 13S, 19S, 22S, 24S, 25S, 26S, 29S)
1.157	74	(23S, 30S, 31S, 32S)
1.432	74	>75% Grass cover, Good, HSG C (3S, 5S, 7S, 9S, 11S, 13S, 19S, 22S, 25S, 33S)
0.150	98	Impervious Placeholder (21S)
0.150	74	Pervious Placeholder (21S)
0.113	98	Roadway Expansion (27S)
1.115	98	Roofs, HSG C (28S)
6.310	**88**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.547	HSG C	3S, 5S, 7S, 9S, 11S, 13S, 19S, 22S, 25S, 28S, 33S
0.000	HSG D	
3.763	Other	1S, 3S, 5S, 7S, 9S, 11S, 13S, 19S, 21S, 22S, 23S, 24S, 25S, 26S, 27S, 29S, 30S, 31S, 32S
6.310		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	3.350	3.350		1S, 3S, 5S, 7S, 9S, 11S, 13S, 19S, 22S, 23S, 24S, 25S, 26S, 29S, 30S, 31S, 32S
0.000	0.000	1.432	0.000	0.000	1.432	>75% Grass cover, Good	3S, 5S, 7S, 9S, 11S, 13S, 19S, 22S, 25S, 33S
0.000	0.000	0.000	0.000	0.150	0.150	Impervious Placeholder	21S
0.000	0.000	0.000	0.000	0.150	0.150	Pervious Placeholder	21S
0.000	0.000	0.000	0.000	0.113	0.113	Roadway Expansion	27S
0.000	0.000	1.115	0.000	0.000	1.115	Roofs	28S
0.000	**0.000**	**2.547**	**0.000**	**3.763**	**6.310**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	26P	157.00	156.75	25.0	0.0100	0.012	0.0	15.0	0.0
2	28P	158.00	145.50	25.0	0.5000	0.012	0.0	15.0	0.0
3	32P	165.50	164.30	40.0	0.0300	0.012	0.0	15.0	0.0

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: WQA-1 Runoff Area=0.214 ac 100.00% Impervious Runoff Depth=3.08"
Tc=6.0 min CN=98 Runoff=0.75 cfs 0.055 af

Subcatchment3S: WQA-2 Runoff Area=0.311 ac 94.21% Impervious Runoff Depth=2.97"
Tc=6.0 min CN=97 Runoff=1.08 cfs 0.077 af

Subcatchment5S: WQA-3 Runoff Area=0.192 ac 81.25% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=93 Runoff=0.61 cfs 0.041 af

Subcatchment7S: WQA-4 Runoff Area=0.206 ac 68.93% Impervious Runoff Depth=2.36"
Tc=6.0 min CN=91 Runoff=0.62 cfs 0.041 af

Subcatchment9S: WQA-5 Runoff Area=0.087 ac 88.51% Impervious Runoff Depth=2.75"
Tc=6.0 min CN=95 Runoff=0.29 cfs 0.020 af

Subcatchment11S: WQA-6 Runoff Area=0.258 ac 91.47% Impervious Runoff Depth=2.86"
Tc=6.0 min CN=96 Runoff=0.88 cfs 0.061 af

Subcatchment13S: WQA-7 Runoff Area=0.226 ac 90.71% Impervious Runoff Depth=2.86"
Tc=6.0 min CN=96 Runoff=0.77 cfs 0.054 af

Subcatchment19S: WQA-8 Runoff Area=0.174 ac 80.46% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=93 Runoff=0.55 cfs 0.037 af

Subcatchment21S: Area of Right Grass Runoff Area=0.300 ac 50.00% Impervious Runoff Depth=1.93"
Tc=6.0 min CN=86 Runoff=0.76 cfs 0.048 af

Subcatchment22S: WQA-9 Runoff Area=0.199 ac 89.45% Impervious Runoff Depth=2.75"
Tc=6.0 min CN=95 Runoff=0.66 cfs 0.046 af

Subcatchment23S: Area of Left Grass Swale Runoff Area=0.208 ac 0.00% Impervious Runoff Depth=1.11"
Tc=6.0 min CN=74 Runoff=0.30 cfs 0.019 af

Subcatchment24S: WQA-10 Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=3.08"
Tc=6.0 min CN=98 Runoff=0.44 cfs 0.032 af

Subcatchment25S: Additional Basin Area Runoff Area=1.112 ac 5.40% Impervious Runoff Depth=1.17"
Tc=6.0 min CN=75 Runoff=1.70 cfs 0.108 af

Subcatchment26S: WQA-11 Runoff Area=0.165 ac 100.00% Impervious Runoff Depth=3.08"
Tc=6.0 min CN=98 Runoff=0.58 cfs 0.042 af

Subcatchment27S: 1/2 Highway Runoff Area=0.113 ac 100.00% Impervious Runoff Depth=3.08"
Tc=6.0 min CN=98 Runoff=0.40 cfs 0.029 af

Subcatchment28S: Proposed & Runoff Area=1.115 ac 100.00% Impervious Runoff Depth=3.08"
Tc=6.0 min CN=98 Runoff=3.91 cfs 0.286 af

Subcatchment29S: 1/2 Highway Runoff Area=0.202 ac 100.00% Impervious Runoff Depth=3.08"
Tc=6.0 min CN=98 Runoff=0.71 cfs 0.052 af

Subcatchment30S: (new Subcat) Runoff Area=0.243 ac 0.00% Impervious Runoff Depth=1.11"
Tc=6.0 min CN=74 Runoff=0.35 cfs 0.022 af

Subcatchment31S: (new Subcat) Runoff Area=0.511 ac 0.00% Impervious Runoff Depth=1.11"
Tc=6.0 min CN=74 Runoff=0.74 cfs 0.047 af

Subcatchment32S: (new Subcat) Runoff Area=0.195 ac 0.00% Impervious Runoff Depth=1.11"
Tc=6.0 min CN=74 Runoff=0.28 cfs 0.018 af

Subcatchment33S: Additional Basin Area Runoff Area=0.154 ac 0.00% Impervious Runoff Depth=1.11"
Tc=6.0 min CN=74 Runoff=0.22 cfs 0.014 af

Reach 23R: Right Grass Swale Avg. Flow Depth=0.49' Max Vel=0.34 fps Inflow=1.16 cfs 0.077 af
n=0.150 L=468.5' S=0.0050 '/' Capacity=2.49 cfs Outflow=0.57 cfs 0.077 af

Reach 25R: Left Grass Swale Avg. Flow Depth=0.47' Max Vel=0.35 fps Inflow=1.11 cfs 0.148 af
n=0.150 L=149.5' S=0.0047 '/' Capacity=3.69 cfs Outflow=0.89 cfs 0.148 af

Pond 2P: PP-1 Peak Elev=165.55' Storage=0.012 af Inflow=0.75 cfs 0.055 af
Outflow=0.42 cfs 0.055 af

Pond 4P: PP-2 Peak Elev=162.51' Storage=0.039 af Inflow=1.08 cfs 0.077 af
Outflow=0.25 cfs 0.063 af

Pond 6P: PP-3 Peak Elev=158.89' Storage=0.018 af Inflow=0.61 cfs 0.041 af
Outflow=0.22 cfs 0.033 af

Pond 8P: PP-4 Peak Elev=169.97' Storage=0.013 af Inflow=0.62 cfs 0.041 af
Outflow=0.25 cfs 0.038 af

Pond 10P: PP-5 Peak Elev=167.62' Storage=0.008 af Inflow=0.29 cfs 0.020 af
Outflow=0.19 cfs 0.015 af

Pond 12P: PP-6 Peak Elev=166.65' Storage=0.016 af Inflow=0.88 cfs 0.061 af
Outflow=0.43 cfs 0.061 af

Pond 14P: PP-7 Peak Elev=168.95' Storage=0.015 af Inflow=0.77 cfs 0.054 af
Outflow=0.37 cfs 0.053 af

Pond 20P: PP-8 Peak Elev=166.60' Storage=0.016 af Inflow=0.55 cfs 0.037 af
Outflow=0.30 cfs 0.028 af

Pond 23P: PP-9 Peak Elev=170.11' Storage=0.013 af Inflow=0.66 cfs 0.046 af
Outflow=0.31 cfs 0.045 af

Pond 25P: PP-10 Peak Elev=169.93' Storage=0.018 af Inflow=0.44 cfs 0.032 af
Outflow=0.15 cfs 0.020 af

Pond 26P: Bio Infiltration Basin 1 Peak Elev=159.37' Storage=0.280 af Inflow=2.77 cfs 0.448 af
Discarded=0.10 cfs 0.163 af Primary=0.12 cfs 0.080 af Outflow=0.21 cfs 0.243 af

Pond 27P: PP-11 Peak Elev=166.04' Storage=0.018 af Inflow=0.58 cfs 0.042 af
Outflow=0.36 cfs 0.032 af

Pond 28P: Bio Infiltration Basin 2 Peak Elev=161.16' Storage=0.120 af Inflow=3.69 cfs 0.335 af
Discarded=0.03 cfs 0.049 af Primary=1.34 cfs 0.234 af Outflow=1.38 cfs 0.283 af

Pond 32P: UG Roof Storage Peak Elev=166.87' Storage=0.103 af Inflow=4.19 cfs 0.304 af
Outflow=3.10 cfs 0.297 af

Link 18L: Proposed Flows (South) Inflow=1.34 cfs 0.314 af
Primary=1.34 cfs 0.314 af

Link 21L: Proposed Flows (North) Inflow=3.10 cfs 0.297 af
Primary=3.10 cfs 0.297 af

Total Runoff Area = 6.310 ac Runoff Volume = 1.150 af Average Runoff Depth = 2.19"
43.41% Pervious = 2.739 ac 56.59% Impervious = 3.571 ac

Summary for Subcatchment 1S: WQA-1

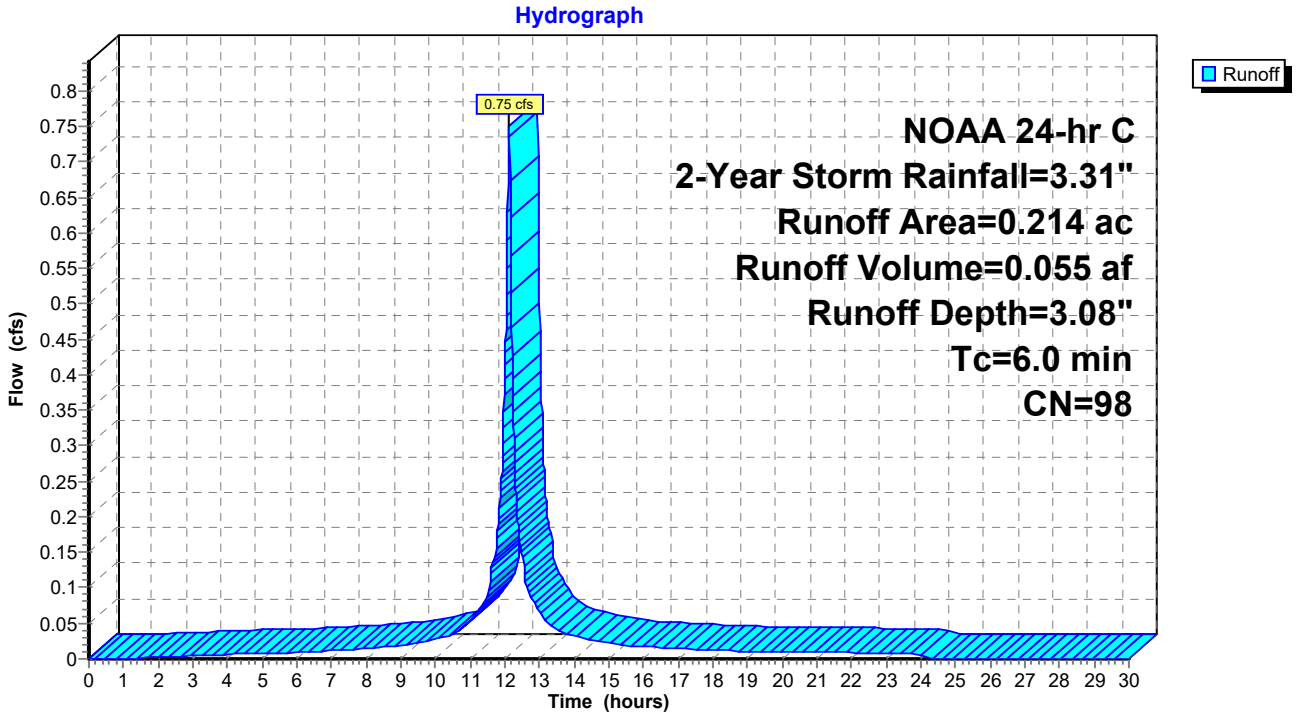
Runoff = 0.75 cfs @ 12.13 hrs, Volume= 0.055 af, Depth= 3.08"
Routed to Pond 2P : PP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.214	98	
	0.214		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1S: WQA-1



Summary for Subcatchment 3S: WQA-2

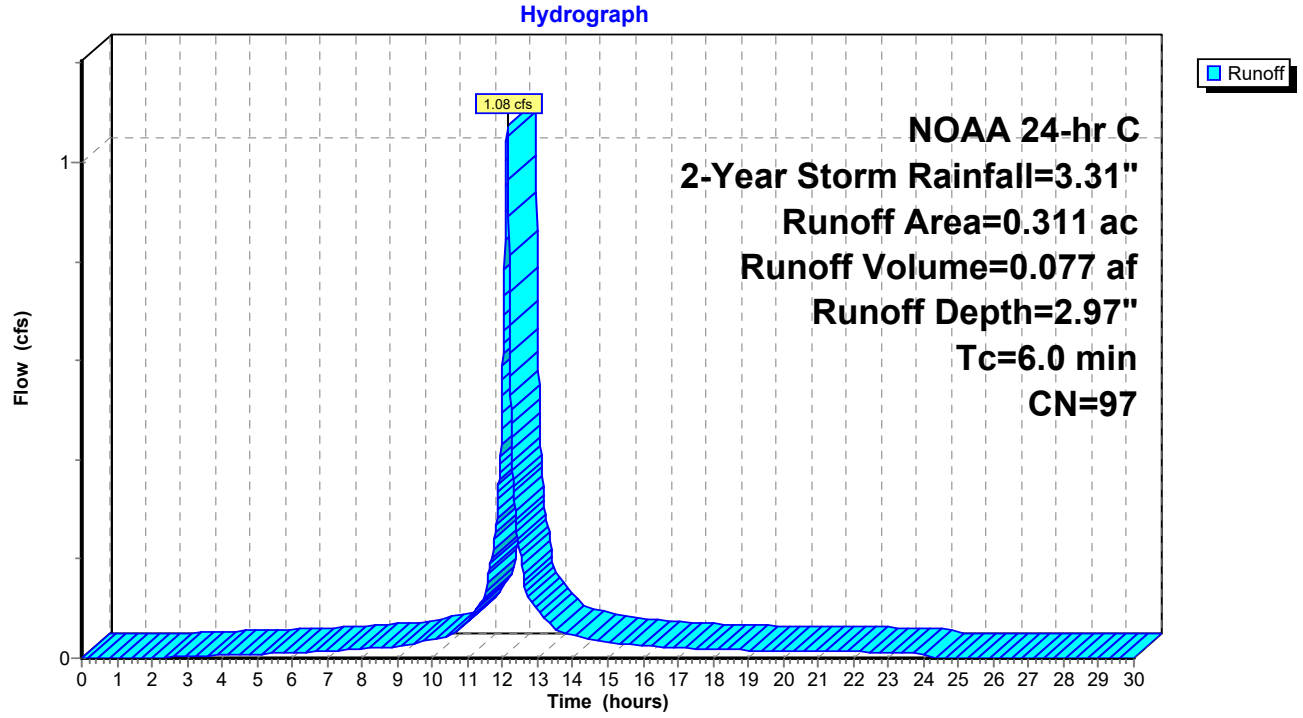
Runoff = 1.08 cfs @ 12.13 hrs, Volume= 0.077 af, Depth= 2.97"
Routed to Pond 4P : PP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.293	98	
	0.018	74	>75% Grass cover, Good, HSG C
	0.311	97	Weighted Average
	0.018		5.79% Pervious Area
	0.293		94.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 3S: WQA-2



Summary for Subcatchment 5S: WQA-3

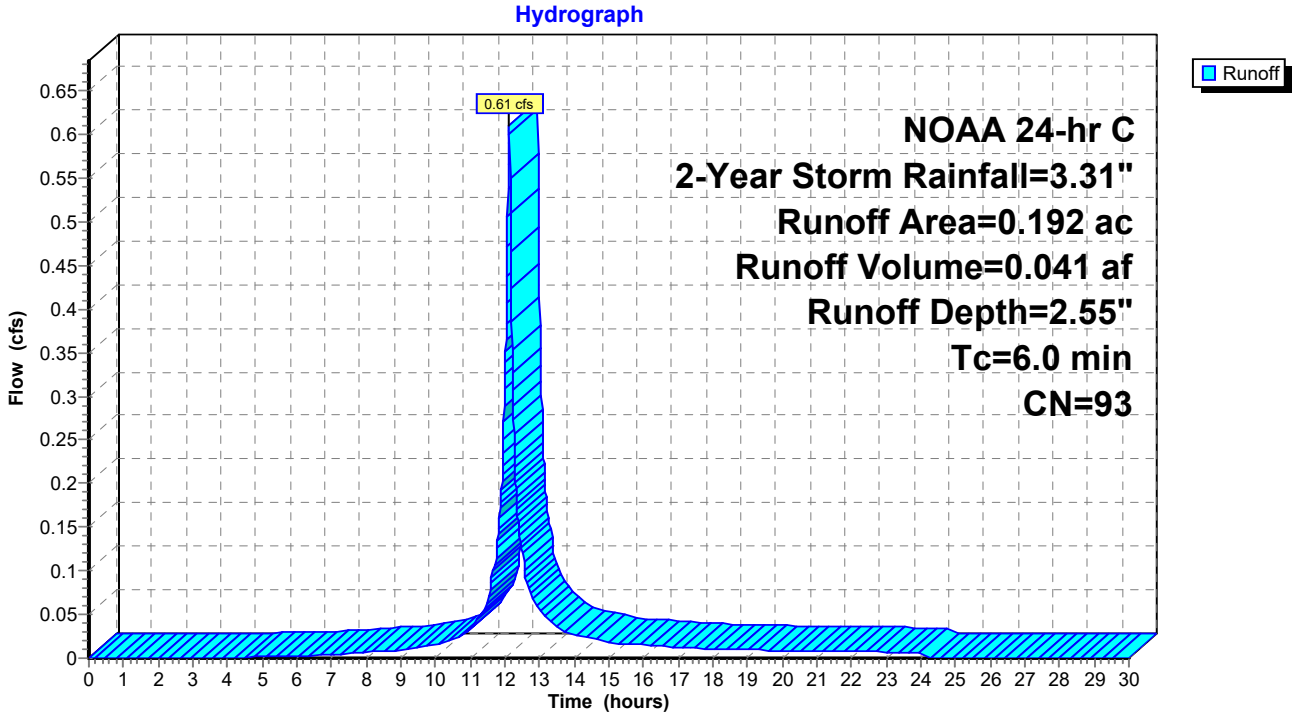
Runoff = 0.61 cfs @ 12.13 hrs, Volume= 0.041 af, Depth= 2.55"
Routed to Pond 6P : PP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.156	98	
	0.036	74	>75% Grass cover, Good, HSG C
	0.192	93	Weighted Average
	0.036		18.75% Pervious Area
	0.156		81.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: WQA-3



Summary for Subcatchment 7S: WQA-4

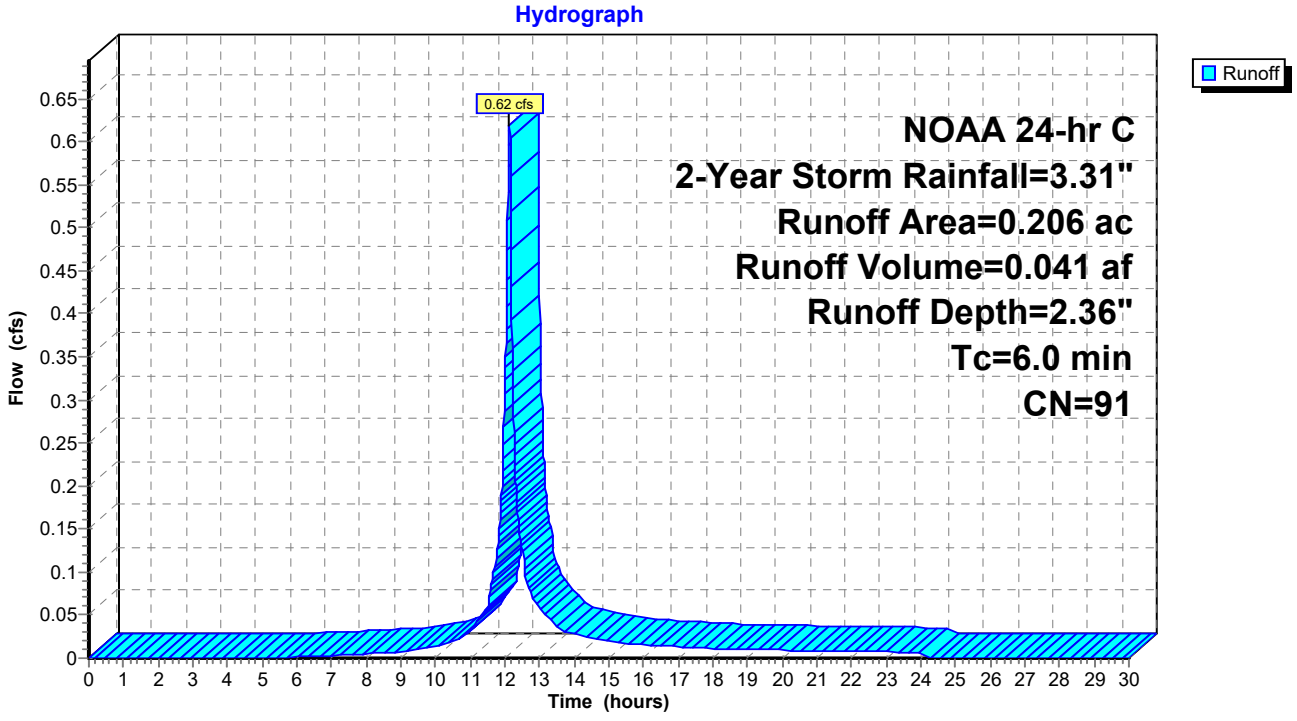
Runoff = 0.62 cfs @ 12.13 hrs, Volume= 0.041 af, Depth= 2.36"
Routed to Pond 8P : PP-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.142	98	
	0.064	74	>75% Grass cover, Good, HSG C
	0.206	91	Weighted Average
	0.064		31.07% Pervious Area
	0.142		68.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 7S: WQA-4



Summary for Subcatchment 9S: WQA-5

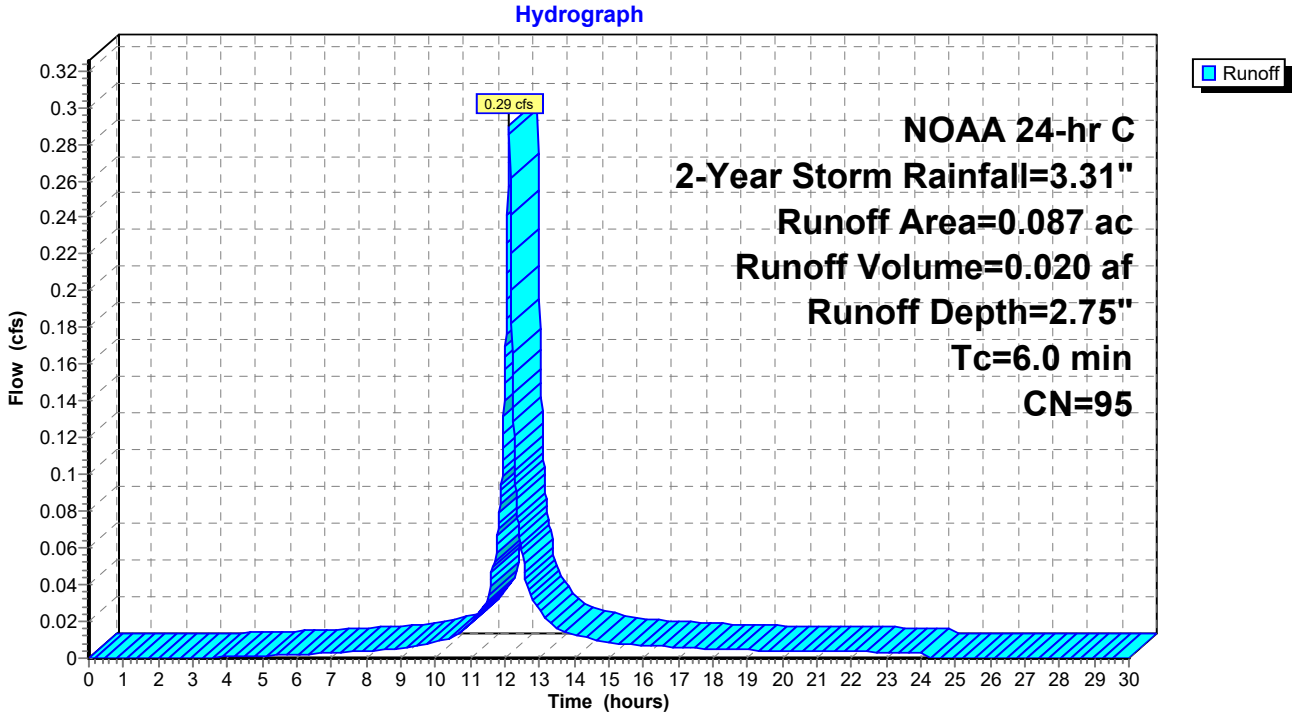
Runoff = 0.29 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 2.75"
Routed to Pond 10P : PP-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.077	98	
	0.010	74	>75% Grass cover, Good, HSG C
	0.087	95	Weighted Average
	0.010		11.49% Pervious Area
	0.077		88.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 9S: WQA-5



Summary for Subcatchment 11S: WQA-6

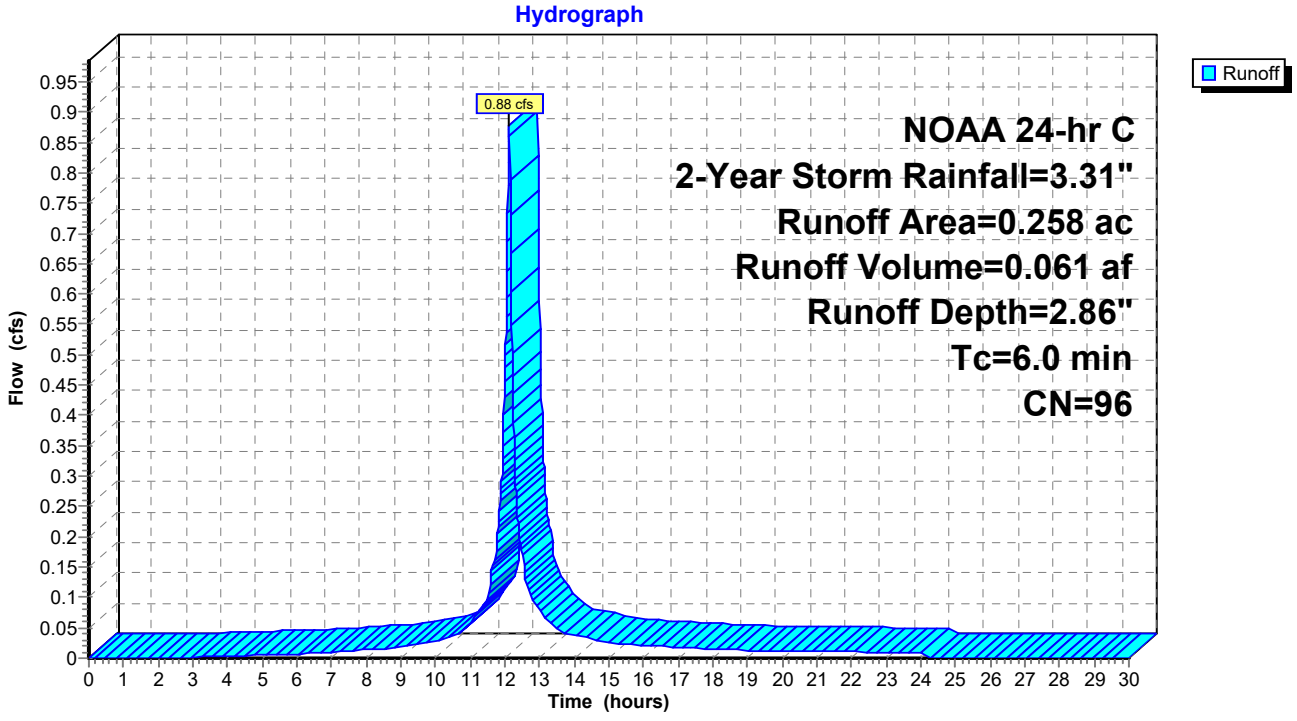
Runoff = 0.88 cfs @ 12.13 hrs, Volume= 0.061 af, Depth= 2.86"
Routed to Pond 12P : PP-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.236	98	
	0.022	74	>75% Grass cover, Good, HSG C
	0.258	96	Weighted Average
	0.022		8.53% Pervious Area
	0.236		91.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 11S: WQA-6



Summary for Subcatchment 13S: WQA-7

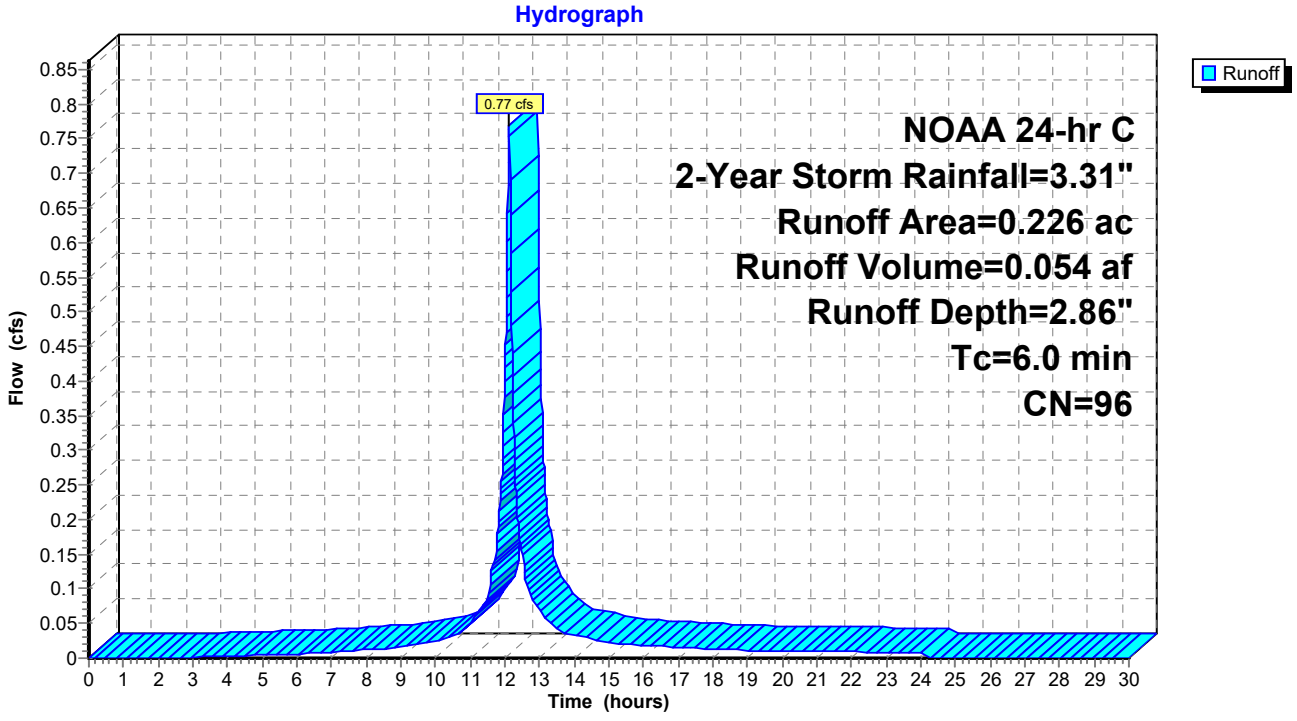
Runoff = 0.77 cfs @ 12.13 hrs, Volume= 0.054 af, Depth= 2.86"
Routed to Pond 14P : PP-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.205	98	
	0.021	74	>75% Grass cover, Good, HSG C
	0.226	96	Weighted Average
	0.021		9.29% Pervious Area
	0.205		90.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 13S: WQA-7



Summary for Subcatchment 19S: WQA-8

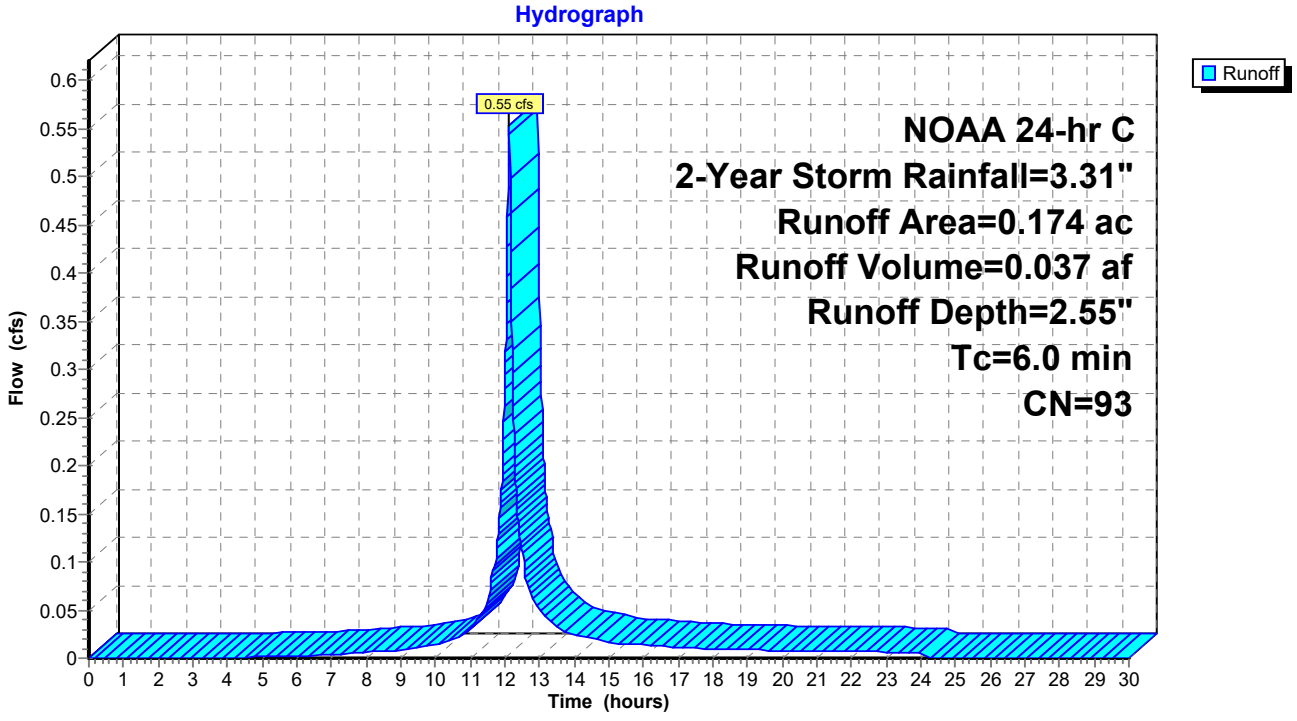
Runoff = 0.55 cfs @ 12.13 hrs, Volume= 0.037 af, Depth= 2.55"
Routed to Pond 20P : PP-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.140	98	
	0.034	74	>75% Grass cover, Good, HSG C
	0.174	93	Weighted Average
	0.034		19.54% Pervious Area
	0.140		80.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 19S: WQA-8



Summary for Subcatchment 21S: Area of Right Grass Swale

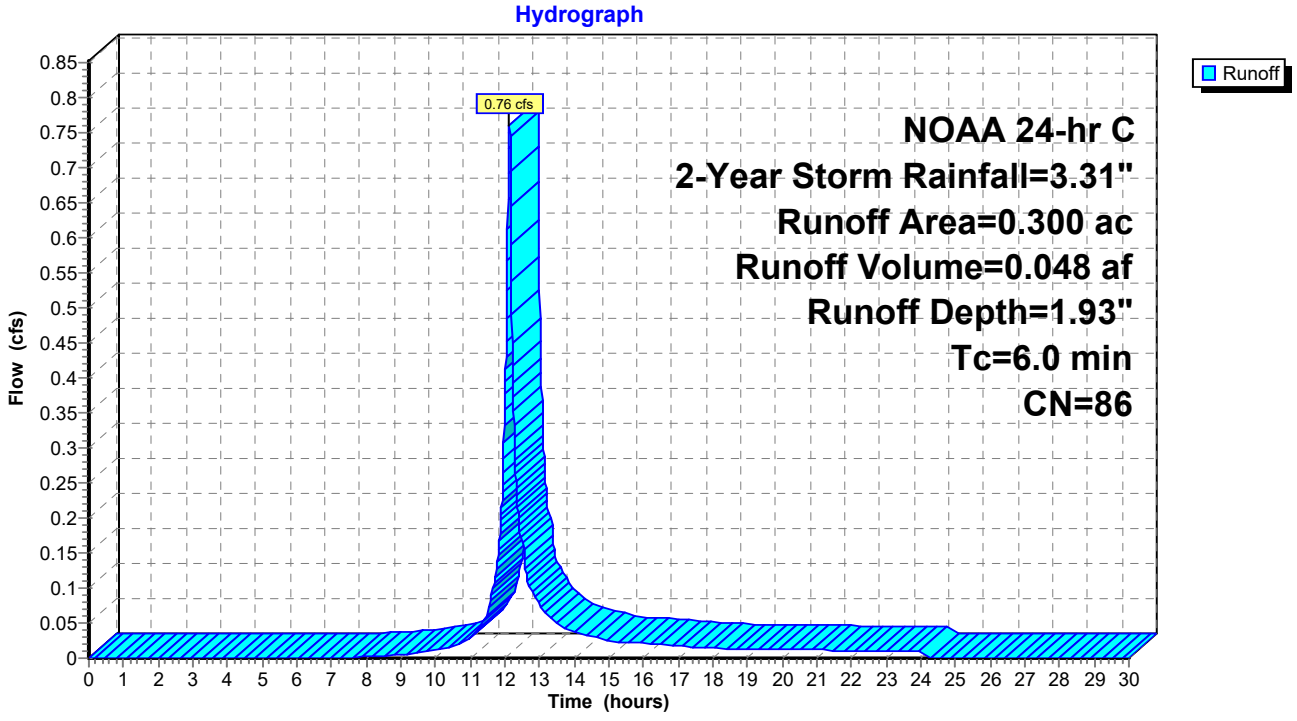
Runoff = 0.76 cfs @ 12.13 hrs, Volume= 0.048 af, Depth= 1.93"
Routed to Reach 23R : Right Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.150	98	Impervious Placeholder
*	0.150	74	Pervious Placeholder
	0.300	86	Weighted Average
	0.150		50.00% Pervious Area
	0.150		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 21S: Area of Right Grass Swale



Summary for Subcatchment 22S: WQA-9

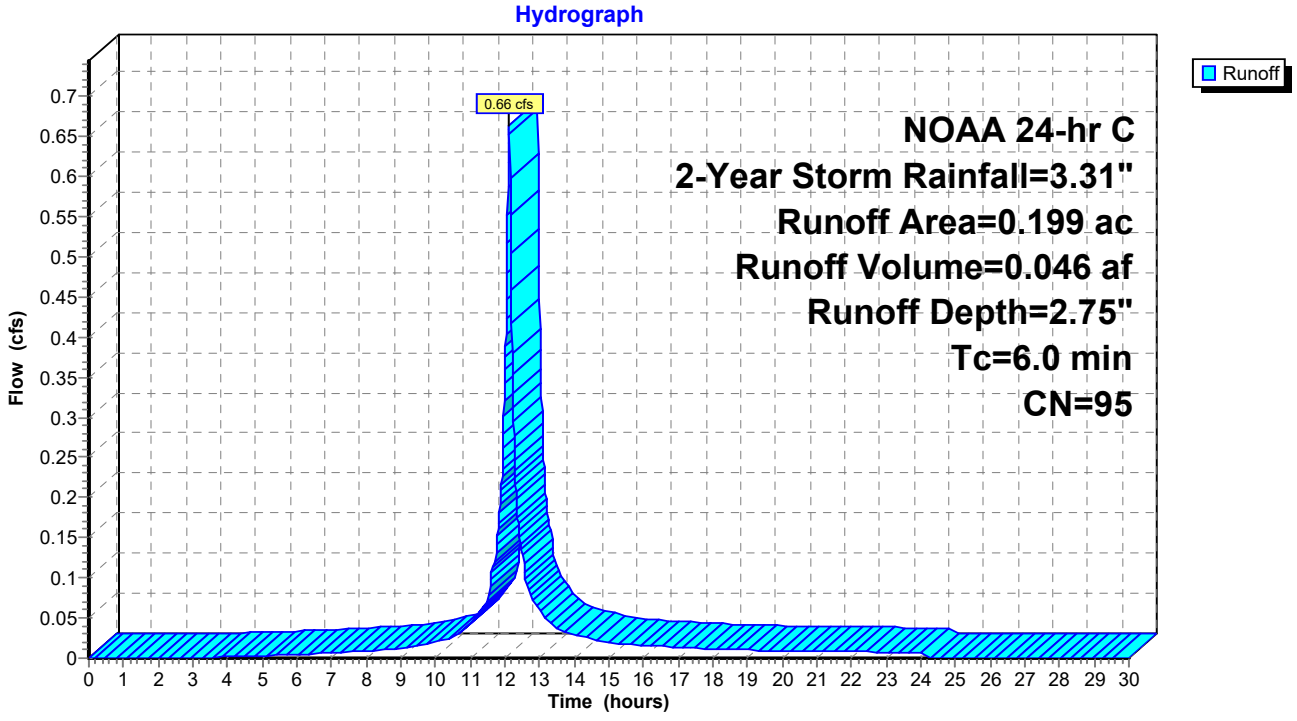
Runoff = 0.66 cfs @ 12.13 hrs, Volume= 0.046 af, Depth= 2.75"
Routed to Pond 23P : PP-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.178	98	
	0.021	74	>75% Grass cover, Good, HSG C
	0.199	95	Weighted Average
	0.021		10.55% Pervious Area
	0.178		89.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 22S: WQA-9



Summary for Subcatchment 23S: Area of Left Grass Swale

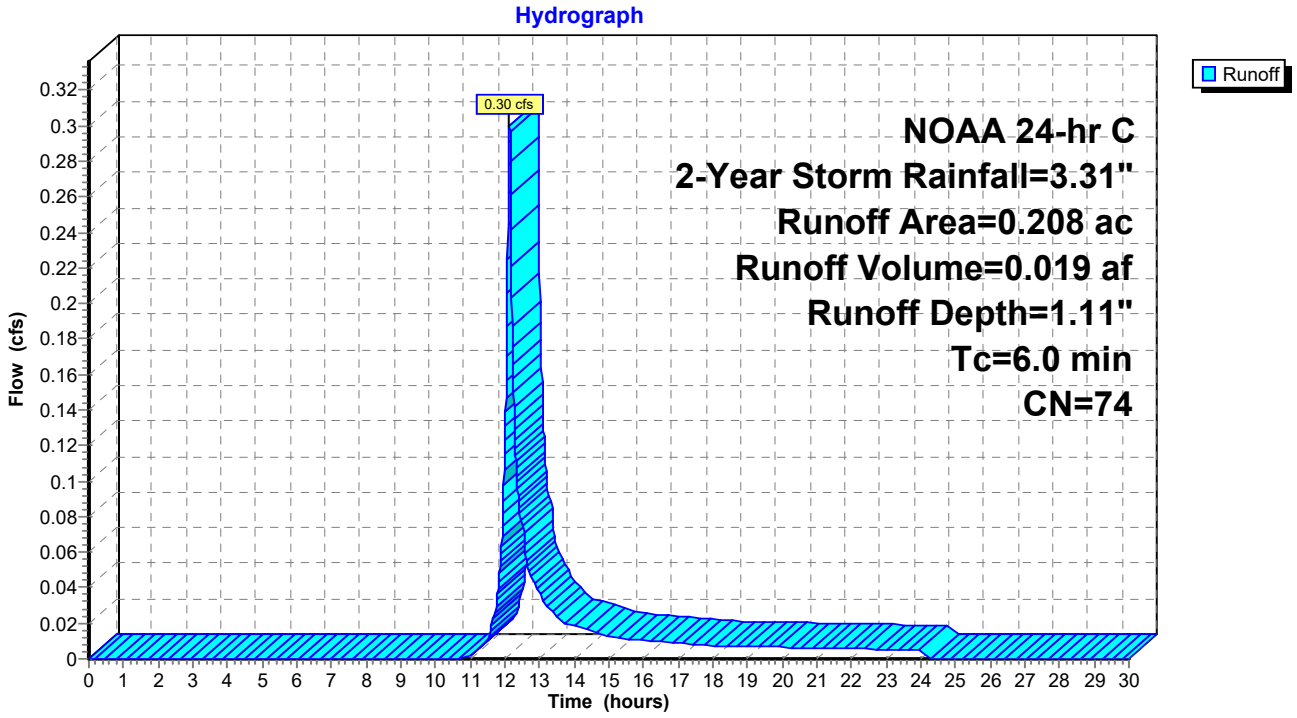
Runoff = 0.30 cfs @ 12.14 hrs, Volume= 0.019 af, Depth= 1.11"
Routed to Reach 25R : Left Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.208	74	
	0.208		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 23S: Area of Left Grass Swale



Summary for Subcatchment 24S: WQA-10

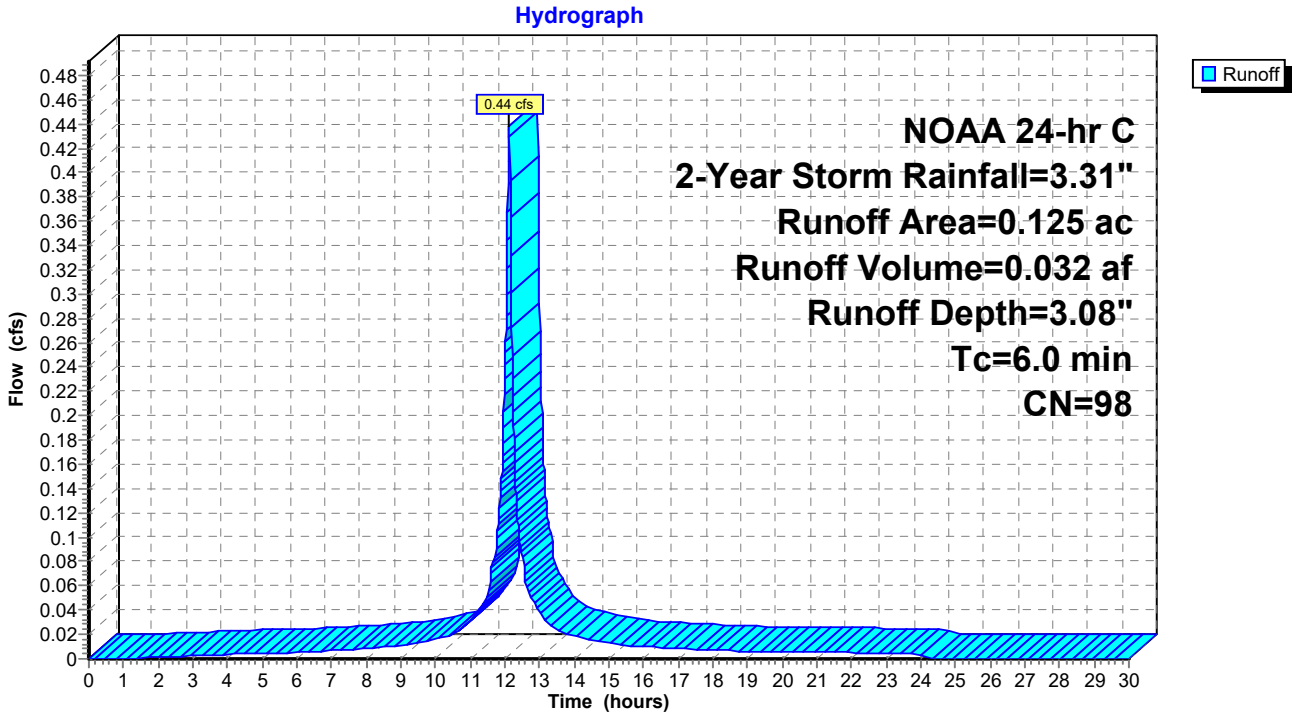
Runoff = 0.44 cfs @ 12.13 hrs, Volume= 0.032 af, Depth= 3.08"
Routed to Pond 25P : PP-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.125	98	
	0.125		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 24S: WQA-10



Summary for Subcatchment 25S: Additional Basin Area

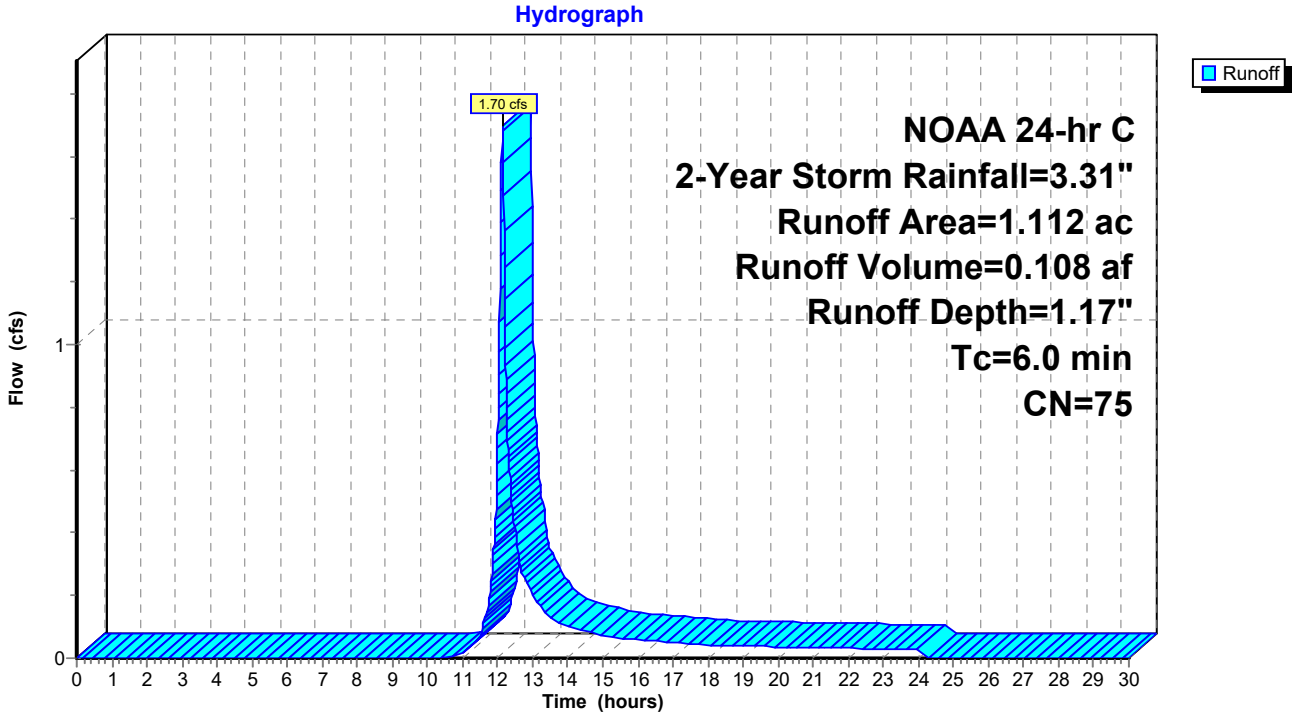
Runoff = 1.70 cfs @ 12.14 hrs, Volume= 0.108 af, Depth= 1.17"
Routed to Pond 28P : Bio Infiltration Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
	1.052	74	>75% Grass cover, Good, HSG C
*	0.060	98	
	1.112	75	Weighted Average
	1.052		94.60% Pervious Area
	0.060		5.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 25S: Additional Basin Area



Summary for Subcatchment 26S: WQA-11

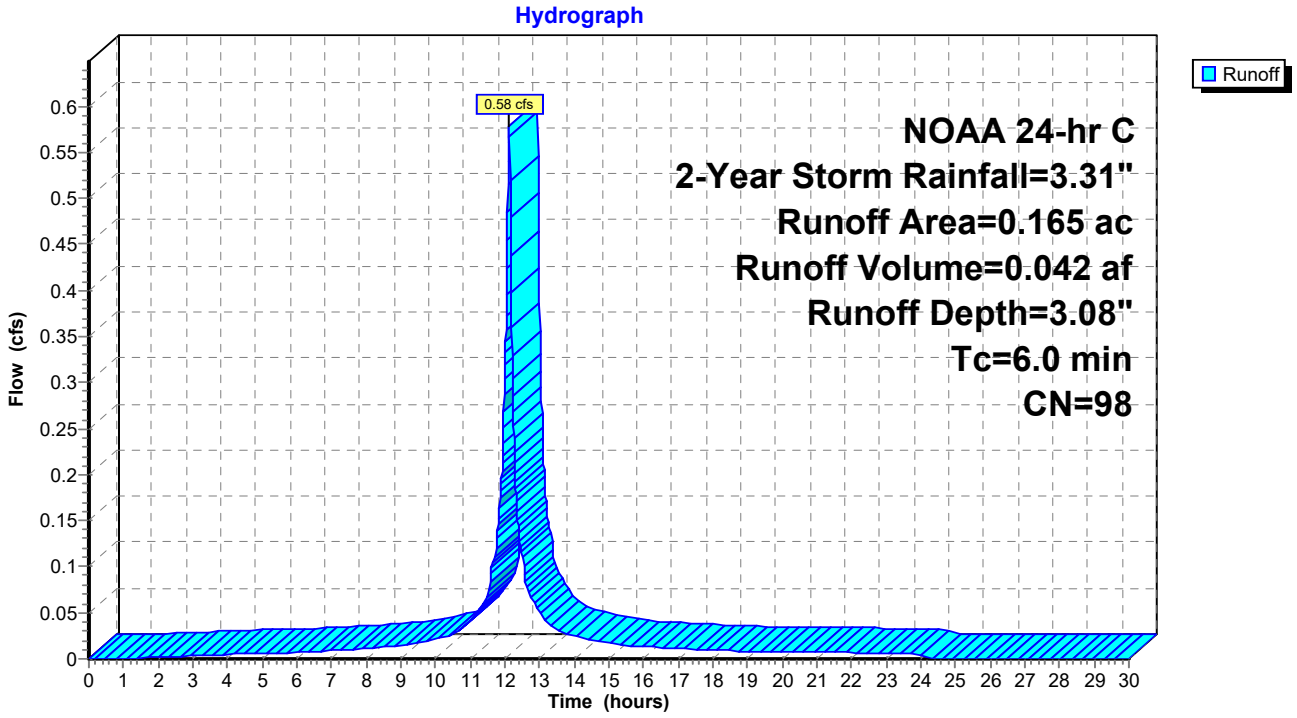
Runoff = 0.58 cfs @ 12.13 hrs, Volume= 0.042 af, Depth= 3.08"
Routed to Pond 27P : PP-11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.165	98	
	0.165		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 26S: WQA-11



Summary for Subcatchment 27S: 1/2 Highway Expansion

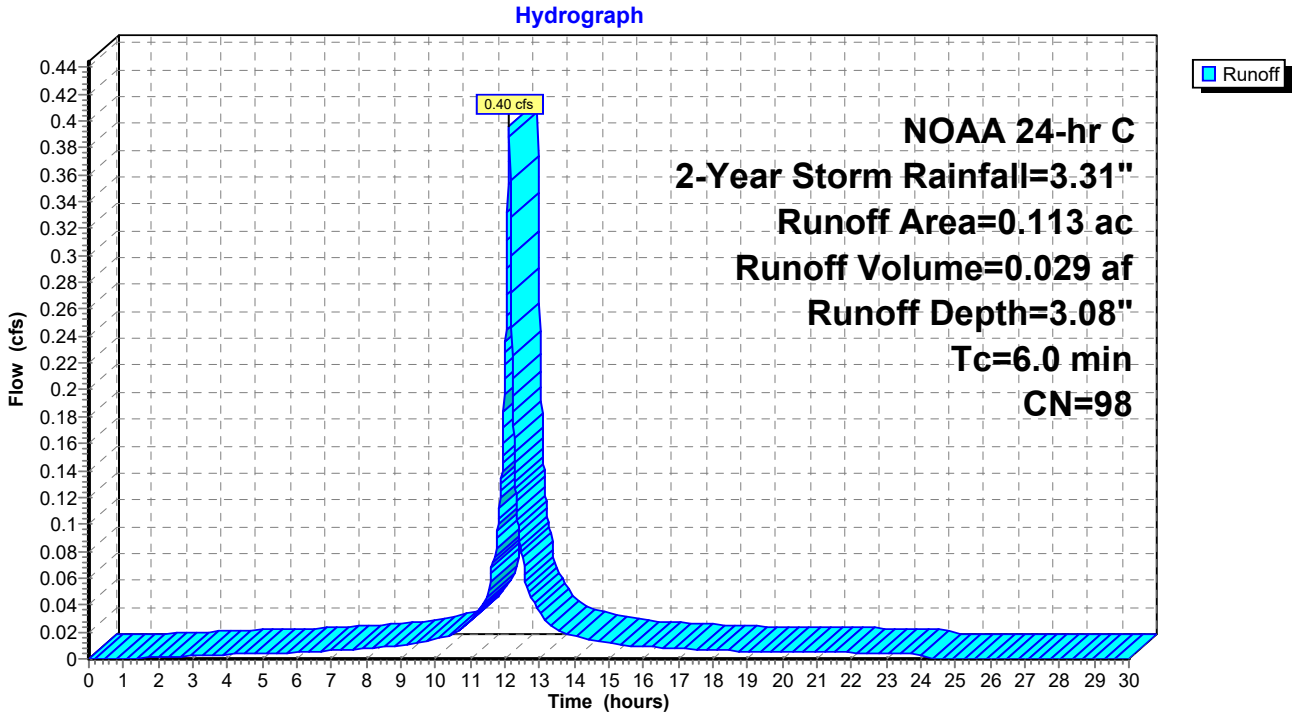
Runoff = 0.40 cfs @ 12.13 hrs, Volume= 0.029 af, Depth= 3.08"
Routed to Reach 23R : Right Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.113	98	Roadway Expansion
	0.113		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 27S: 1/2 Highway Expansion



Summary for Subcatchment 28S: Proposed & Relocated Roof

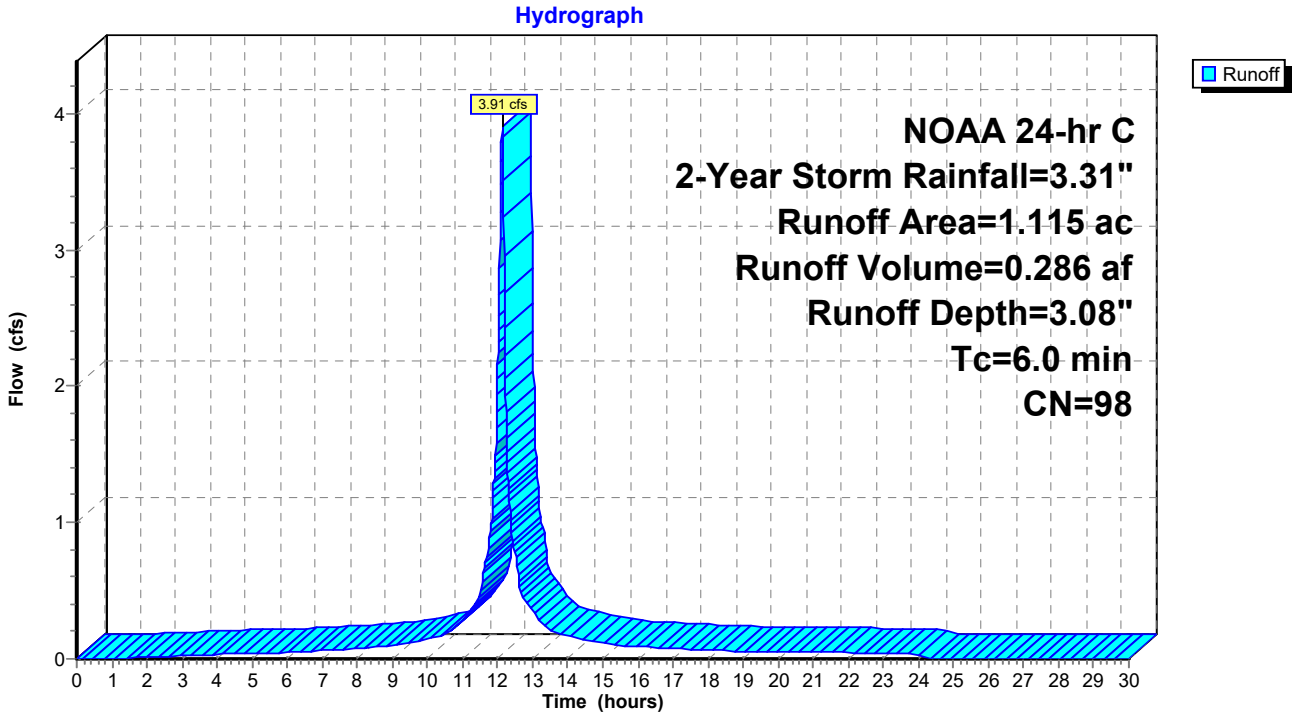
Runoff = 3.91 cfs @ 12.13 hrs, Volume= 0.286 af, Depth= 3.08"
Routed to Pond 32P : UG Roof Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

Area (ac)	CN	Description
1.115	98	Roofs, HSG C
1.115		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 28S: Proposed & Relocated Roof



Summary for Subcatchment 29S: 1/2 Highway Expansion

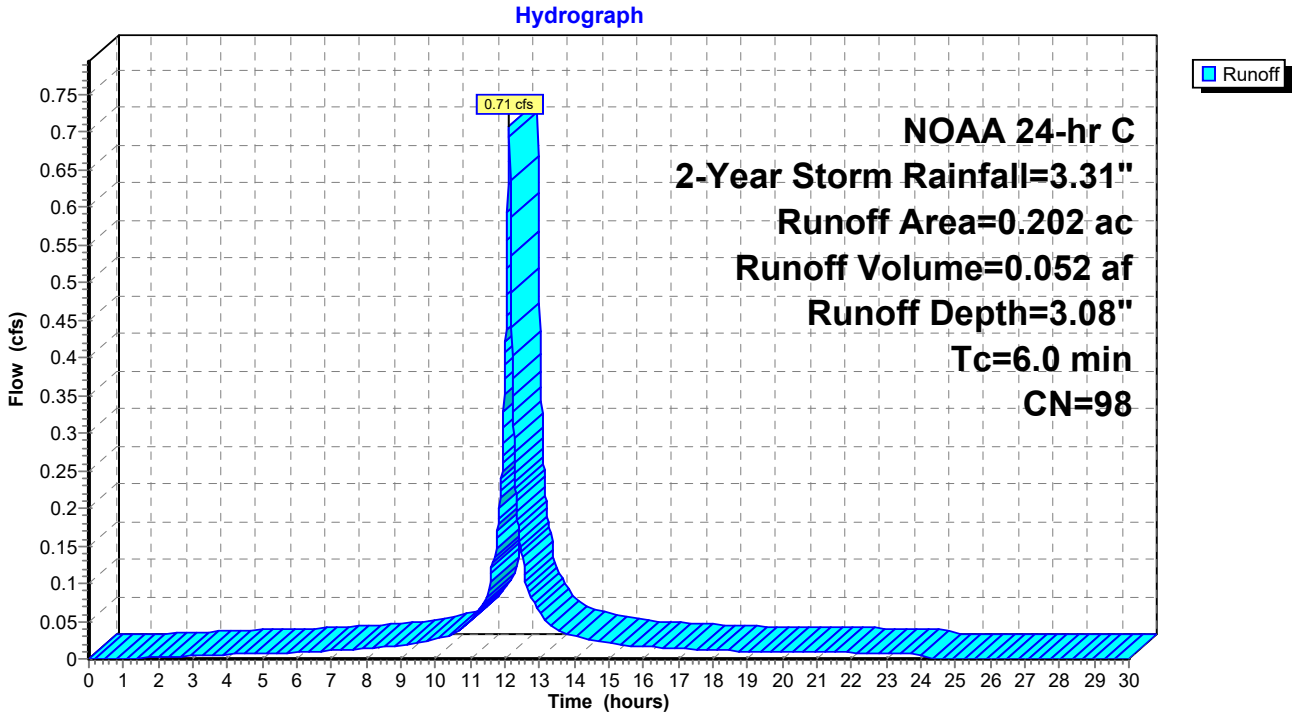
Runoff = 0.71 cfs @ 12.13 hrs, Volume= 0.052 af, Depth= 3.08"
Routed to Reach 25R : Left Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.202	98	
	0.202		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 29S: 1/2 Highway Expansion



Summary for Subcatchment 30S: (new Subcat)

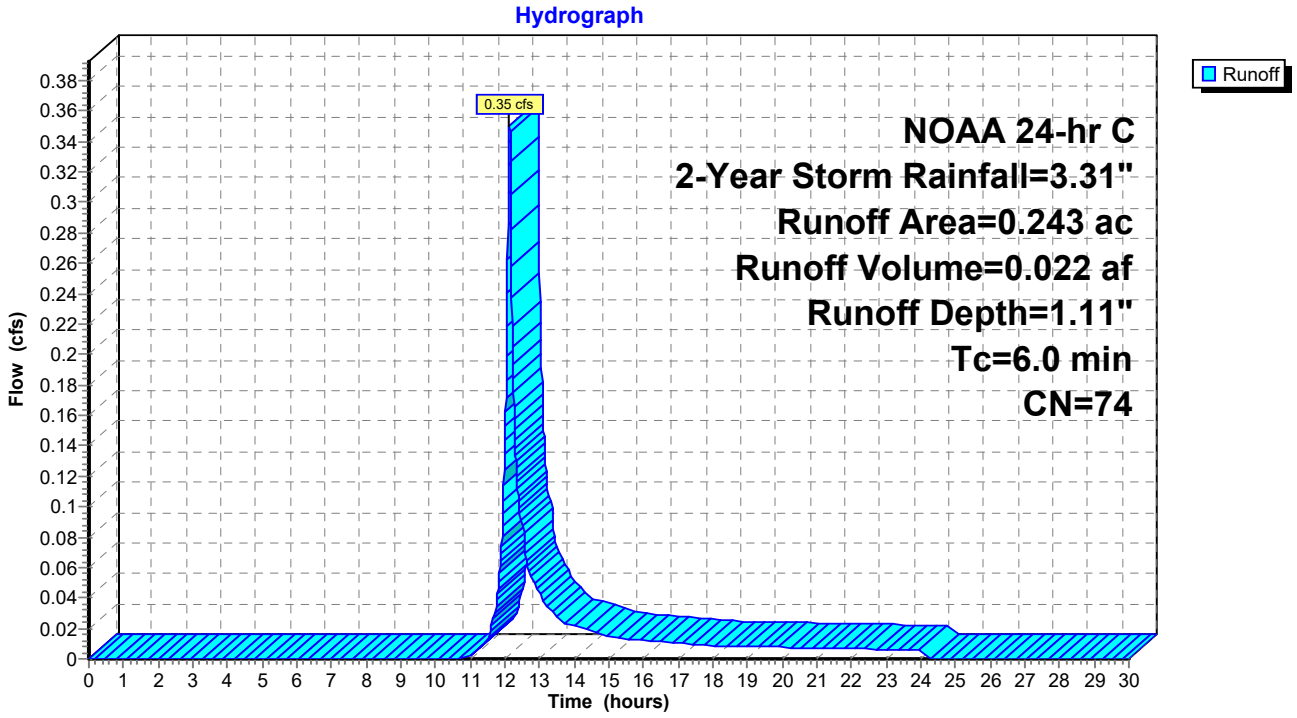
Runoff = 0.35 cfs @ 12.14 hrs, Volume= 0.022 af, Depth= 1.11"
Routed to Pond 26P : Bio Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.243	74	
	0.243		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 30S: (new Subcat)



Summary for Subcatchment 31S: (new Subcat)

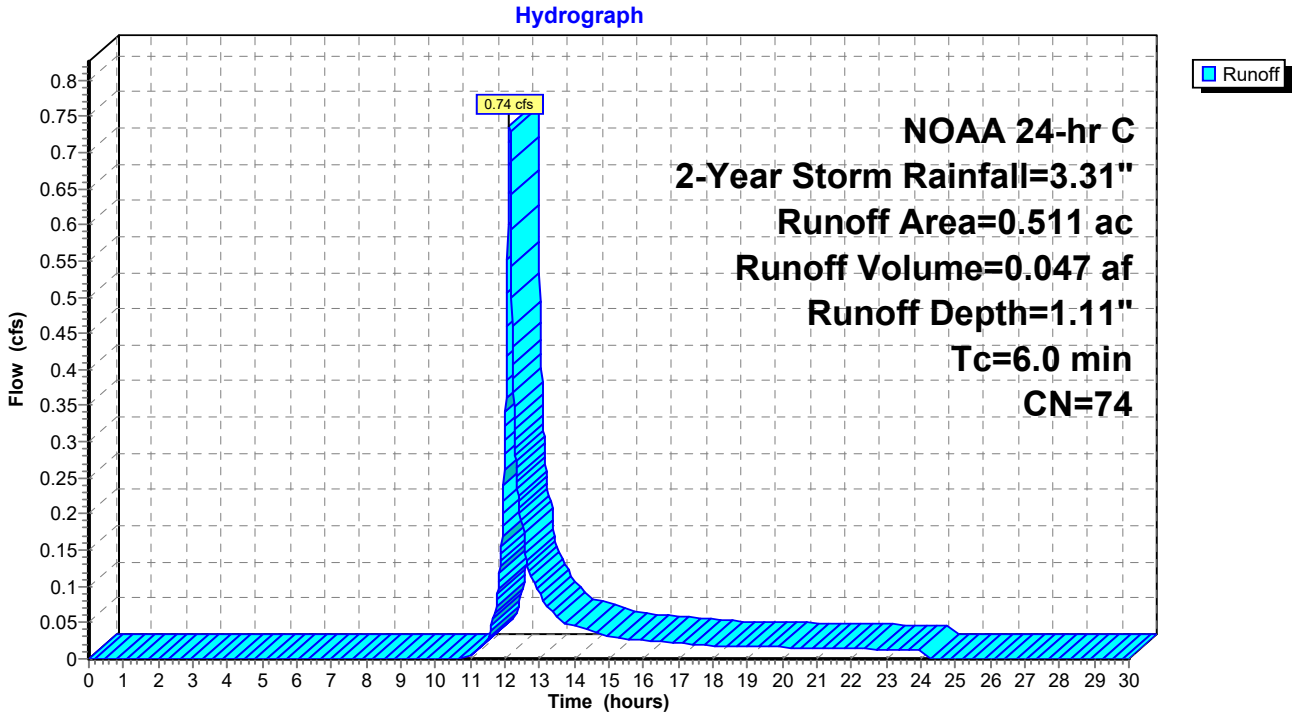
Runoff = 0.74 cfs @ 12.14 hrs, Volume= 0.047 af, Depth= 1.11"
Routed to Pond 28P : Bio Infiltration Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.511	74	
	0.511		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 31S: (new Subcat)



Summary for Subcatchment 32S: (new Subcat)

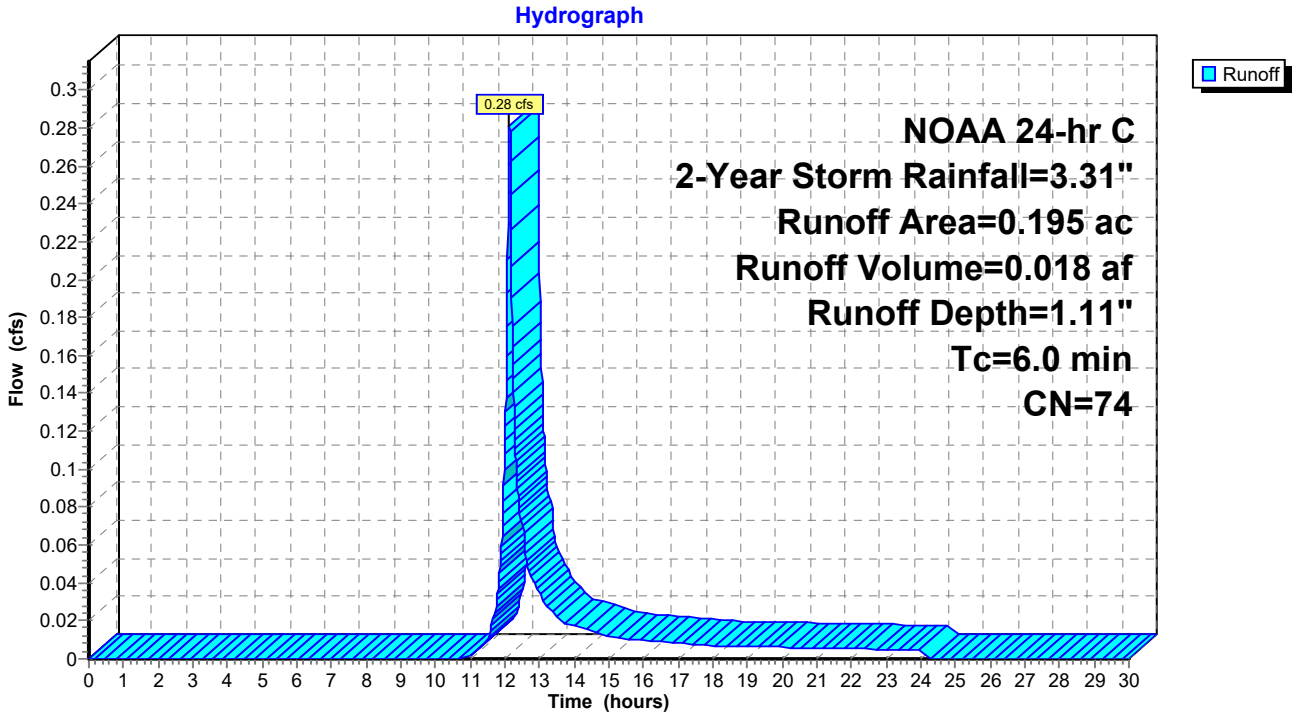
Runoff = 0.28 cfs @ 12.14 hrs, Volume= 0.018 af, Depth= 1.11"
Routed to Pond 32P : UG Roof Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

	Area (ac)	CN	Description
*	0.195	74	
	0.195		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 32S: (new Subcat)



Summary for Subcatchment 33S: Additional Basin Area

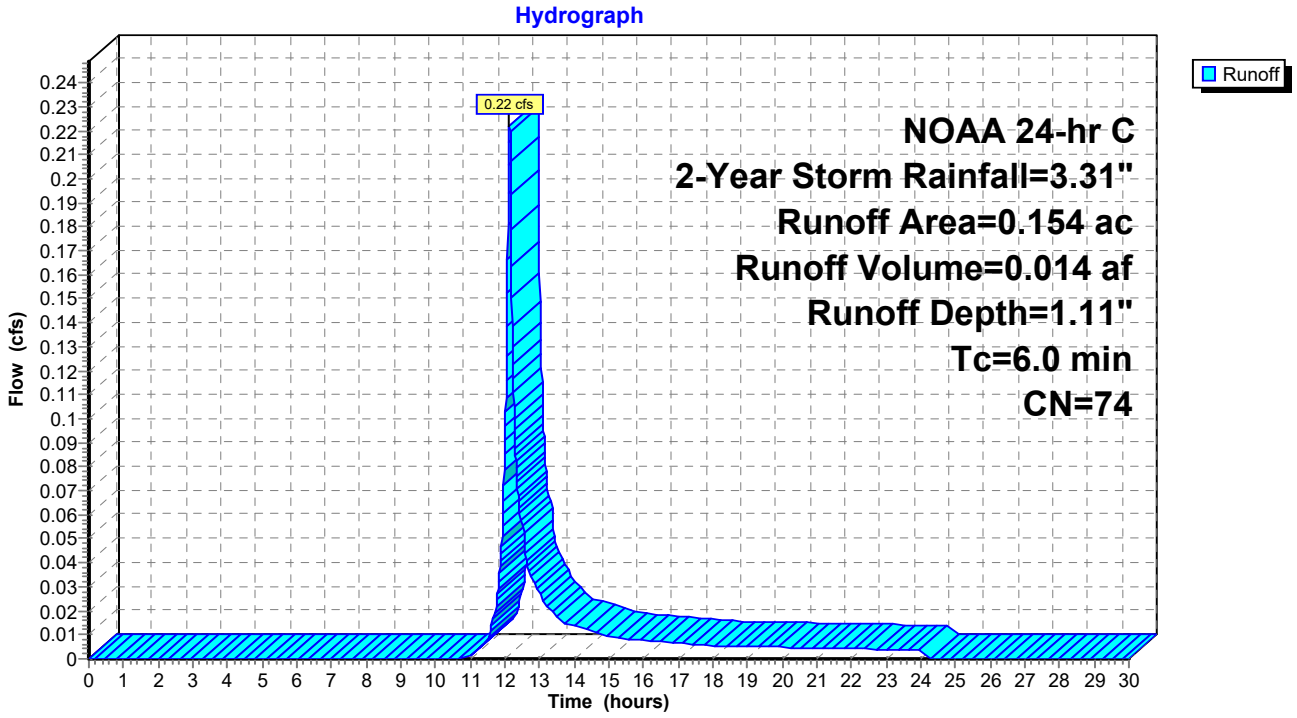
Runoff = 0.22 cfs @ 12.14 hrs, Volume= 0.014 af, Depth= 1.11"
Routed to Pond 26P : Bio Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 2-Year Storm Rainfall=3.31"

Area (ac)	CN	Description
0.154	74	>75% Grass cover, Good, HSG C
0.154		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 33S: Additional Basin Area



Summary for Reach 23R: Right Grass Swale

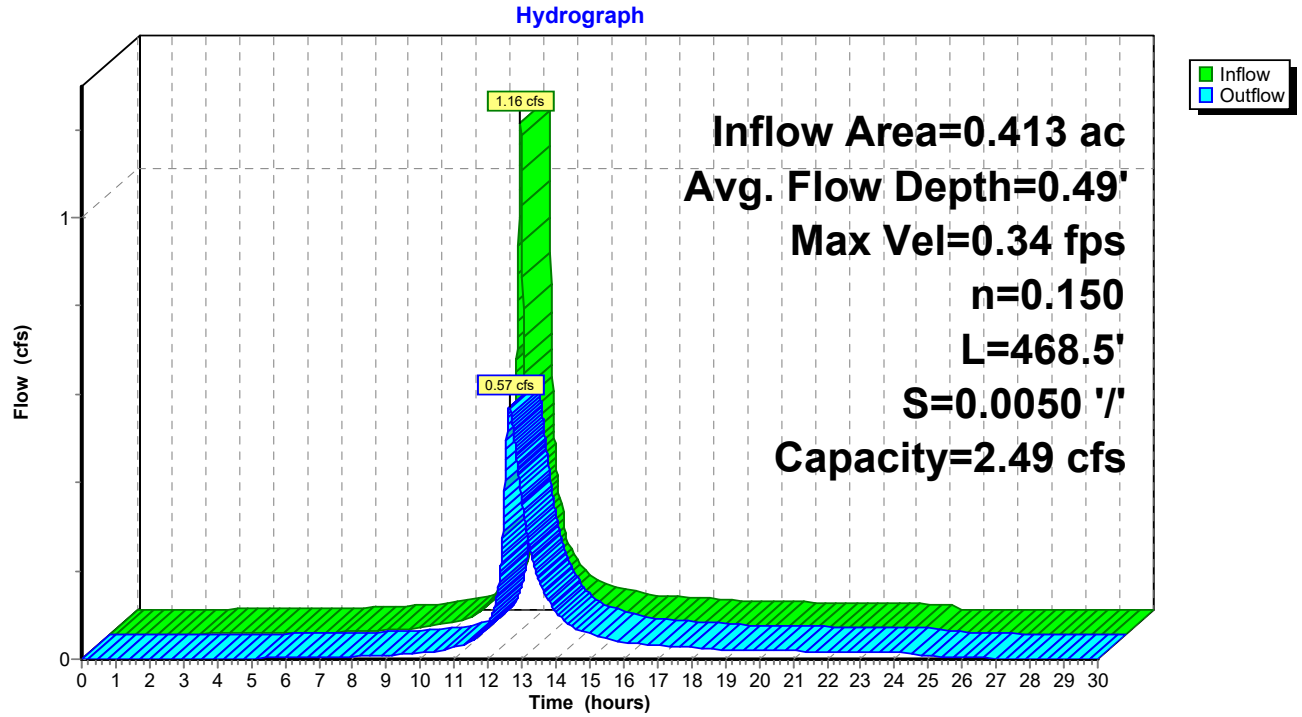
Inflow Area = 0.413 ac, 63.68% Impervious, Inflow Depth = 2.24" for 2-Year Storm event
Inflow = 1.16 cfs @ 12.13 hrs, Volume= 0.077 af
Outflow = 0.57 cfs @ 12.62 hrs, Volume= 0.077 af, Atten= 51%, Lag= 29.5 min
Routed to Reach 25R : Left Grass Swale

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.34 fps, Min. Travel Time= 23.2 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 77.0 min

Peak Storage= 794 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.49' , Surface Width= 4.93'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 2.49 cfs

2.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 468.5' Slope= 0.0050 '/'
Inlet Invert= 165.81', Outlet Invert= 163.47'

‡



Summary for Reach 25R: Left Grass Swale

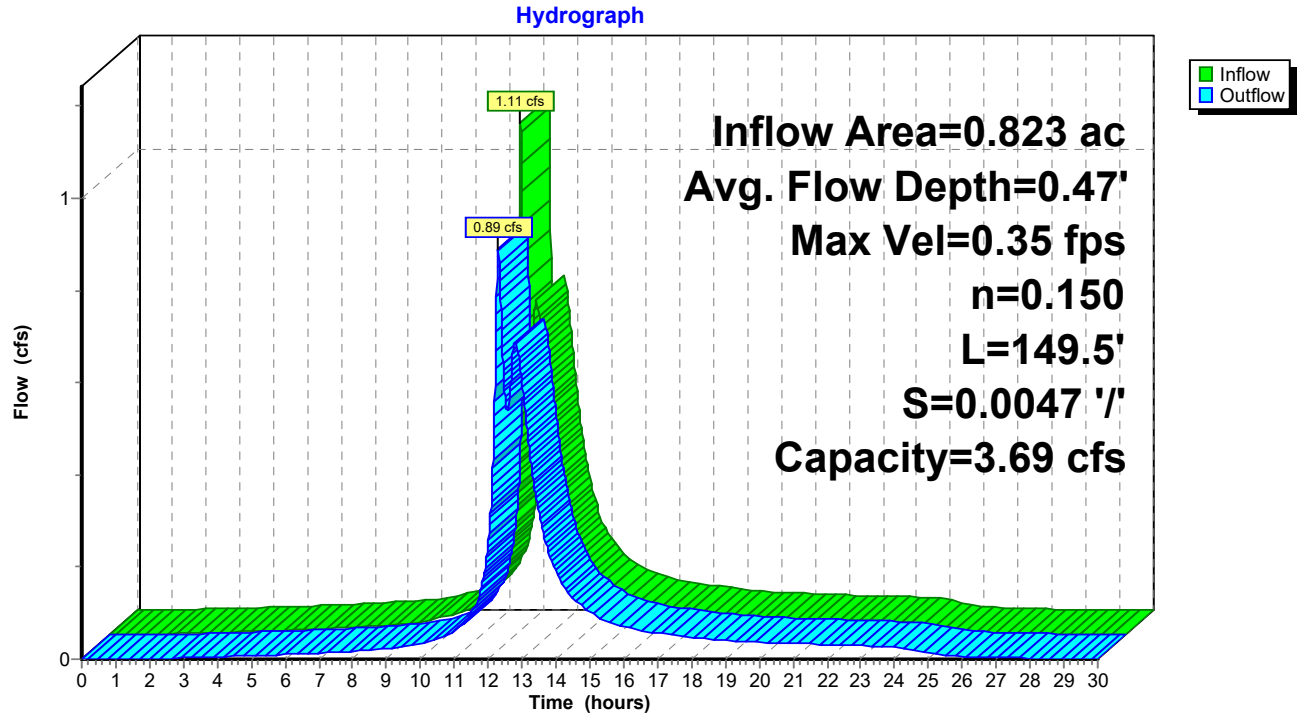
Inflow Area = 0.823 ac, 56.50% Impervious, Inflow Depth > 2.16" for 2-Year Storm event
Inflow = 1.11 cfs @ 12.13 hrs, Volume= 0.148 af
Outflow = 0.89 cfs @ 12.30 hrs, Volume= 0.148 af, Atten= 20%, Lag= 10.0 min
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.35 fps, Min. Travel Time= 7.1 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 23.4 min

Peak Storage= 382 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.47' , Surface Width= 6.83'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 3.69 cfs

4.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 10.00'
Length= 149.5' Slope= 0.0047 '/'
Inlet Invert= 159.71', Outlet Invert= 159.00'

‡



Summary for Pond 2P: PP-1

Inflow Area = 0.214 ac,100.00% Impervious, Inflow Depth = 3.08" for 2-Year Storm event
Inflow = 0.75 cfs @ 12.13 hrs, Volume= 0.055 af
Outflow = 0.42 cfs @ 12.21 hrs, Volume= 0.055 af, Atten= 44%, Lag= 5.0 min
Primary = 0.42 cfs @ 12.21 hrs, Volume= 0.055 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 165.55' @ 12.21 hrs Surf.Area= 0.067 ac Storage= 0.012 af

Plug-Flow detention time= 53.7 min calculated for 0.055 af (100% of inflow)
Center-of-Mass det. time= 51.1 min (808.0 - 756.8)

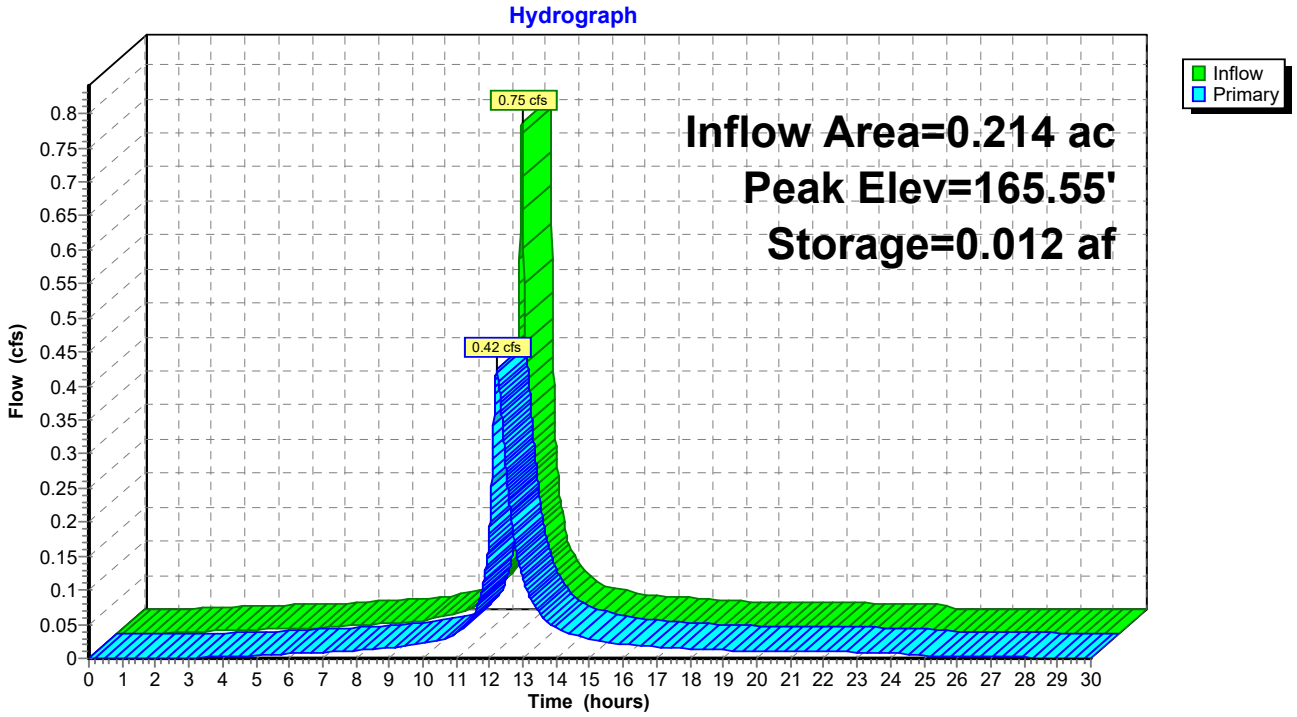
Volume	Invert	Avail.Storage	Storage Description
#1	165.10'	0.080 af	**PP-1 (Prismatic)**Listed below 0.201 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.10	0.067	0.000	0.000
168.10	0.067	0.201	0.201

Device	Routing	Invert	Outlet Devices
#1	Primary	165.10'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	166.60'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.42 cfs @ 12.21 hrs HW=165.55' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.42 cfs @ 2.28 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 2P: PP-1


Hydrograph
Inflow
Primary
0.75 cfs
0.42 cfs
Inflow Area=0.214 ac
Peak Elev=165.55'
Storage=0.012 af
Flow (cfs)
Time (hours)

Summary for Pond 4P: PP-2

Inflow Area = 0.311 ac, 94.21% Impervious, Inflow Depth = 2.97" for 2-Year Storm event
Inflow = 1.08 cfs @ 12.13 hrs, Volume= 0.077 af
Outflow = 0.25 cfs @ 12.41 hrs, Volume= 0.063 af, Atten= 77%, Lag= 16.7 min
Primary = 0.25 cfs @ 12.41 hrs, Volume= 0.063 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 162.51' @ 12.41 hrs Surf.Area= 0.130 ac Storage= 0.039 af

Plug-Flow detention time= 218.0 min calculated for 0.063 af (81% of inflow)
Center-of-Mass det. time= 142.3 min (909.0 - 766.7)

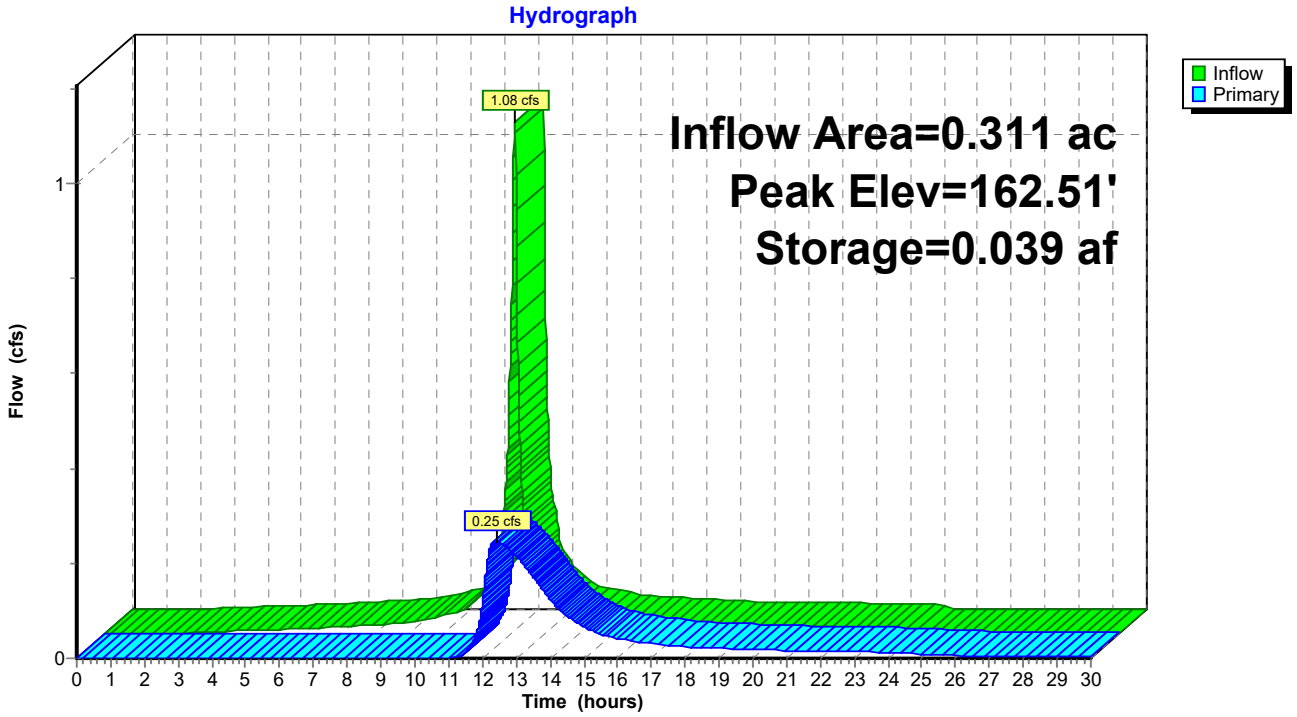
Volume	Invert	Avail.Storage	Storage Description
#1	161.75'	0.169 af	**PP-2 (Prismatic)** Listed below (Recalc) 0.423 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
161.75	0.130	0.000	0.000
165.00	0.130	0.423	0.423

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	163.50'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 12.41 hrs HW=162.51' (Free Discharge)
└─**1=4" Underdrain** (Orifice Controls 0.25 cfs @ 2.81 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 4P: PP-2


Hydrograph
Inflow
Primary
1.08 cfs
0.25 cfs
Inflow Area=0.311 ac
Peak Elev=162.51'
Storage=0.039 af
Flow (cfs)
0
1
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 6P: PP-3

Inflow Area = 0.192 ac, 81.25% Impervious, Inflow Depth = 2.55" for 2-Year Storm event
Inflow = 0.61 cfs @ 12.13 hrs, Volume= 0.041 af
Outflow = 0.22 cfs @ 12.29 hrs, Volume= 0.033 af, Atten= 64%, Lag= 9.6 min
Primary = 0.22 cfs @ 12.29 hrs, Volume= 0.033 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 158.89' @ 12.29 hrs Surf.Area= 0.060 ac Storage= 0.018 af

Plug-Flow detention time= 170.1 min calculated for 0.033 af (82% of inflow)
Center-of-Mass det. time= 95.4 min (889.3 - 794.0)

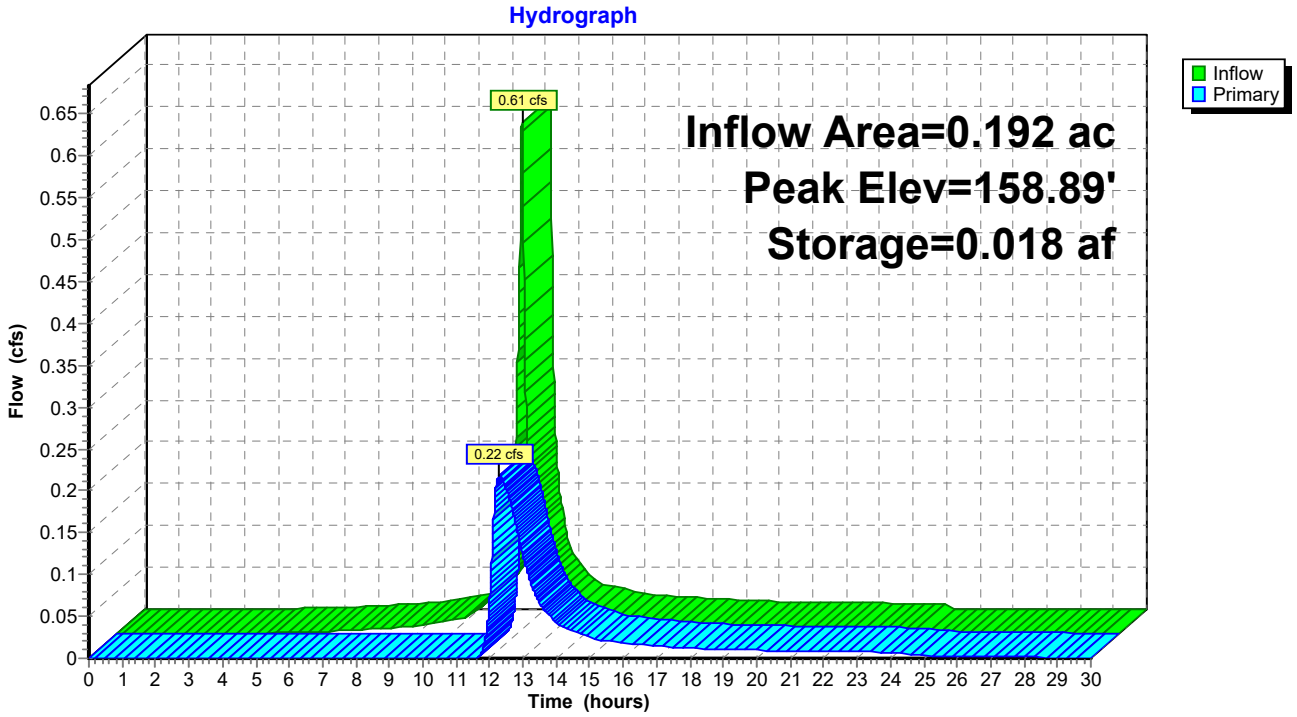
Volume	Invert	Avail.Storage	Storage Description
#1	158.15'	0.079 af	**PP-3 (Prismatic)**Listed below (Recalc) 0.197 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
158.15	0.060	0.000	0.000
161.43	0.060	0.197	0.197

Device	Routing	Invert	Outlet Devices
#1	Primary	158.45'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	159.90'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 12.29 hrs HW=158.89' (Free Discharge)
└**1=4" Underdrain** (Orifice Controls 0.22 cfs @ 2.50 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 6P: PP-3


Hydrograph
Inflow
Primary
0.61 cfs
0.22 cfs
Inflow Area=0.192 ac
Peak Elev=158.89'
Storage=0.018 af
Flow (cfs)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 8P: PP-4

Inflow Area = 0.206 ac, 68.93% Impervious, Inflow Depth = 2.36" for 2-Year Storm event
Inflow = 0.62 cfs @ 12.13 hrs, Volume= 0.041 af
Outflow = 0.25 cfs @ 12.27 hrs, Volume= 0.038 af, Atten= 60%, Lag= 8.4 min
Primary = 0.25 cfs @ 12.27 hrs, Volume= 0.038 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 169.97' @ 12.27 hrs Surf.Area= 0.052 ac Storage= 0.013 af

Plug-Flow detention time= 94.0 min calculated for 0.038 af (95% of inflow)
Center-of-Mass det. time= 63.1 min (867.1 - 804.0)

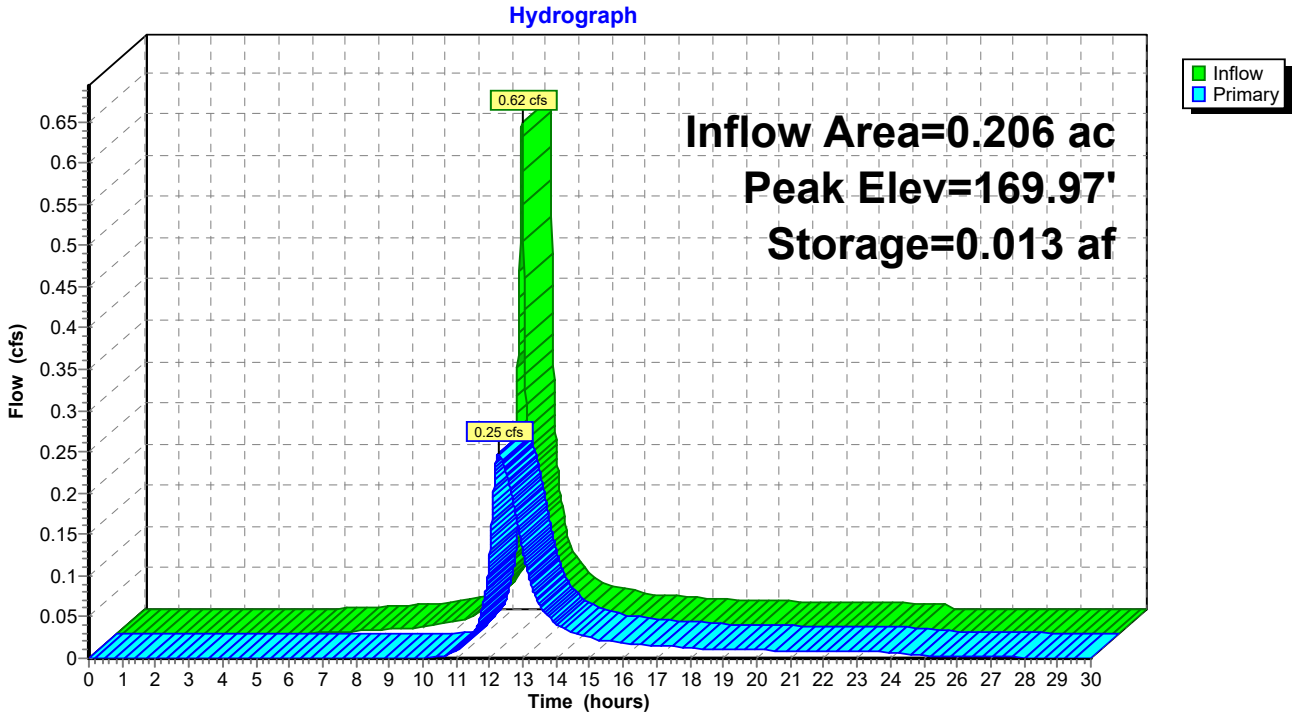
Volume	Invert	Avail.Storage	Storage Description
#1	169.35'	0.068 af	**PP-4 (Prismatic)**Listed below (Recalc) 0.170 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.35	0.052	0.000	0.000
172.62	0.052	0.170	0.170

Device	Routing	Invert	Outlet Devices
#1	Primary	169.45'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	171.10'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 12.27 hrs HW=169.96' (Free Discharge)
└─**1=4" Underdrain** (Orifice Controls 0.25 cfs @ 2.84 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 8P: PP-4


Hydrograph
Inflow
Primary
0.62 cfs
0.25 cfs
Inflow Area=0.206 ac
Peak Elev=169.97'
Storage=0.013 af
Flow (cfs)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 10P: PP-5

Inflow Area = 0.087 ac, 88.51% Impervious, Inflow Depth = 2.75" for 2-Year Storm event
Inflow = 0.29 cfs @ 12.13 hrs, Volume= 0.020 af
Outflow = 0.19 cfs @ 12.19 hrs, Volume= 0.015 af, Atten= 33%, Lag= 3.9 min
Primary = 0.19 cfs @ 12.19 hrs, Volume= 0.015 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 167.62' @ 12.19 hrs Surf.Area= 0.027 ac Storage= 0.008 af

Plug-Flow detention time= 183.2 min calculated for 0.015 af (73% of inflow)
Center-of-Mass det. time= 93.2 min (875.2 - 782.0)

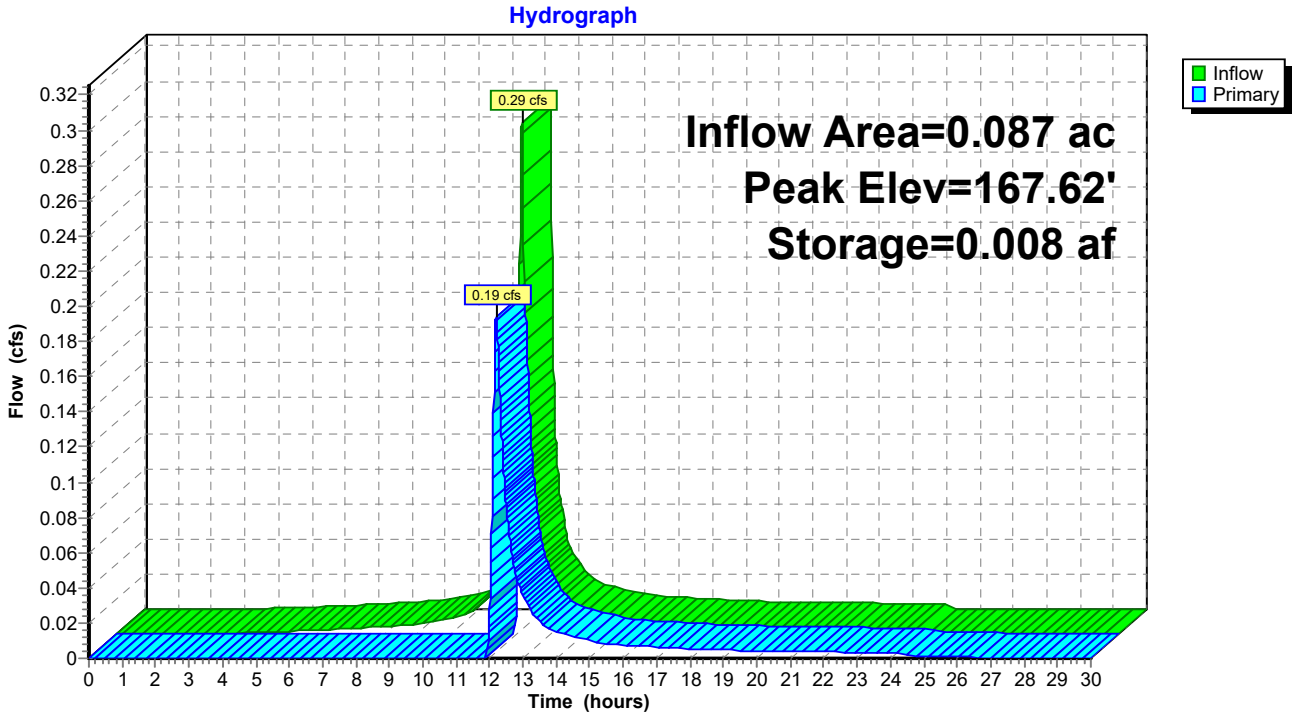
Volume	Invert	Avail.Storage	Storage Description
#1	166.85'	0.030 af	**PP-5 (Prismatic)**Listed below (Recalc) 0.074 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
166.85	0.027	0.000	0.000
169.60	0.027	0.074	0.074

Device	Routing	Invert	Outlet Devices
#1	Primary	167.35'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	168.10'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 12.19 hrs HW=167.62' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.19 cfs @ 1.77 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 10P: PP-5


Hydrograph
Inflow
Primary
0.29 cfs
0.19 cfs
Inflow Area=0.087 ac
Peak Elev=167.62'
Storage=0.008 af
Flow (cfs)
Time (hours)
0 0.02 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 12P: PP-6

Inflow Area = 0.258 ac, 91.47% Impervious, Inflow Depth = 2.86" for 2-Year Storm event
Inflow = 0.88 cfs @ 12.13 hrs, Volume= 0.061 af
Outflow = 0.43 cfs @ 12.23 hrs, Volume= 0.061 af, Atten= 52%, Lag= 6.3 min
Primary = 0.43 cfs @ 12.23 hrs, Volume= 0.061 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.65' @ 12.23 hrs Surf.Area= 0.091 ac Storage= 0.016 af

Plug-Flow detention time= 66.4 min calculated for 0.061 af (99% of inflow)
Center-of-Mass det. time= 61.5 min (836.4 - 774.9)

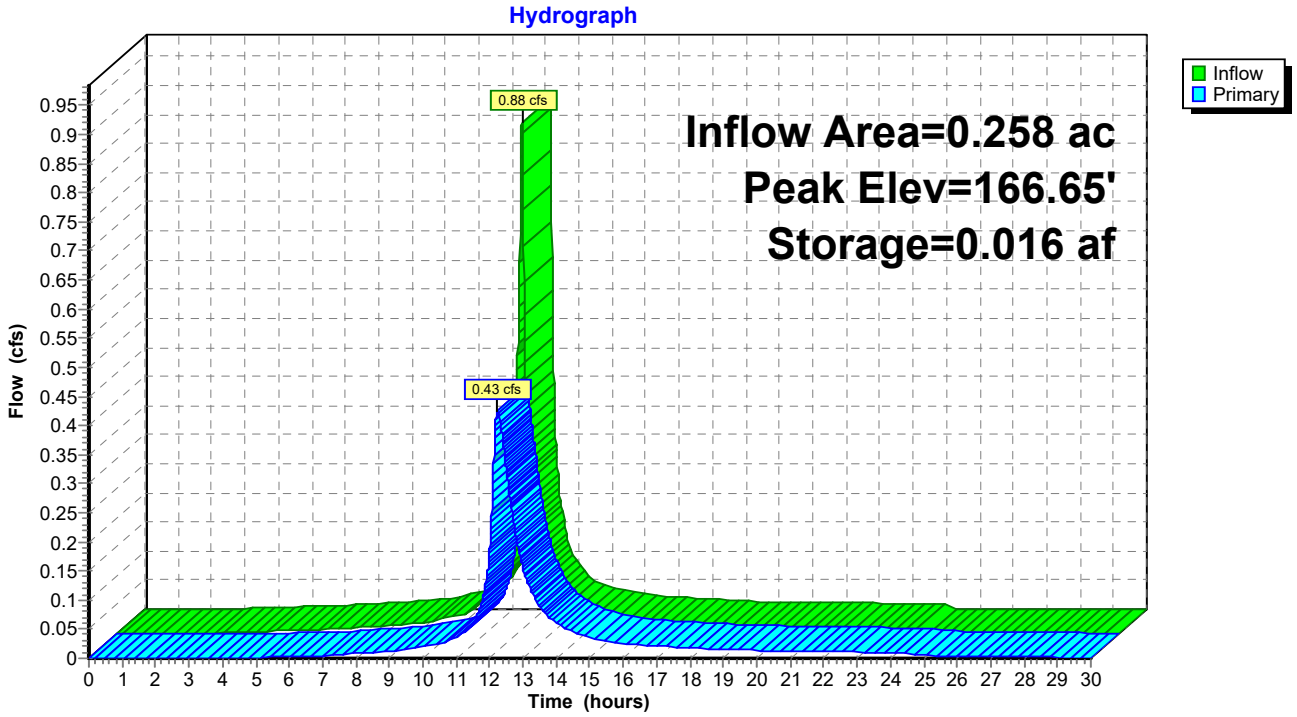
Volume	Invert	Avail.Storage	Storage Description
#1	166.20'	0.110 af	**PP-6 (Prismatic)** Listed below (Recalc) 0.275 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
166.20	0.091	0.000	0.000
169.22	0.091	0.275	0.275

Device	Routing	Invert	Outlet Devices
#1	Primary	166.20'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	167.70'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.43 cfs @ 12.23 hrs HW=166.65' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.43 cfs @ 2.28 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 12P: PP-6


Hydrograph
Inflow
Primary
0.88 cfs
0.43 cfs
Inflow Area=0.258 ac
Peak Elev=166.65'
Storage=0.016 af
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 14P: PP-7

Inflow Area = 0.226 ac, 90.71% Impervious, Inflow Depth = 2.86" for 2-Year Storm event
Inflow = 0.77 cfs @ 12.13 hrs, Volume= 0.054 af
Outflow = 0.37 cfs @ 12.24 hrs, Volume= 0.053 af, Atten= 52%, Lag= 6.5 min
Primary = 0.37 cfs @ 12.24 hrs, Volume= 0.053 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 168.95' @ 12.24 hrs Surf.Area= 0.093 ac Storage= 0.015 af

Plug-Flow detention time= 71.9 min calculated for 0.053 af (99% of inflow)
Center-of-Mass det. time= 65.4 min (840.4 - 774.9)

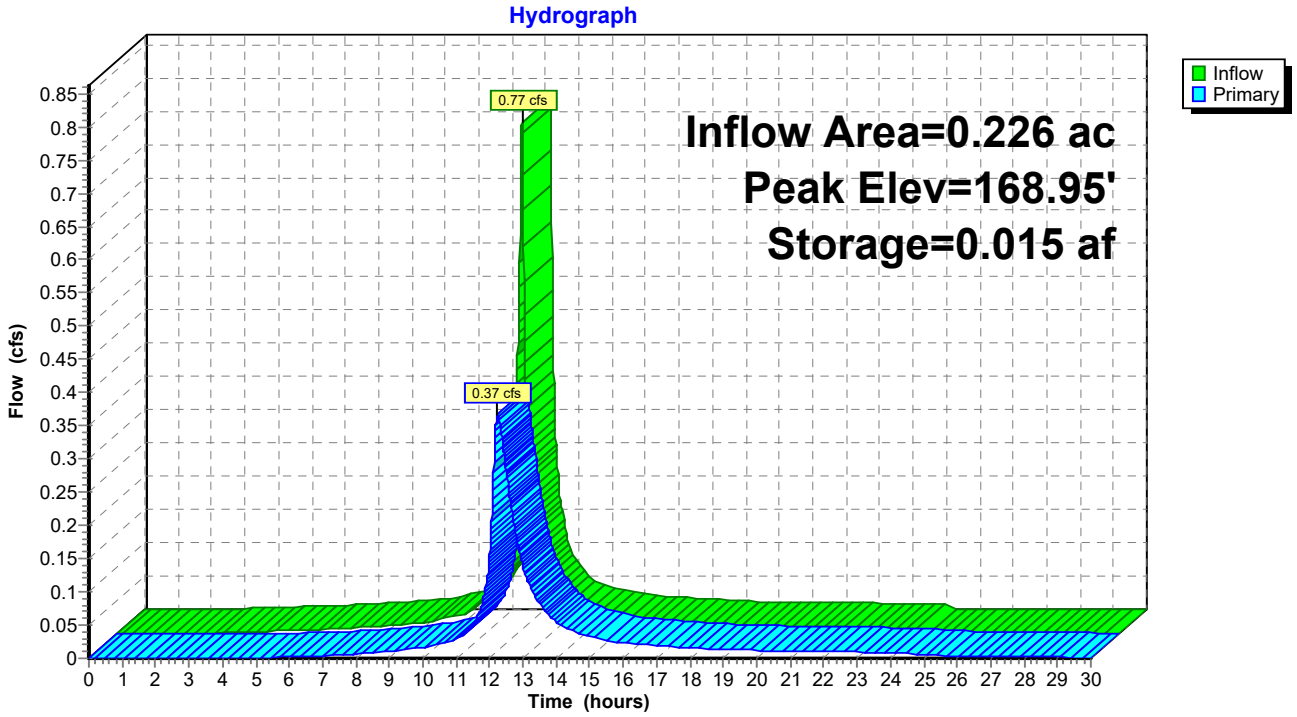
Volume	Invert	Avail.Storage	Storage Description
#1	168.55'	0.093 af	**PP-7 (Prismatic)**Listed below (Recalc) 0.233 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
168.55	0.093	0.000	0.000
171.06	0.093	0.233	0.233

Device	Routing	Invert	Outlet Devices
#1	Primary	168.55'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	169.50'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.37 cfs @ 12.24 hrs HW=168.95' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.37 cfs @ 2.16 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 14P: PP-7


Hydrograph
Inflow
Primary
0.77 cfs
0.37 cfs
Inflow Area=0.226 ac
Peak Elev=168.95'
Storage=0.015 af
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 20P: PP-8

Inflow Area = 0.174 ac, 80.46% Impervious, Inflow Depth = 2.55" for 2-Year Storm event
Inflow = 0.55 cfs @ 12.13 hrs, Volume= 0.037 af
Outflow = 0.30 cfs @ 12.22 hrs, Volume= 0.028 af, Atten= 46%, Lag= 5.4 min
Primary = 0.30 cfs @ 12.22 hrs, Volume= 0.028 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.60' @ 12.22 hrs Surf.Area= 0.046 ac Storage= 0.016 af

Plug-Flow detention time= 179.4 min calculated for 0.028 af (75% of inflow)
Center-of-Mass det. time= 91.8 min (885.8 - 794.0)

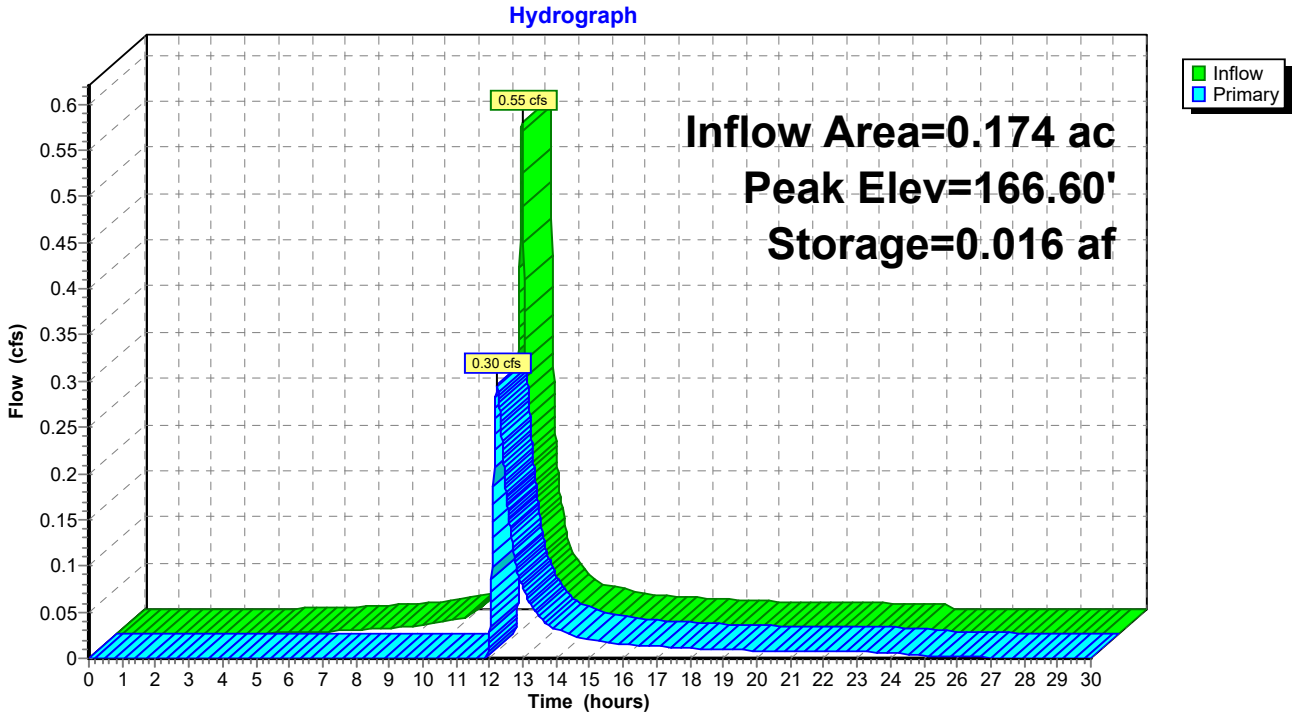
Volume	Invert	Avail.Storage	Storage Description
#1	165.75'	0.056 af	**PP-8 (Prismatic)**Listed below (Recalc) 0.141 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.75	0.046	0.000	0.000
168.81	0.046	0.141	0.141

Device	Routing	Invert	Outlet Devices
#1	Primary	166.25'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	167.25'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.30 cfs @ 12.22 hrs HW=166.60' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.30 cfs @ 2.02 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 20P: PP-8


Hydrograph
Inflow
Primary
0.55 cfs
0.30 cfs
Inflow Area=0.174 ac
Peak Elev=166.60'
Storage=0.016 af
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 23P: PP-9

Inflow Area = 0.199 ac, 89.45% Impervious, Inflow Depth = 2.75" for 2-Year Storm event
Inflow = 0.66 cfs @ 12.13 hrs, Volume= 0.046 af
Outflow = 0.31 cfs @ 12.24 hrs, Volume= 0.045 af, Atten= 53%, Lag= 6.6 min
Primary = 0.31 cfs @ 12.24 hrs, Volume= 0.045 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 170.11' @ 12.24 hrs Surf.Area= 0.090 ac Storage= 0.013 af

Plug-Flow detention time= 73.9 min calculated for 0.045 af (99% of inflow)
Center-of-Mass det. time= 67.1 min (849.1 - 782.0)

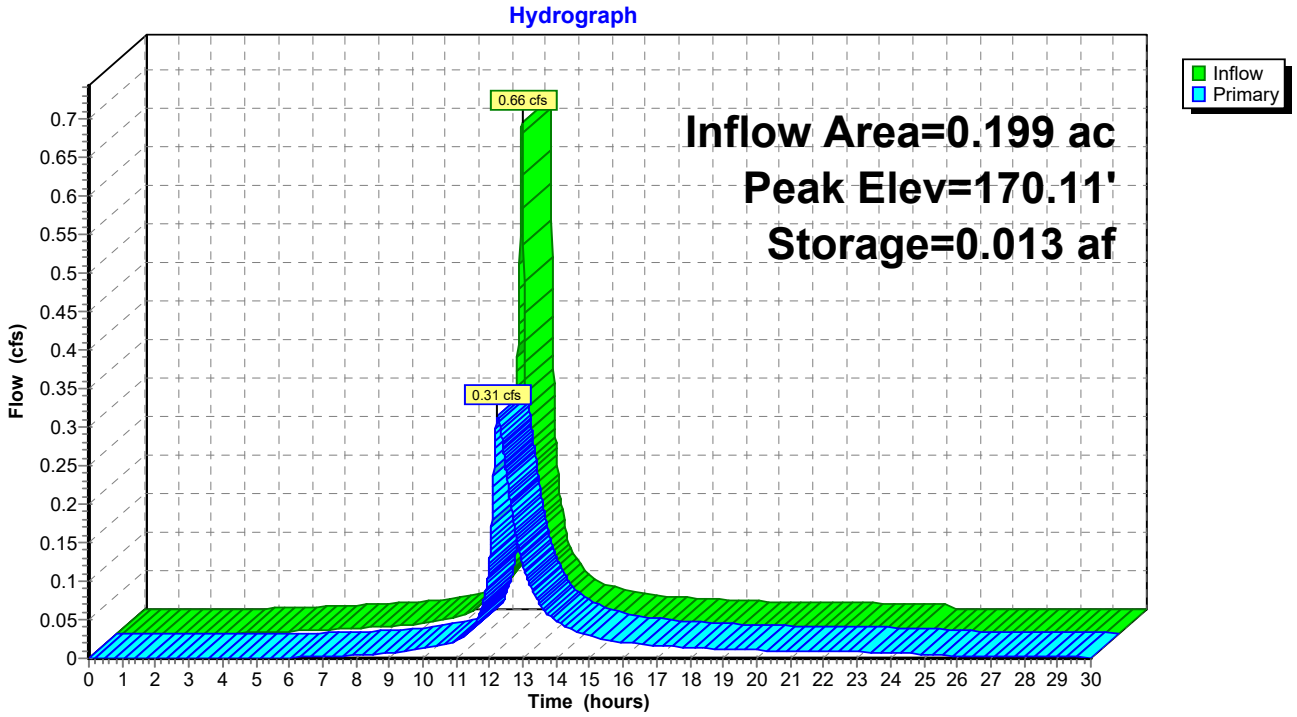
Volume	Invert	Avail.Storage	Storage Description
#1	169.75'	0.090 af	**PP-9 (Prismatic)**Listed below (Recalc) 0.224 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.75	0.090	0.000	0.000
172.24	0.090	0.224	0.224

Device	Routing	Invert	Outlet Devices
#1	Primary	169.75'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	170.95'	**4.0" Vert. 4" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.31 cfs @ 12.24 hrs HW=170.11' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.31 cfs @ 2.05 fps)
└**2=4" Overflow** (Controls 0.00 cfs)

Pond 23P: PP-9


Hydrograph
Inflow
Primary
0.66 cfs
0.31 cfs
Inflow Area=0.199 ac
Peak Elev=170.11'
Storage=0.013 af
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 25P: PP-10

Inflow Area = 0.125 ac,100.00% Impervious, Inflow Depth = 3.08" for 2-Year Storm event
Inflow = 0.44 cfs @ 12.13 hrs, Volume= 0.032 af
Outflow = 0.15 cfs @ 12.30 hrs, Volume= 0.020 af, Atten= 67%, Lag= 10.3 min
Primary = 0.15 cfs @ 12.30 hrs, Volume= 0.020 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 169.93' @ 12.30 hrs Surf.Area= 0.060 ac Storage= 0.018 af

Plug-Flow detention time= 259.7 min calculated for 0.020 af (62% of inflow)
Center-of-Mass det. time= 152.3 min (909.1 - 756.8)

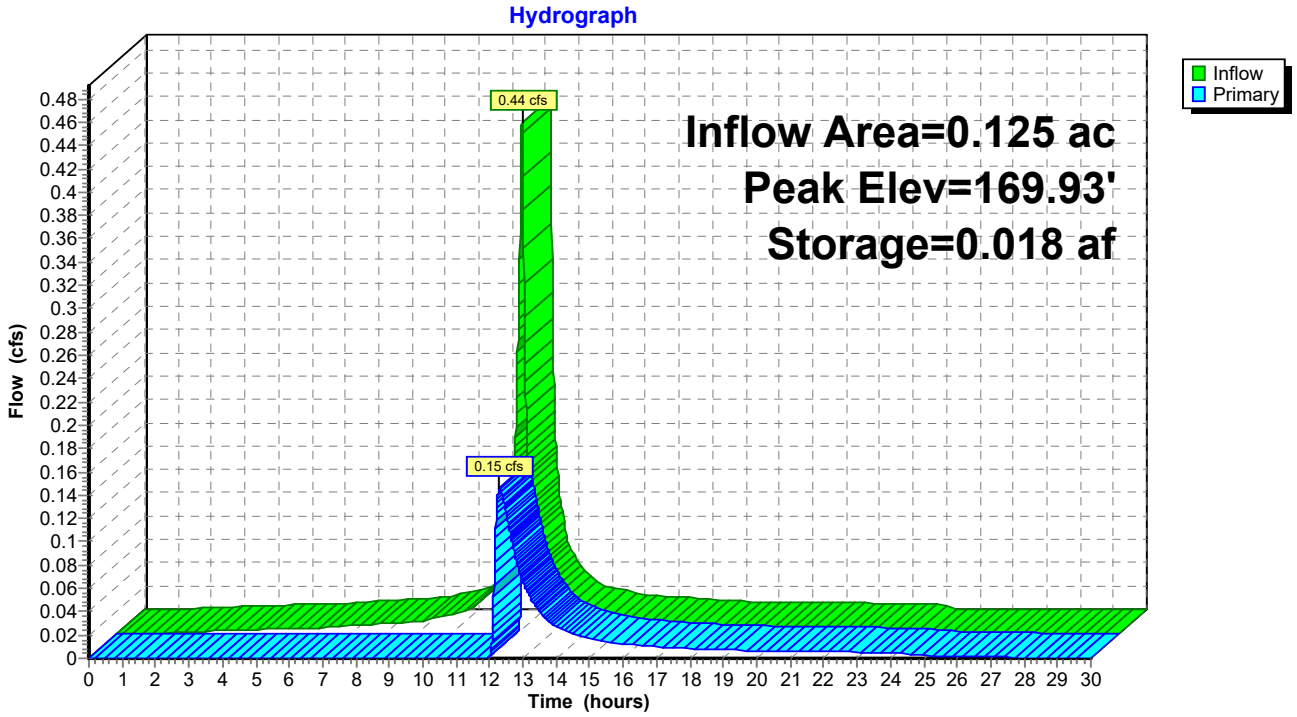
Volume	Invert	Avail.Storage	Storage Description
#1	169.20'	0.073 af	**PP-10 (Prismatic)**Listed below (Recalc) 0.182 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.20	0.060	0.000	0.000
172.24	0.060	0.182	0.182

Device	Routing	Invert	Outlet Devices
#1	Primary	169.70'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	170.70'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.15 cfs @ 12.30 hrs HW=169.93' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.15 cfs @ 1.64 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 25P: PP-10



Summary for Pond 26P: Bio Infiltration Basin 1

[62] Hint: Exceeded Reach 25R OUTLET depth by 0.27' @ 16.89 hrs
[81] Warning: Exceeded Pond 6P by 0.84' @ 16.71 hrs

Inflow Area = 2.500 ac, 62.96% Impervious, Inflow Depth > 2.15" for 2-Year Storm event
Inflow = 2.77 cfs @ 12.28 hrs, Volume= 0.448 af
Outflow = 0.21 cfs @ 16.24 hrs, Volume= 0.243 af, Atten= 92%, Lag= 237.6 min
Discarded = 0.10 cfs @ 16.24 hrs, Volume= 0.163 af
Primary = 0.12 cfs @ 16.24 hrs, Volume= 0.080 af
Routed to Link 18L : Proposed Flows (South)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 159.37' @ 16.24 hrs Surf.Area= 0.186 ac Storage= 0.280 af

Plug-Flow detention time= 424.5 min calculated for 0.243 af (54% of inflow)
Center-of-Mass det. time= 291.1 min (1,151.5 - 860.4)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	0.859 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

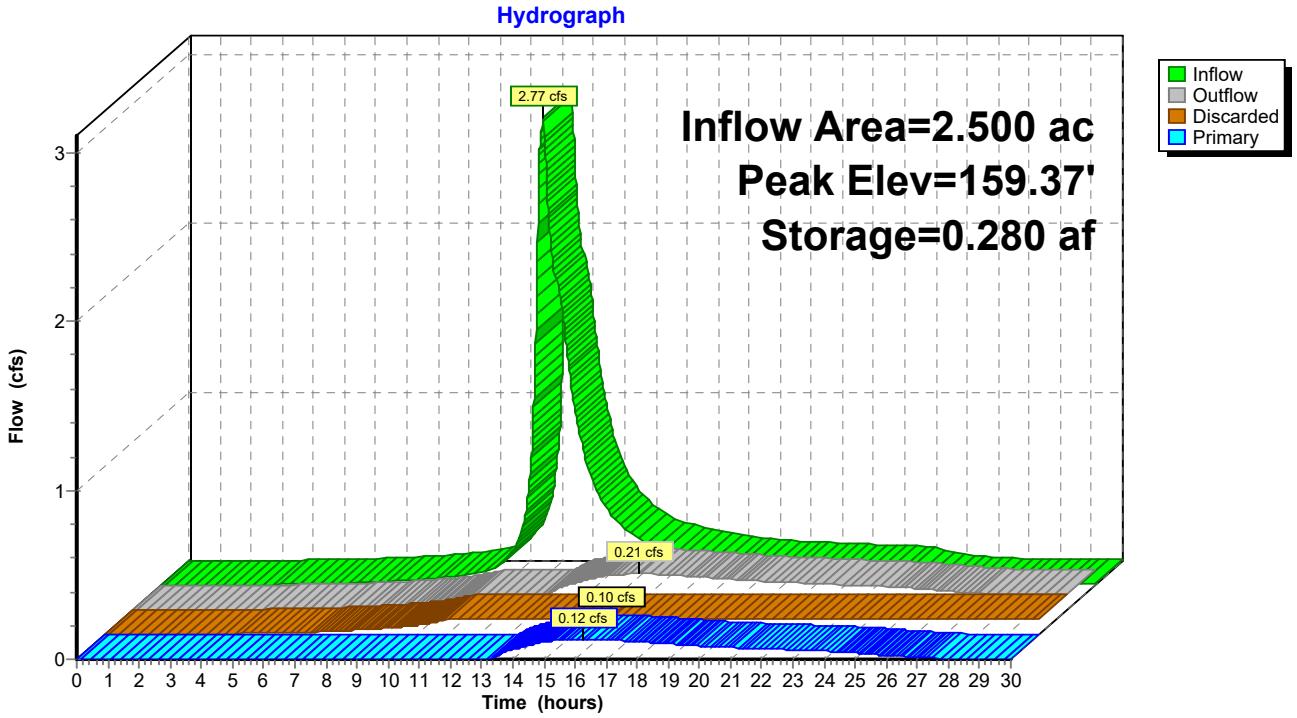
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
156.00	0.177	377.7	0.0	0.000	0.000	0.177
157.00	0.177	377.7	40.0	0.071	0.071	0.186
158.00	0.177	377.7	40.0	0.071	0.142	0.194
159.00	0.177	377.7	40.0	0.071	0.212	0.203
160.00	0.202	403.1	100.0	0.189	0.402	0.240
161.00	0.229	424.1	100.0	0.215	0.617	0.273
162.00	0.256	442.9	100.0	0.242	0.859	0.305

Device	Routing	Invert	Outlet Devices
#1	Primary	157.00'	**15.0" Round RCP_Round 15"** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 157.00' / 156.75' S= 0.0100 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Discarded	156.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'
#3	Device 1	159.00'	**2.5" Vert. WQ** C= 0.600 Limited to weir flow at low heads
#4	Device 1	159.25'	**4.0" Vert. 2Yr** C= 0.600 Limited to weir flow at low heads
#5	Device 1	160.00'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#6	Device 1	160.60'	**24.0" x 24.0" Horiz. Overflow Grate/Trash Rack** C= 0.700 Limited to weir flow at low heads

Discarded OutFlow Max=0.10 cfs @ 16.24 hrs HW=159.37' (Free Discharge)
└**2=Exfiltration** (Controls 0.10 cfs)

Primary OutFlow Max=0.12 cfs @ 16.24 hrs HW=159.37' (Free Discharge)
└**1=RCP_Round 15"** (Passes 0.12 cfs of 8.85 cfs potential flow)
  └**3=WQ** (Orifice Controls 0.08 cfs @ 2.48 fps)
  └**4=2Yr** (Orifice Controls 0.03 cfs @ 1.18 fps)
  └**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**6=Overflow Grate/Trash Rack** (Controls 0.00 cfs)

Pond 26P: Bio Infiltration Basin 1



Summary for Pond 27P: PP-11

Inflow Area = 0.165 ac,100.00% Impervious, Inflow Depth = 3.08" for 2-Year Storm event
Inflow = 0.58 cfs @ 12.13 hrs, Volume= 0.042 af
Outflow = 0.36 cfs @ 12.20 hrs, Volume= 0.032 af, Atten= 39%, Lag= 4.4 min
Primary = 0.36 cfs @ 12.20 hrs, Volume= 0.032 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.04' @ 12.20 hrs Surf.Area= 0.050 ac Storage= 0.018 af

Plug-Flow detention time= 193.4 min calculated for 0.032 af (76% of inflow)
Center-of-Mass det. time= 106.9 min (863.8 - 756.8)

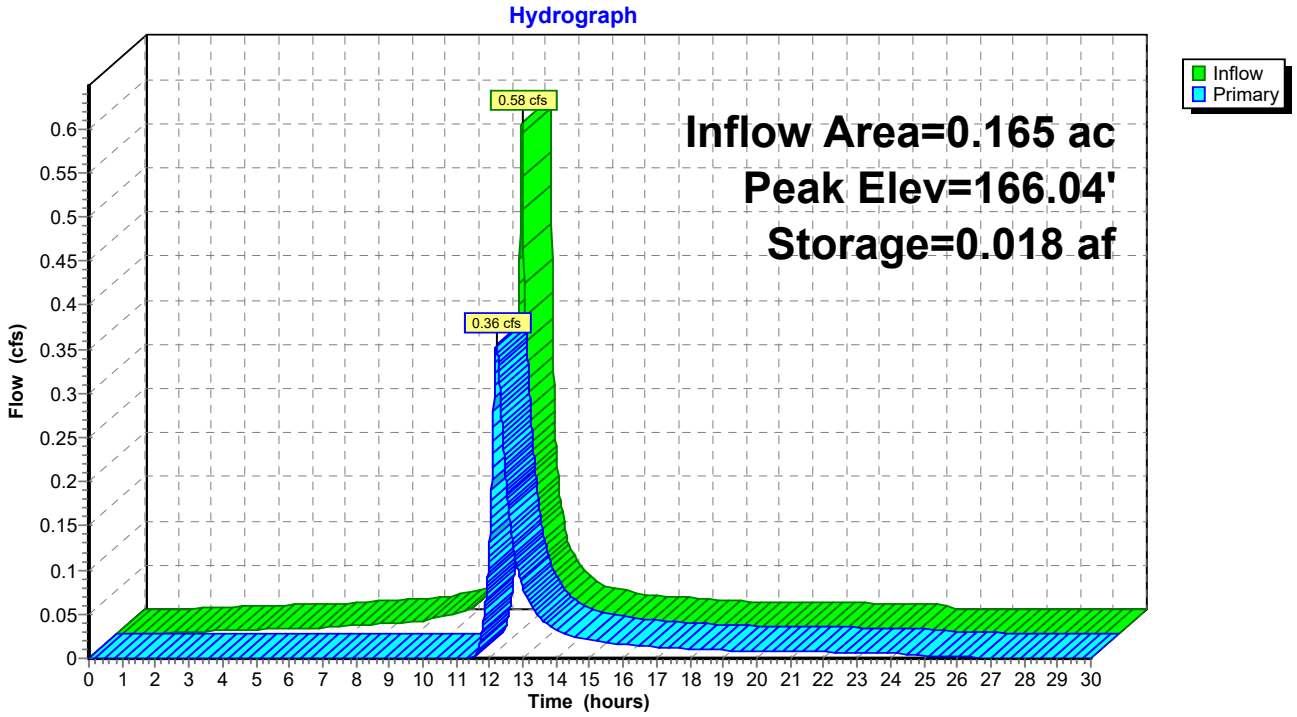
Volume	Invert	Avail.Storage	Storage Description
#1	165.15'	0.060 af	**PP-11 (Prismatic)**Listed below (Recalc) 0.151 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.15	0.050	0.000	0.000
168.17	0.050	0.151	0.151

Device	Routing	Invert	Outlet Devices
#1	Primary	165.65'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	166.65'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.36 cfs @ 12.20 hrs HW=166.04' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.36 cfs @ 2.14 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 27P: PP-11



Summary for Pond 28P: Bio Infiltration Basin 2

Inflow Area = 2.500 ac, 35.28% Impervious, Inflow Depth > 1.61" for 2-Year Storm event
Inflow = 3.69 cfs @ 12.15 hrs, Volume= 0.335 af
Outflow = 1.38 cfs @ 12.58 hrs, Volume= 0.283 af, Atten= 63%, Lag= 26.1 min
Discarded = 0.03 cfs @ 12.58 hrs, Volume= 0.049 af
Primary = 1.34 cfs @ 12.58 hrs, Volume= 0.234 af
Routed to Link 18L : Proposed Flows (South)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 161.16' @ 12.58 hrs Surf.Area= 0.063 ac Storage= 0.120 af

Plug-Flow detention time= 192.0 min calculated for 0.283 af (84% of inflow)
Center-of-Mass det. time= 116.3 min (972.3 - 856.0)

Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	0.263 af	**Small Scale Infiltration Basin 2 (Irregular)** Listed below (Recalc)

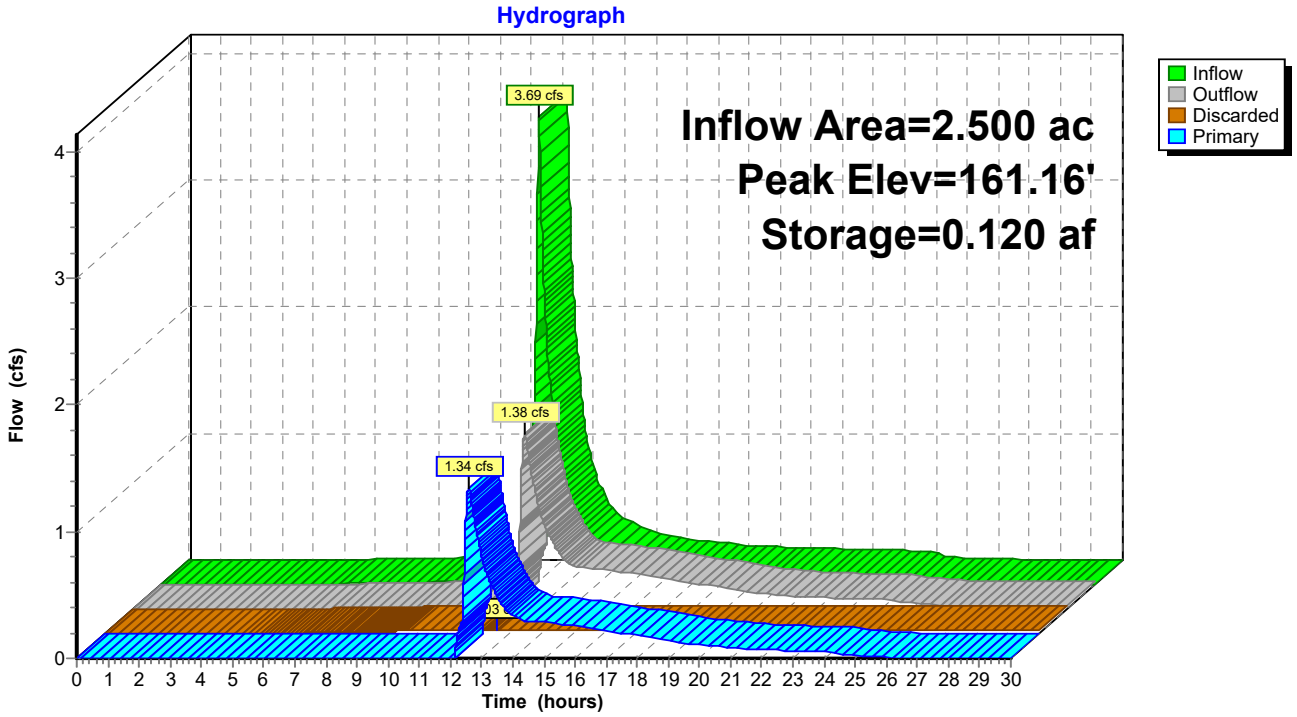
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
157.00	0.047	190.6	0.0	0.000	0.000	0.047
158.00	0.047	190.6	40.0	0.019	0.019	0.051
159.00	0.047	190.6	40.0	0.019	0.038	0.056
160.00	0.047	190.6	40.0	0.019	0.056	0.060
161.00	0.061	209.7	100.0	0.054	0.110	0.075
162.00	0.076	228.6	100.0	0.068	0.179	0.091
163.00	0.093	247.4	100.0	0.084	0.263	0.108

Device	Routing	Invert	Outlet Devices
#1	Primary	158.00'	**15.0" Round RCP_Round 15"** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 158.00' / 145.50' S= 0.5000 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Discarded	157.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'
#3	Device 1	160.00'	**3.5" Vert. WQ+2Yr** C= 0.600 Limited to weir flow at low heads
#4	Device 1	161.00'	**20.0" W x 5.0" H Vert. 10YR X 3.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.00'	**24.0" x 24.0" Horiz. Emergency Overflow** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.58 hrs HW=161.16' (Free Discharge)
└**2=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=1.33 cfs @ 12.58 hrs HW=161.16' (Free Discharge)
└**1=RCP_Round 15"** (Passes 1.33 cfs of 11.76 cfs potential flow)
  ├**3=WQ+2Yr** (Orifice Controls 0.32 cfs @ 4.84 fps)
  ├**4=10YR** (Orifice Controls 1.01 cfs @ 1.28 fps)
  └**5=Emergency Overflow** (Controls 0.00 cfs)

Pond 28P: Bio Infiltration Basin 2



Summary for Pond 32P: UG Roof Storage

Inflow Area = 1.310 ac, 85.11% Impervious, Inflow Depth = 2.78" for 2-Year Storm event
Inflow = 4.19 cfs @ 12.13 hrs, Volume= 0.304 af
Outflow = 3.10 cfs @ 12.18 hrs, Volume= 0.297 af, Atten= 26%, Lag= 3.2 min
Primary = 3.10 cfs @ 12.18 hrs, Volume= 0.297 af
Routed to Link 21L : Proposed Flows (North)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.87' @ 12.18 hrs Surf.Area= 0.188 ac Storage= 0.103 af

Plug-Flow detention time= 183.2 min calculated for 0.297 af (98% of inflow)
Center-of-Mass det. time= 168.3 min (931.5 - 763.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	165.50'	0.266 af	**56.49'W x 144.75'L x 8.58'H Field A** 1.610 af Overall - 0.946 af Embedded = 0.664 af x 40.0% Voids
#2A	167.50'	0.899 af	**ACF R-Tank LD 4** x 2400 Inside #1 Inside= 15.7"W x 66.9"H => 6.95 sf x 2.35'L = 16.3 cf Outside= 15.7"W x 66.9"H => 7.32 sf x 2.35'L = 17.2 cf 2400 Chambers in 40 Rows
		1.164 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	**15.0" Round RCP_Round 15"** L= 40.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 165.50' / 164.30' S= 0.0300 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Device 1	165.50'	**2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	166.50'	**4.0' long Sharp-Crested Rectangular Weir** 1 End Contraction(s) 3.0' Crest Height

Primary OutFlow Max=3.09 cfs @ 12.18 hrs HW=166.87' (Free Discharge)
└**1=RCP_Round 15"** (Passes 3.09 cfs of 6.36 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.18 cfs @ 5.41 fps)
  └**3=Sharp-Crested Rectangular Weir** (Weir Controls 2.91 cfs @ 2.01 fps)

Pond 32P: UG Roof Storage - Chamber Wizard Field A

Chamber Model = ACF R-Tank LD 4 (ACF Environmental R-Tank LD)
Inside= 15.7"W x 66.9"H => 6.95 sf x 2.35'L = 16.3 cf
Outside= 15.7"W x 66.9"H => 7.32 sf x 2.35'L = 17.2 cf

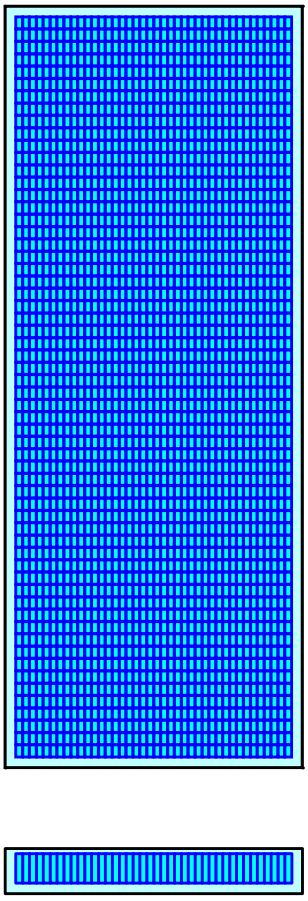
60 Chambers/Row x 2.35' Long = 140.75' Row Length +24.0" End Stone x 2 = 144.75' Base Length
40 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 56.49' Base Width
24.0" Stone Base + 66.9" Chamber Height + 12.0" Stone Cover = 8.58' Field Height

2,400 Chambers x 16.3 cf = 39,147.6 cf Chamber Storage
2,400 Chambers x 17.2 cf = 41,208.0 cf Displacement

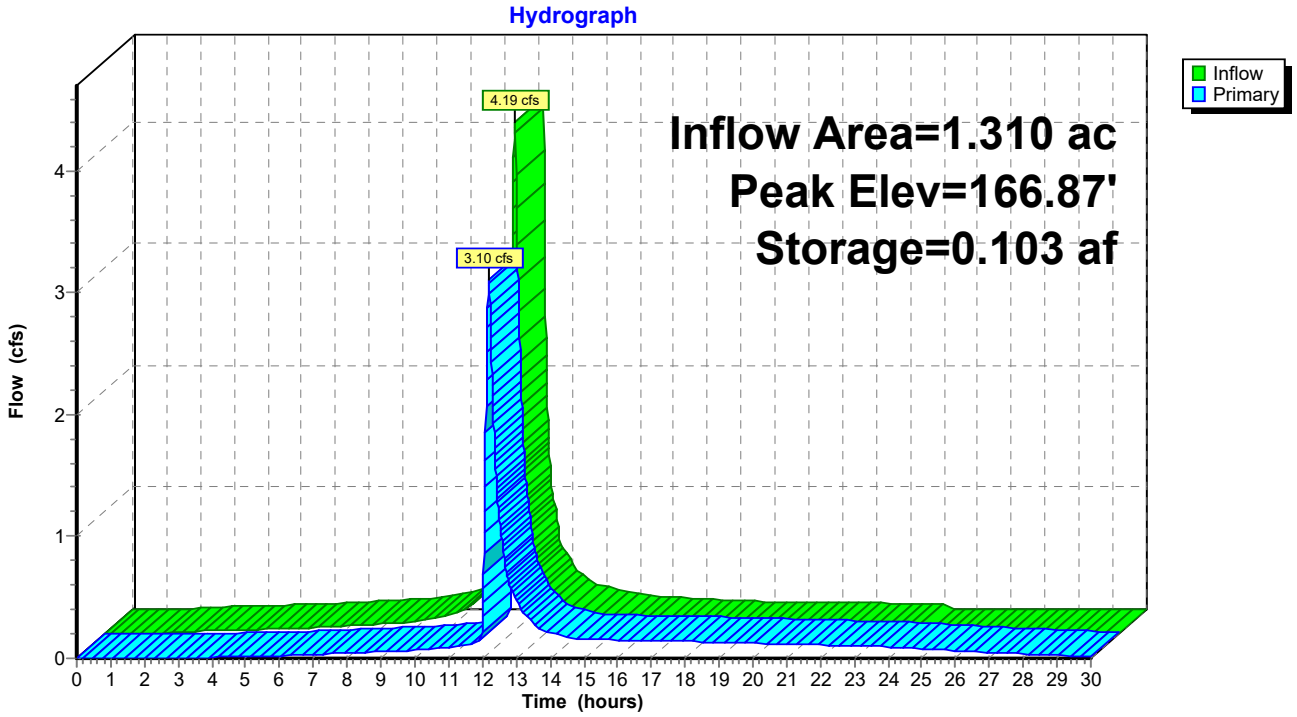
70,140.3 cf Field - 41,208.0 cf Chambers = 28,932.3 cf Stone x 40.0% Voids = 11,572.9 cf Stone Storage

Chamber Storage + Stone Storage = 50,720.5 cf = 1.164 af
Overall Storage Efficiency = 72.3%
Overall System Size = 144.75' x 56.49' x 8.58'

2,400 Chambers
2,597.8 cy Field
1,071.6 cy Stone



Pond 32P: UG Roof Storage

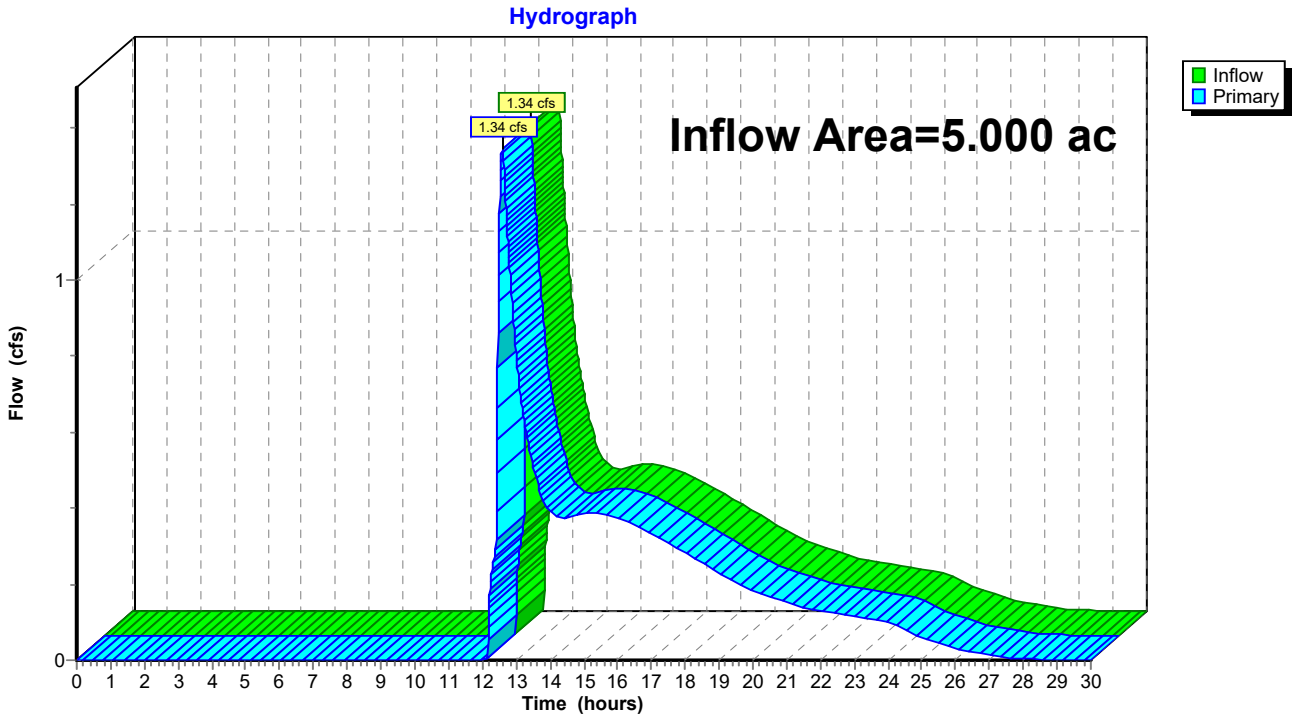


Summary for Link 18L: Proposed Flows (South)

Inflow Area = 5.000 ac, 49.12% Impervious, Inflow Depth = 0.75" for 2-Year Storm event
Inflow = 1.34 cfs @ 12.58 hrs, Volume= 0.314 af
Primary = 1.34 cfs @ 12.58 hrs, Volume= 0.314 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Link 18L: Proposed Flows (South)

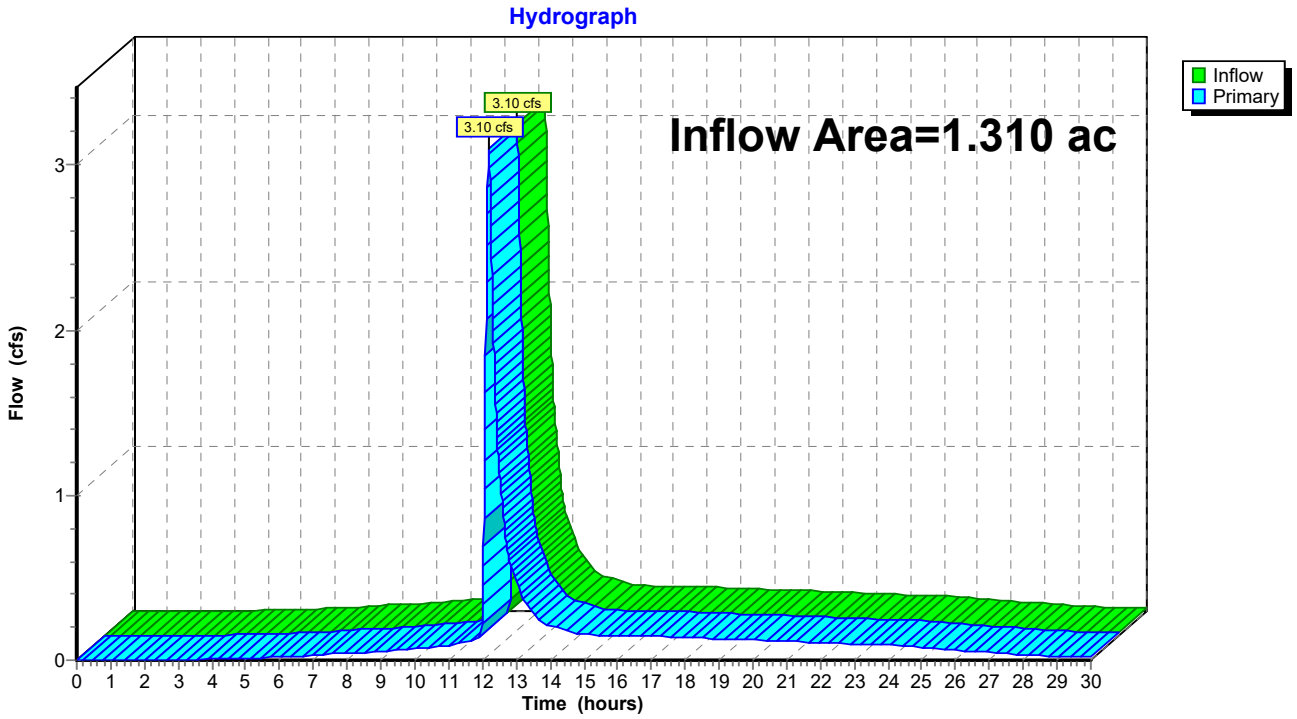


Summary for Link 21L: Proposed Flows (North)

Inflow Area = 1.310 ac, 85.11% Impervious, Inflow Depth > 2.72" for 2-Year Storm event
Inflow = 3.10 cfs @ 12.18 hrs, Volume= 0.297 af
Primary = 3.10 cfs @ 12.18 hrs, Volume= 0.297 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Link 21L: Proposed Flows (North)



Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: WQA-1 Runoff Area=0.214 ac 100.00% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=98 Runoff=1.14 cfs 0.085 af

Subcatchment3S: WQA-2 Runoff Area=0.311 ac 94.21% Impervious Runoff Depth=4.65"
Tc=6.0 min CN=97 Runoff=1.65 cfs 0.120 af

Subcatchment5S: WQA-3 Runoff Area=0.192 ac 81.25% Impervious Runoff Depth=4.20"
Tc=6.0 min CN=93 Runoff=0.97 cfs 0.067 af

Subcatchment7S: WQA-4 Runoff Area=0.206 ac 68.93% Impervious Runoff Depth=3.98"
Tc=6.0 min CN=91 Runoff=1.01 cfs 0.068 af

Subcatchment9S: WQA-5 Runoff Area=0.087 ac 88.51% Impervious Runoff Depth=4.42"
Tc=6.0 min CN=95 Runoff=0.45 cfs 0.032 af

Subcatchment11S: WQA-6 Runoff Area=0.258 ac 91.47% Impervious Runoff Depth=4.53"
Tc=6.0 min CN=96 Runoff=1.36 cfs 0.097 af

Subcatchment13S: WQA-7 Runoff Area=0.226 ac 90.71% Impervious Runoff Depth=4.53"
Tc=6.0 min CN=96 Runoff=1.19 cfs 0.085 af

Subcatchment19S: WQA-8 Runoff Area=0.174 ac 80.46% Impervious Runoff Depth=4.20"
Tc=6.0 min CN=93 Runoff=0.88 cfs 0.061 af

Subcatchment21S: Area of Right Grass Runoff Area=0.300 ac 50.00% Impervious Runoff Depth=3.47"
Tc=6.0 min CN=86 Runoff=1.33 cfs 0.087 af

Subcatchment22S: WQA-9 Runoff Area=0.199 ac 89.45% Impervious Runoff Depth=4.42"
Tc=6.0 min CN=95 Runoff=1.04 cfs 0.073 af

Subcatchment23S: Area of Left Grass Swale Runoff Area=0.208 ac 0.00% Impervious Runoff Depth=2.36"
Tc=6.0 min CN=74 Runoff=0.65 cfs 0.041 af

Subcatchment24S: WQA-10 Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=98 Runoff=0.67 cfs 0.050 af

Subcatchment25S: Additional Basin Area Runoff Area=1.112 ac 5.40% Impervious Runoff Depth=2.45"
Tc=6.0 min CN=75 Runoff=3.60 cfs 0.227 af

Subcatchment26S: WQA-11 Runoff Area=0.165 ac 100.00% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=98 Runoff=0.88 cfs 0.065 af

Subcatchment27S: 1/2 Highway Runoff Area=0.113 ac 100.00% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=98 Runoff=0.60 cfs 0.045 af

Subcatchment28S: Proposed & Runoff Area=1.115 ac 100.00% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=98 Runoff=5.95 cfs 0.443 af

Subcatchment29S: 1/2 Highway Runoff Area=0.202 ac 100.00% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=98 Runoff=1.08 cfs 0.080 af

Subcatchment30S: (new Subcat) Runoff Area=0.243 ac 0.00% Impervious Runoff Depth=2.36"
Tc=6.0 min CN=74 Runoff=0.76 cfs 0.048 af

Subcatchment31S: (new Subcat) Runoff Area=0.511 ac 0.00% Impervious Runoff Depth=2.36"
Tc=6.0 min CN=74 Runoff=1.60 cfs 0.101 af

Subcatchment32S: (new Subcat) Runoff Area=0.195 ac 0.00% Impervious Runoff Depth=2.36"
Tc=6.0 min CN=74 Runoff=0.61 cfs 0.038 af

Subcatchment33S: Additional Basin Area Runoff Area=0.154 ac 0.00% Impervious Runoff Depth=2.36"
Tc=6.0 min CN=74 Runoff=0.48 cfs 0.030 af

Reach 23R: Right Grass Swale Avg. Flow Depth=0.66' Max Vel=0.40 fps Inflow=1.94 cfs 0.132 af
n=0.150 L=468.5' S=0.0050 '/' Capacity=2.49 cfs Outflow=1.04 cfs 0.131 af

Reach 25R: Left Grass Swale Avg. Flow Depth=0.66' Max Vel=0.42 fps Inflow=1.96 cfs 0.253 af
n=0.150 L=149.5' S=0.0047 '/' Capacity=3.69 cfs Outflow=1.65 cfs 0.252 af

Pond 2P: PP-1 Peak Elev=165.74' Storage=0.017 af Inflow=1.14 cfs 0.085 af
Outflow=0.59 cfs 0.085 af

Pond 4P: PP-2 Peak Elev=162.84' Storage=0.057 af Inflow=1.65 cfs 0.120 af
Outflow=0.34 cfs 0.106 af

Pond 6P: PP-3 Peak Elev=159.22' Storage=0.026 af Inflow=0.97 cfs 0.067 af
Outflow=0.33 cfs 0.060 af

Pond 8P: PP-4 Peak Elev=170.32' Storage=0.020 af Inflow=1.01 cfs 0.068 af
Outflow=0.35 cfs 0.066 af

Pond 10P: PP-5 Peak Elev=167.74' Storage=0.010 af Inflow=0.45 cfs 0.032 af
Outflow=0.35 cfs 0.027 af

Pond 12P: PP-6 Peak Elev=166.86' Storage=0.024 af Inflow=1.36 cfs 0.097 af
Outflow=0.60 cfs 0.097 af

Pond 14P: PP-7 Peak Elev=169.13' Storage=0.022 af Inflow=1.19 cfs 0.085 af
Outflow=0.54 cfs 0.085 af

Pond 20P: PP-8 Peak Elev=166.83' Storage=0.020 af Inflow=0.88 cfs 0.061 af
Outflow=0.54 cfs 0.052 af

Pond 23P: PP-9 Peak Elev=170.27' Storage=0.019 af Inflow=1.04 cfs 0.073 af
Outflow=0.49 cfs 0.073 af

Pond 25P: PP-10 Peak Elev=170.11' Storage=0.022 af Inflow=0.67 cfs 0.050 af
Outflow=0.38 cfs 0.037 af

Pond 26P: Bio Infiltration Basin 1 Peak Elev=160.10' Storage=0.423 af Inflow=4.64 cfs 0.771 af
Discarded=0.11 cfs 0.184 af Primary=0.73 cfs 0.366 af Outflow=0.84 cfs 0.550 af

Pond 27P: PP-11 Peak Elev=166.22' Storage=0.021 af Inflow=0.88 cfs 0.065 af
Outflow=0.53 cfs 0.055 af

Pond 28P: Bio Infiltration Basin 2 Peak Elev=161.53' Storage=0.144 af Inflow=7.46 cfs 0.629 af
Discarded=0.04 cfs 0.055 af Primary=5.91 cfs 0.521 af Outflow=5.94 cfs 0.576 af

Pond 32P: UG Roof Storage Peak Elev=167.05' Storage=0.116 af Inflow=6.56 cfs 0.481 af
Outflow=5.56 cfs 0.471 af

Link 18L: Proposed Flows (South) Inflow=5.91 cfs 0.887 af
Primary=5.91 cfs 0.887 af

Link 21L: Proposed Flows (North) Inflow=5.56 cfs 0.471 af
Primary=5.56 cfs 0.471 af

Total Runoff Area = 6.310 ac Runoff Volume = 1.945 af Average Runoff Depth = 3.70"
43.41% Pervious = 2.739 ac 56.59% Impervious = 3.571 ac

Summary for Subcatchment 1S: WQA-1

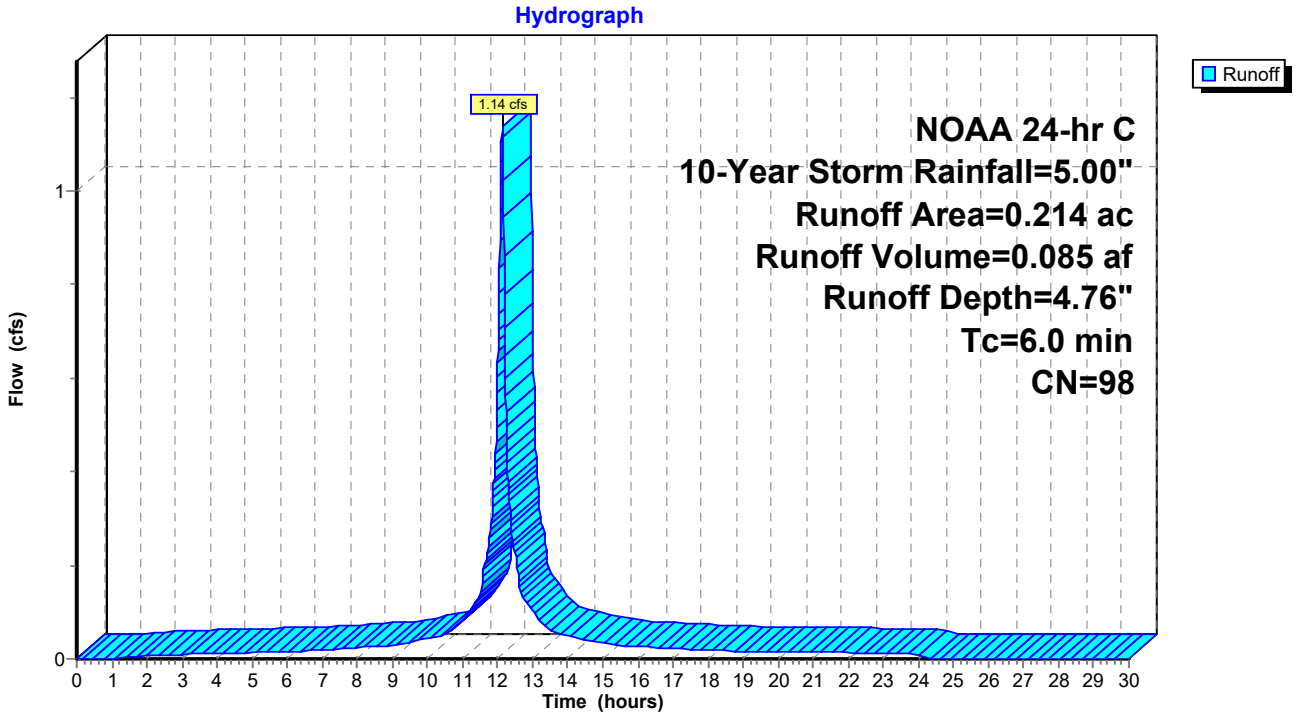
Runoff = 1.14 cfs @ 12.13 hrs, Volume= 0.085 af, Depth= 4.76"
Routed to Pond 2P : PP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.214	98	
	0.214		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1S: WQA-1



Summary for Subcatchment 3S: WQA-2

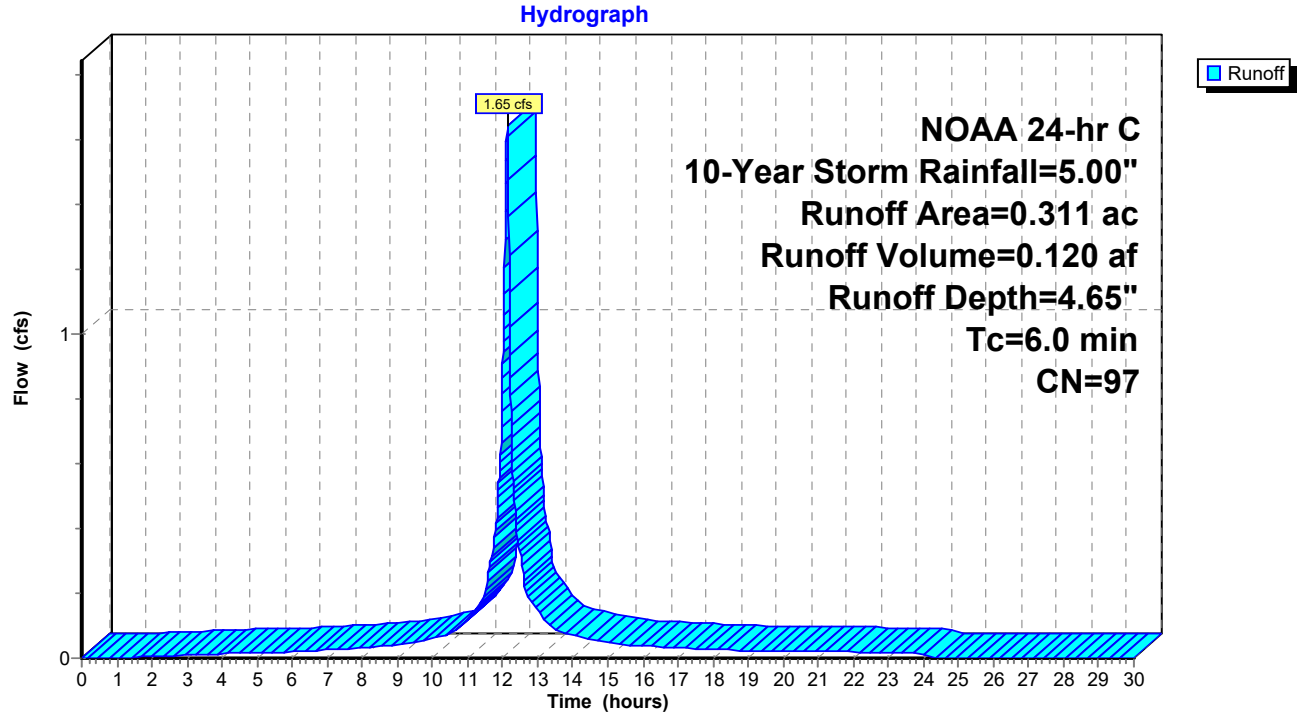
Runoff = 1.65 cfs @ 12.13 hrs, Volume= 0.120 af, Depth= 4.65"
Routed to Pond 4P : PP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.293	98	
	0.018	74	>75% Grass cover, Good, HSG C
	0.311	97	Weighted Average
	0.018		5.79% Pervious Area
	0.293		94.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 3S: WQA-2



Summary for Subcatchment 5S: WQA-3

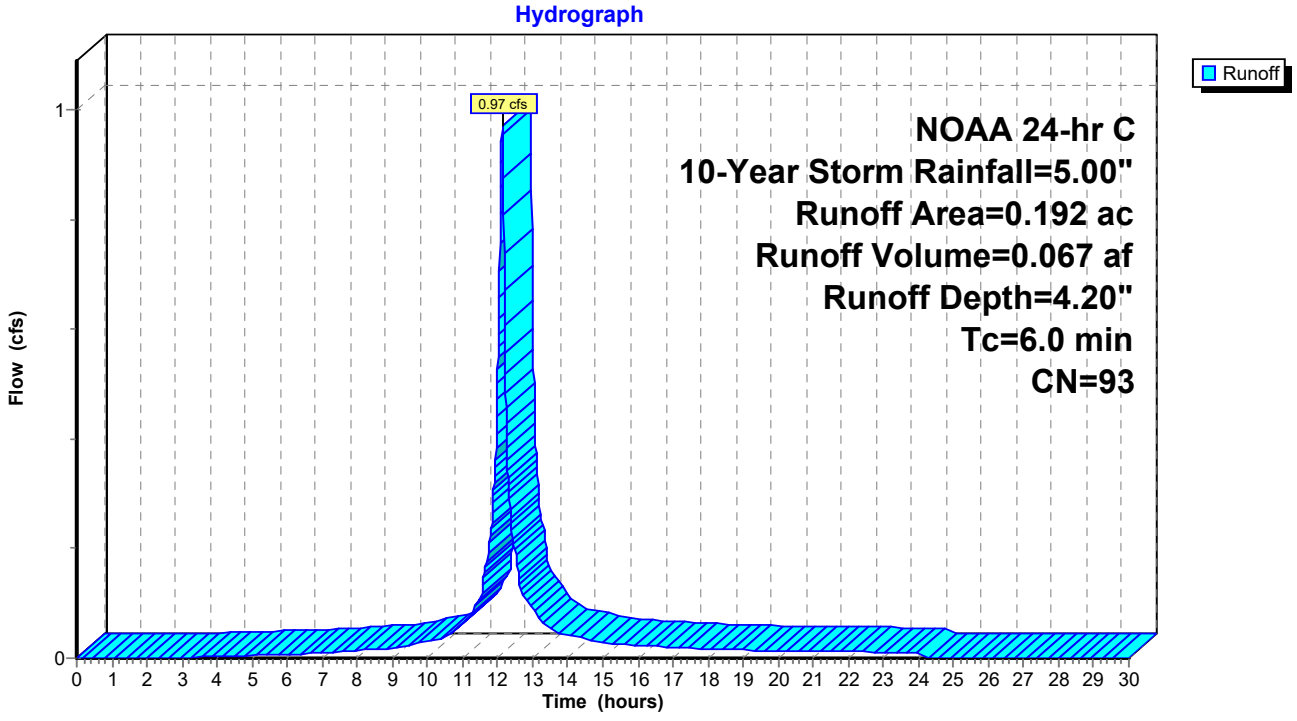
Runoff = 0.97 cfs @ 12.13 hrs, Volume= 0.067 af, Depth= 4.20"
Routed to Pond 6P : PP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.156	98	
	0.036	74	>75% Grass cover, Good, HSG C
	0.192	93	Weighted Average
	0.036		18.75% Pervious Area
	0.156		81.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: WQA-3



Summary for Subcatchment 7S: WQA-4

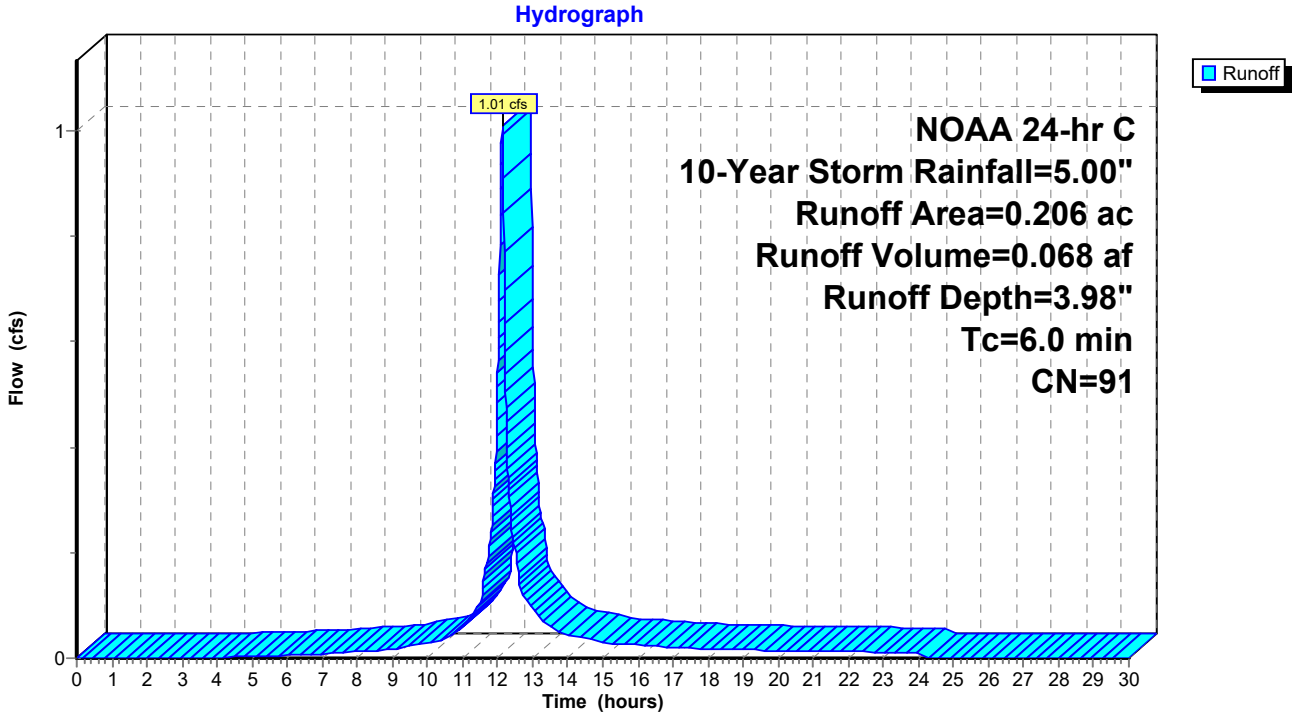
Runoff = 1.01 cfs @ 12.13 hrs, Volume= 0.068 af, Depth= 3.98"
Routed to Pond 8P : PP-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.142	98	
	0.064	74	>75% Grass cover, Good, HSG C
	0.206	91	Weighted Average
	0.064		31.07% Pervious Area
	0.142		68.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 7S: WQA-4



Summary for Subcatchment 9S: WQA-5

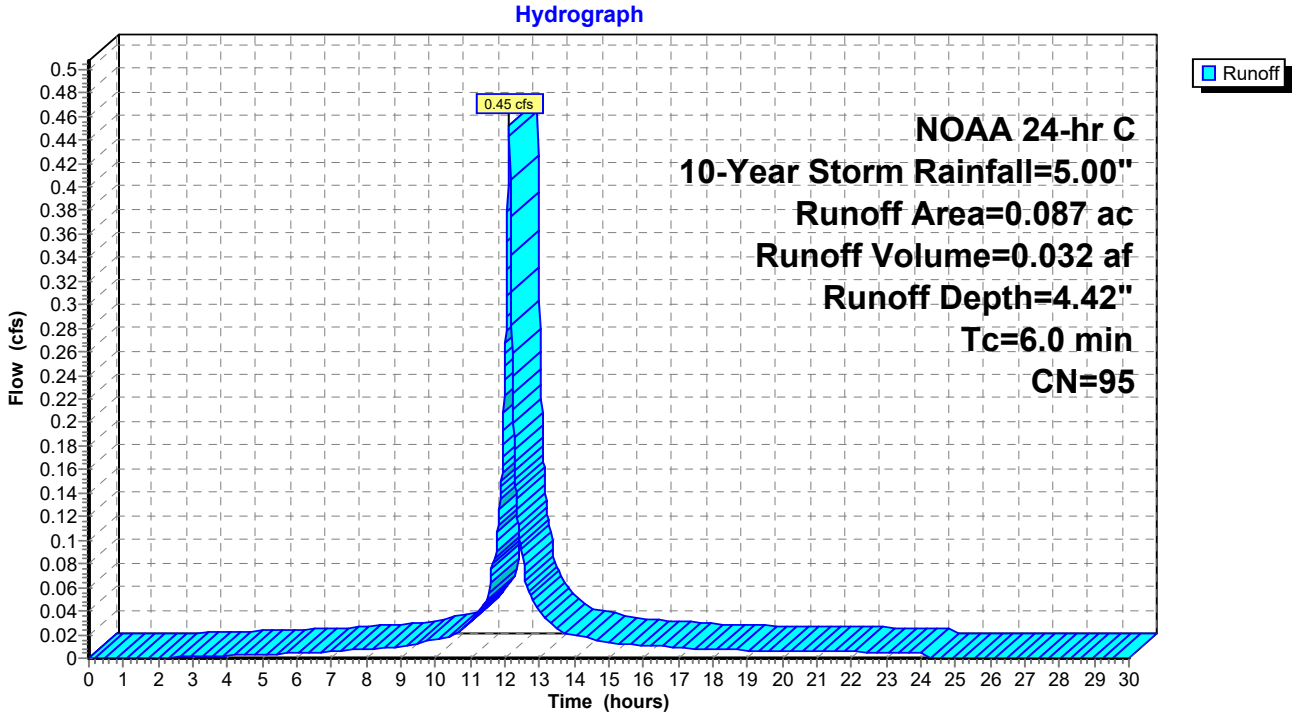
Runoff = 0.45 cfs @ 12.13 hrs, Volume= 0.032 af, Depth= 4.42"
Routed to Pond 10P : PP-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.077	98	
	0.010	74	>75% Grass cover, Good, HSG C
	0.087	95	Weighted Average
	0.010		11.49% Pervious Area
	0.077		88.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 9S: WQA-5



Summary for Subcatchment 11S: WQA-6

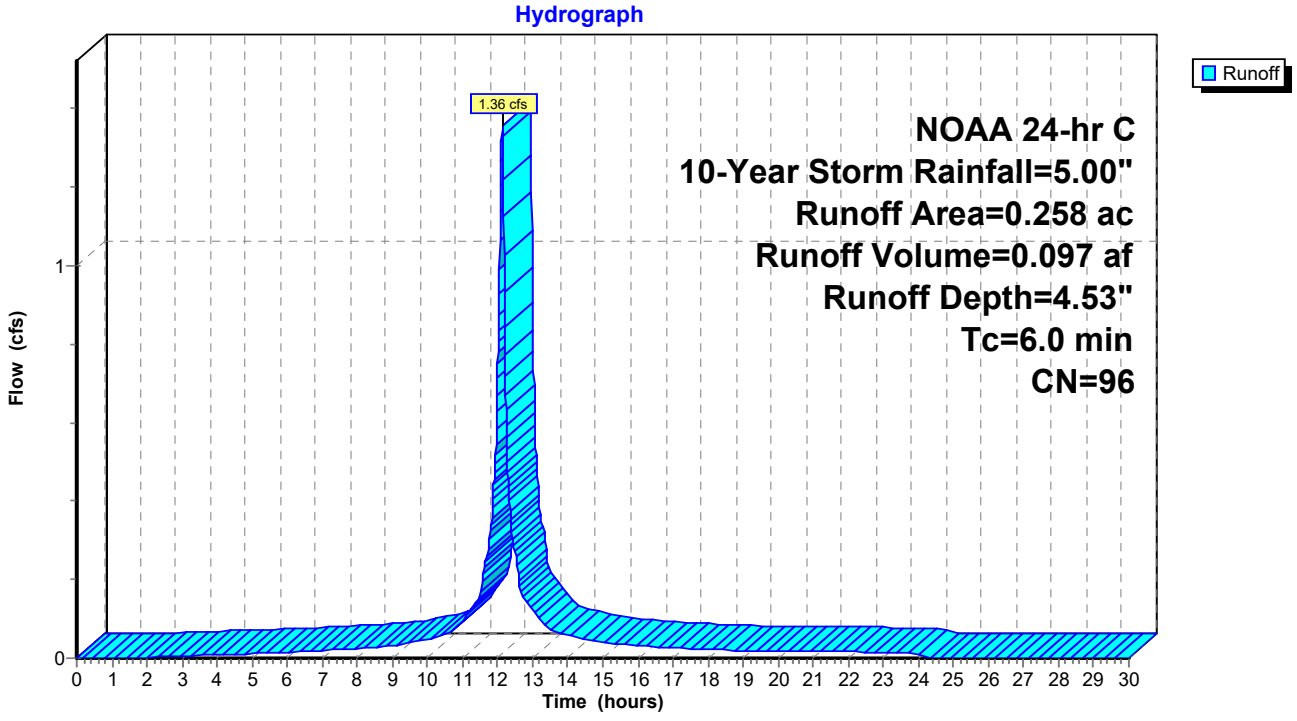
Runoff = 1.36 cfs @ 12.13 hrs, Volume= 0.097 af, Depth= 4.53"
Routed to Pond 12P : PP-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.236	98	
	0.022	74	>75% Grass cover, Good, HSG C
	0.258	96	Weighted Average
	0.022		8.53% Pervious Area
	0.236		91.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 11S: WQA-6



Summary for Subcatchment 13S: WQA-7

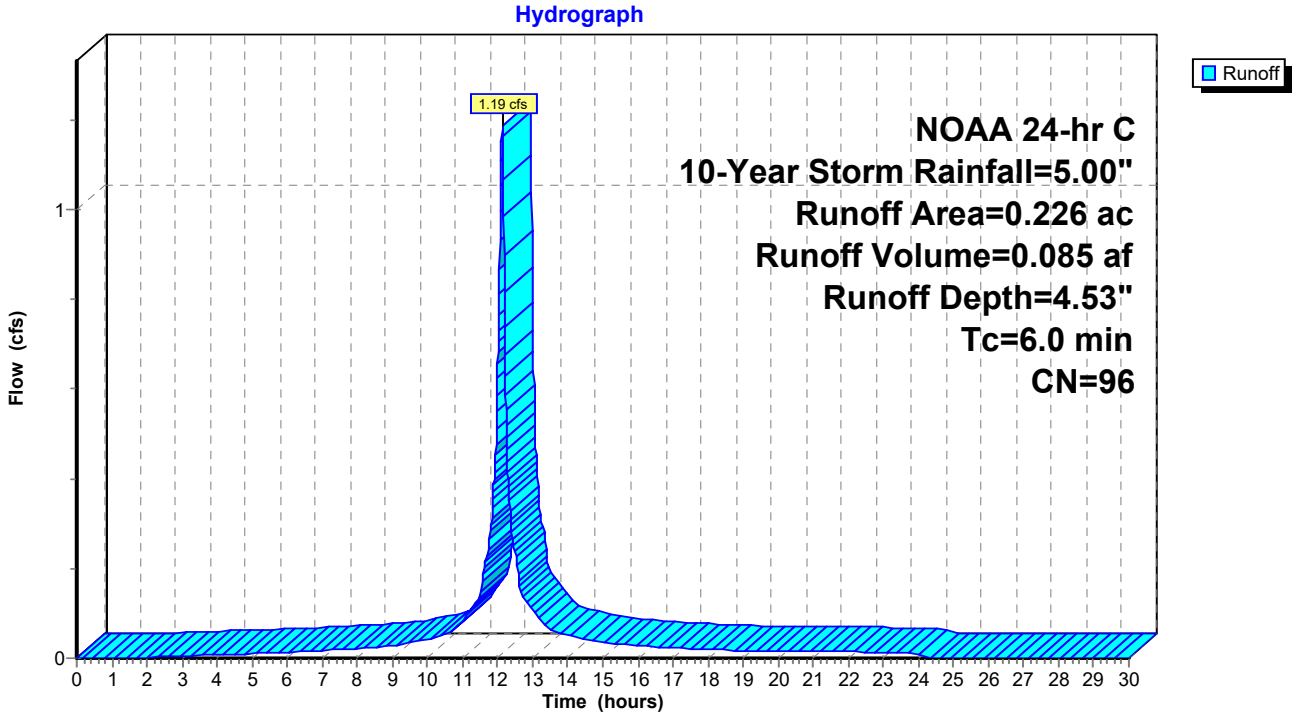
Runoff = 1.19 cfs @ 12.13 hrs, Volume= 0.085 af, Depth= 4.53"
Routed to Pond 14P : PP-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.205	98	
	0.021	74	>75% Grass cover, Good, HSG C
	0.226	96	Weighted Average
	0.021		9.29% Pervious Area
	0.205		90.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 13S: WQA-7



Summary for Subcatchment 19S: WQA-8

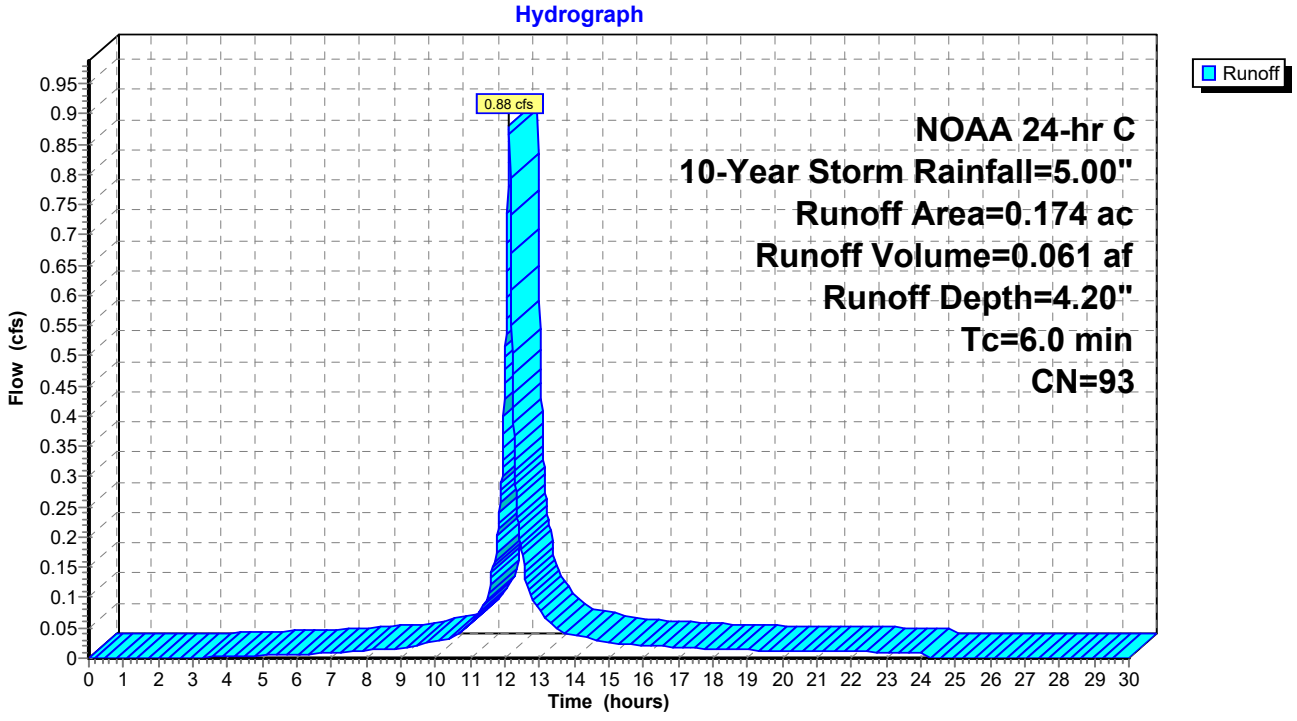
Runoff = 0.88 cfs @ 12.13 hrs, Volume= 0.061 af, Depth= 4.20"
Routed to Pond 20P : PP-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.140	98	
	0.034	74	>75% Grass cover, Good, HSG C
	0.174	93	Weighted Average
	0.034		19.54% Pervious Area
	0.140		80.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 19S: WQA-8



Summary for Subcatchment 21S: Area of Right Grass Swale

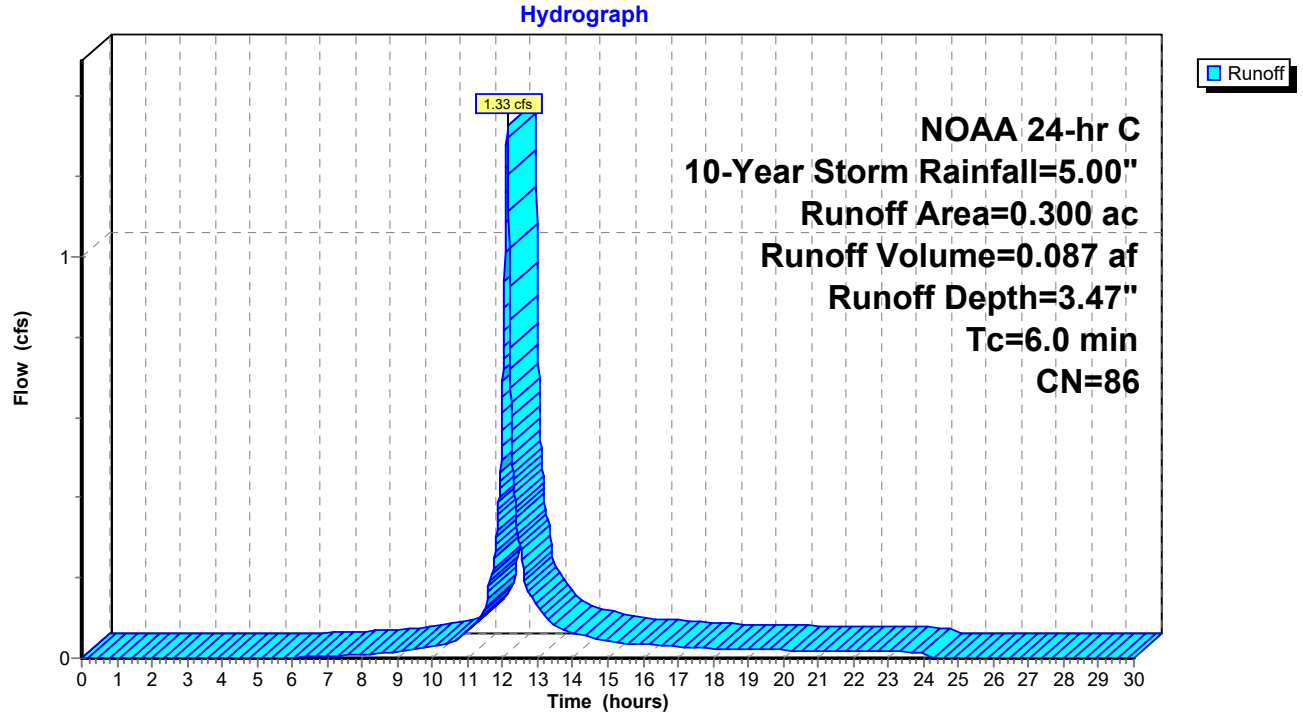
Runoff = 1.33 cfs @ 12.13 hrs, Volume= 0.087 af, Depth= 3.47"
Routed to Reach 23R : Right Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.150	98	Impervious Placeholder
*	0.150	74	Pervious Placeholder
	0.300	86	Weighted Average
	0.150		50.00% Pervious Area
	0.150		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 21S: Area of Right Grass Swale



Summary for Subcatchment 22S: WQA-9

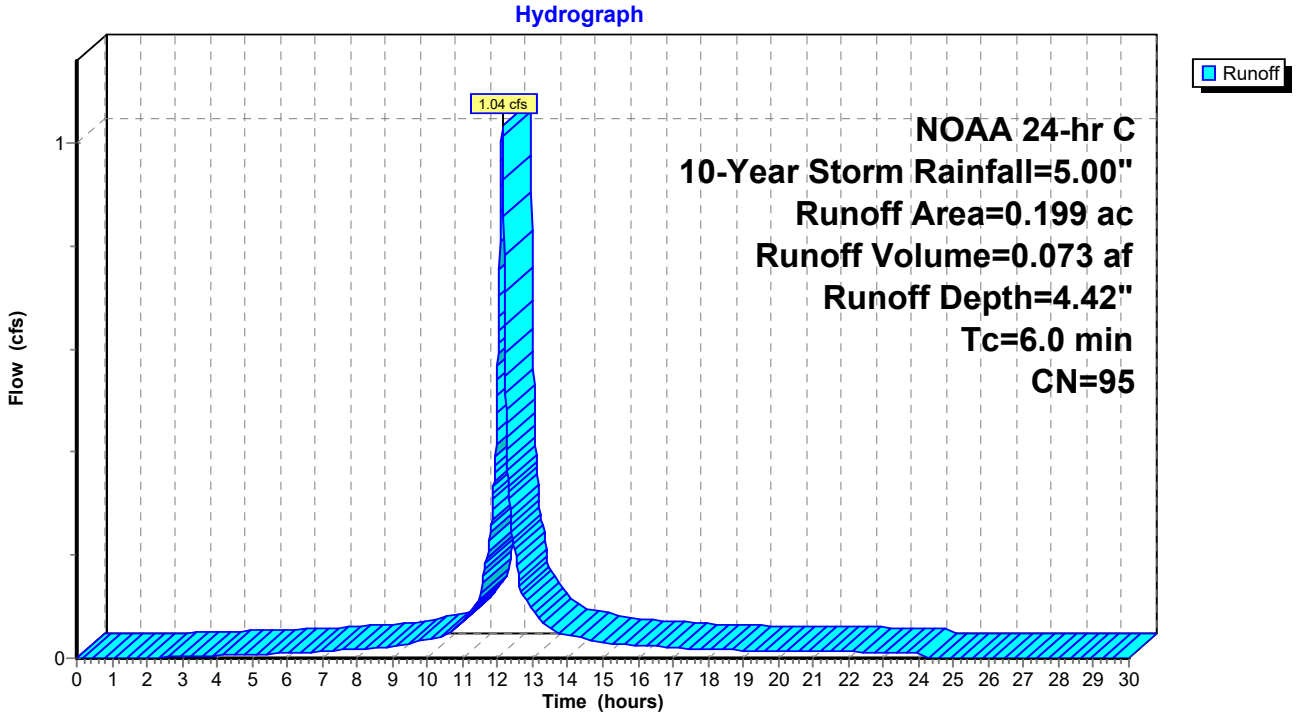
Runoff = 1.04 cfs @ 12.13 hrs, Volume= 0.073 af, Depth= 4.42"
Routed to Pond 23P : PP-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.178	98	
	0.021	74	>75% Grass cover, Good, HSG C
	0.199	95	Weighted Average
	0.021		10.55% Pervious Area
	0.178		89.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 22S: WQA-9



Summary for Subcatchment 23S: Area of Left Grass Swale

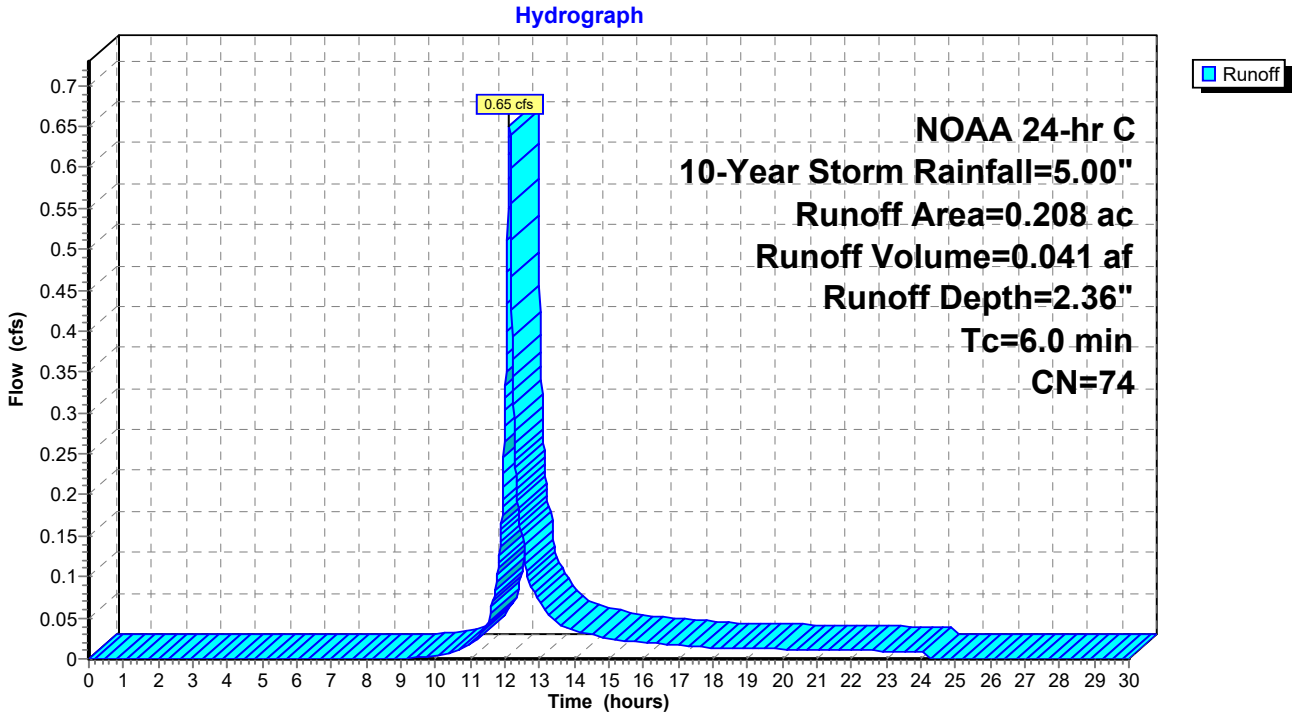
Runoff = 0.65 cfs @ 12.13 hrs, Volume= 0.041 af, Depth= 2.36"
Routed to Reach 25R : Left Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.208	74	
	0.208		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 23S: Area of Left Grass Swale



Summary for Subcatchment 24S: WQA-10

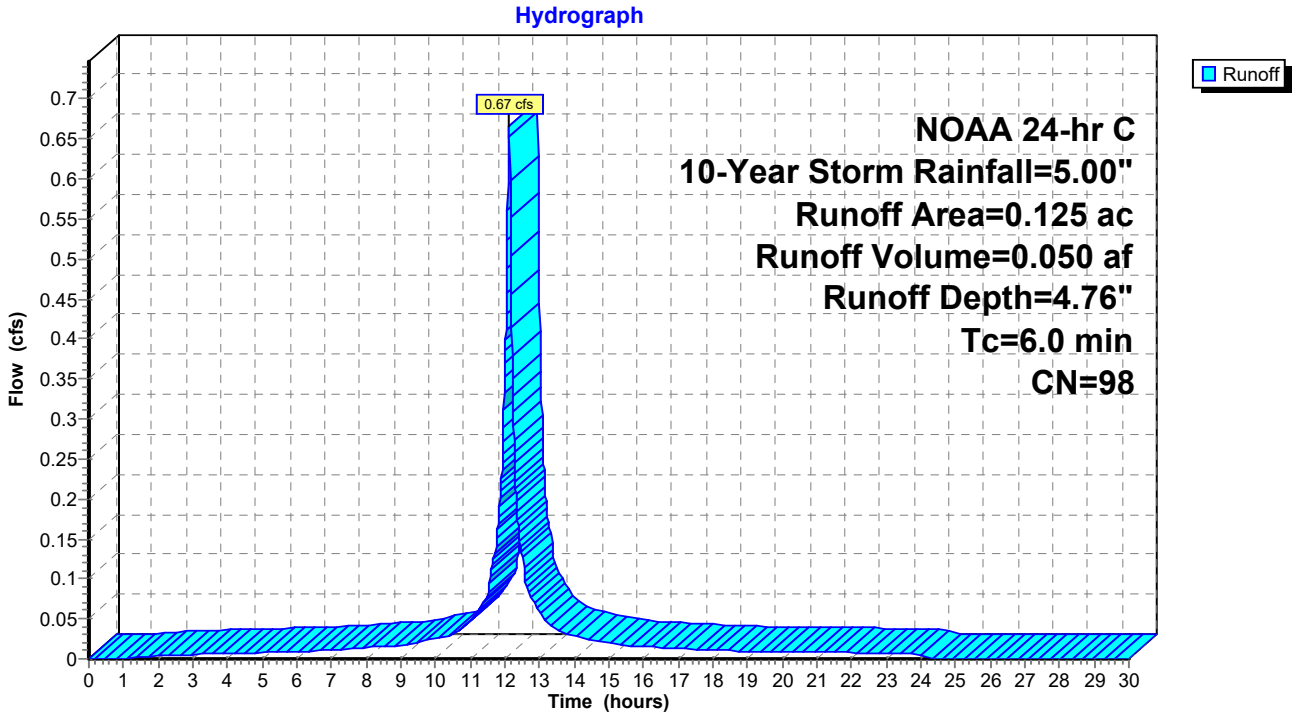
Runoff = 0.67 cfs @ 12.13 hrs, Volume= 0.050 af, Depth= 4.76"
Routed to Pond 25P : PP-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.125	98	
	0.125		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 24S: WQA-10



Summary for Subcatchment 25S: Additional Basin Area

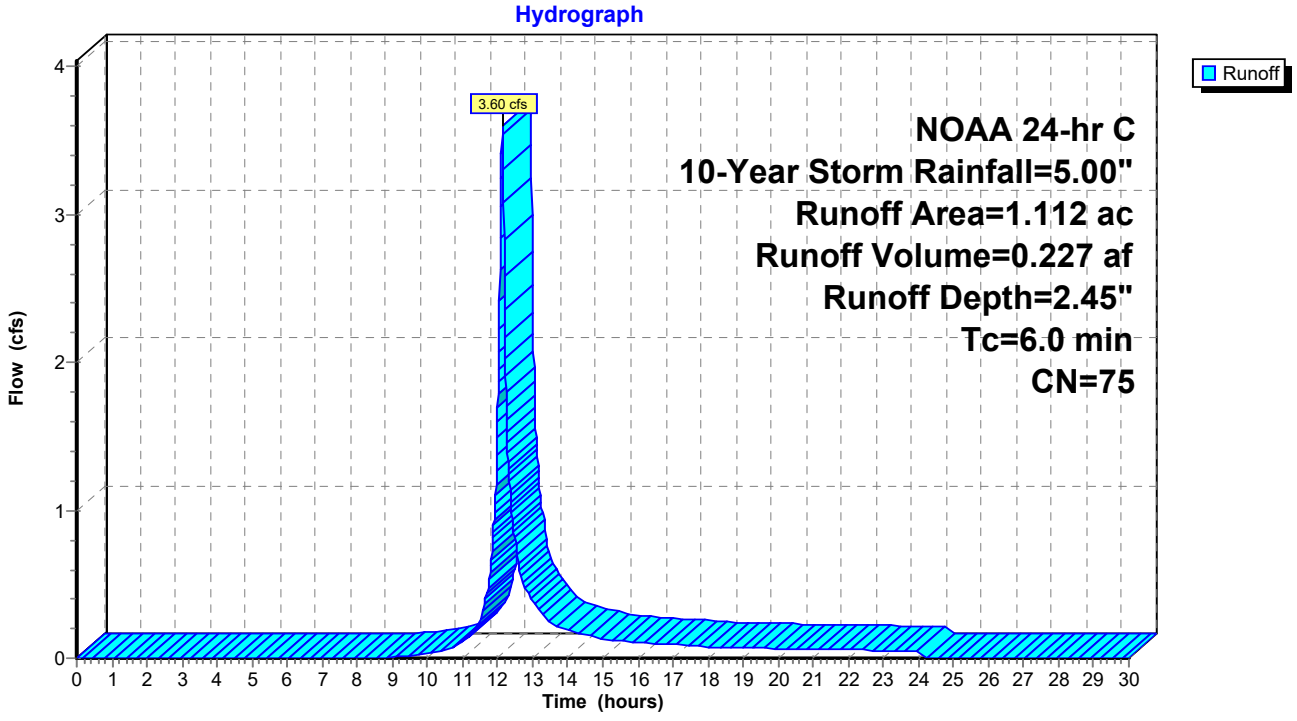
Runoff = 3.60 cfs @ 12.13 hrs, Volume= 0.227 af, Depth= 2.45"
Routed to Pond 28P : Bio Infiltration Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
	1.052	74	>75% Grass cover, Good, HSG C
*	0.060	98	
	1.112	75	Weighted Average
	1.052		94.60% Pervious Area
	0.060		5.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 25S: Additional Basin Area



Summary for Subcatchment 26S: WQA-11

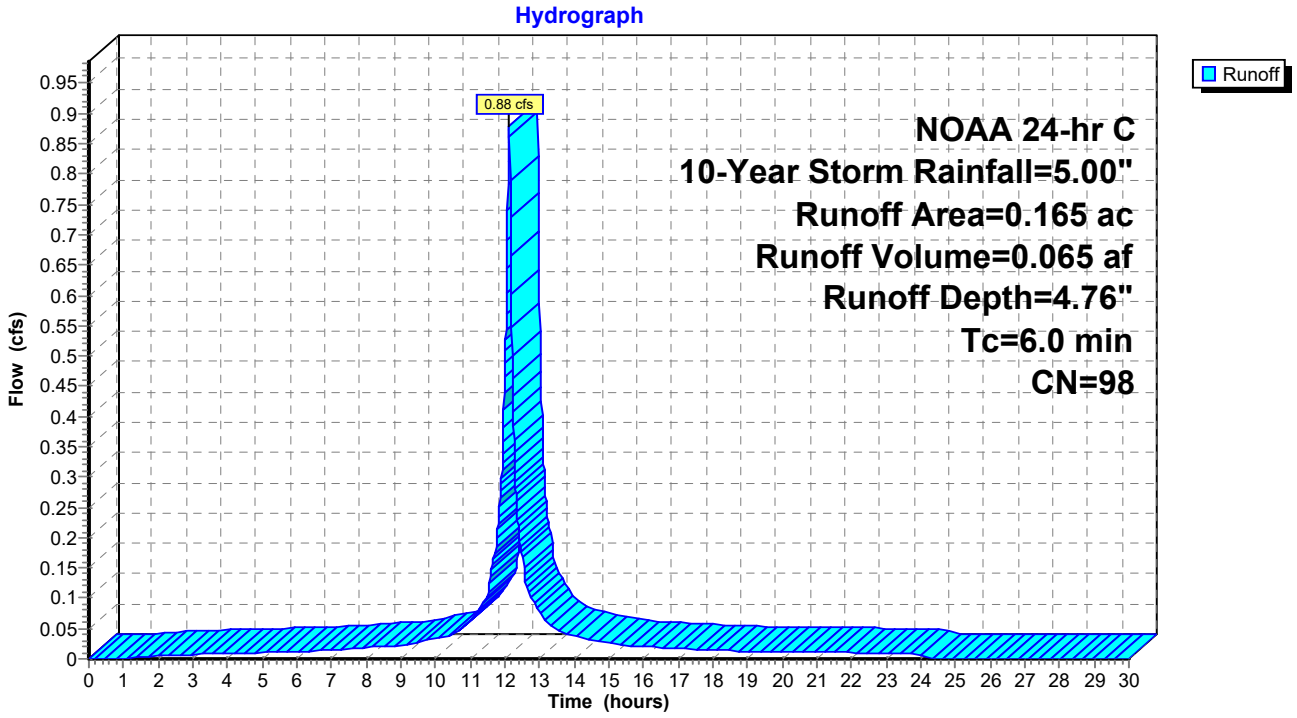
Runoff = 0.88 cfs @ 12.13 hrs, Volume= 0.065 af, Depth= 4.76"
Routed to Pond 27P : PP-11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.165	98	
	0.165		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 26S: WQA-11



Summary for Subcatchment 27S: 1/2 Highway Expansion

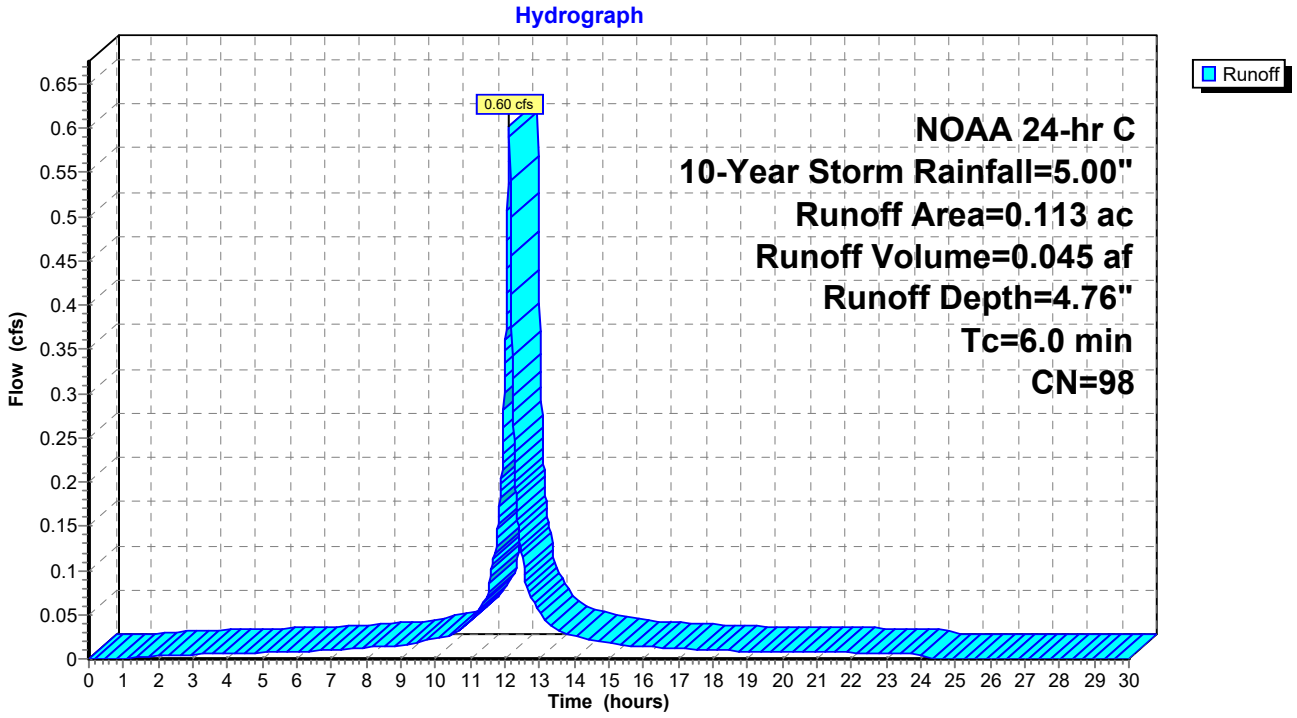
Runoff = 0.60 cfs @ 12.13 hrs, Volume= 0.045 af, Depth= 4.76"
Routed to Reach 23R : Right Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.113	98	Roadway Expansion
	0.113		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 27S: 1/2 Highway Expansion



Summary for Subcatchment 28S: Proposed & Relocated Roof

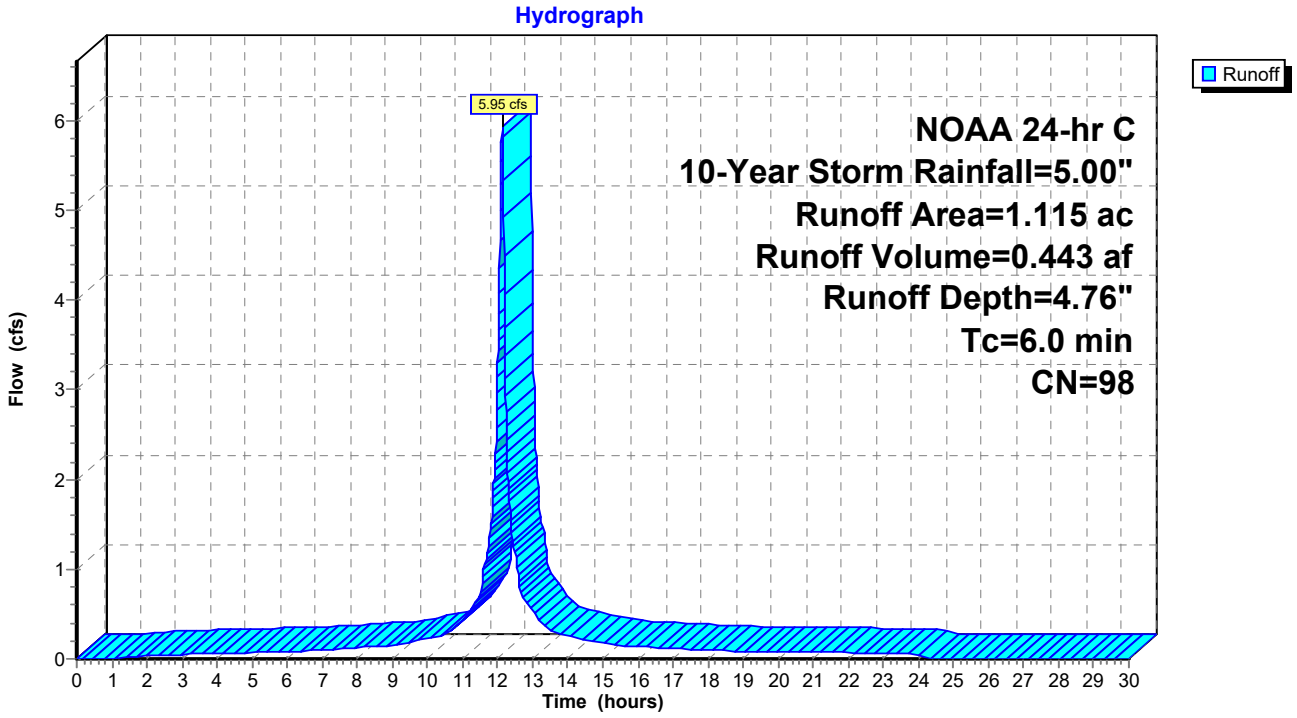
Runoff = 5.95 cfs @ 12.13 hrs, Volume= 0.443 af, Depth= 4.76"
Routed to Pond 32P : UG Roof Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

Area (ac)	CN	Description
1.115	98	Roofs, HSG C
1.115		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 28S: Proposed & Relocated Roof



Summary for Subcatchment 29S: 1/2 Highway Expansion

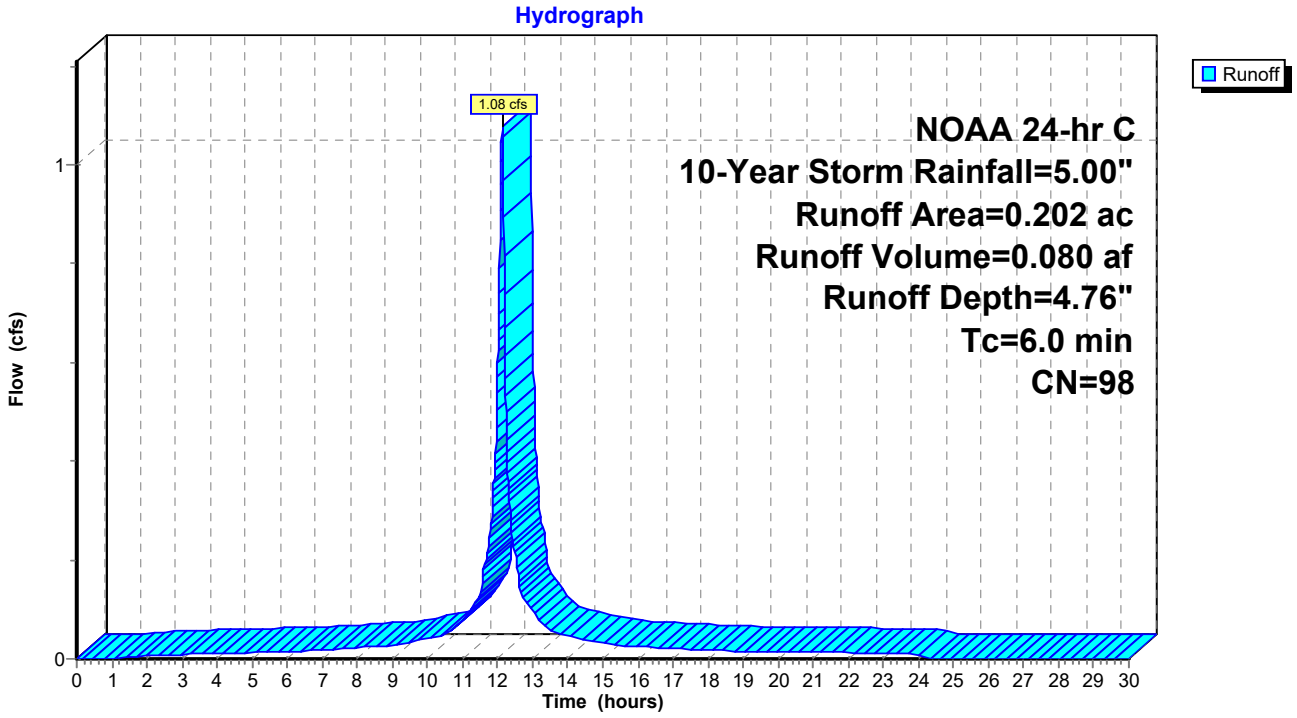
Runoff = 1.08 cfs @ 12.13 hrs, Volume= 0.080 af, Depth= 4.76"
Routed to Reach 25R : Left Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.202	98	
	0.202		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 29S: 1/2 Highway Expansion



Summary for Subcatchment 30S: (new Subcat)

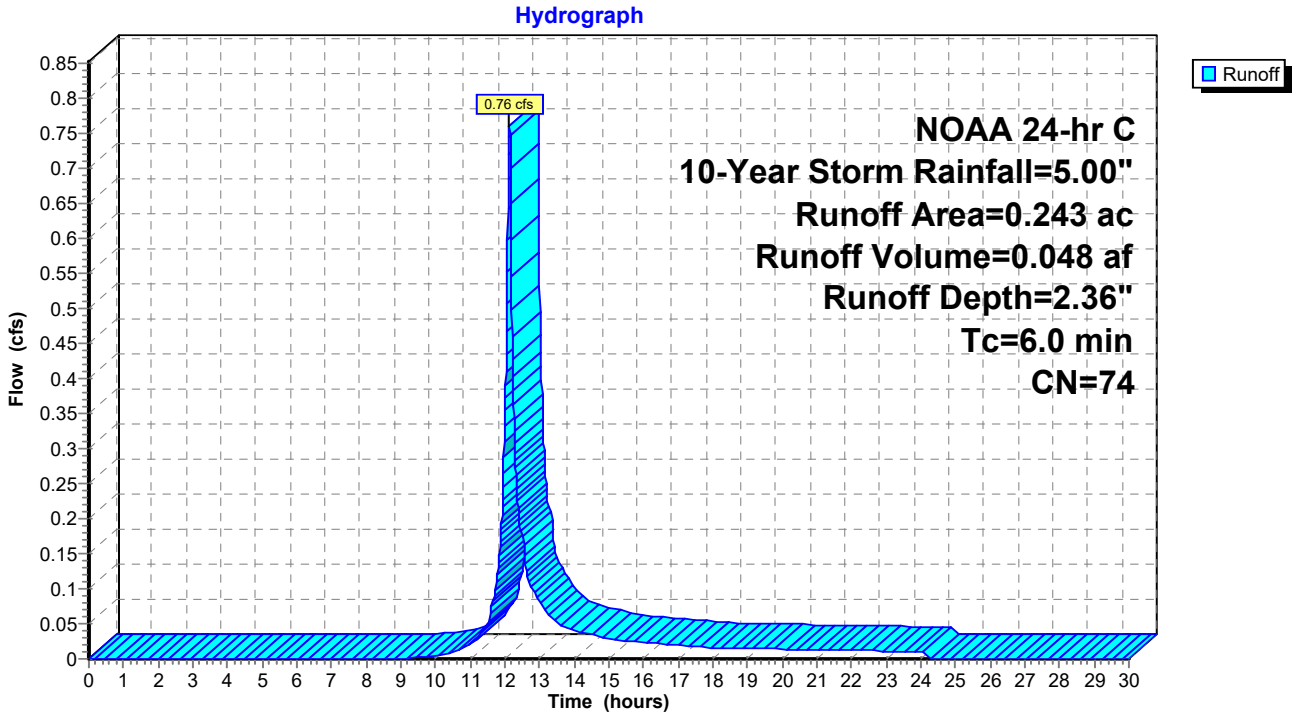
Runoff = 0.76 cfs @ 12.13 hrs, Volume= 0.048 af, Depth= 2.36"
Routed to Pond 26P : Bio Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.243	74	
	0.243		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 30S: (new Subcat)



Summary for Subcatchment 31S: (new Subcat)

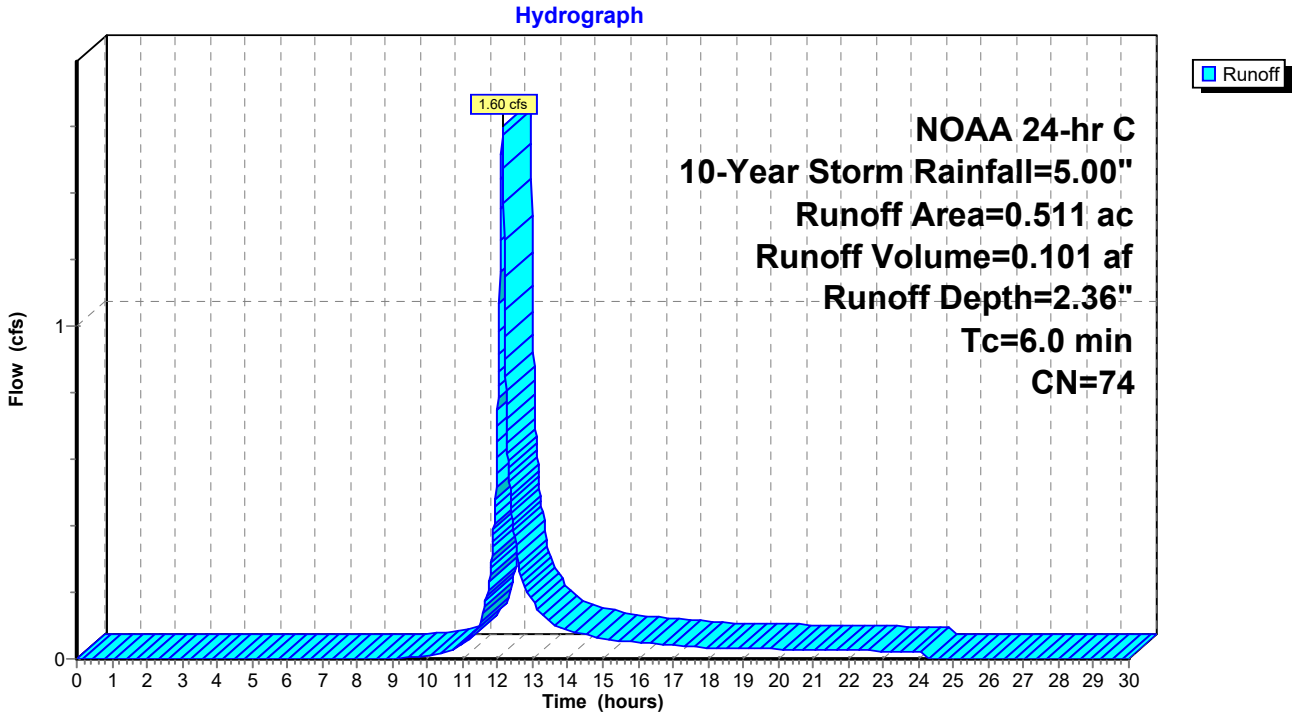
Runoff = 1.60 cfs @ 12.13 hrs, Volume= 0.101 af, Depth= 2.36"
Routed to Pond 28P : Bio Infiltration Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.511	74	
	0.511		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 31S: (new Subcat)



Summary for Subcatchment 32S: (new Subcat)

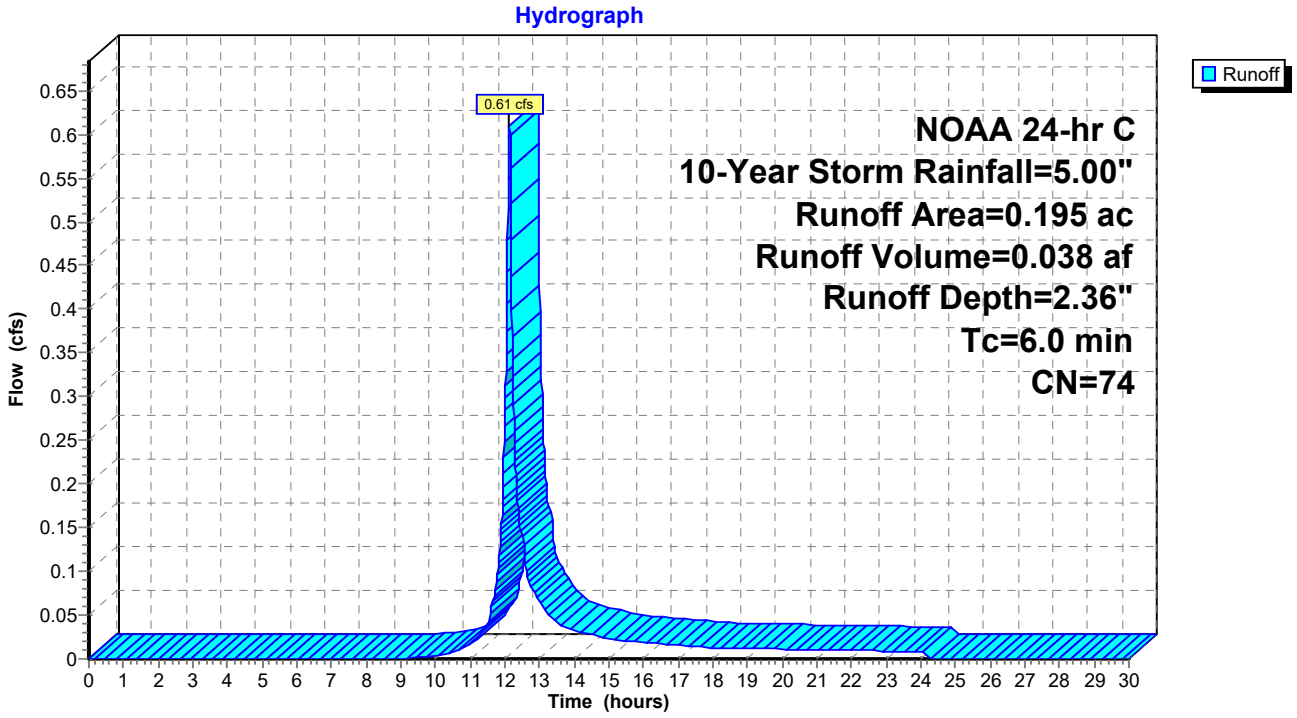
Runoff = 0.61 cfs @ 12.13 hrs, Volume= 0.038 af, Depth= 2.36"
Routed to Pond 32P : UG Roof Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

	Area (ac)	CN	Description
*	0.195	74	
	0.195		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 32S: (new Subcat)



Summary for Subcatchment 33S: Additional Basin Area

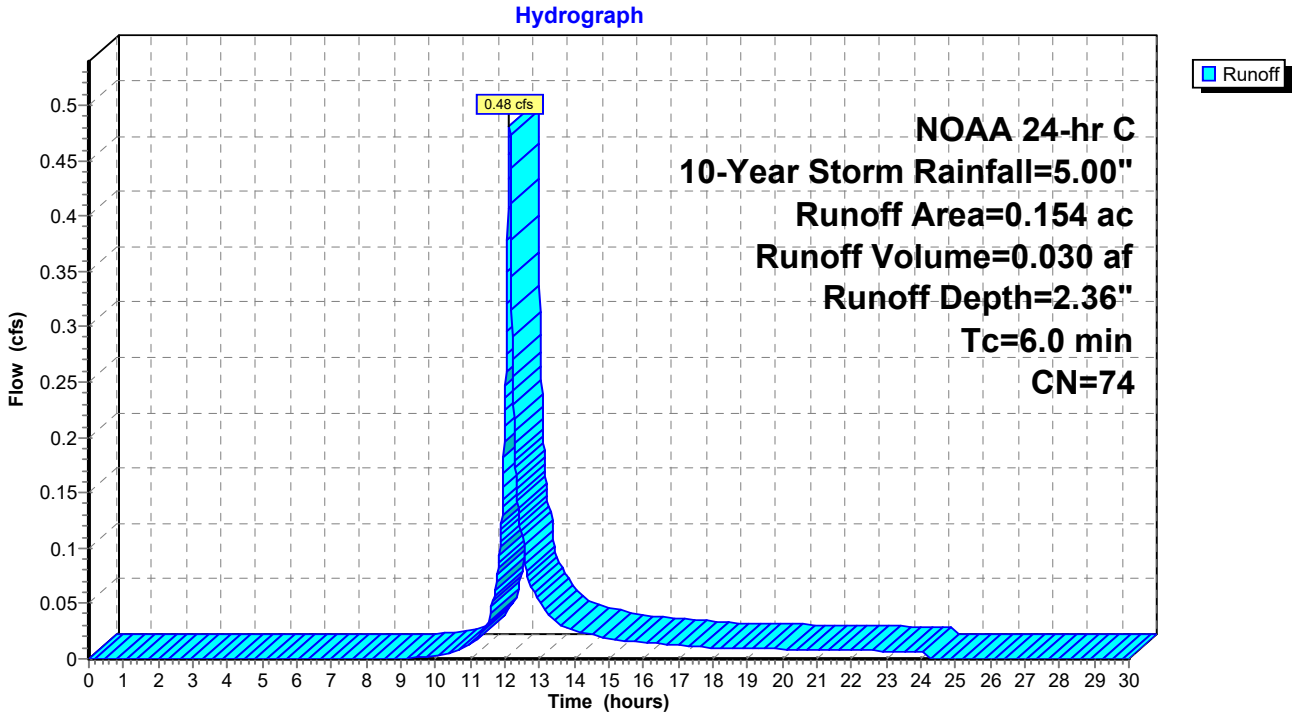
Runoff = 0.48 cfs @ 12.13 hrs, Volume= 0.030 af, Depth= 2.36"
Routed to Pond 26P : Bio Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 10-Year Storm Rainfall=5.00"

Area (ac)	CN	Description
0.154	74	>75% Grass cover, Good, HSG C
0.154		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 33S: Additional Basin Area



Summary for Reach 23R: Right Grass Swale

Inflow Area = 0.413 ac, 63.68% Impervious, Inflow Depth = 3.82" for 10-Year Storm event
Inflow = 1.94 cfs @ 12.13 hrs, Volume= 0.132 af
Outflow = 1.04 cfs @ 12.55 hrs, Volume= 0.131 af, Atten= 46%, Lag= 25.1 min
Routed to Reach 25R : Left Grass Swale

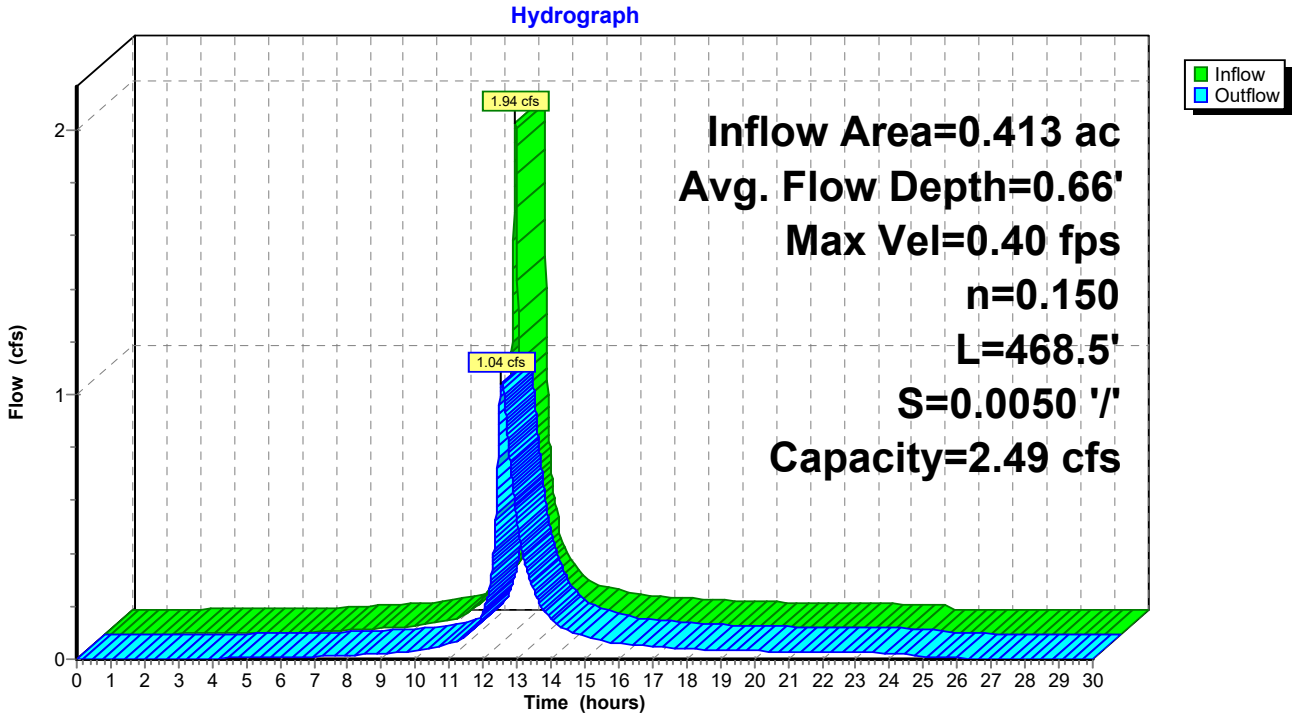
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.40 fps, Min. Travel Time= 19.7 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 64.9 min

Peak Storage= 1,233 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.66' , Surface Width= 5.97'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 2.49 cfs

2.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 468.5' Slope= 0.0050 '/'
Inlet Invert= 165.81', Outlet Invert= 163.47'

‡

Reach 23R: Right Grass Swale



Summary for Reach 25R: Left Grass Swale

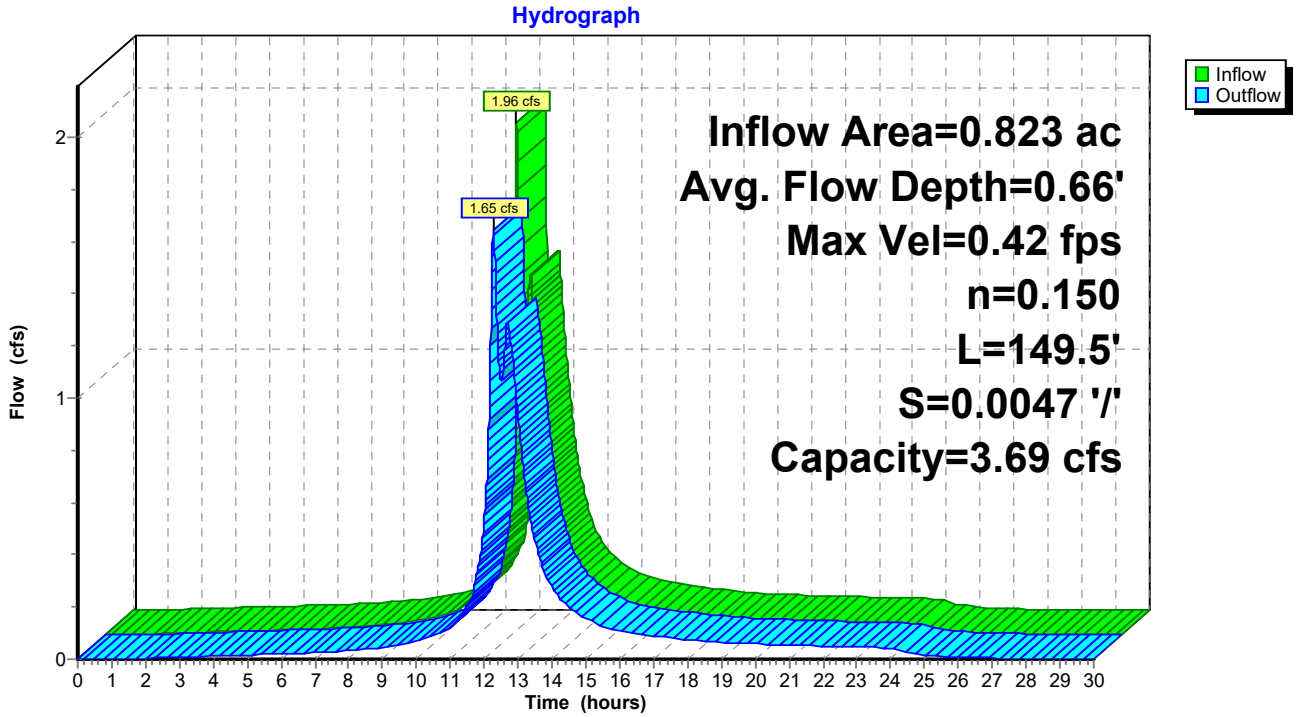
Inflow Area = 0.823 ac, 56.50% Impervious, Inflow Depth > 3.68" for 10-Year Storm event
Inflow = 1.96 cfs @ 12.13 hrs, Volume= 0.253 af
Outflow = 1.65 cfs @ 12.27 hrs, Volume= 0.252 af, Atten= 16%, Lag= 8.5 min
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.42 fps, Min. Travel Time= 5.9 min
Avg. Velocity = 0.13 fps, Avg. Travel Time= 19.6 min

Peak Storage= 587 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.66' , Surface Width= 7.95'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 3.69 cfs

4.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 10.00'
Length= 149.5' Slope= 0.0047 '/'
Inlet Invert= 159.71', Outlet Invert= 159.00'

‡



Summary for Pond 2P: PP-1

Inflow Area = 0.214 ac,100.00% Impervious, Inflow Depth = 4.76" for 10-Year Storm event
Inflow = 1.14 cfs @ 12.13 hrs, Volume= 0.085 af
Outflow = 0.59 cfs @ 12.22 hrs, Volume= 0.085 af, Atten= 48%, Lag= 5.6 min
Primary = 0.59 cfs @ 12.22 hrs, Volume= 0.085 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 165.74' @ 12.22 hrs Surf.Area= 0.067 ac Storage= 0.017 af

Plug-Flow detention time= 45.4 min calculated for 0.085 af (100% of inflow)
Center-of-Mass det. time= 43.5 min (792.3 - 748.8)

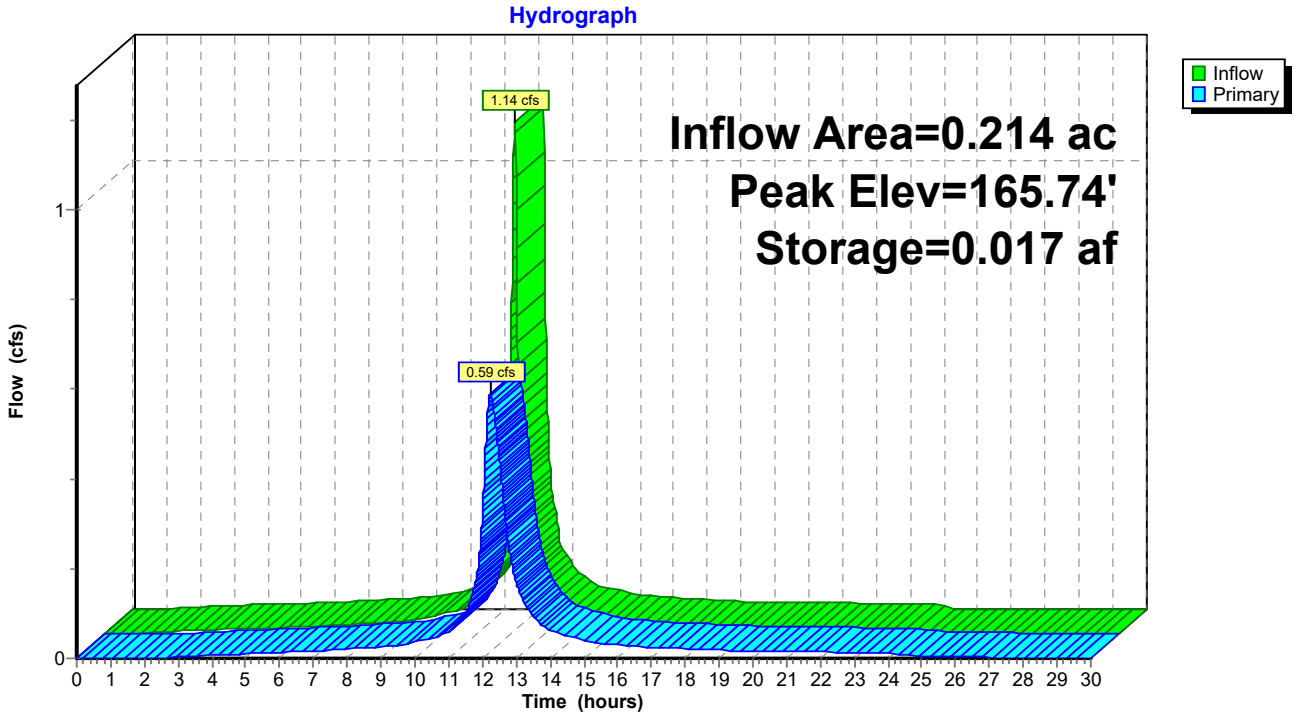
Volume	Invert	Avail.Storage	Storage Description
#1	165.10'	0.080 af	**PP-1 (Prismatic)**Listed below 0.201 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.10	0.067	0.000	0.000
168.10	0.067	0.201	0.201

Device	Routing	Invert	Outlet Devices
#1	Primary	165.10'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	166.60'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.59 cfs @ 12.22 hrs HW=165.74' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.59 cfs @ 3.02 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 2P: PP-1


Hydrograph
Inflow
Primary
1.14 cfs
0.59 cfs
Inflow Area=0.214 ac
Peak Elev=165.74'
Storage=0.017 af
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 4P: PP-2

Inflow Area = 0.311 ac, 94.21% Impervious, Inflow Depth = 4.65" for 10-Year Storm event
Inflow = 1.65 cfs @ 12.13 hrs, Volume= 0.120 af
Outflow = 0.34 cfs @ 12.45 hrs, Volume= 0.106 af, Atten= 79%, Lag= 19.1 min
Primary = 0.34 cfs @ 12.45 hrs, Volume= 0.106 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 162.84' @ 12.45 hrs Surf.Area= 0.130 ac Storage= 0.057 af

Plug-Flow detention time= 189.6 min calculated for 0.106 af (88% of inflow)
Center-of-Mass det. time= 131.2 min (888.1 - 756.9)

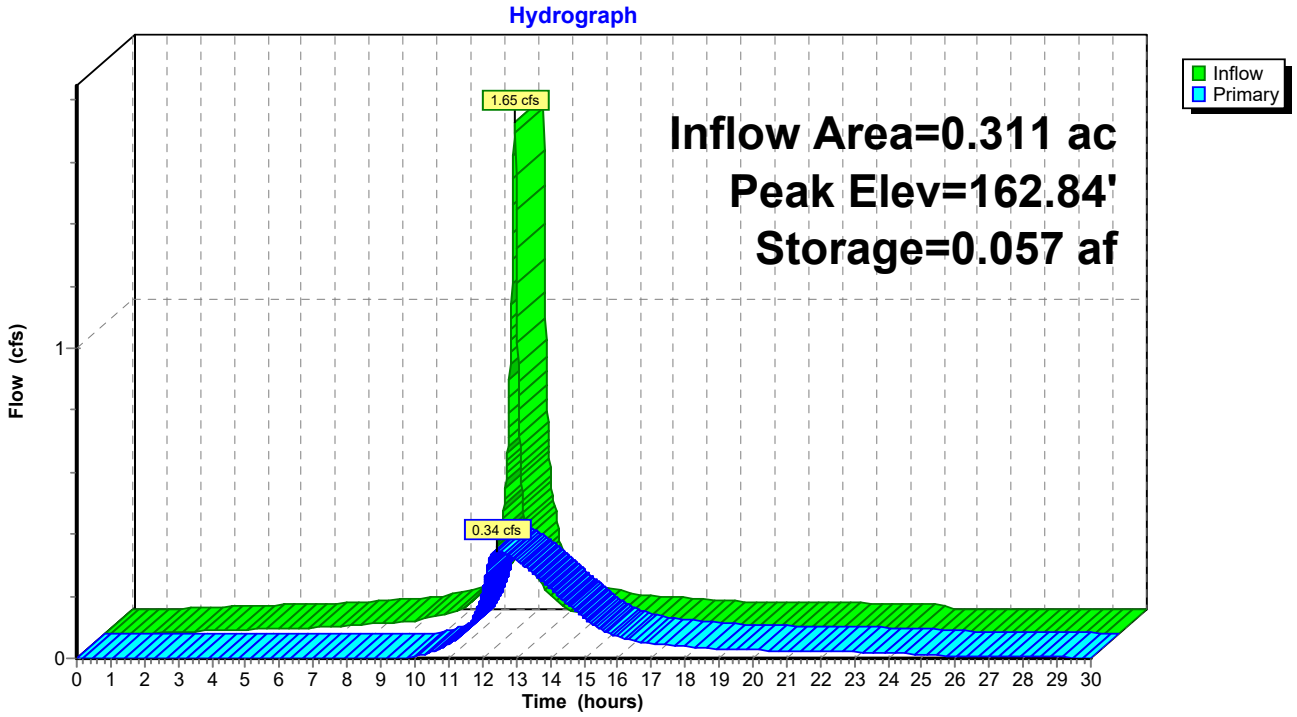
Volume	Invert	Avail.Storage	Storage Description
#1	161.75'	0.169 af	**PP-2 (Prismatic)**Listed below (Recalc) 0.423 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
161.75	0.130	0.000	0.000
165.00	0.130	0.423	0.423

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	163.50'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.34 cfs @ 12.45 hrs HW=162.84' (Free Discharge)
└**1=4" Underdrain** (Orifice Controls 0.34 cfs @ 3.95 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 4P: PP-2


Hydrograph
Inflow
Primary
1.65 cfs
0.34 cfs
Inflow Area=0.311 ac
Peak Elev=162.84'
Storage=0.057 af
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 6P: PP-3

Inflow Area = 0.192 ac, 81.25% Impervious, Inflow Depth = 4.20" for 10-Year Storm event
Inflow = 0.97 cfs @ 12.13 hrs, Volume= 0.067 af
Outflow = 0.33 cfs @ 12.30 hrs, Volume= 0.060 af, Atten= 67%, Lag= 10.4 min
Primary = 0.33 cfs @ 12.30 hrs, Volume= 0.060 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 159.22' @ 12.30 hrs Surf.Area= 0.060 ac Storage= 0.026 af

Plug-Flow detention time= 136.5 min calculated for 0.060 af (89% of inflow)
Center-of-Mass det. time= 81.8 min (862.1 - 780.3)

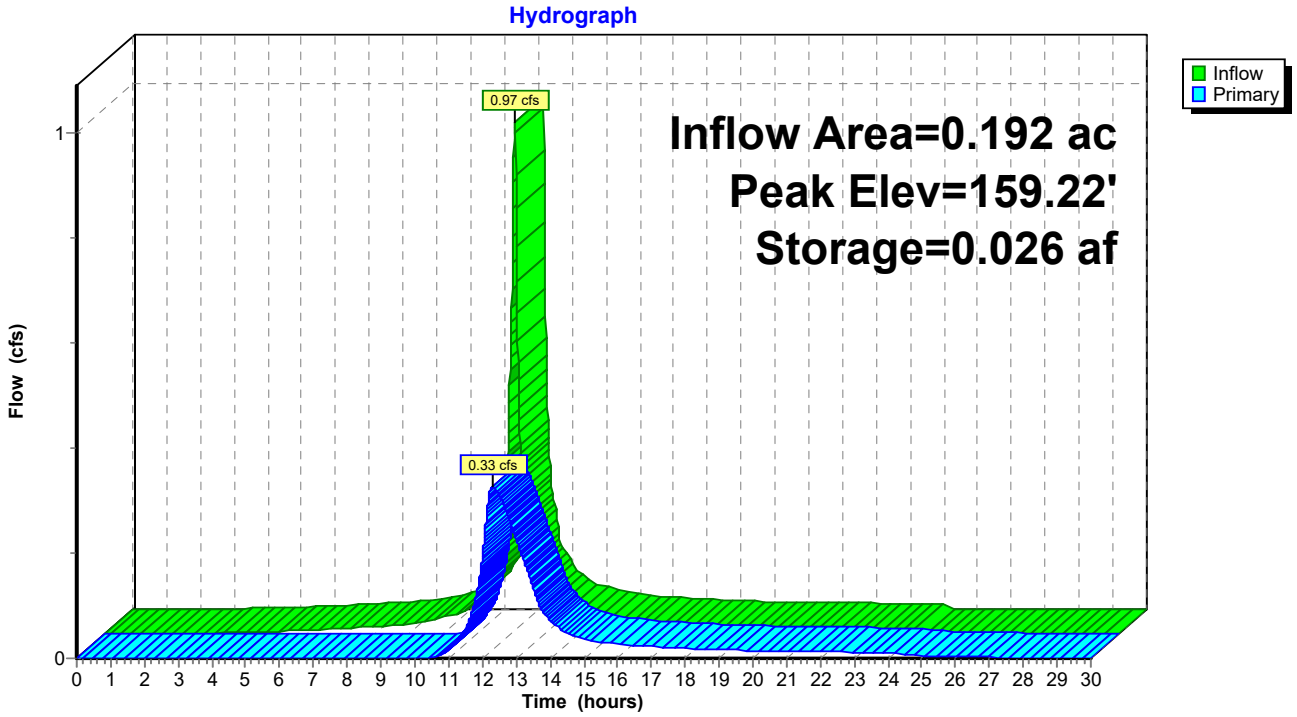
Volume	Invert	Avail.Storage	Storage Description
#1	158.15'	0.079 af	**PP-3 (Prismatic)**Listed below (Recalc) 0.197 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
158.15	0.060	0.000	0.000
161.43	0.060	0.197	0.197

Device	Routing	Invert	Outlet Devices
#1	Primary	158.45'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	159.90'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.33 cfs @ 12.30 hrs HW=159.22' (Free Discharge)
└─**1=4" Underdrain** (Orifice Controls 0.33 cfs @ 3.74 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 6P: PP-3


Hydrograph
Inflow
Primary
0.97 cfs
0.33 cfs
Inflow Area=0.192 ac
Peak Elev=159.22'
Storage=0.026 af
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 8P: PP-4

Inflow Area = 0.206 ac, 68.93% Impervious, Inflow Depth = 3.98" for 10-Year Storm event
Inflow = 1.01 cfs @ 12.13 hrs, Volume= 0.068 af
Outflow = 0.35 cfs @ 12.29 hrs, Volume= 0.066 af, Atten= 65%, Lag= 9.9 min
Primary = 0.35 cfs @ 12.29 hrs, Volume= 0.066 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 170.32' @ 12.29 hrs Surf.Area= 0.052 ac Storage= 0.020 af

Plug-Flow detention time= 75.5 min calculated for 0.066 af (97% of inflow)
Center-of-Mass det. time= 55.7 min (844.9 - 789.2)

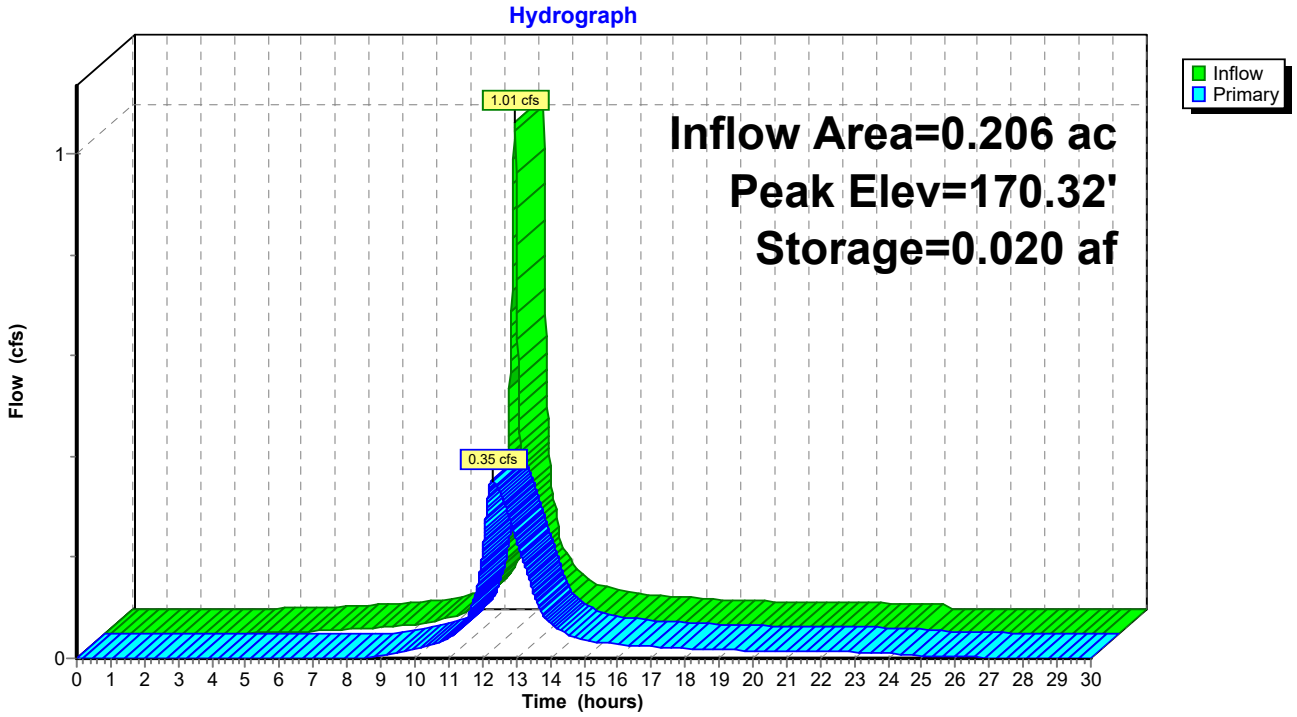
Volume	Invert	Avail.Storage	Storage Description
#1	169.35'	0.068 af	**PP-4 (Prismatic)**Listed below (Recalc) 0.170 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.35	0.052	0.000	0.000
172.62	0.052	0.170	0.170

Device	Routing	Invert	Outlet Devices
#1	Primary	169.45'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	171.10'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.35 cfs @ 12.29 hrs HW=170.32' (Free Discharge)
└─**1=4" Underdrain** (Orifice Controls 0.35 cfs @ 4.03 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 8P: PP-4


Hydrograph
Inflow
Primary
1.01 cfs
0.35 cfs
Inflow Area=0.206 ac
Peak Elev=170.32'
Storage=0.020 af
Flow (cfs)
0
1
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 10P: PP-5

Inflow Area = 0.087 ac, 88.51% Impervious, Inflow Depth = 4.42" for 10-Year Storm event
Inflow = 0.45 cfs @ 12.13 hrs, Volume= 0.032 af
Outflow = 0.35 cfs @ 12.18 hrs, Volume= 0.027 af, Atten= 22%, Lag= 2.9 min
Primary = 0.35 cfs @ 12.18 hrs, Volume= 0.027 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 167.74' @ 12.18 hrs Surf.Area= 0.027 ac Storage= 0.010 af

Plug-Flow detention time= 145.5 min calculated for 0.027 af (83% of inflow)
Center-of-Mass det. time= 73.8 min (843.7 - 769.9)

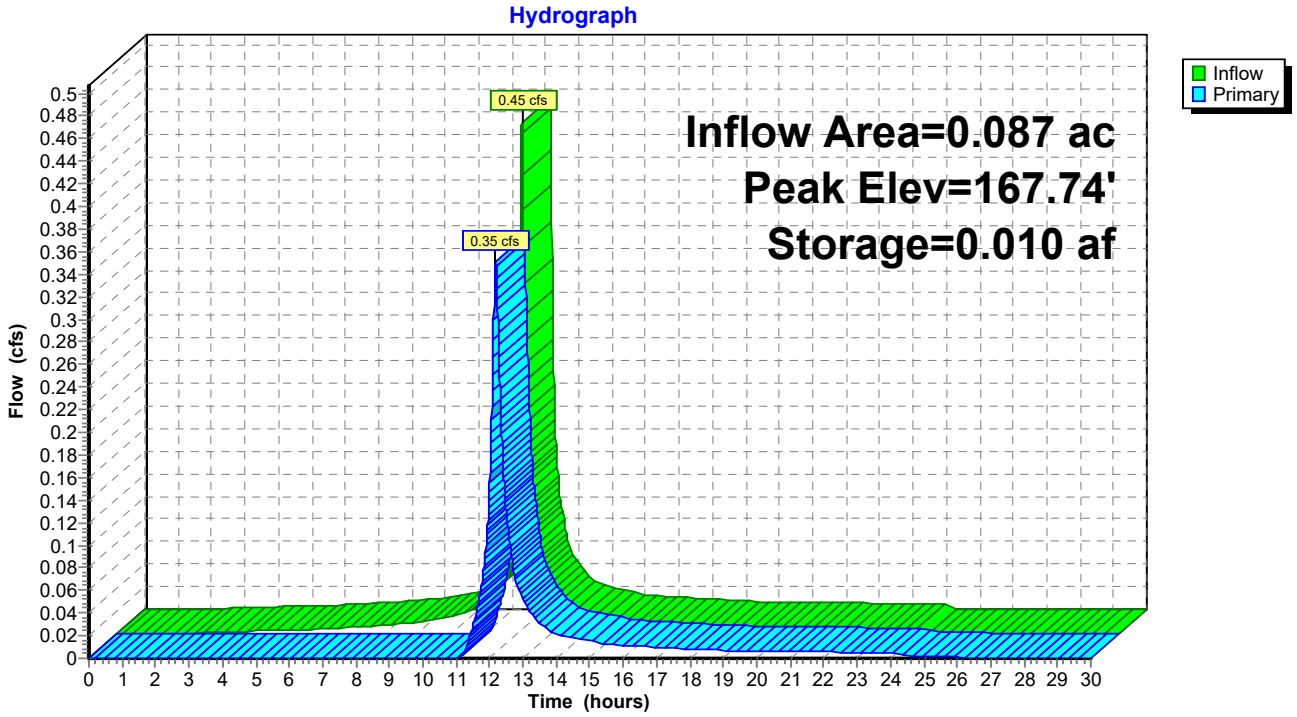
Volume	Invert	Avail.Storage	Storage Description
#1	166.85'	0.030 af	**PP-5 (Prismatic)**Listed below (Recalc) 0.074 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
166.85	0.027	0.000	0.000
169.60	0.027	0.074	0.074

Device	Routing	Invert	Outlet Devices
#1	Primary	167.35'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	168.10'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.35 cfs @ 12.18 hrs HW=167.74' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.35 cfs @ 2.13 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 10P: PP-5


Hydrograph
Inflow
Primary
0.45 cfs
0.35 cfs
Inflow Area=0.087 ac
Peak Elev=167.74'
Storage=0.010 af
Flow (cfs)
Time (hours)

Summary for Pond 12P: PP-6

Inflow Area = 0.258 ac, 91.47% Impervious, Inflow Depth = 4.53" for 10-Year Storm event
Inflow = 1.36 cfs @ 12.13 hrs, Volume= 0.097 af
Outflow = 0.60 cfs @ 12.25 hrs, Volume= 0.097 af, Atten= 55%, Lag= 7.1 min
Primary = 0.60 cfs @ 12.25 hrs, Volume= 0.097 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.86' @ 12.25 hrs Surf.Area= 0.091 ac Storage= 0.024 af

Plug-Flow detention time= 56.3 min calculated for 0.097 af (99% of inflow)
Center-of-Mass det. time= 52.7 min (816.5 - 763.8)

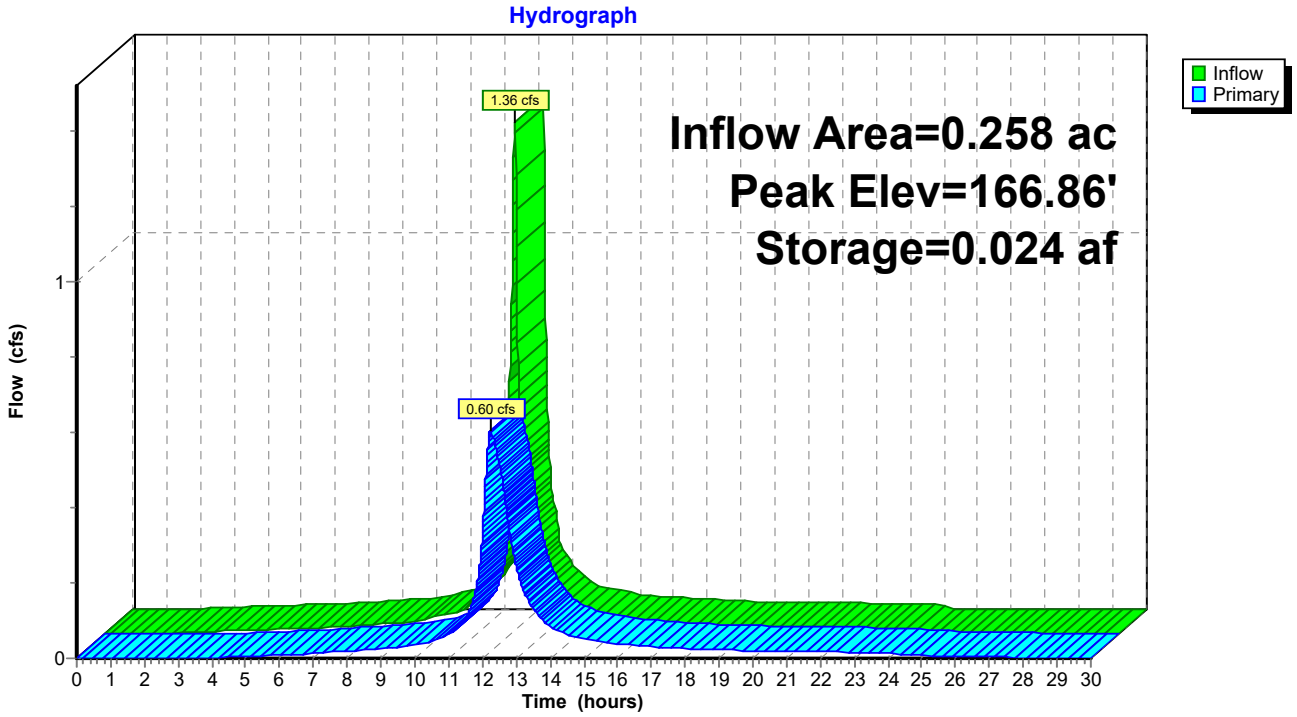
Volume	Invert	Avail.Storage	Storage Description
#1	166.20'	0.110 af	**PP-6 (Prismatic)**Listed below (Recalc) 0.275 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
166.20	0.091	0.000	0.000
169.22	0.091	0.275	0.275

Device	Routing	Invert	Outlet Devices
#1	Primary	166.20'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	167.70'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.60 cfs @ 12.25 hrs HW=166.86' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.60 cfs @ 3.08 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 12P: PP-6


Hydrograph
Inflow
Primary
1.36 cfs
0.60 cfs
Inflow Area=0.258 ac
Peak Elev=166.86'
Storage=0.024 af
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 14P: PP-7

Inflow Area = 0.226 ac, 90.71% Impervious, Inflow Depth = 4.53" for 10-Year Storm event
Inflow = 1.19 cfs @ 12.13 hrs, Volume= 0.085 af
Outflow = 0.54 cfs @ 12.24 hrs, Volume= 0.085 af, Atten= 54%, Lag= 6.9 min
Primary = 0.54 cfs @ 12.24 hrs, Volume= 0.085 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 169.13' @ 12.24 hrs Surf.Area= 0.093 ac Storage= 0.022 af

Plug-Flow detention time= 60.5 min calculated for 0.085 af (99% of inflow)
Center-of-Mass det. time= 56.0 min (819.8 - 763.8)

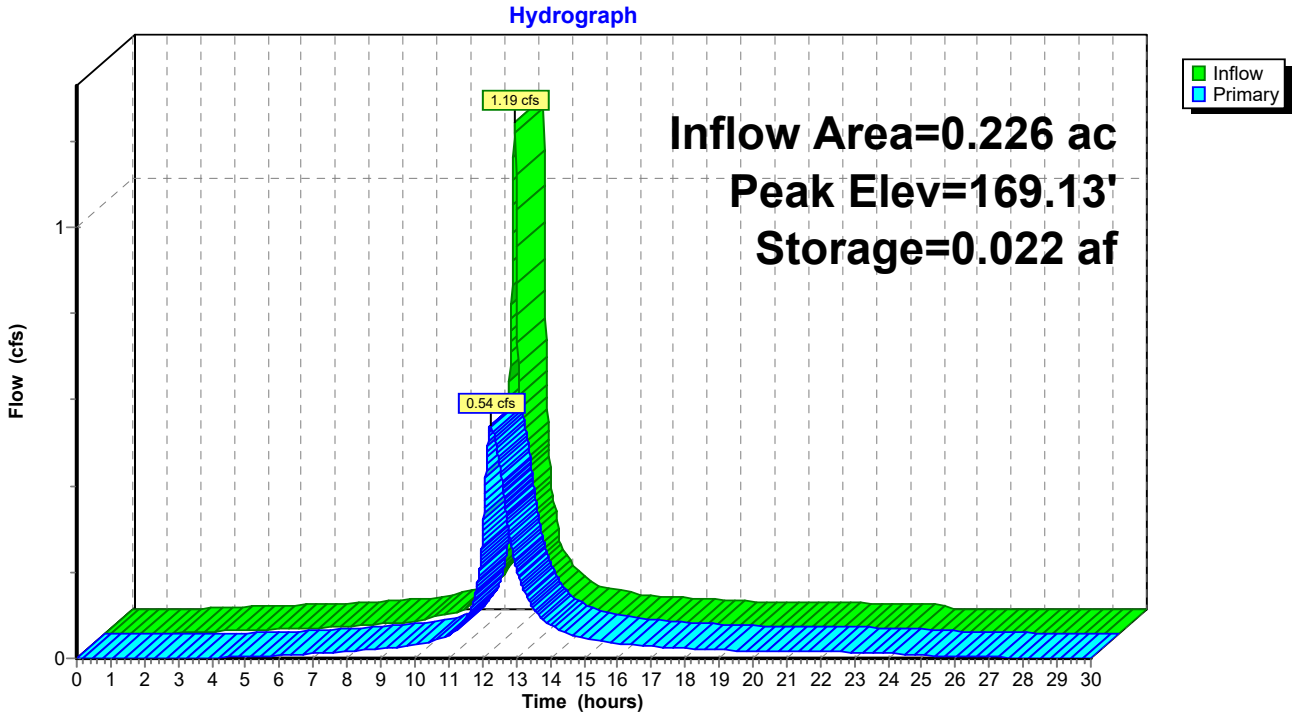
Volume	Invert	Avail.Storage	Storage Description
#1	168.55'	0.093 af	**PP-7 (Prismatic)**Listed below (Recalc) 0.233 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
168.55	0.093	0.000	0.000
171.06	0.093	0.233	0.233

Device	Routing	Invert	Outlet Devices
#1	Primary	168.55'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	169.50'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.54 cfs @ 12.24 hrs HW=169.13' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.54 cfs @ 2.76 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 14P: PP-7


Hydrograph
Inflow
Primary
1.19 cfs
0.54 cfs
Inflow Area=0.226 ac
Peak Elev=169.13'
Storage=0.022 af
Flow (cfs)
0
1
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 20P: PP-8

Inflow Area = 0.174 ac, 80.46% Impervious, Inflow Depth = 4.20" for 10-Year Storm event
Inflow = 0.88 cfs @ 12.13 hrs, Volume= 0.061 af
Outflow = 0.54 cfs @ 12.20 hrs, Volume= 0.052 af, Atten= 39%, Lag= 4.4 min
Primary = 0.54 cfs @ 12.20 hrs, Volume= 0.052 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.83' @ 12.20 hrs Surf.Area= 0.046 ac Storage= 0.020 af

Plug-Flow detention time= 139.1 min calculated for 0.052 af (85% of inflow)
Center-of-Mass det. time= 71.4 min (851.7 - 780.3)

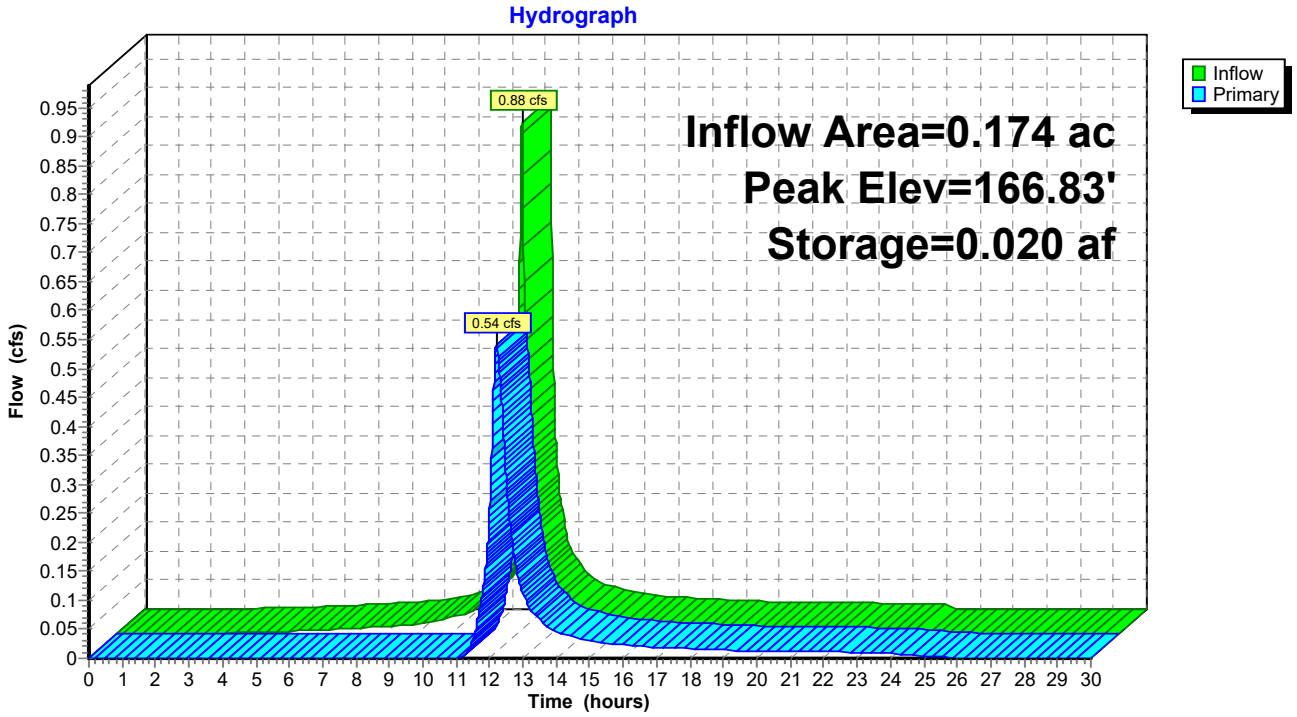
Volume	Invert	Avail.Storage	Storage Description
#1	165.75'	0.056 af	**PP-8 (Prismatic)**Listed below (Recalc) 0.141 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.75	0.046	0.000	0.000
168.81	0.046	0.141	0.141

Device	Routing	Invert	Outlet Devices
#1	Primary	166.25'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	167.25'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.54 cfs @ 12.20 hrs HW=166.83' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.54 cfs @ 2.75 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 20P: PP-8


Hydrograph
Inflow
Primary
0.88 cfs
0.54 cfs
Inflow Area=0.174 ac
Peak Elev=166.83'
Storage=0.020 af
Flow (cfs)
Time (hours)

Summary for Pond 23P: PP-9

Inflow Area = 0.199 ac, 89.45% Impervious, Inflow Depth = 4.42" for 10-Year Storm event
Inflow = 1.04 cfs @ 12.13 hrs, Volume= 0.073 af
Outflow = 0.49 cfs @ 12.24 hrs, Volume= 0.073 af, Atten= 53%, Lag= 6.5 min
Primary = 0.49 cfs @ 12.24 hrs, Volume= 0.073 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 170.27' @ 12.24 hrs Surf.Area= 0.090 ac Storage= 0.019 af

Plug-Flow detention time= 61.6 min calculated for 0.073 af (99% of inflow)
Center-of-Mass det. time= 56.8 min (826.7 - 769.9)

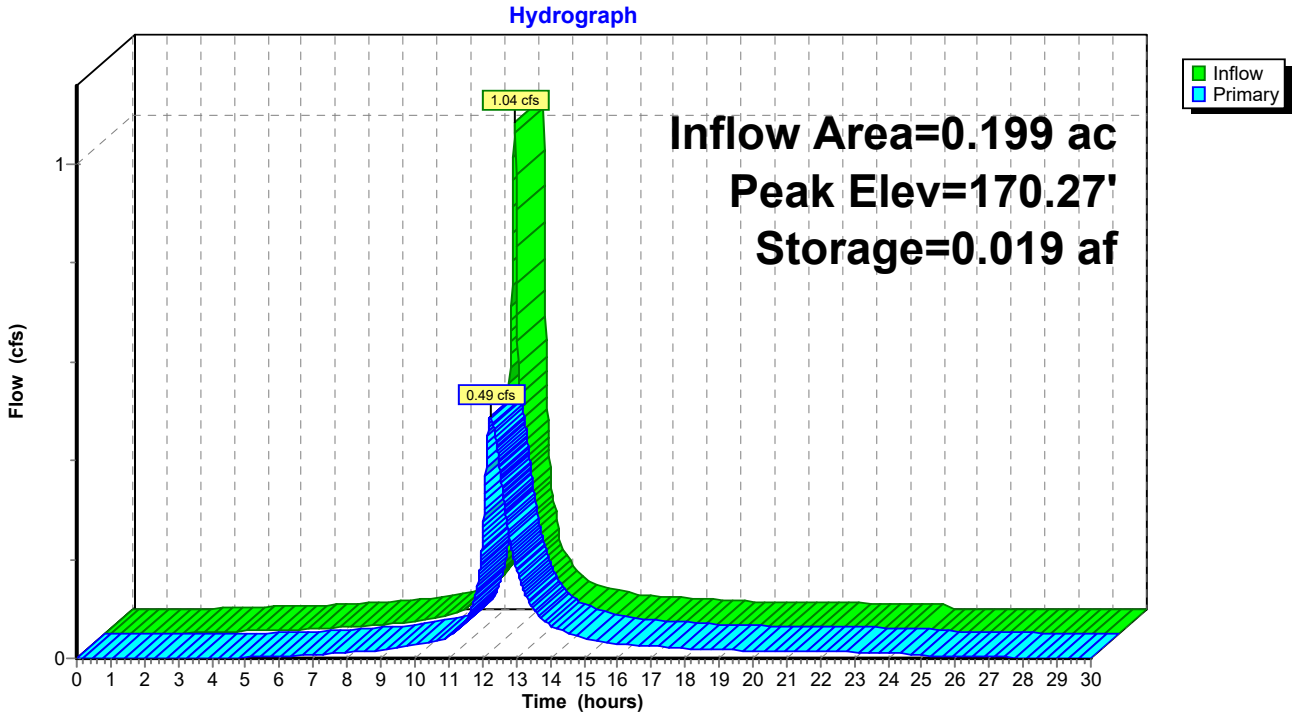
Volume	Invert	Avail.Storage	Storage Description
#1	169.75'	0.090 af	**PP-9 (Prismatic)**Listed below (Recalc) 0.224 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.75	0.090	0.000	0.000
172.24	0.090	0.224	0.224

Device	Routing	Invert	Outlet Devices
#1	Primary	169.75'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	170.95'	**4.0" Vert. 4" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.49 cfs @ 12.24 hrs HW=170.27' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.49 cfs @ 2.50 fps)
└─**2=4" Overflow** (Controls 0.00 cfs)

Pond 23P: PP-9


Hydrograph
Inflow
Primary
1.04 cfs
0.49 cfs
Inflow Area=0.199 ac
Peak Elev=170.27'
Storage=0.019 af
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 25P: PP-10

Inflow Area = 0.125 ac,100.00% Impervious, Inflow Depth = 4.76" for 10-Year Storm event
Inflow = 0.67 cfs @ 12.13 hrs, Volume= 0.050 af
Outflow = 0.38 cfs @ 12.21 hrs, Volume= 0.037 af, Atten= 43%, Lag= 4.9 min
Primary = 0.38 cfs @ 12.21 hrs, Volume= 0.037 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 170.11' @ 12.21 hrs Surf.Area= 0.060 ac Storage= 0.022 af

Plug-Flow detention time= 205.9 min calculated for 0.037 af (75% of inflow)
Center-of-Mass det. time= 117.4 min (866.3 - 748.8)

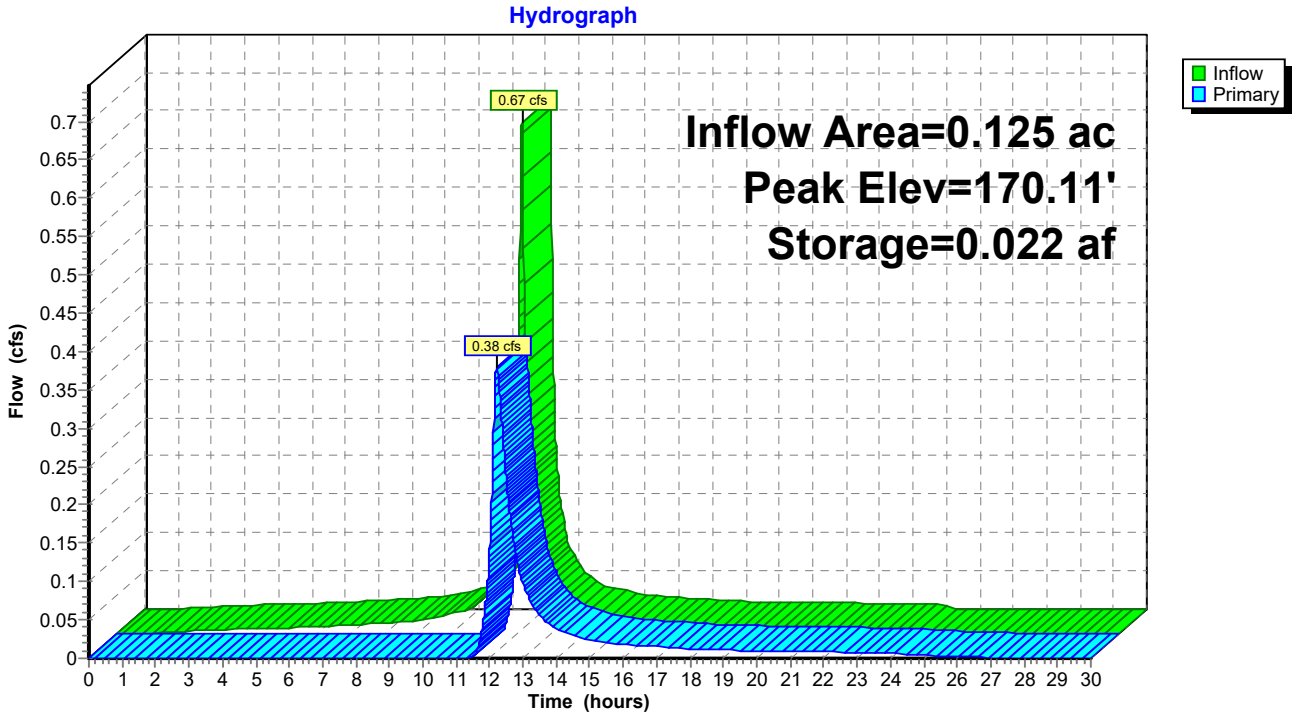
Volume	Invert	Avail.Storage	Storage Description
#1	169.20'	0.073 af	**PP-10 (Prismatic)**Listed below (Recalc) 0.182 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.20	0.060	0.000	0.000
172.24	0.060	0.182	0.182

Device	Routing	Invert	Outlet Devices
#1	Primary	169.70'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	170.70'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.38 cfs @ 12.21 hrs HW=170.11' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.38 cfs @ 2.19 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 25P: PP-10



Summary for Pond 26P: Bio Infiltration Basin 1

[63] Warning: Exceeded Reach 25R INLET depth by 0.19' @ 14.57 hrs
[81] Warning: Exceeded Pond 6P by 1.49' @ 14.49 hrs

Inflow Area = 2.500 ac, 62.96% Impervious, Inflow Depth > 3.70" for 10-Year Storm event
Inflow = 4.64 cfs @ 12.25 hrs, Volume= 0.771 af
Outflow = 0.84 cfs @ 14.10 hrs, Volume= 0.550 af, Atten= 82%, Lag= 111.1 min
Discarded = 0.11 cfs @ 14.10 hrs, Volume= 0.184 af
Primary = 0.73 cfs @ 14.10 hrs, Volume= 0.366 af
Routed to Link 18L : Proposed Flows (South)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 160.10' @ 14.10 hrs Surf.Area= 0.205 ac Storage= 0.423 af

Plug-Flow detention time= 332.4 min calculated for 0.550 af (71% of inflow)
Center-of-Mass det. time= 228.8 min (1,069.1 - 840.3)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	0.859 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

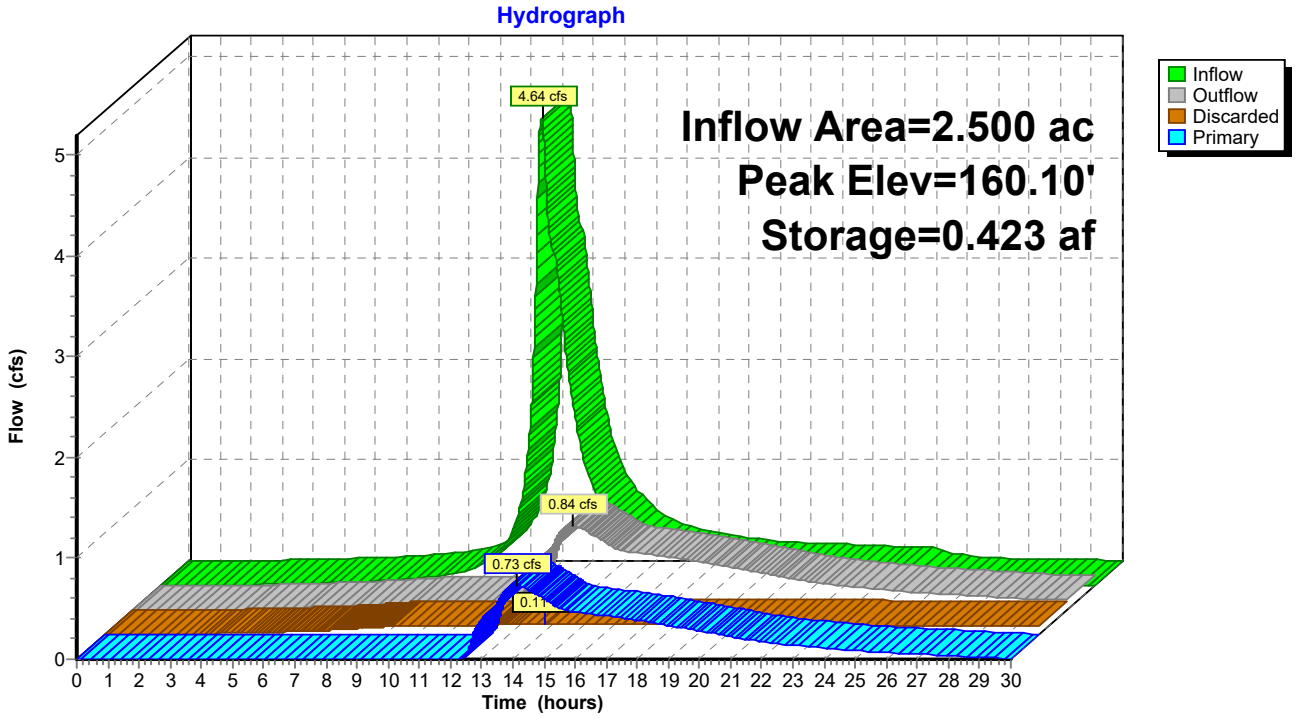
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
156.00	0.177	377.7	0.0	0.000	0.000	0.177
157.00	0.177	377.7	40.0	0.071	0.071	0.186
158.00	0.177	377.7	40.0	0.071	0.142	0.194
159.00	0.177	377.7	40.0	0.071	0.212	0.203
160.00	0.202	403.1	100.0	0.189	0.402	0.240
161.00	0.229	424.1	100.0	0.215	0.617	0.273
162.00	0.256	442.9	100.0	0.242	0.859	0.305

Device	Routing	Invert	Outlet Devices
#1	Primary	157.00'	**15.0" Round RCP_Round 15"** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 157.00' / 156.75' S= 0.0100 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Discarded	156.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'
#3	Device 1	159.00'	**2.5" Vert. WQ** C= 0.600 Limited to weir flow at low heads
#4	Device 1	159.25'	**4.0" Vert. 2Yr** C= 0.600 Limited to weir flow at low heads
#5	Device 1	160.00'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#6	Device 1	160.60'	**24.0" x 24.0" Horiz. Overflow Grate/Trash Rack** C= 0.700 Limited to weir flow at low heads

Discarded OutFlow Max=0.11 cfs @ 14.10 hrs HW=160.10' (Free Discharge)
└**2=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=0.73 cfs @ 14.10 hrs HW=160.10' (Free Discharge)
└**1=RCP_Round 15"** (Passes 0.73 cfs of 10.96 cfs potential flow)
  ├**3=WQ** (Orifice Controls 0.16 cfs @ 4.81 fps)
  ├**4=2Yr** (Orifice Controls 0.35 cfs @ 3.99 fps)
  ├**5=Sharp-Crested Rectangular Weir** (Weir Controls 0.21 cfs @ 1.05 fps)
  └**6=Overflow Grate/Trash Rack** (Controls 0.00 cfs)

Pond 26P: Bio Infiltration Basin 1



Summary for Pond 27P: PP-11

Inflow Area = 0.165 ac,100.00% Impervious, Inflow Depth = 4.76" for 10-Year Storm event
Inflow = 0.88 cfs @ 12.13 hrs, Volume= 0.065 af
Outflow = 0.53 cfs @ 12.20 hrs, Volume= 0.055 af, Atten= 40%, Lag= 4.5 min
Primary = 0.53 cfs @ 12.20 hrs, Volume= 0.055 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.22' @ 12.20 hrs Surf.Area= 0.050 ac Storage= 0.021 af

Plug-Flow detention time= 158.2 min calculated for 0.055 af (84% of inflow)
Center-of-Mass det. time= 88.8 min (837.7 - 748.8)

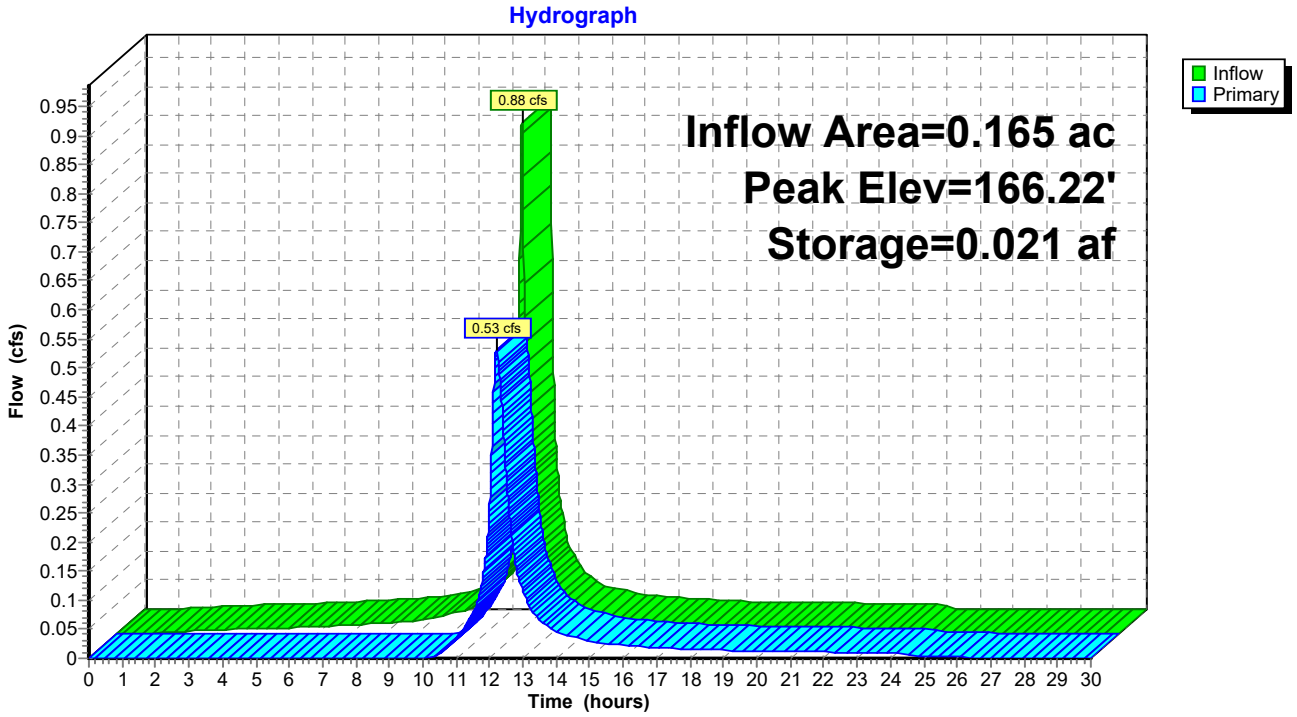
Volume	Invert	Avail.Storage	Storage Description
#1	165.15'	0.060 af	**PP-11 (Prismatic)**Listed below (Recalc) 0.151 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.15	0.050	0.000	0.000
168.17	0.050	0.151	0.151

Device	Routing	Invert	Outlet Devices
#1	Primary	165.65'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	166.65'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.53 cfs @ 12.20 hrs HW=166.22' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.53 cfs @ 2.71 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 27P: PP-11



Summary for Pond 28P: Bio Infiltration Basin 2

Inflow Area = 2.500 ac, 35.28% Impervious, Inflow Depth > 3.02" for 10-Year Storm event
Inflow = 7.46 cfs @ 12.14 hrs, Volume= 0.629 af
Outflow = 5.94 cfs @ 12.20 hrs, Volume= 0.576 af, Atten= 20%, Lag= 3.6 min
Discarded = 0.04 cfs @ 12.20 hrs, Volume= 0.055 af
Primary = 5.91 cfs @ 12.20 hrs, Volume= 0.521 af
Routed to Link 18L : Proposed Flows (South)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 161.53' @ 12.20 hrs Surf.Area= 0.069 ac Storage= 0.144 af

Plug-Flow detention time= 120.8 min calculated for 0.576 af (91% of inflow)
Center-of-Mass det. time= 74.2 min (908.1 - 833.8)

Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	0.263 af	**Small Scale Infiltration Basin 2 (Irregular)** Listed below (Recalc)

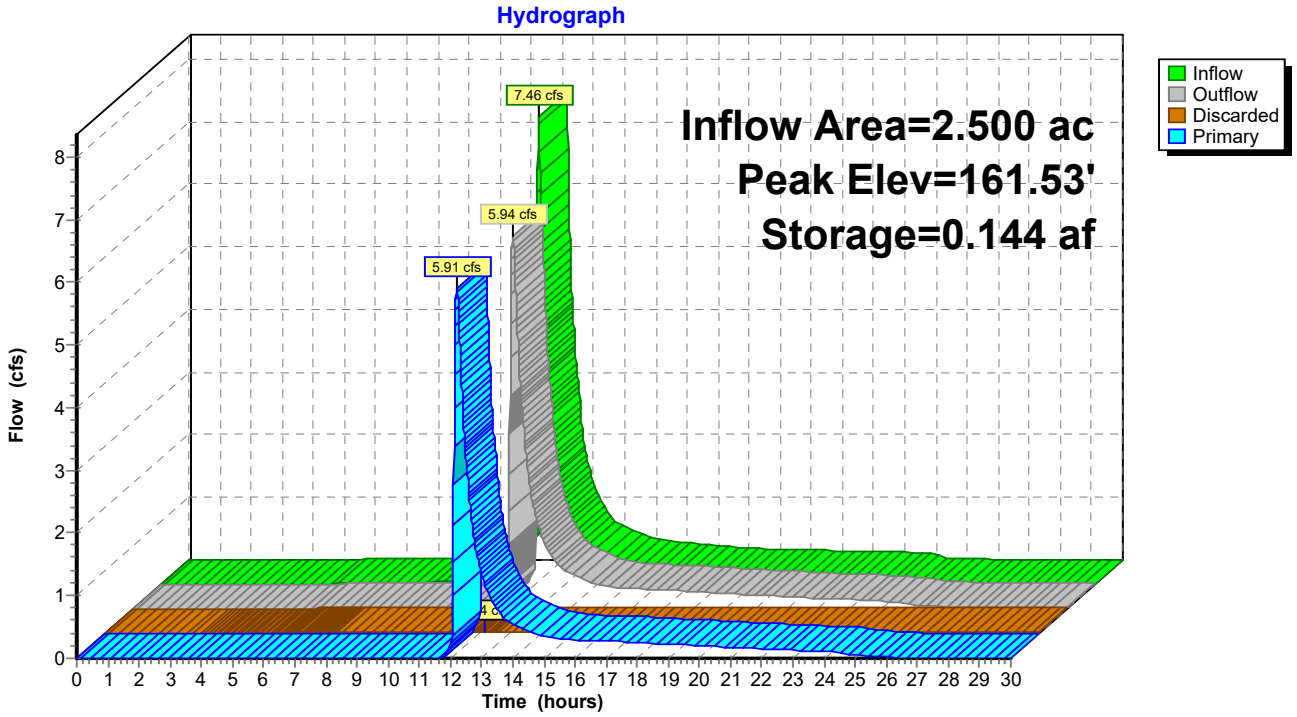
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
157.00	0.047	190.6	0.0	0.000	0.000	0.047
158.00	0.047	190.6	40.0	0.019	0.019	0.051
159.00	0.047	190.6	40.0	0.019	0.038	0.056
160.00	0.047	190.6	40.0	0.019	0.056	0.060
161.00	0.061	209.7	100.0	0.054	0.110	0.075
162.00	0.076	228.6	100.0	0.068	0.179	0.091
163.00	0.093	247.4	100.0	0.084	0.263	0.108

Device	Routing	Invert	Outlet Devices
#1	Primary	158.00'	**15.0" Round RCP_Round 15"** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 158.00' / 145.50' S= 0.5000 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Discarded	157.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'
#3	Device 1	160.00'	**3.5" Vert. WQ+2Yr** C= 0.600 Limited to weir flow at low heads
#4	Device 1	161.00'	**20.0" W x 5.0" H Vert. 10YR X 3.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.00'	**24.0" x 24.0" Horiz. Emergency Overflow** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.20 hrs HW=161.53' (Free Discharge)
└**2=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=5.92 cfs @ 12.20 hrs HW=161.53' (Free Discharge)
└**1=RCP_Round 15"** (Passes 5.92 cfs of 12.58 cfs potential flow)
  ├**3=WQ+2Yr** (Orifice Controls 0.38 cfs @ 5.66 fps)
  ├**4=10YR** (Orifice Controls 5.54 cfs @ 2.66 fps)
  └**5=Emergency Overflow** (Controls 0.00 cfs)

Pond 28P: Bio Infiltration Basin 2



Summary for Pond 32P: UG Roof Storage

Inflow Area = 1.310 ac, 85.11% Impervious, Inflow Depth = 4.41" for 10-Year Storm event
Inflow = 6.56 cfs @ 12.13 hrs, Volume= 0.481 af
Outflow = 5.56 cfs @ 12.17 hrs, Volume= 0.471 af, Atten= 15%, Lag= 2.3 min
Primary = 5.56 cfs @ 12.17 hrs, Volume= 0.471 af
Routed to Link 21L : Proposed Flows (North)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 167.05' @ 12.17 hrs Surf.Area= 0.188 ac Storage= 0.116 af

Plug-Flow detention time= 145.6 min calculated for 0.470 af (98% of inflow)
Center-of-Mass det. time= 131.7 min (887.9 - 756.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	165.50'	0.266 af	**56.49'W x 144.75'L x 8.58'H Field A** 1.610 af Overall - 0.946 af Embedded = 0.664 af x 40.0% Voids
#2A	167.50'	0.899 af	**ACF R-Tank LD 4** x 2400 Inside #1 Inside= 15.7"W x 66.9"H => 6.95 sf x 2.35'L = 16.3 cf Outside= 15.7"W x 66.9"H => 7.32 sf x 2.35'L = 17.2 cf 2400 Chambers in 40 Rows
		1.164 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	**15.0" Round RCP_Round 15"** L= 40.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 165.50' / 164.30' S= 0.0300 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Device 1	165.50'	**2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	166.50'	**4.0' long Sharp-Crested Rectangular Weir** 1 End Contraction(s) 3.0' Crest Height

Primary OutFlow Max=5.55 cfs @ 12.17 hrs HW=167.05' (Free Discharge)
└─**1=RCP_Round 15"** (Passes 5.55 cfs of 7.10 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 5.79 fps)
  └─**3=Sharp-Crested Rectangular Weir** (Weir Controls 5.36 cfs @ 2.48 fps)

Pond 32P: UG Roof Storage - Chamber Wizard Field A

Chamber Model = ACF R-Tank LD 4 (ACF Environmental R-Tank LD)
Inside= 15.7"W x 66.9"H => 6.95 sf x 2.35'L = 16.3 cf
Outside= 15.7"W x 66.9"H => 7.32 sf x 2.35'L = 17.2 cf

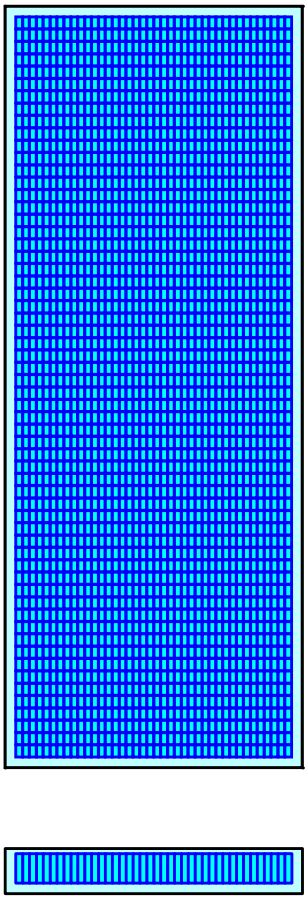
60 Chambers/Row x 2.35' Long = 140.75' Row Length +24.0" End Stone x 2 = 144.75' Base Length
40 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 56.49' Base Width
24.0" Stone Base + 66.9" Chamber Height + 12.0" Stone Cover = 8.58' Field Height

2,400 Chambers x 16.3 cf = 39,147.6 cf Chamber Storage
2,400 Chambers x 17.2 cf = 41,208.0 cf Displacement

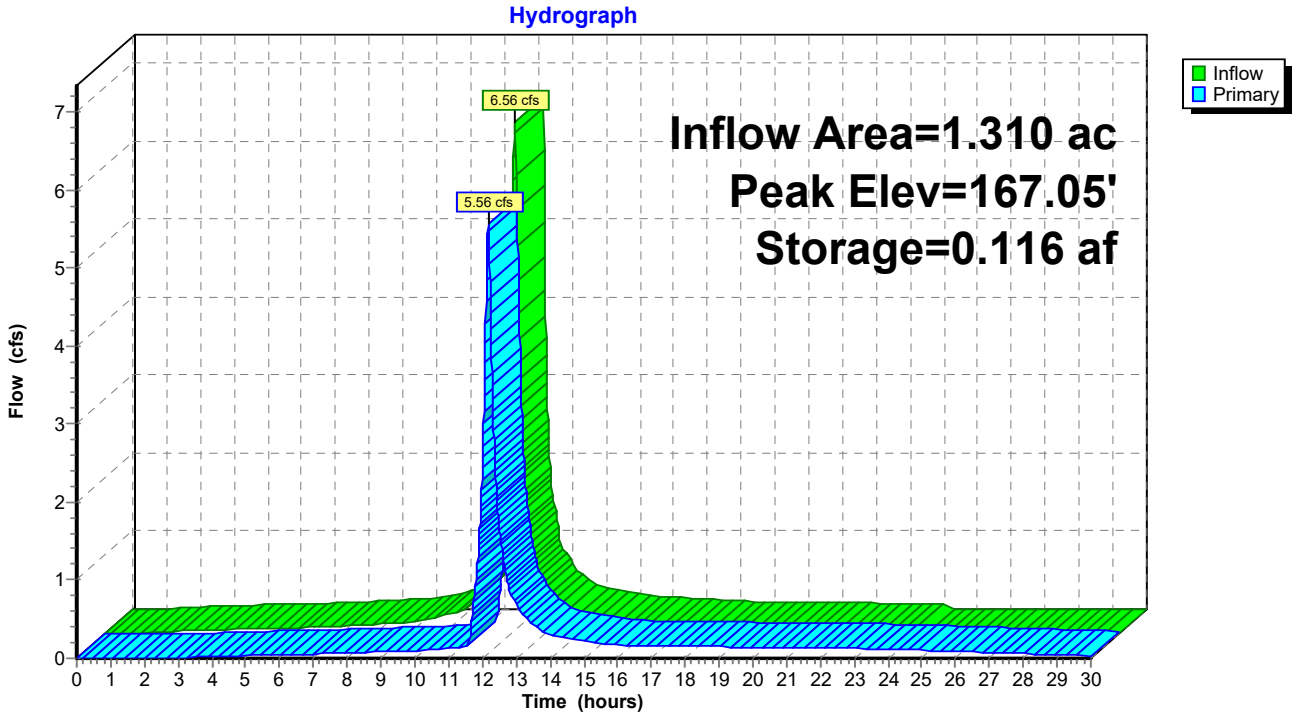
70,140.3 cf Field - 41,208.0 cf Chambers = 28,932.3 cf Stone x 40.0% Voids = 11,572.9 cf Stone Storage

Chamber Storage + Stone Storage = 50,720.5 cf = 1.164 af
Overall Storage Efficiency = 72.3%
Overall System Size = 144.75' x 56.49' x 8.58'

2,400 Chambers
2,597.8 cy Field
1,071.6 cy Stone



Pond 32P: UG Roof Storage

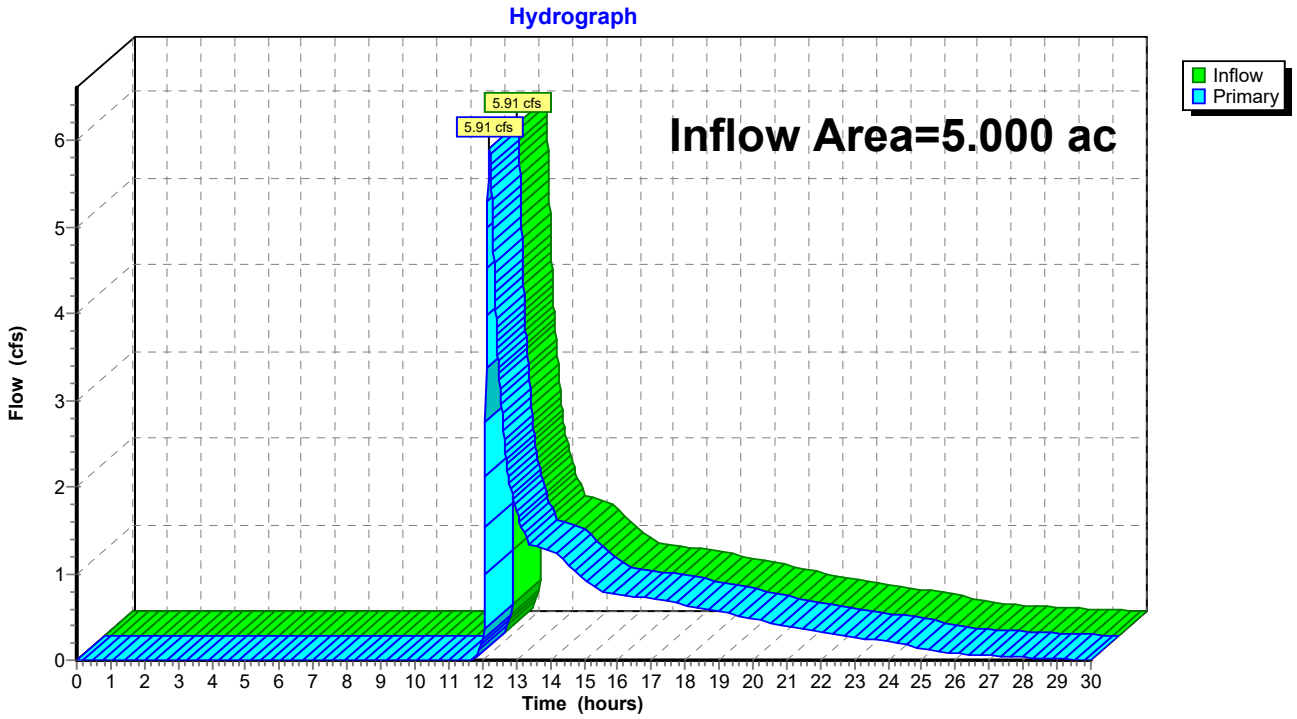


Summary for Link 18L: Proposed Flows (South)

Inflow Area = 5.000 ac, 49.12% Impervious, Inflow Depth > 2.13" for 10-Year Storm event
Inflow = 5.91 cfs @ 12.20 hrs, Volume= 0.887 af
Primary = 5.91 cfs @ 12.20 hrs, Volume= 0.887 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Link 18L: Proposed Flows (South)

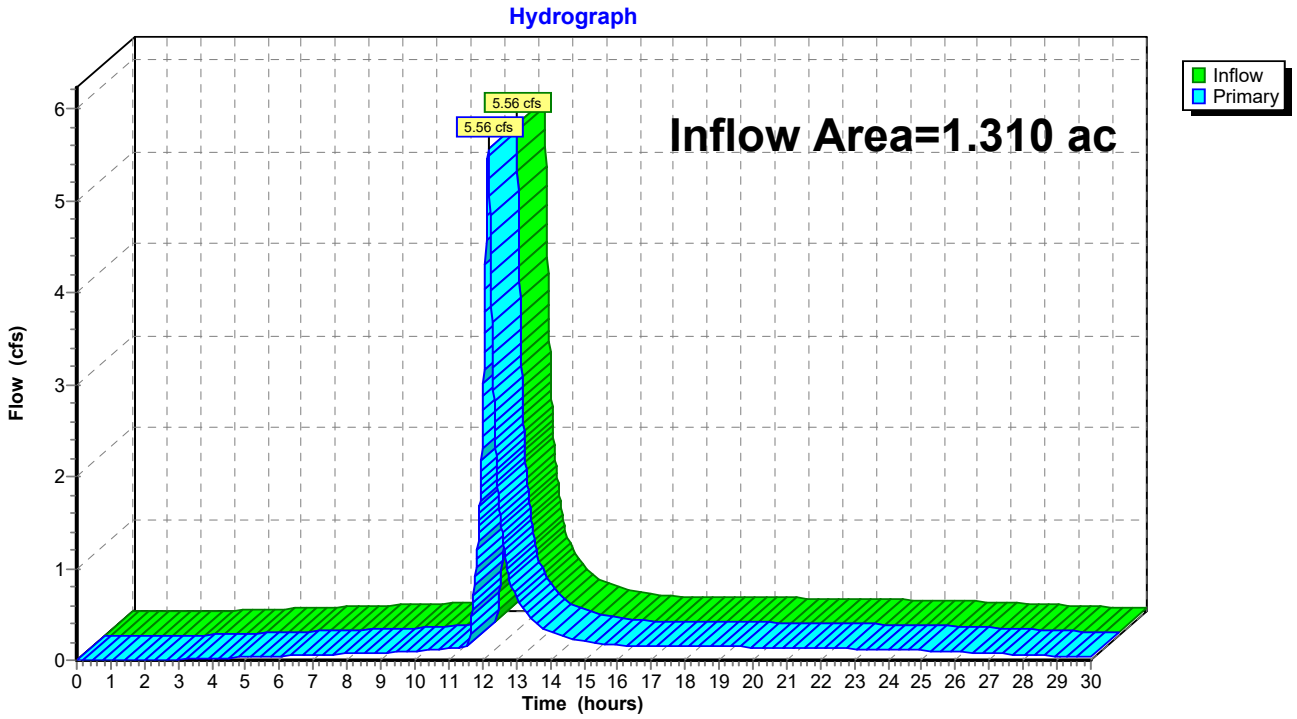


Summary for Link 21L: Proposed Flows (North)

Inflow Area = 1.310 ac, 85.11% Impervious, Inflow Depth > 4.31" for 10-Year Storm event
Inflow = 5.56 cfs @ 12.17 hrs, Volume= 0.471 af
Primary = 5.56 cfs @ 12.17 hrs, Volume= 0.471 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Link 21L: Proposed Flows (North)



Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: WQA-1 Runoff Area=0.214 ac 100.00% Impervious Runoff Depth=8.03"
Tc=6.0 min CN=98 Runoff=1.90 cfs 0.143 af

Subcatchment3S: WQA-2 Runoff Area=0.311 ac 94.21% Impervious Runoff Depth=7.91"
Tc=6.0 min CN=97 Runoff=2.75 cfs 0.205 af

Subcatchment5S: WQA-3 Runoff Area=0.192 ac 81.25% Impervious Runoff Depth=7.43"
Tc=6.0 min CN=93 Runoff=1.66 cfs 0.119 af

Subcatchment7S: WQA-4 Runoff Area=0.206 ac 68.93% Impervious Runoff Depth=7.19"
Tc=6.0 min CN=91 Runoff=1.76 cfs 0.123 af

Subcatchment9S: WQA-5 Runoff Area=0.087 ac 88.51% Impervious Runoff Depth=7.67"
Tc=6.0 min CN=95 Runoff=0.76 cfs 0.056 af

Subcatchment11S: WQA-6 Runoff Area=0.258 ac 91.47% Impervious Runoff Depth=7.79"
Tc=6.0 min CN=96 Runoff=2.27 cfs 0.167 af

Subcatchment13S: WQA-7 Runoff Area=0.226 ac 90.71% Impervious Runoff Depth=7.79"
Tc=6.0 min CN=96 Runoff=1.99 cfs 0.147 af

Subcatchment19S: WQA-8 Runoff Area=0.174 ac 80.46% Impervious Runoff Depth=7.43"
Tc=6.0 min CN=93 Runoff=1.51 cfs 0.108 af

Subcatchment21S: Area of Right Grass Runoff Area=0.300 ac 50.00% Impervious Runoff Depth=6.59"
Tc=6.0 min CN=86 Runoff=2.44 cfs 0.165 af

Subcatchment22S: WQA-9 Runoff Area=0.199 ac 89.45% Impervious Runoff Depth=7.67"
Tc=6.0 min CN=95 Runoff=1.74 cfs 0.127 af

Subcatchment23S: Area of Left Grass Swale Runoff Area=0.208 ac 0.00% Impervious Runoff Depth=5.17"
Tc=6.0 min CN=74 Runoff=1.40 cfs 0.090 af

Subcatchment24S: WQA-10 Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=8.03"
Tc=6.0 min CN=98 Runoff=1.11 cfs 0.084 af

Subcatchment25S: Additional Basin Area Runoff Area=1.112 ac 5.40% Impervious Runoff Depth=5.29"
Tc=6.0 min CN=75 Runoff=7.63 cfs 0.490 af

Subcatchment26S: WQA-11 Runoff Area=0.165 ac 100.00% Impervious Runoff Depth=8.03"
Tc=6.0 min CN=98 Runoff=1.46 cfs 0.110 af

Subcatchment27S: 1/2 Highway Runoff Area=0.113 ac 100.00% Impervious Runoff Depth=8.03"
Tc=6.0 min CN=98 Runoff=1.00 cfs 0.076 af

Subcatchment28S: Proposed & Runoff Area=1.115 ac 100.00% Impervious Runoff Depth=8.03"
Tc=6.0 min CN=98 Runoff=9.87 cfs 0.746 af

Subcatchment29S: 1/2 Highway Runoff Area=0.202 ac 100.00% Impervious Runoff Depth=8.03"
Tc=6.0 min CN=98 Runoff=1.79 cfs 0.135 af

Subcatchment30S: (new Subcat) Runoff Area=0.243 ac 0.00% Impervious Runoff Depth=5.17"
Tc=6.0 min CN=74 Runoff=1.64 cfs 0.105 af

Subcatchment31S: (new Subcat) Runoff Area=0.511 ac 0.00% Impervious Runoff Depth=5.17"
Tc=6.0 min CN=74 Runoff=3.44 cfs 0.220 af

Subcatchment32S: (new Subcat) Runoff Area=0.195 ac 0.00% Impervious Runoff Depth=5.17"
Tc=6.0 min CN=74 Runoff=1.31 cfs 0.084 af

Subcatchment33S: Additional Basin Area Runoff Area=0.154 ac 0.00% Impervious Runoff Depth=5.17"
Tc=6.0 min CN=74 Runoff=1.04 cfs 0.066 af

Reach 23R: Right Grass Swale Avg. Flow Depth=0.91' Max Vel=0.47 fps Inflow=3.44 cfs 0.240 af
n=0.150 L=468.5' S=0.0050 '/' Capacity=2.49 cfs Outflow=2.02 cfs 0.240 af

Reach 25R: Left Grass Swale Avg. Flow Depth=0.94' Max Vel=0.51 fps Inflow=3.73 cfs 0.465 af
n=0.150 L=149.5' S=0.0047 '/' Capacity=3.69 cfs Outflow=3.26 cfs 0.465 af

Pond 2P: PP-1 Peak Elev=166.16' Storage=0.029 af Inflow=1.90 cfs 0.143 af
Outflow=0.85 cfs 0.143 af

Pond 4P: PP-2 Peak Elev=163.47' Storage=0.089 af Inflow=2.75 cfs 0.205 af
Outflow=0.48 cfs 0.190 af

Pond 6P: PP-3 Peak Elev=159.85' Storage=0.041 af Inflow=1.66 cfs 0.119 af
Outflow=0.47 cfs 0.111 af

Pond 8P: PP-4 Peak Elev=171.08' Storage=0.036 af Inflow=1.76 cfs 0.123 af
Outflow=0.51 cfs 0.121 af

Pond 10P: PP-5 Peak Elev=167.95' Storage=0.012 af Inflow=0.76 cfs 0.056 af
Outflow=0.56 cfs 0.050 af

Pond 12P: PP-6 Peak Elev=167.30' Storage=0.040 af Inflow=2.27 cfs 0.167 af
Outflow=0.87 cfs 0.167 af

Pond 14P: PP-7 Peak Elev=169.50' Storage=0.035 af Inflow=1.99 cfs 0.147 af
Outflow=0.79 cfs 0.146 af

Pond 20P: PP-8 Peak Elev=167.24' Storage=0.027 af Inflow=1.51 cfs 0.108 af
Outflow=0.81 cfs 0.098 af

Pond 23P: PP-9 Peak Elev=170.59' Storage=0.030 af Inflow=1.74 cfs 0.127 af
Outflow=0.73 cfs 0.127 af

Pond 25P: PP-10 Peak Elev=170.35' Storage=0.028 af Inflow=1.11 cfs 0.084 af
Outflow=0.60 cfs 0.071 af

Pond 26P: Bio Infiltration Basin 1 Peak Elev=160.68' Storage=0.544 af Inflow=8.13 cfs 1.422 af
Discarded=0.11 cfs 0.207 af Primary=4.61 cfs 0.982 af Outflow=4.72 cfs 1.189 af

Pond 27P: PP-11 Peak Elev=166.58' Storage=0.029 af Inflow=1.46 cfs 0.110 af
Outflow=0.78 cfs 0.100 af

Pond 28P: Bio Infiltration Basin 2 Peak Elev=162.16' Storage=0.191 af Inflow=14.42 cfs 1.249 af
Discarded=0.04 cfs 0.062 af Primary=11.91 cfs 1.133 af Outflow=11.95 cfs 1.194 af

Pond 32P: UG Roof Storage Peak Elev=167.41' Storage=0.143 af Inflow=11.19 cfs 0.830 af
Outflow=8.36 cfs 0.812 af

Link 18L: Proposed Flows (South) Inflow=12.28 cfs 2.115 af
Primary=12.28 cfs 2.115 af

Link 21L: Proposed Flows (North) Inflow=8.36 cfs 0.812 af
Primary=8.36 cfs 0.812 af

Total Runoff Area = 6.310 ac Runoff Volume = 3.566 af Average Runoff Depth = 6.78"
43.41% Pervious = 2.739 ac 56.59% Impervious = 3.571 ac

Summary for Subcatchment 1S: WQA-1

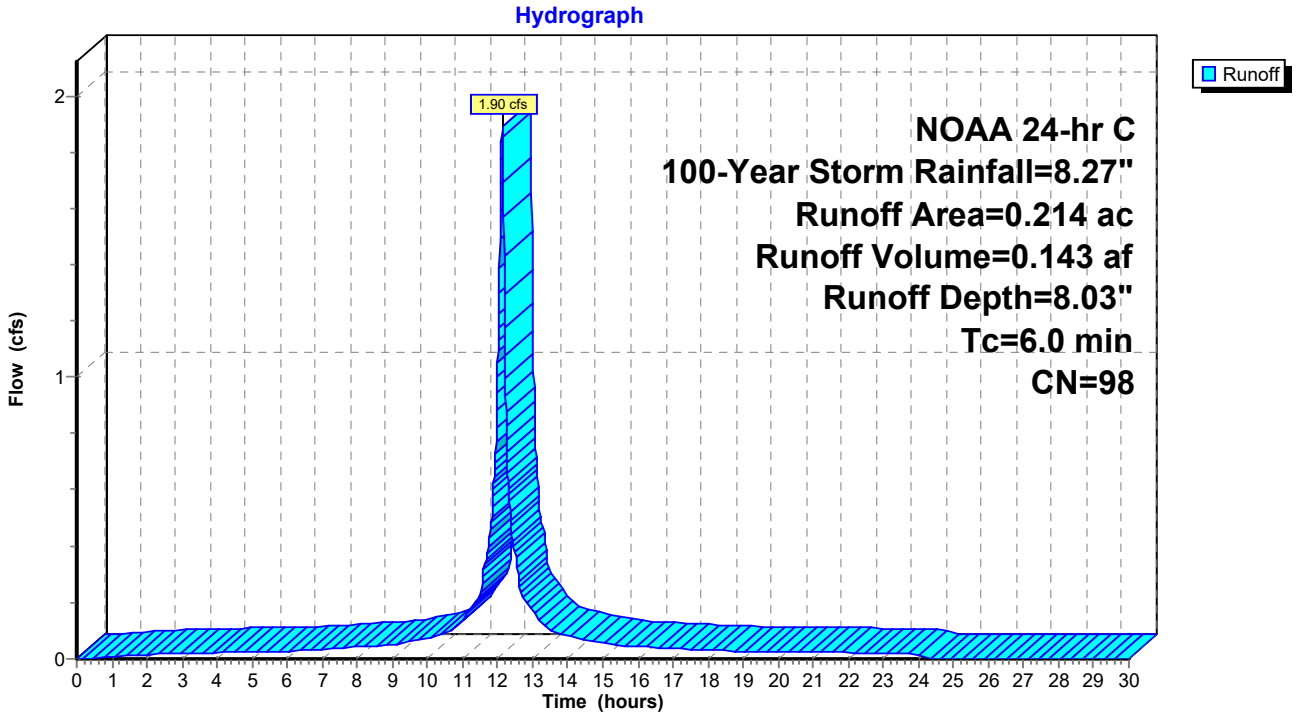
Runoff = 1.90 cfs @ 12.13 hrs, Volume= 0.143 af, Depth= 8.03"
Routed to Pond 2P : PP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.214	98	
	0.214		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1S: WQA-1



Summary for Subcatchment 3S: WQA-2

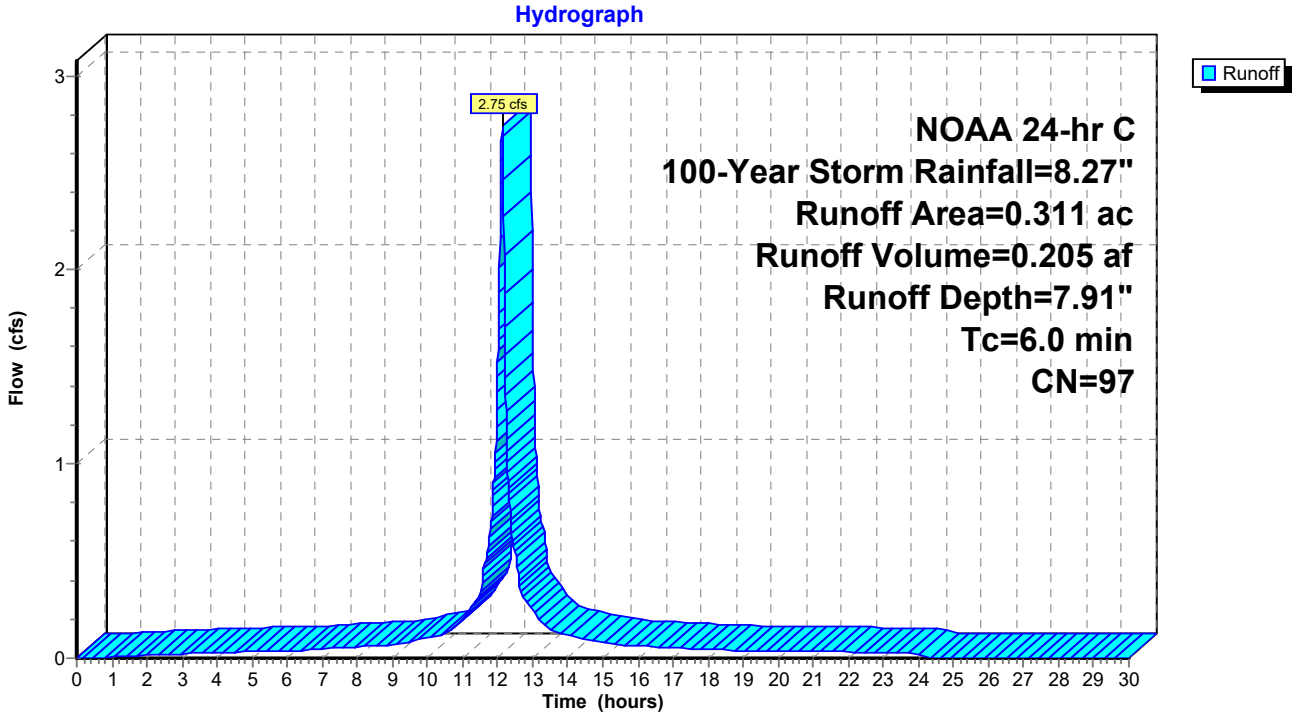
Runoff = 2.75 cfs @ 12.13 hrs, Volume= 0.205 af, Depth= 7.91"
Routed to Pond 4P : PP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.293	98	
	0.018	74	>75% Grass cover, Good, HSG C
	0.311	97	Weighted Average
	0.018		5.79% Pervious Area
	0.293		94.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 3S: WQA-2



Summary for Subcatchment 5S: WQA-3

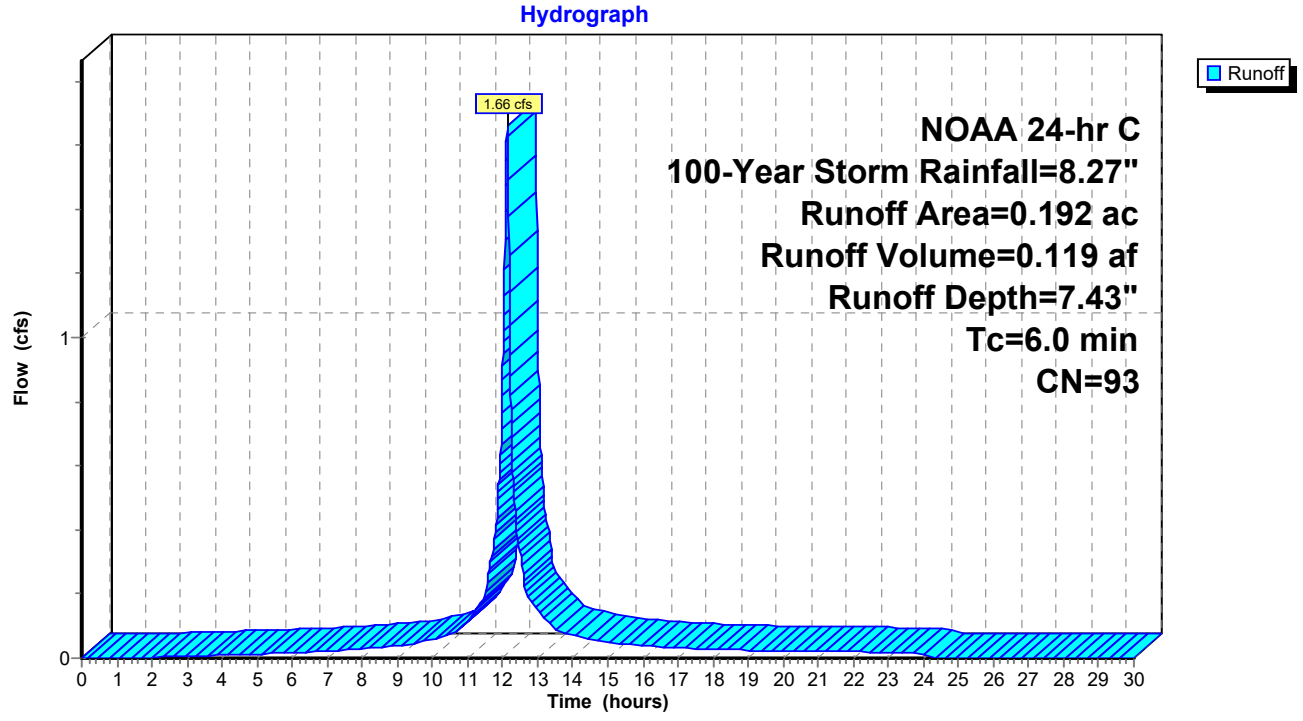
Runoff = 1.66 cfs @ 12.13 hrs, Volume= 0.119 af, Depth= 7.43"
Routed to Pond 6P : PP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.156	98	
	0.036	74	>75% Grass cover, Good, HSG C
	0.192	93	Weighted Average
	0.036		18.75% Pervious Area
	0.156		81.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: WQA-3



Summary for Subcatchment 7S: WQA-4

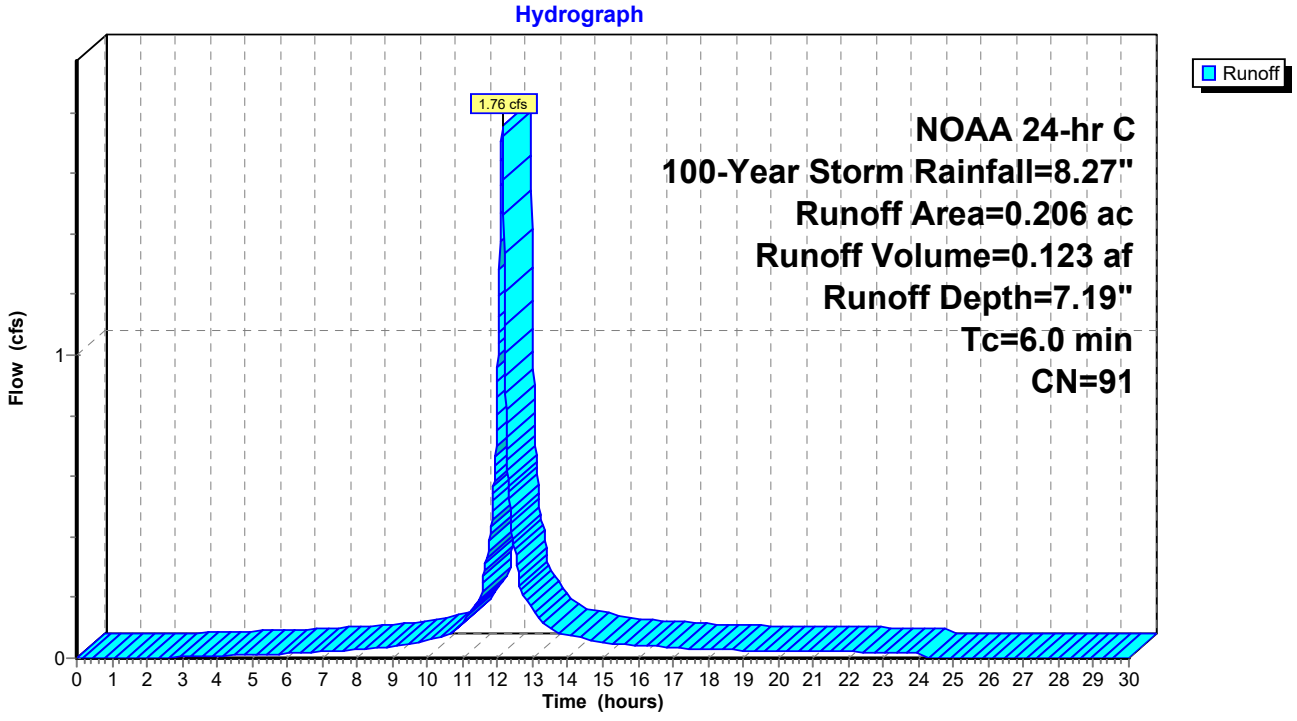
Runoff = 1.76 cfs @ 12.13 hrs, Volume= 0.123 af, Depth= 7.19"
Routed to Pond 8P : PP-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.142	98	
	0.064	74	>75% Grass cover, Good, HSG C
	0.206	91	Weighted Average
	0.064		31.07% Pervious Area
	0.142		68.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 7S: WQA-4



Summary for Subcatchment 9S: WQA-5

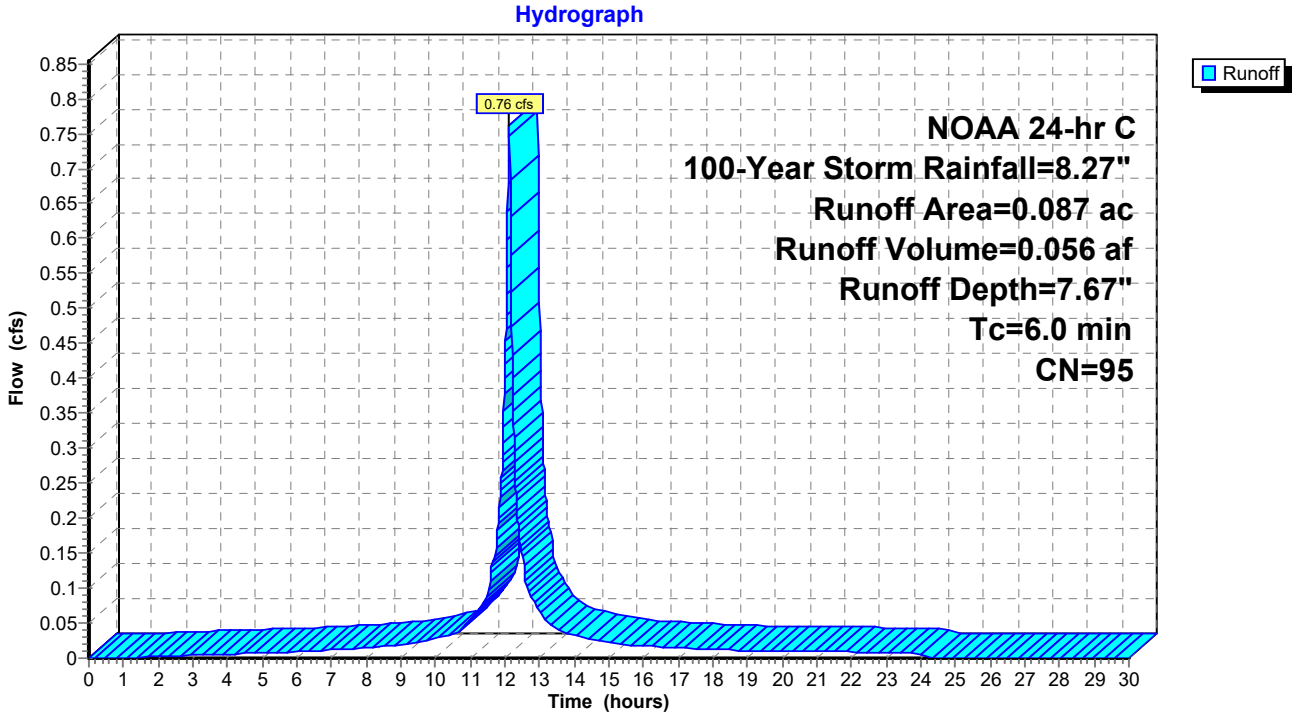
Runoff = 0.76 cfs @ 12.13 hrs, Volume= 0.056 af, Depth= 7.67"
Routed to Pond 10P : PP-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.077	98	
	0.010	74	>75% Grass cover, Good, HSG C
	0.087	95	Weighted Average
	0.010		11.49% Pervious Area
	0.077		88.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 9S: WQA-5



Summary for Subcatchment 11S: WQA-6

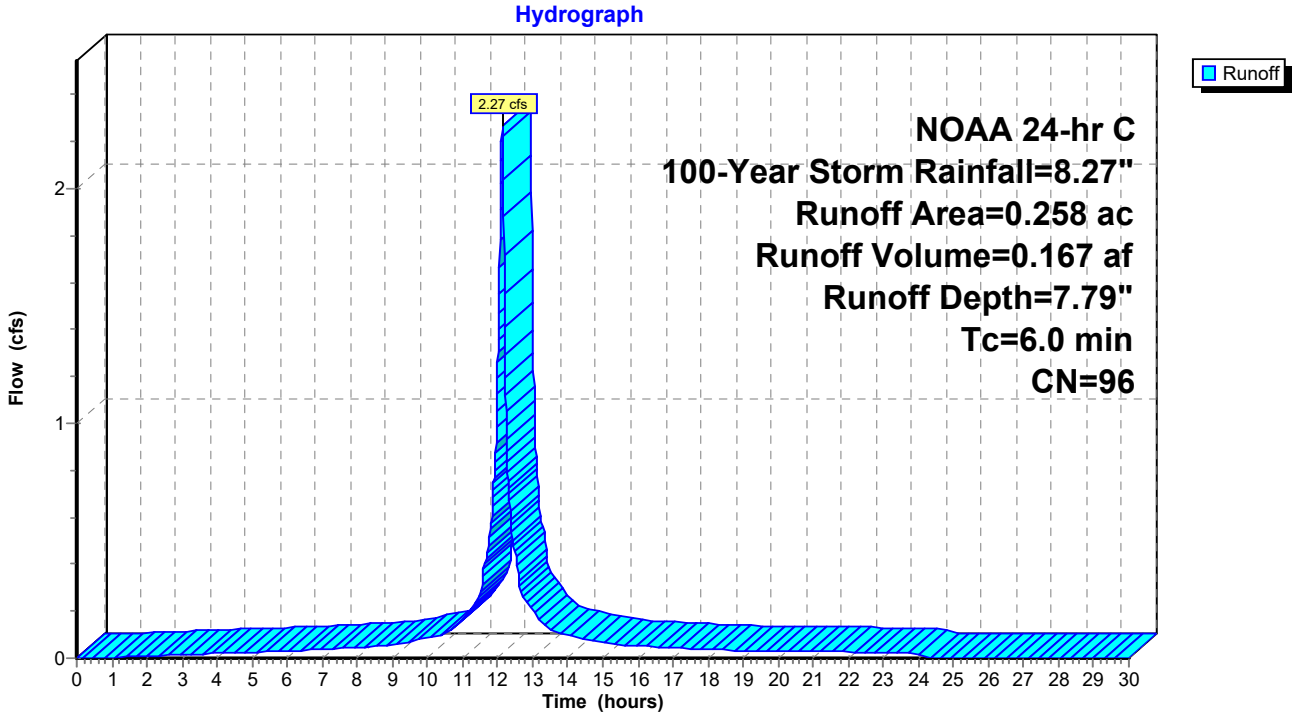
Runoff = 2.27 cfs @ 12.13 hrs, Volume= 0.167 af, Depth= 7.79"
Routed to Pond 12P : PP-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.236	98	
	0.022	74	>75% Grass cover, Good, HSG C
	0.258	96	Weighted Average
	0.022		8.53% Pervious Area
	0.236		91.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 11S: WQA-6



Summary for Subcatchment 13S: WQA-7

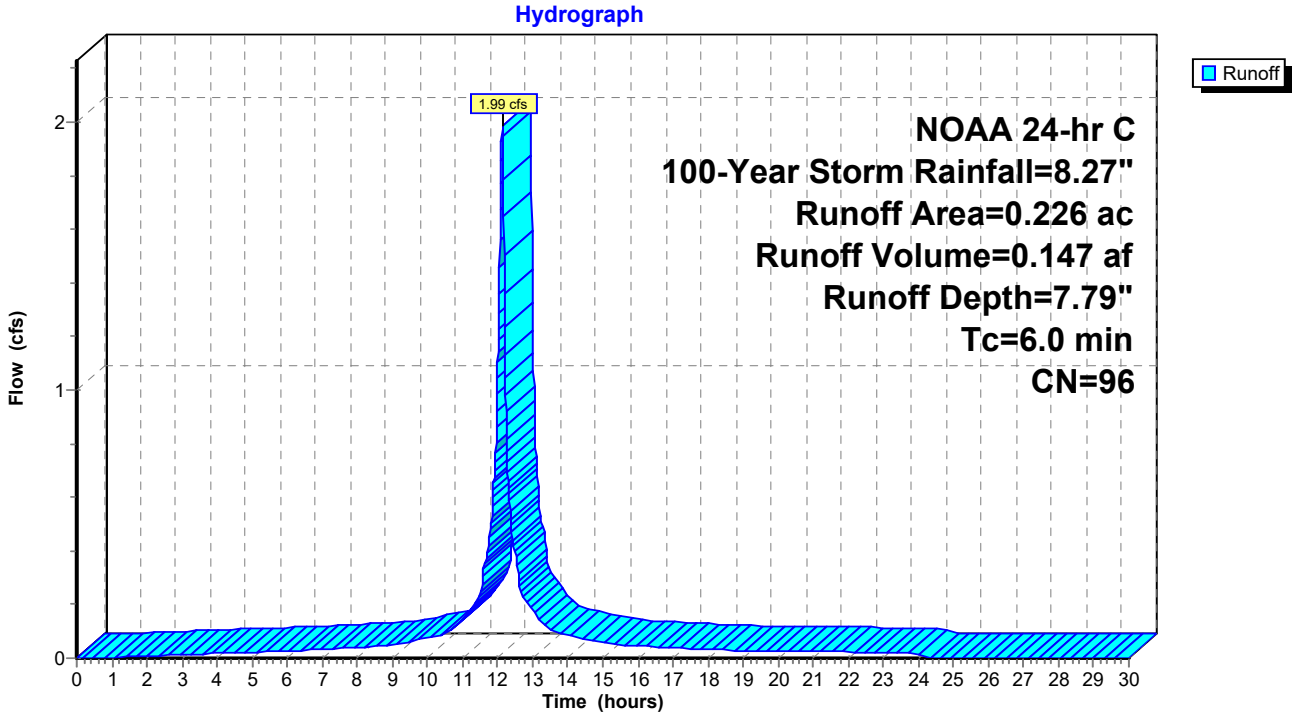
Runoff = 1.99 cfs @ 12.13 hrs, Volume= 0.147 af, Depth= 7.79"
Routed to Pond 14P : PP-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.205	98	
	0.021	74	>75% Grass cover, Good, HSG C
	0.226	96	Weighted Average
	0.021		9.29% Pervious Area
	0.205		90.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 13S: WQA-7



Summary for Subcatchment 19S: WQA-8

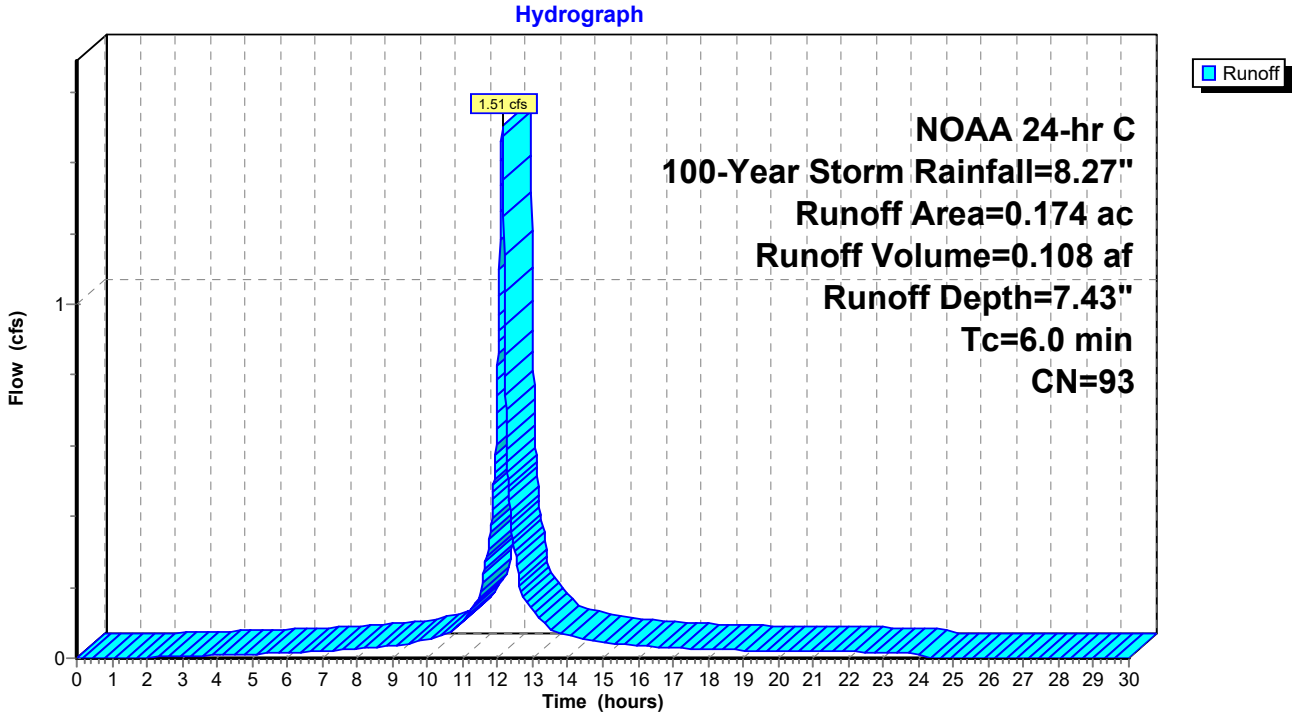
Runoff = 1.51 cfs @ 12.13 hrs, Volume= 0.108 af, Depth= 7.43"
Routed to Pond 20P : PP-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.140	98	
	0.034	74	>75% Grass cover, Good, HSG C
	0.174	93	Weighted Average
	0.034		19.54% Pervious Area
	0.140		80.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 19S: WQA-8



Summary for Subcatchment 21S: Area of Right Grass Swale

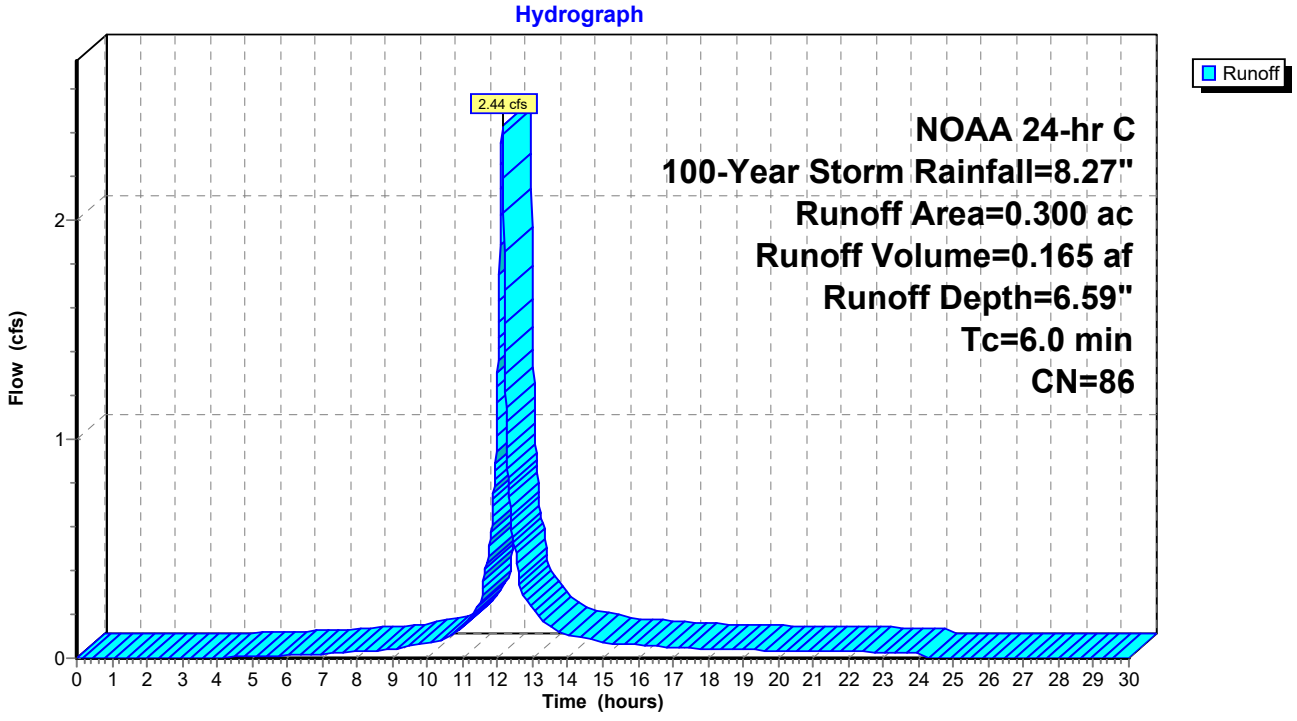
Runoff = 2.44 cfs @ 12.13 hrs, Volume= 0.165 af, Depth= 6.59"
Routed to Reach 23R : Right Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.150	98	Impervious Placeholder
*	0.150	74	Pervious Placeholder
	0.300	86	Weighted Average
	0.150		50.00% Pervious Area
	0.150		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 21S: Area of Right Grass Swale



Summary for Subcatchment 22S: WQA-9

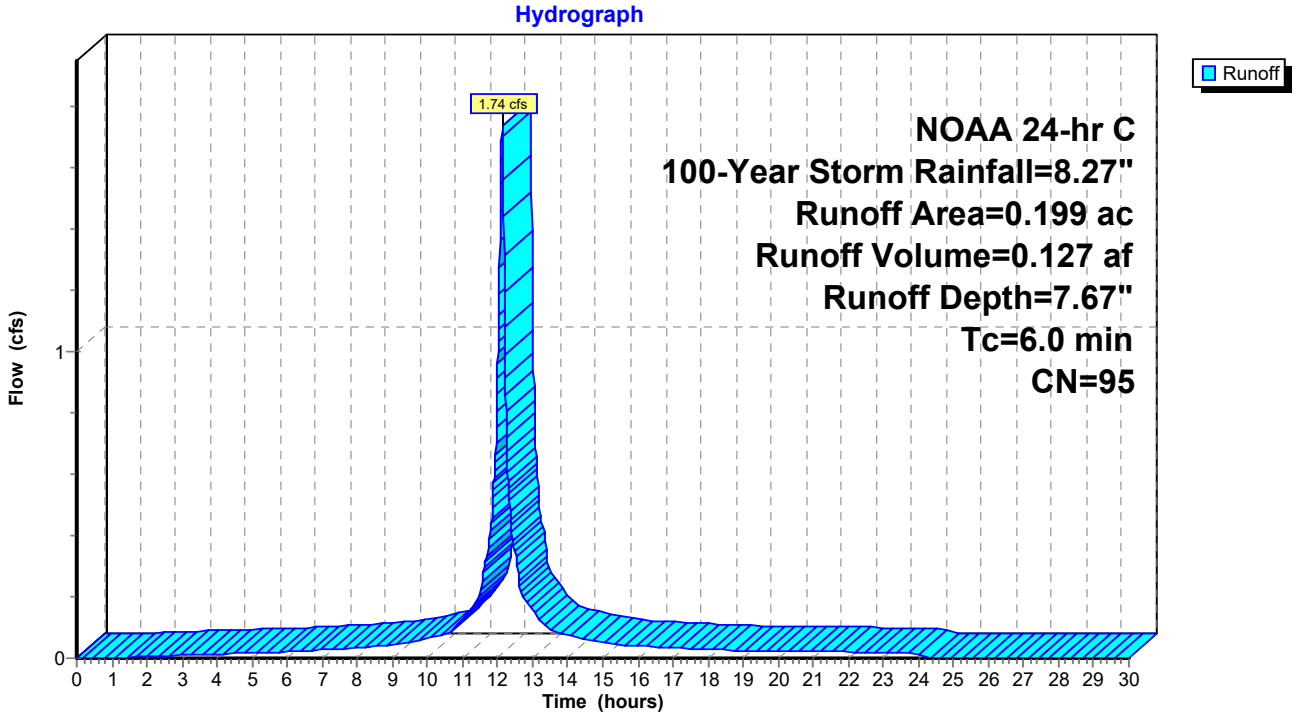
Runoff = 1.74 cfs @ 12.13 hrs, Volume= 0.127 af, Depth= 7.67"
Routed to Pond 23P : PP-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.178	98	
	0.021	74	>75% Grass cover, Good, HSG C
	0.199	95	Weighted Average
	0.021		10.55% Pervious Area
	0.178		89.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 22S: WQA-9



Summary for Subcatchment 23S: Area of Left Grass Swale

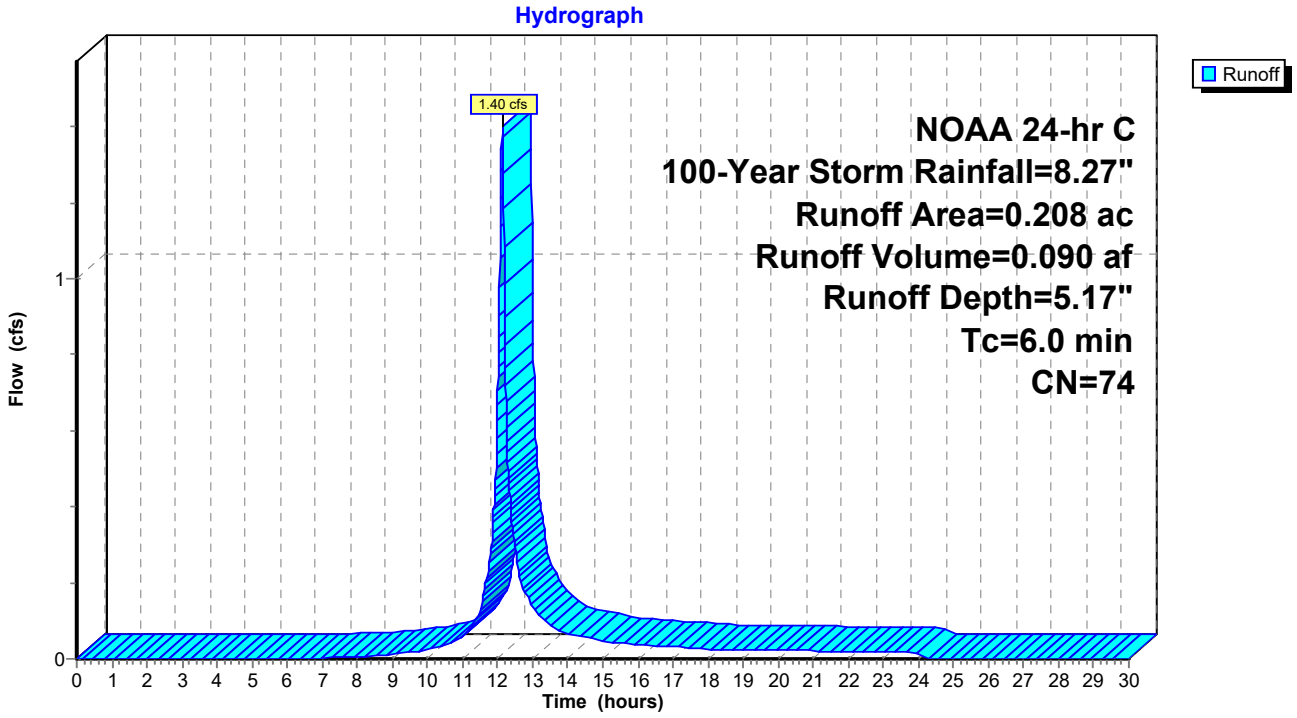
Runoff = 1.40 cfs @ 12.13 hrs, Volume= 0.090 af, Depth= 5.17"
Routed to Reach 25R : Left Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.208	74	
	0.208		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 23S: Area of Left Grass Swale



Summary for Subcatchment 24S: WQA-10

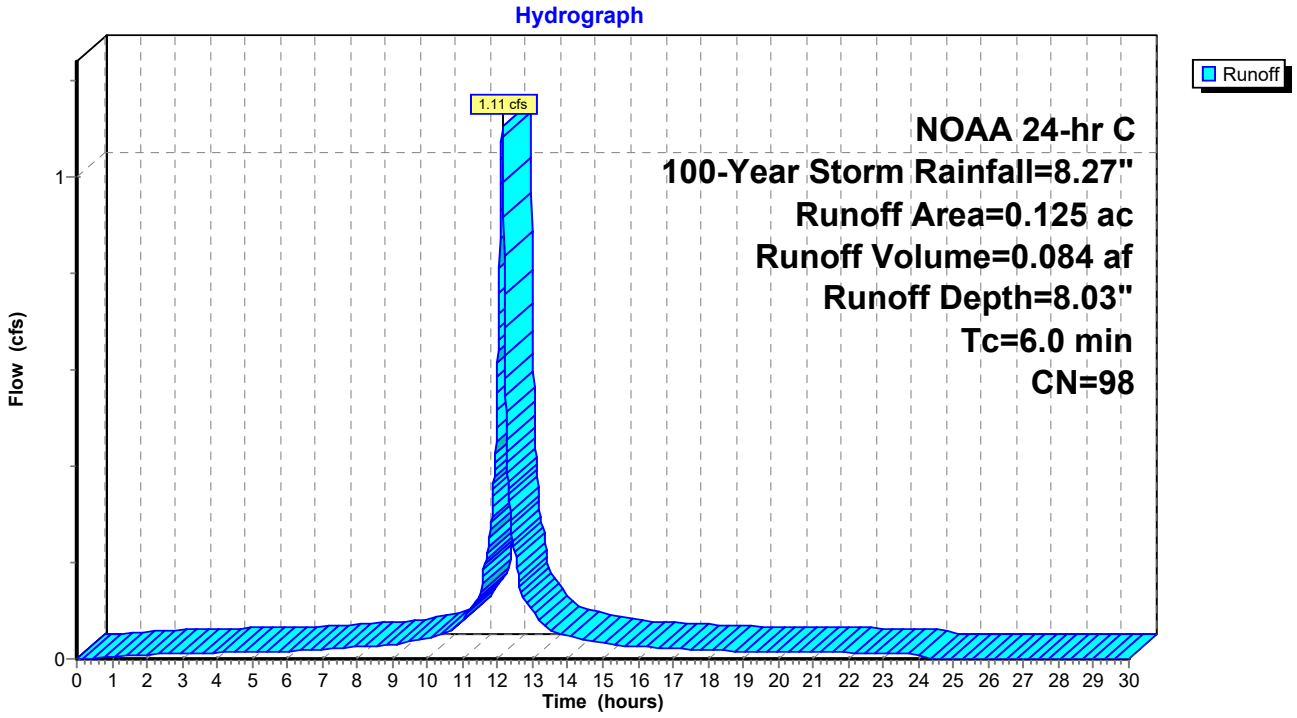
Runoff = 1.11 cfs @ 12.13 hrs, Volume= 0.084 af, Depth= 8.03"
Routed to Pond 25P : PP-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.125	98	
	0.125		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 24S: WQA-10



Summary for Subcatchment 25S: Additional Basin Area

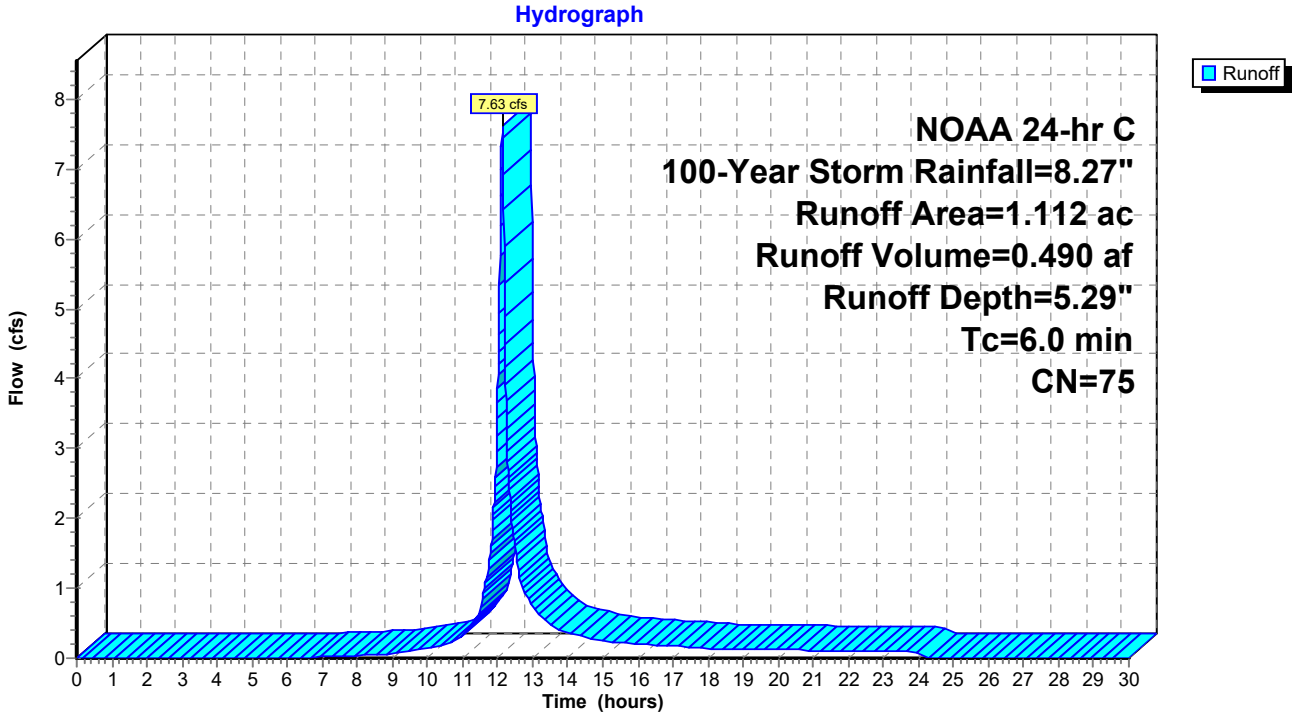
Runoff = 7.63 cfs @ 12.13 hrs, Volume= 0.490 af, Depth= 5.29"
Routed to Pond 28P : Bio Infiltration Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
	1.052	74	>75% Grass cover, Good, HSG C
*	0.060	98	
	1.112	75	Weighted Average
	1.052		94.60% Pervious Area
	0.060		5.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 25S: Additional Basin Area



Summary for Subcatchment 26S: WQA-11

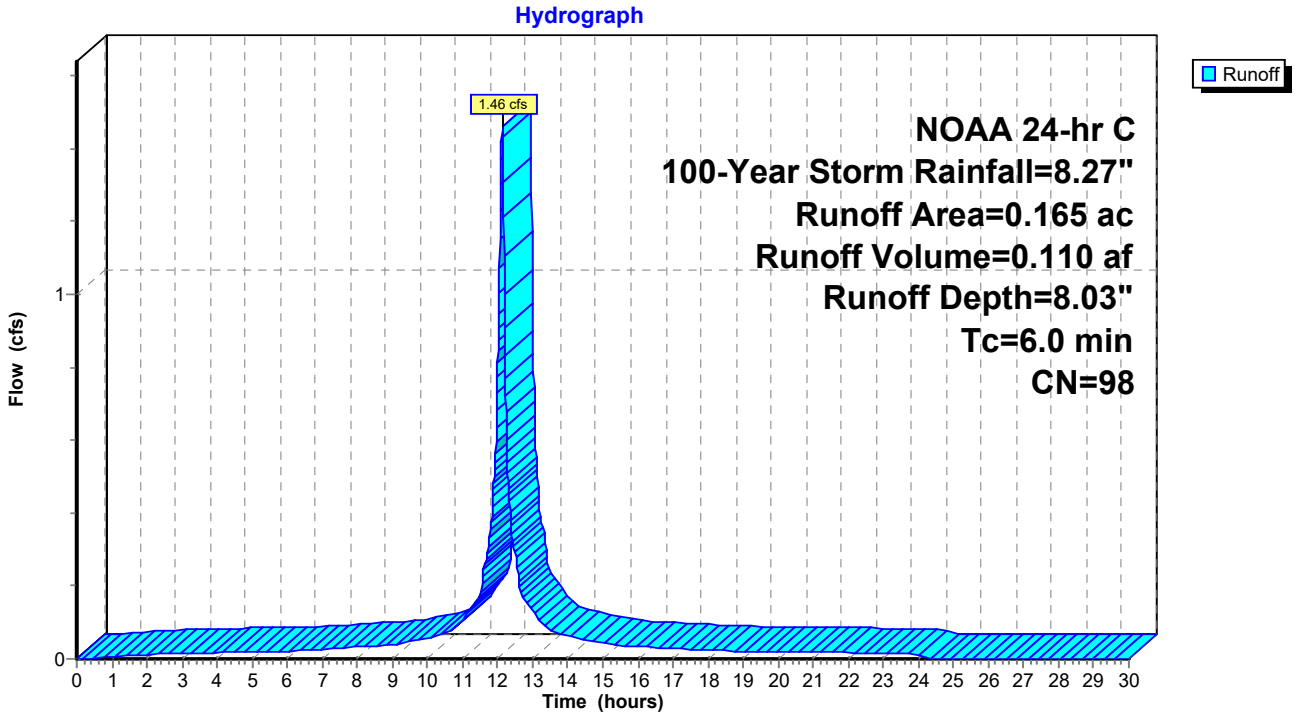
Runoff = 1.46 cfs @ 12.13 hrs, Volume= 0.110 af, Depth= 8.03"
Routed to Pond 27P : PP-11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.165	98	
	0.165		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 26S: WQA-11



Summary for Subcatchment 27S: 1/2 Highway Expansion

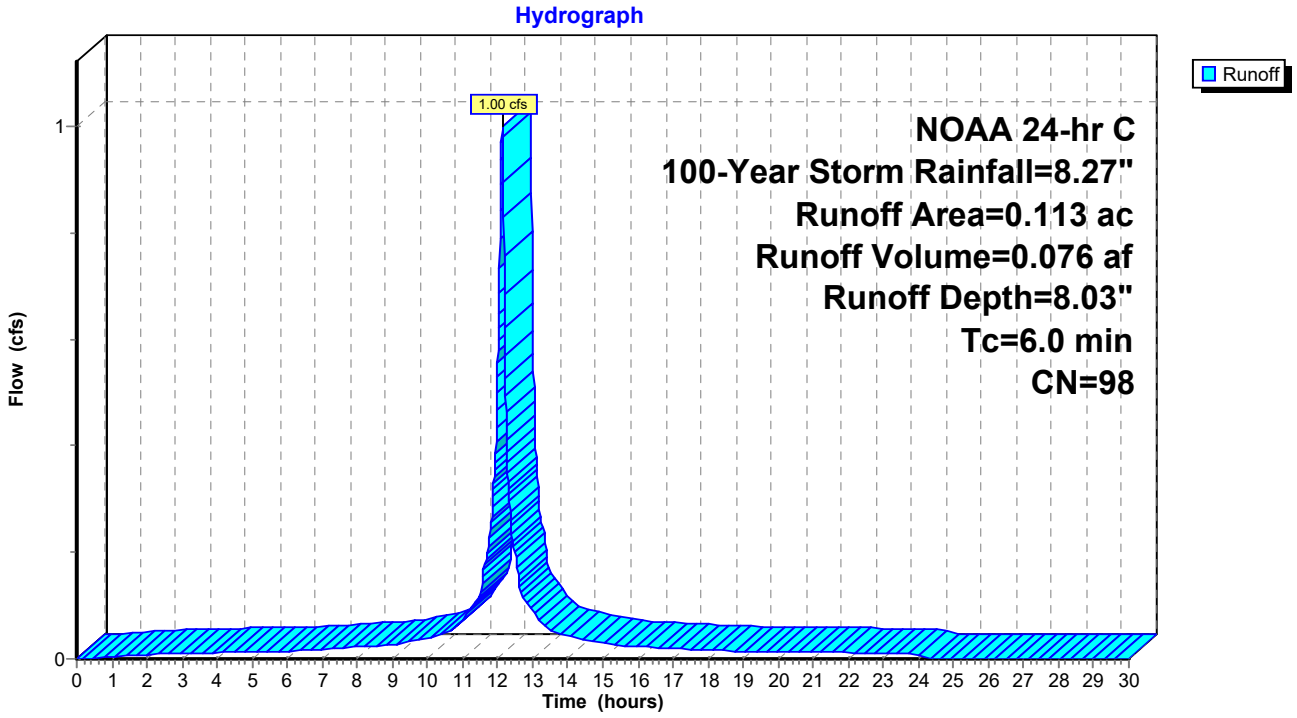
Runoff = 1.00 cfs @ 12.13 hrs, Volume= 0.076 af, Depth= 8.03"
Routed to Reach 23R : Right Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.113	98	Roadway Expansion
	0.113		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 27S: 1/2 Highway Expansion



Summary for Subcatchment 28S: Proposed & Relocated Roof

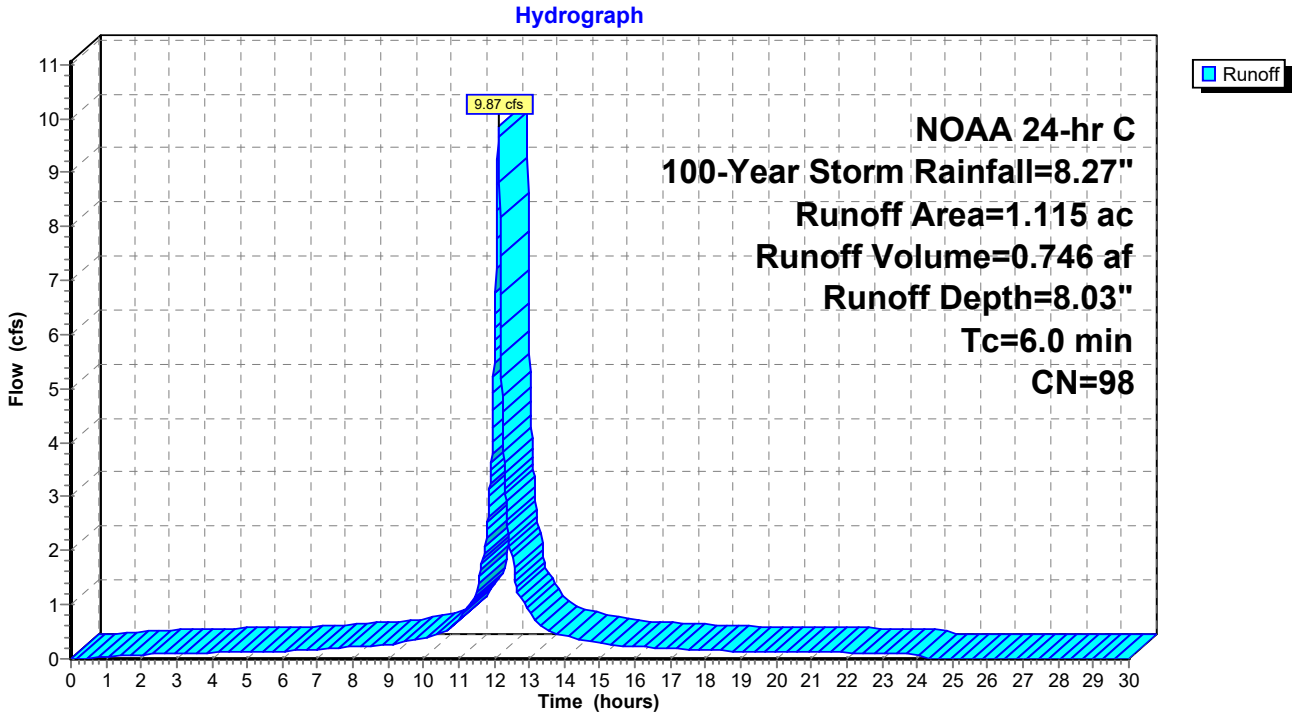
Runoff = 9.87 cfs @ 12.13 hrs, Volume= 0.746 af, Depth= 8.03"
Routed to Pond 32P : UG Roof Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

Area (ac)	CN	Description
1.115	98	Roofs, HSG C
1.115		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 28S: Proposed & Relocated Roof



Summary for Subcatchment 29S: 1/2 Highway Expansion

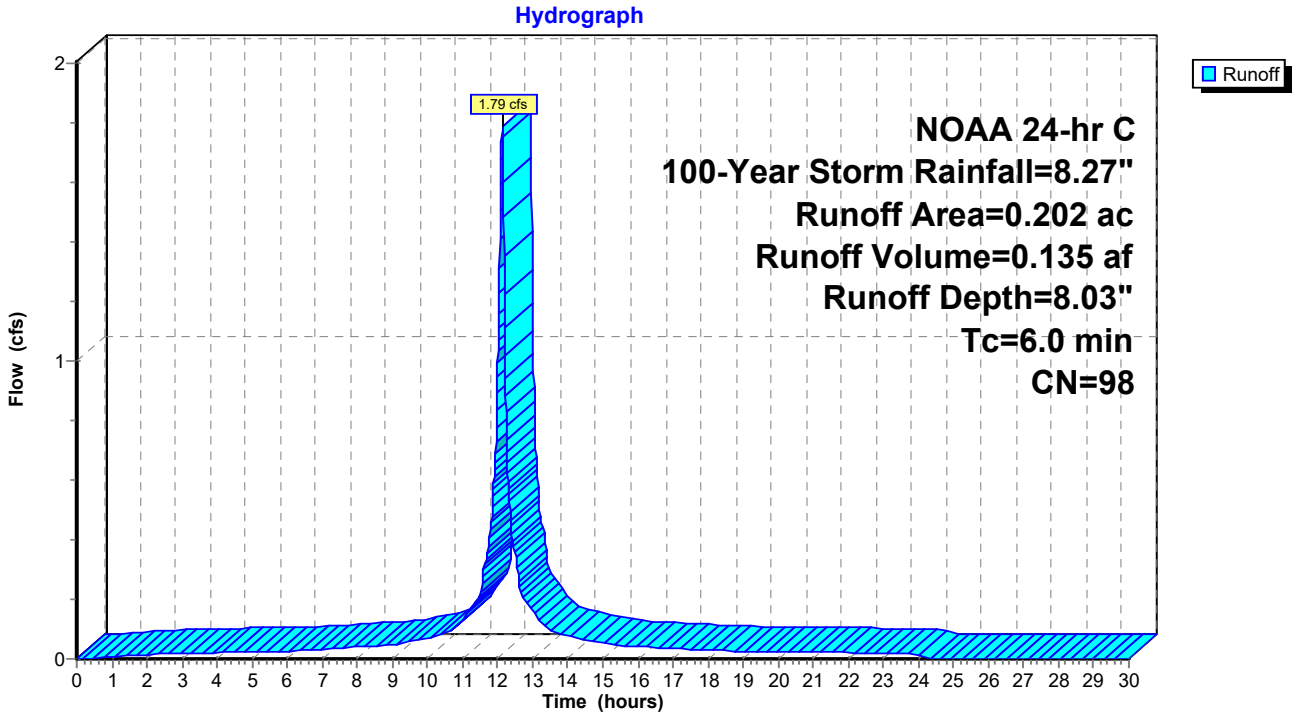
Runoff = 1.79 cfs @ 12.13 hrs, Volume= 0.135 af, Depth= 8.03"
Routed to Reach 25R : Left Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.202	98	
	0.202		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 29S: 1/2 Highway Expansion



Summary for Subcatchment 30S: (new Subcat)

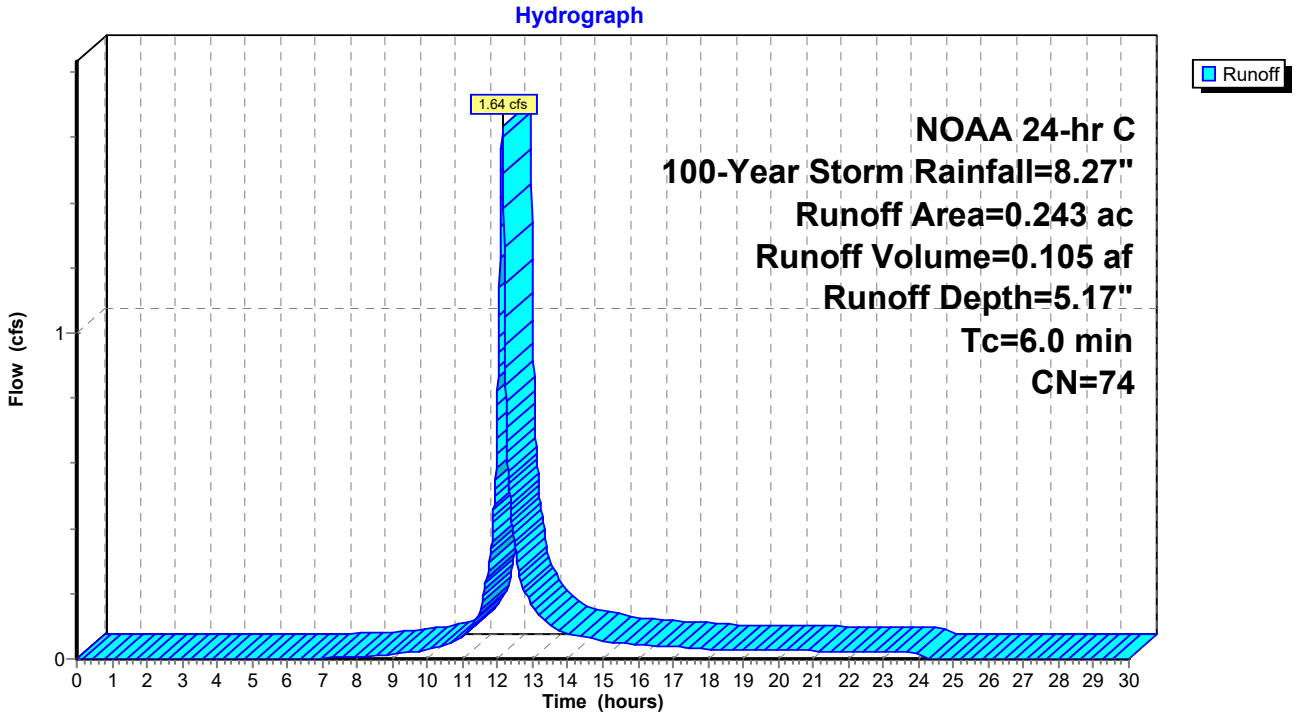
Runoff = 1.64 cfs @ 12.13 hrs, Volume= 0.105 af, Depth= 5.17"
Routed to Pond 26P : Bio Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.243	74	
	0.243		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 30S: (new Subcat)



Summary for Subcatchment 31S: (new Subcat)

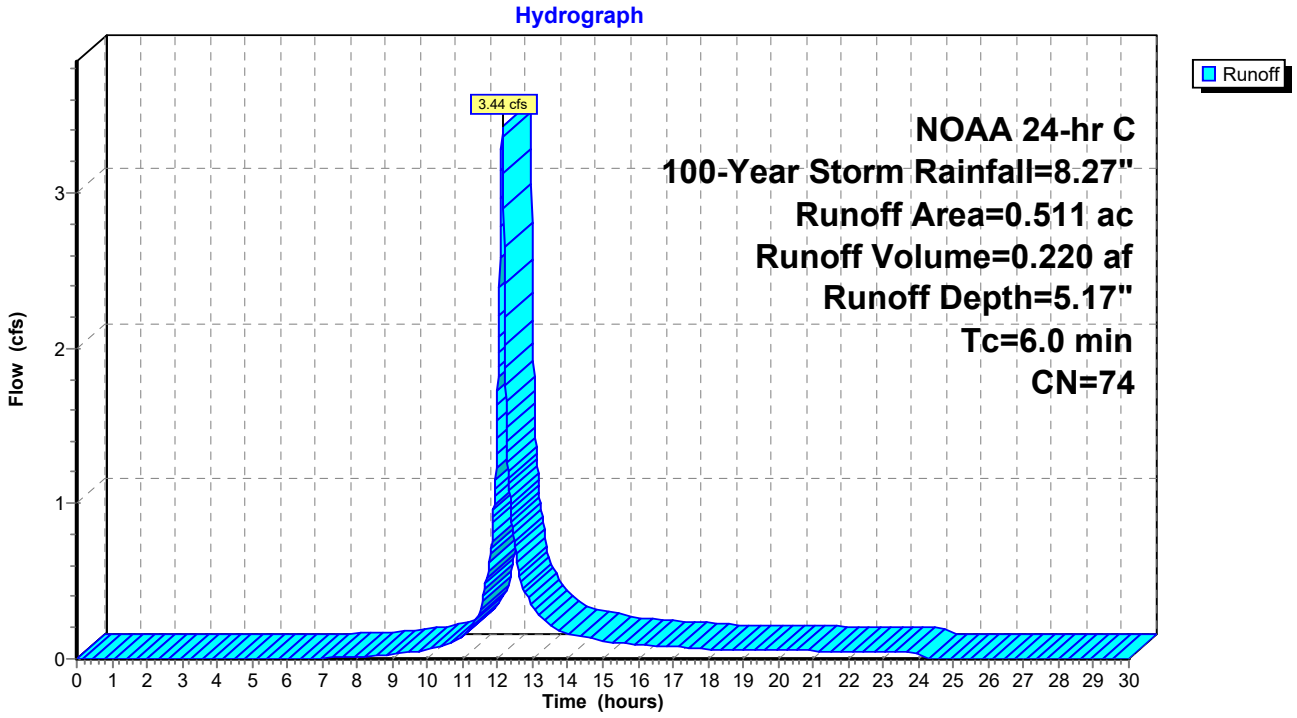
Runoff = 3.44 cfs @ 12.13 hrs, Volume= 0.220 af, Depth= 5.17"
Routed to Pond 28P : Bio Infiltration Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.511	74	
	0.511		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 31S: (new Subcat)



Summary for Subcatchment 32S: (new Subcat)

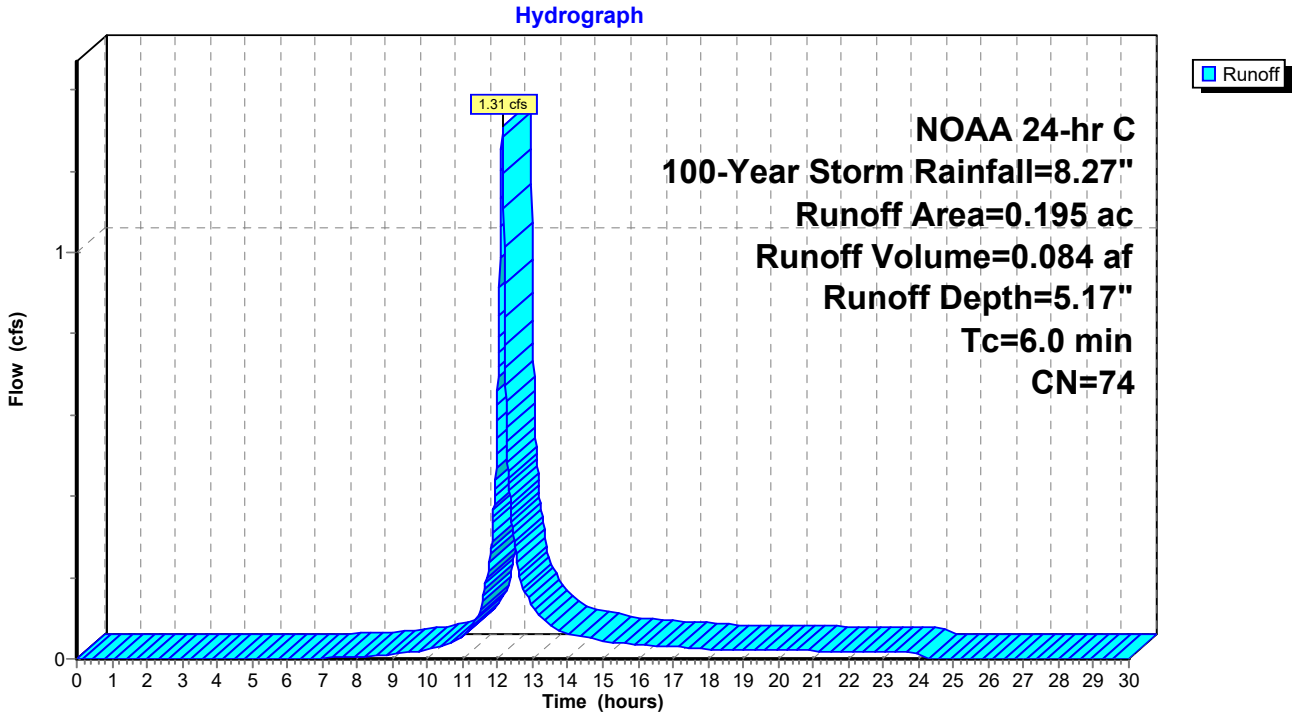
Runoff = 1.31 cfs @ 12.13 hrs, Volume= 0.084 af, Depth= 5.17"
Routed to Pond 32P : UG Roof Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

	Area (ac)	CN	Description
*	0.195	74	
	0.195		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 32S: (new Subcat)



Summary for Subcatchment 33S: Additional Basin Area

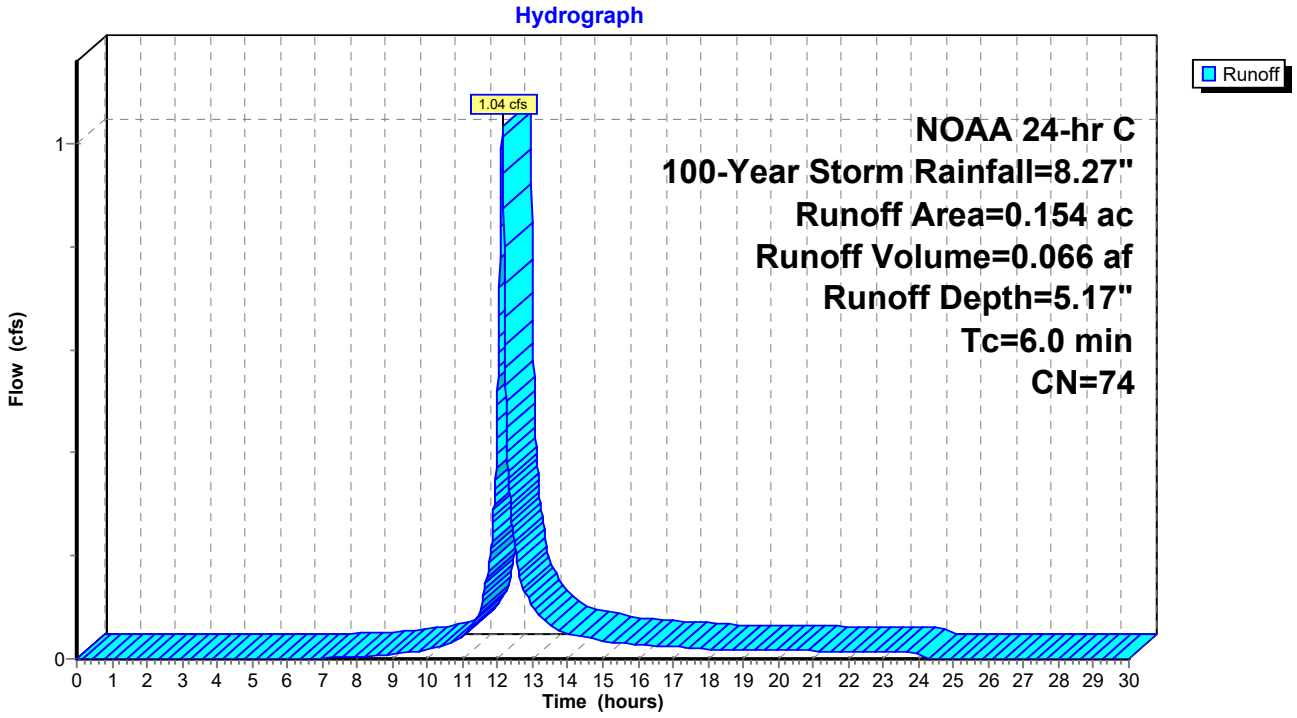
Runoff = 1.04 cfs @ 12.13 hrs, Volume= 0.066 af, Depth= 5.17"
Routed to Pond 26P : Bio Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NOAA 24-hr C 100-Year Storm Rainfall=8.27"

Area (ac)	CN	Description
0.154	74	>75% Grass cover, Good, HSG C
0.154		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 33S: Additional Basin Area



Summary for Reach 23R: Right Grass Swale

[55] Hint: Peak inflow is 138% of Manning's capacity

Inflow Area = 0.413 ac, 63.68% Impervious, Inflow Depth = 6.99" for 100-Year Storm event
Inflow = 3.44 cfs @ 12.13 hrs, Volume= 0.240 af
Outflow = 2.02 cfs @ 12.48 hrs, Volume= 0.240 af, Atten= 41%, Lag= 21.2 min
Routed to Reach 25R : Left Grass Swale

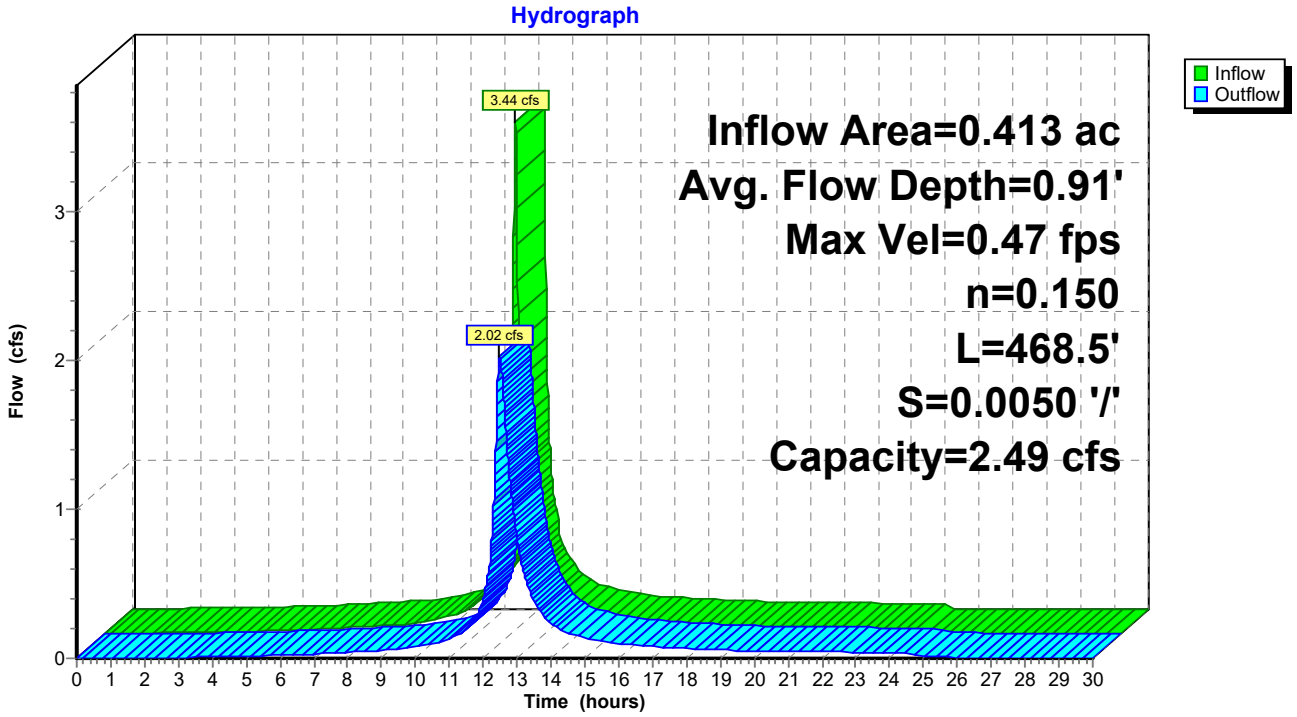
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.47 fps, Min. Travel Time= 16.5 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 53.2 min

Peak Storage= 2,007 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.91' , Surface Width= 7.44'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 2.49 cfs

2.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 468.5' Slope= 0.0050 '/'
Inlet Invert= 165.81', Outlet Invert= 163.47'

‡

Reach 23R: Right Grass Swale



Summary for Reach 25R: Left Grass Swale

[55] Hint: Peak inflow is 101% of Manning's capacity

Inflow Area = 0.823 ac, 56.50% Impervious, Inflow Depth > 6.78" for 100-Year Storm event
Inflow = 3.73 cfs @ 12.13 hrs, Volume= 0.465 af
Outflow = 3.26 cfs @ 12.25 hrs, Volume= 0.465 af, Atten= 13%, Lag= 7.2 min
Routed to Pond 26P : Bio Infiltration Basin 1

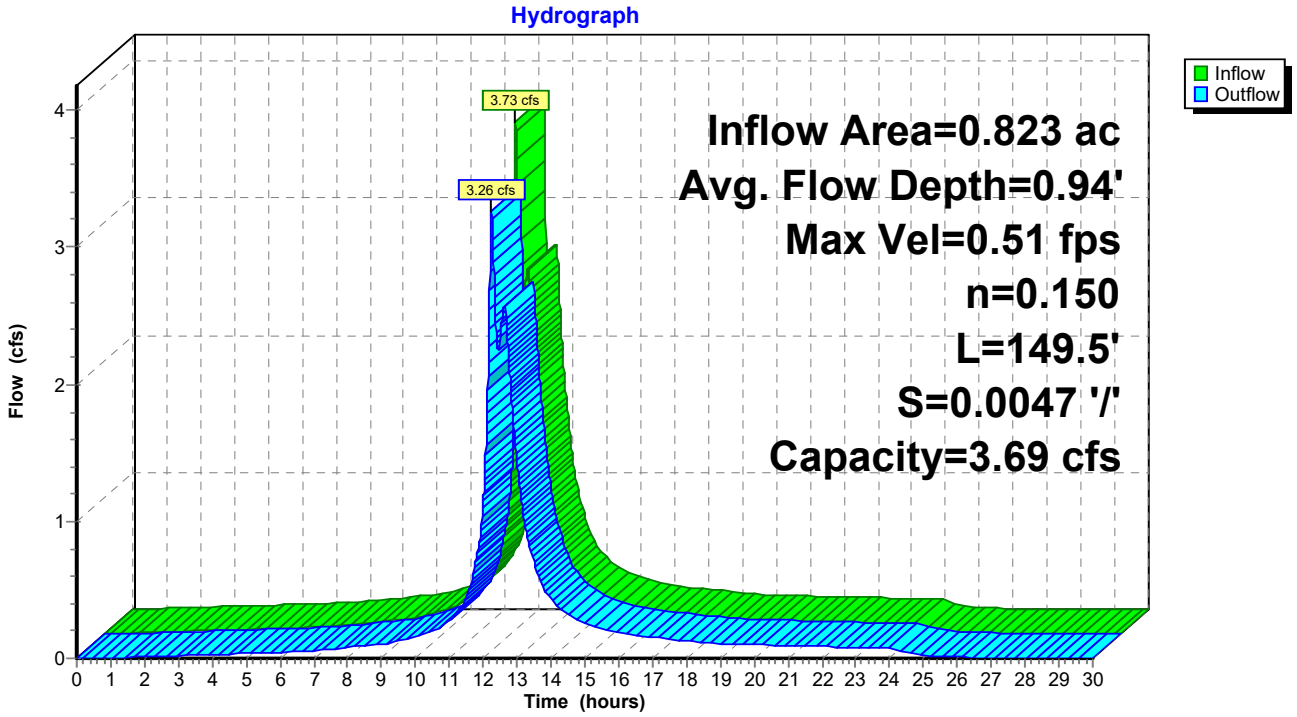
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.51 fps, Min. Travel Time= 4.9 min
Avg. Velocity = 0.16 fps, Avg. Travel Time= 16.0 min

Peak Storage= 957 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.94' , Surface Width= 9.63'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 3.69 cfs

4.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 10.00'
Length= 149.5' Slope= 0.0047 '/'
Inlet Invert= 159.71', Outlet Invert= 159.00'

‡

Reach 25R: Left Grass Swale



Summary for Pond 2P: PP-1

Inflow Area = 0.214 ac,100.00% Impervious, Inflow Depth = 8.03" for 100-Year Storm event
Inflow = 1.90 cfs @ 12.13 hrs, Volume= 0.143 af
Outflow = 0.85 cfs @ 12.25 hrs, Volume= 0.143 af, Atten= 55%, Lag= 7.0 min
Primary = 0.85 cfs @ 12.25 hrs, Volume= 0.143 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.16' @ 12.25 hrs Surf.Area= 0.067 ac Storage= 0.029 af

Plug-Flow detention time= 38.1 min calculated for 0.143 af (100% of inflow)
Center-of-Mass det. time= 36.9 min (778.3 - 741.4)

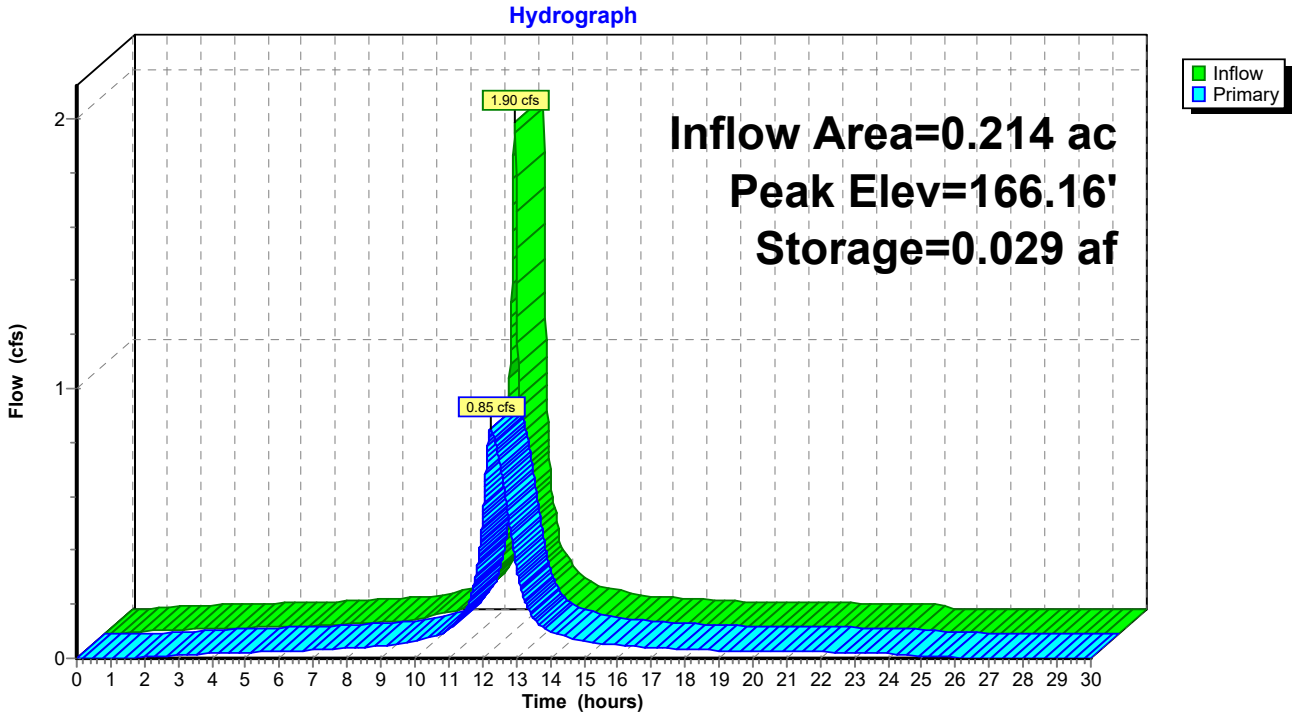
Volume	Invert	Avail.Storage	Storage Description
#1	165.10'	0.080 af	**PP-1 (Prismatic)** Listed below 0.201 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.10	0.067	0.000	0.000
168.10	0.067	0.201	0.201

Device	Routing	Invert	Outlet Devices
#1	Primary	165.10'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	166.60'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.85 cfs @ 12.25 hrs HW=166.16' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.85 cfs @ 4.34 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 2P: PP-1


Hydrograph
Inflow
Primary
1.90 cfs
0.85 cfs
Inflow Area=0.214 ac
Peak Elev=166.16'
Storage=0.029 af
Flow (cfs)
0
1
2
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 4P: PP-2

Inflow Area = 0.311 ac, 94.21% Impervious, Inflow Depth = 7.91" for 100-Year Storm event
Inflow = 2.75 cfs @ 12.13 hrs, Volume= 0.205 af
Outflow = 0.48 cfs @ 12.56 hrs, Volume= 0.190 af, Atten= 83%, Lag= 26.0 min
Primary = 0.48 cfs @ 12.56 hrs, Volume= 0.190 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 163.47' @ 12.56 hrs Surf.Area= 0.130 ac Storage= 0.089 af

Plug-Flow detention time= 165.8 min calculated for 0.190 af (93% of inflow)
Center-of-Mass det. time= 125.5 min (872.9 - 747.4)

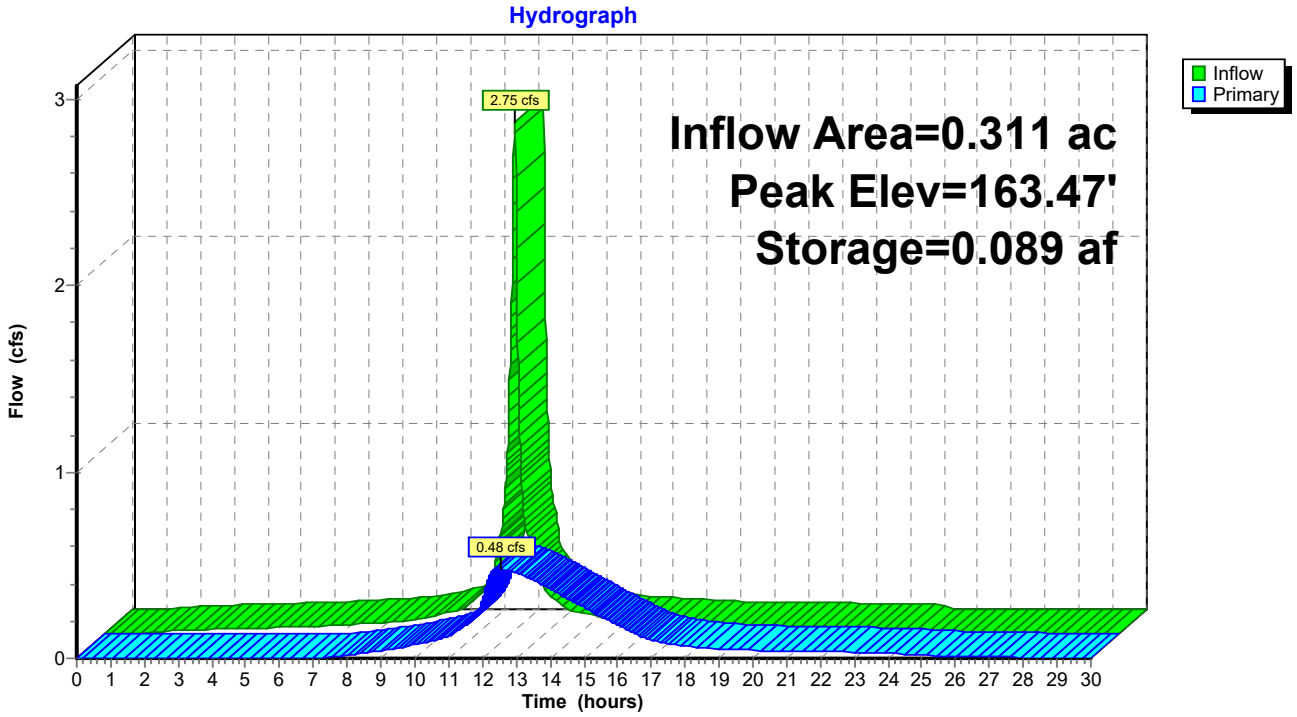
Volume	Invert	Avail.Storage	Storage Description
#1	161.75'	0.169 af	**PP-2 (Prismatic)**Listed below (Recalc) 0.423 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
161.75	0.130	0.000	0.000
165.00	0.130	0.423	0.423

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	163.50'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.48 cfs @ 12.56 hrs HW=163.47' (Free Discharge)
└─**1=4" Underdrain** (Orifice Controls 0.48 cfs @ 5.49 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 4P: PP-2


Hydrograph
Inflow
Primary
2.75 cfs
0.48 cfs
Inflow Area=0.311 ac
Peak Elev=163.47'
Storage=0.089 af
Flow (cfs)
0
1
2
3
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 6P: PP-3

Inflow Area = 0.192 ac, 81.25% Impervious, Inflow Depth = 7.43" for 100-Year Storm event
Inflow = 1.66 cfs @ 12.13 hrs, Volume= 0.119 af
Outflow = 0.47 cfs @ 12.35 hrs, Volume= 0.111 af, Atten= 72%, Lag= 13.4 min
Primary = 0.47 cfs @ 12.35 hrs, Volume= 0.111 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 159.85' @ 12.35 hrs Surf.Area= 0.060 ac Storage= 0.041 af

Plug-Flow detention time= 109.4 min calculated for 0.111 af (94% of inflow)
Center-of-Mass det. time= 73.5 min (839.5 - 766.0)

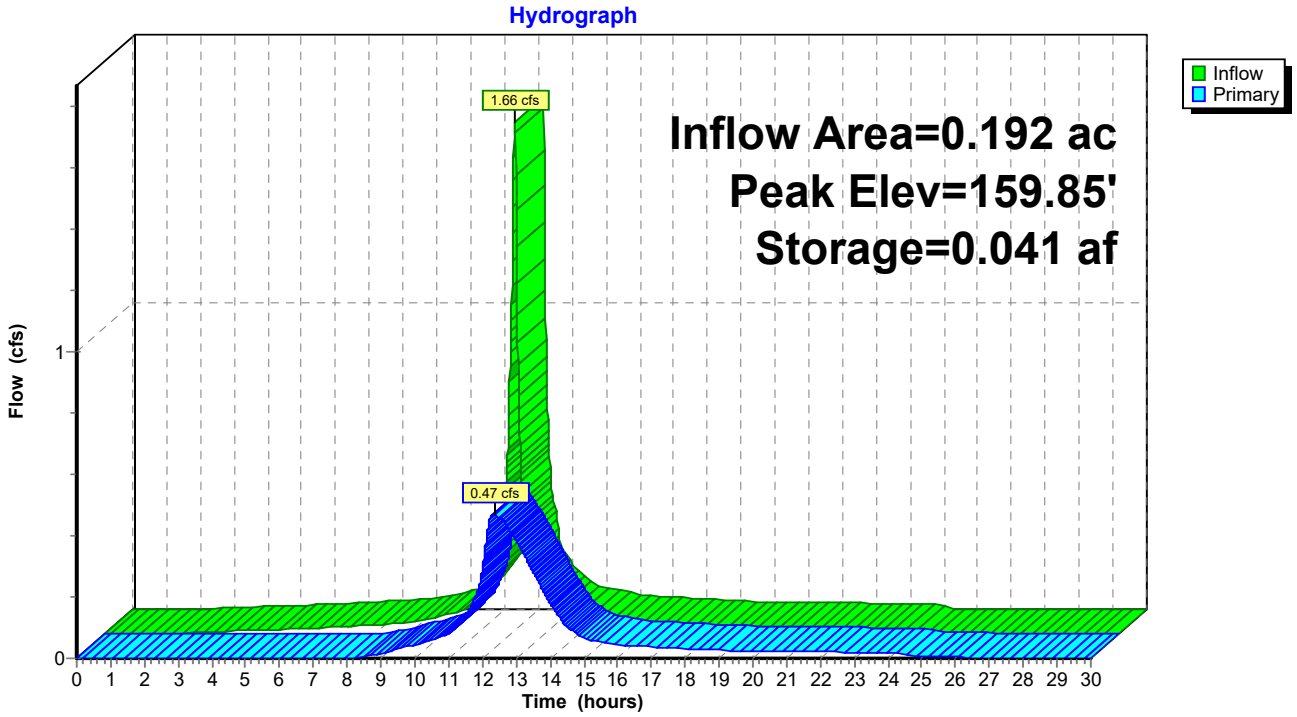
Volume	Invert	Avail.Storage	Storage Description
#1	158.15'	0.079 af	**PP-3 (Prismatic)**Listed below (Recalc) 0.197 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
158.15	0.060	0.000	0.000
161.43	0.060	0.197	0.197

Device	Routing	Invert	Outlet Devices
#1	Primary	158.45'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	159.90'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.47 cfs @ 12.35 hrs HW=159.85' (Free Discharge)
└─**1=4" Underdrain** (Orifice Controls 0.47 cfs @ 5.35 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 6P: PP-3


Hydrograph
Inflow
Primary
1.66 cfs
0.47 cfs
Inflow Area=0.192 ac
Peak Elev=159.85'
Storage=0.041 af
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 8P: PP-4

Inflow Area = 0.206 ac, 68.93% Impervious, Inflow Depth = 7.19" for 100-Year Storm event
Inflow = 1.76 cfs @ 12.13 hrs, Volume= 0.123 af
Outflow = 0.51 cfs @ 12.34 hrs, Volume= 0.121 af, Atten= 71%, Lag= 12.9 min
Primary = 0.51 cfs @ 12.34 hrs, Volume= 0.121 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 171.08' @ 12.34 hrs Surf.Area= 0.052 ac Storage= 0.036 af

Plug-Flow detention time= 63.4 min calculated for 0.121 af (98% of inflow)
Center-of-Mass det. time= 51.6 min (825.1 - 773.4)

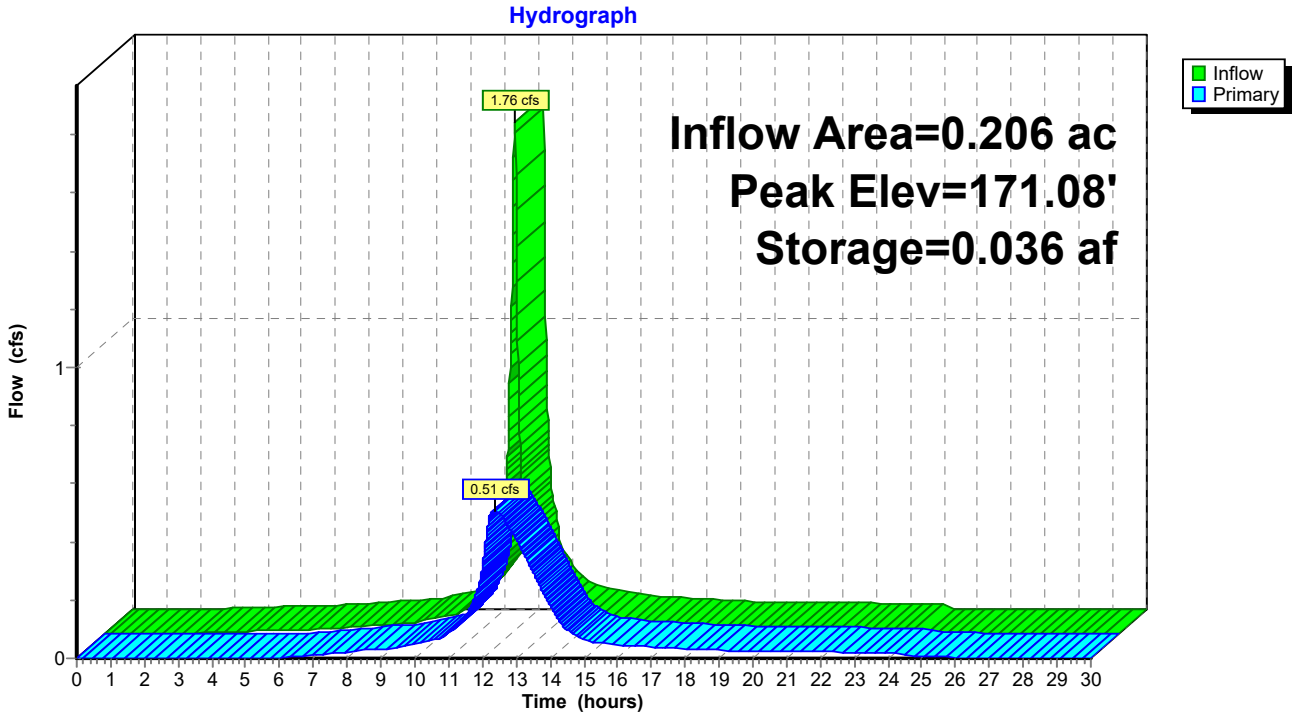
Volume	Invert	Avail.Storage	Storage Description
#1	169.35'	0.068 af	**PP-4 (Prismatic)**Listed below (Recalc) 0.170 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.35	0.052	0.000	0.000
172.62	0.052	0.170	0.170

Device	Routing	Invert	Outlet Devices
#1	Primary	169.45'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	171.10'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.51 cfs @ 12.34 hrs HW=171.08' (Free Discharge)
└**1=4" Underdrain** (Orifice Controls 0.51 cfs @ 5.82 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 8P: PP-4


Hydrograph
Inflow
Primary
1.76 cfs
0.51 cfs
Inflow Area=0.206 ac
Peak Elev=171.08'
Storage=0.036 af
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 10P: PP-5

Inflow Area = 0.087 ac, 88.51% Impervious, Inflow Depth = 7.67" for 100-Year Storm event
Inflow = 0.76 cfs @ 12.13 hrs, Volume= 0.056 af
Outflow = 0.56 cfs @ 12.18 hrs, Volume= 0.050 af, Atten= 27%, Lag= 3.3 min
Primary = 0.56 cfs @ 12.18 hrs, Volume= 0.050 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 167.95' @ 12.18 hrs Surf.Area= 0.027 ac Storage= 0.012 af

Plug-Flow detention time= 109.6 min calculated for 0.050 af (90% of inflow)
Center-of-Mass det. time= 59.0 min (816.5 - 757.5)

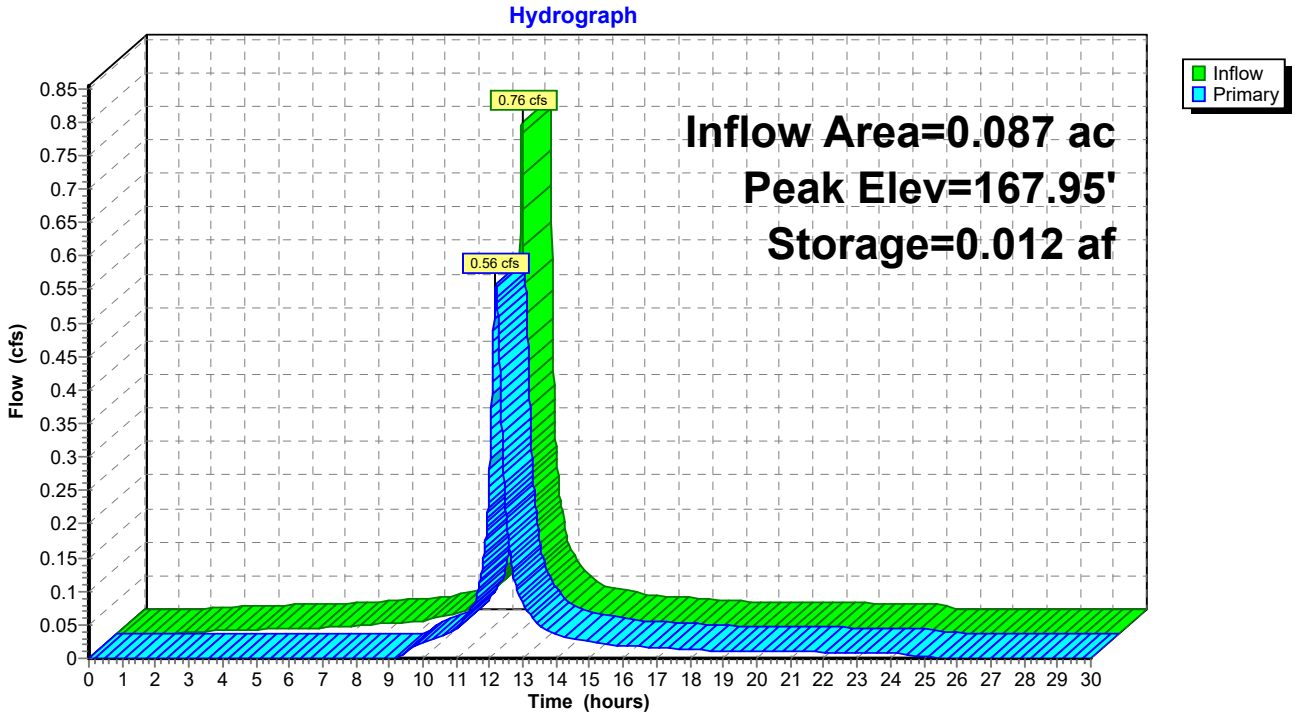
Volume	Invert	Avail.Storage	Storage Description
#1	166.85'	0.030 af	**PP-5 (Prismatic)**Listed below (Recalc) 0.074 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
166.85	0.027	0.000	0.000
169.60	0.027	0.074	0.074

Device	Routing	Invert	Outlet Devices
#1	Primary	167.35'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	168.10'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.56 cfs @ 12.18 hrs HW=167.95' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.56 cfs @ 2.84 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 10P: PP-5


Hydrograph
Inflow
Primary
0.76 cfs
0.56 cfs
Inflow Area=0.087 ac
Peak Elev=167.95'
Storage=0.012 af
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 12P: PP-6

Inflow Area = 0.258 ac, 91.47% Impervious, Inflow Depth = 7.79" for 100-Year Storm event
Inflow = 2.27 cfs @ 12.13 hrs, Volume= 0.167 af
Outflow = 0.87 cfs @ 12.27 hrs, Volume= 0.167 af, Atten= 62%, Lag= 8.6 min
Primary = 0.87 cfs @ 12.27 hrs, Volume= 0.167 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 167.30' @ 12.27 hrs Surf.Area= 0.091 ac Storage= 0.040 af

Plug-Flow detention time= 47.9 min calculated for 0.167 af (100% of inflow)
Center-of-Mass det. time= 45.7 min (798.4 - 752.7)

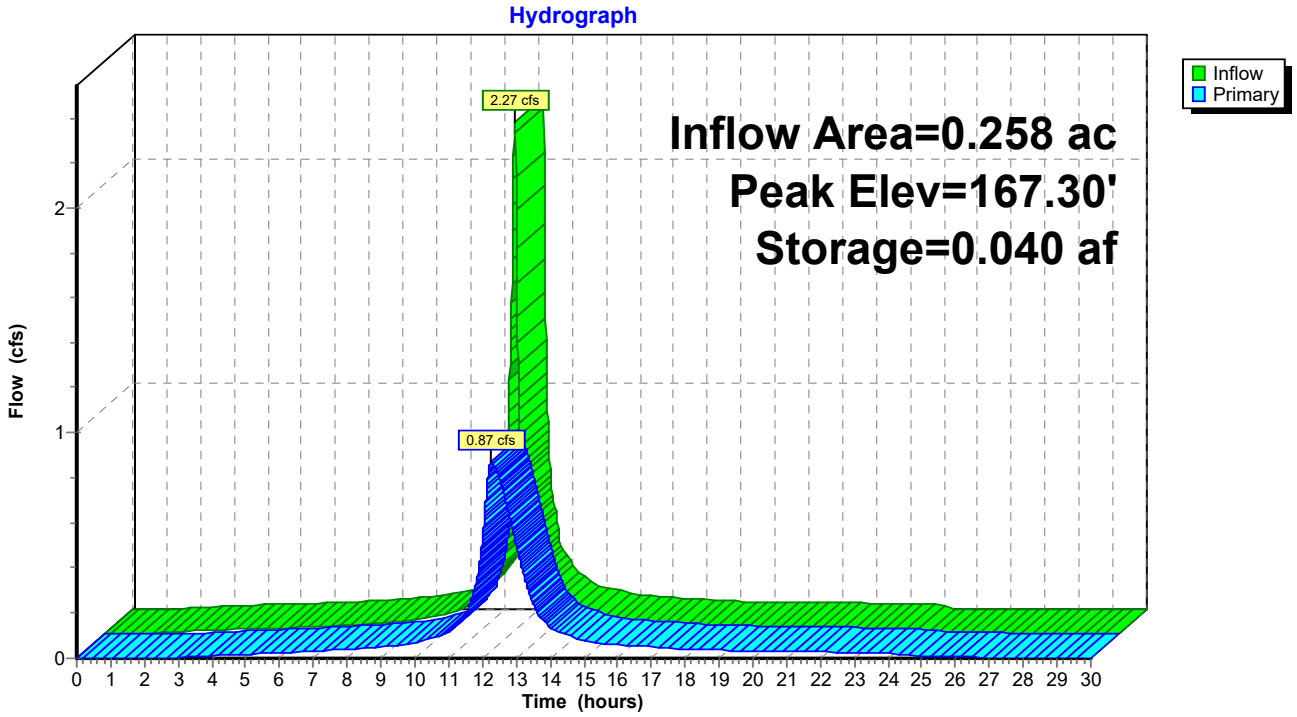
Volume	Invert	Avail.Storage	Storage Description
#1	166.20'	0.110 af	**PP-6 (Prismatic)**Listed below (Recalc) 0.275 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
166.20	0.091	0.000	0.000
169.22	0.091	0.275	0.275

Device	Routing	Invert	Outlet Devices
#1	Primary	166.20'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	167.70'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.87 cfs @ 12.27 hrs HW=167.30' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.87 cfs @ 4.43 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 12P: PP-6


Hydrograph
Inflow
Primary
2.27 cfs
0.87 cfs
Inflow Area=0.258 ac
Peak Elev=167.30'
Storage=0.040 af
Flow (cfs)
0
1
2
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 14P: PP-7

Inflow Area = 0.226 ac, 90.71% Impervious, Inflow Depth = 7.79" for 100-Year Storm event
Inflow = 1.99 cfs @ 12.13 hrs, Volume= 0.147 af
Outflow = 0.79 cfs @ 12.27 hrs, Volume= 0.146 af, Atten= 60%, Lag= 8.3 min
Primary = 0.79 cfs @ 12.27 hrs, Volume= 0.146 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 169.50' @ 12.27 hrs Surf.Area= 0.093 ac Storage= 0.035 af

Plug-Flow detention time= 50.9 min calculated for 0.146 af (100% of inflow)
Center-of-Mass det. time= 47.9 min (800.6 - 752.7)

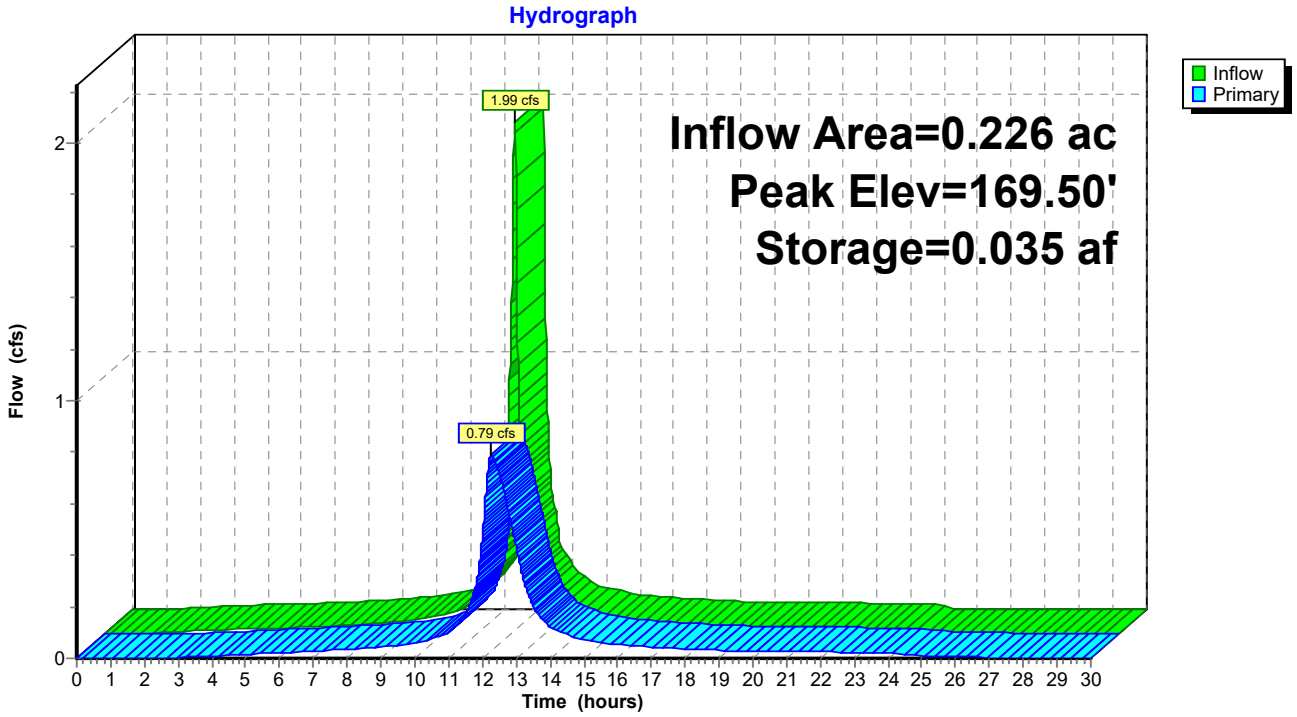
Volume	Invert	Avail.Storage	Storage Description
#1	168.55'	0.093 af	**PP-7 (Prismatic)**Listed below (Recalc) 0.233 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
168.55	0.093	0.000	0.000
171.06	0.093	0.233	0.233

Device	Routing	Invert	Outlet Devices
#1	Primary	168.55'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	169.50'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.79 cfs @ 12.27 hrs HW=169.50' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.79 cfs @ 4.02 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 14P: PP-7


Hydrograph
Inflow
Primary
1.99 cfs
0.79 cfs
Inflow Area=0.226 ac
Peak Elev=169.50'
Storage=0.035 af
Flow (cfs)
0
1
2
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 20P: PP-8

Inflow Area = 0.174 ac, 80.46% Impervious, Inflow Depth = 7.43" for 100-Year Storm event
Inflow = 1.51 cfs @ 12.13 hrs, Volume= 0.108 af
Outflow = 0.81 cfs @ 12.22 hrs, Volume= 0.098 af, Atten= 46%, Lag= 5.3 min
Primary = 0.81 cfs @ 12.22 hrs, Volume= 0.098 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 167.24' @ 12.22 hrs Surf.Area= 0.046 ac Storage= 0.027 af

Plug-Flow detention time= 104.3 min calculated for 0.098 af (91% of inflow)
Center-of-Mass det. time= 58.3 min (824.3 - 766.0)

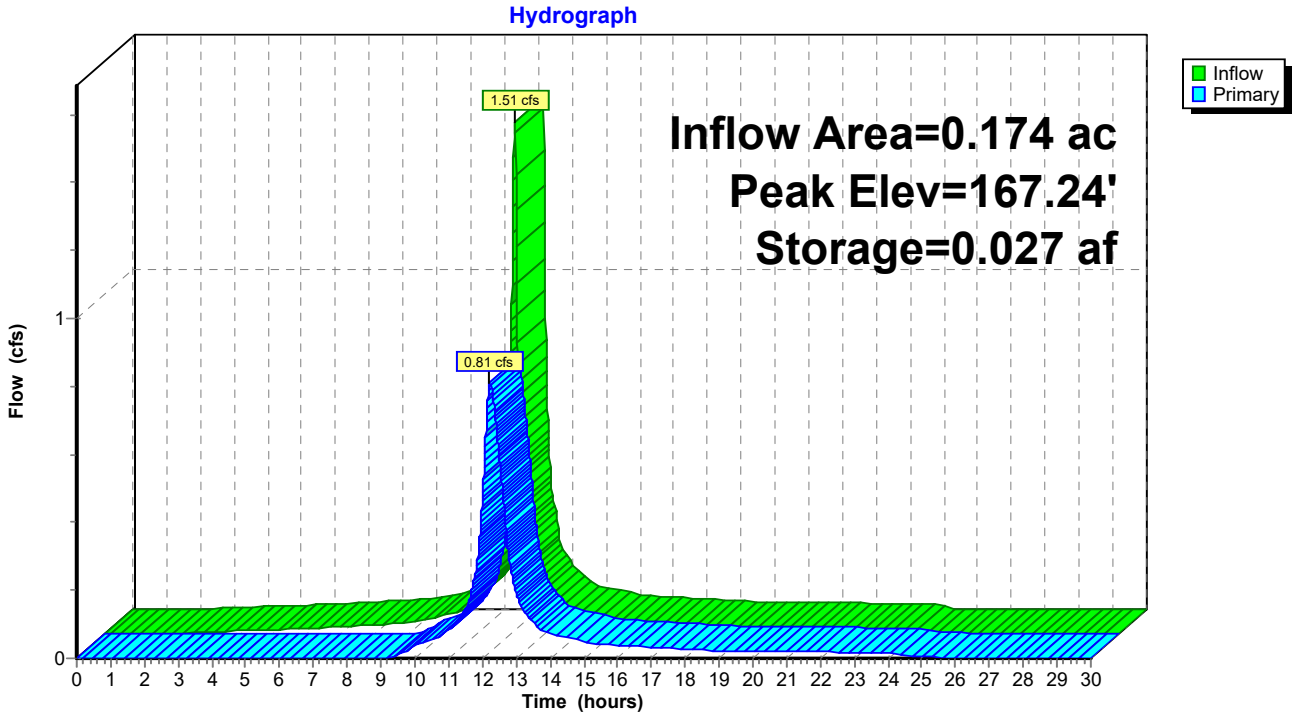
Volume	Invert	Avail.Storage	Storage Description
#1	165.75'	0.056 af	**PP-8 (Prismatic)**Listed below (Recalc) 0.141 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.75	0.046	0.000	0.000
168.81	0.046	0.141	0.141

Device	Routing	Invert	Outlet Devices
#1	Primary	166.25'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	167.25'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.81 cfs @ 12.22 hrs HW=167.24' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.81 cfs @ 4.14 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 20P: PP-8


Hydrograph
Inflow
Primary
1.51 cfs
0.81 cfs
Inflow Area=0.174 ac
Peak Elev=167.24'
Storage=0.027 af
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 23P: PP-9

Inflow Area = 0.199 ac, 89.45% Impervious, Inflow Depth = 7.67" for 100-Year Storm event
Inflow = 1.74 cfs @ 12.13 hrs, Volume= 0.127 af
Outflow = 0.73 cfs @ 12.26 hrs, Volume= 0.127 af, Atten= 58%, Lag= 7.8 min
Primary = 0.73 cfs @ 12.26 hrs, Volume= 0.127 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 170.59' @ 12.26 hrs Surf.Area= 0.090 ac Storage= 0.030 af

Plug-Flow detention time= 51.3 min calculated for 0.127 af (100% of inflow)
Center-of-Mass det. time= 48.1 min (805.6 - 757.5)

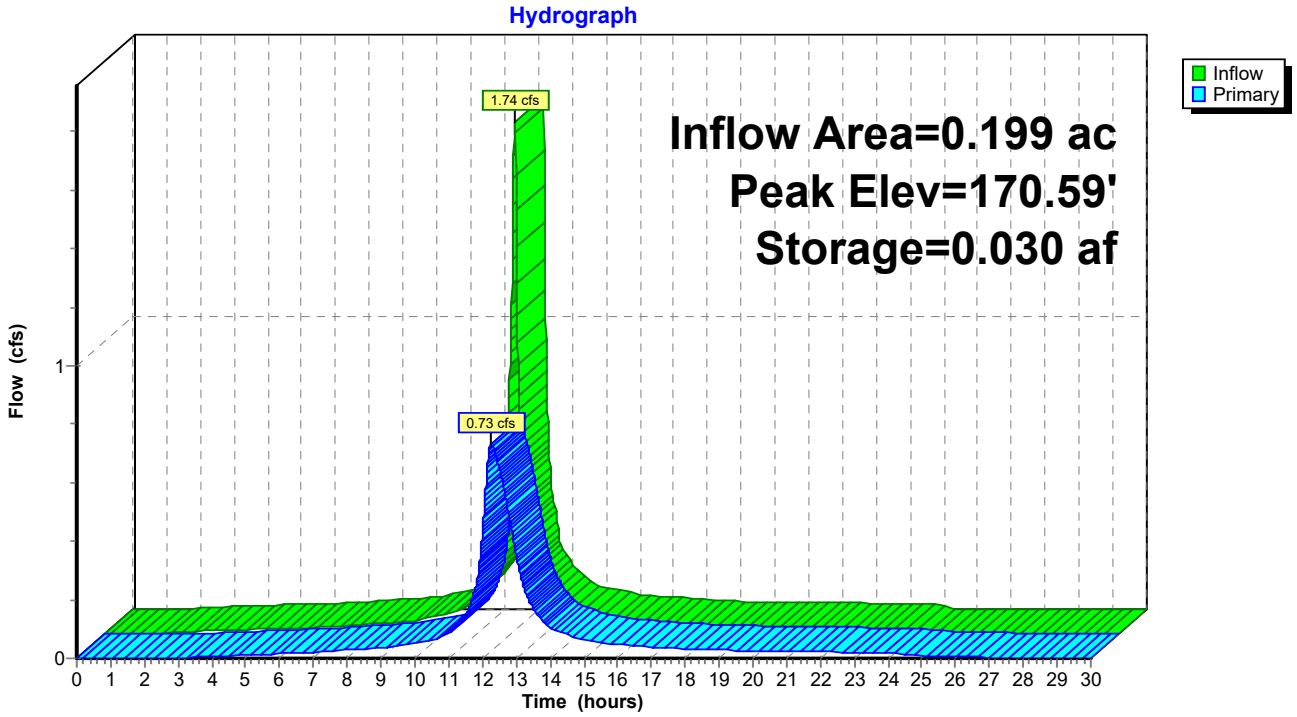
Volume	Invert	Avail.Storage	Storage Description
#1	169.75'	0.090 af	**PP-9 (Prismatic)**Listed below (Recalc) 0.224 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.75	0.090	0.000	0.000
172.24	0.090	0.224	0.224

Device	Routing	Invert	Outlet Devices
#1	Primary	169.75'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	170.95'	**4.0" Vert. 4" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.73 cfs @ 12.26 hrs HW=170.59' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.73 cfs @ 3.71 fps)
└─**2=4" Overflow** (Controls 0.00 cfs)

Pond 23P: PP-9


Hydrograph
Inflow
Primary
1.74 cfs
0.73 cfs
Inflow Area=0.199 ac
Peak Elev=170.59'
Storage=0.030 af
Flow (cfs)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Time (hours)

Summary for Pond 25P: PP-10

Inflow Area = 0.125 ac,100.00% Impervious, Inflow Depth = 8.03" for 100-Year Storm event
Inflow = 1.11 cfs @ 12.13 hrs, Volume= 0.084 af
Outflow = 0.60 cfs @ 12.22 hrs, Volume= 0.071 af, Atten= 46%, Lag= 5.3 min
Primary = 0.60 cfs @ 12.22 hrs, Volume= 0.071 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 170.35' @ 12.22 hrs Surf.Area= 0.060 ac Storage= 0.028 af

Plug-Flow detention time= 161.6 min calculated for 0.071 af (85% of inflow)
Center-of-Mass det. time= 93.8 min (835.2 - 741.4)

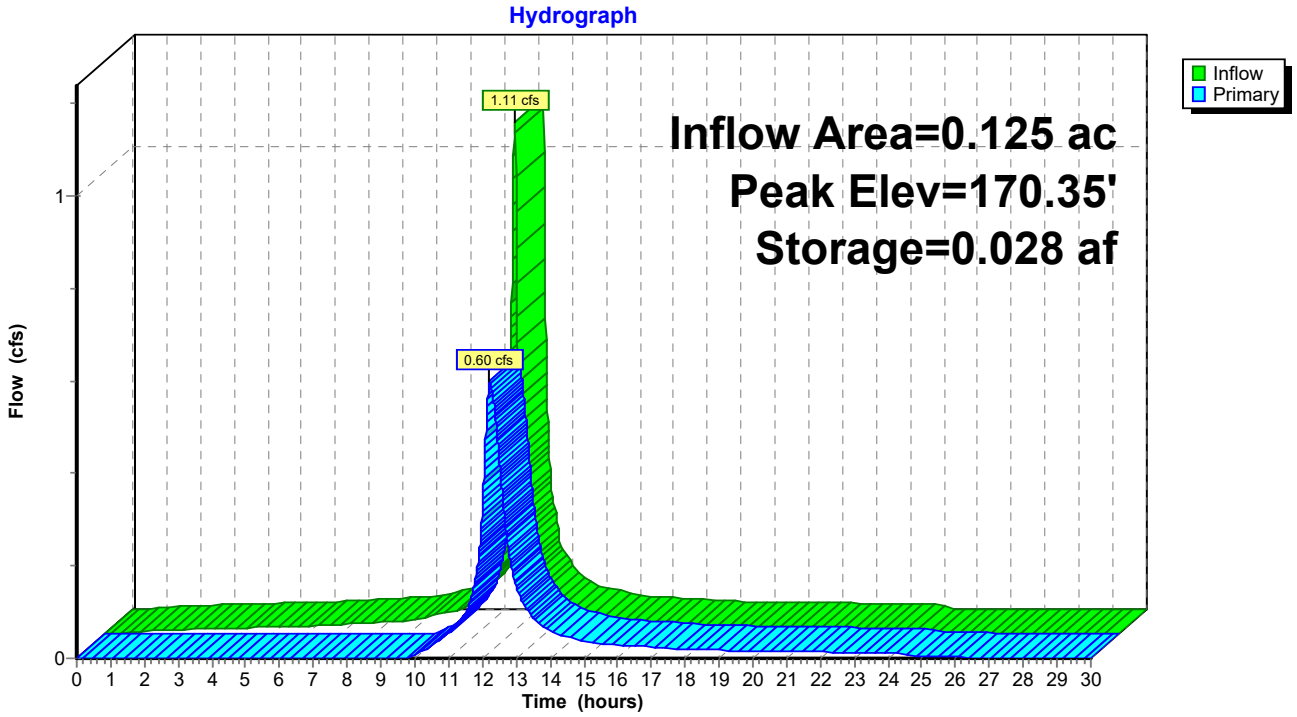
Volume	Invert	Avail.Storage	Storage Description
#1	169.20'	0.073 af	**PP-10 (Prismatic)**Listed below (Recalc) 0.182 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.20	0.060	0.000	0.000
172.24	0.060	0.182	0.182

Device	Routing	Invert	Outlet Devices
#1	Primary	169.70'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	170.70'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.60 cfs @ 12.22 hrs HW=170.35' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.60 cfs @ 3.05 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 25P: PP-10



Summary for Pond 26P: Bio Infiltration Basin 1

[63] Warning: Exceeded Reach 25R INLET depth by 0.43' @ 13.34 hrs
[81] Warning: Exceeded Pond 6P by 1.61' @ 14.36 hrs

Inflow Area = 2.500 ac, 62.96% Impervious, Inflow Depth > 6.83" for 100-Year Storm event
Inflow = 8.13 cfs @ 12.23 hrs, Volume= 1.422 af
Outflow = 4.72 cfs @ 12.84 hrs, Volume= 1.189 af, Atten= 42%, Lag= 36.8 min
Discarded = 0.11 cfs @ 12.84 hrs, Volume= 0.207 af
Primary = 4.61 cfs @ 12.84 hrs, Volume= 0.982 af
Routed to Link 18L : Proposed Flows (South)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 160.68' @ 12.84 hrs Surf.Area= 0.220 ac Storage= 0.544 af

Plug-Flow detention time= 220.2 min calculated for 1.189 af (84% of inflow)
Center-of-Mass det. time= 145.5 min (966.7 - 821.2)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	0.859 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

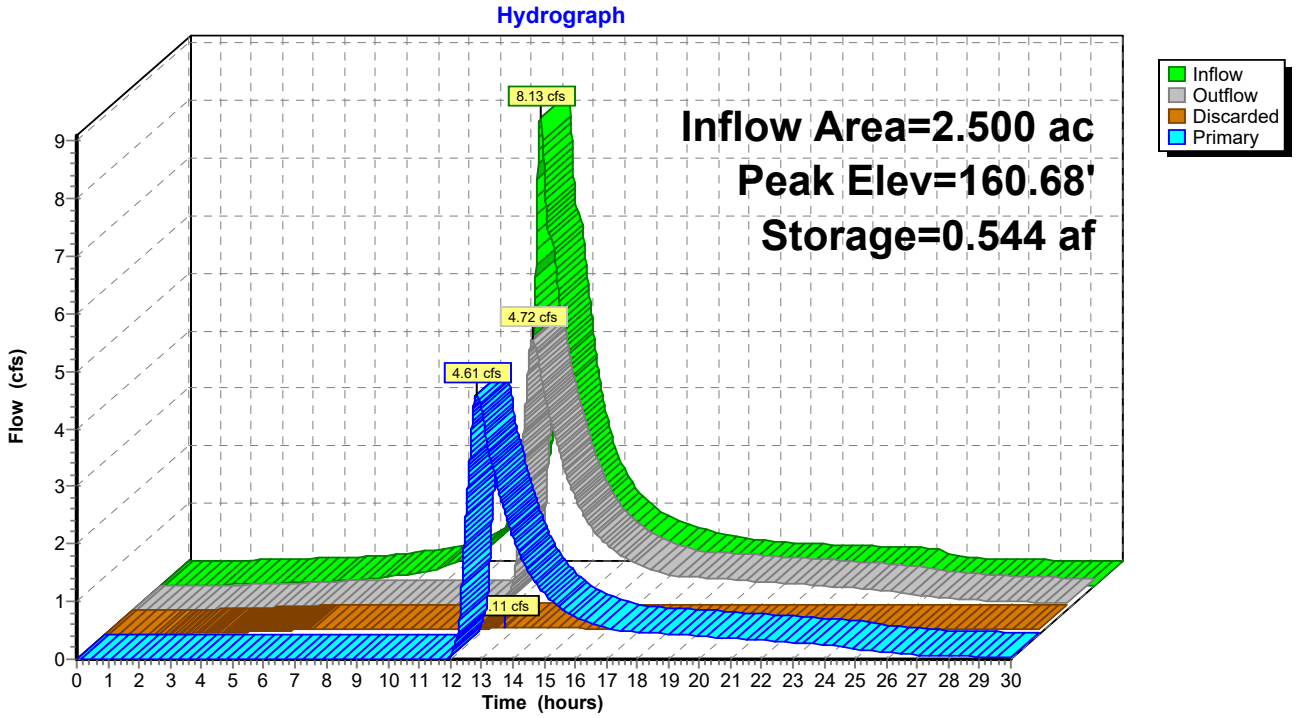
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
156.00	0.177	377.7	0.0	0.000	0.000	0.177
157.00	0.177	377.7	40.0	0.071	0.071	0.186
158.00	0.177	377.7	40.0	0.071	0.142	0.194
159.00	0.177	377.7	40.0	0.071	0.212	0.203
160.00	0.202	403.1	100.0	0.189	0.402	0.240
161.00	0.229	424.1	100.0	0.215	0.617	0.273
162.00	0.256	442.9	100.0	0.242	0.859	0.305

Device	Routing	Invert	Outlet Devices
#1	Primary	157.00'	**15.0" Round RCP_Round 15"** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 157.00' / 156.75' S= 0.0100 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Discarded	156.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'
#3	Device 1	159.00'	**2.5" Vert. WQ** C= 0.600 Limited to weir flow at low heads
#4	Device 1	159.25'	**4.0" Vert. 2Yr** C= 0.600 Limited to weir flow at low heads
#5	Device 1	160.00'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#6	Device 1	160.60'	**24.0" x 24.0" Horiz. Overflow Grate/Trash Rack** C= 0.700 Limited to weir flow at low heads

Discarded OutFlow Max=0.11 cfs @ 12.84 hrs HW=160.68' (Free Discharge)
└**2=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=4.60 cfs @ 12.84 hrs HW=160.68' (Free Discharge)
└**1=RCP_Round 15"** (Passes 4.60 cfs of 12.37 cfs potential flow)
  └**3=WQ** (Orifice Controls 0.21 cfs @ 6.03 fps)
  └**4=2Yr** (Orifice Controls 0.47 cfs @ 5.40 fps)
  └**5=Sharp-Crested Rectangular Weir** (Weir Controls 3.38 cfs @ 2.69 fps)
  └**6=Overflow Grate/Trash Rack** (Weir Controls 0.54 cfs @ 0.90 fps)

Pond 26P: Bio Infiltration Basin 1



Summary for Pond 27P: PP-11

Inflow Area = 0.165 ac,100.00% Impervious, Inflow Depth = 8.03" for 100-Year Storm event
Inflow = 1.46 cfs @ 12.13 hrs, Volume= 0.110 af
Outflow = 0.78 cfs @ 12.22 hrs, Volume= 0.100 af, Atten= 47%, Lag= 5.4 min
Primary = 0.78 cfs @ 12.22 hrs, Volume= 0.100 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.58' @ 12.22 hrs Surf.Area= 0.050 ac Storage= 0.029 af

Plug-Flow detention time= 120.5 min calculated for 0.100 af (91% of inflow)
Center-of-Mass det. time= 71.0 min (812.3 - 741.4)

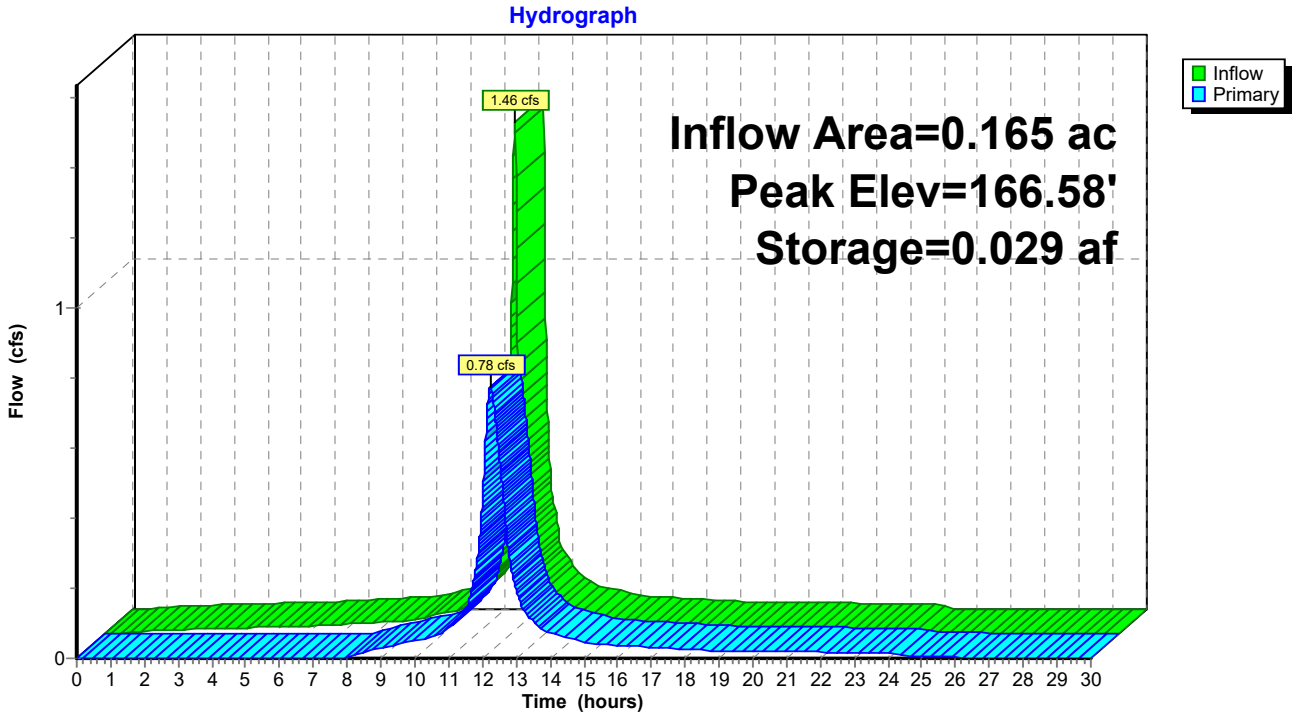
Volume	Invert	Avail.Storage	Storage Description
#1	165.15'	0.060 af	**PP-11 (Prismatic)**Listed below (Recalc) 0.151 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.15	0.050	0.000	0.000
168.17	0.050	0.151	0.151

Device	Routing	Invert	Outlet Devices
#1	Primary	165.65'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	166.65'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.78 cfs @ 12.22 hrs HW=166.58' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.78 cfs @ 3.96 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 27P: PP-11



Summary for Pond 28P: Bio Infiltration Basin 2

Inflow Area = 2.500 ac, 35.28% Impervious, Inflow Depth > 6.00" for 100-Year Storm event
Inflow = 14.42 cfs @ 12.14 hrs, Volume= 1.249 af
Outflow = 11.95 cfs @ 12.18 hrs, Volume= 1.194 af, Atten= 17%, Lag= 2.9 min
Discarded = 0.04 cfs @ 12.18 hrs, Volume= 0.062 af
Primary = 11.91 cfs @ 12.18 hrs, Volume= 1.133 af
Routed to Link 18L : Proposed Flows (South)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 162.16' @ 12.18 hrs Surf.Area= 0.079 ac Storage= 0.191 af

Plug-Flow detention time= 80.1 min calculated for 1.194 af (96% of inflow)
Center-of-Mass det. time= 53.5 min (865.9 - 812.4)

Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	0.263 af	**Small Scale Infiltration Basin 2 (Irregular)** Listed below (Recalc)

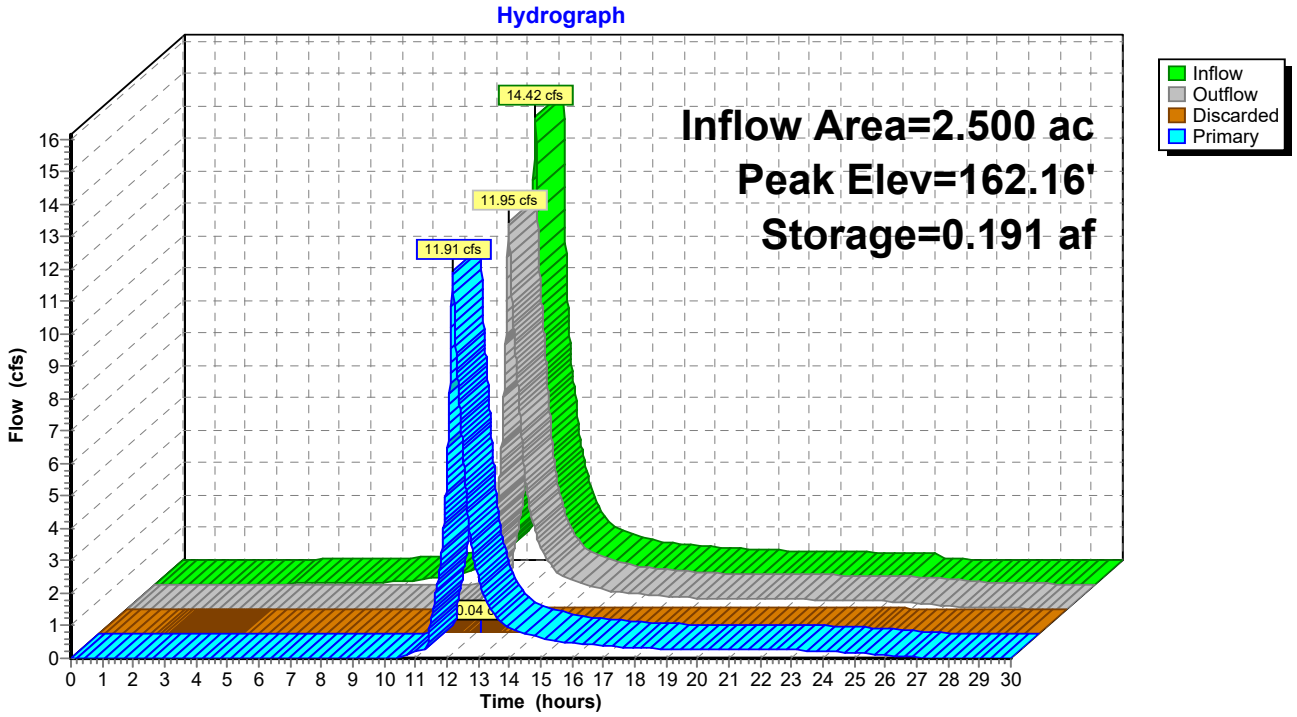
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
157.00	0.047	190.6	0.0	0.000	0.000	0.047
158.00	0.047	190.6	40.0	0.019	0.019	0.051
159.00	0.047	190.6	40.0	0.019	0.038	0.056
160.00	0.047	190.6	40.0	0.019	0.056	0.060
161.00	0.061	209.7	100.0	0.054	0.110	0.075
162.00	0.076	228.6	100.0	0.068	0.179	0.091
163.00	0.093	247.4	100.0	0.084	0.263	0.108

Device	Routing	Invert	Outlet Devices
#1	Primary	158.00'	**15.0" Round RCP_Round 15"** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 158.00' / 145.50' S= 0.5000 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Discarded	157.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'
#3	Device 1	160.00'	**3.5" Vert. WQ+2Yr** C= 0.600 Limited to weir flow at low heads
#4	Device 1	161.00'	**20.0" W x 5.0" H Vert. 10YR X 3.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.00'	**24.0" x 24.0" Horiz. Emergency Overflow** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.18 hrs HW=162.16' (Free Discharge)
└**2=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=11.89 cfs @ 12.18 hrs HW=162.16' (Free Discharge)
└**1=RCP_Round 15"** (Passes 11.89 cfs of 13.89 cfs potential flow)
  ├**3=WQ+2Yr** (Orifice Controls 0.46 cfs @ 6.83 fps)
  ├**4=10YR** (Orifice Controls 9.77 cfs @ 4.69 fps)
  └**5=Emergency Overflow** (Weir Controls 1.67 cfs @ 1.31 fps)

Pond 28P: Bio Infiltration Basin 2



Summary for Pond 32P: UG Roof Storage

Inflow Area = 1.310 ac, 85.11% Impervious, Inflow Depth = 7.60" for 100-Year Storm event
Inflow = 11.19 cfs @ 12.13 hrs, Volume= 0.830 af
Outflow = 8.36 cfs @ 12.18 hrs, Volume= 0.812 af, Atten= 25%, Lag= 3.2 min
Primary = 8.36 cfs @ 12.18 hrs, Volume= 0.812 af
Routed to Link 21L : Proposed Flows (North)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 167.41' @ 12.18 hrs Surf.Area= 0.188 ac Storage= 0.143 af

Plug-Flow detention time= 107.8 min calculated for 0.812 af (98% of inflow)
Center-of-Mass det. time= 93.9 min (843.1 - 749.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	165.50'	0.266 af	**56.49'W x 144.75'L x 8.58'H Field A** 1.610 af Overall - 0.946 af Embedded = 0.664 af x 40.0% Voids
#2A	167.50'	0.899 af	**ACF R-Tank LD 4** x 2400 Inside #1 Inside= 15.7"W x 66.9"H => 6.95 sf x 2.35'L = 16.3 cf Outside= 15.7"W x 66.9"H => 7.32 sf x 2.35'L = 17.2 cf 2400 Chambers in 40 Rows
		1.164 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	**15.0" Round RCP_Round 15"** L= 40.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 165.50' / 164.30' S= 0.0300 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Device 1	165.50'	**2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	166.50'	**4.0' long Sharp-Crested Rectangular Weir** 1 End Contraction(s) 3.0' Crest Height

Primary OutFlow Max=8.36 cfs @ 12.18 hrs HW=167.41' (Free Discharge)
└**1=RCP_Round 15"** (Inlet Controls 8.36 cfs @ 6.81 fps)
├**2=Orifice/Grate** (Passes < 0.22 cfs potential flow)
└**3=Sharp-Crested Rectangular Weir**(Passes < 11.41 cfs potential flow)

Pond 32P: UG Roof Storage - Chamber Wizard Field A

Chamber Model = ACF R-Tank LD 4 (ACF Environmental R-Tank LD)
Inside= 15.7"W x 66.9"H => 6.95 sf x 2.35'L = 16.3 cf
Outside= 15.7"W x 66.9"H => 7.32 sf x 2.35'L = 17.2 cf

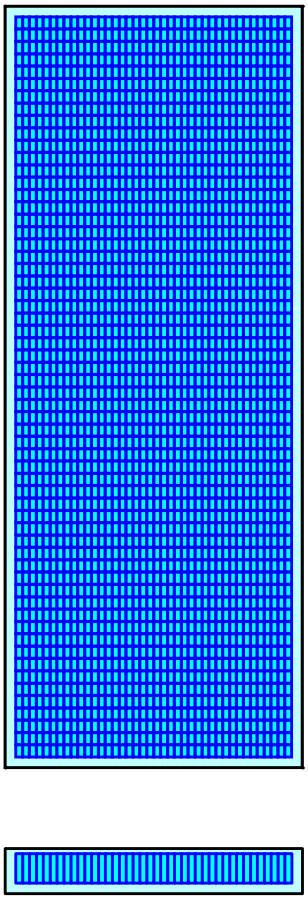
60 Chambers/Row x 2.35' Long = 140.75' Row Length +24.0" End Stone x 2 = 144.75' Base Length
40 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 56.49' Base Width
24.0" Stone Base + 66.9" Chamber Height + 12.0" Stone Cover = 8.58' Field Height

2,400 Chambers x 16.3 cf = 39,147.6 cf Chamber Storage
2,400 Chambers x 17.2 cf = 41,208.0 cf Displacement

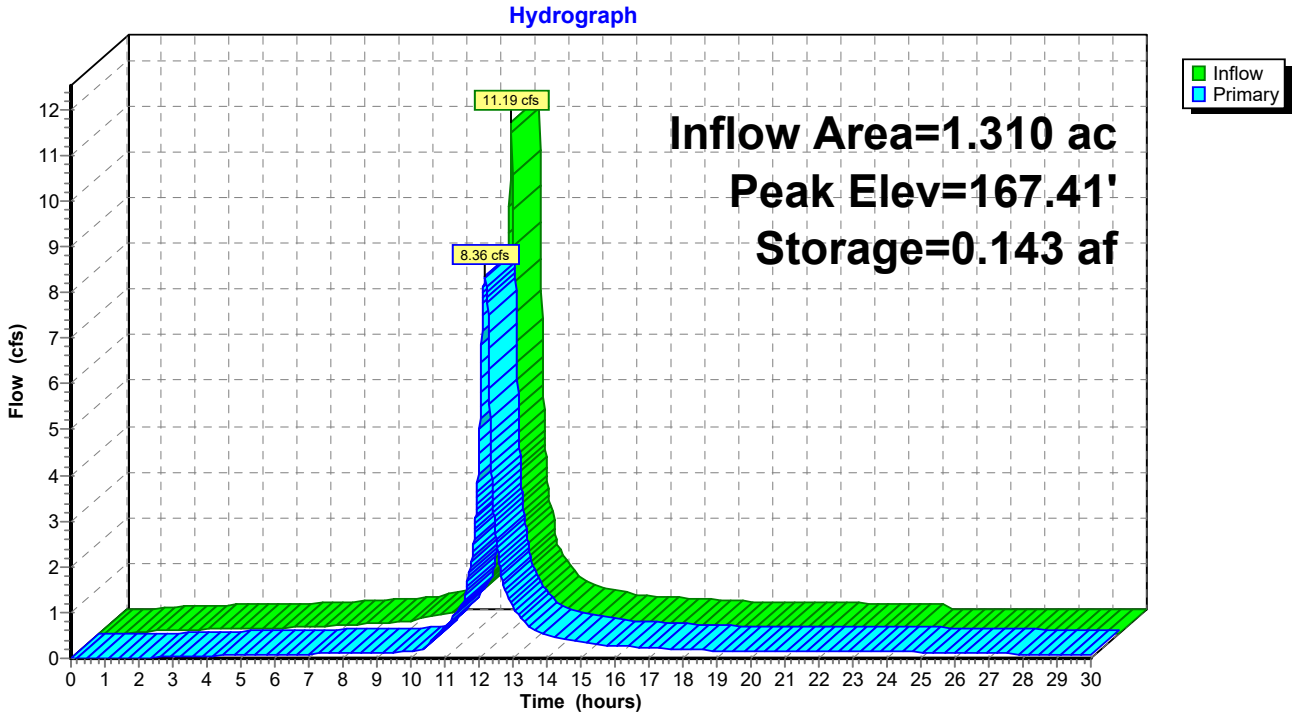
70,140.3 cf Field - 41,208.0 cf Chambers = 28,932.3 cf Stone x 40.0% Voids = 11,572.9 cf Stone Storage

Chamber Storage + Stone Storage = 50,720.5 cf = 1.164 af
Overall Storage Efficiency = 72.3%
Overall System Size = 144.75' x 56.49' x 8.58'

2,400 Chambers
2,597.8 cy Field
1,071.6 cy Stone



Pond 32P: UG Roof Storage

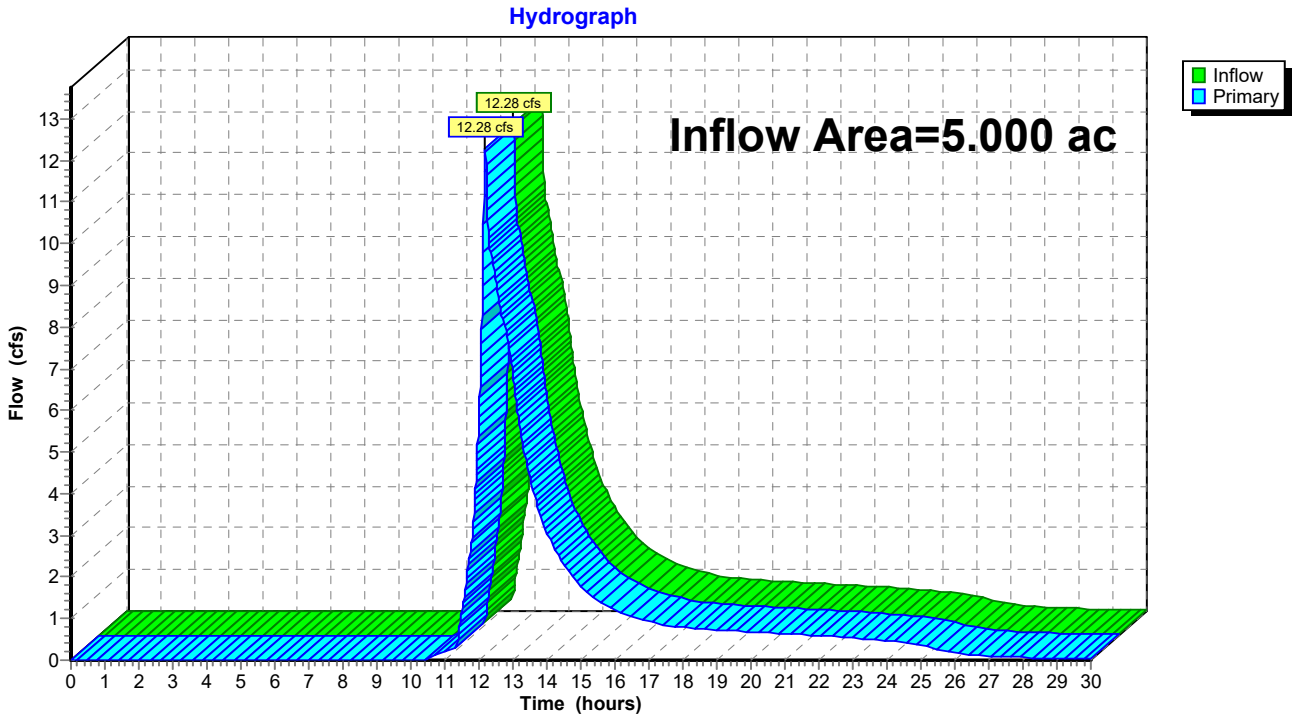


Summary for Link 18L: Proposed Flows (South)

Inflow Area = 5.000 ac, 49.12% Impervious, Inflow Depth > 5.08" for 100-Year Storm event
Inflow = 12.28 cfs @ 12.18 hrs, Volume= 2.115 af
Primary = 12.28 cfs @ 12.18 hrs, Volume= 2.115 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Link 18L: Proposed Flows (South)

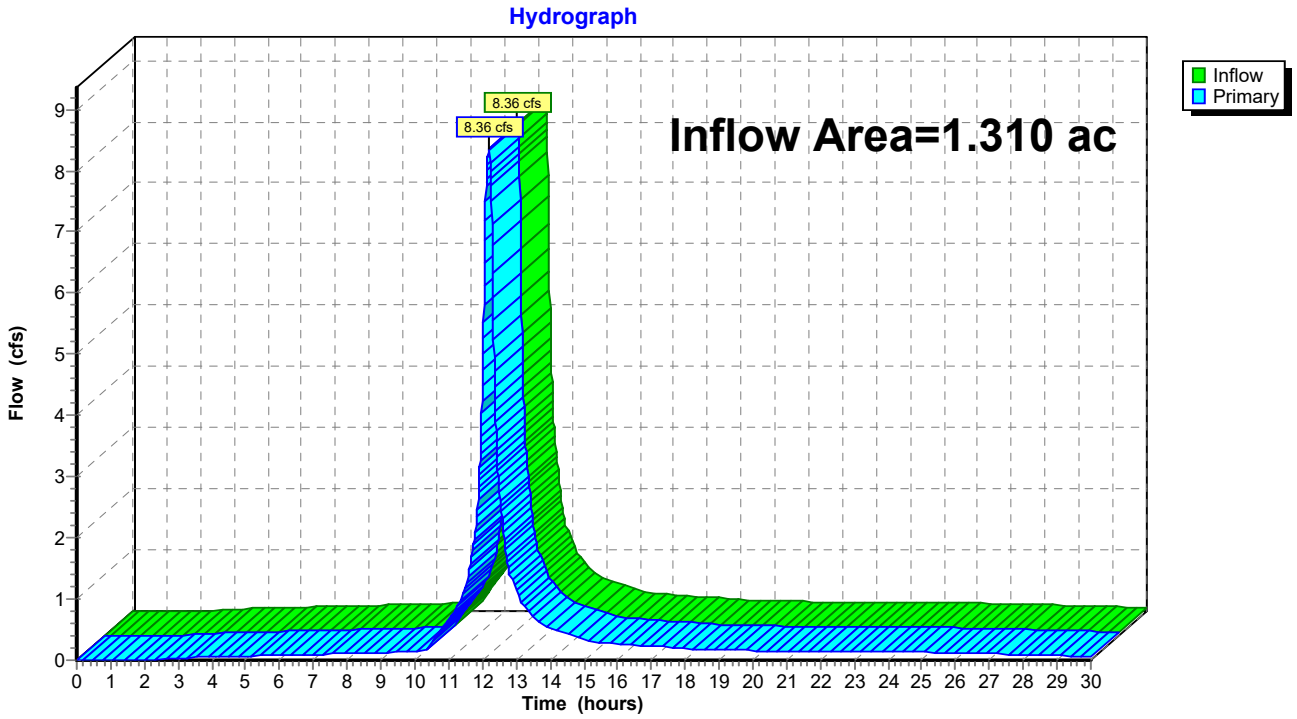


Summary for Link 21L: Proposed Flows (North)

Inflow Area = 1.310 ac, 85.11% Impervious, Inflow Depth > 7.44" for 100-Year Storm event
Inflow = 8.36 cfs @ 12.18 hrs, Volume= 0.812 af
Primary = 8.36 cfs @ 12.18 hrs, Volume= 0.812 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Link 21L: Proposed Flows (North)



Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: WQA-1 Runoff Area=0.214 ac 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=0.63 cfs 0.018 af

Subcatchment3S: WQA-2 Runoff Area=0.311 ac 94.21% Impervious Runoff Depth=0.94"
Tc=6.0 min CN=97 Runoff=0.86 cfs 0.024 af

Subcatchment5S: WQA-3 Runoff Area=0.192 ac 81.25% Impervious Runoff Depth=0.65"
Tc=6.0 min CN=93 Runoff=0.39 cfs 0.010 af

Subcatchment7S: WQA-4 Runoff Area=0.206 ac 68.93% Impervious Runoff Depth=0.54"
Tc=6.0 min CN=91 Runoff=0.35 cfs 0.009 af

Subcatchment9S: WQA-5 Runoff Area=0.087 ac 88.51% Impervious Runoff Depth=0.78"
Tc=6.0 min CN=95 Runoff=0.21 cfs 0.006 af

Subcatchment11S: WQA-6 Runoff Area=0.258 ac 91.47% Impervious Runoff Depth=0.86"
Tc=6.0 min CN=96 Runoff=0.66 cfs 0.018 af

Subcatchment13S: WQA-7 Runoff Area=0.226 ac 90.71% Impervious Runoff Depth=0.86"
Tc=6.0 min CN=96 Runoff=0.58 cfs 0.016 af

Subcatchment19S: WQA-8 Runoff Area=0.174 ac 80.46% Impervious Runoff Depth=0.65"
Tc=6.0 min CN=93 Runoff=0.35 cfs 0.009 af

Subcatchment21S: Area of Right Grass Runoff Area=0.300 ac 50.00% Impervious Runoff Depth=0.33"
Tc=6.0 min CN=86 Runoff=0.32 cfs 0.008 af

Subcatchment22S: WQA-9 Runoff Area=0.199 ac 89.45% Impervious Runoff Depth=0.78"
Tc=6.0 min CN=95 Runoff=0.48 cfs 0.013 af

Subcatchment23S: Area of Left Grass Swale Runoff Area=0.208 ac 0.00% Impervious Runoff Depth=0.07"
Tc=6.0 min CN=74 Runoff=0.03 cfs 0.001 af

Subcatchment24S: WQA-10 Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=0.37 cfs 0.011 af

Subcatchment25S: Additional Basin Area Runoff Area=1.112 ac 5.40% Impervious Runoff Depth=0.09"
Tc=6.0 min CN=75 Runoff=0.21 cfs 0.008 af

Subcatchment26S: WQA-11 Runoff Area=0.165 ac 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=0.48 cfs 0.014 af

Subcatchment27S: 1/2 Highway Runoff Area=0.113 ac 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=0.33 cfs 0.010 af

Subcatchment28S: Proposed & Runoff Area=1.115 ac 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=3.26 cfs 0.096 af

Subcatchment29S: 1/2 Highway Runoff Area=0.202 ac 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.017 af

Subcatchment30S: (new Subcat) Runoff Area=0.243 ac 0.00% Impervious Runoff Depth=0.07"
Tc=6.0 min CN=74 Runoff=0.04 cfs 0.001 af

Subcatchment31S: (new Subcat) Runoff Area=0.511 ac 0.00% Impervious Runoff Depth=0.07"
Tc=6.0 min CN=74 Runoff=0.08 cfs 0.003 af

Subcatchment32S: (new Subcat) Runoff Area=0.195 ac 0.00% Impervious Runoff Depth=0.07"
Tc=6.0 min CN=74 Runoff=0.03 cfs 0.001 af

Subcatchment33S: Additional Basin Area Runoff Area=0.154 ac 0.00% Impervious Runoff Depth=0.07"
Tc=6.0 min CN=74 Runoff=0.02 cfs 0.001 af

Reach 23R: Right Grass Swale Avg. Flow Depth=0.29' Max Vel=0.26 fps Inflow=0.64 cfs 0.018 af
n=0.150 L=468.5' S=0.0050 '/' Capacity=2.49 cfs Outflow=0.22 cfs 0.018 af

Reach 25R: Left Grass Swale Avg. Flow Depth=0.32' Max Vel=0.28 fps Inflow=0.61 cfs 0.037 af
n=0.150 L=149.5' S=0.0047 '/' Capacity=3.69 cfs Outflow=0.45 cfs 0.037 af

Pond 2P: PP-1 Peak Elev=165.44' Storage=0.009 af Inflow=0.63 cfs 0.018 af
Outflow=0.29 cfs 0.018 af

Pond 4P: PP-2 Peak Elev=162.16' Storage=0.021 af Inflow=0.86 cfs 0.024 af
Outflow=0.06 cfs 0.011 af

Pond 6P: PP-3 Peak Elev=158.55' Storage=0.010 af Inflow=0.39 cfs 0.010 af
Outflow=0.02 cfs 0.003 af

Pond 8P: PP-4 Peak Elev=169.63' Storage=0.006 af Inflow=0.35 cfs 0.009 af
Outflow=0.07 cfs 0.007 af

Pond 10P: PP-5 Peak Elev=167.37' Storage=0.006 af Inflow=0.21 cfs 0.006 af
Outflow=0.00 cfs 0.000 af

Pond 12P: PP-6 Peak Elev=166.49' Storage=0.010 af Inflow=0.66 cfs 0.018 af
Outflow=0.21 cfs 0.018 af

Pond 14P: PP-7 Peak Elev=168.80' Storage=0.009 af Inflow=0.58 cfs 0.016 af
Outflow=0.17 cfs 0.016 af

Pond 20P: PP-8 Peak Elev=166.26' Storage=0.009 af Inflow=0.35 cfs 0.009 af
Outflow=0.00 cfs 0.000 af

Pond 23P: PP-9 Peak Elev=169.96' Storage=0.008 af Inflow=0.48 cfs 0.013 af
Outflow=0.13 cfs 0.013 af

Pond 25P: PP-10 Peak Elev=169.65' Storage=0.011 af Inflow=0.37 cfs 0.011 af
Outflow=0.00 cfs 0.000 af

Pond 26P: Bio Infiltration Basin 1 Peak Elev=156.91' Storage=0.064 af Inflow=0.97 cfs 0.096 af
Discarded=0.09 cfs 0.096 af Primary=0.00 cfs 0.000 af Outflow=0.09 cfs 0.096 af

Pond 27P: PP-11 Peak Elev=165.77' Storage=0.012 af Inflow=0.48 cfs 0.014 af
Outflow=0.04 cfs 0.004 af

Pond 28P: Bio Infiltration Basin 2 Peak Elev=159.02' Storage=0.038 af Inflow=0.68 cfs 0.047 af
Discarded=0.02 cfs 0.047 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.047 af

Pond 32P: UG Roof Storage Peak Elev=166.55' Storage=0.079 af Inflow=3.28 cfs 0.097 af
Outflow=0.34 cfs 0.097 af

Link 18L: Proposed Flows (South) Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 21L: Proposed Flows (North) Inflow=0.34 cfs 0.097 af
Primary=0.34 cfs 0.097 af

Total Runoff Area = 6.310 ac Runoff Volume = 0.298 af Average Runoff Depth = 0.57"
43.41% Pervious = 2.739 ac 56.59% Impervious = 3.571 ac

Summary for Subcatchment 1S: WQA-1

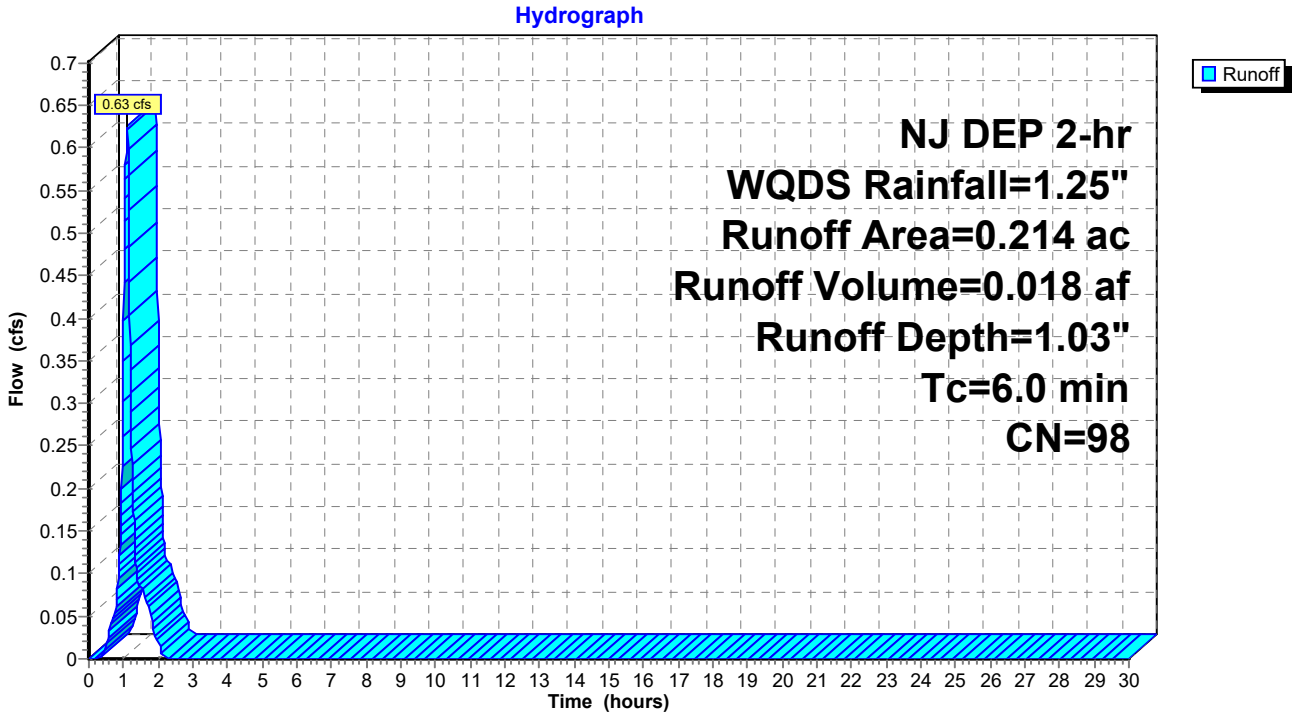
Runoff = 0.63 cfs @ 1.11 hrs, Volume= 0.018 af, Depth= 1.03"
Routed to Pond 2P : PP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.214	98	
	0.214		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1S: WQA-1



Summary for Subcatchment 3S: WQA-2

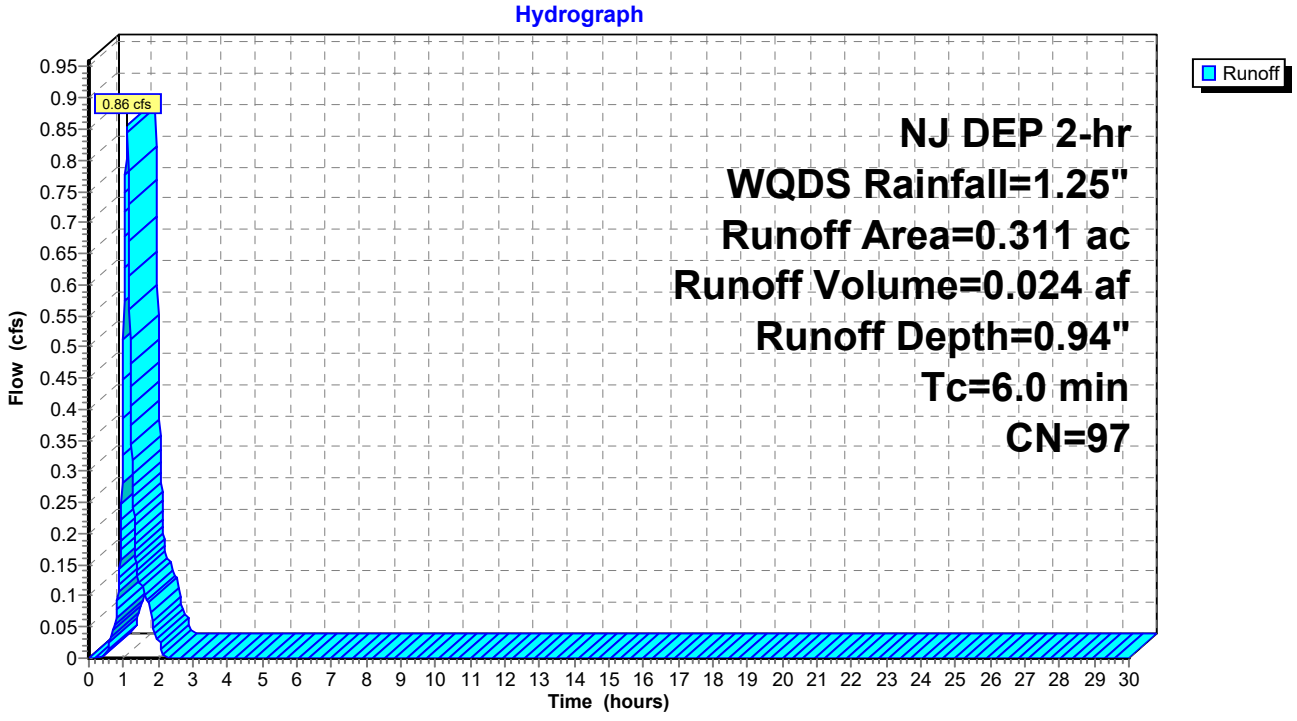
Runoff = 0.86 cfs @ 1.11 hrs, Volume= 0.024 af, Depth= 0.94"
Routed to Pond 4P : PP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.293	98	
	0.018	74	>75% Grass cover, Good, HSG C
	0.311	97	Weighted Average
	0.018		5.79% Pervious Area
	0.293		94.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 3S: WQA-2



Summary for Subcatchment 5S: WQA-3

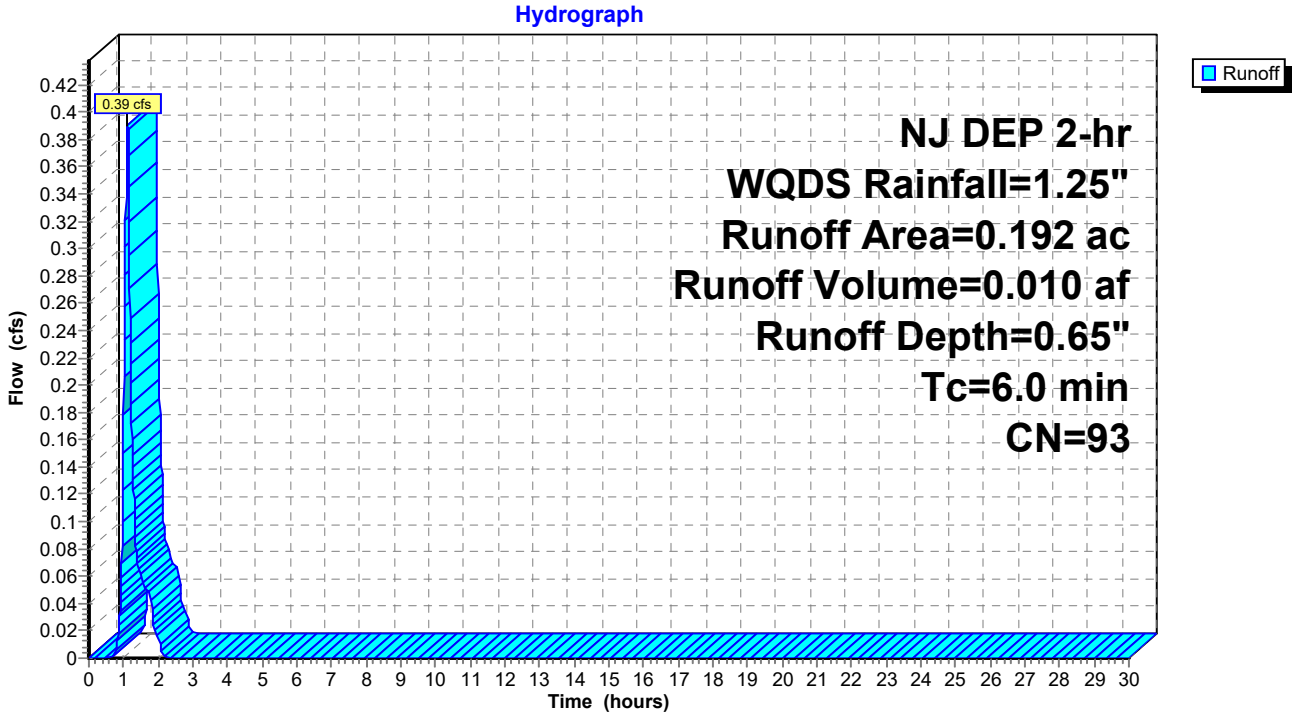
Runoff = 0.39 cfs @ 1.12 hrs, Volume= 0.010 af, Depth= 0.65"
Routed to Pond 6P : PP-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.156	98	
	0.036	74	>75% Grass cover, Good, HSG C
	0.192	93	Weighted Average
	0.036		18.75% Pervious Area
	0.156		81.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: WQA-3



Summary for Subcatchment 7S: WQA-4

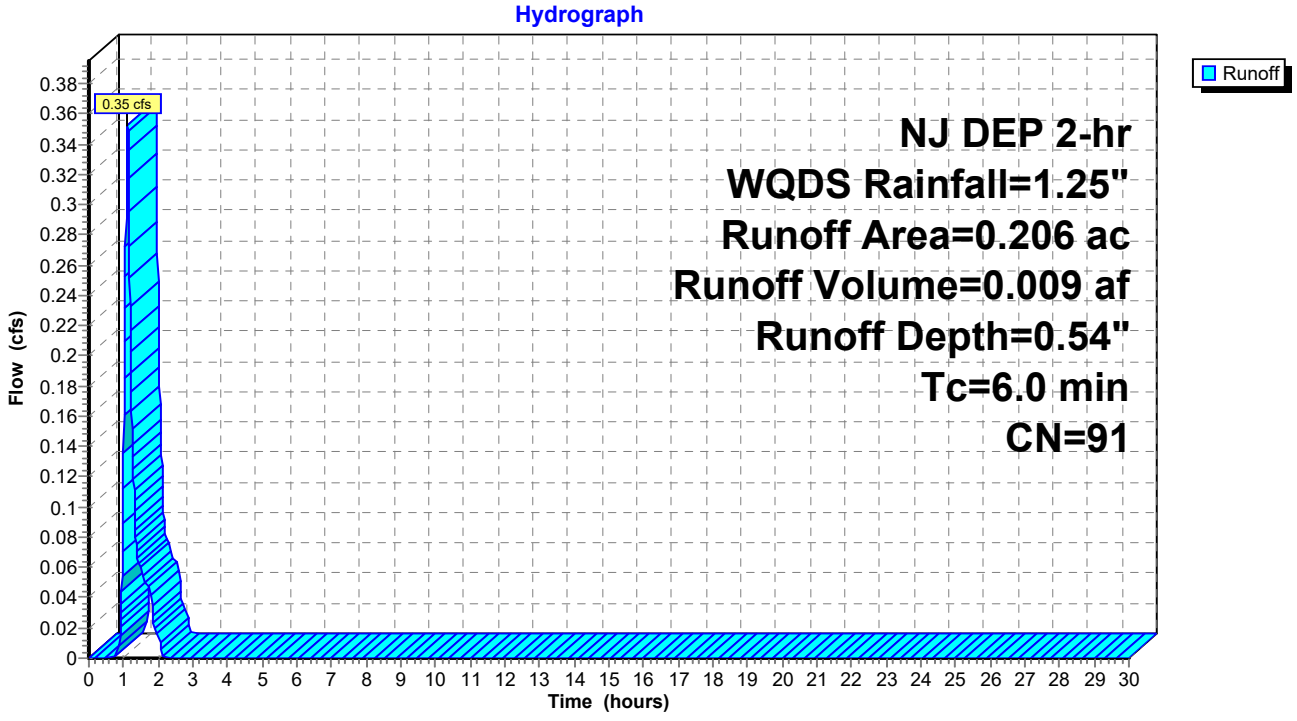
Runoff = 0.35 cfs @ 1.12 hrs, Volume= 0.009 af, Depth= 0.54"
Routed to Pond 8P : PP-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.142	98	
	0.064	74	>75% Grass cover, Good, HSG C
	0.206	91	Weighted Average
	0.064		31.07% Pervious Area
	0.142		68.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 7S: WQA-4



Summary for Subcatchment 9S: WQA-5

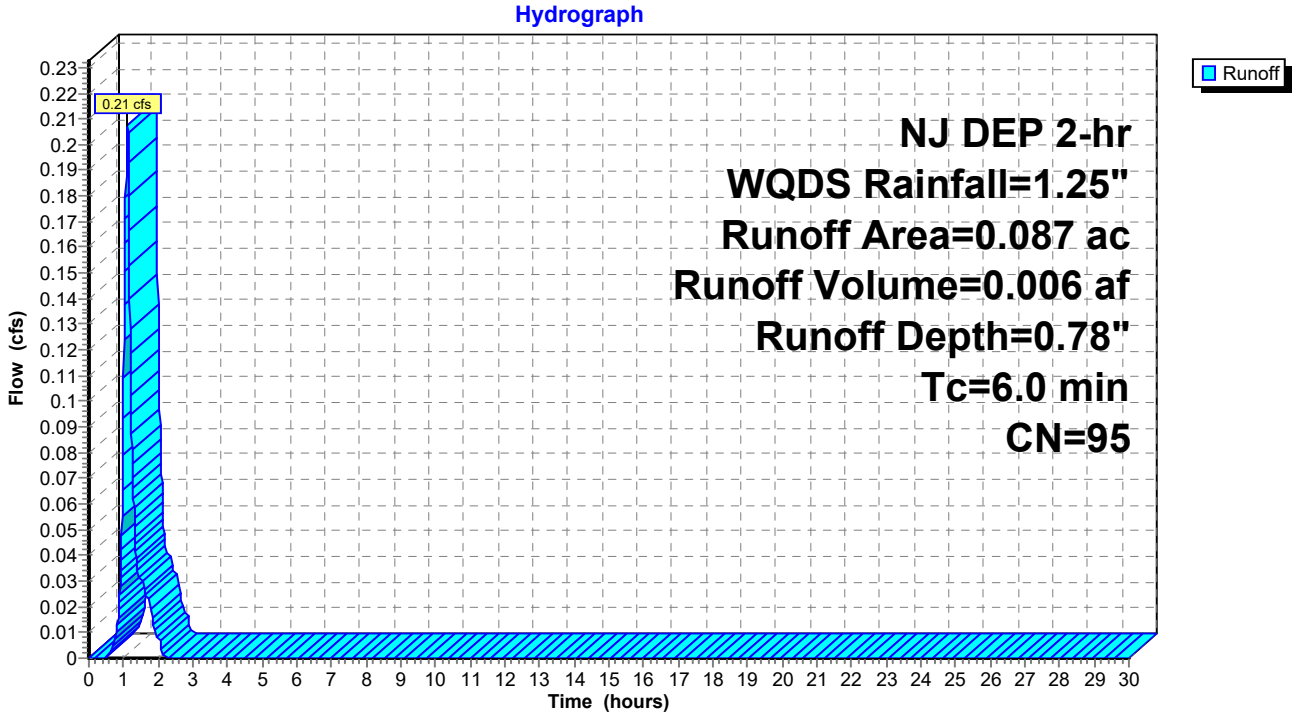
Runoff = 0.21 cfs @ 1.11 hrs, Volume= 0.006 af, Depth= 0.78"
Routed to Pond 10P : PP-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.077	98	
	0.010	74	>75% Grass cover, Good, HSG C
	0.087	95	Weighted Average
	0.010		11.49% Pervious Area
	0.077		88.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 9S: WQA-5



Summary for Subcatchment 11S: WQA-6

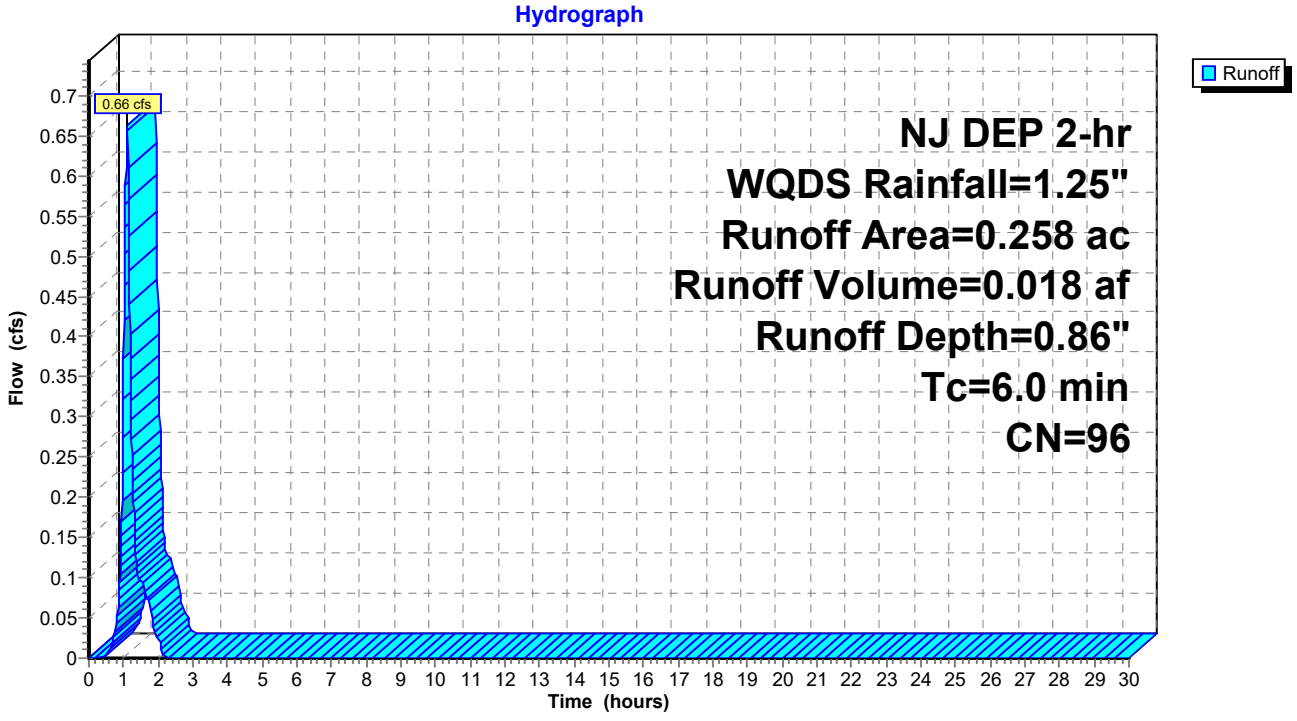
Runoff = 0.66 cfs @ 1.11 hrs, Volume= 0.018 af, Depth= 0.86"
Routed to Pond 12P : PP-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.236	98	
	0.022	74	>75% Grass cover, Good, HSG C
	0.258	96	Weighted Average
	0.022		8.53% Pervious Area
	0.236		91.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 11S: WQA-6



Summary for Subcatchment 13S: WQA-7

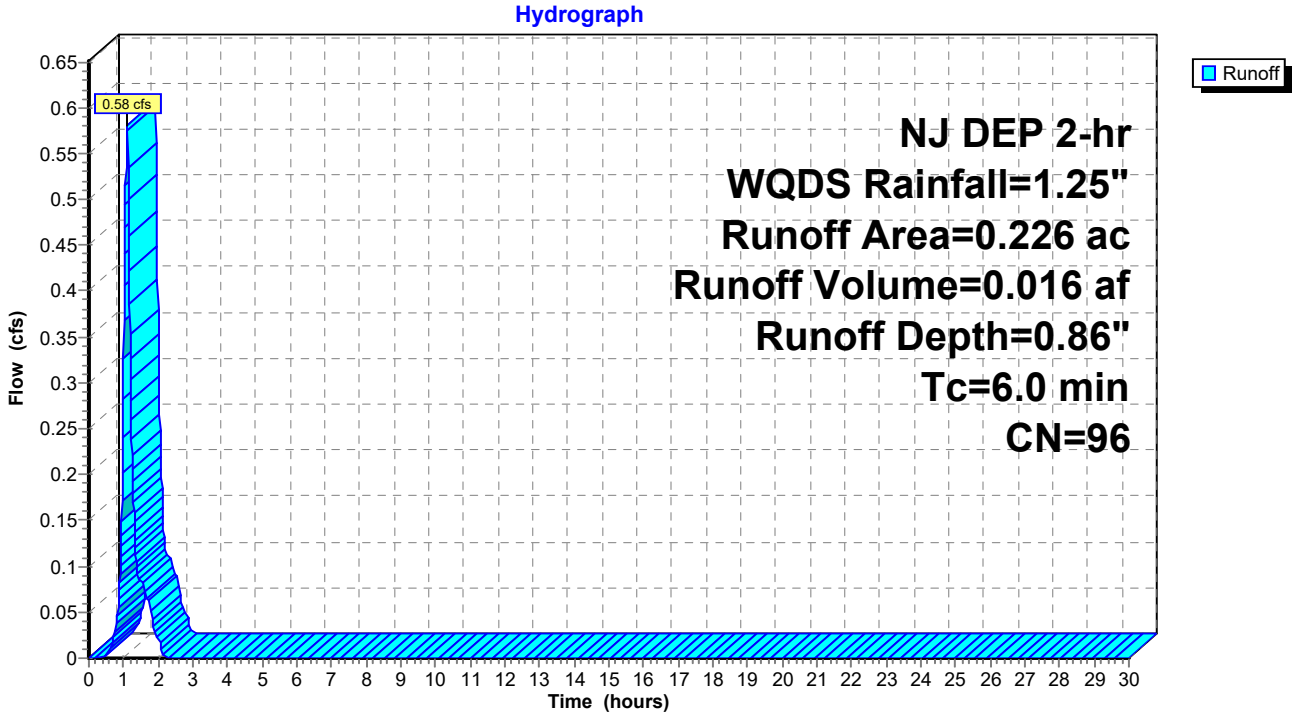
Runoff = 0.58 cfs @ 1.11 hrs, Volume= 0.016 af, Depth= 0.86"
Routed to Pond 14P : PP-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.205	98	
	0.021	74	>75% Grass cover, Good, HSG C
	0.226	96	Weighted Average
	0.021		9.29% Pervious Area
	0.205		90.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 13S: WQA-7



Summary for Subcatchment 19S: WQA-8

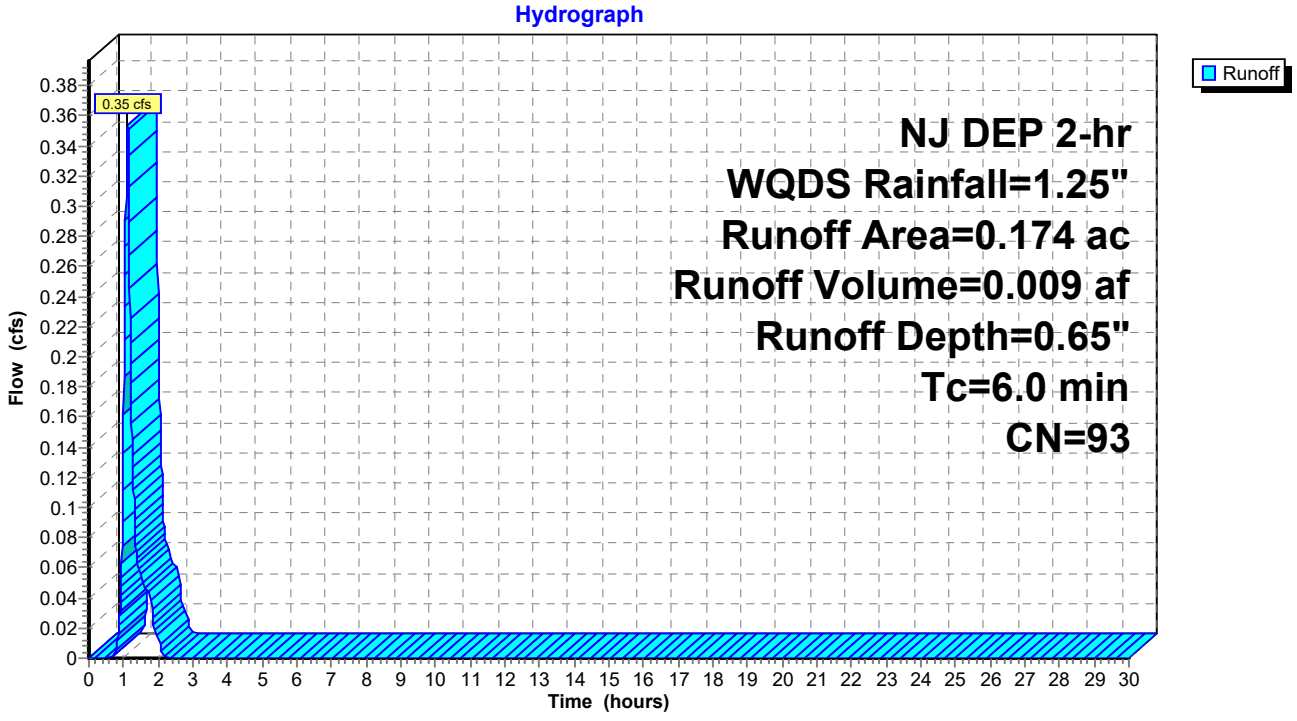
Runoff = 0.35 cfs @ 1.12 hrs, Volume= 0.009 af, Depth= 0.65"
Routed to Pond 20P : PP-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.140	98	
	0.034	74	>75% Grass cover, Good, HSG C
	0.174	93	Weighted Average
	0.034		19.54% Pervious Area
	0.140		80.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 19S: WQA-8



Summary for Subcatchment 21S: Area of Right Grass Swale

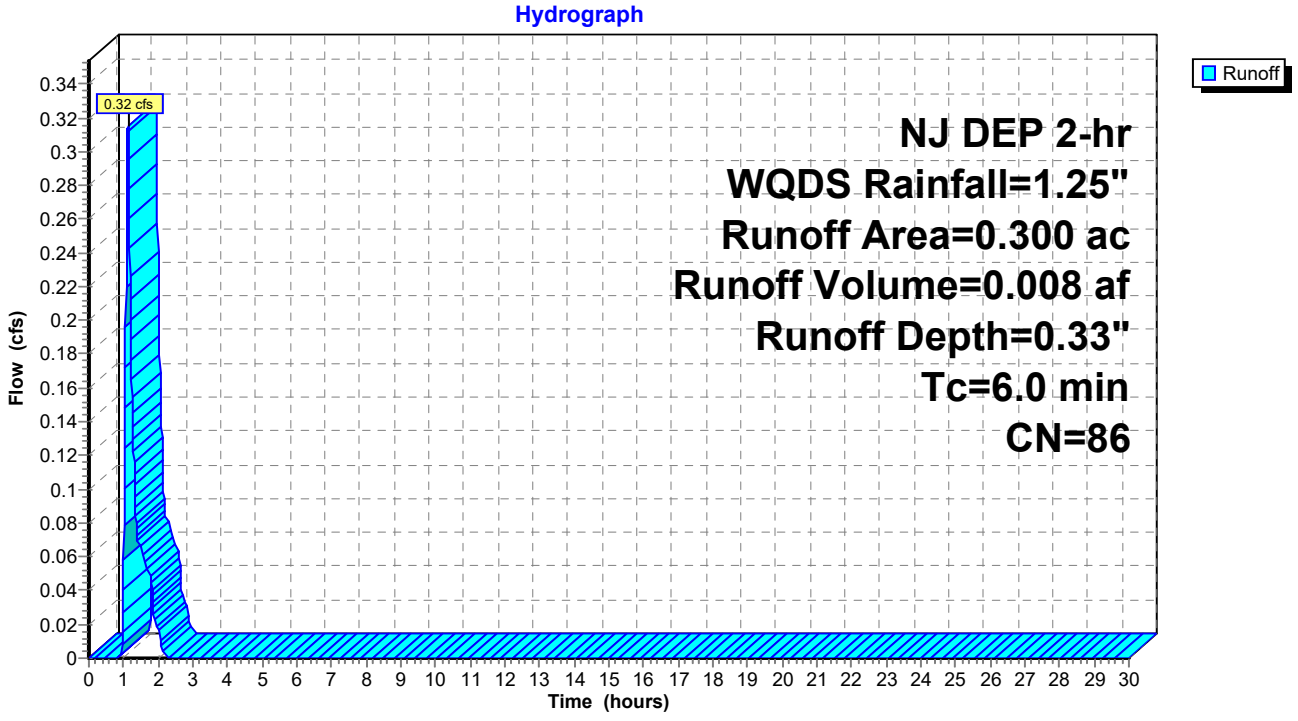
Runoff = 0.32 cfs @ 1.13 hrs, Volume= 0.008 af, Depth= 0.33"
Routed to Reach 23R : Right Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.150	98	Impervious Placeholder
*	0.150	74	Pervious Placeholder
	0.300	86	Weighted Average
	0.150		50.00% Pervious Area
	0.150		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 21S: Area of Right Grass Swale



Summary for Subcatchment 22S: WQA-9

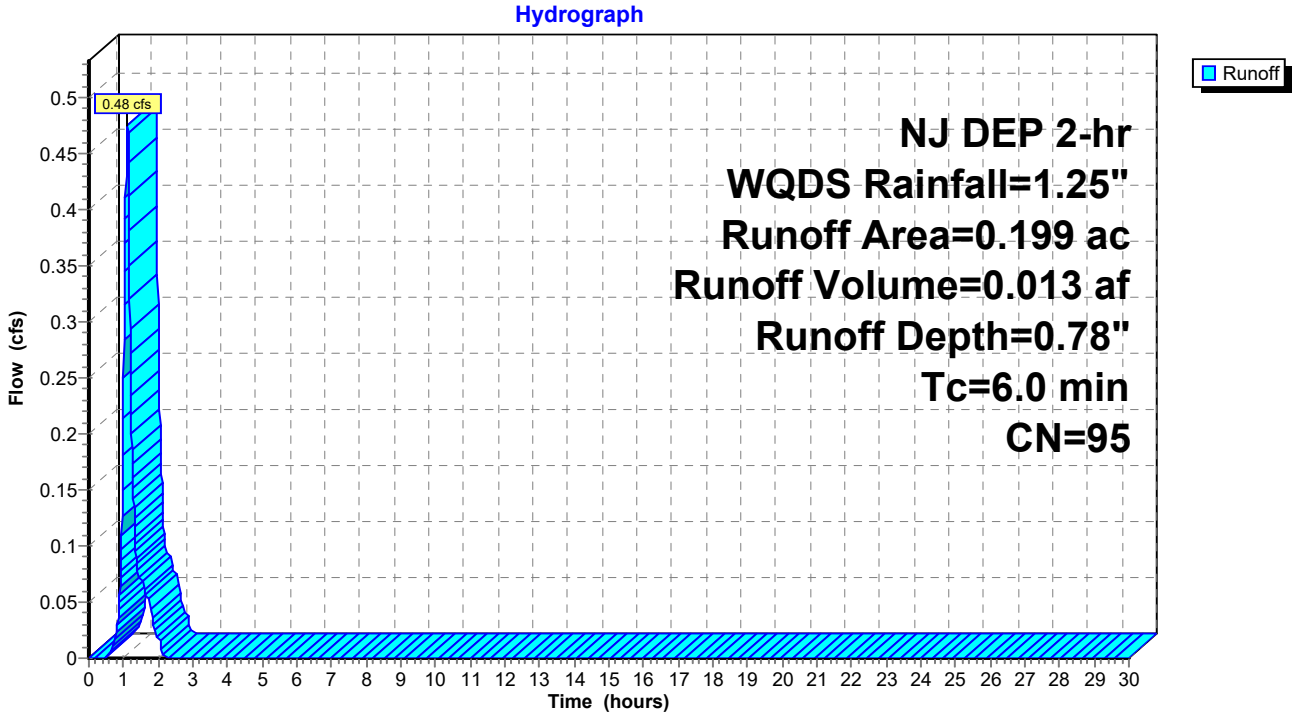
Runoff = 0.48 cfs @ 1.11 hrs, Volume= 0.013 af, Depth= 0.78"
Routed to Pond 23P : PP-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.178	98	
	0.021	74	>75% Grass cover, Good, HSG C
	0.199	95	Weighted Average
	0.021		10.55% Pervious Area
	0.178		89.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 22S: WQA-9



Summary for Subcatchment 23S: Area of Left Grass Swale

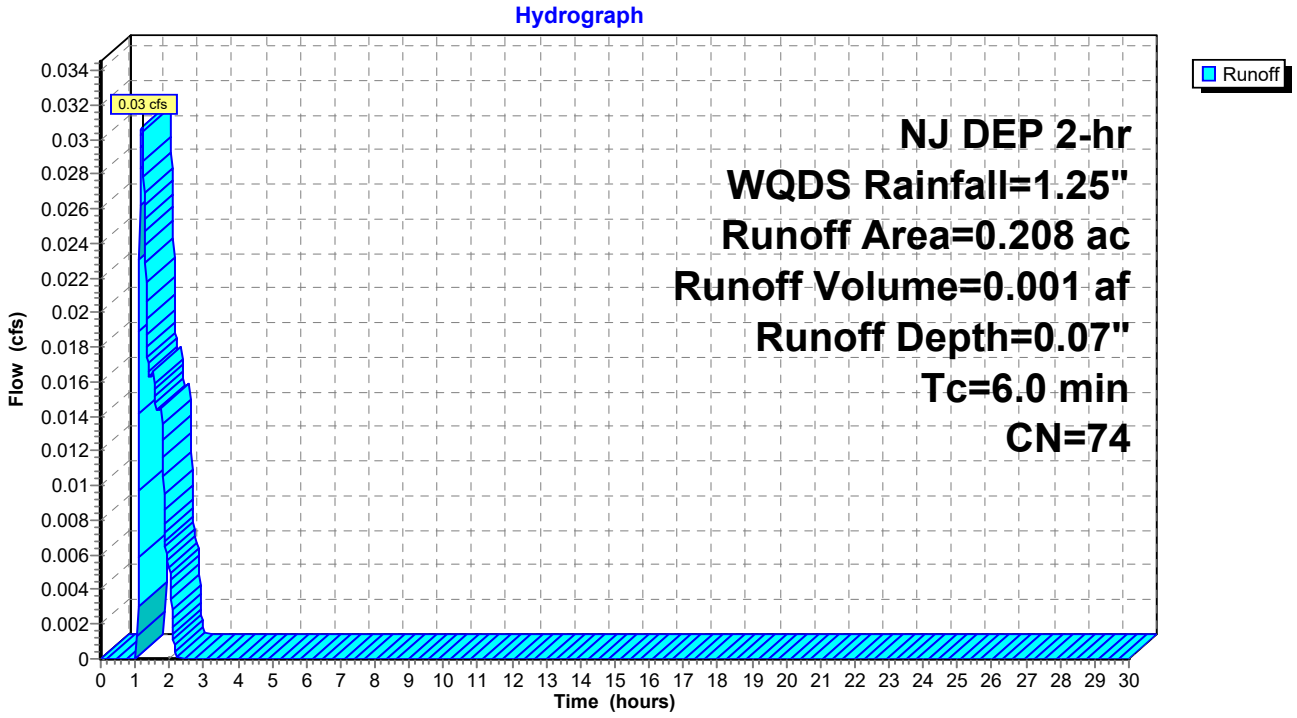
Runoff = 0.03 cfs @ 1.20 hrs, Volume= 0.001 af, Depth= 0.07"
Routed to Reach 25R : Left Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.208	74	
	0.208		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 23S: Area of Left Grass Swale



Summary for Subcatchment 24S: WQA-10

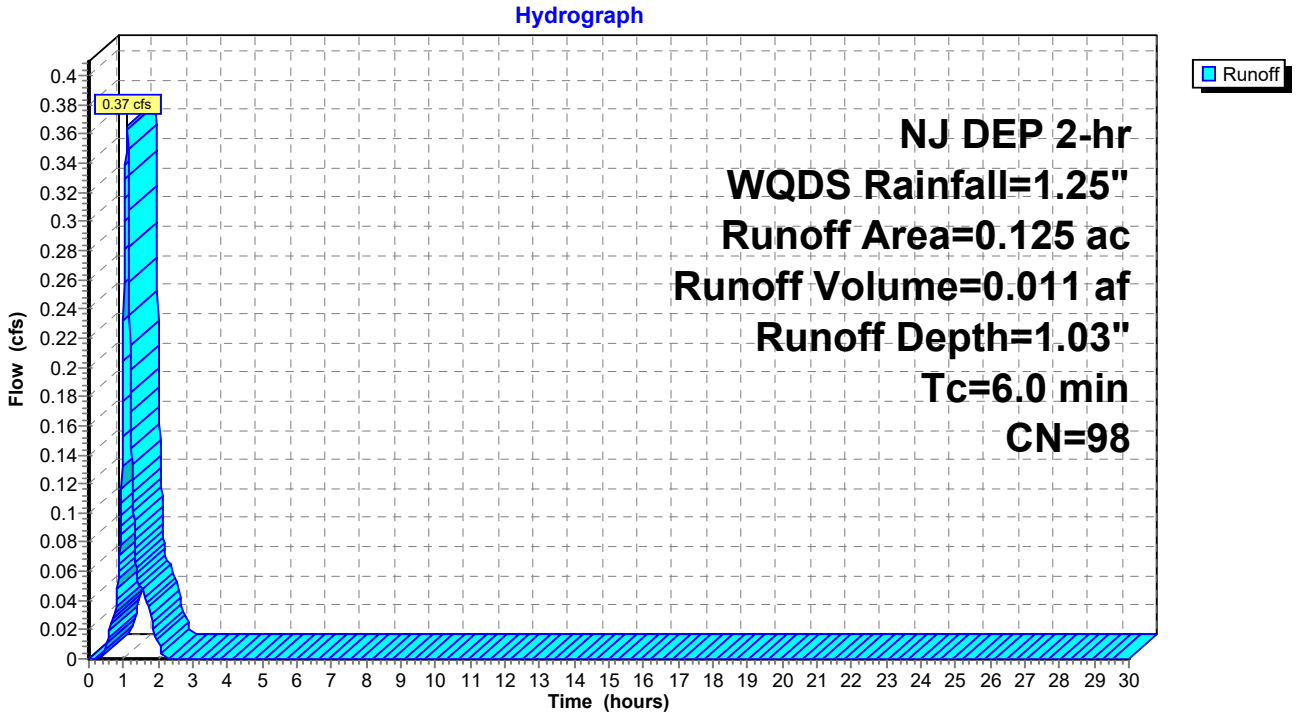
Runoff = 0.37 cfs @ 1.11 hrs, Volume= 0.011 af, Depth= 1.03"
Routed to Pond 25P : PP-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.125	98	
	0.125		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 24S: WQA-10



Summary for Subcatchment 25S: Additional Basin Area

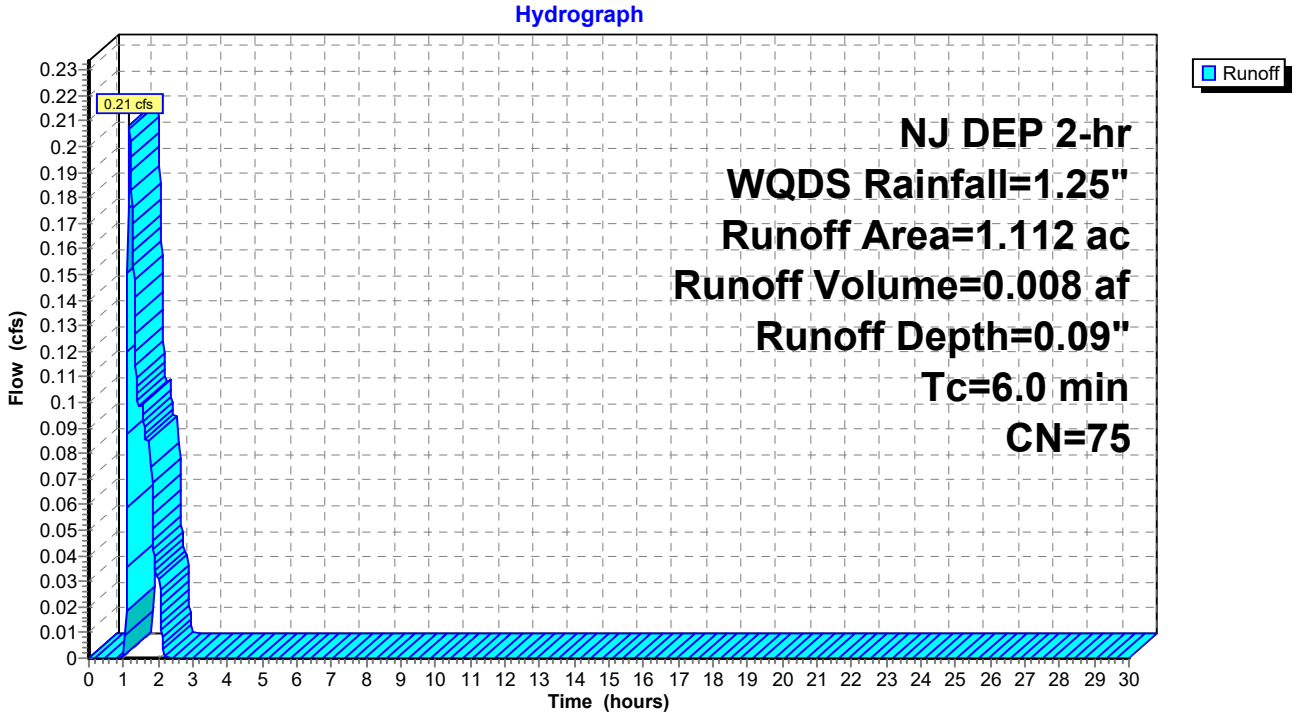
Runoff = 0.21 cfs @ 1.17 hrs, Volume= 0.008 af, Depth= 0.09"
Routed to Pond 28P : Bio Infiltration Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
	1.052	74	>75% Grass cover, Good, HSG C
*	0.060	98	
	1.112	75	Weighted Average
	1.052		94.60% Pervious Area
	0.060		5.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 25S: Additional Basin Area



Summary for Subcatchment 26S: WQA-11

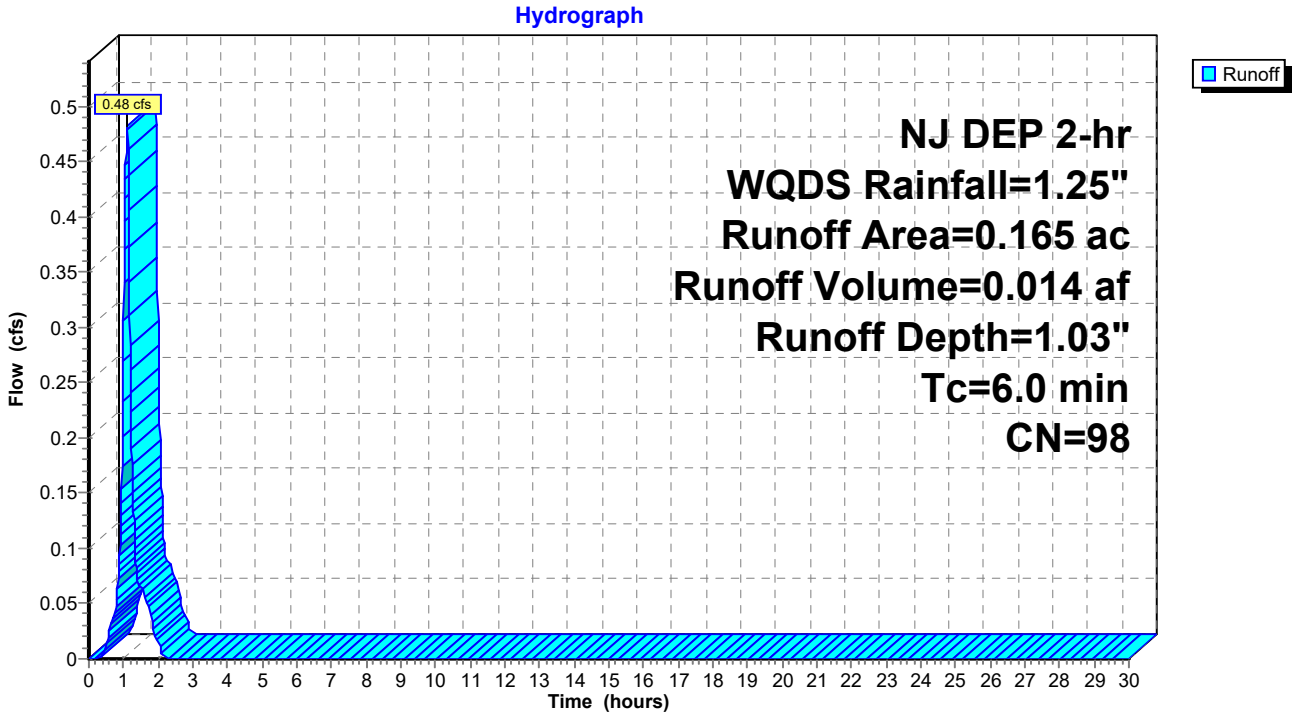
Runoff = 0.48 cfs @ 1.11 hrs, Volume= 0.014 af, Depth= 1.03"
Routed to Pond 27P : PP-11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.165	98	
	0.165		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 26S: WQA-11



Summary for Subcatchment 27S: 1/2 Highway Expansion

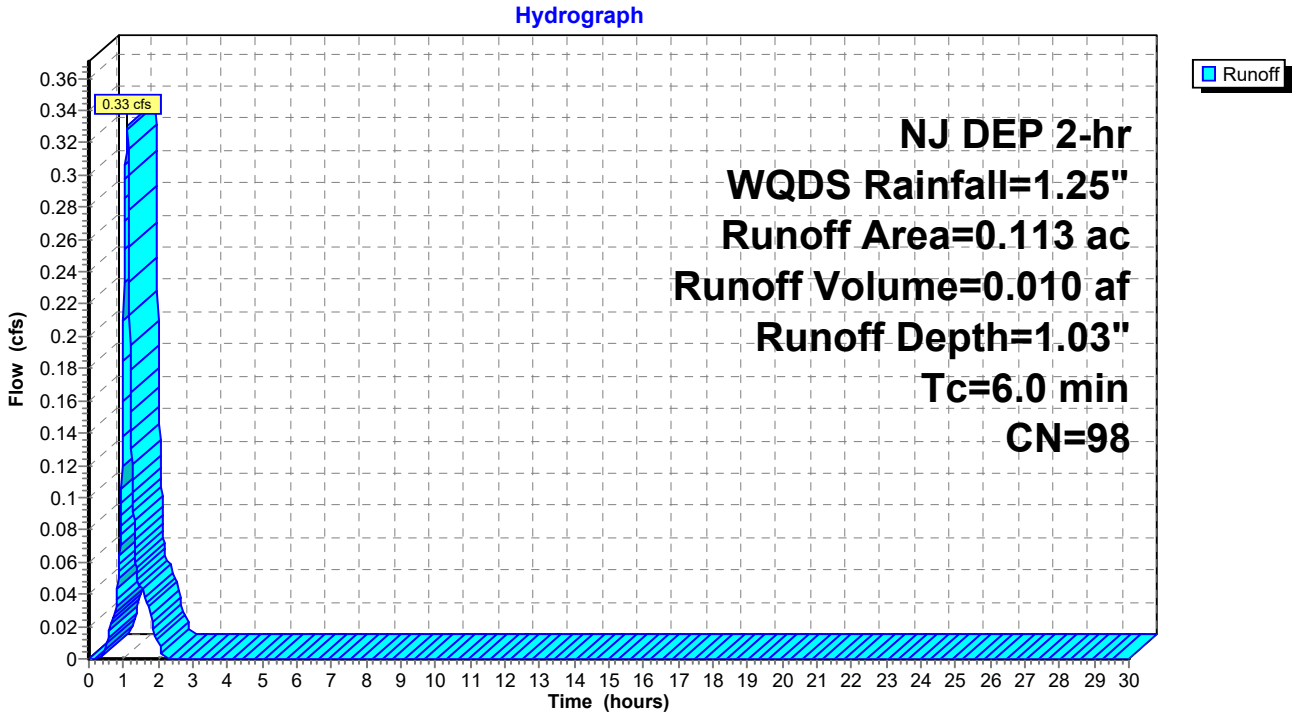
Runoff = 0.33 cfs @ 1.11 hrs, Volume= 0.010 af, Depth= 1.03"
Routed to Reach 23R : Right Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.113	98	Roadway Expansion
	0.113		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 27S: 1/2 Highway Expansion



Summary for Subcatchment 28S: Proposed & Relocated Roof

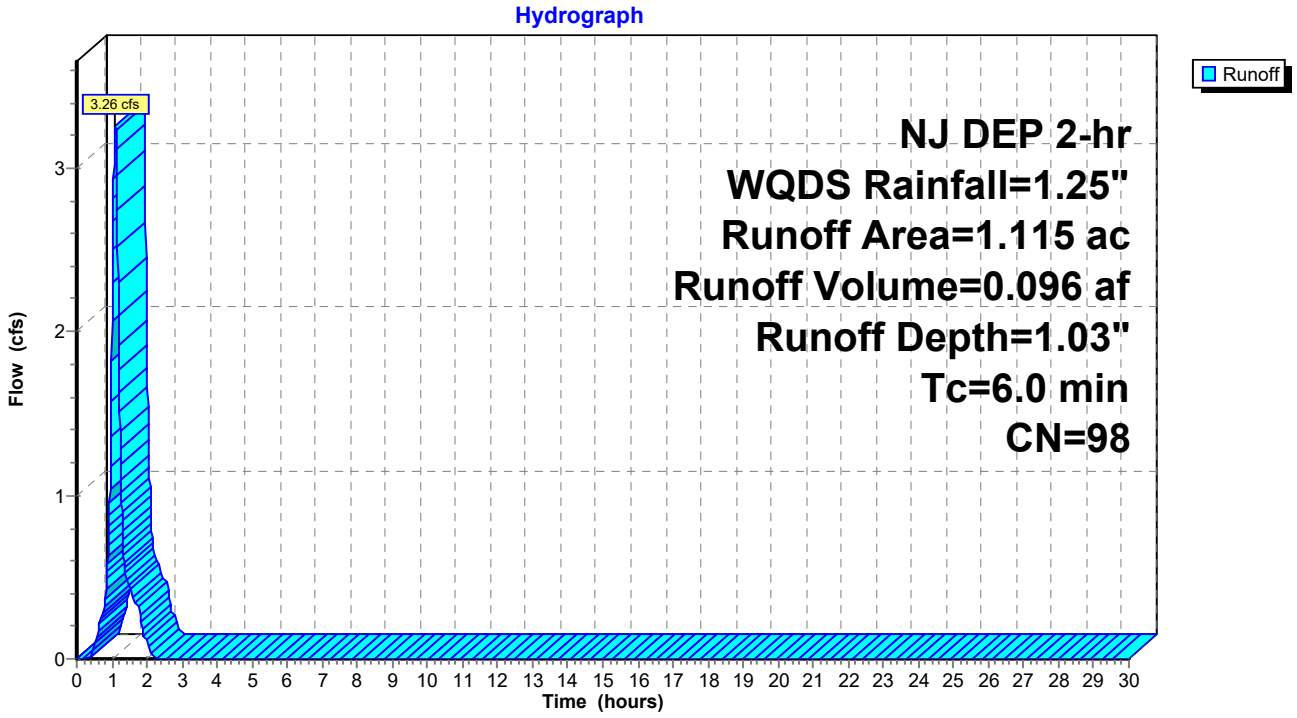
Runoff = 3.26 cfs @ 1.11 hrs, Volume= 0.096 af, Depth= 1.03"
Routed to Pond 32P : UG Roof Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

Area (ac)	CN	Description
1.115	98	Roofs, HSG C
1.115		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 28S: Proposed & Relocated Roof



Summary for Subcatchment 29S: 1/2 Highway Expansion

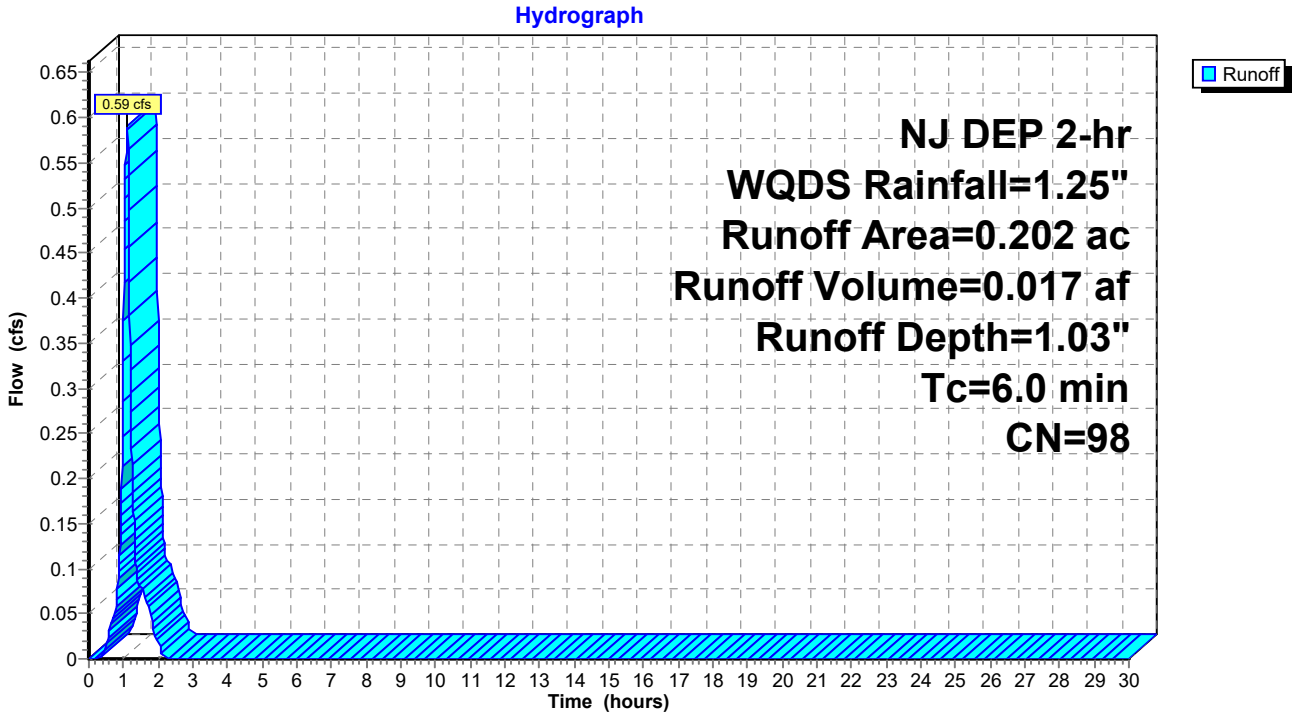
Runoff = 0.59 cfs @ 1.11 hrs, Volume= 0.017 af, Depth= 1.03"
Routed to Reach 25R : Left Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.202	98	
	0.202		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 29S: 1/2 Highway Expansion



Summary for Subcatchment 30S: (new Subcat)

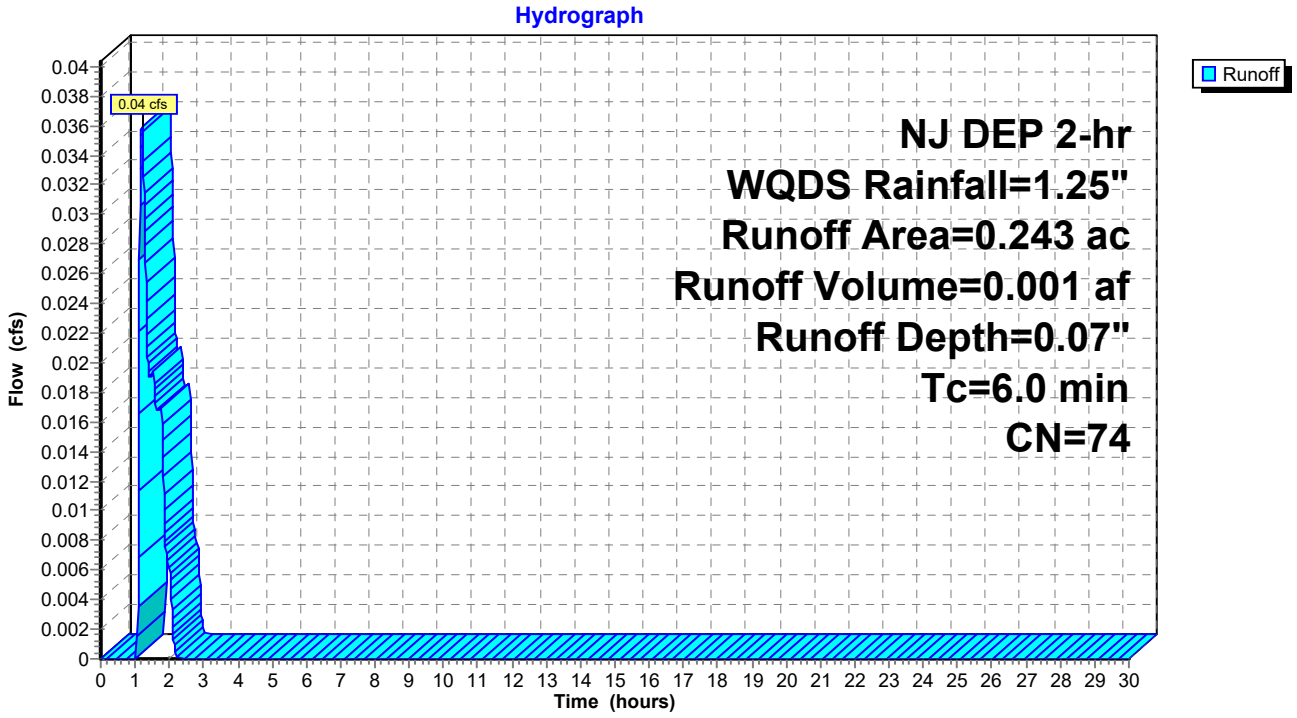
Runoff = 0.04 cfs @ 1.20 hrs, Volume= 0.001 af, Depth= 0.07"
Routed to Pond 26P : Bio Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.243	74	
	0.243		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 30S: (new Subcat)



Summary for Subcatchment 31S: (new Subcat)

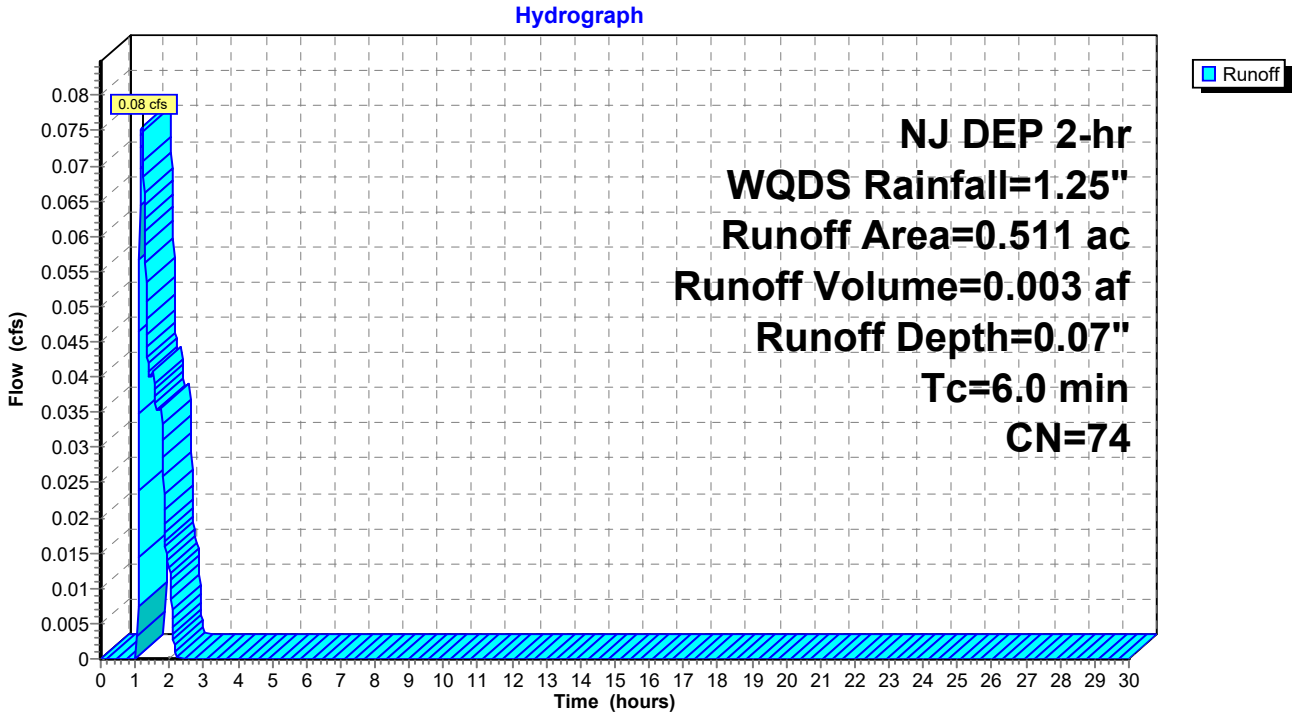
Runoff = 0.08 cfs @ 1.20 hrs, Volume= 0.003 af, Depth= 0.07"
Routed to Pond 28P : Bio Infiltration Basin 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.511	74	
	0.511		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 31S: (new Subcat)



Summary for Subcatchment 32S: (new Subcat)

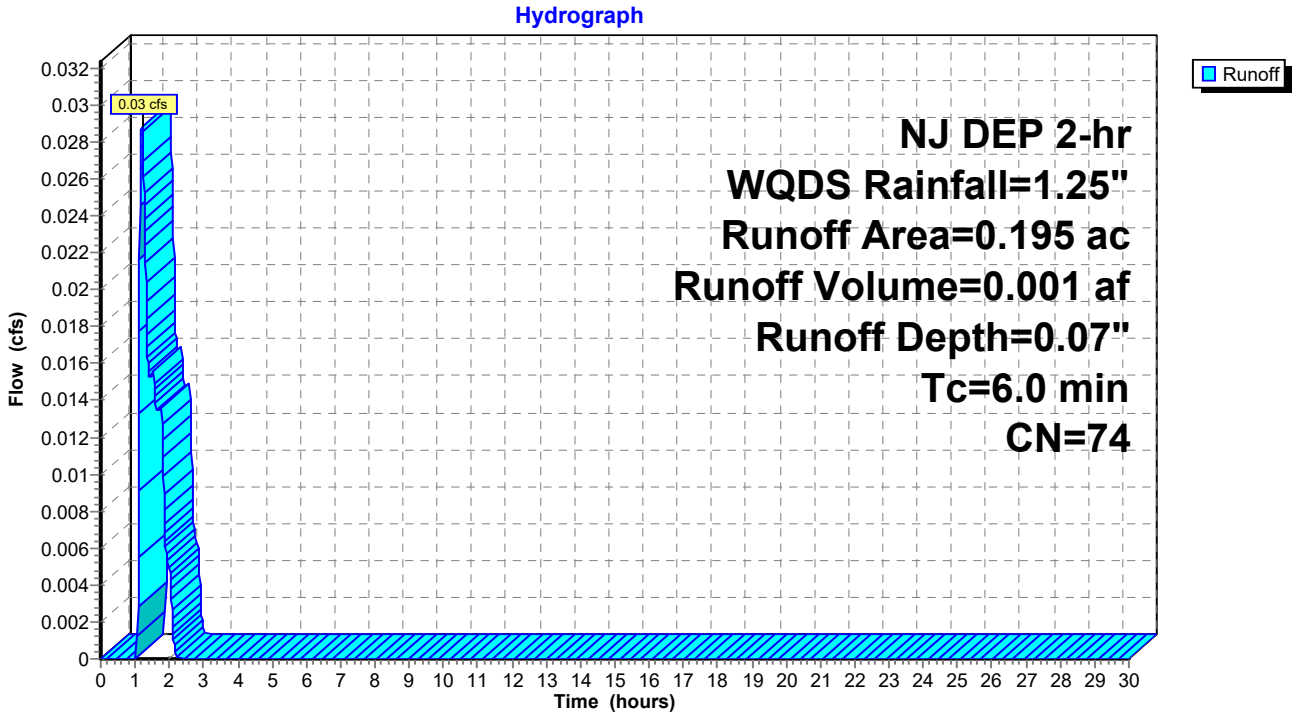
Runoff = 0.03 cfs @ 1.20 hrs, Volume= 0.001 af, Depth= 0.07"
Routed to Pond 32P : UG Roof Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

	Area (ac)	CN	Description
*	0.195	74	
	0.195		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 32S: (new Subcat)



Summary for Subcatchment 33S: Additional Basin Area

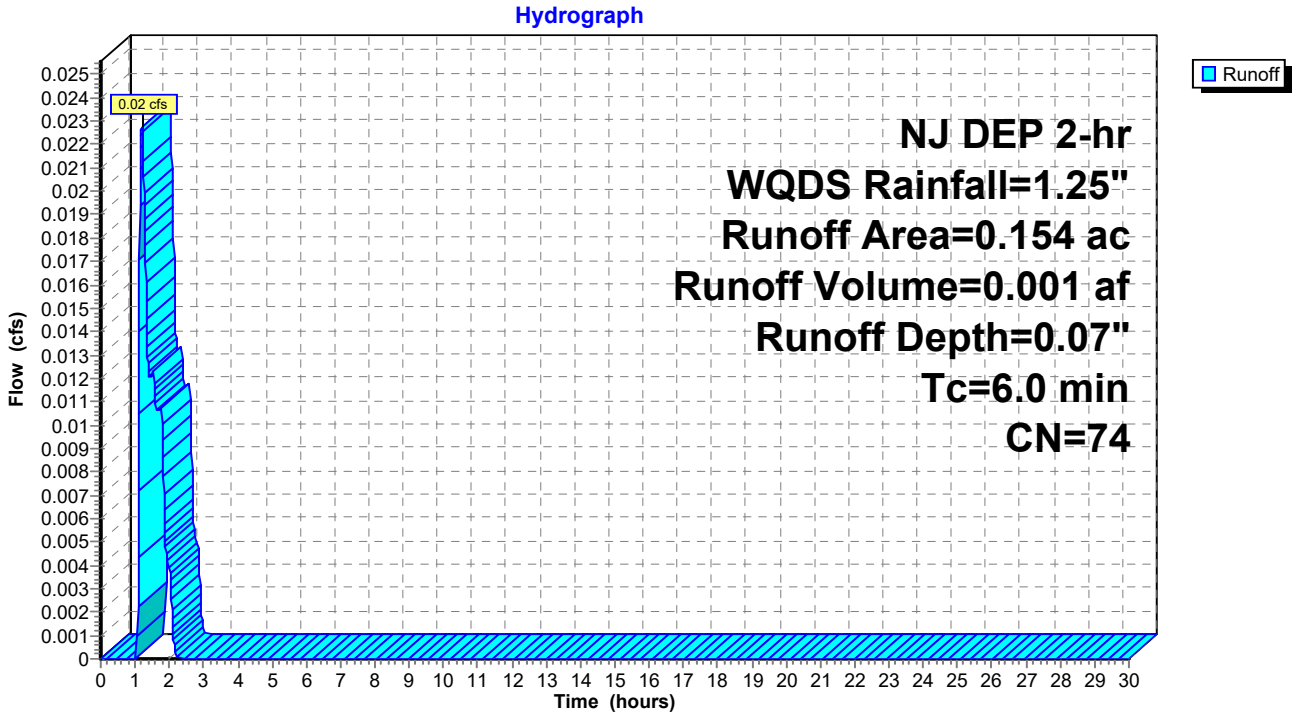
Runoff = 0.02 cfs @ 1.20 hrs, Volume= 0.001 af, Depth= 0.07"
Routed to Pond 26P : Bio Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQDS Rainfall=1.25"

Area (ac)	CN	Description
0.154	74	>75% Grass cover, Good, HSG C
0.154		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 33S: Additional Basin Area



Summary for Reach 23R: Right Grass Swale

Inflow Area = 0.413 ac, 63.68% Impervious, Inflow Depth = 0.53" for WQDS event
Inflow = 0.64 cfs @ 1.12 hrs, Volume= 0.018 af
Outflow = 0.22 cfs @ 1.80 hrs, Volume= 0.018 af, Atten= 66%, Lag= 40.7 min
Routed to Reach 25R : Left Grass Swale

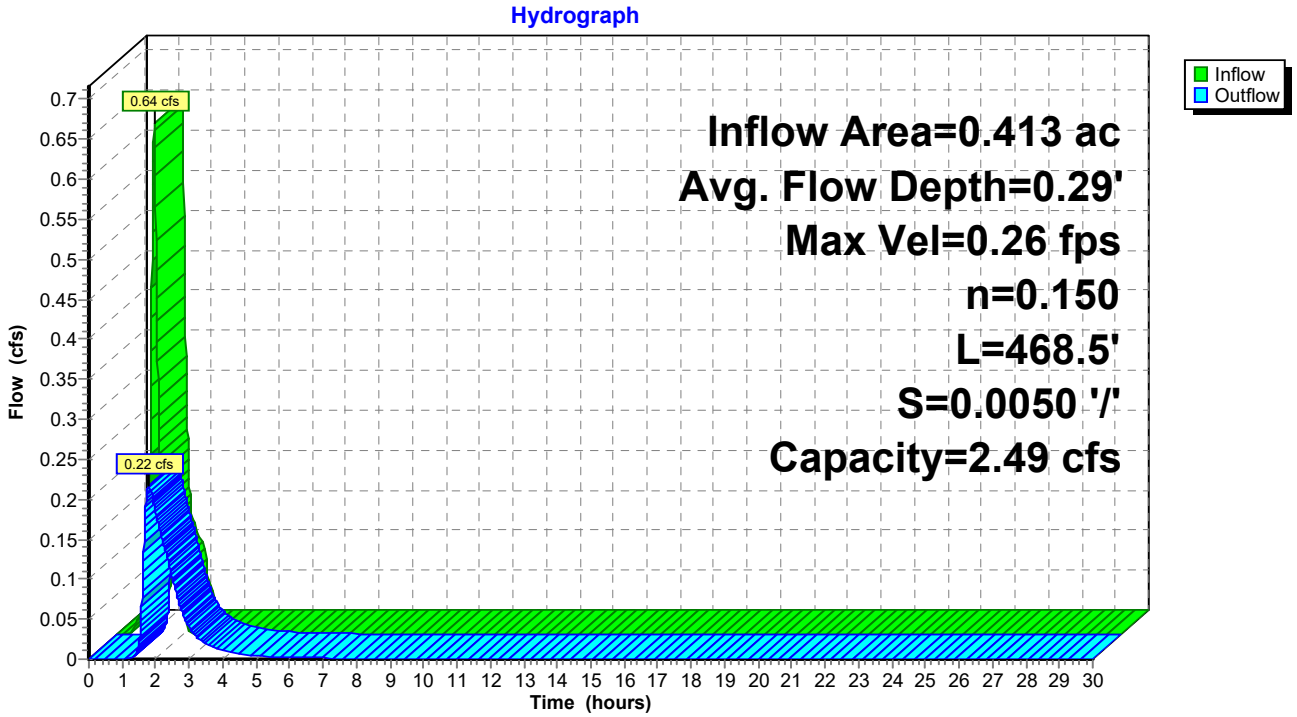
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.26 fps, Min. Travel Time= 30.6 min
Avg. Velocity = 0.05 fps, Avg. Travel Time= 163.8 min

Peak Storage= 398 cf @ 1.29 hrs
Average Depth at Peak Storage= 0.29' , Surface Width= 3.77'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 2.49 cfs

2.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 468.5' Slope= 0.0050 '/'
Inlet Invert= 165.81', Outlet Invert= 163.47'

‡

Reach 23R: Right Grass Swale



Summary for Reach 25R: Left Grass Swale

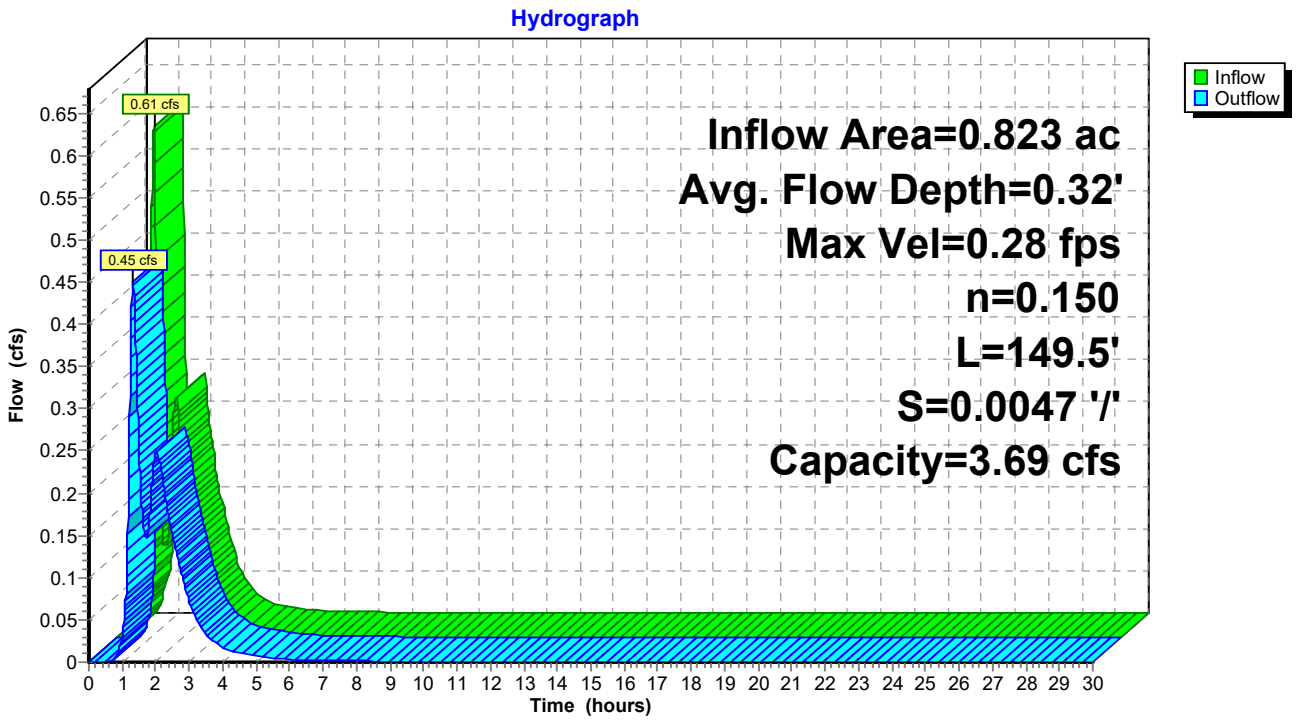
Inflow Area = 0.823 ac, 56.50% Impervious, Inflow Depth = 0.54" for WQDS event
Inflow = 0.61 cfs @ 1.11 hrs, Volume= 0.037 af
Outflow = 0.45 cfs @ 1.32 hrs, Volume= 0.037 af, Atten= 26%, Lag= 12.3 min
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.28 fps, Min. Travel Time= 8.8 min
Avg. Velocity = 0.05 fps, Avg. Travel Time= 50.8 min

Peak Storage= 239 cf @ 1.17 hrs
Average Depth at Peak Storage= 0.32' , Surface Width= 5.93'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 3.69 cfs

4.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 10.00'
Length= 149.5' Slope= 0.0047 '/'
Inlet Invert= 159.71', Outlet Invert= 159.00'

‡



Summary for Pond 2P: PP-1

Inflow Area = 0.214 ac,100.00% Impervious, Inflow Depth = 1.03" for WQDS event
Inflow = 0.63 cfs @ 1.11 hrs, Volume= 0.018 af
Outflow = 0.29 cfs @ 1.22 hrs, Volume= 0.018 af, Atten= 54%, Lag= 6.9 min
Primary = 0.29 cfs @ 1.22 hrs, Volume= 0.018 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 165.44' @ 1.22 hrs Surf.Area= 0.067 ac Storage= 0.009 af

Plug-Flow detention time= 46.7 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 47.1 min (117.4 - 70.3)

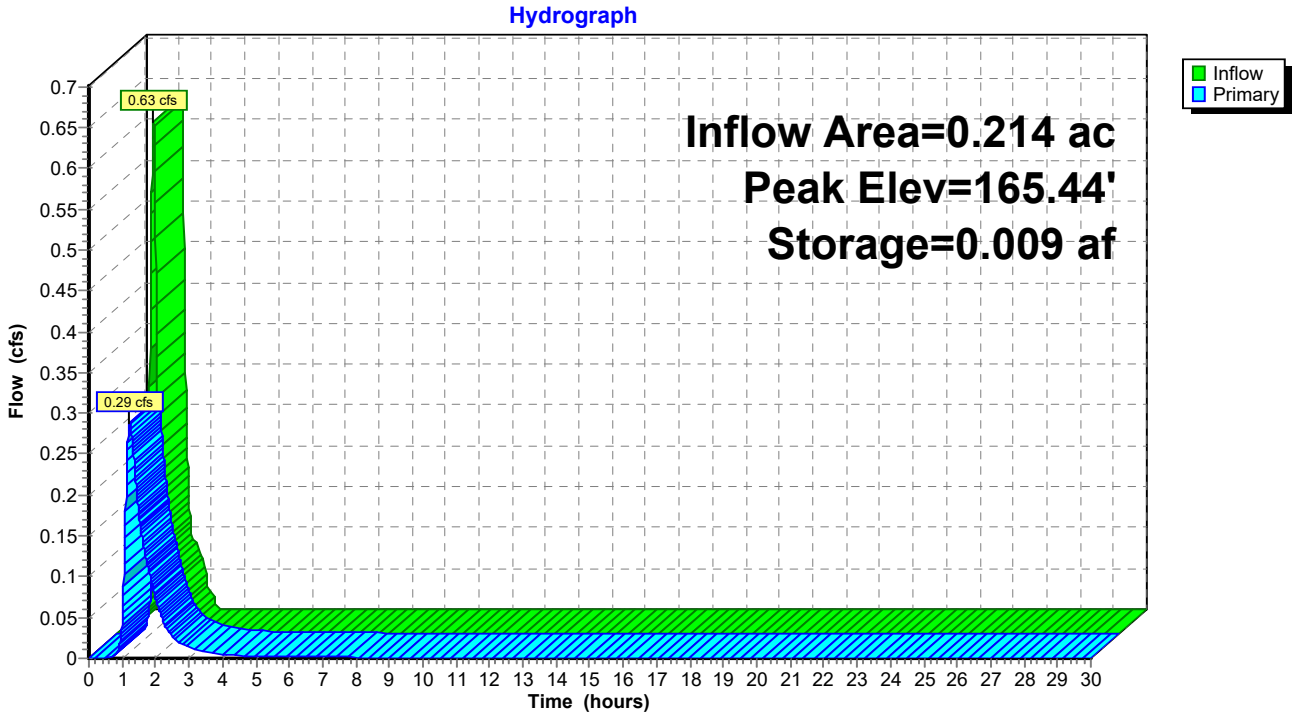
Volume	Invert	Avail.Storage	Storage Description
#1	165.10'	0.080 af	**PP-1 (Prismatic)**Listed below 0.201 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.10	0.067	0.000	0.000
168.10	0.067	0.201	0.201

Device	Routing	Invert	Outlet Devices
#1	Primary	165.10'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	166.60'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.29 cfs @ 1.22 hrs HW=165.44' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.29 cfs @ 2.00 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 2P: PP-1


Hydrograph
Inflow
Primary
Inflow Area=0.214 ac
Peak Elev=165.44'
Storage=0.009 af
0.63 cfs
0.29 cfs
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 4P: PP-2

Inflow Area = 0.311 ac, 94.21% Impervious, Inflow Depth = 0.94" for WQDS event
Inflow = 0.86 cfs @ 1.11 hrs, Volume= 0.024 af
Outflow = 0.06 cfs @ 1.84 hrs, Volume= 0.011 af, Atten= 93%, Lag= 43.8 min
Primary = 0.06 cfs @ 1.84 hrs, Volume= 0.011 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 162.16' @ 1.84 hrs Surf.Area= 0.130 ac Storage= 0.021 af

Plug-Flow detention time= 196.2 min calculated for 0.011 af (45% of inflow)
Center-of-Mass det. time= 184.8 min (256.3 - 71.5)

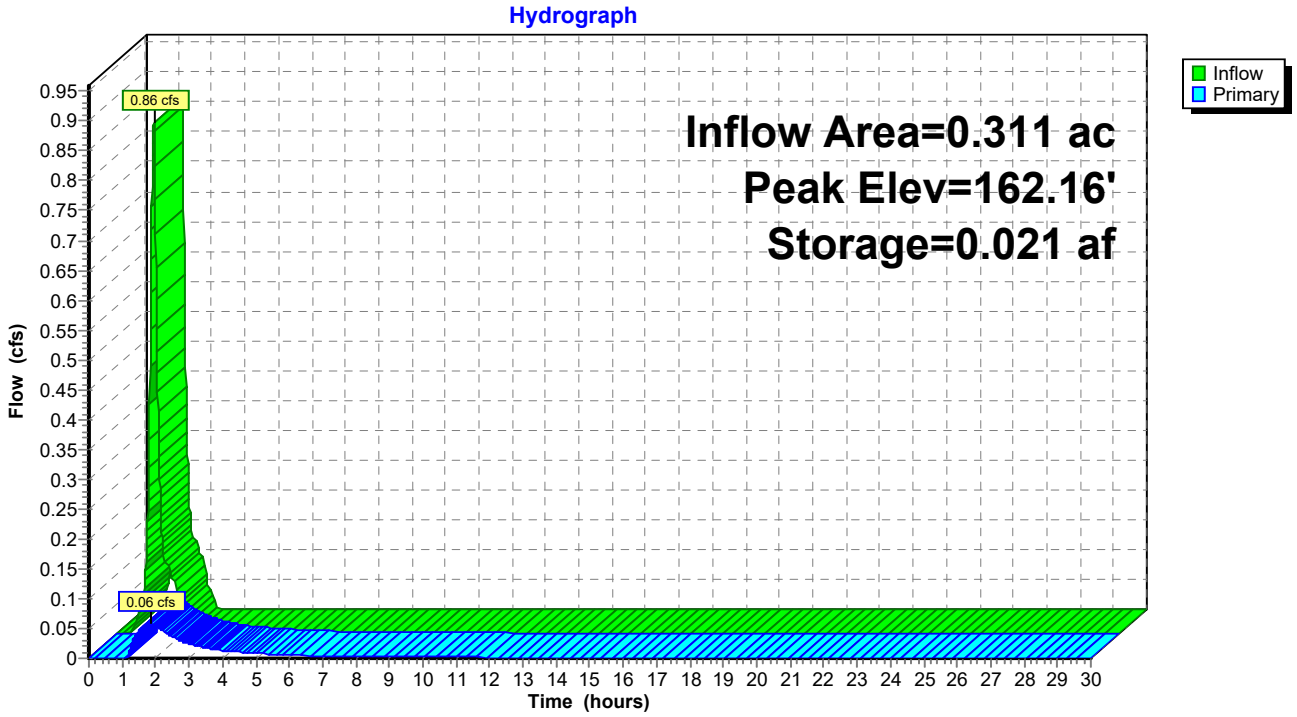
Volume	Invert	Avail.Storage	Storage Description
#1	161.75'	0.169 af	**PP-2 (Prismatic)**Listed below (Recalc) 0.423 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
161.75	0.130	0.000	0.000
165.00	0.130	0.423	0.423

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	163.50'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.06 cfs @ 1.84 hrs HW=162.16' (Free Discharge)
└─**1=4" Underdrain** (Orifice Controls 0.06 cfs @ 1.37 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 4P: PP-2


Hydrograph
Inflow
Primary
Inflow Area=0.311 ac
Peak Elev=162.16'
Storage=0.021 af
0.86 cfs
0.06 cfs
Flow (cfs)
Time (hours)

Summary for Pond 6P: PP-3

Inflow Area = 0.192 ac, 81.25% Impervious, Inflow Depth = 0.65" for WQDS event
Inflow = 0.39 cfs @ 1.12 hrs, Volume= 0.010 af
Outflow = 0.02 cfs @ 1.87 hrs, Volume= 0.003 af, Atten= 94%, Lag= 45.3 min
Primary = 0.02 cfs @ 1.87 hrs, Volume= 0.003 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 158.55' @ 1.87 hrs Surf.Area= 0.060 ac Storage= 0.010 af

Plug-Flow detention time= 167.4 min calculated for 0.003 af (31% of inflow)
Center-of-Mass det. time= 153.9 min (228.8 - 74.9)

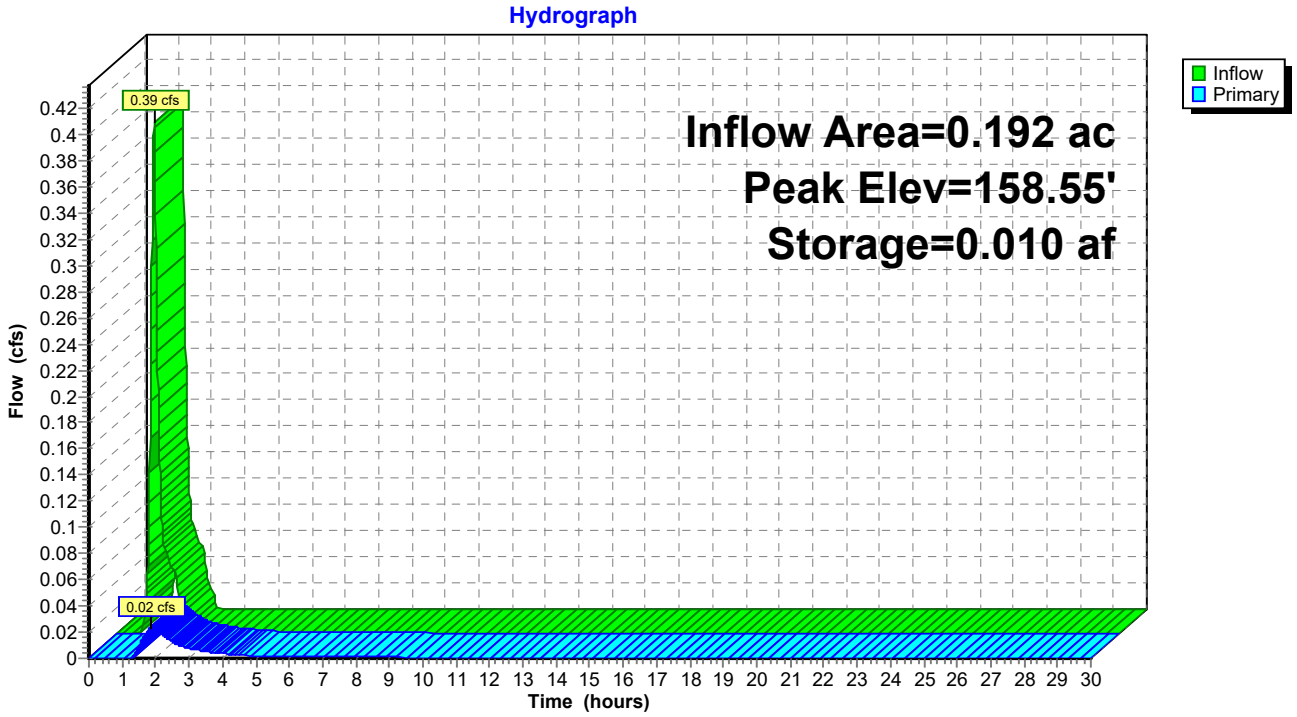
Volume	Invert	Avail.Storage	Storage Description
#1	158.15'	0.079 af	**PP-3 (Prismatic)**Listed below (Recalc) 0.197 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
158.15	0.060	0.000	0.000
161.43	0.060	0.197	0.197

Device	Routing	Invert	Outlet Devices
#1	Primary	158.45'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	159.90'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 1.87 hrs HW=158.55' (Free Discharge)
└─**1=4" Underdrain** (Orifice Controls 0.02 cfs @ 1.06 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 6P: PP-3


Hydrograph
Inflow
Primary
0.39 cfs
0.02 cfs
Inflow Area=0.192 ac
Peak Elev=158.55'
Storage=0.010 af
Flow (cfs)
0 0.02 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32 0.34 0.36 0.38 0.4 0.42
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 8P: PP-4

Inflow Area = 0.206 ac, 68.93% Impervious, Inflow Depth = 0.54" for WQDS event
Inflow = 0.35 cfs @ 1.12 hrs, Volume= 0.009 af
Outflow = 0.07 cfs @ 1.38 hrs, Volume= 0.007 af, Atten= 80%, Lag= 15.4 min
Primary = 0.07 cfs @ 1.38 hrs, Volume= 0.007 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 169.63' @ 1.38 hrs Surf.Area= 0.052 ac Storage= 0.006 af

Plug-Flow detention time= 79.5 min calculated for 0.007 af (78% of inflow)
Center-of-Mass det. time= 72.3 min (148.5 - 76.2)

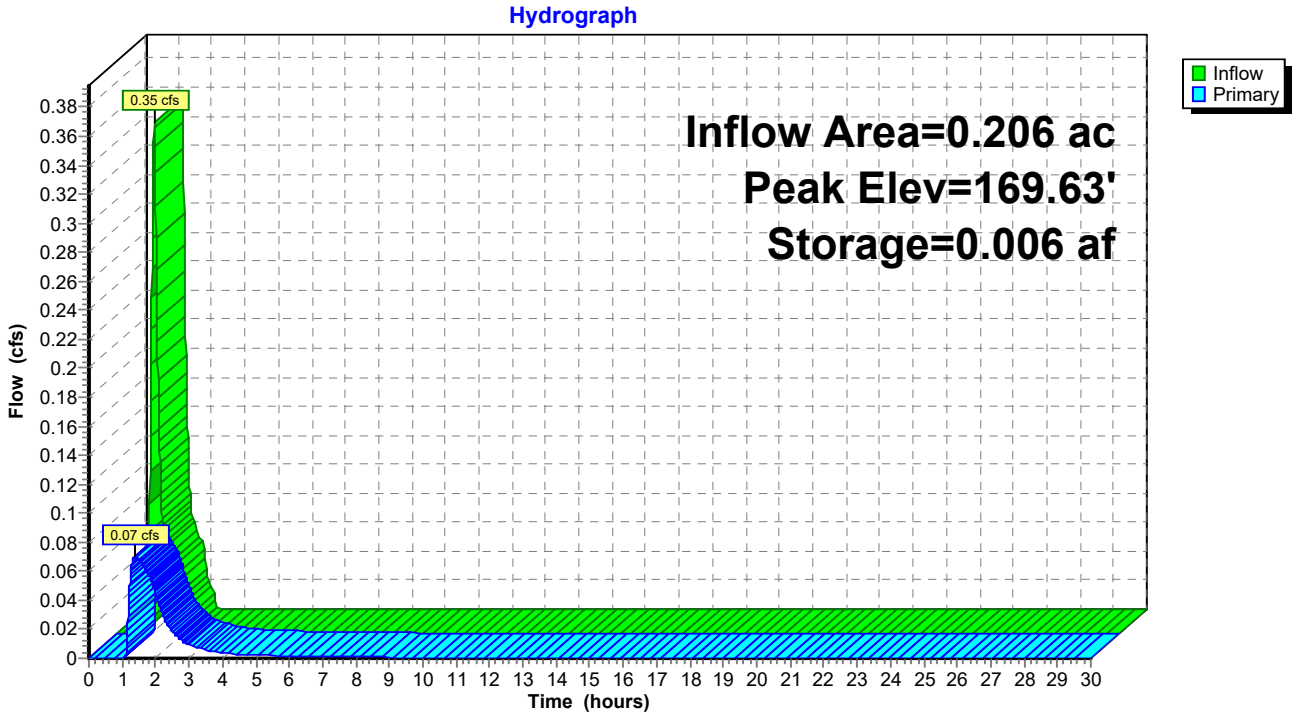
Volume	Invert	Avail.Storage	Storage Description
#1	169.35'	0.068 af	**PP-4 (Prismatic)**Listed below (Recalc) 0.170 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.35	0.052	0.000	0.000
172.62	0.052	0.170	0.170

Device	Routing	Invert	Outlet Devices
#1	Primary	169.45'	**4.0" Vert. 4" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	171.10'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.07 cfs @ 1.38 hrs HW=169.63' (Free Discharge)
└─**1=4" Underdrain** (Orifice Controls 0.07 cfs @ 1.45 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 8P: PP-4


Hydrograph
Inflow
Primary
Inflow Area=0.206 ac
Peak Elev=169.63'
Storage=0.006 af
0.35 cfs
0.07 cfs
Flow (cfs)
Time (hours)

Summary for Pond 10P: PP-5

Inflow Area = 0.087 ac, 88.51% Impervious, Inflow Depth = 0.78" for WQDS event
Inflow = 0.21 cfs @ 1.11 hrs, Volume= 0.006 af
Outflow = 0.00 cfs @ 2.12 hrs, Volume= 0.000 af, Atten= 99%, Lag= 60.4 min
Primary = 0.00 cfs @ 2.12 hrs, Volume= 0.000 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 167.37' @ 2.12 hrs Surf.Area= 0.027 ac Storage= 0.006 af

Plug-Flow detention time= 173.8 min calculated for 0.000 af (5% of inflow)
Center-of-Mass det. time= 150.9 min (224.3 - 73.4)

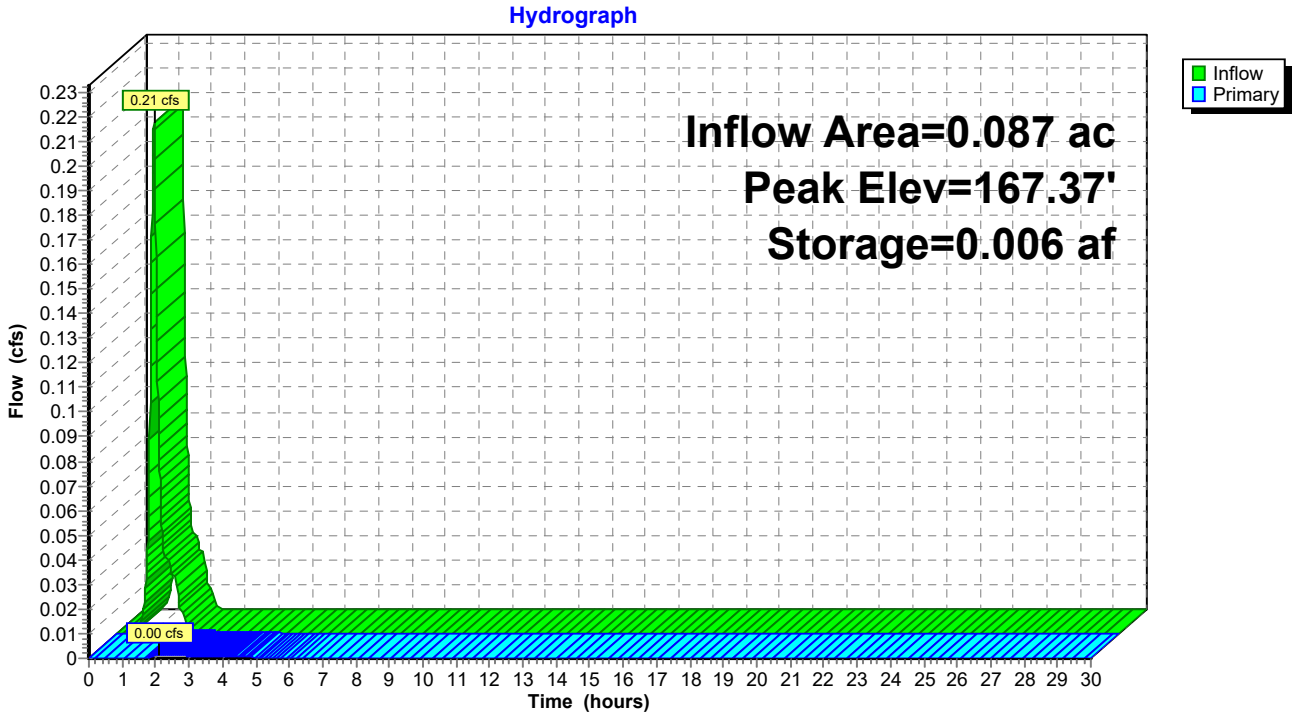
Volume	Invert	Avail.Storage	Storage Description
#1	166.85'	0.030 af	**PP-5 (Prismatic)**Listed below (Recalc) 0.074 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
166.85	0.027	0.000	0.000
169.60	0.027	0.074	0.074

Device	Routing	Invert	Outlet Devices
#1	Primary	167.35'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	168.10'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 2.12 hrs HW=167.37' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.00 cfs @ 0.52 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 10P: PP-5


Hydrograph
Inflow
Primary
Inflow Area=0.087 ac
Peak Elev=167.37'
Storage=0.006 af
0.21 cfs
0.00 cfs
Flow (cfs)
Time (hours)

Summary for Pond 12P: PP-6

Inflow Area = 0.258 ac, 91.47% Impervious, Inflow Depth = 0.86" for WQDS event
Inflow = 0.66 cfs @ 1.11 hrs, Volume= 0.018 af
Outflow = 0.21 cfs @ 1.28 hrs, Volume= 0.018 af, Atten= 68%, Lag= 9.9 min
Primary = 0.21 cfs @ 1.28 hrs, Volume= 0.018 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.49' @ 1.28 hrs Surf.Area= 0.091 ac Storage= 0.010 af

Plug-Flow detention time= 73.1 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 73.0 min (145.6 - 72.6)

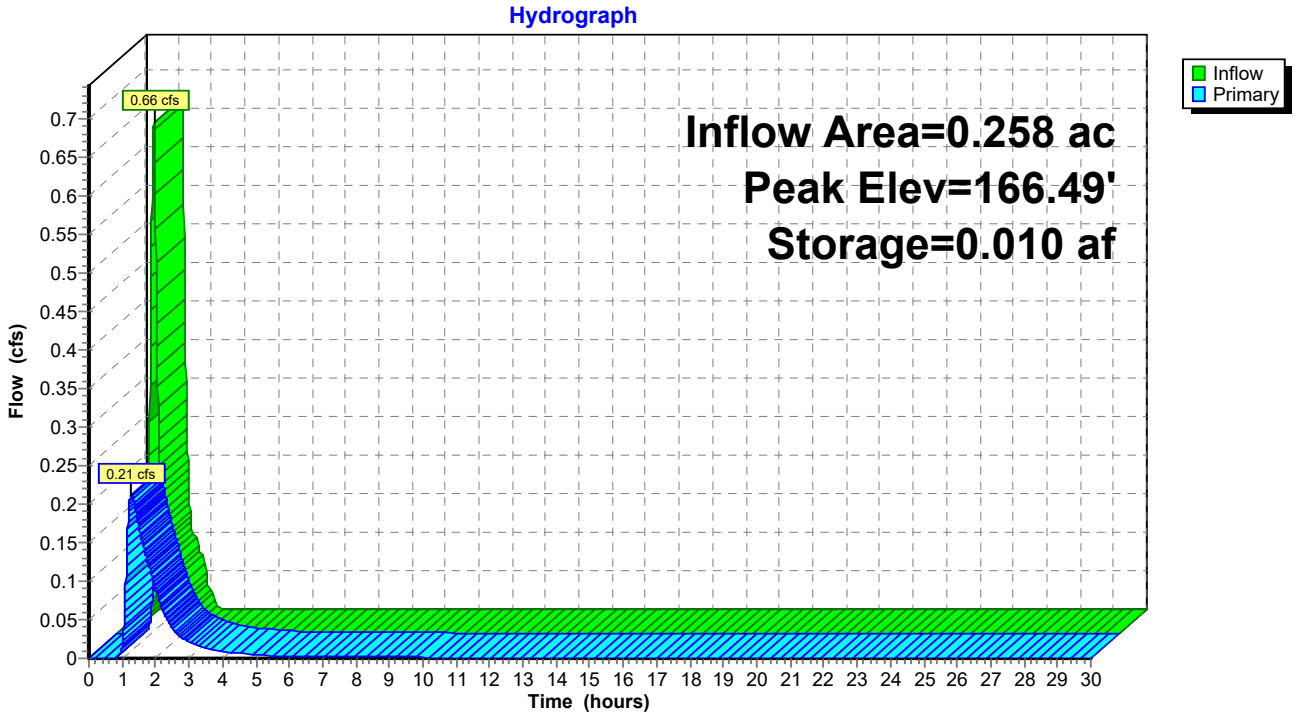
Volume	Invert	Avail.Storage	Storage Description
#1	166.20'	0.110 af	**PP-6 (Prismatic)**Listed below (Recalc) 0.275 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
166.20	0.091	0.000	0.000
169.22	0.091	0.275	0.275

Device	Routing	Invert	Outlet Devices
#1	Primary	166.20'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	167.70'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 1.28 hrs HW=166.49' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.21 cfs @ 1.82 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 12P: PP-6


Hydrograph
Inflow
Primary
Inflow Area=0.258 ac
Peak Elev=166.49'
Storage=0.010 af
0.66 cfs
0.21 cfs
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 14P: PP-7

Inflow Area = 0.226 ac, 90.71% Impervious, Inflow Depth = 0.86" for WQDS event
Inflow = 0.58 cfs @ 1.11 hrs, Volume= 0.016 af
Outflow = 0.17 cfs @ 1.29 hrs, Volume= 0.016 af, Atten= 71%, Lag= 10.7 min
Primary = 0.17 cfs @ 1.29 hrs, Volume= 0.016 af
Routed to Pond 26P : Bio Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 168.80' @ 1.29 hrs Surf.Area= 0.093 ac Storage= 0.009 af

Plug-Flow detention time= 83.7 min calculated for 0.016 af (100% of inflow)
Center-of-Mass det. time= 84.2 min (156.8 - 72.6)

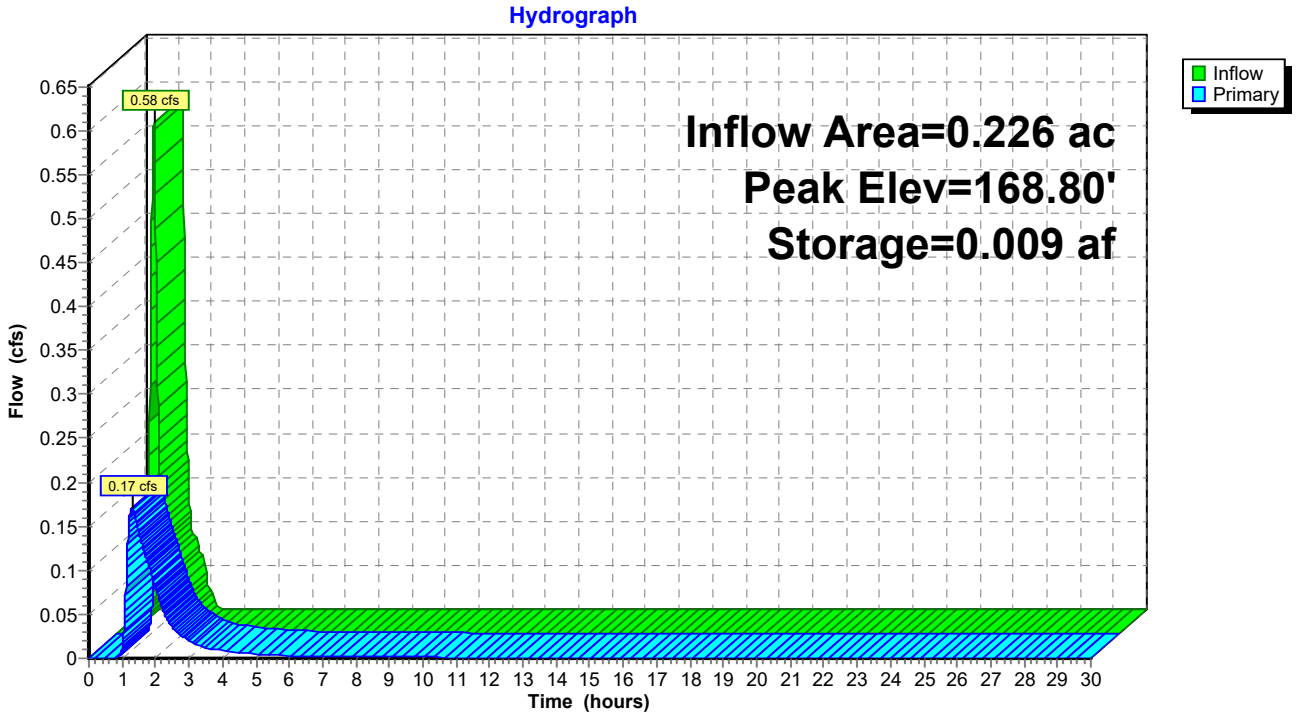
Volume	Invert	Avail.Storage	Storage Description
#1	168.55'	0.093 af	**PP-7 (Prismatic)**Listed below (Recalc) 0.233 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
168.55	0.093	0.000	0.000
171.06	0.093	0.233	0.233

Device	Routing	Invert	Outlet Devices
#1	Primary	168.55'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	169.50'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 1.29 hrs HW=168.80' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.17 cfs @ 1.71 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 14P: PP-7


Hydrograph
Inflow
Primary
Inflow Area=0.226 ac
Peak Elev=168.80'
Storage=0.009 af
0.58 cfs
0.17 cfs
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 20P: PP-8

Inflow Area = 0.174 ac, 80.46% Impervious, Inflow Depth = 0.65" for WQDS event
Inflow = 0.35 cfs @ 1.12 hrs, Volume= 0.009 af
Outflow = 0.00 cfs @ 2.17 hrs, Volume= 0.000 af, Atten= 100%, Lag= 63.3 min
Primary = 0.00 cfs @ 2.17 hrs, Volume= 0.000 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.26' @ 2.17 hrs Surf.Area= 0.046 ac Storage= 0.009 af

Plug-Flow detention time= 275.0 min calculated for 0.000 af (3% of inflow)
Center-of-Mass det. time= 252.5 min (327.4 - 74.9)

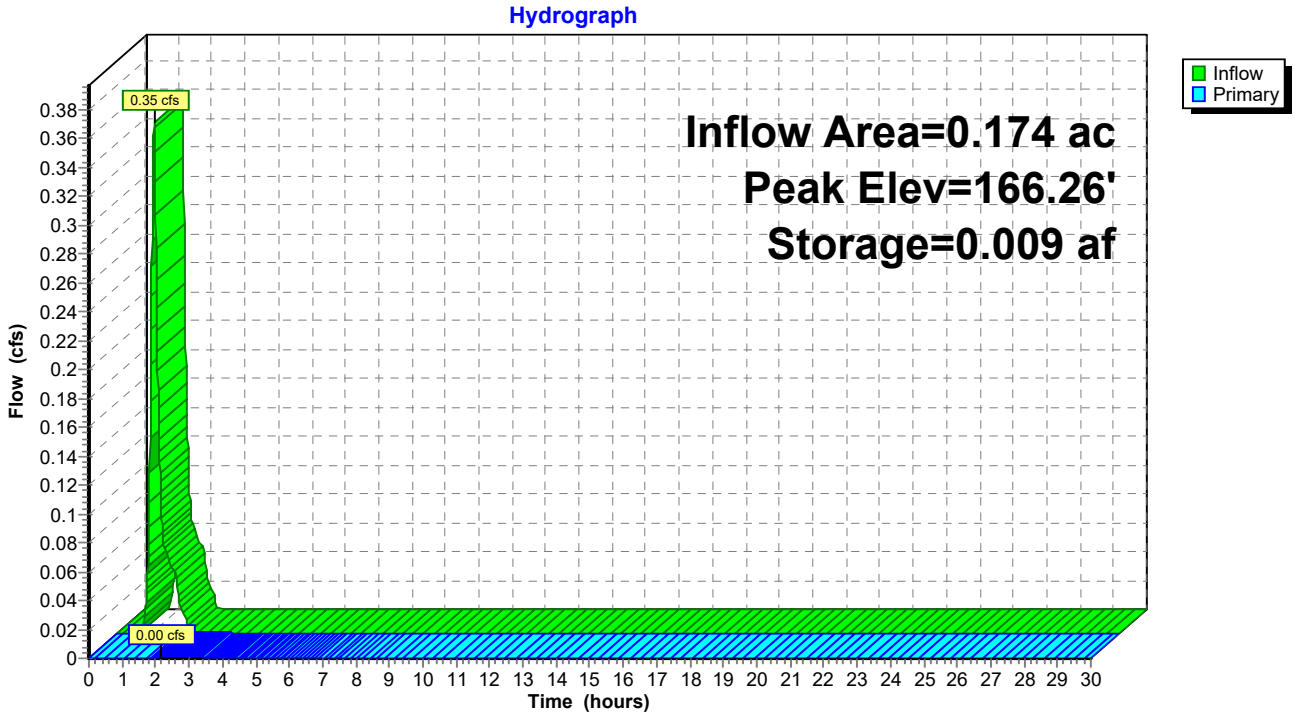
Volume	Invert	Avail.Storage	Storage Description
#1	165.75'	0.056 af	**PP-8 (Prismatic)**Listed below (Recalc) 0.141 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.75	0.046	0.000	0.000
168.81	0.046	0.141	0.141

Device	Routing	Invert	Outlet Devices
#1	Primary	166.25'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	167.25'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 2.17 hrs HW=166.26' (Free Discharge)
└**1=6" Underdrain** (Orifice Controls 0.00 cfs @ 0.39 fps)
└**2=6" Overflow** (Controls 0.00 cfs)

Pond 20P: PP-8


Hydrograph
Inflow
Primary
Inflow Area=0.174 ac
Peak Elev=166.26'
Storage=0.009 af
0.35 cfs
0.00 cfs
Flow (cfs)
Time (hours)
0 0.02 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32 0.34 0.36 0.38
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 23P: PP-9

Inflow Area = 0.199 ac, 89.45% Impervious, Inflow Depth = 0.78" for WQDS event
Inflow = 0.48 cfs @ 1.11 hrs, Volume= 0.013 af
Outflow = 0.13 cfs @ 1.31 hrs, Volume= 0.013 af, Atten= 73%, Lag= 11.7 min
Primary = 0.13 cfs @ 1.31 hrs, Volume= 0.013 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 169.96' @ 1.31 hrs Surf.Area= 0.090 ac Storage= 0.008 af

Plug-Flow detention time= 92.0 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 91.9 min (165.4 - 73.4)

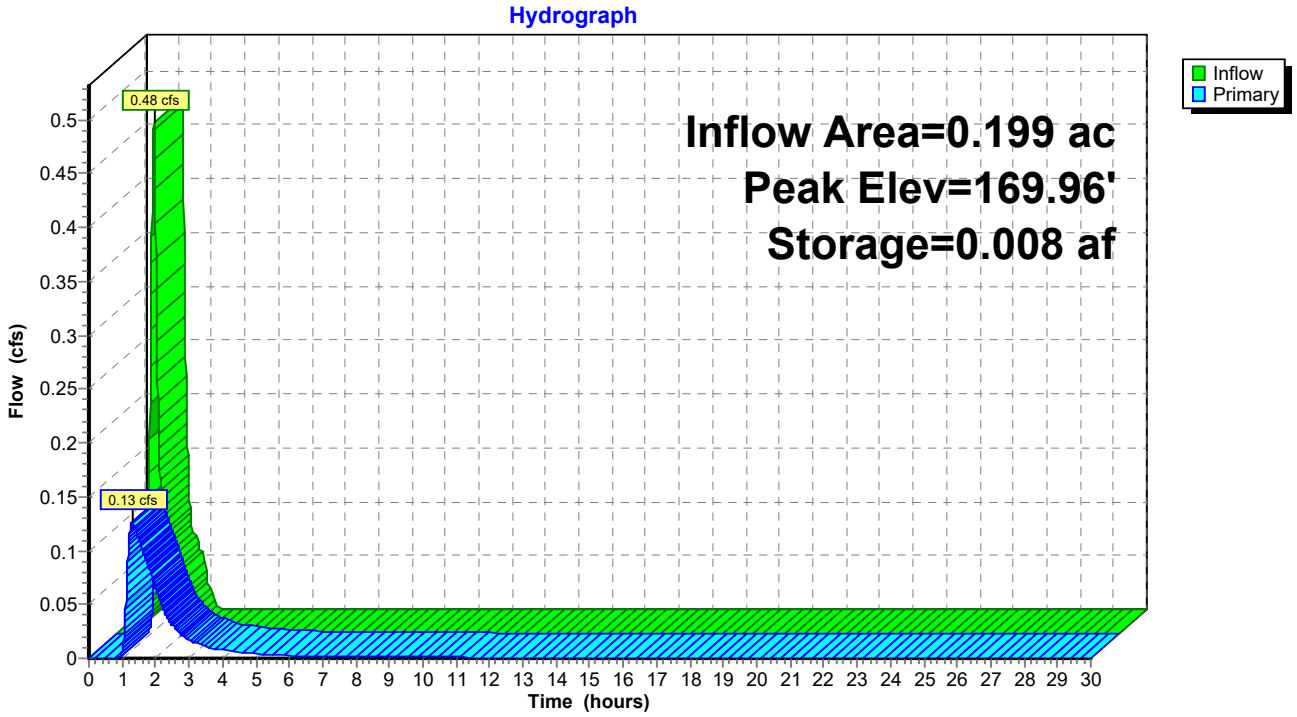
Volume	Invert	Avail.Storage	Storage Description
#1	169.75'	0.090 af	**PP-9 (Prismatic)**Listed below (Recalc) 0.224 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.75	0.090	0.000	0.000
172.24	0.090	0.224	0.224

Device	Routing	Invert	Outlet Devices
#1	Primary	169.75'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	170.95'	**4.0" Vert. 4" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.13 cfs @ 1.31 hrs HW=169.96' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.13 cfs @ 1.57 fps)
└─**2=4" Overflow** (Controls 0.00 cfs)

Pond 23P: PP-9


Hydrograph
Inflow
Primary
0.48 cfs
0.13 cfs
Inflow Area=0.199 ac
Peak Elev=169.96'
Storage=0.008 af
Flow (cfs)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Summary for Pond 25P: PP-10

Inflow Area = 0.125 ac,100.00% Impervious, Inflow Depth = 1.03" for WQDS event
Inflow = 0.37 cfs @ 1.11 hrs, Volume= 0.011 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 169.65' @ 2.34 hrs Surf.Area= 0.060 ac Storage= 0.011 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

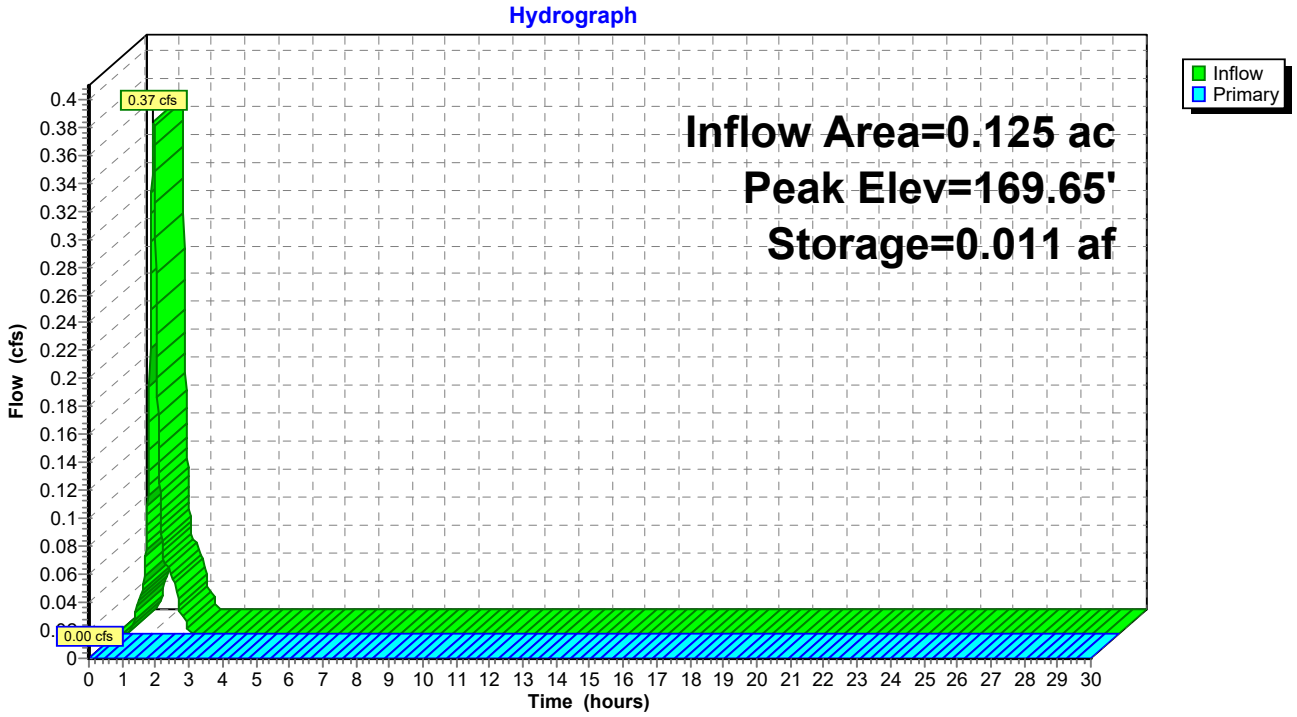
Volume	Invert	Avail.Storage	Storage Description
#1	169.20'	0.073 af	**PP-10 (Prismatic)**Listed below (Recalc) 0.182 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
169.20	0.060	0.000	0.000
172.24	0.060	0.182	0.182

Device	Routing	Invert	Outlet Devices
#1	Primary	169.70'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	170.70'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=169.20' (Free Discharge)
1=6" Underdrain (Controls 0.00 cfs)
2=6" Overflow (Controls 0.00 cfs)

Pond 25P: PP-10



Summary for Pond 26P: Bio Infiltration Basin 1

Inflow Area = 2.500 ac, 62.96% Impervious, Inflow Depth > 0.46" for WQDS event
Inflow = 0.97 cfs @ 1.31 hrs, Volume= 0.096 af
Outflow = 0.09 cfs @ 3.48 hrs, Volume= 0.096 af, Atten= 91%, Lag= 130.2 min
Discarded = 0.09 cfs @ 3.48 hrs, Volume= 0.096 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 18L : Proposed Flows (South)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 156.91' @ 3.48 hrs Surf.Area= 0.177 ac Storage= 0.064 af

Plug-Flow detention time= 300.9 min calculated for 0.096 af (100% of inflow)
Center-of-Mass det. time= 300.7 min (458.4 - 157.6)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	0.859 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

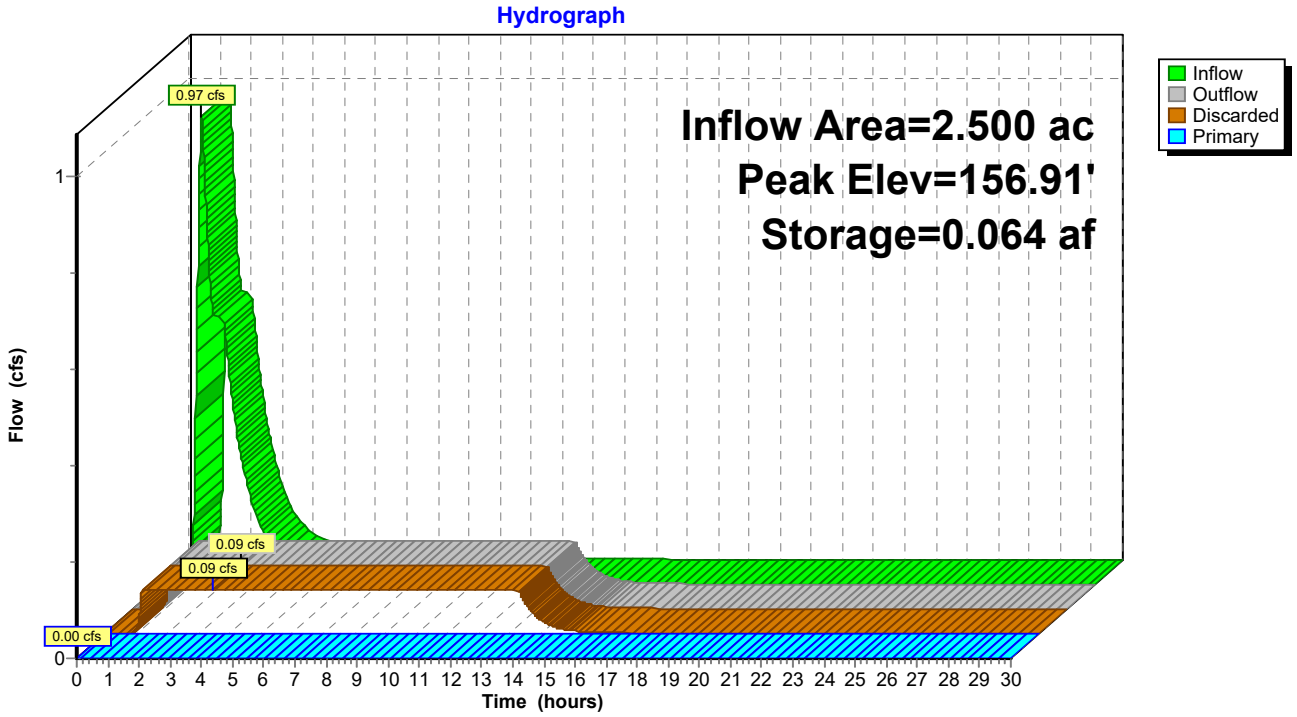
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
156.00	0.177	377.7	0.0	0.000	0.000	0.177
157.00	0.177	377.7	40.0	0.071	0.071	0.186
158.00	0.177	377.7	40.0	0.071	0.142	0.194
159.00	0.177	377.7	40.0	0.071	0.212	0.203
160.00	0.202	403.1	100.0	0.189	0.402	0.240
161.00	0.229	424.1	100.0	0.215	0.617	0.273
162.00	0.256	442.9	100.0	0.242	0.859	0.305

Device	Routing	Invert	Outlet Devices
#1	Primary	157.00'	**15.0" Round RCP_Round 15"** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 157.00' / 156.75' S= 0.0100 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Discarded	156.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'
#3	Device 1	159.00'	**2.5" Vert. WQ** C= 0.600 Limited to weir flow at low heads
#4	Device 1	159.25'	**4.0" Vert. 2Yr** C= 0.600 Limited to weir flow at low heads
#5	Device 1	160.00'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#6	Device 1	160.60'	**24.0" x 24.0" Horiz. Overflow Grate/Trash Rack** C= 0.700 Limited to weir flow at low heads

Discarded OutFlow Max=0.09 cfs @ 3.48 hrs HW=156.91' (Free Discharge)
└**2=Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=156.00' (Free Discharge)
└**1=RCP_Round 15"** (Controls 0.00 cfs)
  ├**3=WQ** (Controls 0.00 cfs)
  ├**4=2Yr** (Controls 0.00 cfs)
  ├**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**6=Overflow Grate/Trash Rack** (Controls 0.00 cfs)

Pond 26P: Bio Infiltration Basin 1



Summary for Pond 27P: PP-11

Inflow Area = 0.165 ac,100.00% Impervious, Inflow Depth = 1.03" for WQDS event
Inflow = 0.48 cfs @ 1.11 hrs, Volume= 0.014 af
Outflow = 0.04 cfs @ 1.81 hrs, Volume= 0.004 af, Atten= 91%, Lag= 42.0 min
Primary = 0.04 cfs @ 1.81 hrs, Volume= 0.004 af
Routed to Pond 28P : Bio Infiltration Basin 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 165.77' @ 1.81 hrs Surf.Area= 0.050 ac Storage= 0.012 af

Plug-Flow detention time= 118.1 min calculated for 0.004 af (30% of inflow)
Center-of-Mass det. time= 102.3 min (172.6 - 70.3)

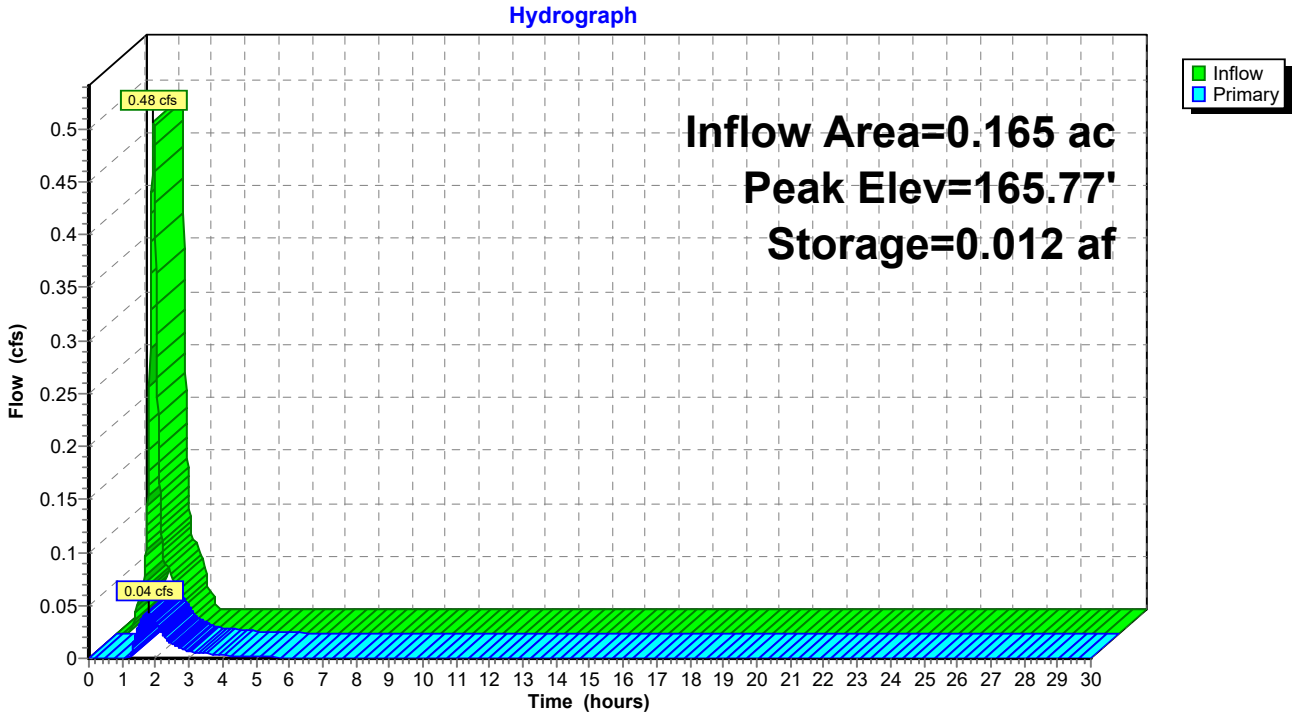
Volume	Invert	Avail.Storage	Storage Description
#1	165.15'	0.060 af	**PP-11 (Prismatic)**Listed below (Recalc) 0.151 af Overall x 40.0% Voids

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
165.15	0.050	0.000	0.000
168.17	0.050	0.151	0.151

Device	Routing	Invert	Outlet Devices
#1	Primary	165.65'	**6.0" Vert. 6" Underdrain** C= 0.600 Limited to weir flow at low heads
#2	Primary	166.65'	**6.0" Vert. 6" Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 1.81 hrs HW=165.77' (Free Discharge)
└─**1=6" Underdrain** (Orifice Controls 0.04 cfs @ 1.17 fps)
└─**2=6" Overflow** (Controls 0.00 cfs)

Pond 27P: PP-11



Summary for Pond 28P: Bio Infiltration Basin 2

Inflow Area = 2.500 ac, 35.28% Impervious, Inflow Depth = 0.23" for WQDS event
Inflow = 0.68 cfs @ 1.21 hrs, Volume= 0.047 af
Outflow = 0.02 cfs @ 3.50 hrs, Volume= 0.047 af, Atten= 96%, Lag= 137.4 min
Discarded = 0.02 cfs @ 3.50 hrs, Volume= 0.047 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 18L : Proposed Flows (South)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 159.02' @ 3.50 hrs Surf.Area= 0.047 ac Storage= 0.038 af

Plug-Flow detention time= 647.2 min calculated for 0.047 af (100% of inflow)
Center-of-Mass det. time= 646.9 min (776.5 - 129.6)

Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	0.263 af	**Small Scale Infiltration Basin 2 (Irregular)** Listed below (Recalc)

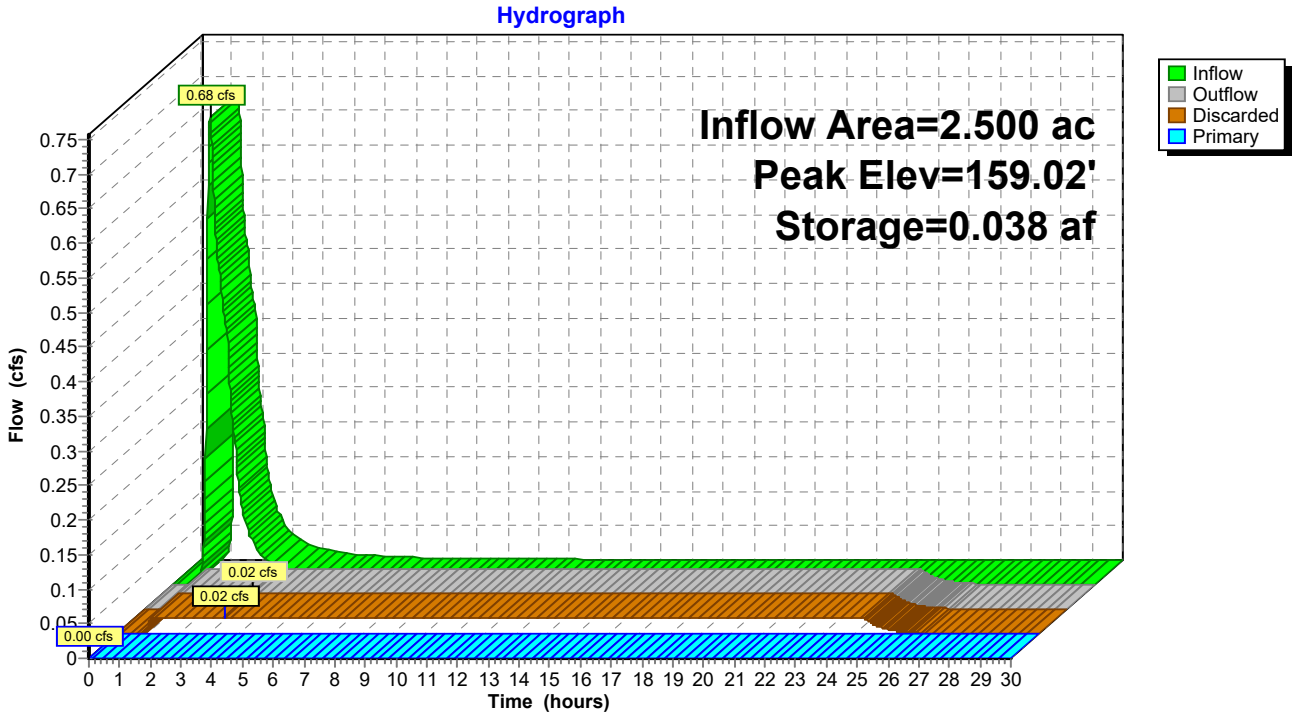
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
157.00	0.047	190.6	0.0	0.000	0.000	0.047
158.00	0.047	190.6	40.0	0.019	0.019	0.051
159.00	0.047	190.6	40.0	0.019	0.038	0.056
160.00	0.047	190.6	40.0	0.019	0.056	0.060
161.00	0.061	209.7	100.0	0.054	0.110	0.075
162.00	0.076	228.6	100.0	0.068	0.179	0.091
163.00	0.093	247.4	100.0	0.084	0.263	0.108

Device	Routing	Invert	Outlet Devices
#1	Primary	158.00'	**15.0" Round RCP_Round 15"** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 158.00' / 145.50' S= 0.5000 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Discarded	157.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'
#3	Device 1	160.00'	**3.5" Vert. WQ+2Yr** C= 0.600 Limited to weir flow at low heads
#4	Device 1	161.00'	**20.0" W x 5.0" H Vert. 10YR X 3.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.00'	**24.0" x 24.0" Horiz. Emergency Overflow** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 3.50 hrs HW=159.02' (Free Discharge)
└**2=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=157.00' (Free Discharge)
└**1=RCP_Round 15"** (Controls 0.00 cfs)
  ├**3=WQ+2Yr** (Controls 0.00 cfs)
  ├**4=10YR** (Controls 0.00 cfs)
  └**5=Emergency Overflow** (Controls 0.00 cfs)

Pond 28P: Bio Infiltration Basin 2



Summary for Pond 32P: UG Roof Storage

Inflow Area = 1.310 ac, 85.11% Impervious, Inflow Depth = 0.89" for WQDS event
Inflow = 3.28 cfs @ 1.11 hrs, Volume= 0.097 af
Outflow = 0.34 cfs @ 1.77 hrs, Volume= 0.097 af, Atten= 90%, Lag= 39.5 min
Primary = 0.34 cfs @ 1.77 hrs, Volume= 0.097 af
Routed to Link 21L : Proposed Flows (North)

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 166.55' @ 1.77 hrs Surf.Area= 0.188 ac Storage= 0.079 af

Plug-Flow detention time= 265.9 min calculated for 0.097 af (100% of inflow)
Center-of-Mass det. time= 266.2 min (336.7 - 70.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	165.50'	0.266 af	**56.49'W x 144.75'L x 8.58'H Field A** 1.610 af Overall - 0.946 af Embedded = 0.664 af x 40.0% Voids
#2A	167.50'	0.899 af	**ACF R-Tank LD 4** x 2400 Inside #1 Inside= 15.7"W x 66.9"H => 6.95 sf x 2.35'L = 16.3 cf Outside= 15.7"W x 66.9"H => 7.32 sf x 2.35'L = 17.2 cf 2400 Chambers in 40 Rows
		1.164 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	**15.0" Round RCP_Round 15"** L= 40.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 165.50' / 164.30' S= 0.0300 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf
#2	Device 1	165.50'	**2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	166.50'	**4.0' long Sharp-Crested Rectangular Weir** 1 End Contraction(s) 3.0' Crest Height

Primary OutFlow Max=0.31 cfs @ 1.77 hrs HW=166.55' (Free Discharge)
└**1=RCP_Round 15"** (Passes 0.31 cfs of 4.81 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.16 cfs @ 4.69 fps)
  └**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.15 cfs @ 0.75 fps)

Pond 32P: UG Roof Storage - Chamber Wizard Field A

Chamber Model = ACF R-Tank LD 4 (ACF Environmental R-Tank LD)
Inside= 15.7"W x 66.9"H => 6.95 sf x 2.35'L = 16.3 cf
Outside= 15.7"W x 66.9"H => 7.32 sf x 2.35'L = 17.2 cf

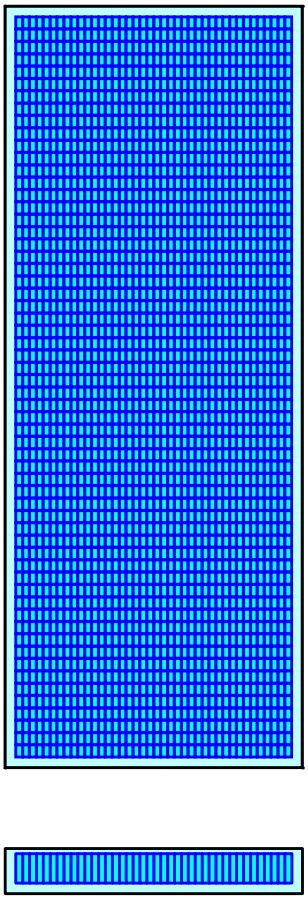
60 Chambers/Row x 2.35' Long = 140.75' Row Length +24.0" End Stone x 2 = 144.75' Base Length
40 Rows x 15.7" Wide + 24.0" Side Stone x 2 = 56.49' Base Width
24.0" Stone Base + 66.9" Chamber Height + 12.0" Stone Cover = 8.58' Field Height

2,400 Chambers x 16.3 cf = 39,147.6 cf Chamber Storage
2,400 Chambers x 17.2 cf = 41,208.0 cf Displacement

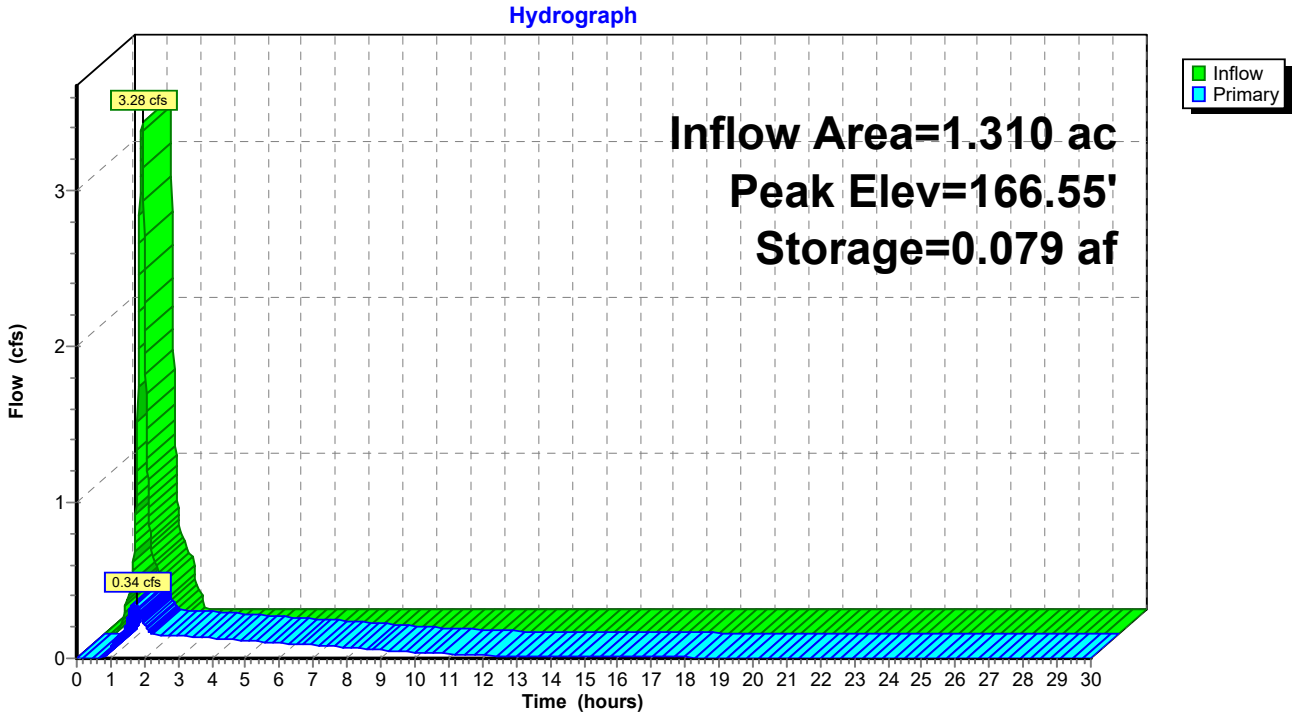
70,140.3 cf Field - 41,208.0 cf Chambers = 28,932.3 cf Stone x 40.0% Voids = 11,572.9 cf Stone Storage

Chamber Storage + Stone Storage = 50,720.5 cf = 1.164 af
Overall Storage Efficiency = 72.3%
Overall System Size = 144.75' x 56.49' x 8.58'

2,400 Chambers
2,597.8 cy Field
1,071.6 cy Stone



Pond 32P: UG Roof Storage

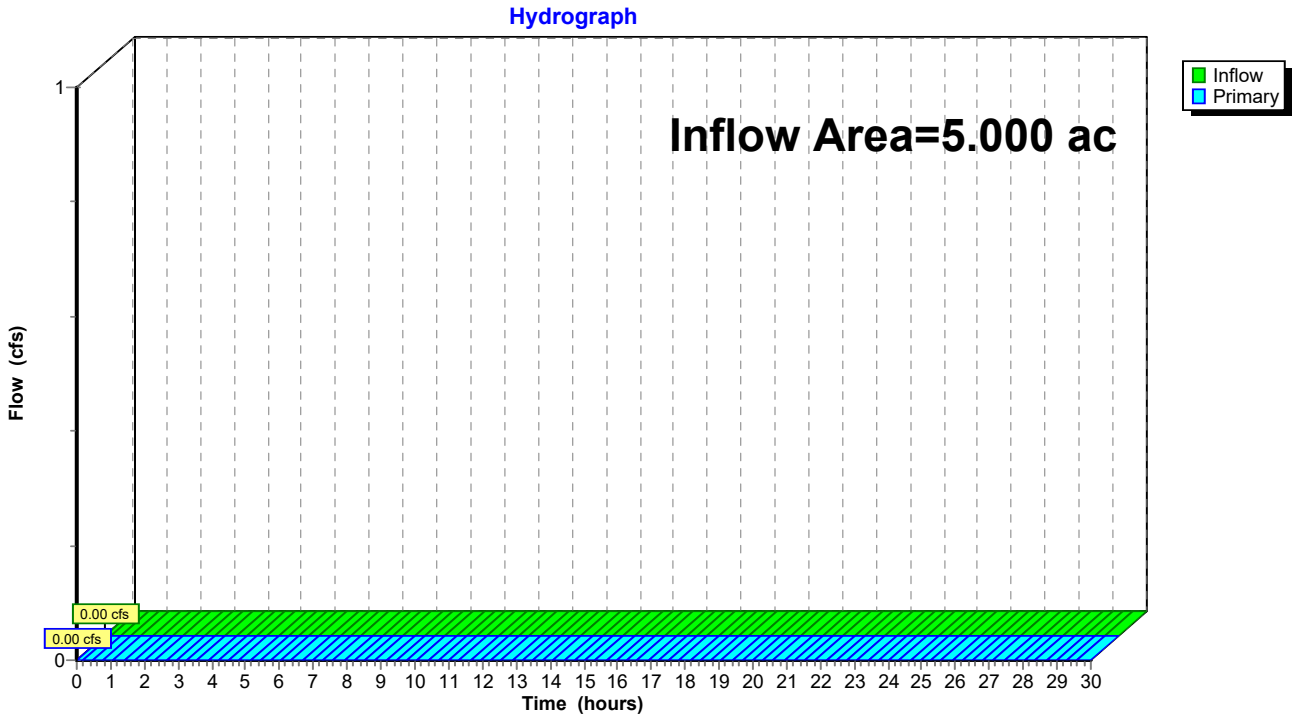


Summary for Link 18L: Proposed Flows (South)

Inflow Area = 5.000 ac, 49.12% Impervious, Inflow Depth = 0.00" for WQDS event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Link 18L: Proposed Flows (South)

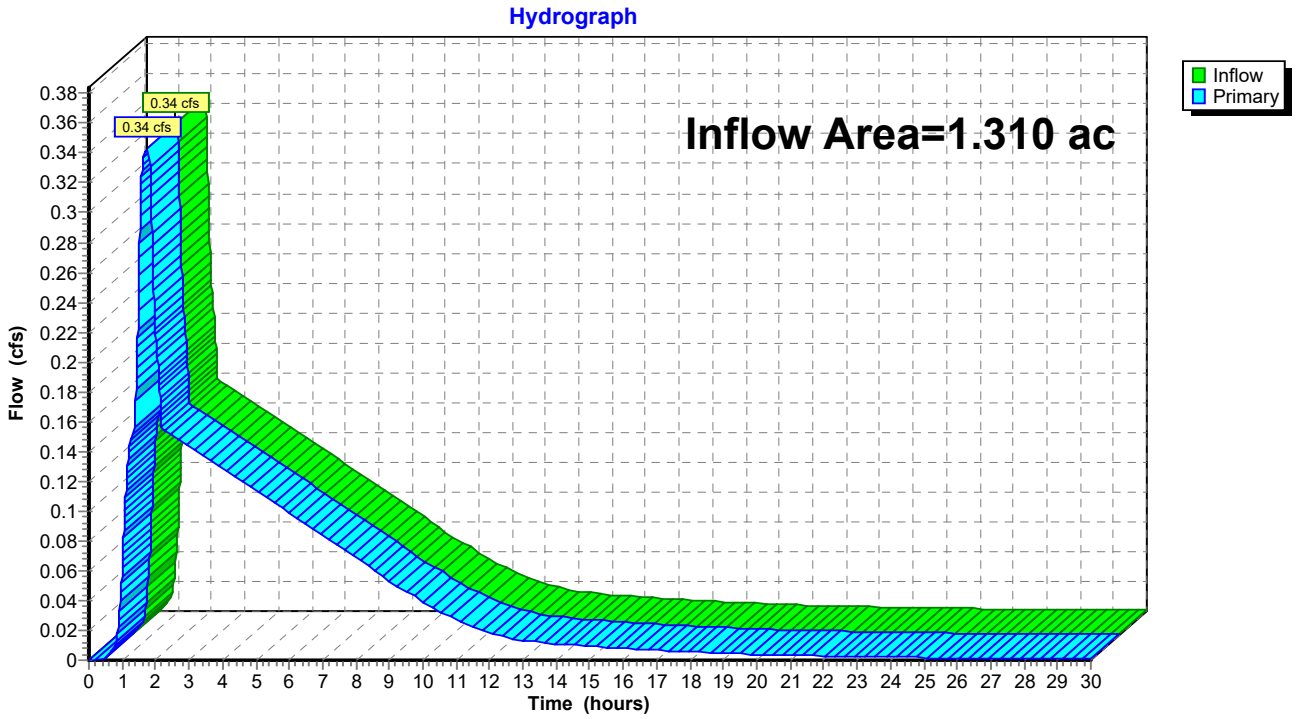


Summary for Link 21L: Proposed Flows (North)

Inflow Area = 1.310 ac, 85.11% Impervious, Inflow Depth > 0.89" for WQDS event
Inflow = 0.34 cfs @ 1.77 hrs, Volume= 0.097 af
Primary = 0.34 cfs @ 1.77 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Link 21L: Proposed Flows (North)



Appendix E – Tax Maps

SHEET NO. 75

CARSON ROAD

505(S)'

2034.40' (TOTAL)

POSSIBLE R.O.W.

SHEET NO. 66.05

SHEET NO. 66.03

LINE

MATCH

6601

1.01
270.675 AC. (TOTAL)

10' WIDE WATER LINE EASEMENT TO ELIZABETHTOWN WATER COMPANY

PROVINCE LINE ROAD

SHEET NO. 76

N.J. PLANE COORDINATE SYSTEM NAD 1983

40(S)'

POSSIBLE R.O.W.

20' WIDE SANITARY SEWER EASEMENT TO E.L.S.A.

EASEMENT TO N. J. BELL TELEPHONE CO.

2
7.30 ± AC. (S) (TOTAL)

LAWRENCEVILLE ROAD

PROVINCE LINE ROAD

SHEET NO. 66.02

MATCH LINE

REV. JAN. 25, 1994
REV. SEPT. 1, 1992

NEW JERSEY DEPARTMENT OF THE TREASURY
DIVISION OF TAXATION
PROPERTY ADMINISTRATION
APPROVED AS A TAX MAP PURSUANT TO THE PROVISIONS OF CHAPTER 175, LAWS OF 1913, ETC.
FOR THE DIRECTOR, DIVISION OF TAXATION
BY _____ P.P. & L.S.
TITLE # 1543 MANAGER, APPEALS SECTION
DATE FEB 28 1997 SERIAL NO. 732

TAX MAP
TOWNSHIP OF LAWRENCE
MERCER COUNTY, NEW JERSEY
SCALE: 1"=100' OCT. 1990
JOHN M. DURA, P.L.S.

SSM/T.T. MOORE ASSOCIATES, INC.
67 SCOTCH RD.
WEST TRENTON N.J. 08628 883-2313

A.D.R. ASSOCIATES, INC.
9285 COMMERCE HIGHWAY
PENNSAUKEN N.J. 08110 663-7200

Appendix F – FEMA FIRM Panel

National Flood Hazard Layer FIRMette

FEMA

74°42'19"W 40°19'28"N

74°41'41"W 40°19'1"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 — Cross Sections with 1% Annual Chance
- 17.5 — Water Surface Elevation
- Coastal Transect
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/27/2022 at 1:43 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.